DORMER PRAMET

KATALOG
LUETTELO

2019



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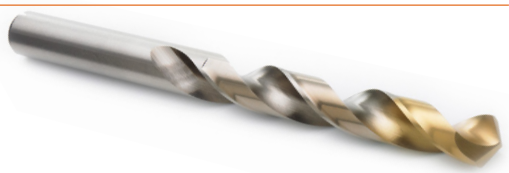



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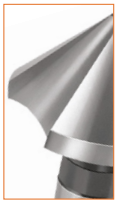

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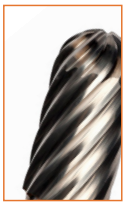

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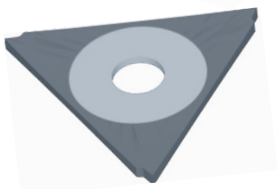



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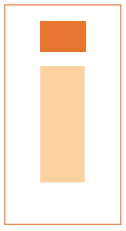


DORMER

	Material	Raaka-aine	Materiale	Materiale
	Standard	Standardi	Standard	Standard
	Djup	Syvyys	Dybde	Dybde
	Spetsvinkel	Kärkikulma	Spissvinkel	Spids vinkel
	Ytbehandling	Pinnoitteet	Overflatebehandling	Overfladebehandling
	Skaft	Varsi	Skaft	Skaft
	Form	Muoto	Form	Form
	Rotationsriktning	Työstösuunta	Rotasjonsretning	Rotationsretning
	Kylning	Jäähdytys	Kjøling	Kølemiddel
	Försänknings°	Upotuskulma	Forsenkings°	Forsænknings°
■	Förstahandsval	Paras valinta	Førstevalg	Perfekt
●	Andrahandsval	Hyvä valinta	Andrevalg	God
	Exempel 10 = Skärhastighet i meter/minut +/- 10%	Esimerkki 10 = Lastuamisnopeus, m/min +/- 10%	Eksempel 10 = skjærehastighet i meter/minutt +/- 10%	Eksempel 10 = Skærehastighed i meter/min. +/- 10%
	Artikelnummer	Tuotteen koodi	Artikkel kode	Kode
	Dim. område	Halkaisija-alue	Dim. område	Dimension

AMG	Svensk	Suomi	Norsk	Dansk
1.1	Rena järn, mjuka stål	Puhdas rauta, pehmeät teräkset	Rent jern, myke stål	Rent jern, blødt stål
1.2	Konstruktionsstål	Rakenneteräkset, hiilletysteräkset	Konstruksjonsstål	Konstruktionsstål
1.3	Kolstål, låglegerade stål	Hiilli- ja niukkaesosteiset teräset	Kullstål, låglegert stål	Kulstofstål, lavt leg.stål
1.4	Legerade stål	Seostetut teräkset	Legert stål	Legeret stål
1.5	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.6	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.7	Legerade härdade stål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
1.8	Legerade härdade stål, slitstål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
2.1	Rostfria automatstål och verktygsstål	Aut. laadut, työkaluteräkset Cr>10%	Rustfritt automatstål	Rustfrit automatstål
2.2	Austenitiska	Austenittiset	Austenistisk (Syrefast)	Austenitisk
2.3	Ferritaustenitiska (duplex), Martensitiska	Ferriiti + Austeniitti (Duplex), Ferriitismartensiittiset	Ferritaustenitiske (duplex), Ferritiske, Martensitiske	Ferritisk+Austenitisk, Martensitisk
2.4	Utskiljningshärdade / Austenitiska	Erkautumiskarkenevat	Utskillingsherdet	Udskilningshærdet
3.1	Gråjärn	Harmaa valurauta	Gråjern	Gråt støbejern
3.2	Gråjärn	Harmaa valurauta	Gråjern	Hærdet støbejern
3.3	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
3.4	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
4.1	Titan, ren	Titaani, seostamaton	Titan, ren	Titan, ren
4.2	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
4.3	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
5.1	Nickel, ren	Nikkeli, seostamaton	Nikkel, ren	Nikkel, ren
5.2	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
5.3	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
6.1	Koppar	Kupari	Kopper	Kobber
6.2	Mässing / Brons	ß-Messinki, pronssi	Messing/Bronse	Messing, Bronze
6.3	Mjuk mässing	α-Messinki, pehmeä	Myk messing	Blød messing
6.4	Cu-Al-Fe-Legeringar	Cu-Al-Fe seokset, lujat pronssit	Cu-Al-Fe-Legeringer	Cu-Al-Fe-legeringer
7.1	Ren aluminium, magnesium	Al, Mg, seostamaton	Ren aluminium, magnesium	Ren aluminium, magnesium
7.2	Al Legeringar, Si<0.5%	Al seostettu, Si<0.5%	Al legeringer, Si<0.5%	Al-legeringer, Si<0.5%
7.3	Al Legeringar, Si>0.5%<10%	Al seostettu, Si>0.5% <10%	Al legeringer, Si>0.5%<10%	Al-legeringer, Si>0.5%<10%
7.4	Al Legeringar, Si>10% Whisker förstärkta Al-och Mg- Legeringar	Al seostettu, Si>10% Whisker lujitetut, Al-seokset, Mg-seokset	Al legeringer, Si>10% Whisker forsterket Al-leg., Mg leg.	Al-legeringer, Si>10% Whisker-forstærket, Al-legeringer, Mg-legeringer
8.1	Mjuka plaster	Pehmeät muovit (Thermoplast)	Myk plast	Blød plast
8.2	Hårda plaster	Kovat muovit, Bakeliitti	Hard plast	Hårde plast
8.3	Armerade plaster	Lujitetut muovit	Armert plast	Armerede plastmaterialer
9.1	Cermets (metall-keramik)	Cermetit (metalli-keraamiset)	Cermets (metal-keramikk)	Cermets (metal-keramik)
10.1	Grafit	Standardi Grafiitti	Standard Grafitt	Standard grafit



A002	69	**A166**	111	**A405**	120	**H855**	21
A002S	69	**A170**	80	**A412**	121	**H858**	21
A022	57	**A188**	140	**A413**	122	**H860**	24
A080	137	**A190**	138	**A510**	83	**H861**	24
A087	132	**A191**	139	**A520**	61	**R100**	30
A088	130	**A199**	136	**A530**	105	**R120**	28
A089	134	**A200**	123	**A553**	86	**R122**	26
A094	133	**A201**	125	**A620**	57	**R123**	26
A095	131	**A205**	123	**A720**	65	**R200**	25
A099	135	**A206**	123	**A723**	53	**R453**	40
A100	69	**A210**	124	**A730**	105	**R454**	40
A101	69	**A225**	126	**A777**	76	**R457**	36
A108	76	**A237**	127	**A900**	88	**R458**	36
A110	92	**A238**	128	**A901**	88	**R459**	44
A117	57	**A242**	129	**A920**	66	**R463**	50
A119	55	**A243**	91	**A921**	66	**R467**	47
A120	57	**A244**	91	**A940**	95	**R510**	34
A122	54	**A266**	123	**A941**	95	**R520**	32
A123	56	**A295**	141	**A951**	116	**R6011**	26
A124	64	**A296**	142	**A952**	116	**R7131**	27
A125	98	**A345**	114	**A976**	102	**R950**	18
A130	105	**A350**	112	**A977**	102	**R960**	18
A147	76	**A400**	118	**A978**	102	**R970**	18
A160	82	**A402**	119	**H853**	21		

DORMER

	Material	Raaka-aine	Materiale	Materiale
	Standard	Standardi	Standard	Standard
	Djup	Syvyys	Dybde	Dybde
	Spetsvinkel	Kärkikulma	Spissvinkel	Spids vinkel
	Ytbehandling	Pinnoitteet	Overflatebehandling	Overfladebehandling
	Skaft	Varsi	Skaft	Skaft
	Rotationsriktning	Työstösuunta	Rotasjonsretning	Rotationsretning
	Kylning	Jäähdytys	Kjøling	Kølemiddel
■	Förstahandsval	Paras valinta	Førstevalg	Perfekt
●	Andrahandsval	Hyvä valinta	Andrevalg	God
	Exempel 10 = Skärhastighet i meter/minut +/- 10%	Esimerkki 10 = Lastuamisnopeus, m/min +/- 10%	Eksempel 10 = skjærehastighet i meter/minutt +/- 10%	Eksempel 10 = Skærehastighed i meter/min. +/- 10%
	Artikelnummer	Tuotteen koodi	Artikkel kode	Kode
	Dim. område	Halkaisija-alue	Dim. område	Dimension

AMG	Svensk	Suomi	Norsk	Dansk
1.1	Rena järn, mjuka stål	Puhdas rauta, pehmeät teräkset	Rent jern, myke stål	Rent jern, blødt stål
1.2	Konstruktionsstål	Rakenneteräkset, hiilletysteräkset	Konstruksjonsstål	Konstruktionsstål
1.3	Kolstål, låglegerade stål	Hiilli- ja niukkaesosteiset teräset	Kullstål, låglegert stål	Kulstofstål, lavt leg.stål
1.4	Legerade stål	Seostetut teräkset	Legert stål	Legeret stål
1.5	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.6	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.7	Legerade härdade stål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
1.8	Legerade härdade stål, slitstål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
2.1	Rostfria automatstål och verktygsstål	Aut. laadut, työkaluteräkset Cr>10%	Rustfritt automatstål	Rustfrit automatstål
2.2	Austenitiska	Austenittiset	Austenistisk (Syrefast)	Austenitisk
2.3	Ferritaustenitiska (duplex), Martensitiska	Ferriiti + Austeniitti (Duplex), Ferriitismarten-siittiset	Ferritaustenitiske (duplex), Ferritiske, Martensitiske	Ferritisk+Austenitisk, Martensitisk
2.4	Utskiljningshärdade / Austenitiska	Erkautumiskarkenevat	Utskillingsherdet	Udskilningshærdet
3.1	Gråjärn	Harmaa valurauta	Gråjern	Gråt støbejern
3.2	Gråjärn	Harmaa valurauta	Gråjern	Hærdet støbejern
3.3	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
3.4	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
4.1	Titan, ren	Titaani, seostamaton	Titan, ren	Titan, ren
4.2	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
4.3	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
5.1	Nickel, ren	Nikkeli, seostamaton	Nikkel, ren	Nikkel, ren
5.2	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
5.3	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
6.1	Koppar	Kupari	Kopper	Kobber
6.2	Mässing / Brons	ß-Messinki, pronssi	Messing/Bronse	Messing, Bronze
6.3	Mjuk mässing	α-Messinki, pehmeä	Myk messing	Blød messing
6.4	Cu-Al-Fe-Legeringar	Cu-Al-Fe seokset, lujat pronssit	Cu-Al-Fe-Legeringer	Cu-Al-Fe-legeringer
7.1	Ren aluminium, magnesium	Al, Mg, seostamaton	Ren aluminium, magnesium	Ren aluminium, magnesium
7.2	Al Legeringar, Si<0.5%	Al seostettu, Si<0.5%	Al legeringer, Si<0.5%	Al-legeringer, Si<0.5%
7.3	Al Legeringar, Si>0.5%<10%	Al seostettu, Si>0.5% <10%	Al legeringer, Si>0.5%<10%	Al-legeringer, Si>0.5%<10%
7.4	Al Legeringar, Si>10% Whisker förstärkta Al-och Mg- Legeringar	Al seostettu, Si>10% Whisker lujitetut, Al-seokset, Mg-seokset	Al legeringer, Si>10% Whisker forsterket Al-leg., Mg leg.	Al-legeringer, Si>10% Whisker-forstærket, Al-legeringer, Mg-legeringer
8.1	Mjuka plaster	Pehmeät muovit (Thermoplast)	Myk plast	Blød plast
8.2	Hårda plaster	Kovat muovit, Bakeliitti	Hard plast	Hårde plast
8.3	Armerade plaster	Lujitetut muovit	Armert plast	Armerede plastmaterialer
9.1	Cermets (metall-keramik)	Cermetit (metalli-keraamiset)	Cermets (metal-keramikk)	Cermets (metal-keramik)
10.1	Grafit	Standardi Grafiitti	Standard Grafitt	Standard grafit

	HM	HM	HM	HSS	HSS	HSS		
	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER		
				3XD	5XD	8XD		
	140°	140°	140°					
	Ti-phon	Ti-phon	Ti-phon					
				DIN 6535HB DIN 6535HE	DIN 6535HB DIN 6535HE	DIN 6535HE		
								
	R950	R960	R970	H853	H855	H858	H860	H861
	15/32 - 42.00	15/32 - 30.50	15/32 - 42.00	12.00 - 42.50	12.00 - 42.50	14.00 - 42.50	N1 - N7	N1 - N6
AMG	18	18	18	21	21	21	24	24	ISO
1.1	●110W	■110W							P 1
1.2	●100W	■100W							P 1
1.3	■100W								P 2
1.4	■85W								P 3
1.5	■85W								P 4
1.6	■60T								H 1
1.7									H 3
1.8									H 4
2.1		■60V							M 1
2.2		■50T							M 3
2.3		■40T							M 2
2.4	●35T	●35T							S 2
3.1		■120V	■120V						K 1
3.2		■116V	■116V						K 2
3.3	■88V	●88V	■80V						K 3
3.4	■88V	●88V	■80V						K 4
4.1		●45T							S 1
4.2		●35T							S 2
4.3		●30S							S 3
5.1		●35T							S 1
5.2		●30S							S 2
5.3		●25S							S 3
6.1									N 3
6.2									N 4
6.3									N 3
6.4									N 4
7.1									N 1
7.2									N 1
7.3									N 1
7.4									N 2
8.1									O
8.2									O
8.3									O
9.1									H
10.1									O

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
	DIN 333A	DORMER	DORMER	DORMER	DORMER	DIN 6539	DIN 338	DIN 6539	DIN 338	DIN 6537 K	DIN 6537 K	DIN 6537 L	DIN 6537 L	DORMER
	1XD	1XD	1XD	1XD	3XD	2.5XD	4XD	2.5XD	4XD	3XD	3XD	5XD	5XD	8XD
	118°	120°	90°	90°	140°	120°	120°	130°	130°	140°	140°	140°	140°	140°
				TiAlN	TiAlN			TiN	TiN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN
				DIN 6535HA	DIN 6535HA					DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA
		N	N	N	N	N	N	N	N	CTW	CTW	CTW	CTW	CTW
	60°													
	R200	R122	R123	R6011	R7131	R120	R100	CDX R520	CDX R510	FORCE X R458	FORCE X R457	FORCE X R454	FORCE X R453	FORCE X R459
	1.00 - 5.00	5.00 - 20.00	5.00 - 20.00	6.00 - 16.00	3.30 - 10.40	1.00 - 12.00	1.00 - 14.00	3.00 - 16.50	3.00 - 14.25	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 16.00
AMG	25	26	26	26	27	28	30	32	34	36	36	40	40	44	ISO
1.1	■50H	■85S	■85S	■110S	■120W	●85S	●85S	■100X	■100W	■155W	■155W	■155V	■155V	■135V	P 1
1.2	■48H	■75S	■75S	■90S	■110W	●75S	●75S	■90X	■90W	■135W	■140W	■135V	■140V	■120V	P 1
1.3	■45F	■75S	■75S	■90S	■105W	●75S	●75S	■90X	■90W	■110W	■135W	■110V	■135V	■110U	P 2
1.4	■40E	■70S	■70S	■75S	■85V	●70S	●70S	■80X	■80W	■100V	■115V	■100V	■115V	■100U	P 3
1.5	■30D	■45S	■45S	■55S	■65V	●45S	●45S	■55X	■55V	■75V	■90V	■75V	■90V	■80U	P 4
1.6	■10C	■45S	■45S	■50S		●45S	●45S	■45W	■45V	■50U	■65U	■50U	■65U	■55T	H 1
1.7		■30S	■30S	■30S		●30S	●30S	●35U	●35T	■30U	■30U	■30U	■30U		H 3
1.8		■30S	■30S	■30S		●30S	●30S	●30T	●30S	■25U	■25U	■25U	■25U		H 4
2.1		■53S	■53S	■60S	■45V			●50W	●50V	■45U	■55V	■45U	■55V	■75V	M 1
2.2		■45S	■45S	■50S	■40V					■40T	■35V	■40T	■35V	■35V	M 3
2.3					■35U					■35T	■30U	■35T	●30U	●30U	M 2
2.4										●35T		●35T	●30U		S 2
3.1	■40H	■75T	■75T	■80T	■90W	●75U	●75T	■90Y	■90X	■90W	■110W	■90W	■110W	■120W	K 1
3.2	■35E	■75T	■75T	■80T	■90W	●75U	●75T	■90Y	■90X	■90W	■110W	■90W	■110W	■120W	K 2
3.3	■30D	■55T	■55T	■70T	■75V	●55U	●55T	■65X	■65W	■70V	■80V	■70V	■80V	■80V	K 3
3.4	■30D	■55T	■55T	■70T	■65V	●55U	●55T	■65X	■65W	■70V	■80V	■70V	■80V	■80V	K 4
4.1		■45T	■45T	■55T		■45T		●60W	●45V	●50U	■55V	●50U	■55V		S 1
4.2		■35T	■35T	■45T		●35T		●45V		●40U	■45V	●40U	■45V		S 2
4.3		■25S	■25S	■35S		●25T		●35U		●35T	■40U	●35T	■40U		S 3
5.1		■45T	■45T	■55T		■40U		■50W	●50V						S 1
5.2		■30S	■30S	■40S		●30T									S 2
5.3		■20S	■20S	■30S		●20T									S 3
6.1	■110F	■275V	■275V	■275V	■125W	■275W				■100V	■125W	■100V	■125W	●125V	N 3
6.2	■100H	■250V	■250V	■250V	■220W	●275W	■250V			■200V	■220W	■200V	■220W	●220V	N 4
6.3	■90G	■250V	■250V	■250V	■220W	●275W	■250V			■200V	■220W	■200V	■220W	●220V	N 3
6.4	■75F	■70T	■70T	■70T	■100V	●70U				●80U	■100V	●80U	■100V	●100U	N 4
7.1	■120I	■200V	■200V	■200V	■250W	■200W	●200V	■225Z	■225Y	■225W	■250W	■225W	■250W	●285W	N 1
7.2	■110H	■200V	■200V	■200V	■250W	●200W	●200V	■225Z	■225Y	■225W	■250W	■225W	■250W	■285W	N 1
7.3	■100G	■112V	■112V	■112V	■200V	●112W	●112V	■150Y	■150X	■180V	■200V	■180V	■200V	■190V	N 1
7.4	■90G	■60V	■60V	■60V	■150V	●60W	●60V	■65Y	■65X	■120V	■150V	■120V	■150V	■95V	N 2
8.1		■60X	■60X	■60X		■60U	■60X	■75Z	■75X						O
8.2		■100V	■100V	■100V		■100U	■100V	■115V	■115V						O
8.3															O
9.1															H
10.1															O

DORMER

	HM	HM	HSS-E	HSS	HSS	HSS	HSS	HSS	HSS-E	HSS-E	HSS	HSS HM	HSS-E	HSS-E	HSS-E
	DIN 6537 K	DIN 6537 L	DORMER	DIN 1897	DIN 1897	DIN 1897	DIN 1897	DIN ANSI	DIN 1897	DIN 1897	DIN 1897	DIN 8037	DIN 1899	DIN ANSI	DIN ANSI
	3XD	5XD	1XD	1XD	1.25XD	1.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	3XD	3XD
	140°	140°		90°/ 120°	120°	120°	135°	135°	130°	135°	130°	118°	118°	130°	130°
	TiAlN	TiAlN	Bronze		ST	ST	ST	TiN	Bronze	Bronze	TiN	ST			Alcrona Top
	DIN 6535HA	DIN 6535HA													
			N	N	N	N	N	N	N	N		H	N	W	W
	FORCE M	FORCE M						022			ADX			PFX	
	R467	R463	A723	A122	A119	A123	A120	A022	A620	A117	A520	A124	A720	A920	A921
	3.00 - 16.00	3.00 - 16.00	6.00 - 8.00	6.00 - 20.00	3.30 - 5.10	3/32 - 1/4	0.50 - 25.00	0.50 - 16.00	2.50 - 13.00	1.00 - 13.00	3.00 - 13.00	3.00 - 16.00	0.15 - 1.40	1.00 - 20.00	2.50 - 16.00
AMG	47	50	53	54	55	56	57	57	57	57	61	64	65	66	66	ISO
1.1			■35D	■35E	■35C	■35E	■35J	■35K	●38K	●38K	■57M		■35A	■40J	■60M	P 1
1.2			■30D	■30E	■27C	■30E	■30J	■32K	●33H	●33H	■47M		■30A	■34J	■52M	P 1
1.3			●25C	■27C	●23C	■27C	■27G	■25I	●30G	●30G	■40K		■27A	■32I	■53J	P 2
1.4			●20C	●21C	●20C	●21C	■21G	■23H	●27G	●27G	■32I		■23A	■32I	■53J	P 3
1.5				●14C	●8C	●14C	●14F	■16G	●18F	■18F	■21G	●40C	●17A	■23E	■38G	P 4
1.6				●10B	●7A	●10B	●10E	●10E	●11E	■11E	●11E	●37A	●10A	■19E	■30G	H 1
1.7																H 3
1.8																H 4
2.1	■85G	■85G		●16C	●15A	●16C	■16F	■15G	■22F	■22F	■30I		●22A	■15F	■17F	M 1
2.2	■75G	■75G		●9D	●7C	●9D	●9H	●8I	■11H	■11H	■16I	●35C	●10A	■7F	■9F	M 3
2.3	■60F	■60F		●10B	●10A	●10B	●10D	●9E	■15D	■15D	■20G	●35C	●15A	■9D	■11D	M 2
2.4	■60E	■60E														S 2
3.1				●32E			■32J	■32K	●34K	●34K	■48M	■55C	■30A	●34L	■53L	K 1
3.2				●27C			■27G	■25I	●30F	●30F	■37K	■43C	■24A	●26L	■42L	K 2
3.3				●20C			■20F	■20G	●22F	●22F	■30J	■40C	●20A	●26L	■42L	K 3
3.4				●16B			●16F	●16G	●17F	■17F	■26F	■32A	●14A	●19J	■36J	K 4
4.1	■55V	■55V		●27C	●27A	●27C	■27G	■25I	●30G	■30G	■34I	●40A	●23A	■30G	●48I	S 1
4.2	■45V	■45V		●12B	●12A	●12B	●16E	●14F	■18F	■18F	■20G	●35A	●17A	■18G	●29I	S 2
4.3	■40U	■40U		●7A	●7A	●7A	●8C	●8C	●10C	■10C	●4B	●25A	●8A	■10C	●16E	S 3
5.1	●55U	●55U		●13D	●9A	●13D	●13H	●13H	●15H	■15H	●17I	●30A	●10A	■15I	●24L	S 1
5.2	●45U	●45U		●8C	●4C	●8C	●8F	●8F	●9F	■9F	●11G	●25A	●7A	■9G	●14I	S 2
5.3	●40U	●40U		●4A	●3C	●4A	●4B	●4B	●6C	■6C	●7E	●20A	●4A	■6E	●10G	S 3
6.1				■27D	●27A	■27D	●36H	●36H	●38I	●38I	●40E		●35A	●65H		N 3
6.2				■33E	●33C	■33E	●38J	●38K	●40K	●40K	■50I	●70G	●40A	●66J		N 4
6.3				■27D	●27C	■27D	●27I	●27I	●27J	●27J	■45K	●60E	●35A	●40J	●71J	N 3
6.4				■16D	●16C	■16D	●16H	●16I	●16I	●16I	●20F	●50C	●27A	●31G	●50I	N 4
7.1				■33E	●33C	■33E	●33K	■40F	●40K	●35K	●55I		●35A	●75L		N 1
7.2				■30E	●30C	■30E	●30J	■32K	●35J	●33J	■50M		●30A	■45N		N 1
7.3				●30D	●30C	●30D	●30I	■32J	●32I	●31I	■37K		●27A	●40N		N 1
7.4				●25D	●25C	●25D	●25I	●25J	●30G	●30G	■35I		●27A	●36J	■48J	N 2
8.1				●30F	●30I	●30F	●30K	●30K	●40L	●35M	●65G		●48A	●55J		O
8.2				●35E	●35C	●35E	●35I	●35I	●32K	●28K	■50G	●60E	●25A	●40H		O
8.3				●17D		●17D	●17G	●17G	●18I	●17I	■35F					O
9.1				●12A		●12A	●4C	●4C		■6C		●9C				H
10.1																O

DORMER

	HSS	HSS	HSS	HSS	HSS	HSS-E	HSS-E	HSS	HSS HM	HSS	HSS-E	HSS-E	HSS-E	HSS	HSS	HSS
	DIN 338	DIN 338	DIN 338	DIN 338	DIN 338	DIN 338	DIN 338	DORMER	DIN 338	DIN 338	DORMER	DIN ANSI	DIN ANSI	NAS 907	NAS 907	DIN 340
	4XD	4XD	4XD	4XD	4XD	6XD	4XD	4XD	4XD	4XD	5XD	6XD	6XD	4XD	4XD	6XD
	118°	118°	118°	118°	135°	130°	135°	118°	118°	130°	130°	130°	130°	135°	118°	118°
	TiN	TiN	ST	ST	ST		Bronze	ST	ST	TiN	TiAlN Top		Alcrona Top			ST
											DIN 6535HA					
	N	N	N	N	W	VA	N	N	N			W	W	N	N	N
								NAS 907J								
	A002	A002S	A100	A101	A108	A147	A777	A170	A160	A510	A553	A900	A901	A243	A244	A110
	1.00 - 16.00	2.00 - 13.00	0.20 - 20.00	1.00 - 12.00	1.00 - 16.00	0.30 - 15.00	0.30 - 16.00	13.00 - 1.1/2	4.00 - 16.00	3.00 - 14.00	5.00 - 20.00	1.00 - 20.00	1.50 - 16.00	3/32 - 1/4	1/8 - 1/4	0.50 - 1"
AMG	69	69	69	69	76	76	76	80	82	83	86	88	88	91	91	92
1.1	■47J	■47J	■35H	■35H	●35I	●35I	●35J	●35H	●60E	■57M	■85L	■38H	■60J			●27G
1.2	■40J	■40J	■30H	■30H	●30I	●30I	●30H	●30H	●60E	■47M	■70L	■33H	■50J			●25G
1.3	■35F	■35F	■25F	■25F	●25G	●25G	●27G	●25F	●55D	■40K	■60L	■26H	■44I	●25F	●25F	●20E
1.4	■30F	■30F	■20F	■20F	●20F	●20F	●24F	●20E	●50D	■30H	■45H	■26H	■44I	●20F	●20F	●16E
1.5	●18F	●18F	●13E	●13E	●13E	●13E	■17E	●13D	●40C	■21F	■28F	■21E	■33G	■13E	■13E	●9D
1.6	●10E	●10E	●9D	●9D	●9D	●9D	■10D	●9C	●37A	●11D	■15D	■16E	■26G	■9D	■9D	●6B
1.7																
1.8																
2.1	●20F	●20F	●15E	●15E	●15E	■15E	●22E	●15D	●40B	■28G	■40G	■15E	■17E	●15E	●15E	●10D
2.2	●12G	●12G	●8G	●8G	■9G	■9G	●11G	●7F	●35C	■14I	■19I	■7E	■9E	■8G	■8G	●6F
2.3	●16C	●16C	●9C	●9C	■10D	■10D	●15C	●7B	●35A	●19G	●27G	■9C	■11C	■9C	■9C	●4B
2.4						●7B										
3.1	■40J	■40J	■30H	■30H	●30H	●30H	●35H	●27H	■50C	■42K	■70K	●24J	■58I	●30I	●30I	●28H
3.2	■30E	■30E	■24F	■24F	●24F	●24F	●28D	●22E	■40A	■32J	■50J	●19J	■47I	●24F	●24F	●21E
3.3	●28E	●28E	●20E	●20E	●20E	●20E	●22E	●19D	■35A	■28J	■45J	●19J	■34J	●20E	●20E	●15D
3.4	●26E	●26E	●14E	●14E	●14E	●14E	■17E	●12D	■30A	■25F	■42F	●14I	■28I	■14E	■14E	●13D
4.1	●23F	●23F	●23E	●23E	■25G	■25G	■28F	●17E	●35A	●32G	■45G	■22E	●35G	■23F	■23F	●17E
4.2	●13D	●13D	●12D	●12D	■16E	■16E	■20D	●9C	●35A	●20H	●30E	■15E	●24G	■12D	■12D	●9C
4.3	●7B	●7B	●6B	●6B	●7B	●7B	■11C	●5A	●25A	●4B	●8C	■6C	●10E	■6B	■6B	●4A
5.1	●13G	●13G	●10G	●10G	●12G	■12G	●15G	●8F	●30A	●17I	●25I	■14G	●22I	■10G	■10G	●8F
5.2	●7E	●7E	●6E	●6E	●7G	●7G	■7E	●4D	●25A	●9E	●15E	■7G	●11I	●6E	●6E	●4D
5.3	●3A	●3A	●3A	●3A	●6E	●6E	●6B	●3A	●20A	●6E	●10G	■6C	●10E	●3A	●3A	●3A
6.1	●50G	●50G	●33G	●33G	●33G	●33G	●38H	●35F	●55D	●40D	●70G	●65G				●30E
6.2	●33I	●33I	●35I	●35I	●35I	●35I	●40F	●33H	●70G	■50I	■85I	●53I				●32H
6.3	●39H	●39H	●27H	●27H	●31H	●31H	●27H	●27G	●60C	■45I	■80I	●34H	●56I	●27H	●27H	●27G
6.4	●30G	●30G	●16G	●16G	●16G	●16G	●21F	●16F	●50C	●20F	●35G	●30G	●48I	■16G	■16G	●16E
7.1	■41K	■41K	●33J	●33J	●33J	●33J	●33J	●33I	●50I	●50G	●70H	●60J				●32I
7.2	■38J	■38J	●30I	●30I	●30I	●30I	●30I	●30H	●45H	■50M	■100M	■45N				●27H
7.3	●33I	●33I	●27H	●27H	●27H	●27H	●30H	●27G	●40G	■31I	■55I	●40N				●27G
7.4	●33I	●33I	●24F	●24F	●24F	●24F	●27F	●22G	●35F	■33I	■55J	●28I	■48I	■24F	■24F	●25E
8.1	■30I	■30I	●30J	●30J	●30J	●30J		●30I		■65G	■90G	●55I				●35I
8.2	■50H	■50H	●28H	●28H	●28H	●28H		●28G	●60E	■50G		●40G				●26G
8.3	●35F	●35F	●14F	●14F	●14F	●14F		●14E		■35F						●12E
9.1	●3B	●3B	●3B	●3B	●3B	●3B	●6C	●3A	●9C					●3B	●3B	●3A
10.1																

ISO
P 1
P 1
P 2
P 3
P 4
H 1
H 3
H 4
M 1
M 3
M 2
S 2
K 1
K 2
K 3
K 4
S 1
S 2
S 3
S 1
S 2
S 3
N 3
N 4
N 3
N 4
N 1
N 1
N 1
N 2
O
O
O
H
O

DORMER

	HSS-E	HSS-E	HSS	HSS-E	HSS-E	HSS-E	HSS	HSS	HSS-E	HSS HM	HSS	HSS	HSS	HSS	HSS
	DIN ANSI	DIN ANSI	BS 328	DIN 1869/1	DIN 1869/2	DIN 1869/3	DIN 345	DIN 345	DIN 345	DIN 345	DIN 341	DIN 1870/1	DIN 1870/1	DIN 1870/2	DIN 8374
	10XD	10XD	10XD	15XD	20XD	25XD	4XD	4XD	4XD	4XD	6XD	10XD	15XD	20XD	4XD
	130°	130°	118°	130°	130°	130°	118°	118°	118°	118°	118°	118°	130°	130°	118°
		Alcrona Top	ST				ST	TiN	Bronze	ST	ST	ST	ST	ST	ST
	W	W	N	W	W	W	N	N	N	N	N	N	W	W	N
															90°
	PFX	PFX		PFX	PFX	PFX									
	A940	A941	A125	A976	A977	A978	A130	A530	A730	A166	A350	A345	A951	A952	A400
	1.00 - 20.00	1.00 - 16.00	1.40 - 1"	1.50 - 14.00	1.50 - 14.00	3.00 - 10.00	3.00 - 50.80	8.50 - 40.00	10.00 - 32.00	10.00 - 33.00	5.00 - 50.00	8.00 - 40.00	10.00 - 30.00	8.00 - 40.00	M3 - M10
AMG	95	95	98	102	102	102	105	105	105	111	112	114	116	116	118
1.1	■38F	■53G	●24E	●31C	●31B	●31A	■35I	■47I	●35J	●60E	■27I	●24G	■27G	■27G	■32G
1.2	■33F	■46G	■22E	●26C	●26B	●26A	■30I	■40I	●30H	●60E	■25I	■22G	■22G	■22G	■27G
1.3	■22G	■36G	●16C	■22C	■22B	■22A	■25F	■30F	●27G	●55D	●20G	●17E	■19E	■19E	■22E
1.4	■22G	■36G	●15C	■22C	■22B	■22A	■20F	■27F	●23F	●50D	●16F	●15D	●15D	●15D	■20E
1.5	■17C	■23D	●6A	■12A	■12A	■12A	●12E	●20E	■17E	●40C	●10E	●6C	●8C	●8C	●10C
1.6	■12C	■17D	●5A	■10A	■10A	■10A	●9D	●10D	■10D	●37A	●6D	●5B	●6B	●6B	●6C
1.7															
1.8															
2.1	■15C	■17C	●9C	●12B	●12B	●12A	●15E	●24E	●24E	●40B	●13E	●12C	●12C	●12C	●16E
2.2	■7E	■9E	●4E	●7C	●7B	●7A	●9G	●13G	■11G	●35C	●4G	●4E	●6E	●6E	●9G
2.3	■9B	■11B	●8A	●8A	●8A	●8A	●10C	●20C	■17C	●35A	●8C	●8A	●12A	●12A	●12C
2.4															
3.1		■36I	●22G				■30I	●36I	●35J	■50C	●26I	●22G	●22G	●22G	■30G
3.2	●16I	■30I	●18D	●23C	●23B	●23A	■24E	■28E	●28G	■40C	●20F	●18D	●16D	●16D	■25E
3.3	●16I	■30I	●13C	●16C	●16B	●16A	●20E	■27E	●22E	■35C	●18E	●13C	●13C	●13C	●19E
3.4	●12H	■24H	●9C	●11A	●11A	●11A	●14E	●22E	■17E	■30A	●11E	●9C	●9C	●9C	●18C
4.1	■18E	●25F	●11D	●15C	●15B	●15A	●23F	●32F	●28G	●35A	●16F	●15D	●18D	●18D	●23E
4.2	■13C	●18D	●9B	●11A	●11A	●11A	●13D	●18D	●20D	●35A	●9D	●9B	●10B	●10B	●14C
4.3	■6C	●8D	●5A	●5A	●5A	●5A	●7B	●13B	●11C	●25A	●5B	●5A	●6A	●6A	●8A
5.1			●5E				●10G	●13G	●15G	●30A	●8G	●8E	●7E	●7E	●10G
5.2			●4C				●7E	●6E	●7E	●25A	●4E	●4C	●5C	●5C	●6C
5.3			●3A				●4A	●3A	●6B	●20A	●3A	●3A	●3A	●3A	●4A
6.1	●65F		●24D				●33F	●60G	●38L	●55D	●33F	●27D	●22D	●22D	●35E
6.2	●70F		●33G				●35I	●55I	●40J	●75G	●35I	●33G	●33G	●33G	●40E
6.3	●34G	●48H	●22F	●30D	●30C	●30B	●35H	■40G	●27H	●60C	●35H	●27F	●22F	●22F	●32E
6.4	●30G	●42H	●16D	●27D	●27C	●27B	●16F	●35E	●21F	●50C	●16F	●16D	●16D	●16D	●20E
7.1	●53H		●24H				●26J	●55I	●33J	●50I	●33J	●33H	●30H	●30H	●45E
7.2	■45N		●22G				●30I	●45I	●30I	●45H	●25I	●27G	●27G	●27G	●32E
7.3	●40N		●22F				●28H	●35G	●30H	●40G	●27H	●27F	●24F	●24F	●32E
7.4	●30G	■42H	●20E	●27D	●27C	●27B	●23H	●28G	●27F	●35F	●25H	●24F	●22F	●22F	●25E
8.1	●55H		●30H				●30K	●50J	●35K		●35L	●30J	●30J	●30J	●30I
8.2	●40F		●26F				●28J	●50H	●28J	●60E	●26J	●30H	●30H	●30H	
8.3			●10D				●14H	●35F	●20H		●12H	●10F	●10F	●10F	
9.1			●3A				●3B	●3B	●5C	●9C	●3B	●3A	●3A	●3A	
10.1															

ISO
P 1
P 1
P 2
P 3
P 4
H 1
H 3
H 4
M 1
M 3
M 2
S 2
K 1
K 2
K 3
K 4
S 1
S 2
S 3
S 1
S 2
S 3
N 3
N 4
N 3
N 4
N 1
N 1
N 1
N 2
O
O
O
H
O

	HSS	HSS	HSS	HSS	HSS	HSS	HSS-E	HSS-E	HSS	HSS	HSS	HSS-E	HSS-E	HSS-E	
	DIN 8376	DIN 8377	DORMER	DORMER	DIN 333A	DIN 333A	DIN 333A	DIN 333A	DIN 333R	DORMER	BS 328	DIN 333A	DIN 333R	DORMER	
	4XD	4XD	2.5XD	2.5XD	1XD	1XD	1XD	1XD	1XD	1XD	1XD	1XD	1XD	1XD	
	118°	118°	118°	118°	118°	118°	118°	118°	118°	122°	120°	118°	118°	118°	
	ST	ST	ST	ST		TiN		TiAlN							
												d_4	d_4		
	N	N													
	180°	180°	90°	180°	60°	60°	60°	60°		60°	60°	60°		60°	
															
	A402	A405	A412	A413	A200	A205	A206	A266	A210	A201	A225	A237	A238	A242	
	M3 - M10	M6 - M18	M3 - M10	M3 - M10	0.50 - 12.50	1.00 - 5.00	1.00 - 5.00	1.00 - 5.00	0.50 - 10.00	0.63 - 6.00	3/64 - 5/16	1.60 - 10.00	1.60 - 8.00	1.00 - 5.00	
AMG	119	120	121	122	123	123	123	123	124	125	126	127	128	129	ISO
1.1	■32G	■32G	■32I	■32I	■35I	■42I	■42I	■42I	■35I	■35I	■35I	■35I	■35I	■35I	P 1
1.2	■27G	■27G	■27I	■27I	■30I	■36I	■36I	■36I	■30I	■30I	■30I	■30I	■30I	■30I	P 1
1.3	■22E	■22E	■22G	■22G	■25G	■30G	■30G	■30G	■25G	■25G	■25G	■25G	■25G	■25G	P 2
1.4	■20E	■20E	■20G	■20G	■20F	■24F	■24F	■24F	■20F	■20F	■20F	■20F	■20F	■20F	P 3
1.5	●10C	●10C	●10E	●10E	●13E	●16E	●16E	●16E	●13E	●13E	●13E	●13E	●13E	●13E	P 4
1.6	●6C	●6C	●6C	●6C	●9D	●11D	●11D	●11D	●9D	●9D	●9D	●9D	●9D	●9D	H 1
1.7															H 3
1.8															H 4
2.1	●16E	●16E	■16G	■16G	●15E	●18E	●18E	●18E	●15E	●15E	●15E	●15E	●15E	●15E	M 1
2.2	●9G	●9G	●9I	●9I	●8G	●10G	●10G	●10G	●8G	●8G	●8G	●8G	●8G	●8G	M 3
2.3	●12C	●12C	●12E	●12E	●10C	●12C	●12C	●12C	●10C	●10C	●10C	●10C	●10C	●10C	M 2
2.4															S 2
3.1	■30G	■30G	■30G	■30G	■30I	■36I	■36I	■36I	■30I	■30I	■30I	■30I	■30I	■30I	K 1
3.2	■25E	■25E	■25E	■25E	■24F	■29F	■29F	■29F	■24F	■24F	■24F	■24F	■24F	■24F	K 2
3.3	●19E	●19E	●19E	●19E	●20E	●24E	●24E	●24E	●20E	●20E	●20E	●20E	●20E	●20E	K 3
3.4	●18C	●18C	●18E	●18E	●14E	●17E	●17E	●17E	●14E	●14E	●14E	●14E	●14E	●14E	K 4
4.1	●23E	●23E	●27G	●27G	●24F	●29F	●29F	●29F	●24F	●24F	●24F	●24F	●24F	●24F	S 1
4.2	●14C	●14C	●16E	●16E	●13D	●16D	●16D	●16D	●13D	●13D	●13D	●13D	●13D	●13D	S 2
4.3	●8A	●8A	●8C	●8C	●7B	●8B	●8B	●8B	●7B	●7B	●7B	●7B	●7B	●7B	S 3
5.1	●10G	●10G	●13I	●13I	●10G	●12G	●12G	●12G	●10G	●10G	●10G	●10G	●10G	●10G	S 1
5.2	●6C	●6C	●8G	●8G	●5E	●6E	●6E	●6E	●5E	●5E	●5E	●5E	●5E	●5E	S 2
5.3	●4A	●4A	●4C	●4C	●4A	●5A	●5A	●5A	●4A	●4A	●4A	●4A	●4A	●4A	S 3
6.1	●35E	●35E	●35G	●35G	●35G	●42G	●42G	●42G	●35G	●35G	●35G	●35G	●35G	●35G	N 3
6.2	●40E	●40E	●40G	●40G	●33I	●40I	●40I	●40I	●33I	●33I	●33I	●33I	●33I	●33I	N 4
6.3	●32E	●32E	●32G	●32G	●27H	●32H	●32H	●32H	●27H	●27H	●27H	●27H	●27H	●27H	N 3
6.4	●20E	●20E	●20G	●20G	●16G	●19G	●19G	●19G	●16G	●16G	●16G	●16G	●16G	●16G	N 4
7.1	●45E	●45E	●45G	●45G	●33J	●40J	●40J	●40J	●33J	●33J	●33J	●33J	●33J	●33J	N 1
7.2	●32E	●32E	●32G	●32G	●30I	●36I	●36I	●36I	●30I	●30I	●30I	●30I	●30I	●30I	N 1
7.3	●32E	●32E	●27G	●27G	●27H	●32H	●32H	●32H	●27H	●27H	●27H	●27H	●27H	●27H	N 1
7.4	●25E	●25E	●25G	●25G	●22H	●26H	●26H	●26H	●22H	●22H	●22H	●22H	●22H	●22H	N 2
8.1	●30I	●30I	●30I	●30I	●30J	●36J	●36J	●36J	●30J	●30J	●30J	●30J	●30J	●30J	O
8.2					●28H	●34H	●34H	●34H	●28H	●28H	●28H	●28H	●28H	●28H	O
8.3					●14F	●17F	●17F	●17F	●14F	●14F	●14F	●14F	●14F	●14F	O
9.1					●3B	●4B	●4B	●4B	●3B	●3B	●3B	●3B	●3B	●3B	H
10.1															O

DORMER

								
	A088	**A095**	**A087**	**A094**	**A089**	**A099**	**A099**	
	Set	Set	Set	Set	Set	Set	DRILLBOY	
AMG	**130**	**131**	**132**	**133**	**134**	**135**	**135**	**ISO**
1.1								P 1
1.2								P 1
1.3								P 2
1.4								P 3
1.5								P 4
1.6								H 1
1.7								H 3
1.8								H 4
2.1								M 1
2.2								M 3
2.3								M 2
2.4								S 2
3.1								K 1
3.2								K 2
3.3								K 3
3.4								K 4
4.1								S 1
4.2								S 2
4.3								S 3
5.1								S 1
5.2								S 2
5.3								S 3
6.1								N 3
6.2								N 4
6.3								N 3
6.4								N 4
7.1								N 1
7.2								N 1
7.3								N 1
7.4								N 2
8.1								O
8.2								O
8.3								O
9.1								H
10.1								O

								
	A199	**A080**	**A190**	**A191**	**A188**	**A295**	**A296**	
	Set	Set	Set	Set	Set	Set	Set	
AMG	**136**	**137**	**138**	**139**	**140**	**141**	**142**	**ISO**
1.1								P 1
1.2								P 1
1.3								P 2
1.4								P 3
1.5								P 4
1.6								H 1
1.7								H 3
1.8								H 4
2.1								M 1
2.2								M 3
2.3								M 2
2.4								S 2
3.1								K 1
3.2								K 2
3.3								K 3
3.4								K 4
4.1								S 1
4.2								S 2
4.3								S 3
5.1								S 1
5.2								S 2
5.3								S 3
6.1								N 3
6.2								N 4
6.3								N 3
6.4								N 4
7.1								N 1
7.2								N 1
7.3								N 1
7.4								N 2
8.1								O
8.2								O
8.3								O
9.1								H
10.1								O

DORMER



HM | HSS HM | HSS | HSS-E

Ø(D)	1mm	2mm	3mm	4mm	5mm	6mm	8mm	10mm	12mm	15mm	16mm	20mm	25mm	30mm	40mm	50mm
A	0.012	0.023	0.029	0.032	0.036	0.042	0.054	0.062	0.069	0.082	0.086	0.110	0.125	0.135	0.155	0.175
B	0.014	0.028	0.037	0.041	0.046	0.053	0.067	0.080	0.090	0.103	0.108	0.135	0.153	0.165	0.188	0.208
C	0.015	0.032	0.044	0.050	0.056	0.064	0.080	0.098	0.110	0.125	0.130	0.160	0.180	0.195	0.220	0.240
D	0.016	0.038	0.053	0.060	0.068	0.078	0.098	0.119	0.130	0.149	0.155	0.188	0.210	0.228	0.253	0.275
E	0.017	0.043	0.062	0.071	0.080	0.092	0.115	0.140	0.150	0.173	0.180	0.215	0.240	0.260	0.285	0.310
F	0.018	0.050	0.073	0.084	0.095	0.109	0.138	0.165	0.178	0.202	0.210	0.248	0.275	0.295	0.320	0.343
G	0.019	0.056	0.084	0.096	0.109	0.126	0.160	0.190	0.205	0.231	0.240	0.280	0.310	0.330	0.355	0.375
H	0.020	0.066	0.102	0.116	0.130	0.150	0.190	0.228	0.243	0.271	0.280	0.320	0.355	0.375	0.398	0.418
I	0.021	0.076	0.119	0.134	0.150	0.173	0.220	0.265	0.280	0.310	0.320	0.360	0.400	0.420	0.440	0.460
J	0.024	0.084	0.135	0.152	0.170	0.197	0.250	0.298	0.315	0.349	0.360	0.405	0.445	0.465	0.485	0.503
K	0.026	0.092	0.150	0.170	0.190	0.220	0.280	0.330	0.350	0.388	0.400	0.450	0.490	0.510	0.530	0.545
L	0.028	0.101	0.165	0.186	0.208	0.240	0.305	0.360	0.385	0.419	0.430	0.485	0.525	0.545	0.568	0.588
M	0.030	0.110	0.180	0.202	0.225	0.260	0.330	0.390	0.420	0.450	0.460	0.520	0.560	0.580	0.605	0.630
N	0.032	0.119	0.195	0.218	0.242	0.280	0.355	0.420	0.455	0.481	0.490	0.555	0.595	0.615	0.642	0.672
S	0.008	0.014	0.020	0.025	0.030	0.037	0.050	0.080	0.100	0.123	0.130	0.150				
T	0.015	0.028	0.040	0.050	0.060	0.070	0.090	0.110	0.130	0.160	0.170	0.190				
U	0.026	0.048	0.070	0.080	0.090	0.107	0.140	0.170	0.200	0.223	0.230	0.240				
V	0.038	0.069	0.100	0.115	0.130	0.153	0.200	0.250	0.280	0.310	0.320	0.340				
W	0.049	0.089	0.130	0.150	0.170	0.200	0.260	0.330	0.380	0.418	0.430	0.450				
X	0.056	0.103	0.150	0.180	0.210	0.250	0.330	0.420	0.480	0.533	0.550	0.580				
Y	0.068	0.124	0.180	0.220	0.260	0.317	0.430	0.550	0.700	0.700	0.700	0.740				
Z	0.094	0.172	0.250	0.325	0.400	0.533	0.800	1.000	1.100	1.175	1.200	1.200				
	mm/N ± 25 %															

$$n = \frac{Vc \times 1000}{\pi \times D}$$

$$Vf = n \times fn$$



HM



Ø(D)	12mm	15mm	16mm	20mm	25mm	30mm	40mm
S	0.100	0.123	0.130	0.150	0.170	0.190	0.220
T	0.130	0.160	0.170	0.190	0.210	0.230	0.260
U	0.200	0.223	0.230	0.240	0.270	0.300	0.360
V	0.280	0.310	0.320	0.340	0.400	0.440	0.510
W	0.380	0.418	0.430	0.450	0.470	0.490	0.520
	mm/N ± 25 %						

R950 R960 R970	18
H853 H855 H858	21
H860 H861	24



H861	H860	R950 R960 R970	H853 H855 H858

R950	R960	R970	H853	H855	H858	H860	H861
15/32 - 42.00	15/32 - 30.50	15/32 - 42.00	15/32 - 42.00	15/32 - 30.50	15/32 - 42.00	N1 - N7	N1 - N6

R950	R960	R970	H853	H855	H858	H860	H861
R95015/32	R96015/32	R97015/32	H85312.0 H85331/64	H85512.0 H85531/64	H85812.0	H860N1	H860N1
R95012.0	R96012.0	R97012.0					
R95012.1	R96012.1	R97012.1					
R95012.2	R96012.2	R97012.2					
R95031/64	R96031/64	R97031/64					
R95012.5	R96012.5	R97012.5	H85312.5 H8531/2	H85512.5 H8551/2	H85812.5		
R95012.6	R96012.6	R97012.6					
R9501/2	R9601/2	R9701/2					
R95012.8	R96012.8	R97012.8					
R95012.9	R96012.9	R97012.9					
R95013.0	R96013.0	R97013.0	H85313.0 H85317/32	H85513.0 H85517/32	H85813.0		
R95033/64	R96033/64	R97033/64					
R95013.2	R96013.2	R97013.2					
R95017/32	R96017/32	R97017/32					
R95013.5	R96013.5	R97013.5	H85314.0 H8539/16	H85514.0 H8559/16	H85814.0		
R95013.6	R96013.6	R97013.6					
R95013.7	R96013.7	R97013.7					
R95013.8	R96013.8	R97013.8					
R95035/64	R96035/64	R97035/64					
R95014.0	R96014.0	R97014.0					
R95014.1	R96014.1	R97014.1					
R95014.2	R96014.2	R97014.2					
R9509/16	R9609/16	R9709/16					
R95014.5	R96014.5	R97014.5					
R95014.6	R96014.6	R97014.6	H85315.0 H85339/64	H85515.0 H85539/64	H85815.0	H860N1	H861N1
R95037/64	R96037/64	R97037/64					
R95014.7	R96014.7	R97014.7					
R95014.8	R96014.8	R97014.8					
R95015.0	R96015.0	R97015.0					
R95019/32	R96019/32	R97019/32					
R95015.1	R96015.1	R97015.1					
R95015.2	R96015.2	R97015.2					
R95039/64	R96039/64	R97039/64					
R95015.5	R96015.5	R97015.5					

DORMER

R950	R960	R970	H853	H855	H858	H860	H861
R95015.6	R96015.6	R97015.6	H85316.0 H85341/64	H85516.0 H85541/64	H85816.0	H860N2	H861N2
R95015.7	R96015.7	R97015.7					
R9505/8	R9605/8	R9705/8					
R95016.0	R96016.0	R97016.0					
R95016.1	R96016.1	R97016.1					
R95016.2	R96016.2	R97016.2					
R95041/64	R96041/64	R97041/64					
R95016.5	R96016.5	R97016.5					
R95016.6	R96016.6	R97016.6	H85317.0 H85311/16	H85517.0 H85511/16	H85817.0		
R95021/32	R96021/32	R97021/32					
R95016.7	R96016.7	R97016.7					
R95017.0	R96017.0	R97017.0					
R95043/64	R96043/64	R97043/64					
R95017.1	R96017.1	R97017.1					
R95017.2	R96017.2	R97017.2					
R95011/16	R96011/16	R97011/16					
R95017.5	R96017.5	R97017.5					
R95017.6	R96017.6	R97017.6	H85318.0 H85323/32	H85518.0 H85523/32	H85818.0		
R95017.7	R96017.7	R97017.7					
R95045/64	R96045/64	R97045/64					
R95018.0	R96018.0	R97018.0					
R95018.1	R96018.1	R97018.1					
R95018.2	R96018.2	R97018.2					
R95023/32	R96023/32	R97023/32					
R95018.5	R96018.5	R97018.5					
R95018.6	R96018.6	R97018.6	H85319.0 H85349/64	H85519.0 H85549/64	H85819.0	H860N3	H861N3
R95047/64	R96047/64	R97047/64					
R95018.7	R96018.7	R97018.7					
R95018.9	R96018.9	R97018.9					
R95019.0	R96019.0	R97019.0					
R9503/4	R9603/4	R9703/4					
R95019.1	R96019.1	R97019.1					
R95019.2	R96019.2	R97019.2					
R95019.25	R96019.25	R97019.25					
R95049/64	R96049/64	R97049/64					
R95019.5	R96019.5	R97019.5					
R95019.6	R96019.6	R97019.6	H85320.0 H85351/64	H85520.0 H85551/64	H85820.0		
R95019.7	R96019.7	R97019.7					
R95025/32	R96025/32	R97025/32					
R95020.0	R96020.0	R97020.0					
R95051/64	R96051/64	R97051/64					
R95020.5	R96020.5	R97020.5					
R95013/16	R96013/16	R97013/16	H85321.0 H85327/32	H85521.0 H85527/32	H85821.0		
R95021.0	R96021.0	R97021.0					
R95053/64	R96053/64	R97053/64					
R95027/32	R96027/32	R97027/32					
R95021.5	R96021.5	R97021.5					
R95055/64	R96055/64	R97055/64	H85322.0 H85357/64	H85522.0 H85557/64	H85822.0	H860N4	H861N3
R95022.0	R96022.0	R97022.0					
R9507/8	R9607/8	R9707/8					
R95022.5	R96022.5	R97022.5					
R95057/64	R96057/64	R97057/64					
R95022.7	R96022.7	R97022.7					
R95023.0	R96023.0	R97023.0	H85323.0 H85359/64	H85523.0 H85559/64	H85823.0		
R95029/32	R96029/32	R97029/32					
R95059/64	R96059/64	R97059/64					
R95023.5	R96023.5	R97023.5					
R95015/16	R96015/16	R97015/16	H85324.0 H85331/32	H85524.0 H85531/32	H85824.0		
R95024.0	R96024.0	R97024.0					
R95061/64	R96061/64	R97061/64					
R95024.5	R96024.5	R97024.5					
R95031/32	R96031/32	R97031/32					

R950	R960	R970	H853	H855	H858	H860	H861
R95025.0	R96025.0	R97025.0	H85325.0 H8531.1/64	H85525.0 H8551.1/64	H85825.0	H860N5	H861N4
R95063/64	R96063/64	R97063/64					
R9501	R9601	R9701					
R95025.5	R96025.5	R97025.5					
R95025.65	R96025.65	R97025.65					
R9501.1/64	R9601.1/64	R9701.1/64					
R95026.0	R96026.0	R97026.0	H85326.0 H8531.3/64	H85526.0 H8551.3/64	H85826.0		
R9501.1/32	R9601.1/32	R9701.1/32					
R95026.5	R96026.5	R97026.5					
R9501.3/64	R9601.3/64	R9701.3/64					
R9501.1/16	R9601.1/16	R9701.1/16	H85327.0 H8531.3/32	H85527.0 H8551.3/32	H85827.0		
R95027.0	R96027.0	R97027.0					
R9501.5/64	R9601.5/64	R9701.5/64					
R95027.5	R96027.5	R97027.5					
R9501.3/32	R9601.3/32	R9701.3/32					
R95028.0	R96028.0	R97028.0	H85328.0 H8531.1/8	H85528.0 H8551.1/8	H85828.0	H860N6	H861N5
R9501.7/64	R9601.7/64	R9701.7/64					
R95028.5	R96028.5	R97028.5					
R9501.1/8	R9601.1/8	R9701.1/8					
R9501.9/64	R9601.9/64	R9701.9/64	H85329.0 H8531.11/64	H85529.0 H8551.11/64	H85829.0		
R95029.0	R96029.0	R97029.0					
R9501.5/32	R9601.5/32	R9701.5/32					
R95029.5	R96029.5	R97029.5					
R9501.11/64	R9601.11/64	R9701.11/64					
R95030.0	R96030.0	R97030.0	H85330.0 H8531.3/16	H85530.0 H8551.3/16	H85830.0		
R9501.3/16	R9601.3/16	R9701.3/16					
R95030.5	R96030.5	R97030.5					
R9501.7/32		R9701.7/32	H85332.0	H85532.0	H85832.0		
R95031.0		R97031.0					
R9501.1/4		R9701.1/4					
R95032.0		R97032.0					
R95032.5		R97032.5	H85333.5	H85533.5	H85833.5		
R9501.19/64		R9701.19/64					
R95033.0		R97033.0					
R95033.5		R97033.5					
R95034.0		R97034.0	H85335.0	H85535.0	H85835.0	H860N7	H861N6
R9501.11/32		R9701.11/32					
R95034.5		R97034.5					
R9501.3/8		R9701.3/8					
R95035.0		R97035.0					
R95036.0		R97036.0	H85336.5	H85536.5	H85836.5		
R9501.27/64		R9701.27/64					
R95036.5		R97036.5					
R95037.0		R97037.0	H85338.0	H85538.0	H85838.0		
R9501.15/32		R9701.15/32					
R95037.5		R97037.5					
R95038.0		R97038.0					
R9501.1/2		R9701.1/2	H85339.5	H85539.5	H85839.5		
R95038.5		R97038.5					
R9501.17/32		R9701.17/32					
R95039.0		R97039.0					
R95039.5		R97039.5					
R9501.9/16		R9701.9/16	H85341.0	H85541.0	H85841.0		
R95040.0		R97040.0					
R95041.0		R97041.0					
R9501.5/8		R9701.5/8	H85342.5	H85542.5	H85842.5		
R95042.0		R97042.0					

DORMER

R950

- Hydra Borrkrona för Stål
- Hydra kruunu teräksiin
- Hydra Bor hode for stål
- Hydra Bor hoved for stål

Fyra (4) skruvar och en (1) skruvmejsel medföljer varje borrkropp
Neljä (4) ruuvia ja yksi (1) avain sisältyy poran runkoon
Fire(4)skruer og en(1)skrutrekker er inkludert med en borkropp.
Fire (4) skruer og en(1) skruetrækker samme med boreholder

R960

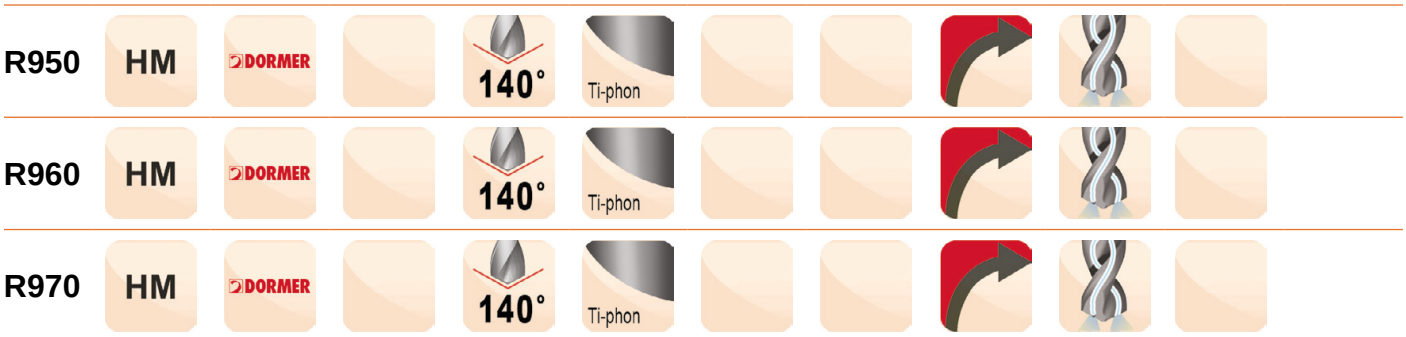
- Hydra Borrkrona för Rostfritt Stål
- Hydra kruunu ruostumattomiin teräksiin
- Hydra Bor hode for Rustfritt stål
- Hydra Bor hoved for Rostfritt stål

Fyra (4) skruvar och en (1) skruvmejsel medföljer varje borrkropp
Neljä (4) ruuvia ja yksi (1) avain sisältyy poran runkoon
Fire(4)skruer og en(1)skrutrekker er inkludert med en borkropp.
Fire (4) skruer og en(1) skruetrækker samme med boreholder

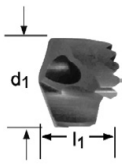
R970

- Hydra Borrkrona för Gjutjärn
- Hydra kruunu valurauta
- Hydra Bor hode for støpejern
- Hydra Bor hoved før støbejern

Fyra (4) skruvar och en (1) skruvmejsel medföljer varje borrkropp
Neljä (4) ruuvia ja yksi (1) avain sisältyy poran runkoon
Fire(4)skruer og en(1)skrutrekker er inkludert med en borkropp.
Fire (4) skruer og en(1) skruetrækker samme med boreholder



R950	■	1.3	1.4	1.5	1.6	3.3	3.4	
	•	1.1	1.2	2.4				
R960	■	1.1	1.2	2.1	2.2	2.3	3.1	3.2
	•	2.4	3.3	3.4	4.1			
R970	■	3.1	3.2	3.3	3.4			



R950	R960	R970
15/32 - 42.00	15/32 - 30.50	15/32 - 42.00

d_1 Øh$_7$ Inch	d_1 Øh$_7$ mm	d_1 decimal Inch	l_1 mm	R950	R960	R970
15/32	11.91	0.4688	9.1	R95015/32	R96015/32	R97015/32
	12.00	0.4724	9.1	R95012.0	R96012.0	R97012.0
	12.10	0.4764	9.1	R95012.1	R96012.1	R97012.1
	12.20	0.4803	9.1	R95012.2	R96012.2	R97012.2
31/64	12.30	0.4844	9.1	R95031/64	R96031/64	R97031/64
	12.50	0.4921	9.4	R95012.5	R96012.5	R97012.5
	12.60	0.4961	9.4	R95012.6	R96012.6	R97012.6
1/2	12.70	0.5000	9.4	R9501/2	R9601/2	R9701/2
	12.80	0.5039	9.4	R95012.8	R96012.8	R97012.8
	12.90	0.5079	9.4	R95012.9	R96012.9	R97012.9
	13.00	0.5118	9.7	R95013.0	R96013.0	R97013.0
33/64	13.10	0.5156	9.7	R95033/64	R96033/64	R97033/64
	13.20	0.5197	9.7	R95013.2	R96013.2	R97013.2
17/32	13.49	0.5313	9.7	R95017/32	R96017/32	R97017/32
	13.50	0.5315	10.3	R95013.5	R96013.5	R97013.5
	13.60	0.5354	10.3	R95013.6	R96013.6	R97013.6
	13.70	0.5394	10.3	R95013.7	R96013.7	R97013.7
	13.80	0.5433	10.3	R95013.8	R96013.8	R97013.8

d_1 Øh$_7$ Inch	d_1 Øh$_7$ mm	d_1 decimal Inch	l_1 mm	R950	R960	R970
35/64	13.89	0.5469	10.3	R95035/64	R96035/64	R97035/64
	14.00	0.5512	10.3	R95014.0	R96014.0	R97014.0
	14.10	0.5551	10.3	R95014.1	R96014.1	R97014.1
	14.20	0.5591	10.3	R95014.2	R96014.2	R97014.2
9/16	14.29	0.5625	10.3	R9509/16	R9609/16	R9709/16
	14.50	0.5709	10.3	R95014.5	R96014.5	R97014.5
	14.60	0.5748	11.0	R95014.6	R96014.6	R97014.6
37/64	14.68	0.5781	11.0	R95037/64	R96037/64	R97037/64
	14.70	0.5787	11.0	R95014.7	R96014.7	R97014.7
	14.80	0.5827	11.0	R95014.8	R96014.8	R97014.8
	15.00	0.5906	11.0	R95015.0	R96015.0	R97015.0
19/32	15.08	0.5938	11.0	R95019/32	R96019/32	R97019/32
	15.10	0.5945	11.0	R95015.1	R96015.1	R97015.1
	15.20	0.5984	11.0	R95015.2	R96015.2	R97015.2
39/64	15.48	0.6094	11.0	R95039/64	R96039/64	R97039/64
	15.50	0.6102	11.0	R95015.5	R96015.5	R97015.5
	15.60	0.6142	11.6	R95015.6	R96015.6	R97015.6
	15.70	0.6181	11.6	R95015.7	R96015.7	R97015.7
5/8	15.88	0.6250	11.6	R9505/8	R9605/8	R9705/8
	16.00	0.6299	11.6	R95016.0	R96016.0	R97016.0
	16.10	0.6339	11.6	R95016.1	R96016.1	R97016.1
	16.20	0.6378	11.6	R95016.2	R96016.2	R97016.2
41/64	16.27	0.6406	11.6	R95041/64	R96041/64	R97041/64
	16.50	0.6496	11.6	R95016.5	R96016.5	R97016.5
	16.60	0.6535	12.2	R95016.6	R96016.6	R97016.6
21/32	16.67	0.6563	12.2	R95021/32	R96021/32	R97021/32
	16.70	0.6575	12.2	R95016.7	R96016.7	R97016.7
	17.00	0.6693	12.2	R95017.0	R96017.0	R97017.0
43/64	17.07	0.6719	12.2	R95043/64	R96043/64	R97043/64
	17.10	0.6732	12.2	R95017.1	R96017.1	R97017.1
	17.20	0.6772	12.2	R95017.2	R96017.2	R97017.2
11/16	17.46	0.6875	12.2	R95011/16	R96011/16	R97011/16
	17.50	0.6890	12.2	R95017.5	R96017.5	R97017.5
	17.60	0.6929	12.9	R95017.6	R96017.6	R97017.6
	17.70	0.6969	12.9	R95017.7	R96017.7	R97017.7
45/64	17.86	0.7031	12.9	R95045/64	R96045/64	R97045/64
	18.00	0.7087	12.9	R95018.0	R96018.0	R97018.0
	18.10	0.7126	12.9	R95018.1	R96018.1	R97018.1
	18.20	0.7165	12.9	R95018.2	R96018.2	R97018.2
23/32	18.26	0.7188	12.9	R95023/32	R96023/32	R97023/32
	18.50	0.7283	12.9	R95018.5	R96018.5	R97018.5
	18.60	0.7323	13.5	R95018.6	R96018.6	R97018.6
47/64	18.65	0.7344	13.5	R95047/64	R96047/64	R97047/64
	18.70	0.7362	13.5	R95018.7	R96018.7	R97018.7
	18.90	0.7441	13.5	R95018.9	R96018.9	R97018.9
	19.00	0.7480	13.5	R95019.0	R96019.0	R97019.0
3/4	19.05	0.7500	13.5	R9503/4	R9603/4	R9703/4
	19.10	0.7520	13.5	R95019.1	R96019.1	R97019.1
	19.20	0.7559	13.5	R95019.2	R96019.2	R97019.2
	19.25	0.7579	13.5	R95019.25	R96019.25	R97019.25
49/64	19.45	0.7656	13.5	R95049/64	R96049/64	R97049/64
	19.50	0.7677	13.5	R95019.5	R96019.5	R97019.5
	19.60	0.7717	14.1	R95019.6	R96019.6	R97019.6
	19.70	0.7756	14.1	R95019.7	R96019.7	R97019.7
25/32	19.84	0.7813	14.1	R95025/32	R96025/32	R97025/32
	20.00	0.7874	14.1	R95020.0	R96020.0	R97020.0
51/64	20.24	0.7969	14.1	R95051/64	R96051/64	R97051/64
	20.50	0.8071	14.1	R95020.5	R96020.5	R97020.5
13/16	20.64	0.8125	14.8	R95013/16	R96013/16	R97013/16
	21.00	0.8268	14.8	R95021.0	R96021.0	R97021.0
53/64	21.03	0.8281	14.8	R95053/64	R96053/64	R97053/64
27/32	21.43	0.8438	14.8	R95027/32	R96027/32	R97027/32
	21.50	0.8465	14.8	R95021.5	R96021.5	R97021.5
55/64	21.83	0.8594	15.0	R95055/64	R96055/64	R97055/64
	22.00	0.8661	15.0	R95022.0	R96022.0	R97022.0
7/8	22.22	0.8750	15.0	R9507/8	R9607/8	R9707/8
	22.50	0.8858	15.0	R95022.5	R96022.5	R97022.5
57/64	22.62	0.8906	15.0	R95057/64	R96057/64	R97057/64
	22.70	0.8937	15.0	R95022.7	R96022.7	R97022.7
	23.00	0.9055	15.1	R95023.0	R96023.0	R97023.0

DORMER

d_1 Øh$_7$ Inch	d_1 Øh$_7$ mm	d_1 decimal Inch	l_1 mm	R950	R960	R970
29/32	23.02	0.9063	15.1	R95029/32	R96029/32	R97029/32
59/64	23.42	0.9219	15.1	R95059/64	R96059/64	R97059/64
	23.50	0.9252	15.1	R95023.5	R96023.5	R97023.5
15/16	23.81	0.9375	15.4	R95015/16	R96015/16	R97015/16
	24.00	0.9449	15.4	R95024.0	R96024.0	R97024.0
61/64	24.21	0.9531	15.4	R95061/64	R96061/64	R97061/64
	24.50	0.9646	15.4	R95024.5	R96024.5	R97024.5
31/32	24.61	0.9688	15.4	R95031/32	R96031/32	R97031/32
	25.00	0.9844	15.8	R95025.0	R96025.0	R97025.0
63/64	25.00	0.9844	15.8	R95063/64	R96063/64	R97063/64
1“	25.40	1.0000	15.8	R9501	R9601	R9701
	25.50	1.0039	15.8	R95025.5	R96025.5	R97025.5
	25.65	1.0098	15.8	R95025.65	R96025.65	R97025.65
1.1/64	25.80	1.0156	15.8	R9501.1/64	R9601.1/64	R9701.1/64
	26.00	1.0236	16.4	R95026.0	R96026.0	R97026.0
1.1/32	26.19	1.0313	16.4	R9501.1/32	R9601.1/32	R9701.1/32
	26.50	1.0433	16.4	R95026.5	R96026.5	R97026.5
1.3/64	26.59	1.0469	16.4	R9501.3/64	R9601.3/64	R9701.3/64
1.1/16	26.99	1.0625	17.1	R9501.1/16	R9601.1/16	R9701.1/16
	27.00	1.0630	17.1	R95027.0	R96027.0	R97027.0
1.5/64	27.38	1.0781	17.1	R9501.5/64	R9601.5/64	R9701.5/64
	27.50	1.0827	17.1	R95027.5	R96027.5	R97027.5
1.3/32	27.78	1.0938	17.1	R9501.3/32	R9601.3/32	R9701.3/32
	28.00	1.1024	17.7	R95028.0	R96028.0	R97028.0
1.7/64	28.18	1.1094	17.7	R9501.7/64	R9601.7/64	R9701.7/64
	28.50	1.1220	17.7	R95028.5	R96028.5	R97028.5
1.1/8	28.58	1.1250	17.7	R9501.1/8	R9601.1/8	R9701.1/8
1.9/64	28.97	1.1406	18.3	R9501.9/64	R9601.9/64	R9701.9/64
	29.00	1.1417	18.3	R95029.0	R96029.0	R97029.0
1.5/32	29.37	1.1563	18.3	R9501.5/32	R9601.5/32	R9701.5/32
	29.50	1.1614	18.3	R95029.5	R96029.5	R97029.5
1.11/64	29.77	1.1719	18.3	R9501.11/64	R9601.11/64	R9701.11/64
	30.00	1.1811	19.0	R95030.0	R96030.0	R97030.0
1.3/16	30.16	1.1875	19.0	R9501.3/16	R9601.3/16	R9701.3/16
	30.50	1.2008	19.0	R95030.5	R96030.5	R97030.5
1.7/32	30.96	1.2188	21.0	R9501.7/32		R9701.7/32
	31.00	1.2205	21.0	R95031.0		R97031.0
1.1/4	31.75	1.2500	21.0	R9501.1/4		R9701.1/4
	32.00	1.2598	21.0	R95032.0		R97032.0
	32.50	1.2795	21.0	R95032.5		R97032.5
1.19/64	32.94	1.2969	21.0	R9501.19/64		R9701.19/64
	33.00	1.2992	21.0	R95033.0		R97033.0
	33.50	1.3189	21.0	R95033.5		R97033.5
	34.00	1.3386	23.0	R95034.0		R97034.0
1.11/32	34.13	1.3438	23.0	R9501.11/32		R9701.11/32
	34.50	1.3583	23.0	R95034.5		R97034.5
1.3/8	34.93	1.3750	23.0	R9501.3/8		R9701.3/8
	35.00	1.3780	23.0	R95035.0		R97035.0
	36.00	1.4173	23.0	R95036.0		R97036.0
1.27/64	36.12	1.4219	23.0	R9501.27/64		R9701.27/64
	36.50	1.4370	23.0	R95036.5		R97036.5
	37.00	1.4567	25.0	R95037.0		R97037.0
1.15/32	37.31	1.4688	25.0	R9501.15/32		R9701.15/32
	37.50	1.4764	25.0	R95037.5		R97037.5
	38.00	1.4961	25.0	R95038.0		R97038.0
1.1/2	38.10	1.5000	25.0	R9501.1/2		R9701.1/2
	38.50	1.5157	25.0	R95038.5		R97038.5
1.17/32	38.89	1.5313	25.0	R9501.17/32		R9701.17/32
	39.00	1.5354	25.0	R95039.0		R97039.0
	39.50	1.5551	25.0	R95039.5		R97039.5
1.9/16	39.69	1.5625	27.0	R9501.9/16		R9701.9/16
	40.00	1.5748	27.0	R95040.0		R97040.0
	41.00	1.6142	27.0	R95041.0		R97041.0
1.5/8	41.28	1.6250	27.0	R9501.5/8		R9701.5/8
	42.00	1.6535	27.0	R95042.0		R97042.0

H853

- Hydra Borrkropp 3xD — Fyra (4) skruvar H860 och en (1) skruvmejsel H861 medföljer varje borrkropp
- Hydra Runko 3xD — Neljä (4) ruuvia H860 ja yksi (1) avain H861 sisältyy poran runkoon
- Hydra Borkropp 3xD — Fire(4)skruer H860 og en(1)skrutrekker H861 er inkludert med en borkropp.
- Hydra Boreholder 3xD — Fire (4) skruer H860 og en(1) skruetrækker H861 samme med boreholder

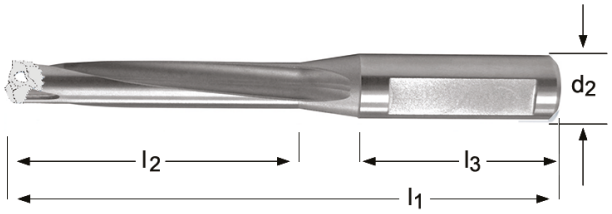
H855

- Hydra Borrkropp 5xD — Fyra (4) skruvar H860 och en (1) skruvmejsel H861 medföljer varje borrkropp
- Hydra Runko 5xD — Neljä (4) ruuvia H860 ja yksi (1) avain H861 sisältyy poran runkoon
- Hydra Borkropp 5xD — Fire(4)skruer H860 og en(1)skrutrekker H861 er inkludert med en borkropp.
- Hydra Boreholder 5xD — Fire (4) skruer H860 og en(1) skruetrækker H861 samme med boreholder

H858

- Hydra Borrkropp 8xD — Fyra (4) skruvar H860 och en (1) skruvmejsel H861 medföljer varje borrkropp
- Hydra Runko 8xD — Neljä (4) ruuvia H860 ja yksi (1) avain H861 sisältyy poran runkoon
- Hydra Borkropp 8xD — Fire(4)skruer H860 og en(1)skrutrekker H861 er inkludert med en borkropp.
- Hydra Boreholder 8xD — Fire (4) skruer H860 og en(1) skruetrækker H861 samme med boreholder

H853	HSS	DORMER	3XD			DIN 6535HB DIN 6535HE				
H855	HSS	DORMER	5XD			DIN 6535HB DIN 6535HE				
H858	HSS	DORMER	8XD			DIN 6535HE				



H853	H855	H858
		
15/32 - 42.00	15/32 - 30.50	15/32 - 42.00

d_2 $Øh_6$ Inch	d_2 $Øh_6$ mm	l_2 mm	l_1 mm	l_3 mm	DIN 6535HB DIN 6535HE	H853	H855	H858
	16.00	44.0	105.0	48.0	DIN6535HE	H85312.0		
	16.00	69.0	130.0	48.0	DIN6535HE		H85512.0	
5/8	15.88	44.0	105.0	48.0	DIN6535HE	H85331/64		
5/8	15.88	69.0	130.0	48.0	DIN6535HE		H85531/64	
	16.00	44.0	105.0	48.0	DIN6535HE	H85312.5		
	16.00	69.0	130.0	48.0	DIN6535HE		H85512.5	
5/8	15.88	44.0	105.0	48.0	DIN6535HE	H8531/2		
5/8	15.88	69.0	130.0	48.0	DIN6535HE		H8551/2	
	16.00	47.0	110.0	48.0	DIN6535HE	H85313.0		
	16.00	74.0	140.0	48.0	DIN6535HE		H85513.0	
5/8	15.88	47.0	110.0	48.0	DIN6535HE	H85317/32		
5/8	15.88	74.0	140.0	48.0	DIN6535HE		H85517/32	
	16.00	124.5	191.5	48.0	DIN6535HE			H85814.0
	16.00	52.5	116.5	48.0	DIN6535HE	H85314.0		
	16.00	81.5	146.5	48.0	DIN6535HE		H85514.0	
3/4	19.05	52.5	116.5	48.0	DIN6535HE	H8539/16		
3/4	19.05	81.5	146.5	48.0	DIN6535HE		H8559/16	
	20.00	133.5	201.5	50.0	DIN6535HE			H85815.0
	20.00	55.5	126.5	50.0	DIN6535HE	H85315.0		
	20.00	86.5	156.5	50.0	DIN6535HE		H85515.0	
3/4	19.05	55.5	126.5	50.0	DIN6535HE	H85339/64		
3/4	19.05	86.5	156.5	50.0	DIN6535HE		H85539/64	

DORMER

d_2 $\emptyset h_6$ Inch	d_2 $\emptyset h_6$ mm	l_2 mm	l_1 mm	l_3 mm	DIN 6535HB DIN 6535HE	H853	H855	H858
	20.00	141.5	211.5	50.0	DIN6535HE			H85816.0
	20.00	59.5	131.5	50.0	DIN6535HE	H85316.0		
	20.00	92.5	166.5	50.0	DIN6535HE		H85516.0	
3/4	19.05	59.5	131.5	50.0	DIN6535HE	H85341/64		
3/4	19.05	92.5	166.5	50.0	DIN6535HE		H85541/64	
	20.00	150.5	221.5	50.0	DIN6535HE			H85817.0
	20.00	62.5	136.5	50.0	DIN6535HE	H85317.0		
	20.00	97.5	171.5	50.0	DIN6535HE		H85517.0	
3/4	19.05	62.5	136.5	50.0	DIN6535HE	H85311/16		
3/4	19.05	97.5	171.5	50.0	DIN6535HE		H85511/16	
	20.00	158.5	226.5	50.0	DIN6535HE			H85818.0
	20.00	103.5	176.5	50.0	DIN6535HE		H85518.0	
	20.00	66.5	141.5	50.0	DIN6535HE	H85318.0		
3/4	19.05	103.5	176.5	50.0	DIN6535HE		H85523/32	
3/4	19.05	66.5	141.5	50.0	DIN6535HE	H85323/32		
	25.00	167.5	251.5	56.0	DIN6535HE			H85819.0
	25.00	108.5	191.5	56.0	DIN6535HE		H85519.0	
	25.00	69.5	156.5	56.0	DIN6535HE	H85319.0		
1”	25.40	108.5	191.5	56.0	DIN6535HE		H85549/64	
1”	25.40	69.5	156.5	56.0	DIN6535HE	H85349/64		
	25.00	175.5	264.5	56.0	DIN6535HE			H85820.0
	25.00	114.5	196.5	56.0	DIN6535HE		H85520.0	
	25.00	73.5	156.5	56.0	DIN6535HE	H85320.0		
1”	25.40	114.5	196.5	56.0	DIN6535HE		H85551/64	
1”	25.40	73.5	156.5	56.0	DIN6535HE	H85351/64		
	25.00	184.5	266.5	56.0	DIN6535HE			H85821.0
	25.00	119.5	196.5	56.0	DIN6535HE		H85521.0	
	25.00	76.5	156.5	56.0	DIN6535HE	H85321.0		
1”	25.40	119.5	196.5	56.0	DIN6535HE		H85527/32	
1”	25.40	76.5	156.5	56.0	DIN6535HE	H85327/32		
	25.00	192.1	271.1	56.0	DIN6535HE			H85822.0
	25.00	125.1	201.1	56.0	DIN6535HE		H85522.0	
	25.00	80.1	161.5	56.0	DIN6535HE	H85322.0		
1”	25.40	125.1	201.1	56.0	DIN6535HE		H85557/64	
1”	25.40	80.1	161.5	56.0	DIN6535HE	H85357/64		
	25.00	200.5	280.5	56.0	DIN6535HE			H85823.0
	25.00	129.5	210.5	56.0	DIN6535HE		H85523.0	
	25.00	82.5	160.5	56.0	DIN6535HE	H85323.0		
1”	25.40	129.5	210.5	56.0	DIN6535HE		H85559/64	
1”	25.40	82.5	160.5	56.0	DIN6535HE	H85359/64		
	32.00	208.2	295.2	60.0	DIN6535HE			H85824.0
	32.00	135.2	220.2	60.0	DIN6535HE		H85524.0	
	32.00	86.2	170.2	60.0	DIN6535HE	H85324.0		
1”	25.40	135.2	220.2	60.0	DIN6535HE		H85531/32	
1”	25.40	86.2	170.2	60.0	DIN6535HE	H85331/32		
	32.00	217.0	300.0	60.0	DIN6535HE			H85825.0
	32.00	140.0	225.0	60.0	DIN6535HE		H85525.0	
	32.00	88.0	170.0	60.0	DIN6535HE	H85325.0		
1.1/4	31.75	140.0	225.0	60.0	DIN6535HE		H8551.1/64	
1.1/4	31.75	88.0	170.0	60.0	DIN6535HE	H8531.1/64		
	32.00	225.0	310.0	60.0	DIN6535HE			H85826.0
	32.00	146.0	230.0	60.0	DIN6535HE		H85526.0	
	32.00	92.0	175.0	60.0	DIN6535HE	H85326.0		
1.1/4	31.75	146.0	230.0	60.0	DIN6535HE		H8551.3/64	
1.1/4	31.75	92.0	175.0	60.0	DIN6535HE	H8531.3/64		
	32.00	234.0	320.0	60.0	DIN6535HE			H85827.0
	32.00	151.0	235.0	60.0	DIN6535HE		H85527.0	
	32.00	94.0	175.0	60.0	DIN6535HE	H85327.0		
1.1/4	31.75	151.0	235.0	60.0	DIN6535HE		H8551.3/32	
1.1/4	31.75	94.0	175.0	60.0	DIN6535HE	H8531.3/32		
	32.00	242.0	325.0	60.0	DIN6535HE			H85828.0
	32.00	157.0	240.0	60.0	DIN6535HE		H85528.0	
	32.00	97.0	180.0	60.0	DIN6535HE	H85328.0		
1.1/4	31.75	157.0	240.0	60.0	DIN6535HE		H8551.1/8	
1.1/4	31.75	97.0	180.0	60.0	DIN6535HE	H8531.1/8		
	32.00	251.0	335.0	60.0	DIN6535HE			H85829.0
	32.00	100.0	185.0	60.0	DIN6535HE	H85329.0		
	32.00	162.0	245.0	60.0	DIN6535HE		H85529.0	
1.1/4	31.75	100.0	185.0	60.0	DIN6535HE	H8531.11/64		
1.1/4	31.75	162.0	245.0	60.0	DIN6535HE		H8551.11/64	
	32.00	259.0	345.0	60.0	DIN6535HE			H85830.0
	32.00	104.0	185.0	60.0	DIN6535HE	H85330.0		
	32.00	167.0	255.0	60.0	DIN6535HE		H85530.0	
1.1/4	31.75	104.0	185.0	60.0	DIN6535HE	H8531.3/16		
1.1/4	31.75	167.0	255.0	60.0	DIN6535HE		H8551.3/16	
	32.00	176.5	261.5	60.0	DIN6535HE		H85532.0	

d_2 Øh$_6$ Inch	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	l_3 mm	DIN 6535HB DIN 6535HE	H853	H855	H858
	32.00	271.5	356.5	60.0	DIN6535HE			H85832.0
	32.00	111.5	196.5	60.0	DIN6535HE	H85332.0		
	40.00	186.5	271.5	60.0	DIN6535HB		H85533.5	
	40.00	286.5	371.5	60.0	DIN6535HB			H85833.5
	40.00	116.5	201.5	60.0	DIN6535HB	H85333.5		
	40.00	196.5	291.5	70.0	DIN6535HB		H85535.0	
	40.00	301.5	396.5	70.0	DIN6535HB			H85835.0
	40.00	121.5	216.5	70.0	DIN6535HB	H85335.0		
	40.00	201.5	296.5	70.0	DIN6535HB		H85536.5	
	40.00	311.5	406.5	70.0	DIN6535HB			H85836.5
	40.00	125.5	221.5	70.0	DIN6535HB	H85336.5		
	40.00	211.5	306.5	70.0	DIN6535HB		H85538.0	
	40.00	326.5	421.5	70.0	DIN6535HB			H85838.0
	40.00	131.5	226.5	70.0	DIN6535HB	H85338.0		
	40.00	221.5	316.5	70.0	DIN6535HB		H85539.5	
	40.00	336.5	431.5	70.0	DIN6535HB			H85839.5
	40.00	136.5	231.5	70.0	DIN6535HB	H85339.5		
	40.00	226.5	325.6	70.0	DIN6535HB		H85541.0	
	40.00	351.5	451.5	70.0	DIN6535HB			H85841.0
	40.00	146.5	246.5	70.0	DIN6535HB	H85341.0		
	40.00	236.5	336.5	70.0	DIN6535HB		H85542.5	
	40.00	361.5	461.5	70.0	DIN6535HB			H85842.5
	40.00	151.6	251.6	70.0	DIN6535HB	H85342.5		

H860

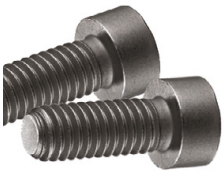
- Hydra Skruvar
- Hydra ruuvit
- Hydra Skruer
- Hydra skruer

Fyra (4) skruvar och en (1) skruvmejsel medföljer varje borrkropp
Neljä (4) ruuvia ja yksi (1) avain sisältyy poran runkoon
Fire(4)skruer og en(1)skrutrekker er inkludert med en borkropp.
Fire (4) skruer og en(1) skruetrækker samme med boreholder

H861

- Hydra skruvmejsel
- Hydra tarvikkeet
- Hydra skrutrekker
- Hydra skruetrækker

Fyra (4) skruvar och en (1) skruvmejsel medföljer varje borrkropp
Neljä (4) ruuvia ja yksi (1) avain sisältyy poran runkoon
Fire(4)skruer og en(1)skrutrekker er inkludert med en borkropp.
Fire (4) skruer og en(1) skruetrækker samme med boreholder





H860	H861
	
N1 - N7	N1 - N6

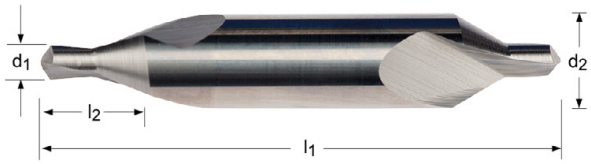
H860	H861
H860N7	H861N6
H860N6	H861N5
H860N5	H861N4
H860N4	H861N3
H860N3	
H860N2	H861N2
H860N1	H861N1

R200

- Dubbhålsborrar - 60°
- Keskiöporat - 60°
- Senterbor - 60°
- Pinolhulsbor - 60°

R200	▪	1.1	1.2	1.3	1.4	1.5	1.6	3.1	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4

R200	HM	DIN 333A	1XD	118°					60°



R200



1.00 - 5.00

d_1 Ø mm	d_1 decimal Inch	l_2 max/min mm	l_1 mm	d_2 Ø mm	R200
1.00	0.0394	1.7 - 1.3	31	3.15	R2001.0X3.15
1.25	0.0492	2.0 - 1.6	31	3.15	R2001.25X3.15
1.60	0.0630	2.6 - 2.0	35	4.00	R2001.6X4.0
2.00	0.0787	3.1 - 2.5	40	5.00	R2002.0X5.0
2.50	0.0984	3.8 - 3.1	45	6.30	R2002.5X6.3
3.15	0.1240	4.6 - 3.9	50	8.00	R2003.15X8.0
4.00	0.1575	5.9 - 5.0	55	10.00	R2004.0X10.0
5.00	0.1969	7.2 - 6.3	63	12.50	R2005.0X12.5

DORMER

R122

- Extra korta NC - Centrerborrar - 120°
- Erittäin lyhyet NC-keskiöporat - 120°
- Ekstra Kort NC - Centrerbor - 120°
- Ekstra Kort NC - Centrerbor - 120°

Fyrfasettslipning t.o.m 10mm
Halkaisijat <=10,0 mm: -nelipintahiottu kärki
4 Fasettsliping t.o.m. 10,0mm
4-facetslibning t.o.m. 10mm

R123

- Extra korta NC - Centrerborrar - 90°
- Erittäin lyhyet NC-keskiöporat - 90°
- Ekstra Kort NC - Centrerbor - 90°
- Ekstra Kort NC - Centrerbor - 90°

Fyrfasettslipning t.o.m 10mm
Halkaisijat <=10,0 mm: -nelipintahiottu kärki
4 Fasettsliping t.o.m. 10,0mm
4-facetslibning t.o.m. 10mm

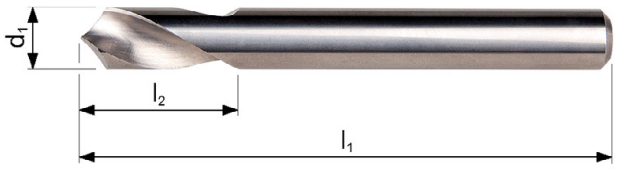
R6011

- NC - Centrerborrar - 90°
- NC-keskiöporat - 90°
- NC - Senterbor - 90°
- NC - Centrerbor - 90°

TiAlN-belagd
TiAlN pinnoitettu
TiAlN belagd
TiAlN Coated

R122; R123; R6011 ▪ 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 2.1 2.2 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2

R122	HM	DORMER	1XD	120°			N				
R123	HM	DORMER	1XD	90°			N				
R6011	HM	DORMER	1XD	90°	TiAlN	DIN 6535HA	N				



R122	R123	R6011
		
5.00 - 20.00	5.00 - 20.00	6.00 - 16.00

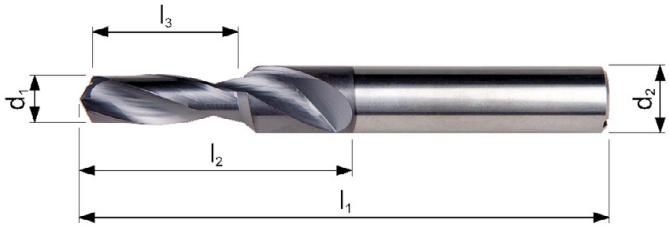
d_1 $Øh_6$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	R122	R123	R6011
5.00	0.1969	16	62	R1225.0	R1235.0	
6.00	0.2362	16	50			R60116.0
6.00	0.2362	17	66	R1226.0	R1236.0	
8.00	0.3150	22	79	R1228.0	R1238.0	
10.00	0.3937	25	70			R601110.0
10.00	0.3937	26	89	R12210.0	R12310.0	
12.00	0.4724	30	102	R12212.0	R12312.0	
16.00	0.6299	26	90			R601116.0
16.00	0.6299	34	115	R12216.0	R12316.0	
20.00	0.7874	40	131	R12220.0	R12320.0	

R7131

- Tappborr för borrning och fasning av gänghål
- Porrasporat kierteiden alkureikien ja viisteiden poraukseen
- Tappbor for boring og fasing av gjengehull
- Tapbor til boring og reifning af gevindhul

R7131 ▪ 1.1 1.2 1.3 1.4 1.5 2.1 2.2 2.3 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4

R7131 HM DORMER 3XD 140° TiAlN DIN 6535HA N



R7131



3.30 - 10.40

d_1 Øm$_7$ mm	d_1 decimal Inch	l_3 mm	l_2 mm	l_1 mm	d_2 Øh$_6$ mm	M	R7131
3.30	0.1299	11.4	20	66	6	M4	R71313.3
4.20	0.1654	13.6	24	66	6	M5	R71314.2
5.00	0.1969	16.5	28	79	8	M6	R71315.0
6.80	0.2677	21.0	34	89	10	M8	R71316.8
8.50	0.3346	25.5	47	102	12	M10	R71318.5
10.20	0.4016	30.0	55	107	14	M12	R713110.2
10.40	0.4094	30.0	55	107	14	M12	R713110.4

DORMER

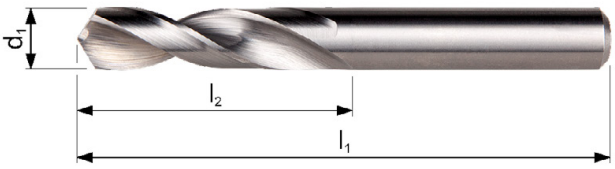
R120

- Extra Korta Borrar
- Erittäin lyhyet porat
- Ekstra Korte Bor
- Ekstra Korte Bor

R120 ▪ 4.1 5.1 6.1 7.1 8.1 8.2

• 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 3.1 3.2 3.3 3.4 4.2 4.3 5.2 5.3 6.2 6.3 6.4 7.2 7.3 7.4

R120 | HM | DIN 6539 | 2.5XD | 120° | N



R120



1.00 - 12.00

d_1 $\emptyset h_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	R120
1.00	0.0394	6	26	R1201.0
1.10	0.0433	7	28	R1201.1
1.20	0.0472	8	30	R1201.2
1.30	0.0512	8	30	R1201.3
1.40	0.0551	9	32	R1201.4
1.50	0.0591	9	32	R1201.5
1.60	0.0630	10	34	R1201.6
1.70	0.0669	10	34	R1201.7
1.80	0.0709	11	36	R1201.8
1.90	0.0748	11	36	R1201.9
2.00	0.0787	12	38	R1202.0
2.10	0.0827	12	38	R1202.1
2.20	0.0866	13	40	R1202.2
2.30	0.0906	13	40	R1202.3
2.40	0.0945	14	43	R1202.4
2.50	0.0984	14	43	R1202.5
2.60	0.1024	14	43	R1202.6
2.70	0.1063	16	46	R1202.7
2.80	0.1102	16	46	R1202.8
2.90	0.1142	16	46	R1202.9
3.00	0.1181	16	46	R1203.0
3.10	0.1220	18	49	R1203.1
3.20	0.1260	18	49	R1203.2
3.30	0.1299	18	49	R1203.3
3.40	0.1339	20	52	R1203.4
3.50	0.1378	20	52	R1203.5
3.60	0.1417	20	52	R1203.6
3.70	0.1457	20	52	R1203.7
3.80	0.1496	22	55	R1203.8
3.90	0.1535	22	55	R1203.9
4.00	0.1575	22	55	R1204.0
4.10	0.1614	22	55	R1204.1
4.20	0.1654	22	55	R1204.2
4.30	0.1693	24	58	R1204.3
4.40	0.1732	24	58	R1204.4
4.50	0.1772	24	58	R1204.5
4.60	0.1811	24	58	R1204.6
4.70	0.1850	24	58	R1204.7

d_1 Øh$_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	R120
4.80	0.1890	26	62	R1204.8
4.90	0.1929	26	62	R1204.9
5.00	0.1969	26	62	R1205.0
5.10	0.2008	26	62	R1205.1
5.20	0.2047	26	62	R1205.2
5.30	0.2087	26	62	R1205.3
5.40	0.2126	28	66	R1205.4
5.50	0.2165	28	66	R1205.5
5.60	0.2205	28	66	R1205.6
5.70	0.2244	28	66	R1205.7
5.80	0.2283	28	66	R1205.8
5.90	0.2323	28	66	R1205.9
6.00	0.2362	28	66	R1206.0
6.10	0.2402	31	70	R1206.1
6.20	0.2441	31	70	R1206.2
6.30	0.2480	31	70	R1206.3
6.40	0.2520	31	70	R1206.4
6.50	0.2559	31	70	R1206.5
6.60	0.2598	31	70	R1206.6
6.70	0.2638	31	70	R1206.7
6.80	0.2677	34	74	R1206.8
6.90	0.2717	34	74	R1206.9
7.00	0.2756	34	74	R1207.0
7.10	0.2795	34	74	R1207.1
7.20	0.2835	34	74	R1207.2
7.30	0.2874	34	74	R1207.3
7.40	0.2913	34	74	R1207.4
7.50	0.2953	34	74	R1207.5
7.60	0.2992	37	79	R1207.6
7.70	0.3031	37	79	R1207.7
7.80	0.3071	37	79	R1207.8
7.90	0.3110	37	79	R1207.9
8.00	0.3150	37	79	R1208.0
8.10	0.3189	37	79	R1208.1
8.20	0.3228	37	79	R1208.2
8.30	0.3268	37	79	R1208.3
8.40	0.3307	37	79	R1208.4
8.50	0.3346	37	79	R1208.5
8.60	0.3386	40	84	R1208.6
8.70	0.3425	40	84	R1208.7
8.80	0.3465	40	84	R1208.8
8.90	0.3504	40	84	R1208.9
9.00	0.3543	40	84	R1209.0
9.10	0.3583	40	84	R1209.1
9.20	0.3622	40	84	R1209.2
9.30	0.3661	40	84	R1209.3
9.40	0.3701	40	84	R1209.4
9.50	0.3740	40	84	R1209.5
9.60	0.3780	43	89	R1209.6
9.70	0.3819	43	89	R1209.7
9.80	0.3858	43	89	R1209.8
9.90	0.3898	43	89	R1209.9
10.00	0.3937	43	89	R12010.0
10.20	0.4016	43	89	R12010.2
10.50	0.4134	43	89	R12010.5
11.00	0.4331	47	95	R12011.0
11.50	0.4528	47	95	R12011.5
12.00	0.4724	51	102	R12012.0

DORMER

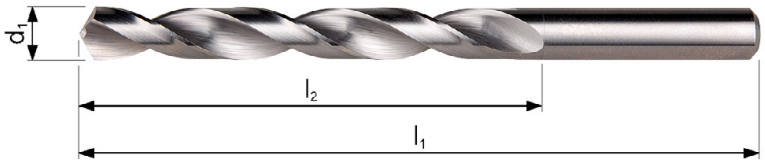
R100

- Korta Borrar
- Lyhyet porat
- Korte Bor
- Korte Bor

R100 ▪ 6.2 6.3 8.1 8.2

R100 • 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 3.1 3.2 3.3 3.4 7.1 7.2 7.3 7.4

R100 HM DIN 338 4XD 120° N



R100



1.00 - 14.00

d_1 $\emptyset h_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	R100
1.00	0.0394	12	34	R1001.0
1.10	0.0433	14	36	R1001.1
1.20	0.0472	16	38	R1001.2
1.30	0.0512	16	38	R1001.3
1.40	0.0551	18	40	R1001.4
1.50	0.0591	18	40	R1001.5
1.60	0.0630	20	43	R1001.6
1.70	0.0669	20	43	R1001.7
1.80	0.0709	22	46	R1001.8
1.90	0.0748	22	46	R1001.9
2.00	0.0787	24	49	R1002.0
2.10	0.0827	24	49	R1002.1
2.20	0.0866	27	53	R1002.2
2.30	0.0906	27	53	R1002.3
2.40	0.0945	30	57	R1002.4
2.50	0.0984	30	57	R1002.5
2.60	0.1024	30	57	R1002.6
2.70	0.1063	33	61	R1002.7
2.80	0.1102	33	61	R1002.8
2.90	0.1142	33	61	R1002.9
3.00	0.1181	33	61	R1003.0
3.10	0.1220	36	65	R1003.1
3.20	0.1260	36	65	R1003.2
3.30	0.1299	36	65	R1003.3
3.40	0.1339	39	70	R1003.4
3.50	0.1378	39	70	R1003.5
3.60	0.1417	39	70	R1003.6
3.70	0.1457	39	70	R1003.7
3.80	0.1496	43	75	R1003.8
3.90	0.1535	43	75	R1003.9
4.00	0.1575	43	75	R1004.0
4.10	0.1614	43	75	R1004.1
4.20	0.1654	43	75	R1004.2
4.30	0.1693	47	80	R1004.3
4.40	0.1732	47	80	R1004.4
4.50	0.1772	47	80	R1004.5
4.60	0.1811	47	80	R1004.6
4.70	0.1850	47	80	R1004.7

d_1 Øh$_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	R100
4.80	0.1890	52	86	R1004.8
4.90	0.1929	52	86	R1004.9
5.00	0.1969	52	86	R1005.0
5.10	0.2008	52	86	R1005.1
5.20	0.2047	52	86	R1005.2
5.30	0.2087	52	86	R1005.3
5.40	0.2126	57	93	R1005.4
5.50	0.2165	57	93	R1005.5
5.60	0.2205	57	93	R1005.6
5.70	0.2244	57	93	R1005.7
5.80	0.2283	57	93	R1005.8
5.90	0.2323	57	93	R1005.9
6.00	0.2362	57	93	R1006.0
6.10	0.2402	63	101	R1006.1
6.20	0.2441	63	101	R1006.2
6.30	0.2480	63	101	R1006.3
6.40	0.2520	63	101	R1006.4
6.50	0.2559	63	101	R1006.5
6.60	0.2598	63	101	R1006.6
6.70	0.2638	63	101	R1006.7
6.80	0.2677	69	109	R1006.8
6.90	0.2717	69	109	R1006.9
7.00	0.2756	69	109	R1007.0
7.10	0.2795	69	109	R1007.1
7.20	0.2835	69	109	R1007.2
7.30	0.2874	69	109	R1007.3
7.40	0.2913	69	109	R1007.4
7.50	0.2953	69	109	R1007.5
7.60	0.2992	75	117	R1007.6
7.70	0.3031	75	117	R1007.7
7.80	0.3071	75	117	R1007.8
7.90	0.3110	75	117	R1007.9
8.00	0.3150	75	117	R1008.0
8.10	0.3189	75	117	R1008.1
8.20	0.3228	75	117	R1008.2
8.30	0.3268	75	117	R1008.3
8.40	0.3307	75	117	R1008.4
8.50	0.3346	75	117	R1008.5
8.60	0.3386	81	125	R1008.6
8.70	0.3425	81	125	R1008.7
8.80	0.3465	81	125	R1008.8
8.90	0.3504	81	125	R1008.9
9.00	0.3543	81	125	R1009.0
9.10	0.3583	81	125	R1009.1
9.20	0.3622	81	125	R1009.2
9.30	0.3661	81	125	R1009.3
9.40	0.3701	81	125	R1009.4
9.50	0.3740	81	125	R1009.5
9.60	0.3780	87	133	R1009.6
9.70	0.3819	87	133	R1009.7
9.80	0.3858	87	133	R1009.8
9.90	0.3898	87	133	R1009.9
10.00	0.3937	87	133	R10010.0
10.20	0.4016	87	133	R10010.2
10.50	0.4134	87	133	R10010.5
11.00	0.4331	94	142	R10011.0
11.50	0.4528	94	142	R10011.5
12.00	0.4724	101	151	R10012.0
13.00	0.5118	101	151	R10013.0
14.00	0.5512	108	160	R10014.0

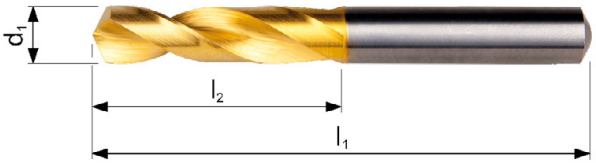
DORMER

R520

- CDX Extra korta solida HM-borrar
- CDX Porat, erittäin lyhyet
- CDX, ekstra korte HM-bor
- CDX Ekstra korte Bor.

R520																		
	▪	1.1	1.2	1.3	1.4	1.5	1.6	3.1	3.2	3.3	3.4	5.1	7.1	7.2	7.3	7.4	8.1	8.2
	•	1.7	1.8	2.1	4.1	4.2	4.3											

R520	HM	DIN 6539	2.5XD	130°	TiN		N			



R520



CDX

3.00 - 16.50

d_1 Øh$_7$ Inch	d_1 Øh$_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	R520
	3.00	0.1181	16	46	R5203.0
	3.10	0.1220	18	49	R5203.1
1/8	3.18	0.1252	18	49	R5201/8
	3.20	0.1260	18	49	R5203.2
	3.30	0.1299	18	49	R5203.3
	3.40	0.1339	20	52	R5203.4
	3.50	0.1378	20	52	R5203.5
	3.60	0.1417	20	52	R5203.6
	3.70	0.1457	20	52	R5203.7
	3.80	0.1496	22	55	R5203.8
	3.90	0.1535	22	55	R5203.9
	4.00	0.1575	22	55	R5204.0
	4.10	0.1614	22	55	R5204.1
	4.20	0.1654	22	55	R5204.2
	4.30	0.1693	24	58	R5204.3
	4.40	0.1732	24	58	R5204.4
	4.50	0.1772	24	58	R5204.5
	4.60	0.1811	24	58	R5204.6
	4.70	0.1850	24	58	R5204.7
	4.80	0.1890	26	62	R5204.8
	4.90	0.1929	26	62	R5204.9
	5.00	0.1969	26	62	R5205.0
	5.10	0.2008	26	62	R5205.1
	5.20	0.2047	26	62	R5205.2
	5.30	0.2087	26	62	R5205.3
	5.40	0.2126	28	66	R5205.4
	5.50	0.2165	28	66	R5205.5
	5.60	0.2205	28	66	R5205.6
	5.70	0.2244	28	66	R5205.7
	5.80	0.2283	28	66	R5205.8
	5.90	0.2323	28	66	R5205.9
	6.00	0.2362	28	66	R5206.0
	6.10	0.2402	31	70	R5206.1
	6.20	0.2441	31	70	R5206.2
	6.30	0.2480	31	70	R5206.3
1/4	6.35	0.2500	31	70	R5201/4
	6.40	0.2520	31	70	R5206.4
	6.50	0.2559	31	70	R5206.5

d_1 Øh$_7$ Inch	d_1 Øh$_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	R520
	6.60	0.2598	31	70	R5206.6
	6.70	0.2638	31	70	R5206.7
	6.80	0.2677	34	74	R5206.8
	6.90	0.2717	34	74	R5206.9
	7.00	0.2756	34	74	R5207.0
	7.10	0.2795	34	74	R5207.1
	7.20	0.2835	34	74	R5207.2
	7.30	0.2874	34	74	R5207.3
	7.40	0.2913	34	74	R5207.4
	7.50	0.2953	34	74	R5207.5
	7.60	0.2992	37	79	R5207.6
	7.70	0.3031	37	79	R5207.7
	7.80	0.3071	37	79	R5207.8
	7.90	0.3110	37	79	R5207.9
5/16	7.94	0.3126	37	79	R5205/16
	8.00	0.3150	37	79	R5208.0
	8.10	0.3189	37	79	R5208.1
	8.20	0.3228	37	79	R5208.2
	8.30	0.3268	37	79	R5208.3
	8.40	0.3307	37	79	R5208.4
	8.50	0.3346	37	79	R5208.5
	8.60	0.3386	40	84	R5208.6
	8.70	0.3425	40	84	R5208.7
	8.80	0.3465	40	84	R5208.8
	8.90	0.3504	40	84	R5208.9
	9.00	0.3543	40	84	R5209.0
	9.10	0.3583	40	84	R5209.1
	9.20	0.3622	40	84	R5209.2
	9.30	0.3661	40	84	R5209.3
	9.40	0.3701	40	84	R5209.4
	9.50	0.3740	40	84	R5209.5
3/8	9.52	0.3748	43	89	R5203/8
	9.60	0.3780	43	89	R5209.6
	9.70	0.3819	43	89	R5209.7
	9.80	0.3858	43	89	R5209.8
	9.90	0.3898	43	89	R5209.9
	10.00	0.3937	43	89	R52010.0
	10.10	0.3976	43	89	R52010.1
	10.20	0.4016	43	89	R52010.2
	10.30	0.4055	43	89	R52010.3
	10.40	0.4094	43	89	R52010.4
	10.50	0.4134	43	89	R52010.5
	11.00	0.4331	47	95	R52011.0
7/16	11.11	0.4374	47	95	R5207/16
	11.20	0.4409	47	95	R52011.2
	11.50	0.4528	47	95	R52011.5
	12.00	0.4724	51	102	R52012.0
	12.50	0.4921	51	102	R52012.5
1/2	12.70	0.5000	51	102	R5201/2
	13.00	0.5118	51	102	R52013.0
	13.50	0.5315	54	107	R52013.5
	14.00	0.5512	54	107	R52014.0
	14.20	0.5591	56	111	R52014.2
	14.25	0.5610	56	111	R52014.25
	14.50	0.5709	56	111	R52014.5
	15.00	0.5906	56	111	R52015.0
	15.10	0.5945	58	115	R52015.1
5/8	15.88	0.6252	58	115	R5205/8
	16.00	0.6299	58	115	R52016.0
	16.50	0.6496	60	119	R52016.5

DORMER

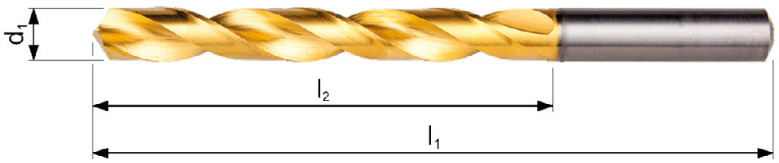
R510

- CDX Korta solida HM-borrar
- CDX Porat, pitkät
- CDX Korte Bor
- CDX Korte Bor

R510 ▪ 1.1 1.2 1.3 1.4 1.5 1.6 3.1 3.2 3.3 3.4 7.1 7.2 7.3 7.4 8.1 8.2

R510 • 1.7 1.8 2.1 4.1 5.1

R510 HM | DIN 338 | 4XD | 130° | TiN | N



R510



CDX

3.00 - 14.25

d_1 Øh$_7$ Inch	d_1 Øh$_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	R510
	3.00	0.1181	33	61	R5103.0
1/8	3.18	0.1252	36	65	R5101/8
	3.20	0.1260	36	65	R5103.2
	3.30	0.1299	36	65	R5103.3
	3.40	0.1339	39	70	R5103.4
	3.50	0.1378	39	70	R5103.5
	3.70	0.1457	39	70	R5103.7
	3.90	0.1535	43	75	R5103.9
	4.00	0.1575	43	75	R5104.0
	4.10	0.1614	43	75	R5104.1
	4.20	0.1654	43	75	R5104.2
	4.30	0.1693	47	80	R5104.3
	4.50	0.1772	47	80	R5104.5
	4.60	0.1811	47	80	R5104.6
	4.70	0.1850	47	80	R5104.7
3/16	4.76	0.1874	52	86	R5103/16
	4.90	0.1929	52	86	R5104.9
	5.00	0.1969	52	86	R5105.0
	5.10	0.2008	52	86	R5105.1
	5.50	0.2165	57	93	R5105.5
	5.60	0.2205	57	93	R5105.6
	5.70	0.2244	57	93	R5105.7
	6.00	0.2362	57	93	R5106.0
1/4	6.35	0.2500	63	101	R5101/4
	6.50	0.2559	63	101	R5106.5
	6.60	0.2598	63	101	R5106.6
	6.80	0.2677	69	109	R5106.8
	6.90	0.2717	69	109	R5106.9
	7.00	0.2756	69	109	R5107.0
	7.30	0.2874	69	109	R5107.3
	7.40	0.2913	69	109	R5107.4
	7.50	0.2953	69	109	R5107.5
	7.80	0.3071	75	117	R5107.8
	7.90	0.3110	75	117	R5107.9
5/16	7.94	0.3126	75	117	R5105/16
	8.00	0.3150	75	117	R5108.0

d_1 $\emptyset h_7$ Inch	d_1 $\emptyset h_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	R510
	8.50	0.3346	75	117	R5108.5
	8.70	0.3425	81	125	R5108.7
	8.80	0.3465	81	125	R5108.8
	9.00	0.3543	81	125	R5109.0
	9.20	0.3622	81	125	R5109.2
	9.30	0.3661	81	125	R5109.3
	9.40	0.3701	81	125	R5109.4
	9.50	0.3740	81	125	R5109.5
3/8	9.52	0.3748	87	133	R5103/8
	9.90	0.3898	87	133	R5109.9
	10.00	0.3937	87	133	R51010.0
	10.20	0.4016	87	133	R51010.2
	10.30	0.4055	87	133	R51010.3
	10.40	0.4094	87	133	R51010.4
	10.50	0.4134	87	133	R51010.5
	10.80	0.4252	94	142	R51010.8
	11.00	0.4331	94	142	R51011.0
7/16	11.11	0.4374	94	142	R5107/16
	11.20	0.4409	94	142	R51011.2
	11.50	0.4528	94	142	R51011.5
	12.00	0.4724	101	151	R51012.0
1/2	12.70	0.5000	101	151	R5101/2
	13.00	0.5118	101	151	R51013.0
	14.00	0.5512	108	160	R51014.0
	14.25	0.5610	114	169	R51014.25

DORMER

R458

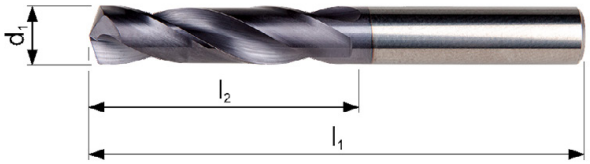
- Force-X Extra korta Borrar 3XD
- Force-X porat, lyhyet 3XD
- Force-X kort bor 3XD
- Force-X kort bor 3XD

R457

- Force-X borrar - invändig kylkanal 3XD
- Force-X porat, jäähdytyskanavat 3XD
- Force-X bor m/kjølekanal 3XD
- Force-X bor Med invendig kølekanal 3XD

R458	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.1	6.2	6.3	7.1	7.2
		7.3	7.4																		
	•	2.4	4.1	4.2	4.3	6.4															
R457	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	6.1	6.2
		6.3	6.4	7.1	7.2	7.3	7.4														

R458	HM	DIN 6537 K	3XD	140°	TiAlN	DIN 6535HA	CTW		
R457	HM	DIN 6537 K	3XD	140°	TiAlN	DIN 6535HA	CTW		





FORCE X

3.00 - 20.00



FORCE X

3.00 - 20.00

d_1 Ø "/Nr.	d_1 Øm$_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh$_6$ mm	R458	R457
	3.00	0.1181	20	62	36	6	R4583.0	R4573.0
	3.10	0.1220	20	62	36	6	R4583.1	R4573.1
1/8	3.18	0.1252	20	62	36	6	R4581/8	R4571/8
	3.20	0.1260	20	62	36	6	R4583.2	R4573.2
30	3.26	0.1283	20	62	36	6	R458N30	R457N30
	3.30	0.1299	20	62	36	6	R4583.3	R4573.3
	3.40	0.1339	20	62	36	6	R4583.4	R4573.4
29	3.45	0.1358	20	62	36	6	R458N29	R457N29
	3.50	0.1378	20	62	36	6	R4583.5	R4573.5
28	3.57	0.1406	20	62	36	6	R458N28	R457N28
9/64	3.57	0.1406	20	62	36	6	R4589/64	R4579/64
	3.60	0.1417	20	62	36	6	R4583.6	R4573.6
27	3.66	0.1441	20	62	36	6	R458N27	R457N27
	3.70	0.1457	20	62	36	6	R4583.7	R4573.7
	3.73	0.1469	24	66	36	6	R4583.73	
26	3.73	0.1469	24	66	36	6	R458N26	R457N26
	3.80	0.1496	24	66	36	6	R4583.8	R4573.8
25	3.80	0.1496	24	66	36	6	R458N25	R457N25
24	3.86	0.1520	24	66	36	6	R458N24	R457N24
	3.90	0.1535	24	66	36	6	R4583.9	R4573.9
23	3.91	0.1539	24	66	36	6	R458N23	R457N23
5/32	3.97	0.1563	24	66	36	6	R4585/32	R4575/32
22	3.99	0.1571	24	66	36	6	R458N22	R457N22
	4.00	0.1575	24	66	36	6	R4584.0	R4574.0

d_1 Ø “/Nr.	d_1 Øm_7 mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh_6 mm	R458	R457
21	4.04	0.1591	24	66	36	6	R458N21	R457N21
	4.05	0.1594	24	66	36	6		R4574.05
20	4.09	0.1610	24	66	36	6	R458N20	R457N20
	4.10	0.1614	24	66	36	6	R4584.1	R4574.1
	4.20	0.1654	24	66	36	6	R4584.2	R4574.2
19	4.22	0.1661	24	66	36	6	R458N19	R457N19
	4.30	0.1693	24	66	36	6	R4584.3	R4574.3
18	4.31	0.1697	24	66	36	6	R458N18	R457N18
11/64	4.37	0.1720	24	66	36	6	R45811/64	R45711/64
17	4.39	0.1728	24	66	36	6	R458N17	R457N17
	4.40	0.1732	24	66	36	6	R4584.4	R4574.4
16	4.50	0.1772	24	66	36	6	R458N16	R457N16
	4.50	0.1772	24	66	36	6	R4584.5	R4574.5
15	4.57	0.1799	24	66	36	6	R458N15	R457N15
	4.60	0.1811	24	66	36	6	R4584.6	R4574.6
14	4.62	0.1819	24	66	36	6	R458N14	R457N14
	4.70	0.1850	24	66	36	6	R4584.7	R4574.7
13	4.70	0.1850	24	66	36	6	R458N13	R457N13
3/16	4.76	0.1874	28	66	36	6	R4583/16	R4573/16
	4.80	0.1890	28	66	36	6	R4584.8	R4574.8
12	4.80	0.1890	28	66	36	6	R458N12	R457N12
11	4.85	0.1909	28	66	36	6	R458N11	R457N11
	4.90	0.1929	28	66	36	6	R4584.9	R4574.9
10	4.92	0.1937	28	66	36	6	R458N10	R457N10
9	4.98	0.1961	28	66	36	6	R458N9	R457N9
	5.00	0.1969	28	66	36	6	R4585.0	R4575.0
	5.05	0.1988	28	66	36	6		R4575.05
8	5.06	0.1992	28	66	36	6	R458N8	R457N8
	5.10	0.2008	28	66	36	6	R4585.1	R4575.1
7	5.11	0.2012	28	66	36	6	R458N7	R457N7
13/64	5.16	0.2031	28	66	36	6	R45813/64	R45713/64
6	5.18	0.2039	28	66	36	6	R458N6	R457N6
	5.20	0.2047	28	66	36	6	R4585.2	R4575.2
5	5.22	0.2055	28	66	36	6	R458N5	R457N5
	5.30	0.2087	28	66	36	6	R4585.3	R4575.3
4	5.31	0.2091	28	66	36	6	R458N4	R457N4
	5.40	0.2126	28	66	36	6	R4585.4	R4575.4
3	5.41	0.2130	28	66	36	6	R458N3	R457N3
	5.50	0.2165	28	66	36	6	R4585.5	R4575.5
7/32	5.56	0.2189	28	66	36	6	R4587/32	R4577/32
	5.60	0.2205	28	66	36	6	R4585.6	R4575.6
2	5.61	0.2209	28	66	36	6	R458N2	R457N2
	5.70	0.2244	28	66	36	6	R4585.7	R4575.7
1	5.79	0.2280	28	66	36	6	R458N1	R457N1
	5.80	0.2283	28	66	36	6	R4585.8	R4575.8
	5.90	0.2323	28	66	36	6	R4585.9	R4575.9
A	5.94	0.2339	28	66	36	6	R458A	R457A
15/64	5.95	0.2343	28	66	36	6	R45815/64	R45715/64
	6.00	0.2362	28	66	36	6	R4586.0	R4576.0
B	6.03	0.2374	34	79	36	8	R458B	R457B
	6.05	0.2382	34	79	36	8		R4576.05
	6.10	0.2402	34	79	36	8	R4586.1	R4576.1
C	6.15	0.2421	34	79	36	8	R458C	R457C
	6.20	0.2441	34	79	36	8	R4586.2	R4576.2
D	6.25	0.2461	34	79	36	8	R458D	R457D
	6.30	0.2480	34	79	36	8	R4586.3	R4576.3
1/4	6.35	0.2500	34	79	36	8	R4581/4	R4571/4
E	6.35	0.2500	34	79	36	8	R458E	R457E
	6.40	0.2520	34	79	36	8	R4586.4	R4576.4
	6.50	0.2559	34	79	36	8	R4586.5	R4576.5
F	6.53	0.2571	34	79	36	8	R458F	R457F
	6.60	0.2598	34	79	36	8	R4586.6	R4576.6
G	6.63	0.2610	34	79	36	8	R458G	R457G
	6.70	0.2638	34	79	36	8	R4586.7	R4576.7
17/64	6.75	0.2657	34	79	36	8	R45817/64	R45717/64
H	6.76	0.2661	34	79	36	8	R458H	R457H
	6.80	0.2677	34	79	36	8	R4586.8	R4576.8
	6.90	0.2717	34	79	36	8	R4586.9	R4576.9
I	6.91	0.2720	34	79	36	8	R458I	R457I
	7.00	0.2756	34	79	36	8	R4587.0	R4577.0

DORMER

d_1 Ø "/Nr.	d_1 Øm_7 mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh_6 mm	R458	R457
J	7.04	0.2772	41	79	36	8	R458J	R457J
	7.10	0.2795	41	79	36	8	R4587.1	R4577.1
K	7.14	0.2811	41	79	36	8	R458K	R457K
9/32	7.14	0.2811	41	79	36	8	R4589/32	R4579/32
	7.20	0.2835	41	79	36	8	R4587.2	R4577.2
	7.30	0.2874	41	79	36	8	R4587.3	R4577.3
L	7.37	0.2902	41	79	36	8	R458L	R457L
	7.40	0.2913	41	79	36	8	R4587.4	R4577.4
M	7.49	0.2949	41	79	36	8	R458M	R457M
	7.50	0.2953	41	79	36	8	R4587.5	R4577.5
19/64	7.54	0.2969	41	79	36	8	R45819/64	R45719/64
	7.60	0.2992	41	79	36	8	R4587.6	R4577.6
N	7.67	0.3020	41	79	36	8	R458N	R457N
	7.70	0.3031	41	79	36	8	R4587.7	R4577.7
	7.80	0.3071	41	79	36	8	R4587.8	R4577.8
	7.90	0.3110	41	79	36	8	R4587.9	R4577.9
5/16	7.94	0.3126	41	79	36	8	R4585/16	R4575/16
	8.00	0.3150	41	79	36	8	R4588.0	R4578.0
O	8.03	0.3161	47	89	40	10	R458O	R457O
	8.05	0.3169	47	89	40	10		R4578.05
	8.10	0.3189	47	89	40	10	R4588.1	R4578.1
	8.20	0.3228	47	89	40	10	R4588.2	R4578.2
P	8.20	0.3228	47	89	40	10	R458P	R457P
	8.30	0.3268	47	89	40	10	R4588.3	R4578.3
21/64	8.33	0.3280	47	89	40	10	R45821/64	R45721/64
	8.40	0.3307	47	89	40	10	R4588.4	R4578.4
Q	8.43	0.3319	47	89	40	10	R458Q	R457Q
	8.50	0.3346	47	89	40	10	R4588.5	R4578.5
	8.60	0.3386	47	89	40	10	R4588.6	R4578.6
R	8.61	0.3390	47	89	40	10	R458R	R457R
	8.70	0.3425	47	89	40	10	R4588.7	R4578.7
11/32	8.73	0.3437	47	89	40	10	R45811/32	R45711/32
	8.80	0.3465	47	89	40	10	R4588.8	R4578.8
S	8.84	0.3480	47	89	40	10	R458S	R457S
	8.90	0.3504	47	89	40	10	R4588.9	R4578.9
	9.00	0.3543	47	89	40	10	R4589.0	R4579.0
T	9.09	0.3579	47	89	40	10	R458T	R457T
	9.10	0.3583	47	89	40	10	R4589.1	R4579.1
23/64	9.13	0.3594	47	89	40	10	R45823/64	R45723/64
	9.20	0.3622	47	89	40	10	R4589.2	R4579.2
	9.30	0.3661	47	89	40	10	R4589.3	R4579.3
U	9.35	0.3681	47	89	40	10	R458U	R457U
	9.40	0.3701	47	89	40	10	R4589.4	R4579.4
	9.50	0.3740	47	89	40	10	R4589.5	R4579.5
3/8	9.52	0.3748	47	89	40	10	R4583/8	R4573/8
V	9.58	0.3772	47	89	40	10	R458V	R457V
	9.60	0.3780	47	89	40	10	R4589.6	R4579.6
	9.70	0.3819	47	89	40	10	R4589.7	R4579.7
	9.80	0.3858	47	89	40	10	R4589.8	R4579.8
W	9.80	0.3858	47	89	40	10	R458W	R457W
	9.90	0.3898	47	89	40	10	R4589.9	R4579.9
25/64	9.92	0.3906	47	89	40	10	R45825/64	R45725/64
	10.00	0.3937	47	89	40	10	R45810.0	R45710.0
	10.05	0.3957	55	102	45	12		R45710.05
X	10.08	0.3969	55	102	45	12	R458X	R457X
	10.10	0.3976	55	102	45	12	R45810.1	R45710.1
	10.20	0.4016	55	102	45	12	R45810.2	R45710.2
Y	10.26	0.4039	55	102	45	12	R458Y	R457Y
	10.30	0.4055	55	102	45	12	R45810.3	R45710.3
13/32	10.32	0.4063	55	102	45	12	R45813/32	R45713/32
	10.40	0.4094	55	102	45	12	R45810.4	R45710.4
Z	10.49	0.4130	55	102	45	12	R458Z	R457Z
	10.50	0.4134	55	102	45	12	R45810.5	R45710.5
	10.60	0.4173	55	102	45	12	R45810.6	R45710.6
	10.70	0.4213	55	102	45	12	R45810.7	
27/64	10.72	0.4220	55	102	45	12	R45827/64	R45727/64
	10.80	0.4252	55	102	45	12	R45810.8	R45710.8
	10.90	0.4291	55	102	45	12	R45810.9	
	11.00	0.4331	55	102	45	12	R45811.0	R45711.0
	11.10	0.4370	55	102	45	12	R45811.1	

d_1 Ø "/Nr.	d_1 Øm_7 mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh_6 mm	R458	R457
7/16	11.11	0.4374	55	102	45	12	R4587/16	R4577/16
	11.20	0.4409	55	102	45	12	R45811.2	R45711.2
	11.30	0.4449	55	102	45	12	R45811.3	R45711.3
	11.40	0.4488	55	102	45	12	R45811.4	R45711.4
	11.50	0.4528	55	102	45	12	R45811.5	R45711.5
29/64	11.51	0.4531	55	102	45	12	R45829/64	R45729/64
	11.60	0.4567	55	102	45	12	R45811.6	R45711.6
	11.70	0.4606	55	102	45	12	R45811.7	
	11.80	0.4646	55	102	45	12	R45811.8	R45711.8
	11.90	0.4685	55	102	45	12	R45811.9	
15/32	11.91	0.4689	55	102	45	12	R45815/32	R45715/32
	12.00	0.4724	55	102	45	12	R45812.0	R45712.0
	12.05	0.4744	60	107	45	14		R45712.05
	12.10	0.4764	60	107	45	14	R45812.1	R45712.1
	12.20	0.4803	60	107	45	14	R45812.2	R45712.2
31/64	12.30	0.4843	60	107	45	14	R45831/64	R45731/64
	12.50	0.4921	60	107	45	14	R45812.5	R45712.5
	12.70	0.5000	60	107	45	14	R45812.7	R45712.7
1/2	12.70	0.5000	60	107	45	14	R4581/2	R4571/2
	12.80	0.5039	60	107	45	14	R45812.8	R45712.8
	13.00	0.5118	60	107	45	14	R45813.0	R45713.0
33/64	13.10	0.5157	60	107	45	14	R45833/64	R45733/64
	13.30	0.5236	60	107	45	14	R45813.3	R45713.3
17/32	13.49	0.5311	60	107	45	14	R45817/32	R45717/32
	13.50	0.5315	60	107	45	14	R45813.5	R45713.5
	13.80	0.5433	60	107	45	14	R45813.8	R45713.8
35/64	13.89	0.5469	60	107	45	14	R45835/64	R45735/64
	14.00	0.5512	60	107	45	14	R45814.0	R45714.0
	14.25	0.5610	65	115	48	16	R45814.25	R45714.25
9/16	14.29	0.5626	65	115	48	16	R4589/16	R4579/16
	14.50	0.5709	65	115	48	16	R45814.5	R45714.5
37/64	14.68	0.5780	65	115	48	16	R45837/64	R45737/64
	14.80	0.5827	65	115	48	16	R45814.8	R45714.8
	15.00	0.5906	65	115	48	16	R45815.0	R45715.0
19/32	15.08	0.5937	65	115	48	16	R45819/32	R45719/32
	15.10	0.5945	65	115	48	16	R45815.1	R45715.1
	15.30	0.6024	65	115	48	16	R45815.3	R45715.3
39/64	15.48	0.6094	65	115	48	16	R45839/64	R45739/64
	15.50	0.6102	65	115	48	16	R45815.5	R45715.5
	15.80	0.6220	65	115	48	16	R45815.8	R45715.8
5/8	15.88	0.6252	65	115	48	16	R4585/8	R4575/8
	16.00	0.6299	65	115	48	16	R45816.0	R45716.0
41/64	16.27	0.6406	73	123	48	18	R45841/64	R45741/64
	16.50	0.6496	73	123	48	18	R45816.5	R45716.5
21/32	16.67	0.6563	73	123	48	18	R45821/32	R45721/32
	17.00	0.6693	73	123	48	18	R45817.0	R45717.0
43/64	17.07	0.6720	73	123	48	18	R45843/64	R45743/64
11/16	17.46	0.6874	73	123	48	18	R45811/16	R45711/16
	17.50	0.6890	73	123	48	18	R45817.5	R45717.5
	17.80	0.7008	73	123	48	18	R45817.8	
45/64	17.86	0.7031	73	123	48	18	R45845/64	R45745/64
	18.00	0.7087	73	123	48	18	R45818.0	R45718.0
23/32	18.26	0.7189	79	131	50	20	R45823/32	R45723/32
	18.50	0.7283	79	131	50	20	R45818.5	R45718.5
47/64	18.65	0.7343	79	131	50	20	R45847/64	R45747/64
	18.80	0.7402	79	131	50	20		R45718.8
	19.00	0.7480	79	131	50	20	R45819.0	R45719.0
3/4	19.05	0.7500	79	131	50	20	R4583/4	R4573/4
	19.50	0.7677	79	131	50	20	R45819.5	R45719.5
	19.80	0.7795	79	131	50	20	R45819.8	R45719.8
	20.00	0.7874	79	131	50	20	R45820.0	R45720.0

DORMER

R454

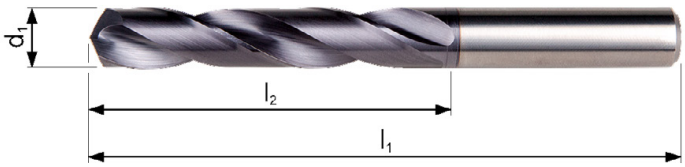
- Force-X Långa Borrar 5XD
- Force-X porat, pitkät 5XD
- Force-X standard bor 5XD
- Force-X Lange bor 5XD

R453

- Force-X borrar - invändig kylkanal 5XD
- Force-X porat, jäähdytyskanavat 5XD
- Force-X bor m/kjølekanal 5XD
- Force-X bor Med invendig kølekanal 5XD

R454	▪	1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 2.1 2.2 2.3 3.1 3.2 3.3 3.4 6.1 6.2 6.3 7.1 7.2 7.3 7.4
	•	2.4 4.1 4.2 4.3 6.4
R453	▪	1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 2.1 2.2 3.1 3.2 3.3 3.4 4.1 4.2 4.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4
	•	2.3 2.4

R454	HM	DIN 6537 L	5XD	140°	TiAlN	DIN 6535HA	CTW™			
R453	HM	DIN 6537 L	5XD	140°	TiAlN	DIN 6535HA	CTW™			





FORCE X

3.00 - 20.00



FORCE X

3.00 - 20.00

d_1 Ø Inch	d_1 Øm_7 mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh_6 mm	R454	R453
	3.00	0.1181	28	66	36	6	R4543.0	R4533.0
	3.10	0.1220	28	66	36	6	R4543.1	R4533.1
1/8	3.18	0.1252	28	66	36	6	R4541/8	R4531/8
	3.20	0.1260	28	66	36	6	R4543.2	R4533.2
30	3.26	0.1283	28	66	36	6	R454N30	R453N30
	3.30	0.1299	28	66	36	6	R4543.3	R4533.3
	3.40	0.1339	28	66	36	6	R4543.4	R4533.4
29	3.45	0.1358	28	66	36	6	R454N29	R453N29
	3.50	0.1378	28	66	36	6	R4543.5	R4533.5
28	3.57	0.1406	28	66	36	6	R454N28	R453N28
9/64	3.57	0.1406	28	66	36	6	R4549/64	R4539/64
	3.60	0.1417	28	66	36	6	R4543.6	R4533.6
27	3.66	0.1441	28	66	36	6	R454N27	R453N27
	3.70	0.1457	28	66	36	6	R4543.7	R4533.7
26	3.73	0.1469	36	74	36	6	R454N26	R453N26
	3.80	0.1496	36	74	36	6	R4543.8	R4533.8
25	3.80	0.1496	36	74	36	6	R454N25	R453N25
24	3.86	0.1520	36	74	36	6	R454N24	R453N24
	3.90	0.1535	36	74	36	6	R4543.9	R4533.9
23	3.91	0.1539	36	74	36	6	R454N23	R453N23
5/32	3.97	0.1563	36	74	36	6	R4545/32	R4535/32
22	3.99	0.1571	36	74	36	6	R454N22	R453N22

d_1 Ø Inch	d_1 Øm_7 mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh_6 mm	R454	R453
	4.00	0.1575	36	74	36	6	R4544.0	R4534.0
21	4.04	0.1591	36	74	36	6	R454N21	R453N21
	4.05	0.1594	36	74	36	6		R4534.05
20	4.09	0.1610	36	74	36	6	R454N20	R453N20
	4.10	0.1614	36	74	36	6	R4544.1	R4534.1
	4.20	0.1654	36	74	36	6	R4544.2	R4534.2
19	4.22	0.1661	36	74	36	6	R454N19	R453N19
	4.30	0.1693	36	74	36	6	R4544.3	R4534.3
18	4.31	0.1697	36	74	36	6	R454N18	R453N18
11/64	4.37	0.1720	36	74	36	6	R45411/64	R45311/64
17	4.39	0.1728	36	74	36	6	R454N17	R453N17
	4.40	0.1732	36	74	36	6	R4544.4	R4534.4
	4.50	0.1772	36	74	36	6	R4544.5	R4534.5
16	4.50	0.1772	36	74	36	6	R454N16	R453N16
15	4.57	0.1799	36	74	36	6	R454N15	R453N15
	4.60	0.1811	36	74	36	6	R4544.6	R4534.6
14	4.62	0.1819	36	74	36	6	R454N14	R453N14
	4.70	0.1850	36	74	36	6	R4544.7	R4534.7
13	4.70	0.1850	36	74	36	6	R454N13	R453N13
3/16	4.76	0.1874	44	82	36	6	R4543/16	R4533/16
	4.80	0.1890	44	82	36	6	R4544.8	R4534.8
12	4.80	0.1890	44	82	36	6	R454N12	R453N12
11	4.85	0.1909	44	82	36	6	R454N11	R453N11
	4.90	0.1929	44	82	36	6	R4544.9	R4534.9
10	4.92	0.1937	44	82	36	6	R454N10	R453N10
9	4.98	0.1961	44	82	36	6	R454N9	R453N9
	5.00	0.1969	44	82	36	6	R4545.0	R4535.0
	5.05	0.1988	44	82	36	6		R4535.05
8	5.06	0.1992	44	82	36	6	R454N8	R453N8
	5.10	0.2008	44	82	36	6	R4545.1	R4535.1
7	5.11	0.2012	44	82	36	6	R454N7	R453N7
13/64	5.16	0.2031	44	82	36	6	R45413/64	R45313/64
6	5.18	0.2039	44	82	36	6	R454N6	R453N6
	5.20	0.2047	44	82	36	6	R4545.2	R4535.2
5	5.22	0.2055	44	82	36	6	R454N5	R453N5
	5.30	0.2087	44	82	36	6		R4535.3
4	5.31	0.2091	44	82	36	6	R454N4	R453N4
	5.40	0.2126	44	82	36	6		R4535.4
3	5.41	0.2130	44	82	36	6	R454N3	R453N3
	5.50	0.2165	44	82	36	6	R4545.5	R4535.5
7/32	5.56	0.2189	44	82	36	6	R4547/32	R4537/32
	5.60	0.2205	44	82	36	6	R4545.6	R4535.6
2	5.61	0.2209	44	82	36	6	R454N2	R453N2
	5.70	0.2244	44	82	36	6	R4545.7	R4535.7
1	5.79	0.2280	44	82	36	6	R454N1	R453N1
	5.80	0.2283	44	82	36	6	R4545.8	R4535.8
	5.90	0.2323	44	82	36	6	R4545.9	R4535.9
A	5.94	0.2339	44	82	36	6	R454A	R453A
15/64	5.95	0.2343	44	82	36	6	R45415/64	R45315/64
	6.00	0.2362	44	82	36	6	R4546.0	R4536.0
B	6.03	0.2374	53	91	36	8	R454B	R453B
	6.05	0.2382	53	91	36	8		R4536.05
	6.10	0.2402	53	91	36	8	R4546.1	R4536.1
C	6.15	0.2421	53	91	36	8	R454C	R453C
	6.20	0.2441	53	91	36	8	R4546.2	R4536.2
D	6.25	0.2461	53	91	36	8	R454D	R453D
	6.30	0.2480	53	91	36	8	R4546.3	R4536.3
1/4	6.35	0.2500	53	91	36	8	R4541/4	R4531/4
E	6.35	0.2500	53	91	36	8	R454E	R453E
	6.40	0.2520	53	91	36	8	R4546.4	R4536.4
	6.50	0.2559	53	91	36	8	R4546.5	R4536.5
F	6.53	0.2571	53	91	36	8	R454F	R453F
	6.60	0.2598	53	91	36	8	R4546.6	R4536.6
G	6.63	0.2610	53	91	36	8	R454G	R453G
	6.70	0.2638	53	91	36	8	R4546.7	R4536.7
17/64	6.75	0.2657	53	91	36	8	R45417/64	R45317/64
H	6.76	0.2661	53	91	36	8	R454H	R453H
	6.80	0.2677	53	91	36	8	R4546.8	R4536.8
	6.90	0.2717	53	91	36	8	R4546.9	R4536.9

DORMER

d_1 Ø Inch	d_1 Øm_7 mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh_6 mm	R454	R453
I	6.91	0.2720	53	91	36	8	R454I	R453I
	7.00	0.2756	53	91	36	8	R4547.0	R4537.0
J	7.04	0.2772	53	91	36	8	R454J	R453J
	7.10	0.2795	53	91	36	8	R4547.1	R4537.1
K	7.14	0.2811	53	91	36	8	R454K	R453K
9/32	7.14	0.2811	53	91	36	8	R4549/32	R4539/32
	7.20	0.2835	53	91	36	8		R4537.2
	7.30	0.2874	53	91	36	8	R4547.3	R4537.3
L	7.37	0.2902	53	91	36	8	R454L	R453L
	7.40	0.2913	53	91	36	8	R4547.4	R4537.4
M	7.49	0.2949	53	91	36	8	R454M	R453M
	7.50	0.2953	53	91	36	8	R4547.5	R4537.5
19/64	7.54	0.2969	53	91	36	8	R45419/64	R45319/64
	7.60	0.2992	53	91	36	8	R4547.6	R4537.6
N	7.67	0.3020	53	91	36	8	R454N	R453N
	7.70	0.3031	53	91	36	8	R4547.7	R4537.7
	7.80	0.3071	53	91	36	8	R4547.8	R4537.8
	7.90	0.3110	53	91	36	8	R4547.9	R4537.9
5/16	7.94	0.3126	53	91	36	8	R4545/16	R4535/16
	8.00	0.3150	53	91	36	8	R4548.0	R4538.0
O	8.03	0.3161	61	103	40	10	R454O	R453O
	8.05	0.3169	61	103	40	10		R4538.05
	8.10	0.3189	61	103	40	10	R4548.1	R4538.1
	8.20	0.3228	61	103	40	10	R4548.2	R4538.2
P	8.20	0.3228	61	103	40	10	R454P	R453P
	8.30	0.3268	61	103	40	10		R4538.3
21/64	8.33	0.3280	61	103	40	10	R45421/64	R45321/64
	8.40	0.3307	61	103	40	10	R4548.4	R4538.4
Q	8.43	0.3319	61	103	40	10	R454Q	R453Q
	8.50	0.3346	61	103	40	10	R4548.5	R4538.5
	8.60	0.3386	61	103	40	10	R4548.6	R4538.6
R	8.61	0.3390	61	103	40	10	R454R	R453R
	8.70	0.3425	61	103	40	10	R4548.7	R4538.7
11/32	8.73	0.3437	61	103	40	10	R45411/32	R45311/32
	8.80	0.3465	61	103	40	10	R4548.8	R4538.8
S	8.84	0.3480	61	103	40	10	R454S	R453S
	8.90	0.3504	61	103	40	10	R4548.9	R4538.9
	9.00	0.3543	61	103	40	10	R4549.0	R4539.0
T	9.09	0.3579	61	103	40	10	R454T	R453T
	9.10	0.3583	61	103	40	10	R4549.1	R4539.1
23/64	9.13	0.3594	61	103	40	10	R45423/64	R45323/64
	9.20	0.3622	61	103	40	10		R4539.2
	9.30	0.3661	61	103	40	10	R4549.3	R4539.3
U	9.35	0.3681	61	103	40	10	R454U	R453U
	9.40	0.3701	61	103	40	10	R4549.4	R4539.4
	9.50	0.3740	61	103	40	10	R4549.5	R4539.5
3/8	9.52	0.3748	61	103	40	10	R4543/8	R4533/8
V	9.58	0.3772	61	103	40	10	R454V	R453V
	9.60	0.3780	61	103	40	10	R4549.6	R4539.6
	9.70	0.3819	61	103	40	10	R4549.7	R4539.7
	9.80	0.3858	61	103	40	10	R4549.8	R4539.8
W	9.80	0.3858	61	103	40	10	R454W	R453W
	9.90	0.3898	61	103	40	10	R4549.9	R4539.9
25/64	9.92	0.3906	61	103	40	10	R45425/64	R45325/64
	10.00	0.3937	61	103	40	10	R45410.0	R45310.0
	10.05	0.3957	70	118	45	12		R45310.05
X	10.08	0.3969	70	118	45	12	R454X	R453X
	10.10	0.3976	70	118	45	12	R45410.1	R45310.1
	10.20	0.4016	70	118	45	12	R45410.2	R45310.2
Y	10.26	0.4039	70	118	45	12	R454Y	R453Y
	10.30	0.4055	70	118	45	12	R45410.3	R45310.3
13/32	10.32	0.4063	70	118	45	12	R45413/32	R45313/32
	10.40	0.4094	70	118	45	12	R45410.4	R45310.4
Z	10.49	0.4130	70	118	45	12	R454Z	R453Z
	10.50	0.4134	70	118	45	12	R45410.5	R45310.5
	10.60	0.4173	70	118	45	12	R45410.6	R45310.6
27/64	10.72	0.4220	70	118	45	12	R45427/64	R45327/64
	10.80	0.4252	70	118	45	12		R45310.8
	11.00	0.4331	70	118	45	12	R45411.0	R45311.0
7/16	11.11	0.4374	70	118	45	12	R4547/16	R4537/16

d_1 Ø Inch	d_1 Øm_7 mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh_6 mm	R454	R453
	11.20	0.4409	70	118	45	12	R45411.2	R45311.2
	11.30	0.4449	70	118	45	12		R45311.3
	11.40	0.4488	70	118	45	12	R45411.4	R45311.4
	11.50	0.4528	70	118	45	12	R45411.5	R45311.5
29/64	11.51	0.4531	70	118	45	12	R45429/64	R45329/64
	11.60	0.4567	70	118	45	12	R45411.6	R45311.6
	11.80	0.4646	70	118	45	12	R45411.8	R45311.8
15/32	11.91	0.4689	70	118	45	12	R45415/32	R45315/32
	12.00	0.4724	70	118	45	12	R45412.0	R45312.0
	12.05	0.4744	76	124	45	14		R45312.05
	12.10	0.4764	76	124	45	14	R45412.1	
	12.20	0.4803	76	124	45	14	R45412.2	R45312.2
31/64	12.30	0.4843	76	124	45	14	R45431/64	R45331/64
	12.50	0.4921	76	124	45	14	R45412.5	R45312.5
	12.70	0.5000	76	124	45	14	R45412.7	R45312.7
1/2	12.70	0.5000	76	124	45	14	R4541/2	R4531/2
	12.80	0.5039	76	124	45	14	R45412.8	R45312.8
	13.00	0.5118	76	124	45	14	R45413.0	R45313.0
33/64	13.10	0.5157	76	124	45	14	R45433/64	R45333/64
	13.30	0.5236	76	124	45	14		R45313.3
17/32	13.49	0.5311	76	124	45	14	R45417/32	R45317/32
	13.50	0.5315	76	124	45	14	R45413.5	R45313.5
	13.80	0.5433	76	124	45	14	R45413.8	R45313.8
35/64	13.89	0.5469	76	124	45	14	R45435/64	R45335/64
	14.00	0.5512	76	124	45	14	R45414.0	R45314.0
	14.25	0.5610	82	133	48	16	R45414.25	R45314.25
9/16	14.29	0.5626	82	133	48	16	R4549/16	R4539/16
	14.50	0.5709	82	133	48	16	R45414.5	R45314.5
37/64	14.68	0.5780	82	133	48	16	R45437/64	R45337/64
	14.80	0.5827	82	133	48	16	R45414.8	R45314.8
	15.00	0.5906	82	133	48	16	R45415.0	R45315.0
19/32	15.08	0.5937	82	133	48	16	R45419/32	R45319/32
	15.10	0.5945	82	133	48	16	R45415.1	R45315.1
	15.30	0.6024	82	133	48	16		R45315.3
39/64	15.48	0.6094	82	133	48	16	R45439/64	R45339/64
	15.50	0.6102	82	133	48	16	R45415.5	R45315.5
	15.80	0.6220	82	133	48	16	R45415.8	R45315.8
5/8	15.88	0.6252	82	133	48	16	R4545/8	R4535/8
	16.00	0.6299	82	133	48	16	R45416.0	R45316.0
41/64	16.27	0.6406	91	143	48	18	R45441/64	R45341/64
	16.50	0.6496	91	143	48	18	R45416.5	R45316.5
21/32	16.67	0.6563	91	143	48	18	R45421/32	R45321/32
	17.00	0.6693	91	143	48	18	R45417.0	R45317.0
43/64	17.07	0.6720	91	143	48	18	R45443/64	R45343/64
11/16	17.46	0.6874	91	143	48	18	R45411/16	R45311/16
	17.50	0.6890	91	143	48	18	R45417.5	R45317.5
	17.80	0.7008	91	143	48	18	R45417.8	R45317.8
45/64	17.86	0.7031	91	143	48	18	R45445/64	R45345/64
	18.00	0.7087	91	143	48	18	R45418.0	R45318.0
23/32	18.26	0.7189	99	153	50	20	R45423/32	R45323/32
	18.50	0.7283	99	153	50	20	R45418.5	R45318.5
47/64	18.65	0.7343	99	153	50	20	R45447/64	R45347/64
	19.00	0.7480	99	153	50	20	R45419.0	R45319.0
3/4	19.05	0.7500	99	153	50	20	R4543/4	R4533/4
	19.50	0.7677	99	153	50	20	R45419.5	R45319.5
	19.80	0.7795	99	153	50	20	R45419.8	R45319.8
	20.00	0.7874	99	153	50	20	R45420.0	R45320.0

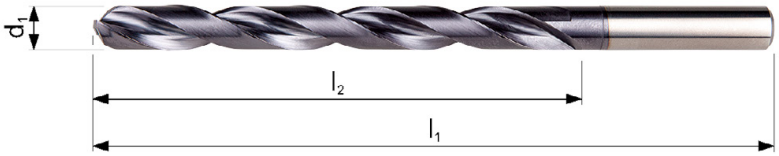
DORMER

R459

- Force-X borrar - invändig kylkanal 8XD
- Force-X porat, jäähdytyskanavat 8XD
- Force-X lang bor m/kjølekanal 8XD
- Force-X bor Med invendig kølekanal 8XD

R459	■	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	3.1	3.2	3.3	3.4	7.2	7.3
	●	2.3	6.1	6.2	6.3	6.4	7.1								

R459 HM DORMER 8XD 140° TiAlN DIN 6535HA



R459



FORCE X

3.00 - 16.00

d_1 Øm$_7$ Inch	d_1 Øm$_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh$_6$ mm	R459
	3.00	0.1181	37	79	36	6	R4593.0
	3.10	0.1220	37	79	36	6	R4593.1
1/8	3.18	0.1252	37	79	36	6	R4591/8
	3.20	0.1260	37	79	36	6	R4593.2
	3.30	0.1299	37	79	36	6	R4593.3
	3.40	0.1339	37	79	36	6	R4593.4
	3.50	0.1378	37	79	36	6	R4593.5
9/64	3.57	0.1406	37	79	36	6	R4599/64
	3.60	0.1417	37	79	36	6	R4593.6
	3.70	0.1457	37	79	36	6	R4593.7
	3.80	0.1496	48	90	36	6	R4593.8
	3.90	0.1535	48	90	36	6	R4593.9
5/32	3.97	0.1563	48	90	36	6	R4595/32
	4.00	0.1575	48	90	36	6	R4594.0
	4.10	0.1614	48	90	36	6	R4594.1
	4.20	0.1654	48	90	36	6	R4594.2
	4.30	0.1693	48	90	36	6	R4594.3
11/64	4.37	0.1720	48	90	36	6	R45911/64
	4.40	0.1732	48	90	36	6	R4594.4
	4.50	0.1772	48	90	36	6	R4594.5
	4.60	0.1811	48	90	36	6	R4594.6
	4.70	0.1850	62	104	36	6	R4594.7
3/16	4.76	0.1874	62	104	36	6	R4593/16
	4.80	0.1890	62	104	36	6	R4594.8
	4.90	0.1929	62	104	36	6	R4594.9
	5.00	0.1969	62	104	36	6	R4595.0
	5.10	0.2008	62	104	36	6	R4595.1
13/64	5.16	0.2031	62	104	36	6	R45913/64
	5.20	0.2047	62	104	36	6	R4595.2
	5.30	0.2087	62	104	36	6	R4595.3
	5.40	0.2126	62	104	36	6	R4595.4
	5.50	0.2165	62	104	36	6	R4595.5
7/32	5.56	0.2189	62	104	36	6	R4597/32
	5.60	0.2205	62	104	36	6	R4595.6
	5.70	0.2244	62	104	36	6	R4595.7
	5.80	0.2283	62	104	36	6	R4595.8

d_1 $Øm_7$ Inch	d_1 $Øm_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 $Øh_6$ mm	R459
	5.90	0.2323	62	104	36	6	R4595.9
15/64	5.95	0.2343	62	104	36	6	R45915/64
	6.00	0.2362	62	104	36	6	R4596.0
	6.10	0.2402	84	126	36	8	R4596.1
	6.20	0.2441	84	126	36	8	R4596.2
	6.30	0.2480	84	126	36	8	R4596.3
1/4	6.35	0.2500	84	126	36	8	R4591/4
	6.40	0.2520	84	126	36	8	R4596.4
	6.50	0.2559	84	126	36	8	R4596.5
	6.60	0.2598	84	126	36	8	R4596.6
	6.70	0.2638	84	126	36	8	R4596.7
17/64	6.75	0.2657	84	126	36	8	R45917/64
	6.80	0.2677	84	126	36	8	R4596.8
	6.90	0.2717	84	126	36	8	R4596.9
	7.00	0.2756	84	126	36	8	R4597.0
	7.10	0.2795	84	126	36	8	R4597.1
9/32	7.14	0.2811	84	126	36	8	R4599/32
	7.20	0.2835	84	126	36	8	R4597.2
	7.30	0.2874	84	126	36	8	R4597.3
	7.40	0.2913	84	126	36	8	R4597.4
	7.50	0.2953	84	126	36	8	R4597.5
19/64	7.54	0.2969	84	126	36	8	R45919/64
	7.60	0.2992	84	126	36	8	R4597.6
	7.70	0.3031	84	126	36	8	R4597.7
	7.80	0.3071	84	126	36	8	R4597.8
	7.90	0.3110	84	126	36	8	R4597.9
5/16	7.94	0.3126	84	126	36	8	R4595/16
	8.00	0.3150	84	126	36	8	R4598.0
	8.10	0.3189	106	152	40	10	R4598.1
	8.20	0.3228	106	152	40	10	R4598.2
	8.30	0.3268	106	152	40	10	R4598.3
21/64	8.33	0.3280	106	152	40	10	R45921/64
	8.40	0.3307	106	152	40	10	R4598.4
	8.50	0.3346	106	152	40	10	R4598.5
	8.60	0.3386	106	152	40	10	R4598.6
	8.70	0.3425	106	152	40	10	R4598.7
11/32	8.73	0.3437	106	152	40	10	R45911/32
	8.80	0.3465	106	152	40	10	R4598.8
	8.90	0.3504	106	152	40	10	R4598.9
	9.00	0.3543	106	152	40	10	R4599.0
	9.10	0.3583	106	152	40	10	R4599.1
23/64	9.13	0.3594	106	152	40	10	R45923/64
	9.20	0.3622	106	152	40	10	R4599.2
	9.30	0.3661	106	152	40	10	R4599.3
	9.40	0.3701	106	152	40	10	R4599.4
	9.50	0.3740	106	152	40	10	R4599.5
3/8	9.53	0.3748	106	152	40	10	R4593/8
	9.60	0.3780	106	152	40	10	R4599.6
	9.70	0.3819	106	152	40	10	R4599.7
	9.80	0.3858	106	152	40	10	R4599.8
	9.90	0.3898	106	152	40	10	R4599.9
25/64	9.92	0.3906	106	152	40	10	R45925/64
	10.00	0.3937	106	152	40	10	R45910.0
	10.20	0.4016	128	180	45	12	R45910.2
	10.30	0.4055	128	180	45	12	R45910.3
13/32	10.32	0.4063	128	180	45	12	R45913/32
	10.40	0.4094	128	180	45	12	R45910.4
	10.50	0.4134	128	180	45	12	R45910.5
27/64	10.72	0.4220	128	180	45	12	R45927/64
	10.80	0.4252	128	180	45	12	R45910.8
	11.00	0.4331	128	180	45	12	R45911.0
7/16	11.11	0.4374	128	180	45	12	R4597/16
	11.20	0.4409	128	180	45	12	R45911.2
	11.30	0.4449	128	180	45	12	R45911.3
	11.50	0.4528	128	180	45	12	R45911.5
29/64	11.51	0.4531	128	180	45	12	R45929/64
	11.80	0.4646	128	180	45	12	R45911.8
15/32	11.91	0.4689	128	180	45	12	R45915/32
	12.00	0.4724	128	180	45	12	R45912.0
	12.20	0.4803	151	202	48	14	R45912.2

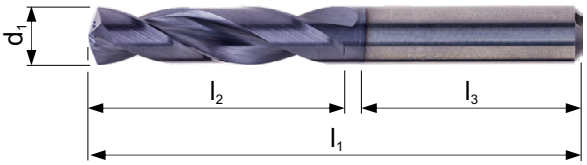
d_1 $Øm_7$ Inch	d_1 $Øm_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 $Øh_6$ mm	R459
31/64	12.30	0.4843	151	202	48	14	R45931/64
	12.50	0.4921	151	202	48	14	R45912.5
1/2	12.70	0.5000	151	202	48	14	R4591/2
	12.80	0.5039	151	202	48	14	R45912.8
	13.00	0.5118	151	202	48	14	R45913.0
33/64	13.10	0.5157	151	202	48	14	R45933/64
17/32	13.49	0.5311	151	202	48	14	R45917/32
	13.50	0.5315	151	202	48	14	R45913.5
35/64	13.89	0.5469	151	202	48	14	R45935/64
	14.00	0.5512	151	202	48	14	R45914.0
	14.25	0.5610	172	227	48	16	R45914.25
9/16	14.29	0.5626	172	227	48	16	R4599/16
	14.50	0.5709	172	227	48	16	R45914.5
37/64	14.68	0.5780	172	227	48	16	R45937/64
	15.00	0.5906	172	227	48	16	R45915.0
19/32	15.08	0.5937	172	227	48	16	R45919/32
	15.10	0.5945	172	227	48	16	R45915.1
39/64	15.48	0.6094	172	227	48	16	R45939/64
	15.50	0.6102	172	227	48	16	R45915.5
5/8	15.88	0.6252	172	227	48	16	R4595/8
	16.00	0.6299	172	227	48	16	R45916.0

R467

- Broca corta Force M, refrigeración interna 3×D
- Force M porat, jäähdytyskanavat, 3xD
- Force-M bor med kjølekanal, 3xD
- Force-M bor med invendig kølekanal, 3XD

R467 ▪ 2.1 2.2 2.3 2.4 4.1 4.2 4.3
• 5.1 5.2 5.3

R467 HM | DIN 6537 K | 3XD | 140° | TiAlN | DIN 6535HA | CTW™



R467



FORCE M
3.00 - 16.00

d_1 Ø "/Nr./letter	d_1 Øm_7 mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh_6 mm	R467
	3.00	0.1181	20	62	36	6	R4673.0
	3.10	0.1220	20	62	36	6	R4673.1
1/8	3.18	0.1250	20	62	36	6	R4671/8
	3.20	0.1260	20	62	36	6	R4673.2
	3.30	0.1299	20	62	36	6	R4673.3
	3.40	0.1339	20	62	36	6	R4673.4
29	3.45	0.1360	20	62	36	6	R467N29
	3.50	0.1378	20	62	36	6	R4673.5
9/64	3.57	0.1406	20	62	36	6	R4679/64
	3.60	0.1417	20	62	36	6	R4673.6
	3.70	0.1457	20	62	36	6	R4673.7
	3.80	0.1496	24	66	36	6	R4673.8
	3.90	0.1535	24	66	36	6	R4673.9
5/32	3.97	0.1563	24	66	36	6	R4675/32
	4.00	0.1575	24	66	36	6	R4674.0
	4.05	0.1594	24	66	36	6	R4674.05
	4.10	0.1614	24	66	36	6	R4674.1
	4.20	0.1654	24	66	36	6	R4674.2
	4.30	0.1693	24	66	36	6	R4674.3
11/64	4.37	0.1719	24	66	36	6	R46711/64
	4.40	0.1732	24	66	36	6	R4674.4
	4.50	0.1772	24	66	36	6	R4674.5
	4.60	0.1811	24	66	36	6	R4674.6
	4.70	0.1850	24	66	36	6	R4674.7
3/16	4.76	0.1875	28	66	36	6	R4673/16
	4.80	0.1890	28	66	36	6	R4674.8
	4.90	0.1929	28	66	36	6	R4674.9
	5.00	0.1969	28	66	36	6	R4675.0
	5.05	0.1988	28	66	36	6	R4675.05
	5.10	0.2008	28	66	36	6	R4675.1
7	5.11	0.2010	28	66	36	6	R467N7
13/64	5.16	0.2031	28	66	36	6	R46713/64
	5.20	0.2047	28	66	36	6	R4675.2
5	5.22	0.2055	28	66	36	6	R467N5
	5.30	0.2087	28	66	36	6	R4675.3
	5.40	0.2126	28	66	36	6	R4675.4
	5.50	0.2165	28	66	36	6	R4675.5
7/32	5.56	0.2188	28	66	36	6	R4677/32

DORMER

d_1 Ø “/Nr./letter	d_1 Øm_7 mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh_6 mm	R467
	5.60	0.2205	28	66	36	6	R4675.6
	5.70	0.2244	28	66	36	6	R4675.7
	5.80	0.2283	28	66	36	6	R4675.8
	5.90	0.2323	28	66	36	6	R4675.9
15/64	5.95	0.2344	28	66	36	6	R46715/64
	6.00	0.2362	28	66	36	6	R4676.0
	6.05	0.2382	34	79	36	8	R4676.05
	6.10	0.2402	34	79	36	8	R4676.1
	6.20	0.2441	34	79	36	8	R4676.2
	6.30	0.2480	34	79	36	8	R4676.3
1/4	6.35	0.2500	34	79	36	8	R4671/4
	6.40	0.2520	34	79	36	8	R4676.4
	6.50	0.2559	34	79	36	8	R4676.5
	6.60	0.2598	34	79	36	8	R4676.6
	6.70	0.2638	34	79	36	8	R4676.7
17/64	6.75	0.2656	34	79	36	8	R46717/64
	6.80	0.2677	34	79	36	8	R4676.8
	6.90	0.2717	34	79	36	8	R4676.9
	7.00	0.2756	34	79	36	8	R4677.0
	7.10	0.2795	41	79	36	8	R4677.1
9/32	7.14	0.2813	41	79	36	8	R4679/32
	7.20	0.2835	41	79	36	8	R4677.2
	7.30	0.2874	41	79	36	8	R4677.3
	7.40	0.2913	41	79	36	8	R4677.4
	7.50	0.2953	41	79	36	8	R4677.5
19/64	7.54	0.2969	41	79	36	8	R46719/64
	7.60	0.2992	41	79	36	8	R4677.6
	7.70	0.3031	41	79	36	8	R4677.7
	7.80	0.3071	41	79	36	8	R4677.8
	7.90	0.3110	41	79	36	8	R4677.9
5/16	7.94	0.3125	41	79	36	8	R4675/16
	8.00	0.3150	41	79	36	8	R4678.0
	8.05	0.3169	47	89	40	10	R4678.05
	8.10	0.3189	47	89	40	10	R4678.1
	8.20	0.3228	47	89	40	10	R4678.2
	8.30	0.3268	47	89	40	10	R4678.3
21/64	8.33	0.3281	47	89	40	10	R46721/64
	8.40	0.3307	47	89	40	10	R4678.4
	8.50	0.3346	47	89	40	10	R4678.5
	8.60	0.3386	47	89	40	10	R4678.6
	8.70	0.3425	47	89	40	10	R4678.7
11/32	8.73	0.3438	47	89	40	10	R46711/32
	8.80	0.3465	47	89	40	10	R4678.8
	8.90	0.3504	47	89	40	10	R4678.9
	9.00	0.3543	47	89	40	10	R4679.0
	9.10	0.3583	47	89	40	10	R4679.1
23/64	9.13	0.3594	47	89	40	10	R46723/64
	9.20	0.3622	47	89	40	10	R4679.2
	9.30	0.3661	47	89	40	10	R4679.3
	9.40	0.3701	47	89	40	10	R4679.4
	9.50	0.3740	47	89	40	10	R4679.5
3/8	9.53	0.3750	47	89	40	10	R4673/8
	9.60	0.3780	47	89	40	10	R4679.6
	9.70	0.3819	47	89	40	10	R4679.7
	9.80	0.3858	47	89	40	10	R4679.8
	9.90	0.3898	47	89	40	10	R4679.9
25/64	9.92	0.3906	47	89	40	10	R46725/64
	10.00	0.3937	47	89	40	10	R46710.0
	10.05	0.3957	55	102	45	12	R46710.05
	10.10	0.3976	55	102	45	12	R46710.1
	10.20	0.4016	55	102	45	12	R46710.2
	10.30	0.4055	55	102	45	12	R46710.3
13/32	10.32	0.4063	55	102	45	12	R46713/32
	10.40	0.4094	55	102	45	12	R46710.4
	10.50	0.4134	55	102	45	12	R46710.5
	10.60	0.4173	55	102	45	12	R46710.6
27/64	10.72	0.4219	55	102	45	12	R46727/64
	10.80	0.4252	55	102	45	12	R46710.8
	10.90	0.4291	55	102	45	12	R46710.9
	11.00	0.4331	55	102	45	12	R46711.0

d_1 Ø “/Nr./letter	d_1 Øm_7 mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh_6 mm	R467
7/16	11.11	0.4375	55	102	45	12	R4677/16
	11.20	0.4409	55	102	45	12	R46711.2
	11.30	0.4449	55	102	45	12	R46711.3
	11.40	0.4488	55	102	45	12	R46711.4
	11.50	0.4528	55	102	45	12	R46711.5
29/64	11.51	0.4531	55	102	45	12	R46729/64
	11.60	0.4567	55	102	45	12	R46711.6
	11.80	0.4646	55	102	45	12	R46711.8
15/32	11.91	0.4688	55	102	45	12	R46715/32
	12.00	0.4724	55	102	45	12	R46712.0
	12.05	0.4744	60	107	45	14	R46712.05
	12.10	0.4764	60	107	45	14	R46712.1
	12.20	0.4803	60	107	45	14	R46712.2
31/64	12.30	0.4844	60	107	45	14	R46731/64
	12.50	0.4921	60	107	45	14	R46712.5
	12.70	0.5000	60	107	45	14	R46712.7
1/2	12.70	0.5000	60	107	45	14	R4671/2
	12.80	0.5039	60	107	45	14	R46712.8
	13.00	0.5118	60	107	45	14	R46713.0
33/64	13.10	0.5156	60	107	45	14	R46733/64
	13.30	0.5236	60	107	45	14	R46713.3
17/32	13.49	0.5313	60	107	45	14	R46717/32
	13.50	0.5315	60	107	45	14	R46713.5
	13.80	0.5433	60	107	45	14	R46713.8
35/64	13.89	0.5469	60	107	45	14	R46735/64
	14.00	0.5512	60	107	45	14	R46714.0
	14.25	0.5610	65	115	48	16	R46714.25
9/16	14.29	0.5625	65	115	48	16	R4679/16
	14.50	0.5709	65	115	48	16	R46714.5
37/64	14.68	0.5781	65	115	48	16	R46737/64
	14.80	0.5827	65	115	48	16	R46714.8
	15.00	0.5906	65	115	48	16	R46715.0
19/32	15.08	0.5938	65	115	48	16	R46719/32
	15.10	0.5945	65	115	48	16	R46715.1
	15.30	0.6024	65	115	48	16	R46715.3
39/64	15.48	0.6094	65	115	48	16	R46739/64
	15.50	0.6102	65	115	48	16	R46715.5
	15.80	0.6220	65	115	48	16	R46715.8
5/8	15.88	0.6250	65	115	48	16	R4675/8
	16.00	0.6299	65	115	48	16	R46716.0

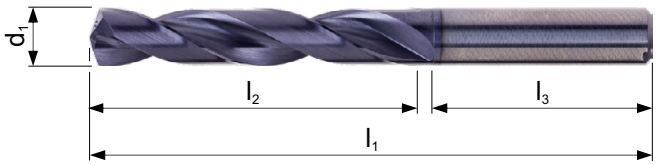
DORMER

R463

- Force M kort borr 5×D med kylkanaler
- Force M porat, jäähdytyskanavat, 5xD
- Force-M bor med kjølekanal, 5xD
- Force-M bor med invendig kølekanal, 5xD

R463 ▪ 2.1 2.2 2.3 2.4 4.1 4.2 4.3
• 5.1 5.2 5.3

R463 HM | DIN 6537 L | 5XD | 140° | TiAlN | DIN 6535HA | CTW™



R463



FORCE M
3.00 - 16.00

d_1 Ø "/Nr./letter	d_1 Øm_7 mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh_6 mm	R463
	3.00	0.1181	28	66	36	6	R4633.0
	3.10	0.1220	28	66	36	6	R4633.1
1/8	3.18	0.1250	28	66	36	6	R4631/8
	3.20	0.1260	28	66	36	6	R4633.2
	3.30	0.1299	28	66	36	6	R4633.3
	3.40	0.1339	28	66	36	6	R4633.4
29	3.45	0.1360	28	66	36	6	R463N29
	3.50	0.1378	28	66	36	6	R4633.5
9/64	3.57	0.1406	28	66	36	6	R4639/64
	3.60	0.1417	28	66	36	6	R4633.6
	3.70	0.1457	28	66	36	6	R4633.7
	3.80	0.1496	36	74	36	6	R4633.8
	3.90	0.1535	36	74	36	6	R4633.9
5/32	3.97	0.1563	36	74	36	6	R4635/32
	4.00	0.1575	36	74	36	6	R4634.0
	4.05	0.1594	36	74	36	6	R4634.05
	4.10	0.1614	36	74	36	6	R4634.1
	4.20	0.1654	36	74	36	6	R4634.2
	4.30	0.1693	36	74	36	6	R4634.3
11/64	4.37	0.1719	36	74	36	6	R46311/64
	4.40	0.1732	36	74	36	6	R4634.4
	4.50	0.1772	36	74	36	6	R4634.5
	4.60	0.1811	36	74	36	6	R4634.6
	4.70	0.1850	36	74	36	6	R4634.7
3/16	4.76	0.1875	44	82	36	6	R4633/16
	4.80	0.1890	44	82	36	6	R4634.8
	4.90	0.1929	44	82	36	6	R4634.9
	5.00	0.1969	44	82	36	6	R4635.0
	5.05	0.1988	44	82	36	6	R4635.05
	5.10	0.2008	44	82	36	6	R4635.1
7	5.11	0.2010	44	82	36	6	R463N7
13/64	5.16	0.2031	44	82	36	6	R46313/64
	5.20	0.2047	44	82	36	6	R4635.2
5	5.22	0.2055	44	82	36	6	R463N5
	5.30	0.2087	44	82	36	6	R4635.3
	5.40	0.2126	44	82	36	6	R4635.4
	5.50	0.2165	44	82	36	6	R4635.5
7/32	5.56	0.2188	44	82	36	6	R4637/32

d_1 Ø “/Nr./letter	d_1 Øm_7 mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh_6 mm	R463
	5.60	0.2205	44	82	36	6	R4635.6
	5.70	0.2244	44	82	36	6	R4635.7
	5.80	0.2283	44	82	36	6	R4635.8
	5.90	0.2323	44	82	36	6	R4635.9
15/64	5.95	0.2344	44	82	36	6	R46315/64
	6.00	0.2362	44	82	36	6	R4636.0
	6.05	0.2382	53	91	36	8	R4636.05
	6.10	0.2402	53	91	36	8	R4636.1
	6.20	0.2441	53	91	36	8	R4636.2
	6.30	0.2480	53	91	36	8	R4636.3
1/4	6.35	0.2500	53	91	36	8	R4631/4
	6.40	0.2520	53	91	36	8	R4636.4
	6.50	0.2559	53	91	36	8	R4636.5
	6.60	0.2598	53	91	36	8	R4636.6
	6.70	0.2638	53	91	36	8	R4636.7
17/64	6.75	0.2656	53	91	36	8	R46317/64
	6.80	0.2677	53	91	36	8	R4636.8
	6.90	0.2717	53	91	36	8	R4636.9
	7.00	0.2756	53	91	36	8	R4637.0
	7.10	0.2795	53	91	36	8	R4637.1
9/32	7.14	0.2813	53	91	36	8	R4639/32
	7.20	0.2835	53	91	36	8	R4637.2
	7.30	0.2874	53	91	36	8	R4637.3
	7.40	0.2913	53	91	36	8	R4637.4
	7.50	0.2953	53	91	36	8	R4637.5
19/64	7.54	0.2969	53	91	36	8	R46319/64
	7.60	0.2992	53	91	36	8	R4637.6
	7.70	0.3031	53	91	36	8	R4637.7
	7.80	0.3071	53	91	36	8	R4637.8
	7.90	0.3110	53	91	36	8	R4637.9
5/16	7.94	0.3125	53	91	36	8	R4635/16
	8.00	0.3150	53	91	36	8	R4638.0
	8.05	0.3169	61	103	40	10	R4638.05
	8.10	0.3189	61	103	40	10	R4638.1
	8.20	0.3228	61	103	40	10	R4638.2
	8.30	0.3268	61	103	40	10	R4638.3
21/64	8.33	0.3281	61	103	40	10	R46321/64
	8.40	0.3307	61	103	40	10	R4638.4
	8.50	0.3346	61	103	40	10	R4638.5
	8.60	0.3386	61	103	40	10	R4638.6
	8.70	0.3425	61	103	40	10	R4638.7
11/32	8.73	0.3438	61	103	40	10	R46311/32
	8.80	0.3465	61	103	40	10	R4638.8
	8.90	0.3504	61	103	40	10	R4638.9
	9.00	0.3543	61	103	40	10	R4639.0
	9.10	0.3583	61	103	40	10	R4639.1
23/64	9.13	0.3594	61	103	40	10	R46323/64
	9.20	0.3622	61	103	40	10	R4639.2
	9.30	0.3661	61	103	40	10	R4639.3
	9.40	0.3701	61	103	40	10	R4639.4
	9.50	0.3740	61	103	40	10	R4639.5
3/8	9.53	0.3750	61	103	40	10	R4633/8
	9.60	0.3780	61	103	40	10	R4639.6
	9.70	0.3819	61	103	40	10	R4639.7
	9.80	0.3858	61	103	40	10	R4639.8
	9.90	0.3898	61	103	40	10	R4639.9
25/64	9.92	0.3906	61	103	40	10	R46325/64
	10.00	0.3937	61	103	40	10	R46310.0
	10.05	0.3957	70	118	45	12	R46310.05
	10.10	0.3976	70	118	45	12	R46310.1
	10.20	0.4016	70	118	45	12	R46310.2
	10.30	0.4055	70	118	45	12	R46310.3
13/32	10.32	0.4063	70	118	45	12	R46313/32
	10.40	0.4094	70	118	45	12	R46310.4
	10.50	0.4134	70	118	45	12	R46310.5
	10.60	0.4173	70	118	45	12	R46310.6
27/64	10.72	0.4219	70	118	45	12	R46327/64
	10.80	0.4252	70	118	45	12	R46310.8
	10.90	0.4291	70	118	45	12	R46310.9
	11.00	0.4331	70	118	45	12	R46311.0

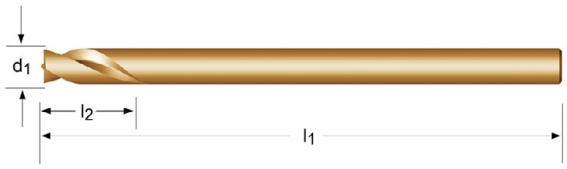
d_1 Ø “/Nr./letter	d_1 Øm_7 mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh_6 mm	R463
7/16	11.11	0.4375	70	118	45	12	R4637/16
	11.20	0.4409	70	118	45	12	R46311.2
	11.30	0.4449	70	118	45	12	R46311.3
	11.40	0.4488	70	118	45	12	R46311.4
	11.50	0.4528	70	118	45	12	R46311.5
29/64	11.51	0.4531	70	118	45	12	R46329/64
	11.60	0.4567	70	118	45	12	R46311.6
	11.80	0.4646	70	118	45	12	R46311.8
15/32	11.91	0.4688	70	118	45	12	R46315/32
	12.00	0.4724	70	118	45	12	R46312.0
	12.05	0.4744	76	124	45	14	R46312.05
	12.20	0.4803	76	124	45	14	R46312.2
31/64	12.30	0.4844	76	124	45	14	R46331/64
	12.50	0.4921	76	124	45	14	R46312.5
	12.70	0.5000	76	124	45	14	R46312.7
1/2	12.70	0.5000	76	124	45	14	R4631/2
	12.80	0.5039	76	124	45	14	R46312.8
	13.00	0.5118	76	124	45	14	R46313.0
33/64	13.10	0.5156	76	124	45	14	R46333/64
	13.30	0.5236	76	124	45	14	R46313.3
17/32	13.49	0.5313	76	124	45	14	R46317/32
	13.50	0.5315	76	124	45	14	R46313.5
	13.80	0.5433	76	124	45	14	R46313.8
35/64	13.89	0.5469	76	124	45	14	R46335/64
	14.00	0.5512	76	124	45	14	R46314.0
	14.25	0.5610	82	133	48	16	R46314.25
9/16	14.29	0.5625	82	133	48	16	R4639/16
	14.50	0.5709	82	133	48	16	R46314.5
37/64	14.68	0.5781	82	133	48	16	R46337/64
	14.80	0.5827	82	133	48	16	R46314.8
	15.00	0.5906	82	133	48	16	R46315.0
19/32	15.08	0.5938	82	133	48	16	R46319/32
	15.10	0.5945	82	133	48	16	R46315.1
	15.30	0.6024	82	133	48	16	R46315.3
39/64	15.48	0.6094	82	133	48	16	R46339/64
	15.50	0.6102	82	133	48	16	R46315.5
	15.80	0.6220	82	133	48	16	R46315.8
5/8	15.88	0.6250	82	133	48	16	R4635/8
	16.00	0.6299	82	133	48	16	R46316.0

A723

- Punktsvetsborr
- Pistehitsipora
- Punktsveisbor
- Punktsvejsebor

A723			
▪	1.1	1.2	
•	1.3	1.4	

A723	HSS-E	DORMER	1XD		Bronze		N			





d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A723
6.00	0.2362	18	66	A7236.0X66
6.00	0.2362	18	93	A7236.0X93
8.00	0.3150	24	79	A7238.0X79
8.00	0.3150	24	117	A7238.0X117

DORMER

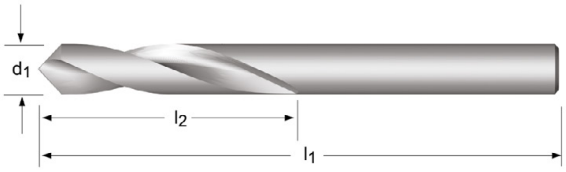
A122

- NC - Centrerborrar
- NC-keskiöporat
- NC - Senterbor
- NC - Centrerbor

Totallängd enl DIN 1897
Kokonaispituus DIN 1897 mukaan
Totallengde lik DIN 1897
Totallængde i følge DIN 1897

A122																				
	▪	1.1	1.2	1.3	6.1	6.2	6.3	6.4	7.1	7.2										
	•	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	7.3	7.4	8.1	8.2
		8.3	9.1																		

A122	HSS	DIN 1897	1XD	90°/ 120°			N			



A122



6.00 - 20.00

d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A122
6.00	0.2362	30	66	A1226.0X90
6.00	0.2362	30	66	A1226.0X120
8.00	0.3150	33	79	A1228.0X90
8.00	0.3150	33	79	A1228.0X120
10.00	0.3937	35	89	A12210.0X90
10.00	0.3937	35	89	A12210.0X120
12.00	0.4724	40	102	A12212.0X90
12.00	0.4724	40	102	A12212.0X120
16.00	0.6299	40	115	A12216.0X90
16.00	0.6299	40	115	A12216.0X120
20.00	0.7874	55	131	A12220.0X90
20.00	0.7874	55	131	A12220.0X120

A119

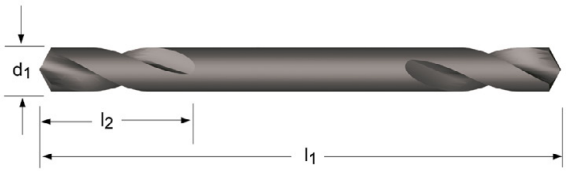
- Extra Korta Dubbeländade Borrar
- Erittäin lyhyet porat, 2-päiset
- Ekstra Korte Dobble Bor
- Ekstra Korte Dobbel Endet Bor

Popnitplåtsborr
Ohutlevypora
Tynnplate bor
Popnittebor til metal

A119 ▪ 1.1 1.2

• 1.3 1.4 1.5 1.6 2.1 2.2 2.3 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2

A119 HSS | DIN 1897 | 1.25XD | 120° | ST | N



A119



3.30 - 5.10

d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A119
3.30	0.1299	11	49	A1193.3
3.60	0.1417	12	52	A1193.6
4.10	0.1614	14	55	A1194.1
4.20	0.1654	14	55	A1194.2
4.90	0.1929	17	62	A1194.9
5.10	0.2008	17	62	A1195.1

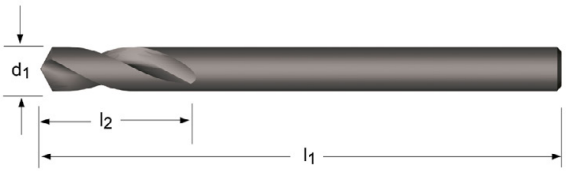
A123

- Extra Korta Borrar
- Erittäin lyhyet porat
- Ekstra Korte Bor
- Ekstra Korte Bor

Totallängd enl. DIN 1897 och Tunnplåtbor
Ohutlevypora, kokonaispituus DIN 1897 mukaan
Total lengde til DIN 1897 og Tynnplate Bor
Overlængde efter DIN 1897, popnitte bor til metal

A123																		
	▪	1.1	1.2	1.3	6.1	6.2	6.3	6.4	7.1	7.2								
	•	1.4	1.5	1.6	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	7.3	7.4	8.1	8.2	8.3	9.1

A123	HSS	DIN 1897	1.5XD	120°	ST		N			





3/32 - 1/4

d_1 $Øh_8$ Inch	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A123
3/32	2.38	0.0937	14	43	A1233/32S
	2.50	0.0984	14	43	A1232.5S
	3.00	0.1181	16	46	A1233.0S
1/8	3.18	0.1252	18	49	A1231/8S
	3.20	0.1260	18	49	A1233.2S
	3.30	0.1299	18	49	A1233.3S
	3.50	0.1378	18	52	A1233.5S
	3.70	0.1457	18	52	A1233.7S
5/32	3.97	0.1563	18	55	A1235/32S
	4.00	0.1575	18	55	A1234.0S
	4.10	0.1614	18	55	A1234.1S
	4.20	0.1654	18	55	A1234.2S
	4.50	0.1772	18	58	A1234.5S
3/16	4.76	0.1874	18	62	A1233/16S
	4.80	0.1890	18	62	A1234.8S
	4.90	0.1929	18	62	A1234.9S
	5.00	0.1969	18	62	A1235.0S
	5.50	0.2165	18	66	A1235.5S
7/32	5.56	0.2189	18	66	A1237/32S
	6.00	0.2362	18	66	A1236.0S
1/4	6.35	0.2500	19	70	A1231/4S

A120

- Extra Korta Borrar — Blank under 1,0mm. 118 spets upp till 2,9mm och över 13,0mm
- Erittäin lyhyet porat — Halk. < 1,0 mm: -kirkkaita. Halk. < 2,9 mm ja > 13,0 mm: -kärkikulma 118°.
- Ekstra Korte Bor — Blank under 1,0mm. 118° spiss opp til 2,9mm og over 13,0mm
- Ekstra Korte Bor — Blank under 1,0mm. 118 spids op til 2,9mm og over 13,0mm

A022

- 022 Extra Korta Borrar — Obelagd under 2,0mm, Tin-topp och korsspetsad från och med 2,0mm
- 022 Erittäin lyhyet porat — Halkaisijat < 2 mm -kirkkaat, 2 mm ja yli TiN ja ristiteroitus
- 022 Ekstra Korte Bor — Ubelagt under 2,0 mm, Tin-topp og kryss slipet fra og med 2,0mm
- 022 Ekstra Korte Bor — Blank under 2,0 mm, TIN spids og special spids fra 2,0 mm og større

A620

- Extra Korta Borrar
- Erittäin lyhyet porat
- Ekstra Korte Bor
- Ekstra Korte Bor

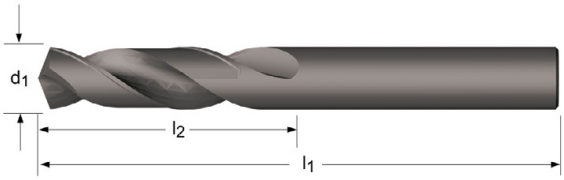
A117

- Extra Korta Borrar — 118 spets upp till 1,5mm
- Erittäin lyhyet porat — Halkaisijat <= 1,5 mm: -kärkikulma 118°
- Ekstra Korte Bor — 118° spiss opp til 1,5mm
- Ekstra Korte Bor — 118 spids op til 1,5mm

A120	■	1.1	1.2	1.3	1.4	2.1	3.1	3.2	3.3	4.1											
	•	1.5	1.6	2.2	2.3	3.4	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2
		8.3	9.1																		
A022	■	1.1	1.2	1.3	1.4	1.5	2.1	3.1	3.2	3.3	4.1	7.1	7.2	7.3							
	•	1.6	2.2	2.3	3.4	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.4	8.1	8.2	8.3	9.1		
A620	■	2.1	2.2	2.3																	
	•	1.1	1.2	1.3	1.4	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4
		7.1	7.2	7.3	7.4	8.1	8.2	8.3													
A117	■	1.5	1.6	2.1	2.2	2.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	9.1							
	•	1.1	1.2	1.3	1.4	3.1	3.2	3.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3		

A120	HSS	DIN 1897	2.5XD	135°	ST		N				
A022	HSS	DIN ANSI	2.5XD	135°	TiN		N		 A088 124	 L115 335
A620	HSS-E	DIN 1897	2.5XD	130°	Bronze		N				
A117	HSS-E	DIN 1897	2.5XD	135°	Bronze		N				

DORMER



A120	A022	A620	A117
			
0.50 - 25.00	0.50 - 16.00	2.50 - 13.00	1.00 - 13.00

d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A120	A022	A620	A117
	0.50	0.0197	3	20	A120.5	A022.5		
	0.60	0.0236	3.5	21	A120.6	A022.6		
	0.70	0.0276	4.5	23	A120.7	A022.7		
1/32	0.79	0.0311	13	35		A0221/32		
1/32	0.79	0.0311	5	24	A1201/32			
	0.80	0.0315	5	24	A120.8	A022.8		
	0.90	0.0354	5.5	25	A120.9	A022.9		
	1.00	0.0394	6	26	A1201.0	A0221.0		A1171.0
	1.10	0.0433	7	28	A1201.1	A0221.1		A1171.1
3/64	1.19	0.0469	13	35		A0223/64		
3/64	1.19	0.0469	8	30	A1203/64			
	1.20	0.0472	8	30	A1201.2	A0221.2		A1171.2
	1.30	0.0512	8	30	A1201.3	A0221.3		A1171.3
	1.40	0.0551	9	32	A1201.4	A0221.4		A1171.4
	1.50	0.0591	9	32	A1201.5	A0221.5		A1171.5
1/16	1.59	0.0626	10	34	A1201/16			
1/16	1.59	0.0626	16	41		A0221/16		
	1.60	0.0630	10	34	A1201.6	A0221.6		A1171.6
	1.70	0.0669	10	34	A1201.7	A0221.7		A1171.7
	1.80	0.0709	11	36	A1201.8	A0221.8		A1171.8
	1.90	0.0748	11	36	A1201.9	A0221.9		A1171.9
5/64	1.98	0.0780	12	38	A1205/64			
5/64	1.98	0.0780	17	43		A0225/64		
	2.00	0.0787	12	38	A1202.0	A0222.0		A1172.0
	2.10	0.0827	12	38	A1202.1	A0222.1		A1172.1
	2.20	0.0866	13	40	A1202.2	A0222.2		A1172.2
	2.25	0.0886	13	40	A1202.25	A0222.25		
	2.30	0.0906	13	40	A1202.3	A0222.3		A1172.3
3/32	2.38	0.0937	14	43	A1203/32			
3/32	2.38	0.0937	20	45		A0223/32		
	2.40	0.0945	14	43	A1202.4	A0222.4		A1172.4
	2.50	0.0984	14	43	A1202.5	A0222.5	A6202.5	A1172.5
	2.60	0.1024	14	43	A1202.6	A0222.6	A6202.6	A1172.6
	2.65	0.1043	14	43	A1202.65	A0222.65		
	2.70	0.1063	16	46	A1202.7	A0222.7	A6202.7	A1172.7
7/64	2.78	0.1094	16	46	A1207/64			
7/64	2.78	0.1094	22	47		A0227/64		
	2.80	0.1102	16	46	A1202.8	A0222.8	A6202.8	A1172.8
	2.90	0.1142	16	46	A1202.9	A0222.9	A6202.9	A1172.9
	3.00	0.1181	16	46	A1203.0	A0223.0	A6203.0	A1173.0
	3.10	0.1220	18	49	A1203.1	A0223.1	A6203.1	A1173.1
1/8	3.18	0.1252	18	49	A1201/8			A1171/8
1/8	3.18	0.1252	23	49		A0221/8		
	3.20	0.1260	18	49	A1203.2	A0223.2	A6203.2	A1173.2
	3.25	0.1280	18	49	A1203.25	A0223.25		
	3.30	0.1299	18	49	A1203.3	A0223.3	A6203.3	A1173.3
	3.40	0.1339	20	52	A1203.4	A0223.4	A6203.4	A1173.4
	3.50	0.1378	20	52	A1203.5	A0223.5	A6203.5	A1173.5
9/64	3.57	0.1406	20	52	A1209/64			
9/64	3.57	0.1406	25	50		A0229/64		
	3.60	0.1417	20	52	A1203.6	A0223.6	A6203.6	A1173.6
	3.70	0.1457	20	52	A1203.7	A0223.7	A6203.7	A1173.7
	3.80	0.1496	22	55	A1203.8	A0223.8	A6203.8	A1173.8
	3.90	0.1535	22	55	A1203.9	A0223.9	A6203.9	A1173.9

d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A120	A022	A620	A117
5/32	3.97	0.1563	22	55	A1205/32			A1175/32
5/32	3.97	0.1563	26	53		A0225/32		
	4.00	0.1575	22	55	A1204.0	A0224.0	A6204.0	A1174.0
	4.10	0.1614	22	55	A1204.1	A0224.1	A6204.1	A1174.1
	4.20	0.1654	22	55	A1204.2	A0224.2	A6204.2	A1174.2
	4.30	0.1693	24	58	A1204.3	A0224.3	A6204.3	A1174.3
11/64	4.37	0.1720	24	58	A12011/64			
11/64	4.37	0.1720	28	55		A02211/64		
	4.40	0.1732	24	58	A1204.4	A0224.4	A6204.4	A1174.4
	4.50	0.1772	24	58	A1204.5	A0224.5	A6204.5	A1174.5
	4.60	0.1811	24	58	A1204.6	A0224.6	A6204.6	A1174.6
	4.70	0.1850	24	58	A1204.7	A0224.7	A6204.7	A1174.7
3/16	4.76	0.1874	26	62	A1203/16			A1173/16
3/16	4.76	0.1874	30	57		A0223/16		
	4.80	0.1890	26	62	A1204.8	A0224.8	A6204.8	A1174.8
	4.90	0.1929	26	62	A1204.9	A0224.9	A6204.9	A1174.9
	5.00	0.1969	26	62	A1205.0	A0225.0	A6205.0	A1175.0
	5.10	0.2008	26	62	A1205.1	A0225.1	A6205.1	A1175.1
13/64	5.16	0.2031	26	62	A12013/64			
13/64	5.16	0.2031	31	58		A02213/64		
	5.20	0.2047	26	62	A1205.2	A0225.2	A6205.2	A1175.2
	5.30	0.2087	26	62	A1205.3	A0225.3	A6205.3	A1175.3
	5.40	0.2126	28	66	A1205.4	A0225.4	A6205.4	A1175.4
	5.50	0.2165	28	66	A1205.5	A0225.5	A6205.5	A1175.5
7/32	5.56	0.2189	28	66	A1207/32			
7/32	5.56	0.2189	33	61		A0227/32		
	5.60	0.2205	28	66	A1205.6	A0225.6	A6205.6	A1175.6
	5.70	0.2244	28	66	A1205.7	A0225.7	A6205.7	A1175.7
	5.80	0.2283	28	66	A1205.8	A0225.8	A6205.8	A1175.8
	5.90	0.2323	28	66	A1205.9	A0225.9	A6205.9	A1175.9
15/64	5.95	0.2343	28	66	A12015/64			
15/64	5.95	0.2343	34	63		A02215/64		
	6.00	0.2362	28	66	A1206.0	A0226.0	A6206.0	A1176.0
	6.10	0.2402	31	70	A1206.1	A0226.1	A6206.1	A1176.1
	6.20	0.2441	31	70	A1206.2	A0226.2	A6206.2	A1176.2
	6.30	0.2480	31	70	A1206.3	A0226.3	A6206.3	A1176.3
1/4	6.35	0.2500	31	70	A1201/4			A1171/4
1/4	6.35	0.2500	36	65		A0221/4		
	6.40	0.2520	31	70	A1206.4	A0226.4	A6206.4	A1176.4
	6.50	0.2559	31	70	A1206.5	A0226.5	A6206.5	A1176.5
	6.60	0.2598	31	70	A1206.6	A0226.6	A6206.6	A1176.6
	6.70	0.2638	31	70	A1206.7	A0226.7	A6206.7	A1176.7
	6.80	0.2677	34	74	A1206.8	A0226.8	A6206.8	A1176.8
	6.90	0.2717	34	74	A1206.9	A0226.9	A6206.9	A1176.9
	7.00	0.2756	34	74	A1207.0	A0227.0	A6207.0	A1177.0
	7.10	0.2795	34	74	A1207.1	A0227.1	A6207.1	A1177.1
9/32	7.14	0.2811	34	74	A1209/32			
9/32	7.14	0.2811	40	70		A0229/32		
	7.20	0.2835	34	74	A1207.2	A0227.2	A6207.2	A1177.2
	7.30	0.2874	34	74	A1207.3	A0227.3	A6207.3	A1177.3
	7.40	0.2913	34	74	A1207.4	A0227.4	A6207.4	A1177.4
	7.50	0.2953	34	74	A1207.5	A0227.5	A6207.5	A1177.5
	7.60	0.2992	37	79	A1207.6	A0227.6	A6207.6	A1177.6
	7.70	0.3031	37	79	A1207.7	A0227.7	A6207.7	A1177.7
	7.80	0.3071	37	79	A1207.8	A0227.8	A6207.8	A1177.8
	7.90	0.3110	37	79	A1207.9	A0227.9	A6207.9	A1177.9
5/16	7.94	0.3126	37	79	A1205/16			A1175/16
5/16	7.94	0.3126	43	73		A0225/16		
	8.00	0.3150	37	79	A1208.0	A0228.0	A6208.0	A1178.0
	8.10	0.3189	37	79	A1208.1	A0228.1	A6208.1	A1178.1
	8.20	0.3228	37	79	A1208.2	A0228.2	A6208.2	A1178.2
	8.30	0.3268	37	79	A1208.3	A0228.3	A6208.3	A1178.3
	8.40	0.3307	37	79	A1208.4	A0228.4	A6208.4	A1178.4
	8.50	0.3346	37	79	A1208.5	A0228.5	A6208.5	A1178.5
	8.60	0.3386	40	84	A1208.6	A0228.6	A6208.6	A1178.6
	8.70	0.3425	40	84	A1208.7	A0228.7	A6208.7	A1178.7
11/32	8.73	0.3437	40	84	A12011/32			
11/32	8.73	0.3437	45	78		A02211/32		
	8.80	0.3465	40	84	A1208.8	A0228.8	A6208.8	A1178.8
	8.90	0.3504	40	84	A1208.9	A0228.9	A6208.9	A1178.9
	9.00	0.3543	40	84	A1209.0	A0229.0	A6209.0	A1179.0
	9.10	0.3583	40	84	A1209.1	A0229.1	A6209.1	A1179.1

DORMER

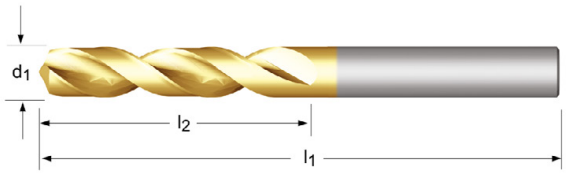
d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A120	A022	A620	A117
	9.20	0.3622	40	84	A1209.2	A0229.2	A6209.2	A1179.2
	9.30	0.3661	40	84	A1209.3	A0229.3	A6209.3	A1179.3
	9.40	0.3701	40	84	A1209.4	A0229.4	A6209.4	A1179.4
	9.50	0.3740	40	84	A1209.5	A0229.5	A6209.5	A1179.5
3/8	9.52	0.3748	43	89	A1203/8			A1173/8
3/8	9.52	0.3748	48	81		A0223/8		
	9.60	0.3780	43	89	A1209.6	A0229.6	A6209.6	A1179.6
	9.70	0.3819	43	89	A1209.7	A0229.7	A6209.7	A1179.7
	9.80	0.3858	43	89	A1209.8	A0229.8	A6209.8	A1179.8
	9.90	0.3898	43	89	A1209.9	A0229.9	A6209.9	A1179.9
	10.00	0.3937	43	89	A12010.0	A02210.0	A62010.0	A11710.0
	10.10	0.3976	43	89	A12010.1	A02210.1		
	10.20	0.4016	43	89	A12010.2	A02210.2	A62010.2	A11710.2
	10.30	0.4055	43	89	A12010.3	A02210.3	A62010.3	
13/32	10.32	0.4063	43	89	A12013/32			
13/32	10.32	0.4063	51	86		A02213/32		
	10.40	0.4094	43	89	A12010.4	A02210.4	A62010.4	
	10.50	0.4134	43	89	A12010.5	A02210.5	A62010.5	A11710.5
	10.60	0.4173	43	89	A12010.6	A02210.6		
	10.70	0.4213	47	95	A12010.7	A02210.7		
	10.80	0.4252	47	95	A12010.8	A02210.8	A62010.8	
	10.90	0.4291	47	95	A12010.9	A02210.9		
	11.00	0.4331	47	95	A12011.0	A02211.0	A62011.0	A11711.0
	11.10	0.4370	47	95	A12011.1	A02211.1		
7/16	11.11	0.4374	47	95	A1207/16			
7/16	11.11	0.4374	54	89		A0227/16		
	11.20	0.4409	47	95	A12011.2	A02211.2		
	11.30	0.4449	47	95	A12011.3	A02211.3		
	11.50	0.4528	47	95	A12011.5	A02211.5	A62011.5	A11711.5
	11.60	0.4567	47	95	A12011.6	A02211.6		
	11.70	0.4606	47	95	A12011.7	A02211.7		
	11.80	0.4646	47	95	A12011.8	A02211.8		
	11.90	0.4685	51	102	A12011.9	A02211.9		
	12.00	0.4724	51	102	A12012.0	A02212.0	A62012.0	A11712.0
	12.10	0.4764	51	102	A12012.1	A02212.1		
	12.20	0.4803	51	102	A12012.2	A02212.2	A62012.2	
	12.50	0.4921	51	102	A12012.5	A02212.5	A62012.5	
1/2	12.70	0.5000	51	102	A1201/2			A1171/2
1/2	12.70	0.5000	60	98		A0221/2		
	12.80	0.5039	51	102			A62012.8	
	13.00	0.5118	51	102	A12013.0	A02213.0	A62013.0	A11713.0
	13.50	0.5315	54	107	A12013.5	A02213.5		
	14.00	0.5512	54	107	A12014.0	A02214.0		
9/16	14.29	0.5626	56	111	A1209/16			
9/16	14.29	0.5626	67	105		A0229/16		
	14.50	0.5709	56	111	A12014.5	A02214.5		
	15.00	0.5906	56	111	A12015.0	A02215.0		
	15.50	0.6102	58	115	A12015.5	A02215.5		
5/8	15.88	0.6252	58	115	A1205/8			
5/8	15.88	0.6252	73	111		A0225/8		
	16.00	0.6299	58	115	A12016.0	A02216.0		
	16.50	0.6496	60	119	A12016.5			
	17.00	0.6693	60	119	A12017.0			
11/16	17.46	0.6874	62	123	A12011/16			
	17.50	0.6890	62	123	A12017.5			
	18.00	0.7087	62	123	A12018.0			
	18.50	0.7283	64	127	A12018.5			
	19.00	0.7480	64	127	A12019.0			
3/4	19.05	0.7500	66	131	A1203/4			
	19.50	0.7677	66	131	A12019.5			
	20.00	0.7874	66	131	A12020.0			
	20.50	0.8071	68	136	A12020.5			
13/16	20.64	0.8126	68	136	A12013/16			
	21.00	0.8268	68	136	A12021.0			
	22.00	0.8661	70	141	A12022.0			
7/8	22.22	0.8748	70	141	A1207/8			
	23.00	0.9055	72	146	A12023.0			
15/16	23.81	0.9374	75	151	A12015/16			
	24.00	0.9449	75	151	A12024.0			
	25.00	0.9843	75	151	A12025.0			

A520

- ADX Extra korta borrar, Cylindriskt skaft
- ADX Porat, erittäin lyhyet
- ADX ekstra korte bor. syl. feste
- ADX Ekstra korte bor. cyl. Skaft

A520	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	6.2	6.3	7.2	7.3	7.4	8.2
		8.3																			
	•	1.6	4.3	5.1	5.2	5.3	6.1	6.4	7.1	8.1											

A520 | HSS | DIN 1897 | 2.5XD | 130° | TiN





d_1 $Øh_8$ Inch	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A520
	3.00	0.1181	16	46	A5203.0
	3.10	0.1220	18	49	A5203.1
1/8	3.18	0.1252	18	49	A5201/8
	3.20	0.1260	18	49	A5203.2
	3.30	0.1299	18	49	A5203.3
	3.40	0.1339	20	52	A5203.4
	3.50	0.1378	20	52	A5203.5
9/64	3.57	0.1406	20	52	A5209/64
	3.60	0.1417	20	52	A5203.6
	3.70	0.1457	20	52	A5203.7
	3.80	0.1496	22	55	A5203.8
	3.90	0.1535	22	55	A5203.9
5/32	3.97	0.1563	22	55	A5205/32
	4.00	0.1575	22	55	A5204.0
	4.10	0.1614	22	55	A5204.1
	4.20	0.1654	22	55	A5204.2
	4.30	0.1693	24	58	A5204.3
11/64	4.37	0.1720	24	58	A52011/64
	4.40	0.1732	24	58	A5204.4
	4.50	0.1772	24	58	A5204.5
	4.60	0.1811	24	58	A5204.6
	4.70	0.1850	24	58	A5204.7
3/16	4.76	0.1874	26	62	A5203/16
	4.80	0.1890	26	62	A5204.8
	4.90	0.1929	26	62	A5204.9
	5.00	0.1969	26	62	A5205.0
	5.10	0.2008	26	62	A5205.1
13/64	5.16	0.2031	26	62	A52013/64
	5.20	0.2047	26	62	A5205.2
	5.30	0.2087	26	62	A5205.3
	5.40	0.2126	28	66	A5205.4
	5.50	0.2165	28	66	A5205.5
7/32	5.56	0.2189	28	66	A5207/32
	5.60	0.2205	28	66	A5205.6
	5.70	0.2244	28	66	A5205.7
	5.80	0.2283	28	66	A5205.8
	5.90	0.2323	28	66	A5205.9
15/64	5.95	0.2343	28	66	A52015/64

DORMER

d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A520
	6.00	0.2362	28	66	A5206.0
	6.10	0.2402	31	70	A5206.1
	6.20	0.2441	31	70	A5206.2
	6.30	0.2480	31	70	A5206.3
1/4	6.35	0.2500	31	70	A5201/4
	6.40	0.2520	31	70	A5206.4
	6.50	0.2559	31	70	A5206.5
	6.60	0.2598	31	70	A5206.6
	6.70	0.2638	31	70	A5206.7
17/64	6.75	0.2657	34	74	A52017/64
	6.80	0.2677	34	74	A5206.8
	6.90	0.2717	34	74	A5206.9
	7.00	0.2756	34	74	A5207.0
	7.10	0.2795	34	74	A5207.1
9/32	7.14	0.2811	34	74	A5209/32
	7.20	0.2835	34	74	A5207.2
	7.30	0.2874	34	74	A5207.3
	7.40	0.2913	34	74	A5207.4
	7.50	0.2953	34	74	A5207.5
19/64	7.54	0.2969	37	79	A52019/64
	7.60	0.2992	37	79	A5207.6
	7.70	0.3031	37	79	A5207.7
	7.80	0.3071	37	79	A5207.8
	7.90	0.3110	37	79	A5207.9
5/16	7.94	0.3126	37	79	A5205/16
	8.00	0.3150	37	79	A5208.0
	8.10	0.3189	37	79	A5208.1
	8.20	0.3228	37	79	A5208.2
	8.30	0.3268	37	79	A5208.3
21/64	8.33	0.3280	37	79	A52021/64
	8.40	0.3307	37	79	A5208.4
	8.50	0.3346	37	79	A5208.5
	8.60	0.3386	40	84	A5208.6
	8.70	0.3425	40	84	A5208.7
11/32	8.73	0.3437	40	84	A52011/32
	8.80	0.3465	40	84	A5208.8
	8.90	0.3504	40	84	A5208.9
	9.00	0.3543	40	84	A5209.0
	9.10	0.3583	40	84	A5209.1
23/64	9.13	0.3594	40	84	A52023/64
	9.20	0.3622	40	84	A5209.2
	9.30	0.3661	40	84	A5209.3
	9.40	0.3701	40	84	A5209.4
	9.50	0.3740	40	84	A5209.5
3/8	9.52	0.3748	43	89	A5203/8
	9.60	0.3780	43	89	A5209.6
	9.70	0.3819	43	89	A5209.7
	9.80	0.3858	43	89	A5209.8
	9.90	0.3898	43	89	A5209.9
25/64	9.92	0.3906	43	89	A52025/64
	10.00	0.3937	43	89	A52010.0
	10.10	0.3976	43	89	A52010.1
	10.20	0.4016	43	89	A52010.2
	10.30	0.4055	43	89	A52010.3
13/32	10.32	0.4063	43	89	A52013/32
	10.40	0.4094	43	89	A52010.4
	10.50	0.4134	43	89	A52010.5
	10.60	0.4173	43	89	A52010.6
	10.70	0.4213	47	95	A52010.7
27/64	10.72	0.4220	47	95	A52027/64
	10.80	0.4252	47	95	A52010.8
	10.90	0.4291	47	95	A52010.9
	11.00	0.4331	47	95	A52011.0
	11.10	0.4370	47	95	A52011.1
7/16	11.11	0.4374	47	95	A5207/16
	11.20	0.4409	47	95	A52011.2
	11.30	0.4449	47	95	A52011.3
	11.40	0.4488	47	95	A52011.4
	11.50	0.4528	47	95	A52011.5
29/64	11.51	0.4531	47	95	A52029/64

d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A520
	11.60	0.4567	47	95	A52011.6
	11.70	0.4606	47	95	A52011.7
	11.80	0.4646	47	95	A52011.8
	11.90	0.4685	51	102	A52011.9
15/32	11.91	0.4689	51	102	A52015/32
	12.00	0.4724	51	102	A52012.0
	12.10	0.4764	51	102	A52012.1
	12.20	0.4803	51	102	A52012.2
	12.30	0.4843	51	102	A52012.3
31/64	12.30	0.4843	51	102	A52031/64
	12.40	0.4882	51	102	A52012.4
	12.50	0.4921	51	102	A52012.5
	12.60	0.4961	51	102	A52012.6
	12.70	0.5000	51	102	A52012.7
1/2	12.70	0.5000	51	102	A5201/2
	12.80	0.5039	51	102	A52012.8
	12.90	0.5079	51	102	A52012.9
	13.00	0.5118	51	102	A52013.0

DORMER

A124

- Extrakort borr med inlödd 4-fasettspets
- Erittäin lyhyet porat, 4-pintahiottu juotettu kovametallikärki
- Kort bor med 4 fasset slipt påloddet HM skjær
- Ekstra korte bor 4-facet m/ HM platte

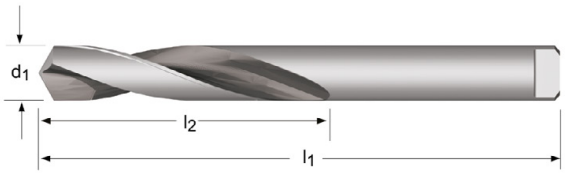
Tunga enl DIN 1809
Lehti - DIN 1809 mukaan
Tunge lik DIN 1809
Tunge i følge DIN 1809

A124

▪ 3.1 3.2 3.3 3.4

• 1.5 1.6 2.2 2.3 4.1 4.2 4.3 5.1 5.2 5.3 6.2 6.3 6.4 8.2 9.1

A124 HSS HM | DIN 8037 | 2.5XD | 118° | ST | H



A124



3.00 - 16.00

d_1 Ø mm	d_1 decimal Inch	l_2 mm	l_1 mm	A124
3.00	0.1181	20	50	A1243.0
3.20	0.1260	25	56	A1243.2
3.50	0.1378	25	56	A1243.5
4.00	0.1575	25	56	A1244.0
4.20	0.1654	28	63	A1244.2
4.50	0.1772	28	63	A1244.5
4.80	0.1890	28	63	A1244.8
5.00	0.1969	28	63	A1245.0
5.20	0.2047	32	71	A1245.2
5.50	0.2165	32	71	A1245.5
5.80	0.2283	32	71	A1245.8
6.00	0.2362	32	71	A1246.0
6.50	0.2559	32	71	A1246.5
6.80	0.2677	40	80	A1246.8
7.00	0.2756	40	80	A1247.0
7.50	0.2953	40	80	A1247.5
8.00	0.3150	40	80	A1248.0
8.50	0.3346	50	90	A1248.5
9.00	0.3543	50	90	A1249.0
9.50	0.3740	50	90	A1249.5
10.00	0.3937	56	100	A12410.0
10.50	0.4134	56	100	A12410.5
11.00	0.4331	56	100	A12411.0
11.50	0.4528	63	112	A12411.5
12.00	0.4724	63	112	A12412.0
13.00	0.5118	63	112	A12413.0
14.00	0.5512	71	125	A12414.0
15.00	0.5906	71	125	A12415.0
16.00	0.6299	80	140	A12416.0

A720

- Mikroborrar
- Mikroporat
- Mikrobor
- Mikrobor

A720																				
	▪	1.1	1.2	1.3	1.4	3.1	3.2													
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2																

A720	HSS-E	DIN 1899	2.5XD	118°			N			



A720



0.15 - 1.40

d_1 Ø mm	d_1 decimal Inch	l_2 mm	l_1 mm	d_2 Ø mm	A720
0.15	0.0059	1.0	25	1	A720.15
0.16	0.0063	1.4	25	1	A720.16
0.17	0.0067	1.4	25	1	A720.17
0.18	0.0070	1.4	25	1	A720.18
0.20	0.0078	1.8	25	1	A720.2
0.22	0.0087	1.8	25	1	A720.22
0.25	0.0098	2.2	25	1	A720.25
0.27	0.0106	2.2	25	1	A720.27
0.28	0.0110	2.2	25	1	A720.28
0.30	0.0118	2.2	25	1	A720.3
0.35	0.0138	2.8	25	1	A720.35
0.38	0.0150	2.8	25	1	A720.38
0.39	0.0154	3.6	25	1	A720.39
0.40	0.0157	3.6	25	1	A720.4
0.45	0.0177	3.6	25	1	A720.45
0.50	0.0197	4.0	25	1	A720.5
0.55	0.0217	4.5	25	1	A720.55
0.60	0.0236	4.5	25	1	A720.6
0.62	0.0244	5.0	25	1	A720.62
0.65	0.0256	5.0	25	1	A720.65
0.70	0.0276	5.6	25	1	A720.7
0.75	0.0295	5.6	25	1	A720.75
0.80	0.0315	6.3	25	1.5	A720.8
0.85	0.0335	6.3	25	1.5	A720.85
0.90	0.0354	7.1	25	1.5	A720.9
0.95	0.0374	7.1	25	1.5	A720.95
1.00	0.0394	8.0	25	1.5	A7201.0
1.05	0.0413	8.0	25	1.5	A7201.05
1.10	0.0433	9.0	25	1.5	A7201.1
1.20	0.0472	10.0	25	1.5	A7201.2
1.30	0.0512	10.0	25	1.5	A7201.3
1.40	0.0551	11.2	25	1.5	A7201.4

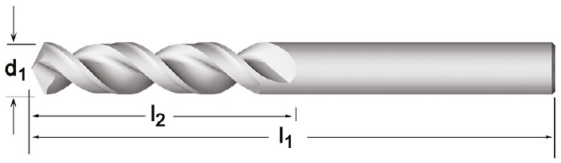
DORMER

A920
A921

- PFX Extra Korta Borrar
- PFX Porat, erittäin lyhyet
- PFX Ekstra Korte Bor
- PFX Ekstra Korte Bor

A920	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	7.2
	•	3.1	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.1	7.3	7.4	8.1	8.2			
A921	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	7.4		
	•	4.1	4.2	4.3	5.1	5.2	5.3	6.3	6.4								

A920	HSS-E	DIN ANSI	3XD	130°			W			
A921	HSS-E	DIN ANSI	3XD	130°	Alcrona Top		W			



A920	A921
	
PFX	PFX
1.00 - 20.00	2.50 - 16.00

d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A920	A921
	1.00	0.0394	6	26	A9201.0	
	1.10	0.0433	7	28	A9201.1	
3/64	1.19	0.0469	13	35	A9203/64	
	1.20	0.0472	8	30	A9201.2	
	1.25	0.0492	8	30	A9201.25	
	1.30	0.0512	8	30	A9201.3	
	1.35	0.0531	9	32	A9201.35	
	1.40	0.0551	9	32	A9201.4	
	1.50	0.0591	9	32	A9201.5	
	1.55	0.0610	10	34	A9201.55	
1/16	1.59	0.0626	16	41	A9201/16	
	1.60	0.0630	10	34	A9201.6	
	1.70	0.0669	10	34	A9201.7	
	1.75	0.0689	11	36	A9201.75	
	1.80	0.0709	11	36	A9201.8	
	1.90	0.0748	11	36	A9201.9	
5/64	1.98	0.0780	17	43	A9205/64	
	2.00	0.0787	12	38	A9202.0	
	2.10	0.0827	12	38	A9202.1	
	2.15	0.0846	13	40	A9202.15	
	2.20	0.0866	13	40	A9202.2	
	2.30	0.0906	13	40	A9202.3	
	2.35	0.0925	14	43	A9202.35	
3/32	2.38	0.0937	19	41	A9203/32	
	2.40	0.0945	14	43	A9202.4	
	2.50	0.0984	14	43	A9202.5	A9212.5
	2.60	0.1024	14	43	A9202.6	A9212.6
	2.70	0.1063	16	46	A9202.7	A9212.7
7/64	2.78	0.1094	21	46	A9207/64	A9217/64
	2.80	0.1102	16	46	A9202.8	
	2.90	0.1142	16	46	A9202.9	A9212.9
	3.00	0.1181	16	46	A9203.0	A9213.0

d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A920	A921
	3.10	0.1220	18	49	A9203.1	A9213.1
1/8	3.18	0.1252	22	48	A9201/8	A9211/8
	3.20	0.1260	18	49	A9203.2	A9213.2
	3.30	0.1299	18	49	A9203.3	A9213.3
	3.40	0.1339	20	52	A9203.4	A9213.4
	3.50	0.1378	20	52	A9203.5	A9213.5
9/64	3.57	0.1406	24	49	A9209/64	A9219/64
	3.60	0.1417	20	52	A9203.6	A9213.6
	3.70	0.1457	20	52	A9203.7	A9213.7
	3.80	0.1496	22	55	A9203.8	A9213.8
	3.90	0.1535	22	55	A9203.9	A9213.9
5/32	3.97	0.1563	25	52	A9205/32	A9215/32
	4.00	0.1575	22	55	A9204.0	A9214.0
	4.10	0.1614	22	55	A9204.1	A9214.1
	4.20	0.1654	22	55	A9204.2	A9214.2
	4.30	0.1693	24	58	A9204.3	A9214.3
11/64	4.37	0.1720	27	54	A92011/64	A92111/64
	4.40	0.1732	24	58	A9204.4	A9214.4
	4.50	0.1772	24	58	A9204.5	A9214.5
	4.60	0.1811	24	58	A9204.6	A9214.6
	4.70	0.1850	24	58	A9204.7	A9214.7
3/16	4.76	0.1874	29	56	A9203/16	A9213/16
	4.80	0.1890	26	62	A9204.8	A9214.8
	4.90	0.1929	26	62	A9204.9	A9214.9
	5.00	0.1969	26	62	A9205.0	A9215.0
	5.10	0.2008	26	62	A9205.1	A9215.1
13/64	5.16	0.2031	30	57	A92013/64	A92113/64
	5.20	0.2047	26	62	A9205.2	A9215.2
	5.30	0.2087	26	62	A9205.3	A9215.3
	5.40	0.2126	28	66	A9205.4	A9215.4
	5.50	0.2165	28	66	A9205.5	A9215.5
7/32	5.56	0.2189	32	60	A9207/32	A9217/32
	5.60	0.2205	28	66	A9205.6	A9215.6
	5.70	0.2244	28	66	A9205.7	A9215.7
	5.80	0.2283	28	66	A9205.8	A9215.8
	5.90	0.2323	28	66	A9205.9	A9215.9
15/64	5.95	0.2343	33	62	A92015/64	A92115/64
	6.00	0.2362	28	66	A9206.0	A9216.0
	6.10	0.2402	31	70	A9206.1	A9216.1
	6.20	0.2441	31	70	A9206.2	A9216.2
	6.30	0.2480	31	70	A9206.3	A9216.3
1/4	6.35	0.2500	35	64	A9201/4	A9211/4
	6.40	0.2520	31	70	A9206.4	A9216.4
	6.50	0.2559	31	70	A9206.5	A9216.5
	6.60	0.2598	31	70	A9206.6	A9216.6
	6.70	0.2638	31	70	A9206.7	A9216.7
17/64	6.75	0.2657	37	67	A92017/64	A92117/64
	6.80	0.2677	34	74	A9206.8	A9216.8
	6.90	0.2717	34	74	A9206.9	A9216.9
	7.00	0.2756	34	74	A9207.0	A9217.0
	7.10	0.2795	34	74	A9207.1	A9217.1
9/32	7.14	0.2811	38	68	A9209/32	A9219/32
	7.20	0.2835	34	74	A9207.2	A9217.2
	7.30	0.2874	34	74	A9207.3	A9217.3
	7.40	0.2913	34	74	A9207.4	A9217.4
	7.50	0.2953	34	74	A9207.5	A9217.5
19/64	7.54	0.2969	40	70	A92019/64	A92119/64
	7.60	0.2992	37	79	A9207.6	A9217.6
	7.70	0.3031	37	79	A9207.7	A9217.7
	7.80	0.3071	37	79	A9207.8	A9217.8
	7.90	0.3110	37	79	A9207.9	A9217.9
5/16	7.94	0.3126	41	71	A9205/16	A9215/16
	8.00	0.3150	37	79	A9208.0	A9218.0
	8.10	0.3189	37	79	A9208.1	A9218.1
	8.20	0.3228	37	79	A9208.2	A9218.2
	8.30	0.3268	37	79	A9208.3	A9218.3
21/64	8.33	0.3280	43	75	A92021/64	A92121/64
	8.40	0.3307	37	79	A9208.4	A9218.4
	8.50	0.3346	37	79	A9208.5	A9218.5
	8.60	0.3386	40	84	A9208.6	A9218.6

DORMER

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A920	A921
	8.70	0.3425	40	84	A9208.7	A9218.7
11/32	8.73	0.3437	43	76	A92011/32	A92111/32
	8.80	0.3465	40	84	A9208.8	A9218.8
	8.90	0.3504	40	84	A9208.9	A9218.9
	9.00	0.3543	40	84	A9209.0	A9219.0
	9.10	0.3583	40	84	A9209.1	A9219.1
23/64	9.13	0.3594	44	78	A92023/64	A92123/64
	9.20	0.3622	40	84	A9209.2	A9219.2
	9.30	0.3661	40	84	A9209.3	A9219.3
	9.40	0.3701	40	84	A9209.4	A9219.4
	9.50	0.3740	40	84	A9209.5	A9219.5
3/8	9.52	0.3748	46	79	A9203/8	A9213/8
	9.60	0.3780	43	89	A9209.6	A9219.6
	9.70	0.3819	43	89	A9209.7	A9219.7
	9.80	0.3858	43	89	A9209.8	A9219.8
	9.90	0.3898	43	89	A9209.9	A9219.9
25/64	9.92	0.3906	48	83	A92025/64	A92125/64
	10.00	0.3937	43	89	A92010.0	A92110.0
	10.20	0.4016	43	89	A92010.2	A92110.2
	10.30	0.4055	43	89	A92010.3	A92110.3
13/32	10.32	0.4063	49	84	A92013/32	A92113/32
	10.50	0.4134	43	89	A92010.5	A92110.5
27/64	10.72	0.4220	51	86	A92027/64	A92127/64
	10.80	0.4252	47	95	A92010.8	A92110.8
	11.00	0.4331	47	95	A92011.0	A92111.0
7/16	11.11	0.4374	52	87	A9207/16	A9217/16
	11.50	0.4528	47	95	A92011.5	A92111.5
29/64	11.51	0.4531	54	90	A92029/64	A92129/64
	11.80	0.4646	47	95	A92011.8	A92111.8
15/32	11.91	0.4689	54	92	A92015/32	A92115/32
	12.00	0.4724	51	102	A92012.0	A92112.0
	12.20	0.4803	51	102	A92012.2	
31/64	12.30	0.4843	56	94	A92031/64	A92131/64
	12.50	0.4921	51	102	A92012.5	A92112.5
1/2	12.70	0.5000	57	95	A9201/2	A9211/2
	13.00	0.5118	51	102	A92013.0	A92113.0
33/64	13.10	0.5157	60	98	A92033/64	A92133/64
	13.50	0.5315	54	107	A92013.5	A92113.5
35/64	13.89	0.5469	64	102	A92035/64	A92135/64
	14.00	0.5512	54	107	A92014.0	A92114.0
9/16	14.29	0.5626	64	102	A9209/16	A9219/16
	14.50	0.5709	56	111	A92014.5	A92114.5
37/64	14.68	0.5780	67	105	A92037/64	A92137/64
	14.75	0.5807	56	111	A92014.75	A92114.75
	15.00	0.5906	56	111	A92015.0	A92115.0
19/32	15.08	0.5937	67	105	A92019/32	A92119/32
39/64	15.48	0.6094	70	108	A92039/64	A92139/64
	15.50	0.6102	58	115	A92015.5	A92115.5
5/8	15.88	0.6252	70	108	A9205/8	A9215/8
	16.00	0.6299	58	115	A92016.0	A92116.0
41/64	16.27	0.6406	73	114	A92041/64	
	16.50	0.6496	60	119	A92016.5	
21/32	16.67	0.6563	73	114	A92021/32	
	16.75	0.6594	60	119	A92016.75	
	17.00	0.6693	60	119	A92017.0	
43/64	17.07	0.6720	73	117	A92043/64	
11/16	17.46	0.6874	73	117	A92011/16	
	17.50	0.6890	62	123	A92017.5	
45/64	17.86	0.7031	76	121	A92045/64	
	18.00	0.7087	62	123	A92018.0	
23/32	18.26	0.7189	76	121	A92023/32	
	18.50	0.7283	64	127	A92018.5	
47/64	18.65	0.7343	79	127	A92047/64	
	19.00	0.7480	64	127	A92019.0	
3/4	19.05	0.7500	79	127	A9203/4	
49/64	19.45	0.7657	83	130	A92049/64	
	19.50	0.7677	66	131	A92019.5	
25/32	19.84	0.7811	83	130	A92025/32	
	20.00	0.7874	66	131	A92020.0	

A002

• 002 Kort korsspetsat borr	Obelagd under 2,0mm, Tin-topp och korsspetsad från och med 2,0mm
• 002 Lyhyet porat, ristiteroitus	Halkaisijat < 2 mm -kirkkaat, 2 mm ja yli TiN ja ristiteroitus
• 002 standard bor kryss slipt spiss	Ubelagt under 2,0 mm, Tin-topp og kryss slipet fra og med 2,0mm
• A002 bor kryds slebet	Blank under 2,0 mm, TIN spids og special spids fra 2,0 mm og større

A002S

• 002 Kort korsspetsat borr - Påsförpackat	Tin-topp
• 002 Lyhyet porat, ristiteroitus - IP-pakkaus	TiN-kärki
• 002 standard bor kryss slipt spiss - Blisterpakning	Tin-topp
• A002 bor kryds slebet, plast indpak.	TIN spids

A100

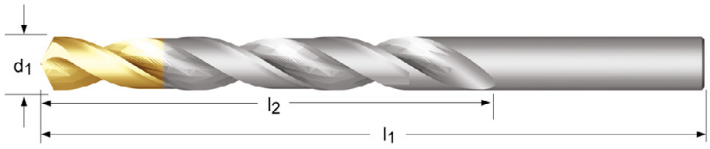
• Korta Borrar	Blank under 1,0mm, 3/64”, N60
• Lyhyet porat	Halkaisijat < 1,0 mm: -kirkkaita
• Korte Bor	Blank under 1,0mm, 3/64”, N60
• Korte Bor	Blank under 1,0mm, 3/64”, N60

A101

• Korta Borrar - LH	Blank under 3,0mm
• Lyhyet porat - LH	Halkaisijat < 3,0 mm: -kirkkaita
• Korte Bor - venstre	Blank under 3,0mm
• Korte Bor - LH	Blank under 3,0mm.

A002; A002S	▪	1.1	1.2	1.3	1.4	3.1	3.2	7.1	7.2	8.1	8.2								
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.3
		9.1																	
A100; A101	▪	1.1	1.2	1.3	1.4	3.1	3.2												
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1
		7.4	8.1	8.2	8.3	9.1													

A002	HSS	DIN 338	4XD	118°	TiN		N												
	A087 126	A089 128	A094 127	A095 125	A099 129	L000 336	L001 337	L002 338	L113 333	L114 334	L115 335								
A002S	HSS	DIN 338	4XD	118°	TiN		N												
A100	HSS	DIN 338	4XD	118°	ST		N		A190 132	A191 133	A199 130								
A101	HSS	DIN 338	4XD	118°	ST		N												



A002	A002S	A100	A101
			
1.00 - 16.00	2.00 - 13.00	0.20 - 20.00	1.00 - 12.00

d_1 Øh$_8$ "/Nr./letter	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A002	A002S	A100	A101
	0.20	0.0079	2.5	19			A100.2	
	0.25	0.0098	3	19			A100.25	
	0.30	0.0118	3	19			A100.3	
	0.32	0.0126	4	19			A100.32	
80	0.34	0.0134	4	19			A100N80	
	0.35	0.0138	4	19			A100.35	
79	0.37	0.0146	4	19			A100N79	
	0.38	0.0150	4	19			A100.38	
1/64	0.40	0.0157	5	20			A1001/64	
	0.40	0.0157	5	20			A100.4	
78	0.41	0.0161	5	20			A100N78	
	0.42	0.0165	5	20			A100.42	
	0.45	0.0177	5	20			A100.45	
77	0.46	0.0181	5	20			A100N77	
	0.48	0.0189	5	20			A100.48	
	0.50	0.0197	6	22			A100.5	
76	0.51	0.0201	6	22			A100N76	
	0.52	0.0205	6	22			A100.52	
75	0.53	0.0209	6	22			A100N75	
	0.55	0.0217	7	24			A100.55	
74	0.57	0.0224	7	24			A100N74	
	0.58	0.0228	7	24			A100.58	
	0.60	0.0236	7	24			A100.6	
73	0.61	0.0240	8	26			A100N73	
	0.62	0.0244	8	26			A100.62	
72	0.64	0.0252	8	26			A100N72	
	0.65	0.0256	8	26			A100.65	
71	0.66	0.0260	8	26			A100N71	
	0.68	0.0268	9	28			A100.68	
	0.70	0.0276	9	28			A100.7	
70	0.71	0.0280	9	28			A100N70	
	0.72	0.0283	9	28			A100.72	
69	0.74	0.0291	9	28			A100N69	
	0.75	0.0295	9	28			A100.75	
68	0.79	0.0311	10	30			A100N68	
	0.78	0.0307	10	30			A100.78	
1/32	0.79	0.0311	10	30			A1001/32	
	0.80	0.0315	10	30			A100.8	
67	0.81	0.0319	10	30			A100N67	
	0.82	0.0323	10	30			A100.82	
66	0.84	0.0331	10	30			A100N66	
	0.85	0.0335	10	30			A100.85	
	0.88	0.0346	11	32			A100.88	
65	0.89	0.0350	11	32			A100N65	
	0.90	0.0354	11	32			A100.9	
64	0.91	0.0358	11	32			A100N64	
	0.92	0.0362	11	32			A100.92	
63	0.94	0.0370	11	32			A100N63	

d_1 $Øh_8$ "/Nr./letter	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A002	A002S	A100	A101
	0.95	0.0374	11	32			A100.95	
62	0.97	0.0382	12	34			A100N62	
	0.98	0.0386	12	34			A100.98	
61	0.99	0.0390	12	34			A100N61	
	1.00	0.0394	12	34	A0021.0		A1001.0	A1011.0
60	1.02	0.0402	12	34			A100N60	
59	1.04	0.0409	12	34			A100N59	
	1.05	0.0413	12	34			A1001.05	
58	1.07	0.0421	14	36			A100N58	
57	1.09	0.0429	14	36			A100N57	
	1.10	0.0433	14	36	A0021.1		A1001.1	A1011.1
	1.15	0.0453	14	36			A1001.15	
56	1.18	0.0465	14	36			A100N56	
3/64	1.19	0.0469	16	38	A0023/64		A1003/64	
	1.20	0.0472	16	38	A0021.2		A1001.2	A1011.2
	1.25	0.0492	16	38			A1001.25	A1011.25
	1.30	0.0512	16	38	A0021.3		A1001.3	A1011.3
55	1.32	0.0520	16	38			A100N55	
	1.35	0.0531	18	40			A1001.35	
	1.40	0.0551	18	40	A0021.4		A1001.4	A1011.4
54	1.40	0.0551	18	40			A100N54	
	1.45	0.0571	18	40			A1001.45	
	1.50	0.0591	18	40	A0021.5		A1001.5	A1011.5
53	1.51	0.0594	20	43			A100N53	
	1.55	0.0610	20	43			A1001.55	
1/16	1.59	0.0626	20	43	A0021/16		A1001/16	
	1.60	0.0630	20	43	A0021.6		A1001.6	A1011.6
52	1.61	0.0634	20	43			A100N52	
	1.65	0.0650	20	43			A1001.65	
	1.70	0.0669	20	43	A0021.7		A1001.7	A1011.7
51	1.70	0.0669	22	46			A100N51	
	1.75	0.0689	22	46			A1001.75	
50	1.78	0.0701	22	46			A100N50	
	1.80	0.0709	22	46	A0021.8		A1001.8	A1011.8
	1.85	0.0728	22	46			A1001.85	
49	1.85	0.0728	22	46			A100N49	
	1.90	0.0748	22	46	A0021.9		A1001.9	A1011.9
48	1.93	0.0760	24	49			A100N48	
	1.95	0.0768	24	49			A1001.95	
5/64	1.98	0.0780	24	49	A0025/64		A1005/64	
47	1.99	0.0783	24	49			A100N47	
	2.00	0.0787	24	49	A0022.0	A002S2.0 [2)]	A1002.0	A1012.0
	2.05	0.0807	24	49			A1002.05	
46	2.06	0.0811	24	49			A100N46	
45	2.08	0.0819	24	49			A100N45	
	2.10	0.0827	24	49	A0022.1		A1002.1	A1012.1
	2.15	0.0846	27	53			A1002.15	
44	2.18	0.0858	27	53			A100N44	
	2.20	0.0866	27	53	A0022.2		A1002.2	A1012.2
	2.25	0.0886	27	53			A1002.25	
43	2.26	0.0890	27	53			A100N43	
	2.30	0.0906	27	53	A0022.3		A1002.3	A1012.3
	2.35	0.0925	27	53			A1002.35	
42	2.38	0.0937	30	57			A100N42	
3/32	2.38	0.0937	30	57	A0023/32		A1003/32	
	2.40	0.0945	30	57	A0022.4		A1002.4	A1012.4
41	2.44	0.0961	30	57			A100N41	
	2.45	0.0965	30	57			A1002.45	
40	2.49	0.0980	30	57			A100N40	
	2.50	0.0984	30	57	A0022.5	A002S2.5 [2)]	A1002.5	A1012.5
39	2.53	0.0996	30	57			A100N39	
	2.55	0.1004	30	57			A1002.55	
38	2.58	0.1016	30	57			A100N38	
	2.60	0.1024	30	57	A0022.6		A1002.6	A1012.6
37	2.64	0.1039	30	57			A100N37	
	2.65	0.1043	30	57			A1002.65	
	2.70	0.1063	33	61	A0022.7		A1002.7	A1012.7
36	2.71	0.1067	33	61			A100N36	

2) Två per förpackning / Kaksi poraa / pakkaus - 2 / 2 stk pr. Pakke

d_1 Øh$_8$ "/Nr./letter	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A002	A002S	A100	A101
	2.75	0.1083	33	61			A1002.75	
7/64	2.78	0.1094	33	61	A0027/64		A1007/64	
35	2.79	0.1098	33	61			A100N35	
	2.80	0.1102	33	61	A0022.8		A1002.8	A1012.8
34	2.82	0.1110	33	61			A100N34	
	2.85	0.1122	33	61			A1002.85	
33	2.87	0.1130	33	61			A100N33	
	2.90	0.1142	33	61	A0022.9		A1002.9	A1012.9
	2.95	0.1161	33	61			A1002.95	
32	2.95	0.1161	33	61			A100N32	
	3.00	0.1181	33	61	A0023.0	A002S3.0 [2)]	A1003.0	A1013.0
31	3.05	0.1201	36	65			A100N31	
	3.10	0.1220	36	65	A0023.1		A1003.1	
	3.15	0.1240	36	65			A1003.15	
1/8	3.18	0.1252	36	65	A0021/8	A002S1/8 [2)]	A1001/8	
	3.20	0.1260	36	65	A0023.2	A002S3.2 [2)]	A1003.2	A1013.2
	3.25	0.1280	36	65	A0023.25		A1003.25	
30	3.26	0.1283	36	65			A100N30	
	3.30	0.1299	36	65	A0023.3	A002S3.3 [2)]	A1003.3	A1013.3
	3.40	0.1339	39	70	A0023.4		A1003.4	
29	3.45	0.1358	39	70			A100N29	
	3.50	0.1378	39	70	A0023.5	A002S3.5 [2)]	A1003.5	A1013.5
28	3.57	0.1406	39	70			A100N28	
9/64	3.57	0.1406	39	70	A0029/64		A1009/64	
	3.60	0.1417	39	70	A0023.6		A1003.6	
27	3.66	0.1441	39	70			A100N27	
	3.70	0.1457	39	70	A0023.7		A1003.7	
26	3.73	0.1469	39	70			A100N26	
	3.75	0.1476	39	70			A1003.75	
	3.80	0.1496	43	75	A0023.8		A1003.8	A1013.8
25	3.80	0.1496	43	75			A100N25	
24	3.86	0.1520	43	75			A100N24	
	3.90	0.1535	43	75	A0023.9		A1003.9	
23	3.91	0.1539	43	75			A100N23	
5/32	3.97	0.1563	43	75	A0025/32	A002S5/32 [2)]	A1005/32	
22	3.99	0.1571	43	75			A100N22	
	4.00	0.1575	43	75	A0024.0	A002S4.0 [2)]	A1004.0	A1014.0
21	4.04	0.1591	43	75			A100N21	
20	4.09	0.1610	43	75			A100N20	
	4.10	0.1614	43	75	A0024.1	A002S4.1 [2)]	A1004.1	
	4.20	0.1654	43	75	A0024.2	A002S4.2 [2)]	A1004.2	A1014.2
19	4.22	0.1661	43	75			A100N19	
	4.25	0.1673	43	75			A1004.25	
	4.30	0.1693	47	80	A0024.3		A1004.3	
18	4.31	0.1697	47	80			A100N18	
11/64	4.37	0.1720	47	80	A00211/64		A10011/64	
17	4.39	0.1728	47	80			A100N17	
	4.40	0.1732	47	80	A0024.4		A1004.4	
	4.50	0.1772	47	80	A0024.5	A002S4.5 [2)]	A1004.5	A1014.5
16	4.50	0.1772	47	80			A100N16	
15	4.57	0.1799	47	80			A100N15	
	4.60	0.1811	47	80	A0024.6		A1004.6	
14	4.62	0.1819	47	80			A100N14	
	4.70	0.1850	47	80	A0024.7		A1004.7	
13	4.70	0.1850	47	80			A100N13	
	4.75	0.1870	47	80			A1004.75	
3/16	4.76	0.1874	52	86	A0023/16	A002S3/16 [2)]	A1003/16	
	4.80	0.1890	52	86	A0024.8		A1004.8	A1014.8
12	4.80	0.1890	52	86			A100N12	
11	4.85	0.1909	52	86			A100N11	
	4.90	0.1929	52	86	A0024.9		A1004.9	
10	4.92	0.1937	52	86			A100N10	
9	4.98	0.1961	52	86			A100N9	
	5.00	0.1969	52	86	A0025.0	A002S5.0 [2)]	A1005.0	A1015.0
8	5.06	0.1992	52	86			A100N8	
	5.10	0.2008	52	86	A0025.1		A1005.1	A1015.1
7	5.11	0.2012	52	86			A100N7	
13/64	5.16	0.2031	52	86	A00213/64	A002S13/64	A10013/64	

2) Två per förpackning / Kaksi poraa / pakkaus - 2 / 2 stk pr. Pakke

d_1 $Øh_8$ "/Nr./letter	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A002	A002S	A100	A101
6	5.18	0.2039	52	86			A100N6	
	5.20	0.2047	52	86	A0025.2		A1005.2	A1015.2
5	5.22	0.2055	52	86			A100N5	
	5.25	0.2067	52	86			A1005.25	
	5.30	0.2087	52	86	A0025.3		A1005.3	
4	5.31	0.2091	57	93			A100N4	
	5.40	0.2126	57	93	A0025.4		A1005.4	
3	5.41	0.2130	57	93			A100N3	
	5.50	0.2165	57	93	A0025.5	A002S5.5	A1005.5	A1015.5
7/32	5.56	0.2189	57	93	A0027/32	A002S7/32	A1007/32	
	5.60	0.2205	57	93	A0025.6		A1005.6	
2	5.61	0.2209	57	93			A100N2	
	5.70	0.2244	57	93	A0025.7		A1005.7	
	5.75	0.2264	57	93			A1005.75	
1	5.79	0.2280	57	93			A100N1	
	5.80	0.2283	57	93	A0025.8		A1005.8	
	5.90	0.2323	57	93	A0025.9		A1005.9	
A	5.94	0.2339	57	93			A100A	
15/64	5.95	0.2343	57	93	A00215/64		A10015/64	
	6.00	0.2362	57	93	A0026.0	A002S6.0	A1006.0	A1016.0
B	6.03	0.2374	63	101			A100B	
	6.10	0.2402	63	101	A0026.1		A1006.1	
C	6.15	0.2421	63	101			A100C	
	6.20	0.2441	63	101	A0026.2		A1006.2	
	6.25	0.2461	63	101			A1006.25	
D	6.25	0.2461	63	101			A100D	
	6.30	0.2480	63	101	A0026.3		A1006.3	
1/4	6.35	0.2500	63	101	A0021/4	A002S1/4	A1001/4	
E	6.35	0.2500	63	101			A100E	
	6.40	0.2520	63	101	A0026.4		A1006.4	
	6.50	0.2559	63	101	A0026.5	A002S6.5	A1006.5	A1016.5
F	6.53	0.2571	63	101			A100F	
	6.60	0.2598	63	101	A0026.6		A1006.6	
G	6.63	0.2610	63	101			A100G	
	6.70	0.2638	63	101	A0026.7		A1006.7	
17/64	6.75	0.2657	69	109	A00217/64	A002S17/64	A10017/64	
	6.75	0.2657	69	109			A1006.75	
H	6.76	0.2661	69	109			A100H	
	6.80	0.2677	69	109	A0026.8	A002S6.8	A1006.8	
	6.90	0.2717	69	109	A0026.9		A1006.9	
I	6.91	0.2720	69	109			A100I	
	7.00	0.2756	69	109	A0027.0	A002S7.0	A1007.0	A1017.0
J	7.04	0.2772	69	109			A100J	
	7.10	0.2795	69	109	A0027.1		A1007.1	
K	7.14	0.2811	69	109			A100K	
9/32	7.14	0.2811	69	109	A0029/32		A1009/32	
	7.20	0.2835	69	109	A0027.2		A1007.2	
	7.25	0.2854	69	109			A1007.25	
	7.30	0.2874	69	109	A0027.3		A1007.3	
L	7.37	0.2902	69	109			A100L	
	7.40	0.2913	69	109	A0027.4		A1007.4	
M	7.49	0.2949	69	109			A100M	
	7.50	0.2953	69	109	A0027.5	A002S7.5	A1007.5	A1017.5
19/64	7.54	0.2969	75	117	A00219/64		A10019/64	
	7.60	0.2992	75	117	A0027.6		A1007.6	
N	7.67	0.3020	75	117			A100N	
	7.70	0.3031	75	117	A0027.7		A1007.7	
	7.75	0.3051	75	117			A1007.75	
	7.80	0.3071	75	117	A0027.8		A1007.8	
	7.90	0.3110	75	117	A0027.9		A1007.9	
5/16	7.94	0.3126	75	117	A0025/16	A002S5/16	A1005/16	
	8.00	0.3150	75	117	A0028.0	A002S8.0	A1008.0	A1018.0
O	8.03	0.3161	75	117			A100O	
	8.10	0.3189	75	117	A0028.1		A1008.1	
	8.20	0.3228	75	117	A0028.2	A002S8.2	A1008.2	
P	8.20	0.3228	75	117			A100P	
	8.25	0.3248	75	117			A1008.25	
	8.30	0.3268	75	117	A0028.3		A1008.3	
21/64	8.33	0.3280	75	117	A00221/64		A10021/64	
	8.40	0.3307	75	117	A0028.4		A1008.4	

d_1 $Øh_8$ "/Nr./letter	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A002	A002S	A100	A101
Q	8.43	0.3319	75	117			A100Q	
	8.50	0.3346	75	117	A0028.5	A002S8.5	A1008.5	A1018.5
	8.60	0.3386	81	125	A0028.6		A1008.6	
R	8.61	0.3390	81	125			A100R	
	8.70	0.3425	81	125	A0028.7		A1008.7	
11/32	8.73	0.3437	81	125	A00211/32		A10011/32	
	8.75	0.3445	81	125			A1008.75	
	8.80	0.3465	81	125	A0028.8		A1008.8	
S	8.84	0.3480	81	125			A100S	
	8.90	0.3504	81	125	A0028.9		A1008.9	
	9.00	0.3543	81	125	A0029.0	A002S9.0	A1009.0	A1019.0
T	9.09	0.3579	81	125			A100T	
	9.10	0.3583	81	125	A0029.1		A1009.1	
23/64	9.13	0.3594	81	125	A00223/64		A10023/64	
	9.20	0.3622	81	125	A0029.2		A1009.2	
	9.25	0.3642	81	125			A1009.25	
	9.30	0.3661	81	125	A0029.3		A1009.3	
U	9.35	0.3681	81	125			A100U	
	9.40	0.3701	81	125	A0029.4		A1009.4	
	9.50	0.3740	81	125	A0029.5	A002S9.5	A1009.5	
3/8	9.52	0.3748	87	133	A0023/8	A002S3/8	A1003/8	
V	9.58	0.3772	87	133			A100V	
	9.60	0.3780	87	133	A0029.6		A1009.6	
	9.70	0.3819	87	133	A0029.7		A1009.7	
	9.75	0.3839	87	133			A1009.75	
	9.80	0.3858	87	133	A0029.8		A1009.8	
W	9.80	0.3858	87	133			A100W	
	9.90	0.3898	87	133	A0029.9		A1009.9	
25/64	9.92	0.3906	87	133	A00225/64		A10025/64	
	10.00	0.3937	87	133	A00210.0	A002S10.0	A10010.0	A10110.0
X	10.08	0.3969	87	133			A100X	
	10.10	0.3976	87	133	A00210.1		A10010.1	
	10.20	0.4016	87	133	A00210.2	A002S10.2	A10010.2	
	10.25	0.4035	87	133			A10010.25	
Y	10.26	0.4039	87	133			A100Y	
	10.30	0.4055	87	133	A00210.3		A10010.3	
13/32	10.32	0.4063	87	133	A00213/32		A10013/32	
	10.40	0.4094	87	133	A00210.4		A10010.4	
Z	10.49	0.4130	87	133			A100Z	
	10.50	0.4134	87	133	A00210.5	A002S10.5	A10010.5	
	10.60	0.4173	87	133	A00210.6		A10010.6	
	10.70	0.4213	94	142	A00210.7		A10010.7	
27/64	10.72	0.4220	94	142	A00227/64		A10027/64	
	10.75	0.4232	94	142			A10010.75	
	10.80	0.4252	94	142	A00210.8		A10010.8	
	10.90	0.4291	94	142	A00210.9		A10010.9	
	11.00	0.4331	94	142	A00211.0	A002S11.0	A10011.0	A10111.0
	11.10	0.4370	94	142	A00211.1		A10011.1	
7/16	11.11	0.4374	94	142	A0027/16		A1007/16	
	11.20	0.4409	94	142	A00211.2		A10011.2	
	11.25	0.4429	94	142			A10011.25	
	11.30	0.4449	94	142	A00211.3		A10011.3	
	11.40	0.4488	94	142	A00211.4		A10011.4	
	11.50	0.4528	94	142	A00211.5	A002S11.5	A10011.5	
29/64	11.51	0.4531	94	142	A00229/64		A10029/64	
	11.60	0.4567	94	142	A00211.6		A10011.6	
	11.70	0.4606	94	142	A00211.7		A10011.7	
	11.75	0.4626	94	142			A10011.75	
	11.80	0.4646	94	142	A00211.8		A10011.8	
	11.90	0.4685	101	151	A00211.9		A10011.9	
15/32	11.91	0.4689	101	151	A00215/32		A10015/32	
	12.00	0.4724	101	151	A00212.0	A002S12.0	A10012.0	A10112.0
	12.10	0.4764	101	151	A00212.1		A10012.1	
	12.20	0.4803	101	151	A00212.2		A10012.2	
	12.25	0.4823	101	151			A10012.25	
	12.30	0.4843	101	151	A00212.3		A10012.3	
31/64	12.30	0.4843	101	151	A00231/64		A10031/64	
	12.40	0.4882	101	151	A00212.4		A10012.4	
	12.50	0.4921	101	151	A00212.5	A002S12.5	A10012.5	
	12.60	0.4961	101	151	A00212.6		A10012.6	

d_1 $Øh_8$ "/Nr./letter	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A002	A002S	A100	A101
	12.70	0.5000	101	151	A00212.7		A10012.7	
1/2	12.70	0.5000	101	151	A0021/2	A002S1/2	A1001/2	
	12.75	0.5020	101	151			A10012.75	
	12.80	0.5039	101	151	A00212.8		A10012.8	
	12.90	0.5079	101	151	A00212.9		A10012.9	
	13.00	0.5118	101	151	A00213.0	A002S13.0	A10013.0	
33/64	13.10	0.5157	101	151	A00233/64		A10033/64	
	13.10	0.5157	101	151	A00213.1		A10013.1	
	13.20	0.5197	101	151	A00213.2		A10013.2	
	13.25	0.5217	108	160	A00213.25		A10013.25	
	13.30	0.5236	108	160	A00213.3		A10013.3	
	13.40	0.5276	108	160	A00213.4		A10013.4	
17/32	13.49	0.5311	108	160	A00217/32		A10017/32	
	13.50	0.5315	108	160	A00213.5		A10013.5	
	13.60	0.5354	108	160	A00213.6		A10013.6	
	13.70	0.5394	108	160	A00213.7		A10013.7	
	13.75	0.5413	108	160	A00213.75		A10013.75	
	13.80	0.5433	108	160	A00213.8		A10013.8	
35/64	13.89	0.5469	108	160	A00235/64		A10035/64	
	13.90	0.5472	108	160	A00213.9		A10013.9	
	14.00	0.5512	108	160	A00214.0		A10014.0	
	14.25	0.5610	114	169	A00214.25		A10014.25	
9/16	14.29	0.5626	114	169	A0029/16		A1009/16	
	14.50	0.5709	114	169	A00214.5		A10014.5	
37/64	14.68	0.5780	114	169	A00237/64		A10037/64	
	14.75	0.5807	114	169	A00214.75		A10014.75	
	15.00	0.5906	114	169	A00215.0		A10015.0	
19/32	15.08	0.5937	120	178	A00219/32		A10019/32	
	15.25	0.6004	120	178	A00215.25		A10015.25	
39/64	15.48	0.6094	120	178	A00239/64		A10039/64	
	15.50	0.6102	120	178	A00215.5		A10015.5	
	15.75	0.6201	120	178	A00215.75		A10015.75	
5/8	15.88	0.6252	120	178	A0025/8		A1005/8	
	16.00	0.6299	120	178	A00216.0		A10016.0	
41/64	16.27	0.6406	125	184			A10041/64	
	16.50	0.6496	125	184			A10016.5	
21/32	16.67	0.6563	125	184			A10021/32	
	17.00	0.6693	125	184			A10017.0	
43/64	17.07	0.6720	130	191			A10043/64	
11/16	17.46	0.6874	130	191			A10011/16	
	17.50	0.6890	130	191			A10017.5	
	18.00	0.7087	130	191			A10018.0	
	18.50	0.7283	135	198			A10018.5	
	19.00	0.7480	135	198			A10019.0	
	19.50	0.7677	140	205			A10019.5	
	20.00	0.7874	140	205			A10020.0	

DORMER

A108

- Korta Borrar Korsspets
- Lyhyet porat, ristiteroitus
- Korte Bor
- Korte Bor Split Point

Med korsspets fr.o.m 1,6mm, 1/16”
Halkaisijat => 1,6 mm: -ristiteroitus
Med korsspiss f.o.m. 1,6mm, 1/16”
Med krydsspids fr.o.m. 1,6mm, 1/16”

A147

- Korta Borrar
- Lyhyet porat
- Korte Bor
- Korte Bor

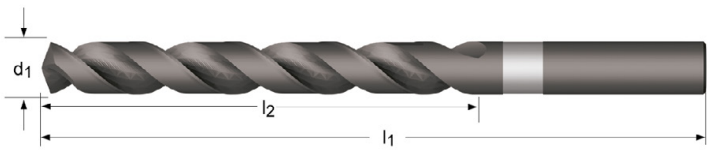
A777

- Korta Borrar Korsspets
- Lyhyet porat, ristiteroitus
- Korte Bor
- Korte Bor Split Point

4 Fasett spets upp till 1,4mm.
Halkaisijat <= 1,4 mm: - 4-pintahionta.
4 Fasett spiss opp til 1,4mm.
4 facet spids op til 1,4mm.

A108	▪	2.2 2.3 4.1 4.2
	•	1.1 1.2 1.3 1.4 1.5 1.6 2.1 3.1 3.2 3.3 3.4 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2 8.3 9.1
A147	▪	2.1 2.2 2.3 4.1 4.2 5.1
	•	1.1 1.2 1.3 1.4 1.5 1.6 2.4 3.1 3.2 3.3 3.4 4.3 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2 8.3 9.1
A777	▪	1.5 1.6 3.4 4.1 4.2 4.3 5.2
	•	1.1 1.2 1.3 1.4 2.1 2.2 2.3 3.1 3.2 3.3 5.1 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 9.1

A108	HSS	DIN 338	4XD	135°	ST		W			A188 134	L114 334
A147	HSS-E	DIN 338	4XD	130°			VA				
A777	HSS-E	DIN 338	4XD	135°	Bronze		N		NAS 907J	A295 135	



A108	A147	A777
		
1.00 - 16.00	0.30 - 15.0	0.30 - 16.00

d_1 Øh8 Inch	d_1 Øh8 mm	d_1 decimal Inch	l_2 mm	l_1 mm	A108	A147	A777
	0.30	0.0118	3	19		A147.3	A777.3
	0.35	0.0138	4	19			A777.35
	0.40	0.0157	5	20		A147.4	A777.4
	0.45	0.0177	5	20			A777.45
	0.50	0.0197	6	22		A147.5	A777.5
	0.55	0.0217	7	24			A777.55

d_1 $Øh_8$ Inch	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A108	A147	A777
	0.60	0.0236	7	24		A147.6	A777.6
	0.65	0.0256	8	26			A777.65
	0.70	0.0276	9	28		A147.7	A777.7
	0.80	0.0315	10	30		A147.8	A777.8
	0.90	0.0354	11	32		A147.9	A777.9
	0.95	0.0374	11	32			A777.95
	1.00	0.0394	12	34	A1081.0	A1471.0	A7771.0
	1.10	0.0433	14	36	A1081.1	A1471.1	A7771.1
	1.20	0.0472	16	38	A1081.2	A1471.2	A7771.2
	1.30	0.0512	16	38	A1081.3	A1471.3	A7771.3
	1.40	0.0551	18	40	A1081.4	A1471.4	A7771.4
	1.50	0.0591	18	40	A1081.5	A1471.5	A7771.5
1/16	1.59	0.0626	20	43	A1081/16	A1471/16	A7771/16
	1.60	0.0630	20	43	A1081.6	A1471.6	A7771.6
	1.70	0.0669	20	43	A1081.7	A1471.7	A7771.7
	1.80	0.0709	22	46	A1081.8	A1471.8	A7771.8
	1.90	0.0748	22	46	A1081.9	A1471.9	A7771.9
5/64	1.98	0.0780	24	49	A1085/64		A7775/64
	2.00	0.0787	24	49	A1082.0	A1472.0	A7772.0
	2.10	0.0827	24	49	A1082.1	A1472.1	A7772.1
	2.20	0.0866	27	53	A1082.2	A1472.2	A7772.2
	2.30	0.0906	27	53	A1082.3	A1472.3	A7772.3
3/32	2.38	0.0937	30	57	A1083/32	A1473/32	A7773/32
	2.40	0.0945	30	57	A1082.4	A1472.4	A7772.4
	2.50	0.0984	30	57	A1082.5	A1472.5	A7772.5
	2.60	0.1024	30	57	A1082.6	A1472.6	A7772.6
	2.70	0.1063	33	61	A1082.7	A1472.7	A7772.7
7/64	2.78	0.1094	33	61	A1087/64		A7777/64
	2.80	0.1102	33	61	A1082.8	A1472.8	A7772.8
	2.90	0.1142	33	61	A1082.9	A1472.9	A7772.9
	3.00	0.1181	33	61	A1083.0	A1473.0	A7773.0
	3.10	0.1220	36	65	A1083.1	A1473.1	A7773.1
1/8	3.18	0.1252	36	65	A1081/8	A1471/8	A7771/8
	3.20	0.1260	36	65	A1083.2	A1473.2	A7773.2
	3.30	0.1299	36	65	A1083.3	A1473.3	A7773.3
	3.40	0.1339	39	70	A1083.4	A1473.4	A7773.4
	3.50	0.1378	39	70	A1083.5	A1473.5	A7773.5
9/64	3.57	0.1406	39	70	A1089/64		A7779/64
	3.60	0.1417	39	70	A1083.6	A1473.6	A7773.6
	3.70	0.1457	39	70	A1083.7	A1473.7	A7773.7
	3.80	0.1496	43	75	A1083.8	A1473.8	A7773.8
	3.90	0.1535	43	75	A1083.9	A1473.9	A7773.9
5/32	3.97	0.1563	43	75	A1085/32	A1475/32	A7775/32
	4.00	0.1575	43	75	A1084.0	A1474.0	A7774.0
	4.10	0.1614	43	75	A1084.1	A1474.1	A7774.1
	4.20	0.1654	43	75	A1084.2	A1474.2	A7774.2
	4.30	0.1693	47	80	A1084.3	A1474.3	A7774.3
11/64	4.37	0.1720	47	80	A10811/64		A77711/64
	4.40	0.1732	47	80	A1084.4	A1474.4	A7774.4
	4.50	0.1772	47	80	A1084.5	A1474.5	A7774.5
	4.60	0.1811	47	80	A1084.6	A1474.6	A7774.6
	4.70	0.1850	47	80	A1084.7	A1474.7	A7774.7
3/16	4.76	0.1874	52	86	A1083/16	A1473/16	A7773/16
	4.80	0.1890	52	86	A1084.8	A1474.8	A7774.8
	4.90	0.1929	52	86	A1084.9	A1474.9	A7774.9
N10	4.92	0.1935	52	86	A108N10		
	5.00	0.1969	52	86	A1085.0	A1475.0	A7775.0
	5.10	0.2008	52	86	A1085.1	A1475.1	A7775.1
13/64	5.16	0.2031	52	86	A10813/64		A77713/64
	5.20	0.2047	52	86	A1085.2	A1475.2	A7775.2
	5.30	0.2087	52	86	A1085.3	A1475.3	A7775.3
	5.40	0.2126	57	93	A1085.4	A1475.4	A7775.4
	5.50	0.2165	57	93	A1085.5	A1475.5	A7775.5
7/32	5.56	0.2189	57	93	A1087/32		A7777/32
	5.60	0.2205	57	93	A1085.6	A1475.6	A7775.6
	5.70	0.2244	57	93	A1085.7	A1475.7	A7775.7
	5.80	0.2283	57	93	A1085.8	A1475.8	A7775.8
	5.90	0.2323	57	93	A1085.9	A1475.9	A7775.9
15/64	5.95	0.2343	57	93	A10815/64		A77715/64
	6.00	0.2362	57	93	A1086.0	A1476.0	A7776.0

DORMER

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A108	A147	A777
	6.10	0.2402	63	101	A1086.1	A1476.1	A7776.1
	6.20	0.2441	63	101	A1086.2	A1476.2	A7776.2
	6.30	0.2480	63	101	A1086.3	A1476.3	A7776.3
1/4	6.35	0.2500	63	101	A1081/4	A1471/4	A7771/4
	6.40	0.2520	63	101	A1086.4	A1476.4	A7776.4
	6.50	0.2559	63	101	A1086.5	A1476.5	A7776.5
	6.60	0.2598	63	101	A1086.6	A1476.6	A7776.6
	6.70	0.2638	63	101	A1086.7	A1476.7	A7776.7
17/64	6.75	0.2657	69	109	A10817/64		A77717/64
	6.80	0.2677	69	109	A1086.8	A1476.8	A7776.8
	6.90	0.2717	69	109	A1086.9	A1476.9	A7776.9
	7.00	0.2756	69	109	A1087.0	A1477.0	A7777.0
	7.10	0.2795	69	109	A1087.1	A1477.1	A7777.1
9/32	7.14	0.2811	69	109	A1089/32		A7779/32
	7.20	0.2835	69	109	A1087.2	A1477.2	A7777.2
	7.30	0.2874	69	109	A1087.3	A1477.3	A7777.3
	7.40	0.2913	69	109	A1087.4	A1477.4	A7777.4
	7.50	0.2953	69	109	A1087.5	A1477.5	A7777.5
19/64	7.54	0.2969	75	117	A10819/64		A77719/64
	7.60	0.2992	75	117	A1087.6	A1477.6	A7777.6
	7.70	0.3031	75	117	A1087.7	A1477.7	A7777.7
	7.80	0.3071	75	117	A1087.8	A1477.8	A7777.8
	7.90	0.3110	75	117	A1087.9	A1477.9	A7777.9
5/16	7.94	0.3126	75	117	A1085/16		A7775/16
	8.00	0.3150	75	117	A1088.0	A1478.0	A7778.0
	8.10	0.3189	75	117	A1088.1	A1478.1	A7778.1
	8.20	0.3228	75	117	A1088.2	A1478.2	A7778.2
	8.30	0.3268	75	117	A1088.3	A1478.3	A7778.3
21/64	8.33	0.3280	75	117	A10821/64		A77721/64
	8.40	0.3307	75	117	A1088.4	A1478.4	A7778.4
	8.50	0.3346	75	117	A1088.5	A1478.5	A7778.5
	8.60	0.3386	81	125	A1088.6	A1478.6	A7778.6
	8.70	0.3425	81	125	A1088.7	A1478.7	A7778.7
11/32	8.73	0.3437	81	125	A10811/32		A77711/32
	8.80	0.3465	81	125	A1088.8	A1478.8	A7778.8
	8.90	0.3504	81	125	A1088.9	A1478.9	A7778.9
	9.00	0.3543	81	125	A1089.0	A1479.0	A7779.0
	9.10	0.3583	81	125	A1089.1	A1479.1	A7779.1
23/64	9.13	0.3594	81	125	A10823/64		A77723/64
	9.20	0.3622	81	125	A1089.2	A1479.2	A7779.2
	9.30	0.3661	81	125	A1089.3	A1479.3	A7779.3
	9.40	0.3701	81	125	A1089.4	A1479.4	A7779.4
	9.50	0.3740	81	125	A1089.5	A1479.5	A7779.5
3/8	9.52	0.3748	87	133	A1083/8		A7773/8
	9.60	0.3780	87	133	A1089.6	A1479.6	A7779.6
	9.70	0.3819	87	133	A1089.7	A1479.7	A7779.7
	9.80	0.3858	87	133	A1089.8	A1479.8	A7779.8
	9.90	0.3898	87	133	A1089.9	A1479.9	A7779.9
25/64	9.92	0.3906	87	133	A10825/64		A77725/64
	10.00	0.3937	87	133	A10810.0	A14710.0	A77710.0
	10.10	0.3976	87	133			A77710.1
	10.20	0.4016	87	133	A10810.2	A14710.2	A77710.2
13/32	10.32	0.4063	87	133	A10813/32		A77713/32
	10.50	0.4134	87	133	A10810.5	A14710.5	A77710.5
27/64	10.72	0.4220	94	142	A10827/64		A77727/64
	10.80	0.4252	94	142	A10810.8		A77710.8
	11.00	0.4331	94	142	A10811.0	A14711.0	A77711.0
7/16	11.11	0.4374	94	142	A1087/16		A7777/16
	11.20	0.4409	94	142		A14711.2	A77711.2
	11.50	0.4528	94	142	A10811.5	A14711.5	A77711.5
29/64	11.51	0.4531	94	142	A10829/64		A77729/64
	11.80	0.4646	94	142	A10811.8		A77711.8
15/32	11.91	0.4689	101	151	A10815/32		A77715/32
	12.00	0.4724	101	151	A10812.0	A14712.0	A77712.0
	12.20	0.4803	101	151	A10812.2		A77712.2
31/64	12.30	0.4843	101	151	A10831/64		A77731/64
	12.50	0.4921	101	151	A10812.5	A14712.5	A77712.5
1/2	12.70	0.5000	101	151	A1081/2		A7771/2
	12.80	0.5039	101	151	A10812.8		A77712.8
	12.90	0.5079	101	151	A10812.9		

d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A108	A147	A777
	13.00	0.5118	101	151	A10813.0	A14713.0	A77713.0
	13.50	0.5315	108	160	A10813.5	A14713.5	A77713.5
	14.00	0.5512	108	160	A10814.0	A14714.0	A77714.0
	14.50	0.5709	114	169	A10814.5	A14714.5	A77714.5
	15.00	0.5906	114	169	A10815.0	A14715.0	A77715.0
	15.25	0.6004	120	178	A10815.25		
	15.50	0.6102	120	178	A10815.5		A77715.5
	16.00	0.6299	120	178	A10816.0		A77716.0

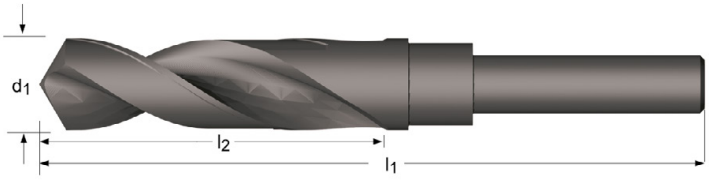
DORMER

A170

- Korta Borrar Med 1/2” Cylindriskt Skaft
- Lyhyet porat, lieriövarsi, 1/2”
- Korte Bor Med 1/2” Sylindrisk Skaft
- Korte Bor Med 1/2” Cylindrisk Skaft

A170 • 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2 8.3 9.1

A170 HSS | DORMER | 4XD | 118° | ST | N



A170



13.00 - 1.1/2

d_1 $Øh_8$ Inch	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 Inch	l_1 Inch	l_2 mm	l_1 mm	A170
	13.00	0.5118			83	156	A17013.0
33/64	13.10	0.5157	3.1/8	6“			A17033/64
17/32	13.49	0.5311	3.1/8	6“			A17017/32
	13.50	0.5315			83	156	A17013.5
35/64	13.89	0.5469	3.1/8	6“			A17035/64
	14.00	0.5512			83	156	A17014.0
9/16	14.29	0.5626	3.1/8	6“			A1709/16
	14.50	0.5709			83	156	A17014.5
37/64	14.68	0.5780	3.1/8	6“			A17037/64
	15.00	0.5906			83	156	A17015.0
19/32	15.08	0.5937	3.1/8	6“			A17019/32
39/64	15.48	0.6094	3.1/8	6“			A17039/64
	15.50	0.6102			83	156	A17015.5
5/8	15.88	0.6252	3.1/8	6“			A1705/8
	16.00	0.6299			84	157	A17016.0
41/64	16.27	0.6406	3.1/8	6“			A17041/64
	16.50	0.6496			84	157	A17016.5
21/32	16.67	0.6563	3.1/8	6“			A17021/32
	17.00	0.6693			84	157	A17017.0
43/64	17.07	0.6720	3.1/8	6“			A17043/64
11/16	17.46	0.6874	3.1/8	6“			A17011/16
	17.50	0.6890			84	157	A17017.5
45/64	17.86	0.7031	3.1/8	6“			A17045/64
	18.00	0.7087			84	157	A17018.0
23/32	18.26	0.7189	3.1/8	6“			A17023/32
	18.50	0.7283			84	157	A17018.5
47/64	18.65	0.7343	3.1/8	6“			A17047/64
	19.00	0.7480			84	157	A17019.0
3/4	19.05	0.7500	3.1/8	6“			A1703/4
49/64	19.45	0.7657	3“	6“			A17049/64
	19.50	0.7677			81	158	A17019.5
25/32	19.84	0.7811	3“	6“			A17025/32
	20.00	0.7874			81	158	A17020.0
51/64	20.24	0.7969	3“	6“			A17051/64
13/16	20.64	0.8126	3“	6“			A17013/16
	21.00	0.8268			82	158	A17021.0
53/64	21.03	0.8280	3“	6“			A17053/64
27/32	21.43	0.8437	3“	6“			A17027/32

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 Inch	l_1 Inch	l_2 mm	l_1 mm	A170
55/64	21.83	0.8594	3“	6“			A17055/64
	22.00	0.8661			82	158	A17022.0
7/8	22.22	0.8748	3“	6“			A1707/8
57/64	22.62	0.8906	3“	6“			A17057/64
	23.00	0.9055			82	158	A17023.0
29/32	23.02	0.9063	3“	6“			A17029/32
59/64	23.42	0.9220	3“	6“			A17059/64
15/16	23.81	0.9374	3“	6“			A17015/16
	24.00	0.9449			83	159	A17024.0
61/64	24.21	0.9531	3“	6“			A17061/64
31/32	24.61	0.9689	3“	6“			A17031/32
	25.00	0.9843			83	159	A17025.0
63/64	25.00	0.9843	3“	6“			A17063/64
1“	25.40	1.0000	3“	6“			A1701
1.1/32	26.19	1.0311	3“	6“			A1701.1/32
1.1/16	26.99	1.0626	3“	6“			A1701.1/16
1.7/64	28.18	1.1094	3“	6“			A1701.7/64
1.1/8	28.58	1.1252	3“	6“			A1701.1/8
1.9/64	28.97	1.1406	3“	6“			A1701.9/64
1.5/32	29.37	1.1563	3“	6“			A1701.5/32
1.3/16	30.16	1.1874	3“	6“			A1701.3/16
1.7/32	30.96	1.2189	3“	6“			A1701.7/32
1.1/4	31.75	1.2500	3“	6“			A1701.1/4
1.5/16	33.34	1.3126	3“	6“			A1701.5/16
1.3/8	34.93	1.3752	3“	6“			A1701.3/8
1.7/16	36.51	1.4374	3“	6“			A1701.7/16
1.1/2	38.10	1.5000	3“	6“			A1701.1/2

DORMER

A160

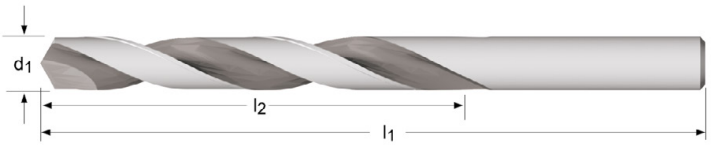
- Kort borr med inlödd 4-fasettspets
- Lyhyet porat, 4-pintahiottu juotettu kovametallikärki
- Standard bor med 4 fasset slipt påloddet HM skjær
- Bor 4-facet m/ HM platte

A160

▪ 3.1 3.2 3.3 3.4

• 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.2 9.1

A160 HSS HM | DIN 338 | 4XD | 118° | ST | N



A160



4.00 - 16.00

d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A160
4.00	0.1575	43	75	A1604.0
4.50	0.1772	47	80	A1604.5
5.00	0.1969	52	86	A1605.0
5.50	0.2165	57	93	A1605.5
6.00	0.2362	57	93	A1606.0
6.50	0.2559	63	101	A1606.5
6.80	0.2677	69	109	A1606.8
7.00	0.2756	69	109	A1607.0
7.50	0.2953	69	109	A1607.5
8.00	0.3150	75	117	A1608.0
8.50	0.3346	75	117	A1608.5
9.00	0.3543	81	125	A1609.0
9.50	0.3740	81	125	A1609.5
10.00	0.3937	87	133	A16010.0
10.20	0.4016	87	133	A16010.2
10.50	0.4134	87	133	A16010.5
11.00	0.4331	94	142	A16011.0
11.50	0.4528	94	142	A16011.5
12.00	0.4724	101	151	A16012.0
13.00	0.5118	101	151	A16013.0
14.00	0.5512	108	160	A16014.0
15.00	0.5906	114	169	A16015.0
16.00	0.6299	120	178	A16016.0

A510

- ADX Korta borrar, Cylindriskt skaft
- ADX Porat, lyhyet
- ADX korte bor, syl. feste
- ADX korte bor, cyl. skaft.

A510																			
	■	1.1	1.2	1.3	1.4	1.5	2.1	2.2	3.1	3.2	3.3	3.4	6.2	6.3	7.2	7.3	7.4	8.1	8.2	8.3
	•	1.6	2.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.4	7.1								

A510 | HSS | DIN 338 | 4XD | 130° | TiN



A510



ADX

3.00 - 14.00

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A510
	3.00	0.1181	33	61	A5103.0
	3.10	0.1220	36	65	A5103.1
1/8	3.18	0.1252	36	65	A5101/8
	3.20	0.1260	36	65	A5103.2
	3.30	0.1299	36	65	A5103.3
	3.40	0.1339	39	70	A5103.4
	3.50	0.1378	39	70	A5103.5
9/64	3.57	0.1406	39	70	A5109/64
	3.60	0.1417	39	70	A5103.6
	3.70	0.1457	39	70	A5103.7
	3.80	0.1496	43	75	A5103.8
	3.90	0.1535	43	75	A5103.9
5/32	3.97	0.1563	43	75	A5105/32
	4.00	0.1575	43	75	A5104.0
	4.10	0.1614	43	75	A5104.1
	4.20	0.1654	43	75	A5104.2
	4.30	0.1693	47	80	A5104.3
11/64	4.37	0.1720	47	80	A51011/64
	4.40	0.1732	47	80	A5104.4
	4.50	0.1772	47	80	A5104.5
	4.60	0.1811	47	80	A5104.6
	4.70	0.1850	47	80	A5104.7
3/16	4.76	0.1874	52	86	A5103/16
	4.80	0.1890	52	86	A5104.8
	4.90	0.1929	52	86	A5104.9
	5.00	0.1969	52	86	A5105.0
	5.10	0.2008	52	86	A5105.1
13/64	5.16	0.2031	52	86	A51013/64
	5.20	0.2047	52	86	A5105.2
	5.30	0.2087	52	86	A5105.3
	5.40	0.2126	57	93	A5105.4
	5.50	0.2165	57	93	A5105.5
7/32	5.56	0.2189	57	93	A5107/32
	5.60	0.2205	57	93	A5105.6
	5.70	0.2244	57	93	A5105.7
	5.80	0.2283	57	93	A5105.8

DORMER

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A510
	5.90	0.2323	57	93	A5105.9
15/64	5.95	0.2343	57	93	A51015/64
	6.00	0.2362	57	93	A5106.0
	6.10	0.2402	63	101	A5106.1
	6.20	0.2441	63	101	A5106.2
	6.30	0.2480	63	101	A5106.3
1/4	6.35	0.2500	63	101	A5101/4
	6.40	0.2520	63	101	A5106.4
	6.50	0.2559	63	101	A5106.5
	6.60	0.2598	63	101	A5106.6
	6.70	0.2638	63	101	A5106.7
17/64	6.75	0.2657	69	109	A51017/64
	6.80	0.2677	69	109	A5106.8
	6.90	0.2717	69	109	A5106.9
	7.00	0.2756	69	109	A5107.0
	7.10	0.2795	69	109	A5107.1
9/32	7.14	0.2811	69	109	A5109/32
	7.20	0.2835	69	109	A5107.2
	7.30	0.2874	69	109	A5107.3
	7.40	0.2913	69	109	A5107.4
	7.50	0.2953	69	109	A5107.5
19/64	7.54	0.2969	75	117	A51019/64
	7.60	0.2992	75	117	A5107.6
	7.70	0.3031	75	117	A5107.7
	7.80	0.3071	75	117	A5107.8
	7.90	0.3110	75	117	A5107.9
5/16	7.94	0.3126	75	117	A5105/16
	8.00	0.3150	75	117	A5108.0
	8.10	0.3189	75	117	A5108.1
	8.20	0.3228	75	117	A5108.2
	8.30	0.3268	75	117	A5108.3
21/64	8.33	0.3280	75	117	A51021/64
	8.40	0.3307	75	117	A5108.4
	8.50	0.3346	75	117	A5108.5
	8.60	0.3386	81	125	A5108.6
	8.70	0.3425	81	125	A5108.7
11/32	8.73	0.3437	81	125	A51011/32
	8.80	0.3465	81	125	A5108.8
	8.90	0.3504	81	125	A5108.9
	9.00	0.3543	81	125	A5109.0
	9.10	0.3583	81	125	A5109.1
23/64	9.13	0.3594	81	125	A51023/64
	9.20	0.3622	81	125	A5109.2
	9.30	0.3661	81	125	A5109.3
	9.40	0.3701	81	125	A5109.4
	9.50	0.3740	81	125	A5109.5
3/8	9.52	0.3748	87	133	A5103/8
	9.60	0.3780	87	133	A5109.6
	9.70	0.3819	87	133	A5109.7
	9.80	0.3858	87	133	A5109.8
	9.90	0.3898	87	133	A5109.9
25/64	9.92	0.3906	87	133	A51025/64
	10.00	0.3937	87	133	A51010.0
	10.10	0.3976	87	133	A51010.1
	10.20	0.4016	87	133	A51010.2
	10.30	0.4055	87	133	A51010.3
13/32	10.32	0.4063	87	133	A51013/32
	10.40	0.4094	87	133	A51010.4
	10.50	0.4134	87	133	A51010.5
	10.60	0.4173	87	133	A51010.6
	10.70	0.4213	94	142	A51010.7
27/64	10.72	0.4220	94	142	A51027/64
	10.80	0.4252	94	142	A51010.8
	10.90	0.4291	94	142	A51010.9
	11.00	0.4331	94	142	A51011.0
	11.10	0.4370	94	142	A51011.1
7/16	11.11	0.4374	94	142	A5107/16
	11.20	0.4409	94	142	A51011.2
	11.30	0.4449	94	142	A51011.3
	11.40	0.4488	94	142	A51011.4

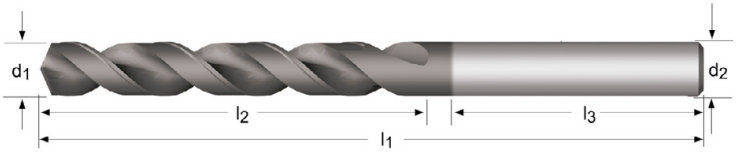
d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A510
	11.50	0.4528	94	142	A51011.5
29/64	11.51	0.4531	94	142	A51029/64
	11.60	0.4567	94	142	A51011.6
	11.70	0.4606	94	142	A51011.7
	11.80	0.4646	94	142	A51011.8
	11.90	0.4685	101	151	A51011.9
15/32	11.91	0.4689	101	151	A51015/32
	12.00	0.4724	101	151	A51012.0
	12.10	0.4764	101	151	A51012.1
	12.20	0.4803	101	151	A51012.2
	12.30	0.4843	101	151	A51012.3
31/64	12.30	0.4843	101	151	A51031/64
	12.40	0.4882	101	151	A51012.4
	12.50	0.4921	101	151	A51012.5
	12.60	0.4961	101	151	A51012.6
	12.70	0.5000	101	151	A51012.7
1/2	12.70	0.5000	101	151	A5101/2
	12.80	0.5039	101	151	A51012.8
	12.90	0.5079	101	151	A51012.9
	13.00	0.5118	101	151	A51013.0
	14.00	0.5512	108	160	A51014.0

A553

- ADX Borrar - invändig kylkanal
- ADX Porat, jäähdytyskanavat
- ADX Bor - Invendig kjølekanal
- ADX Bor - indvendig køl

A553																			
	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	3.1	3.2	3.3	3.4	4.1	6.2	6.3	7.2	7.3	7.4	8.1
	•	2.3	4.2	4.3	5.1	5.2	5.3	6.1	6.4	7.1										

A553 HSS-E DORMER 5XD 130° TiAlN Top DIN 6535HA



A553



ADX

5.00 - 20.00

d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh$_6$ mm	A553
5.00	0.1969	36	79	36	6	A5535.0
5.20	0.2047	38	79	36	6	A5535.2
5.50	0.2165	40	79	36	6	A5535.5
6.00	0.2362	43	79	36	6	A5536.0
6.30	0.2480	46	87	36	8	A5536.3
6.50	0.2559	47	87	36	8	A5536.5
6.80	0.2677	48	87	36	8	A5536.8
6.90	0.2717	48	87	36	8	A5536.9
7.00	0.2756	48	87	36	8	A5537.0
7.40	0.2913	54	94	36	8	A5537.4
7.50	0.2953	54	94	36	8	A5537.5
8.00	0.3150	58	94	36	8	A5538.0
8.50	0.3346	75	130	40	10	A5538.5
8.70	0.3425	75	130	40	10	A5538.7
9.00	0.3543	75	130	40	10	A5539.0
9.50	0.3740	75	130	40	10	A5539.5
10.00	0.3937	75	130	40	10	A55310.0
10.20	0.4016	87	150	45	12	A55310.2
10.30	0.4055	87	150	45	12	A55310.3
10.50	0.4134	87	150	45	12	A55310.5
11.00	0.4331	94	150	45	12	A55311.0
11.30	0.4449	94	150	45	12	A55311.3
11.50	0.4528	94	150	45	12	A55311.5
12.00	0.4724	94	150	45	12	A55312.0
12.50	0.4921	101	160	45	14	A55312.5
13.00	0.5118	101	160	45	14	A55313.0
13.50	0.5315	101	160	45	14	A55313.5
14.00	0.5512	101	160	45	14	A55314.0
14.25	0.5610	108	170	48	16	A55314.25
14.50	0.5709	108	170	48	16	A55314.5
15.00	0.5906	108	170	48	16	A55315.0
15.25	0.6004	108	170	48	16	A55315.25
15.50	0.6102	108	170	48	16	A55315.5
16.00	0.6299	108	170	48	16	A55316.0
16.50	0.6496	125	190	48	18	A55316.5
17.00	0.6693	125	190	48	18	A55317.0

d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Øh$_6$ mm	A553
17.50	0.6890	130	190	48	18	A55317.5
17.75	0.6988	130	190	48	18	A55317.75
18.00	0.7087	130	190	48	18	A55318.0
19.00	0.7480	135	200	50	20	A55319.0
19.25	0.7579	140	200	50	20	A55319.25
20.00	0.7874	140	200	50	20	A55320.0

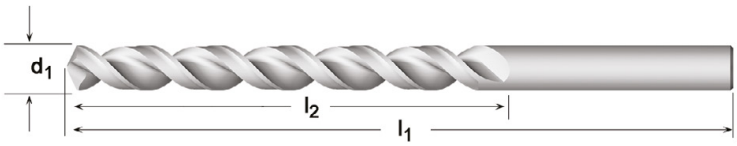
DORMER

A900
- PFX Korta Borrar
- PFX Porat, lyhyet

A901
- PFX Korte Bor
- PFX Korte Bor

A900	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	7.2
	•	3.1	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.1	7.3	7.4	8.1	8.2			
A901	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	7.4		
	•	4.1	4.2	4.3	5.1	5.2	5.3	6.3	6.4								

A900	HSS-E	DIN ANSI	6XD	130°			W			
A901	HSS-E	DIN ANSI	6XD	130°	Alcrona Top		W			



A900



PFX
1.00 - 20.00

A901



PFX
1.50 - 16.00

d_1 $Øh_8$ Inch	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A900	A901
	1.00	0.0394	12	34	A9001.0	
	1.10	0.0433	14	36	A9001.1	
3/64	1.19	0.0469	19	44	A9003/64	
	1.20	0.0472	16	38	A9001.2	
	1.25	0.0492	16	36	A9001.25	
	1.30	0.0512	16	38	A9001.3	
	1.40	0.0551	18	40	A9001.4	
	1.50	0.0591	18	40	A9001.5	A9011.5
	1.55	0.0610	20	43	A9001.55	A9011.55
1/16	1.59	0.0626	22	48	A9001/16	A9011/16
	1.60	0.0630	20	43	A9001.6	A9011.6
	1.70	0.0669	20	43	A9001.7	
	1.75	0.0689	22	46	A9001.75	A9011.75
	1.80	0.0709	22	46	A9001.8	A9011.8
	1.90	0.0748	22	46	A9001.9	A9011.9
5/64	1.98	0.0780	25	51	A9005/64	A9015/64
	2.00	0.0787	24	49	A9002.0	A9012.0
	2.10	0.0827	24	49	A9002.1	A9012.1
	2.15	0.0846	27	53	A9002.15	A9012.15
	2.20	0.0866	27	53	A9002.2	
	2.30	0.0906	27	53	A9002.3	
3/32	2.38	0.0937	32	57	A9003/32	A9013/32
	2.40	0.0945	30	57	A9002.4	A9012.4
	2.50	0.0984	30	57	A9002.5	A9012.5
	2.60	0.1024	30	57	A9002.6	A9012.6
	2.70	0.1063	33	61	A9002.7	A9012.7
7/64	2.78	0.1094	38	67	A9007/64	A9017/64
	2.80	0.1102	33	61	A9002.8	

d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A900	A901
	2.90	0.1142	33	61	A9002.9	A9012.9
	3.00	0.1181	33	61	A9003.0	A9013.0
	3.10	0.1220	36	65	A9003.1	A9013.1
1/8	3.18	0.1252	41	70	A9001/8	A9011/8
	3.20	0.1260	36	65	A9003.2	A9013.2
	3.30	0.1299	36	65	A9003.3	A9013.3
	3.40	0.1339	39	70	A9003.4	A9013.4
	3.50	0.1378	39	70	A9003.5	A9013.5
9/64	3.57	0.1406	44	73	A9009/64	A9019/64
	3.60	0.1417	39	70	A9003.6	A9013.6
	3.70	0.1457	39	70	A9003.7	A9013.7
	3.80	0.1496	43	75	A9003.8	A9013.8
	3.90	0.1535	43	75	A9003.9	A9013.9
5/32	3.97	0.1563	51	79	A9005/32	A9015/32
	4.00	0.1575	43	75	A9004.0	A9014.0
	4.10	0.1614	43	75	A9004.1	A9014.1
	4.20	0.1654	43	75	A9004.2	A9014.2
	4.30	0.1693	47	80	A9004.3	A9014.3
11/64	4.37	0.1720	54	83	A90011/64	A90111/64
	4.40	0.1732	47	80	A9004.4	A9014.4
	4.50	0.1772	47	80	A9004.5	A9014.5
	4.60	0.1811	47	80	A9004.6	A9014.6
	4.70	0.1850	47	80	A9004.7	A9014.7
3/16	4.76	0.1874	59	89	A9003/16	A9013/16
	4.80	0.1890	52	86	A9004.8	A9014.8
	4.90	0.1929	52	86	A9004.9	A9014.9
	5.00	0.1969	52	86	A9005.0	A9015.0
	5.10	0.2008	52	86	A9005.1	A9015.1
13/64	5.16	0.2031	62	92	A90013/64	A90113/64
	5.20	0.2047	52	86	A9005.2	A9015.2
	5.30	0.2087	52	86	A9005.3	A9015.3
	5.40	0.2126	57	93	A9005.4	A9015.4
	5.50	0.2165	57	93	A9005.5	A9015.5
7/32	5.56	0.2189	64	95	A9007/32	A9017/32
	5.60	0.2205	57	93	A9005.6	A9015.6
	5.70	0.2244	57	93	A9005.7	A9015.7
	5.80	0.2283	57	93	A9005.8	A9015.8
	5.90	0.2323	57	93	A9005.9	A9015.9
15/64	5.95	0.2343	67	98	A90015/64	A90115/64
	6.00	0.2362	57	93	A9006.0	A9016.0
	6.10	0.2402	63	101	A9006.1	A9016.1
	6.20	0.2441	63	101	A9006.2	A9016.2
	6.30	0.2480	63	101	A9006.3	A9016.3
1/4	6.35	0.2500	70	102	A9001/4	A9011/4
	6.40	0.2520	63	101	A9006.4	A9016.4
	6.50	0.2559	63	101	A9006.5	A9016.5
	6.60	0.2598	63	101	A9006.6	A9016.6
	6.70	0.2638	63	101	A9006.7	A9016.7
17/64	6.75	0.2657	73	105	A90017/64	A90117/64
	6.80	0.2677	69	109	A9006.8	A9016.8
	6.90	0.2717	69	109	A9006.9	A9016.9
	7.00	0.2756	69	109	A9007.0	A9017.0
	7.10	0.2795	69	109	A9007.1	A9017.1
9/32	7.14	0.2811	75	108	A9009/32	A9019/32
	7.20	0.2835	69	109	A9007.2	A9017.2
	7.30	0.2874	69	109	A9007.3	A9017.3
	7.40	0.2913	69	109	A9007.4	A9017.4
	7.50	0.2953	69	109	A9007.5	A9017.5
19/64	7.54	0.2969	78	111	A90019/64	A90119/64
	7.60	0.2992	75	117	A9007.6	A9017.6
	7.70	0.3031	75	117	A9007.7	A9017.7
	7.80	0.3071	75	117	A9007.8	A9017.8
	7.90	0.3110	75	117	A9007.9	A9017.9
5/16	7.94	0.3126	81	114	A9005/16	A9015/16
	8.00	0.3150	75	117	A9008.0	A9018.0
	8.10	0.3189	75	117	A9008.1	A9018.1
	8.20	0.3228	75	117	A9008.2	A9018.2
	8.30	0.3268	75	117	A9008.3	A9018.3
21/64	8.33	0.3280	84	117	A90021/64	A90121/64
	8.40	0.3307	75	117	A9008.4	A9018.4

DORMER

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A900	A901
	8.50	0.3346	75	117	A9008.5	A9018.5
	8.60	0.3386	81	125	A9008.6	A9018.6
	8.70	0.3425	81	125	A9008.7	A9018.7
11/32	8.73	0.3437	87	121	A90011/32	A90111/32
	8.80	0.3465	81	125	A9008.8	A9018.8
	8.90	0.3504	81	125	A9008.9	A9018.9
	9.00	0.3543	81	125	A9009.0	A9019.0
	9.10	0.3583	81	125	A9009.1	A9019.1
23/64	9.13	0.3594	89	124	A90023/64	A90123/64
	9.20	0.3622	81	125	A9009.2	A9019.2
	9.30	0.3661	81	125	A9009.3	A9019.3
	9.40	0.3701	81	125	A9009.4	A9019.4
	9.50	0.3740	81	125	A9009.5	A9019.5
3/8	9.52	0.3748	92	127	A9003/8	A9013/8
	9.60	0.3780	87	133	A9009.6	A9019.6
	9.70	0.3819	87	133	A9009.7	A9019.7
	9.80	0.3858	87	133	A9009.8	A9019.8
	9.90	0.3898	87	133	A9009.9	A9019.9
25/64	9.92	0.3906	95	130	A90025/64	A90125/64
	10.00	0.3937	87	133	A90010.0	A90110.0
	10.20	0.4016	87	133	A90010.2	A90110.2
	10.30	0.4055	87	133	A90010.3	A90110.3
13/32	10.32	0.4063	98	133	A90013/32	A90113/32
	10.40	0.4094	87	133	A90010.4	A90110.4
	10.50	0.4134	87	133	A90010.5	A90110.5
27/64	10.72	0.4220	100	137	A90027/64	A90127/64
	10.80	0.4252	94	142	A90010.8	A90110.8
	11.00	0.4331	94	142	A90011.0	A90111.0
7/16	11.11	0.4374	103	140	A9007/16	A9017/16
	11.50	0.4528	94	142	A90011.5	A90111.5
29/64	11.51	0.4531	106	143	A90029/64	A90129/64
	11.80	0.4646	94	142	A90011.8	A90111.8
15/32	11.91	0.4689	110	146	A90015/32	A90115/32
	12.00	0.4724	101	151	A90012.0	A90112.0
31/64	12.30	0.4843	111	149	A90031/64	A90131/64
	12.50	0.4921	101	151	A90012.5	A90112.5
1/2	12.70	0.5000	101	151	A9001/2	A9011/2
	13.00	0.5118	101	151	A90013.0	A90113.0
33/64	13.10	0.5157	122	168	A90033/64	A90133/64
	13.50	0.5315	108	160	A90013.5	A90113.5
35/64	13.89	0.5469	122	168	A90035/64	A90135/64
	14.00	0.5512	108	160	A90014.0	A90114.0
9/16	14.29	0.5626	122	168	A9009/16	A9019/16
	14.50	0.5709	114	169	A90014.5	A90114.5
37/64	14.68	0.5780	122	168	A90037/64	A90137/64
	15.00	0.5906	114	169	A90015.0	A90115.0
19/32	15.08	0.5937	132	181	A90019/32	A90119/32
39/64	15.48	0.6094	132	181	A90039/64	A90139/64
	15.50	0.6102	120	178	A90015.5	A90115.5
5/8	15.88	0.6252	132	181	A9005/8	A9015/8
	16.00	0.6299	120	178	A90016.0	A90116.0
41/64	16.27	0.6406	132	181	A90041/64	
	16.50	0.6496	125	184	A90016.5	
21/32	16.67	0.6563	132	181	A90021/32	
	17.00	0.6693	125	184	A90017.0	
43/64	17.07	0.6720	143	194	A90043/64	
11/16	17.46	0.6874	143	194	A90011/16	
	17.50	0.6890	130	191	A90017.5	
45/64	17.86	0.7031	130	191	A90045/64	
	18.00	0.7087	130	191	A90018.0	
23/32	18.26	0.7189	130	191	A90023/32	
	18.50	0.7283	135	198	A90018.5	
47/64	18.65	0.7343	135	198	A90047/64	
	19.00	0.7480	135	198	A90019.0	
3/4	19.05	0.7500	135	198	A9003/4	
49/64	19.45	0.7657	135	198	A90049/64	
	19.50	0.7677	140	205	A90019.5	
25/32	19.84	0.7811	140	205	A90025/32	
	20.00	0.7874	140	205	A90020.0	

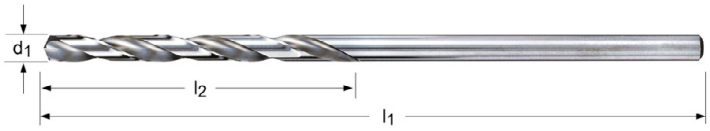
A243
- Flygplansborrar
- Pitkät porat, lentokoneteollisuudelle
- Flybor
- Flybor

A244
- Flybor
- Flybor

Totallängd 150mm
Kokonaispituus 150 mm
Totallengde 150mm
Totallængde 150mm

A243; A244											
▪	1.5	1.6	2.2	2.3	3.4	4.1	4.2	4.3	5.1	6.4	7.4
•	1.3	1.4	2.1	3.1	3.2	3.3	5.2	5.3	6.3	9.1	

A243	HSS	NAS 907	4XD	135°			N			
A244	HSS	NAS 907	4XD	118°			N			





d_1 $Øh_8$ Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	A243	A244
3/32	0.0938	1.1/4	6“	A2433/32X6	
40	0.0980	1.3/8	6“	A243N40X6	
1/8	0.1250	1.5/8	6“	A2431/8X6	A2441/8X6
30	0.1285	1.5/8	6“	A243N30X6	
5/32	0.1563	2“	6“	A2435/32X6	A2445/32X6
21	0.1590	2.1/8	6“	A243N21X6	
20	0.1610	2.1/8	6“	A243N20X6	
3/16	0.1875	2.5/16	6“	A2433/16X6	A2443/16X6
11	0.1910	2.5/16	6“	A243N11X6	
10	0.1935	2.7/16	6“	A243N10X6	
1/4	0.2500	2.3/4	6“	A2431/4X6	A2441/4X6

DORMER

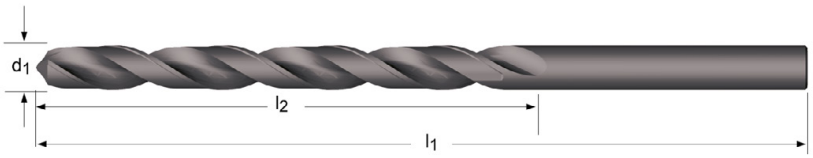
A110

- Långa Borrar
- Pitkät porat
- Lange Bor
- Lange Bor

Blanka under 1,0mm, 1/16”
Halkaisijat < 1,0 mm: -kirkkaita
Blank under 1,0mm, 1/16”
Blank under 1,0mm, 1/16”

A110 • 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2 8.3 9.1

A110 HSS | DIN 340 | 6XD | 118° | ST | N



A110



0.50 - 1“

d_1 Øh8 Inch	d_1 Øh8 mm	d_1 decimal Inch	l_2 mm	l_1 mm	A110
	0.50	0.0197	12	32	A110.5
	0.60	0.0236	15	35	A110.6
	0.70	0.0276	21	42	A110.7
1/32	0.79	0.0311	25	46	A1101/32
	0.80	0.0315	25	46	A110.8
	0.90	0.0354	29	51	A110.9
	1.00	0.0394	33	56	A1101.0
	1.10	0.0433	37	60	A1101.1
	1.20	0.0472	41	65	A1101.2
	1.30	0.0512	41	65	A1101.3
	1.40	0.0551	45	70	A1101.4
	1.50	0.0591	45	70	A1101.5
1/16	1.59	0.0626	50	76	A1101/16
	1.60	0.0630	50	76	A1101.6
	1.70	0.0669	50	76	A1101.7
	1.75	0.0689	53	80	A1101.75
	1.80	0.0709	53	80	A1101.8
	1.90	0.0748	53	80	A1101.9
5/64	1.98	0.0780	56	85	A1105/64
	2.00	0.0787	56	85	A1102.0
	2.05	0.0807	56	85	A1102.05
	2.10	0.0827	56	85	A1102.1
	2.20	0.0866	59	90	A1102.2
	2.25	0.0886	59	90	A1102.25
	2.30	0.0906	59	90	A1102.3
3/32	2.38	0.0937	62	95	A1103/32
	2.40	0.0945	62	95	A1102.4
	2.50	0.0984	62	95	A1102.5
	2.60	0.1024	62	95	A1102.6
	2.70	0.1063	66	100	A1102.7
7/64	2.78	0.1094	66	100	A1107/64
	2.80	0.1102	66	100	A1102.8
	2.90	0.1142	66	100	A1102.9
	3.00	0.1181	66	100	A1103.0
	3.10	0.1220	69	106	A1103.1
1/8	3.18	0.1252	69	106	A1101/8
	3.20	0.1260	69	106	A1103.2
	3.25	0.1280	69	106	A1103.25

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A110
	3.30	0.1299	69	106	A1103.3
	3.40	0.1339	73	112	A1103.4
	3.50	0.1378	73	112	A1103.5
9/64	3.57	0.1406	73	112	A1109/64
	3.60	0.1417	73	112	A1103.6
	3.70	0.1457	73	112	A1103.7
	3.75	0.1476	73	112	A1103.75
	3.80	0.1496	78	119	A1103.8
	3.90	0.1535	78	119	A1103.9
5/32	3.97	0.1563	78	119	A1105/32
	4.00	0.1575	78	119	A1104.0
	4.10	0.1614	78	119	A1104.1
	4.20	0.1654	78	119	A1104.2
	4.25	0.1673	78	119	A1104.25
	4.30	0.1693	82	126	A1104.3
11/64	4.37	0.1720	82	126	A11011/64
	4.40	0.1732	82	126	A1104.4
	4.50	0.1772	82	126	A1104.5
	4.60	0.1811	82	126	A1104.6
	4.70	0.1850	82	126	A1104.7
	4.75	0.1870	82	126	A1104.75
3/16	4.76	0.1874	87	132	A1103/16
	4.80	0.1890	87	132	A1104.8
	4.90	0.1929	87	132	A1104.9
	5.00	0.1969	87	132	A1105.0
	5.10	0.2008	87	132	A1105.1
13/64	5.16	0.2031	87	132	A11013/64
	5.20	0.2047	87	132	A1105.2
	5.25	0.2067	87	132	A1105.25
	5.30	0.2087	87	132	A1105.3
	5.40	0.2126	91	139	A1105.4
	5.50	0.2165	91	139	A1105.5
7/32	5.56	0.2189	91	139	A1107/32
	5.60	0.2205	91	139	A1105.6
	5.70	0.2244	91	139	A1105.7
	5.75	0.2264	91	139	A1105.75
	5.80	0.2283	91	139	A1105.8
	5.90	0.2323	91	139	A1105.9
15/64	5.95	0.2343	91	139	A11015/64
	6.00	0.2362	91	139	A1106.0
	6.10	0.2402	97	148	A1106.1
	6.20	0.2441	97	148	A1106.2
	6.25	0.2461	97	148	A1106.25
	6.30	0.2480	97	148	A1106.3
1/4	6.35	0.2500	97	148	A1101/4
	6.40	0.2520	97	148	A1106.4
	6.50	0.2559	97	148	A1106.5
	6.60	0.2598	97	148	A1106.6
	6.70	0.2638	97	148	A1106.7
17/64	6.75	0.2657	102	156	A11017/64
	6.75	0.2657	102	156	A1106.75
	6.80	0.2677	102	156	A1106.8
	6.90	0.2717	102	156	A1106.9
	7.00	0.2756	102	156	A1107.0
	7.10	0.2795	102	156	A1107.1
9/32	7.14	0.2811	102	156	A1109/32
	7.20	0.2835	102	156	A1107.2
	7.25	0.2854	102	156	A1107.25
	7.30	0.2874	102	156	A1107.3
	7.40	0.2913	102	156	A1107.4
	7.50	0.2953	102	156	A1107.5
	7.60	0.2992	109	165	A1107.6
	7.70	0.3031	109	165	A1107.7
	7.75	0.3051	109	165	A1107.75
	7.80	0.3071	109	165	A1107.8
	7.90	0.3110	109	165	A1107.9
5/16	7.94	0.3126	109	165	A1105/16
	8.00	0.3150	109	165	A1108.0
	8.10	0.3189	109	165	A1108.1
	8.20	0.3228	109	165	A1108.2

DORMER

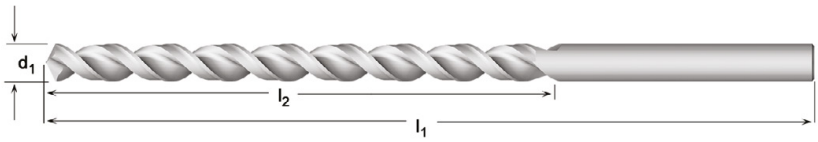
d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A110
	8.25	0.3248	109	165	A1108.25
	8.30	0.3268	109	165	A1108.3
	8.40	0.3307	109	165	A1108.4
	8.50	0.3346	109	165	A1108.5
	8.60	0.3386	115	175	A1108.6
	8.70	0.3425	115	175	A1108.7
11/32	8.73	0.3437	115	175	A11011/32
	8.75	0.3445	115	175	A1108.75
	8.80	0.3465	115	175	A1108.8
	8.90	0.3504	115	175	A1108.9
	9.00	0.3543	115	175	A1109.0
	9.10	0.3583	115	175	A1109.1
	9.20	0.3622	115	175	A1109.2
	9.25	0.3642	115	175	A1109.25
	9.30	0.3661	115	175	A1109.3
	9.40	0.3701	115	175	A1109.4
	9.50	0.3740	115	175	A1109.5
3/8	9.52	0.3748	121	184	A1103/8
	9.60	0.3780	121	184	A1109.6
	9.70	0.3819	121	184	A1109.7
	9.75	0.3839	121	184	A1109.75
	9.80	0.3858	121	184	A1109.8
	9.90	0.3898	121	184	A1109.9
	10.00	0.3937	121	184	A11010.0
	10.10	0.3976	121	184	A11010.1
	10.20	0.4016	121	184	A11010.2
	10.25	0.4035	121	184	A11010.25
	10.30	0.4055	121	184	A11010.3
13/32	10.32	0.4063	121	184	A11013/32
	10.50	0.4134	121	184	A11010.5
	10.75	0.4232	128	195	A11010.75
	10.80	0.4252	128	195	A11010.8
	11.00	0.4331	128	195	A11011.0
7/16	11.11	0.4374	128	195	A1107/16
	11.25	0.4429	128	195	A11011.25
	11.40	0.4488	128	195	A11011.4
	11.50	0.4528	128	195	A11011.5
	11.75	0.4626	128	195	A11011.75
	12.00	0.4724	134	205	A11012.0
	12.10	0.4764	134	205	A11012.1
	12.25	0.4823	134	205	A11012.25
	12.50	0.4921	134	205	A11012.5
1/2	12.70	0.5000	134	205	A1101/2
	13.00	0.5118	134	205	A11013.0
17/32	13.49	0.5311	140	214	A11017/32
	13.50	0.5315	140	214	A11013.5
	14.00	0.5512	140	214	A11014.0
9/16	14.29	0.5626	144	220	A1109/16
	14.50	0.5709	144	220	A11014.5
	15.00	0.5906	144	220	A11015.0
	15.50	0.6102	149	227	A11015.5
5/8	15.88	0.6252	149	227	A1105/8
	16.00	0.6299	149	227	A11016.0
	16.50	0.6496	154	235	A11016.5
	17.00	0.6693	154	235	A11017.0
11/16	17.46	0.6874	158	241	A11011/16
	17.50	0.6890	158	241	A11017.5
	18.00	0.7087	158	241	A11018.0
	18.50	0.7283	162	247	A11018.5
	19.00	0.7480	162	247	A11019.0
3/4	19.05	0.7500	166	254	A1103/4
	19.50	0.7677	166	254	A11019.5
	20.00	0.7874	166	254	A11020.0
	21.00	0.8268	171	261	A11021.0
	22.00	0.8661	176	268	A11022.0
7/8	22.22	0.8748	176	268	A1107/8
15/16	23.81	0.9374	185	282	A11015/16
1“	25.40	1.0000	190	290	A1101

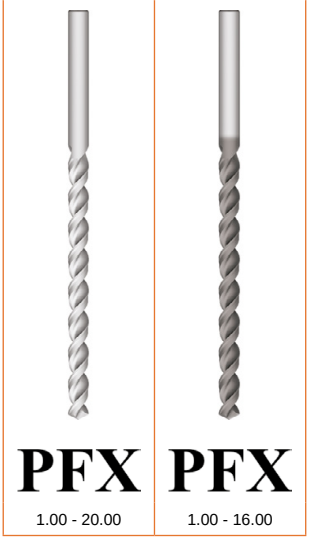
A940
- PFX Långa Borrar
- PFX Porat, pitkät

A941
- PFX Lange Bor
- PFX Lange Bor

A940	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	4.1	4.2	4.3	7.2
	•	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.1	7.3	7.4	8.1	8.2	
A941	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	7.4
	•	4.1	4.2	4.3	6.3	6.4								

A940	HSS-E	DIN ANSI	10XD	130°			W			
A941	HSS-E	DIN ANSI	10XD	130°	Alcrona Top		W			





d_1 $Øh_8$ Inch	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A940	A941
	1.00	0.0394	33	56	A9401.0	A9411.0
	1.10	0.0433	37	60	A9401.1	
3/64	1.19	0.0469	29	57	A9403/64	A9413/64
	1.20	0.0472	41	65	A9401.2	
	1.30	0.0512	41	65	A9401.3	
	1.40	0.0551	45	70	A9401.4	
	1.50	0.0591	45	70	A9401.5	A9411.5
1/16	1.59	0.0626	44	76	A9401/16	A9411/16
	1.60	0.0630	50	76	A9401.6	
	1.70	0.0669	50	76	A9401.7	
	1.80	0.0709	53	80	A9401.8	
	1.90	0.0748	53	80	A9401.9	
5/64	1.98	0.0780	51	95	A9405/64	A9415/64
	2.00	0.0787	56	85	A9402.0	A9412.0
	2.10	0.0827	56	85	A9402.1	
	2.20	0.0866	59	90	A9402.2	
	2.30	0.0906	59	90	A9402.3	
3/32	2.38	0.0937	57	108	A9403/32	A9413/32
	2.40	0.0945	62	95	A9402.4	
	2.50	0.0984	62	95	A9402.5	A9412.5
	2.60	0.1024	62	95	A9402.6	
	2.70	0.1063	66	100	A9402.7	
7/64	2.78	0.1094	64	117	A9407/64	A9417/64
	2.80	0.1102	66	100	A9402.8	
	2.90	0.1142	66	100	A9402.9	
	3.00	0.1181	66	100	A9403.0	A9413.0

DORMER

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A940	A941
	3.10	0.1220	69	106	A9403.1	A9413.1
1/8	3.18	0.1252	70	130	A9401/8	A9411/8
	3.20	0.1260	69	106	A9403.2	A9413.2
	3.30	0.1299	69	106	A9403.3	A9413.3
	3.40	0.1339	73	112	A9403.4	A9413.4
	3.50	0.1378	73	112	A9403.5	A9413.5
9/64	3.57	0.1406	76	137	A9409/64	A9419/64
	3.60	0.1417	73	112	A9403.6	A9413.6
	3.70	0.1457	73	112	A9403.7	A9413.7
	3.80	0.1496	78	119	A9403.8	A9413.8
	3.90	0.1535	78	119	A9403.9	A9413.9
5/32	3.97	0.1563	76	137	A9405/32	A9415/32
	4.00	0.1575	78	119	A9404.0	A9414.0
	4.10	0.1614	78	119	A9404.1	A9414.1
	4.20	0.1654	78	119	A9404.2	A9414.2
	4.30	0.1693	82	126	A9404.3	A9414.3
11/64	4.37	0.1720	86	146	A94011/64	A94111/64
	4.40	0.1732	82	126	A9404.4	A9414.4
	4.50	0.1772	82	126	A9404.5	A9414.5
	4.60	0.1811	82	126	A9404.6	A9414.6
	4.70	0.1850	82	126	A9404.7	A9414.7
3/16	4.76	0.1874	86	146	A9403/16	A9413/16
	4.80	0.1890	87	132	A9404.8	A9414.8
	4.90	0.1929	87	132	A9404.9	A9414.9
	5.00	0.1969	87	132	A9405.0	A9415.0
	5.10	0.2008	87	132	A9405.1	A9415.1
13/64	5.16	0.2031	92	152	A94013/64	A94113/64
	5.20	0.2047	87	132	A9405.2	A9415.2
	5.30	0.2087	87	132	A9405.3	A9415.3
	5.40	0.2126	91	139	A9405.4	A9415.4
	5.50	0.2165	91	139	A9405.5	A9415.5
7/32	5.56	0.2189	92	152	A9407/32	A9417/32
	5.60	0.2205	91	139	A9405.6	A9415.6
	5.70	0.2244	91	139	A9405.7	A9415.7
	5.80	0.2283	91	139	A9405.8	A9415.8
	5.90	0.2323	91	139	A9405.9	A9415.9
15/64	5.95	0.2343	95	156	A94015/64	A94115/64
	6.00	0.2362	91	139	A9406.0	A9416.0
	6.10	0.2402	97	148	A9406.1	A9416.1
	6.20	0.2441	97	148	A9406.2	A9416.2
	6.30	0.2480	97	148	A9406.3	A9416.3
1/4	6.35	0.2500	95	156	A9401/4	A9411/4
	6.40	0.2520	97	148	A9406.4	A9416.4
	6.50	0.2559	97	148	A9406.5	A9416.5
	6.60	0.2598	97	148	A9406.6	A9416.6
	6.70	0.2638	97	148	A9406.7	A9416.7
17/64	6.75	0.2657	98	159	A94017/64	A94117/64
	6.80	0.2677	102	156	A9406.8	A9416.8
	6.90	0.2717	102	156	A9406.9	A9416.9
	7.00	0.2756	102	156	A9407.0	A9417.0
	7.10	0.2795	102	156	A9407.1	A9417.1
9/32	7.14	0.2811	98	159	A9409/32	A9419/32
	7.20	0.2835	102	156	A9407.2	A9417.2
	7.30	0.2874	102	156	A9407.3	A9417.3
	7.40	0.2913	102	156	A9407.4	A9417.4
	7.50	0.2953	102	156	A9407.5	A9417.5
19/64	7.54	0.2969	102	162	A94019/64	A94119/64
	7.60	0.2992	109	165	A9407.6	A9417.6
	7.70	0.3031	109	165	A9407.7	A9417.7
	7.80	0.3071	109	165	A9407.8	A9417.8
	7.90	0.3110	109	165	A9407.9	A9417.9
5/16	7.94	0.3126	102	162	A9405/16	A9415/16
	8.00	0.3150	109	165	A9408.0	A9418.0
	8.10	0.3189	109	165	A9408.1	A9418.1
	8.20	0.3228	109	165	A9408.2	A9418.2
	8.30	0.3268	109	165	A9408.3	A9418.3
21/64	8.33	0.3280	105	165	A94021/64	A94121/64
	8.40	0.3307	109	165	A9408.4	A9418.4
	8.50	0.3346	109	165	A9408.5	A9418.5
	8.60	0.3386	115	175	A9408.6	A9418.6

d_1 $\emptyset h_8$ Inch	d_1 $\emptyset h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A940	A941
	8.70	0.3425	115	175	A9408.7	A9418.7
11/32	8.73	0.3437	105	165	A94011/32	A94111/32
	8.80	0.3465	115	175	A9408.8	A9418.8
	8.90	0.3504	115	175	A9408.9	A9418.9
	9.00	0.3543	115	175	A9409.0	A9419.0
	9.10	0.3583	115	175	A9409.1	A9419.1
23/64	9.13	0.3594	108	171	A94023/64	A94123/64
	9.20	0.3622	115	175	A9409.2	A9419.2
	9.30	0.3661	115	175	A9409.3	A9419.3
	9.40	0.3701	115	175	A9409.4	A9419.4
	9.50	0.3740	115	175	A9409.5	A9419.5
3/8	9.52	0.3748	108	171	A9403/8	A9413/8
	9.60	0.3780	121	184	A9409.6 [3]	A9419.6 [3]
	9.70	0.3819	121	184	A9409.7 [3]	A9419.7 [3]
	9.80	0.3858	121	184	A9409.8 [3]	A9419.8 [3]
	9.90	0.3898	121	184	A9409.9 [3]	A9419.9 [3]
25/64	9.92	0.3906	111	178	A94025/64 [3]	A94125/64 [3]
	10.00	0.3937	121	184	A94010.0 [3]	A94110.0 [3]
	10.20	0.4016	121	184	A94010.2 [3]	A94110.2 [3]
	10.30	0.4055	121	184	A94010.3 [3]	A94110.3 [3]
13/32	10.32	0.4063	111	178	A94013/32 [3]	A94113/32 [3]
	10.50	0.4134	121	184	A94010.5 [3]	A94110.5 [3]
27/64	10.72	0.4220	117	184	A94027/64 [3]	A94127/64 [3]
	11.00	0.4331	128	195	A94011.0 [3]	A94111.0 [3]
7/16	11.11	0.4374	117	184	A9407/16 [3]	A9417/16 [3]
	11.20	0.4409	128	195	A94011.2 [3]	A94111.2 [3]
	11.50	0.4528	128	195	A94011.5 [3]	A94111.5 [3]
29/64	11.51	0.4531	121	190	A94029/64 [3]	A94129/64 [3]
	11.80	0.4646	128	195	A94011.8 [3]	A94111.8 [3]
15/32	11.91	0.4689	121	190	A94015/32 [3]	A94115/32 [3]
	12.00	0.4724	134	205	A94012.0 [3]	A94112.0 [3]
	12.20	0.4803	134	205	A94012.2 [3]	A94112.2 [3]
31/64	12.30	0.4843	121	197	A94031/64 [3]	A94131/64 [3]
	12.50	0.4921	134	205	A94012.5 [3]	A94112.5 [3]
1/2	12.70	0.5000	121	197	A9401/2 [3]	A9411/2 [3]
	13.00	0.5118	134	205	A94013.0 [3]	A94113.0 [3]
33/64	13.10	0.5157	121	203	A94033/64 [3]	A94133/64 [3]
17/32	13.49	0.5311	121	203	A94017/32 [3]	
	13.50	0.5315	140	214	A94013.5 [3]	A94113.5 [3]
35/64	13.89	0.5469	124	210	A94035/64 [3]	A94135/64 [3]
	14.00	0.5512	140	214	A94014.0 [3]	A94114.0 [3]
9/16	14.29	0.5626	124	210	A9409/16 [3]	A9419/16 [3]
	14.50	0.5709	144	220	A94014.5 [3]	A94114.5 [3]
37/64	14.68	0.5780	124	222	A94037/64 [3]	A94137/64 [3]
	15.00	0.5906	144	220	A94015.0 [3]	A94115.0 [3]
19/32	15.08	0.5937	124	222	A94019/32 [3]	A94119/32 [3]
39/64	15.48	0.6094	124	222	A94039/64 [3]	A94139/64 [3]
	15.50	0.6102	149	227	A94015.5 [3]	A94115.5 [3]
5/8	15.88	0.6252	124	222	A9405/8 [3]	A9415/8 [3]
	16.00	0.6299	149	227	A94016.0 [3]	A94116.0 [3]
41/64	16.27	0.6406	130	229	A94041/64 [3]	
	16.50	0.6496	154	235	A94016.5 [3]	
21/32	16.67	0.6563	130	229	A94021/32 [3]	
	17.00	0.6693	154	235	A94017.0 [3]	
43/64	17.07	0.6720	137	235	A94043/64 [3]	
11/16	17.46	0.6874	137	235	A94011/16 [3]	
	17.50	0.6890	158	241	A94017.5 [3]	
45/64	17.86	0.7031	143	241	A94045/64 [3]	
	18.00	0.7087	158	241	A94018.0 [3]	
23/32	18.26	0.7189	143	241	A94023/32 [3]	
47/64	18.65	0.7343	149	248	A94047/64 [3]	
	19.00	0.7480	162	247	A94019.0 [3]	
3/4	19.05	0.7500	149	248	A9403/4 [3]	
49/64	19.45	0.7657	152	251	A94049/64 [3]	
25/32	19.84	0.7811	152	251	A94025/32 [3]	
	20.00	0.7874	166	254	A94020.0 [3]	

[3] < 10xD

DORMER

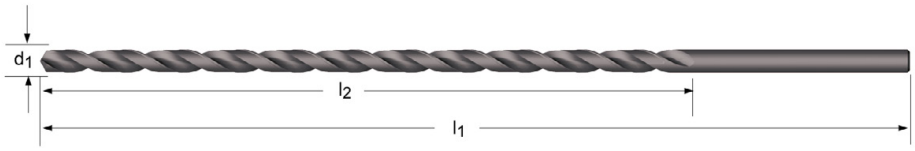
A125

- Extra Långa Borrar — Blank under 2,2mm, 5/64”
- Erittäin pitkät porat — Halkaisijat < 2,2 mm, 5/64”: -kirkkaita
- Ekstra Lange Bor — Blank under 2,2mm, 5/64”
- Ekstra Lange Bor — Blank under 2,2mm, 5/64”

A125 ▪ 1.1 1.2

• 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2 8.3 9.1

A125 | HSS | BS 328 | 10XD | 118° | ST | N



A125



1.40 - 1“

d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A125
	1.40	0.0551	100	160	A1251.4X160
	1.50	0.0591	80	125	A1251.5X125
	1.50	0.0591	100	160	A1251.5X160
1/16	1.59	0.0626	80	125	A1251/16X125
1/16	1.59	0.0626	100	160	A1251/16X160
	1.80	0.0709	100	160	A1251.8X160
5/64	1.98	0.0780	80	125	A1255/64X125
5/64	1.98	0.0780	100	160	A1255/64X160
	2.00	0.0787	80	125	A1252.0X125
	2.00	0.0787	100	160	A1252.0X160
	2.20	0.0866	100	160	A1252.2X160
3/32	2.38	0.0937	80	125	A1253/32X125
3/32	2.38	0.0937	100	160	A1253/32X160
	2.50	0.0984	80	125	A1252.5X125
	2.50	0.0984	100	160	A1252.5X160
7/64	2.78	0.1094	80	125	A1257/64X125
7/64	2.78	0.1094	100	160	A1257/64X160
	3.00	0.1181	100	160	A1253.0X160
	3.00	0.1181	150	200	A1253.0X200
	3.00	0.1181	200	250	A1253.0X250
1/8	3.18	0.1252	100	160	A1251/8X160
1/8	3.18	0.1252	150	200	A1251/8X200
1/8	3.18	0.1252	200	250	A1251/8X250
1/8	3.18	0.1252	250	310	A1251/8X315
	3.30	0.1299	100	160	A1253.3X160
	3.50	0.1378	100	160	A1253.5X160
	3.50	0.1378	150	200	A1253.5X200
	3.50	0.1378	200	250	A1253.5X250
9/64	3.57	0.1406	100	160	A1259/64X160
9/64	3.57	0.1406	150	200	A1259/64X200
9/64	3.57	0.1406	250	310	A1259/64X315
5/32	3.97	0.1563	100	160	A1255/32X160
5/32	3.97	0.1563	150	200	A1255/32X200
5/32	3.97	0.1563	200	250	A1255/32X250

d_1 $\emptyset h_8$ Inch	d_1 $\emptyset h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A125
5/32	3.97	0.1563	250	310	A1255/32X315
	4.00	0.1575	100	160	A1254.0X160
	4.00	0.1575	150	200	A1254.0X200
	4.00	0.1575	200	250	A1254.0X250
	4.00	0.1575	250	310	A1254.0X315
11/64	4.37	0.1720	100	160	A12511/64X160
11/64	4.37	0.1720	150	200	A12511/64X200
11/64	4.37	0.1720	250	310	A12511/64X315
	4.50	0.1772	100	160	A1254.5X160
	4.50	0.1772	150	200	A1254.5X200
	4.50	0.1772	200	250	A1254.5X250
	4.50	0.1772	250	310	A1254.5X315
3/16	4.76	0.1874	100	160	A1253/16X160
3/16	4.76	0.1874	150	200	A1253/16X200
3/16	4.76	0.1874	200	250	A1253/16X250
3/16	4.76	0.1874	250	310	A1253/16X315
3/16	4.76	0.1874	300	400	A1253/16X400
	5.00	0.1969	100	160	A1255.0X160
	5.00	0.1969	150	200	A1255.0X200
	5.00	0.1969	200	250	A1255.0X250
	5.00	0.1969	250	310	A1255.0X315
	5.00	0.1969	300	400	A1255.0X400
13/64	5.16	0.2031	150	200	A12513/64X200
13/64	5.16	0.2031	200	250	A12513/64X250
13/64	5.16	0.2031	250	310	A12513/64X315
	5.50	0.2165	150	200	A1255.5X200
	5.50	0.2165	200	250	A1255.5X250
	5.50	0.2165	250	310	A1255.5X315
7/32	5.56	0.2189	150	200	A1257/32X200
7/32	5.56	0.2189	200	250	A1257/32X250
7/32	5.56	0.2189	250	310	A1257/32X315
15/64	5.95	0.2343	150	200	A12515/64X200
15/64	5.95	0.2343	200	250	A12515/64X250
15/64	5.95	0.2343	250	310	A12515/64X315
	6.00	0.2362	150	200	A1256.0X200
	6.00	0.2362	200	250	A1256.0X250
	6.00	0.2362	250	310	A1256.0X315
	6.00	0.2362	300	400	A1256.0X400
1/4	6.35	0.2500	150	200	A1251/4X200
1/4	6.35	0.2500	200	250	A1251/4X250
1/4	6.35	0.2500	250	310	A1251/4X315
1/4	6.35	0.2500	300	400	A1251/4X400
1/4	6.35	0.2500	400	460	A1251/4X500
	6.50	0.2559	150	200	A1256.5X200
	6.50	0.2559	200	250	A1256.5X250
	6.50	0.2559	250	310	A1256.5X315
17/64	6.75	0.2657	150	200	A12517/64X200
17/64	6.75	0.2657	200	250	A12517/64X250
17/64	6.75	0.2657	400	460	A12517/64X500
	7.00	0.2756	150	200	A1257.0X200
	7.00	0.2756	200	250	A1257.0X250
	7.00	0.2756	250	310	A1257.0X315
9/32	7.14	0.2811	150	200	A1259/32X200
9/32	7.14	0.2811	200	250	A1259/32X250
9/32	7.14	0.2811	250	310	A1259/32X315
9/32	7.14	0.2811	400	460	A1259/32X500
	7.50	0.2953	150	200	A1257.5X200
	7.50	0.2953	200	250	A1257.5X250
	7.50	0.2953	250	310	A1257.5X315
19/64	7.54	0.2969	250	310	A12519/64X315
19/64	7.54	0.2969	400	460	A12519/64X500
5/16	7.94	0.3126	150	200	A1255/16X200
5/16	7.94	0.3126	200	250	A1255/16X250
5/16	7.94	0.3126	250	310	A1255/16X315
5/16	7.94	0.3126	300	400	A1255/16X400
5/16	7.94	0.3126	400	460	A1255/16X500
	8.00	0.3150	200	250	A1258.0X250
	8.00	0.3150	250	310	A1258.0X315
	8.00	0.3150	300	400	A1258.0X400
21/64	8.33	0.3280	250	310	A12521/64X315

DORMER

d_1 $\emptyset h_8$ Inch	d_1 $\emptyset h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A125
21/64	8.33	0.3280	400	460	A12521/64X500
	8.50	0.3346	200	250	A1258.5X250
	8.50	0.3346	250	310	A1258.5X315
11/32	8.73	0.3437	200	250	A12511/32X250
11/32	8.73	0.3437	250	310	A12511/32X315
11/32	8.73	0.3437	300	400	A12511/32X400
11/32	8.73	0.3437	400	460	A12511/32X500
	9.00	0.3543	200	250	A1259.0X250
	9.00	0.3543	250	310	A1259.0X315
	9.00	0.3543	300	400	A1259.0X400
23/64	9.13	0.3594	250	310	A12523/64X315
23/64	9.13	0.3594	400	460	A12523/64X500
	9.50	0.3740	200	250	A1259.5X250
	9.50	0.3740	250	310	A1259.5X315
3/8	9.52	0.3748	200	250	A1253/8X250
3/8	9.52	0.3748	250	310	A1253/8X315
3/8	9.52	0.3748	300	400	A1253/8X400
3/8	9.52	0.3748	400	460	A1253/8X500
25/64	9.92	0.3906	250	310	A12525/64X315
25/64	9.92	0.3906	400	460	A12525/64X500
	10.00	0.3937	200	250	A12510.0X250
	10.00	0.3937	250	310	A12510.0X315
	10.00	0.3937	300	400	A12510.0X400
13/32	10.32	0.4063	200	250	A12513/32X250
13/32	10.32	0.4063	250	310	A12513/32X315
13/32	10.32	0.4063	400	460	A12513/32X500
	10.50	0.4134	200	250	A12510.5X250
	10.50	0.4134	250	310	A12510.5X315
	10.50	0.4134	300	400	A12510.5X400
27/64	10.72	0.4220	250	310	A12527/64X315
	11.00	0.4331	200	250	A12511.0X250
	11.00	0.4331	250	310	A12511.0X315
	11.00	0.4331	300	400	A12511.0X400
7/16	11.11	0.4374	200	250	A1257/16X250
7/16	11.11	0.4374	250	310	A1257/16X315
7/16	11.11	0.4374	300	400	A1257/16X400
7/16	11.11	0.4374	400	460	A1257/16X500
29/64	11.51	0.4531	250	310	A12529/64X315
29/64	11.51	0.4531	400	460	A12529/64X500
15/32	11.91	0.4689	200	250	A12515/32X250
15/32	11.91	0.4689	250	310	A12515/32X315
15/32	11.91	0.4689	400	460	A12515/32X500
	12.00	0.4724	200	250	A12512.0X250
	12.00	0.4724	250	310	A12512.0X315
	12.00	0.4724	300	400	A12512.0X400
31/64	12.30	0.4843	250	310	A12531/64X315
31/64	12.30	0.4843	400	460	A12531/64X500
1/2	12.70	0.5000	200	250	A1251/2X250
1/2	12.70	0.5000	250	310	A1251/2X315
1/2	12.70	0.5000	300	400	A1251/2X400
1/2	12.70	0.5000	400	460	A1251/2X500
	13.00	0.5118	250	310	A12513.0X315
	13.00	0.5118	300	400	A12513.0X400
33/64	13.10	0.5157	250	310	A12533/64X315
33/64	13.10	0.5157	400	460	A12533/64X500
17/32	13.49	0.5311	250	310	A12517/32X315
17/32	13.49	0.5311	400	460	A12517/32X500
35/64	13.89	0.5469	250	310	A12535/64X315
35/64	13.89	0.5469	400	460	A12535/64X500
	14.00	0.5512	250	310	A12514.0X315
	14.00	0.5512	300	400	A12514.0X400
9/16	14.29	0.5626	250	310	A1259/16X315
9/16	14.29	0.5626	400	460	A1259/16X500
37/64	14.68	0.5780	250	310	A12537/64X315
19/32	15.08	0.5937	250	310	A12519/32X315
19/32	15.08	0.5937	400	460	A12519/32X500
39/64	15.48	0.6094	250	310	A12539/64X315
39/64	15.48	0.6094	400	460	A12539/64X500
5/8	15.88	0.6252	250	310	A1255/8X315
5/8	15.88	0.6252	400	460	A1255/8X500

d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A125
21/32	16.67	0.6563	250	310	A12521/32X315
21/32	16.67	0.6563	400	460	A12521/32X500
11/16	17.46	0.6874	250	310	A12511/16X315
11/16	17.46	0.6874	400	460	A12511/16X500
23/32	18.26	0.7189	250	310	A12523/32X315
23/32	18.26	0.7189	400	460	A12523/32X500
3/4	19.05	0.7500	250	310	A1253/4X315
3/4	19.05	0.7500	400	460	A1253/4X500
25/32	19.84	0.7811	400	460	A12525/32X500
13/16	20.64	0.8126	400	460	A12513/16X500
7/8	22.22	0.8748	400	460	A1257/8X500
15/16	23.81	0.9374	400	460	A12515/16X500
1“	25.40	1.0000	400	460	A1251X500

DORMER

A976
A977
A978

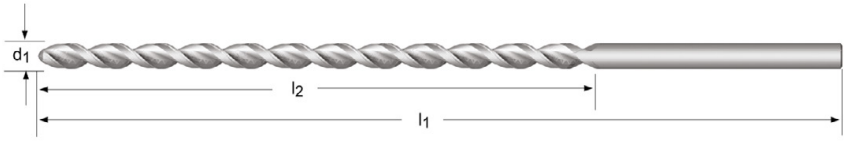
- PFX Extra Långa Borrar
- PFX Porat, erittäin pitkät
- PFX Ekstra Lange Bor
- PFX Ekstra Lange Bor

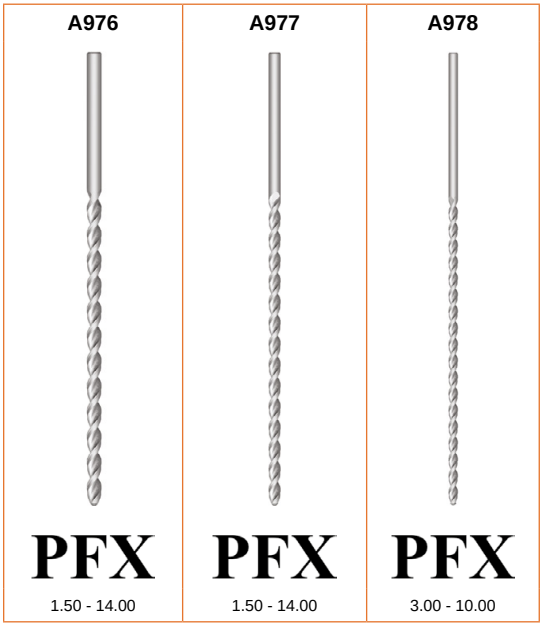
A976; A977; A978

▪ 1.3 1.4 1.5 1.6

• 1.1 1.2 2.1 2.2 2.3 3.2 3.3 3.4 4.1 4.2 4.3 6.3 6.4 7.4

A976	HSS-E	DIN 1869/1	15XD	130°			W					
A977	HSS-E	DIN 1869/2	20XD	130°			W					
A978	HSS-E	DIN 1869/3	25XD	130°			W					





d_1 $Øh_8$ Inch	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A976	A977	A978
	1.50	0.0591	75	115	A9761.5		
	1.50	0.0591	100	150		A9771.5 [4]	
1/16	1.59	0.0626	100	150		A9771/16 [4]	
	2.00	0.0787	110	160		A9772.0 [4]	
	2.00	0.0787	85	125	A9762.0X125		
	2.10	0.0827	85	125	A9762.1X125		
	2.20	0.0866	90	135	A9762.2X135		
	2.30	0.0906	90	135	A9762.3X135		
3/32	2.38	0.0937	115	170		A9773/32 [4]	
	2.40	0.0945	95	140	A9762.4X140		
	2.50	0.0984	95	140	A9762.5X140		
	2.60	0.1024	95	140	A9762.6X140		
	2.70	0.1063	100	150	A9762.7X150		
	2.80	0.1102	100	150	A9762.8X150		
	2.90	0.1142	100	150	A9762.9X150		
	3.00	0.1181	100	150	A9763.0X150		
	3.00	0.1181	130	190		A9773.0X190	
	3.00	0.1181	160	240			A9783.0 [4]
	3.10	0.1220	105	155	A9763.1X155		
1/8	3.18	0.1252	105	155	A9761/8		

[4] Dormer standard / Pituudet Dormer Standardin mukaan / Spor og totallengde lik Dormer standard / Spor og totallængde i følge Dormer standard

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A976	A977	A978
1/8	3.18	0.1252	135	200		A9771/8	
	3.20	0.1260	105	155	A9763.2X155		
	3.30	0.1299	105	155	A9763.3X155		
	3.40	0.1339	115	165	A9763.4X165		
	3.50	0.1378	115	165	A9763.5X165		
	3.50	0.1378	145	210		A9773.5X210	
	3.50	0.1378	180	265			A9783.5X265
	3.60	0.1417	115	165	A9763.6X165		
	3.70	0.1457	115	165	A9763.7X165		
	3.80	0.1496	120	175	A9763.8X175		
	3.90	0.1535	120	175	A9763.9X175		
5/32	3.97	0.1563	120	175	A9765/32		
	4.00	0.1575	120	175	A9764.0X175		
	4.00	0.1575	150	220		A9774.0X220	
	4.00	0.1575	190	280			A9784.0X280
	4.10	0.1614	120	175	A9764.1X175		
	4.20	0.1654	120	175	A9764.2X175		
	4.30	0.1693	125	185	A9764.3X185		
	4.40	0.1732	125	185	A9764.4X185		
	4.50	0.1772	125	185	A9764.5X185		
	4.50	0.1772	160	235		A9774.5X235	
	4.50	0.1772	200	295			A9784.5X295
	4.60	0.1811	125	185	A9764.6X185		
	4.70	0.1850	125	185	A9764.7X185		
3/16	4.76	0.1874	135	195	A9763/16		
3/16	4.76	0.1874	170	245		A9773/16	
	4.80	0.1890	135	195	A9764.8X195		
	4.90	0.1929	135	195	A9764.9X195		
	5.00	0.1969	135	195	A9765.0X195		
	5.00	0.1969	170	245		A9775.0X245	
	5.00	0.1969	210	315			A9785.0X315
	5.10	0.2008	135	195	A9765.1X195		
	5.20	0.2047	135	195	A9765.2X195		
	5.30	0.2087	135	195	A9765.3X195		
	5.40	0.2126	140	205	A9765.4X205		
	5.50	0.2165	140	205	A9765.5X205		
	5.50	0.2165	180	260		A9775.5X260	
	5.50	0.2165	225	330			A9785.5X330
	5.60	0.2205	140	205	A9765.6X205		
	5.70	0.2244	140	205	A9765.7X205		
	5.80	0.2283	140	205	A9765.8X205		
	5.90	0.2323	140	205	A9765.9X205		
	6.00	0.2362	140	205	A9766.0X205		
	6.00	0.2362	180	260		A9776.0X260	
	6.00	0.2362	225	330			A9786.0X330
	6.10	0.2402	150	215	A9766.1X215		
	6.20	0.2441	150	215	A9766.2X215		
	6.30	0.2480	150	215	A9766.3X215		
1/4	6.35	0.2500	150	215	A9761/4		
1/4	6.35	0.2500	190	275		A9771/4	
1/4	6.35	0.2500	235	350			A9781/4
	6.40	0.2520	150	215	A9766.4X215		
	6.50	0.2559	150	215	A9766.5X215		
	6.50	0.2559	190	275		A9776.5X275	
	6.50	0.2559	235	350			A9786.5X350
	6.60	0.2598	150	215	A9766.6X215		
	6.70	0.2638	150	215	A9766.7X215		
	6.80	0.2677	155	225	A9766.8X225		
	6.90	0.2717	155	225	A9766.9X225		
	7.00	0.2756	155	225	A9767.0X225		
	7.00	0.2756	200	290		A9777.0X290	
	7.00	0.2756	250	370			A9787.0X370
	7.50	0.2953	155	225	A9767.5X225		
	7.50	0.2953	200	290		A9777.5X290	
	7.50	0.2953	250	370			A9787.5X370
5/16	7.94	0.3126	165	240	A9765/16		
	8.00	0.3150	165	240	A9768.0X240		
	8.00	0.3150	210	305		A9778.0X305	
	8.00	0.3150	265	390			A9788.0X390
	8.50	0.3346	165	240	A9768.5X240		

d_1 $\emptyset h_8$ Inch	d_1 $\emptyset h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A976	A977	A978
	8.50	0.3346	210	305		A9778.5X305	
	8.50	0.3346	265	390			A9788.5X390
11/32	8.73	0.3437	175	250	A97611/32		
11/32	8.73	0.3437	220	320		A97711/32	
	9.00	0.3543	175	250	A9769.0X250		
	9.00	0.3543	220	320		A9779.0X320	
	9.00	0.3543	280	410			A9789.0X410
	9.50	0.3740	175	250	A9769.5X250		
	9.50	0.3740	220	320		A9779.5X320	
	9.50	0.3740	280	410			A9789.5X410
3/8	9.52	0.3748	185	265	A9763/8		
	10.00	0.3937	185	265	A97610.0X265		
	10.00	0.3937	235	340		A97710.0X340	
	10.00	0.3937	295	430			A97810.0X430
	10.50	0.4134	185	265	A97610.5		
	10.50	0.4134	235	340		A97710.5	
	11.00	0.4331	195	280	A97611.0		
	11.00	0.4331	250	365		A97711.0	
7/16	11.11	0.4374	195	280	A9767/16		
	11.50	0.4528	195	280	A97611.5		
	11.50	0.4528	250	365		A97711.5	
	12.00	0.4724	205	295	A97612.0		
	12.00	0.4724	260	375		A97712.0	
	12.50	0.4921	205	295	A97612.5		
	12.50	0.4921	260	375		A97712.5	
1/2	12.70	0.5000	205	295	A9761/2		
	13.00	0.5118	205	295	A97613.0		
	13.00	0.5118	260	375		A97713.0	
	14.00	0.5512	215	310	A97614.0 [4)]		
	14.00	0.5512	270	390		A97714.0 [4)]	

[4)] Dormer standard / Pituudet Dormer Standardin mukaan / Spor og totallengde lik Dormer standard / Spor og totallængde i følge Dormer standard

DORMER

A130
- Korta borrar med MK
- MK-vartiset porat, lyhyet
- Korte bor med MK
- Korte bor med MK

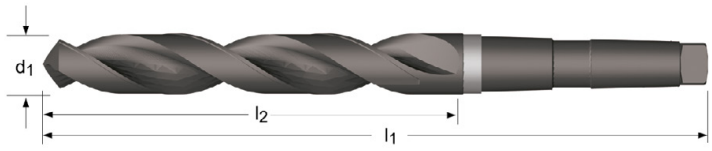
Över 14,0mm urspetsade
Halkaisijat > 14,0 mm: -kevennetty kärki
Over 14,0mm utspisset
Over 14,0mm - udspidsede

A530
- Korta borrar med MK
- MK-vartiset porat, lyhyet
- Korte bor med MK
- Korte bor med MK

A730
- Korta borrar med MK
- MK-vartiset porat, lyhyet
- Korte bor med MK
- Korte bor med MK

A130	▪	1.1	1.2	1.3	1.4	3.1	3.2													
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1														
A530	▪	1.1	1.2	1.3	1.4	3.2	3.3	6.3												
	•	1.5	1.6	2.1	2.2	2.3	3.1	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.4	7.1	7.2	7.3	7.4
		8.1	8.2	8.3	9.1															
A730	▪	1.5	1.6	2.2	2.3	3.4														
	•	1.1	1.2	1.3	1.4	2.1	3.1	3.2	3.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2
		7.3	7.4	8.1	8.2	8.3	9.1													

A130	HSS	DIN 345	4XD	118°	ST		N	
A530	HSS	DIN 345	4XD	118°	TiN		N	
A730	HSS-E	DIN 345	4XD	118°	Bronze		N	



A130	A530	A730
		
3.00 - 50.80	8.50 - 40.00	10.00 - 32.00

d_1 $Øh_8$ Inch	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A130	A530	A730
	3.00	0.1181	33	114	1	A1303.0		
1/8	3.18	0.1252	36	117	1	A1301/8		
	3.20	0.1260	36	117	1	A1303.2		
	3.25	0.1280	36	117	1	A1303.25		
	3.30	0.1299	36	117	1	A1303.3		
	3.50	0.1378	39	120	1	A1303.5		
9/64	3.57	0.1406	39	120	1	A1309/64		
	3.75	0.1476	39	120	1	A1303.75		
5/32	3.97	0.1563	43	124	1	A1305/32		
	4.00	0.1575	43	124	1	A1304.0		
	4.10	0.1614	43	124	1	A1304.1		
	4.20	0.1654	43	124	1	A1304.2		

DORMER

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A130	A530	A730
	4.25	0.1673	43	124	1	A1304.25		
11/64	4.37	0.1720	47	128	1	A13011/64		
	4.50	0.1772	47	128	1	A1304.5		
	4.75	0.1870	52	128	1	A1304.75		
3/16	4.76	0.1874	52	133	1	A1303/16		
	4.80	0.1890	52	133	1	A1304.8		
	4.90	0.1929	52	133	1	A1304.9		
	5.00	0.1969	52	133	1	A1305.0		
	5.10	0.2008	52	133	1	A1305.1		
13/64	5.16	0.2031	52	133	1	A13013/64		
	5.20	0.2047	52	133	1	A1305.2		
	5.25	0.2067	52	133	1	A1305.25		
	5.40	0.2126	57	138	1	A1305.4		
	5.50	0.2165	57	138	1	A1305.5		
7/32	5.56	0.2189	57	138	1	A1307/32		
	5.70	0.2244	57	138	1	A1305.7		
	5.75	0.2264	57	138	1	A1305.75		
	5.80	0.2283	57	138	1	A1305.8		
	5.90	0.2323	57	138	1	A1305.9		
15/64	5.95	0.2343	57	138	1	A13015/64		
	6.00	0.2362	57	138	1	A1306.0		
	6.10	0.2402	63	144	1	A1306.1		
	6.20	0.2441	63	144	1	A1306.2		
	6.25	0.2461	63	144	1	A1306.25		
	6.30	0.2480	63	144	1	A1306.3		
1/4	6.35	0.2500	63	144	1	A1301/4		
	6.40	0.2520	63	144	1	A1306.4		
	6.50	0.2559	63	144	1	A1306.5		
	6.60	0.2598	63	144	1	A1306.6		
	6.70	0.2638	63	144	1	A1306.7		
17/64	6.75	0.2657	69	150	1	A13017/64		
	6.75	0.2657	69	150	1	A1306.75		
	6.80	0.2677	69	150	1	A1306.8		
	6.90	0.2717	69	150	1	A1306.9		
	7.00	0.2756	69	150	1	A1307.0		
9/32	7.14	0.2811	69	150	1	A1309/32		
	7.20	0.2835	69	150	1	A1307.2		
	7.25	0.2854	69	150	1	A1307.25		
	7.30	0.2874	69	150	1	A1307.3		
	7.40	0.2913	69	150	1	A1307.4		
	7.50	0.2953	69	150	1	A1307.5		
19/64	7.54	0.2969	75	156	1	A13019/64		
	7.70	0.3031	75	156	1	A1307.7		
	7.75	0.3051	75	156	1	A1307.75		
	7.80	0.3071	75	156	1	A1307.8		
	7.90	0.3110	75	156	1	A1307.9		
5/16	7.94	0.3126	75	156	1	A1305/16		
	8.00	0.3150	75	156	1	A1308.0		
	8.10	0.3189	75	156	1	A1308.1		
	8.20	0.3228	75	156	1	A1308.2		
	8.25	0.3248	75	156	1	A1308.25		
	8.30	0.3268	75	156	1	A1308.3		
21/64	8.33	0.3280	75	156	1	A13021/64		
	8.40	0.3307	75	156	1	A1308.4		
	8.50	0.3346	75	156	1	A1308.5	A5308.5	
	8.60	0.3386	81	162	1	A1308.6		
	8.70	0.3425	81	162	1	A1308.7		
11/32	8.73	0.3437	81	162	1	A13011/32		
	8.75	0.3445	81	162	1	A1308.75		
	8.80	0.3465	81	162	1	A1308.8		
	8.90	0.3504	81	162	1	A1308.9		
	9.00	0.3543	81	162	1	A1309.0	A5309.0	
	9.10	0.3583	81	162	1	A1309.1		
23/64	9.13	0.3594	81	162	1	A13023/64		
	9.20	0.3622	81	162	1	A1309.2		
	9.25	0.3642	81	162	1	A1309.25		
	9.30	0.3661	81	162	1	A1309.3		
	9.50	0.3740	81	162	1	A1309.5		
3/8	9.52	0.3748	87	168	1	A1303/8		
	9.60	0.3780	87	168	1	A1309.6		

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A130	A530	A730
	9.70	0.3819	87	168	1	A1309.7		
	9.75	0.3839	87	168	1	A1309.75		
	9.80	0.3858	87	168	1	A1309.8		
	9.90	0.3898	87	168	1	A1309.9		
25/64	9.92	0.3906	87	168	1	A13025/64		
	10.00	0.3937	87	168	1	A13010.0	A53010.0	A73010.0
	10.10	0.3976	87	168	1	A13010.1		
	10.20	0.4016	87	168	1	A13010.2	A53010.2	A73010.2
	10.25	0.4035	87	168	1	A13010.25		
	10.30	0.4055	87	168	1	A13010.3		
13/32	10.32	0.4063	87	168	1	A13013/32		
	10.50	0.4134	87	168	1	A13010.5	A53010.5	A73010.5
27/64	10.72	0.4220	94	175	1	A13027/64		
	10.75	0.4232	94	175	1	A13010.75		
	10.80	0.4252	94	175	1	A13010.8		A73010.8
	10.90	0.4291	94	175	1	A13010.9		
	11.00	0.4331	94	175	1	A13011.0	A53011.0	A73011.0
	11.10	0.4370	94	175	1	A13011.1		
7/16	11.11	0.4374	94	175	1	A1307/16		
	11.20	0.4409	94	175	1	A13011.2		
	11.25	0.4429	94	175	1	A13011.25		
	11.30	0.4449	94	175	1	A13011.3		
	11.40	0.4488	94	175	1	A13011.4		
	11.50	0.4528	94	175	1	A13011.5	A53011.5	A73011.5
29/64	11.51	0.4531	94	175	1	A13029/64		
	11.60	0.4567	94	175	1	A13011.6		
	11.70	0.4606	94	175	1	A13011.7		
	11.75	0.4626	94	175	1	A13011.75	A53011.75	
	11.80	0.4646	94	175	1	A13011.8		A73011.8
	11.90	0.4685	101	182	1	A13011.9		
15/32	11.91	0.4689	101	182	1	A13015/32		
	12.00	0.4724	101	182	1	A13012.0	A53012.0	A73012.0
	12.10	0.4764	101	182	1	A13012.1		
	12.20	0.4803	101	182	1	A13012.2		A73012.2
	12.25	0.4823	101	182	1	A13012.25		
	12.30	0.4843	101	182	1	A13012.3		
31/64	12.30	0.4843	101	182	1	A13031/64		
	12.40	0.4882	101	182	1	A13012.4		
	12.50	0.4921	101	182	1	A13012.5	A53012.5	A73012.5
	12.60	0.4961	101	182	1	A13012.6		
	12.70	0.5000	101	182	1	A13012.7		
1/2	12.70	0.5000	101	182	1	A1301/2		
	12.75	0.5020	101	182	1	A13012.75		
	12.80	0.5039	101	182	1	A13012.8		A73012.8
	12.90	0.5079	101	182	1	A13012.9		
	13.00	0.5118	101	182	1	A13013.0	A53013.0	A73013.0
33/64	13.10	0.5157	101	182	1	A13033/64		
	13.20	0.5197	101	182	1	A13013.2		
	13.25	0.5217	108	189	1	A13013.25		
17/32	13.49	0.5311	108	189	1	A13017/32		
	13.50	0.5315	108	189	1	A13013.5	A53013.5	A73013.5
	13.60	0.5354	108	189	1	A13013.6		
	13.70	0.5394	108	189	1	A13013.7		
	13.75	0.5413	108	189	1	A13013.75		
	13.80	0.5433	108	189	1	A13013.8		A73013.8
35/64	13.89	0.5469	108	189	1	A13035/64		
	13.90	0.5472	108	189	1	A13013.9		
	14.00	0.5512	108	189	1	A13014.0	A53014.0	A73014.0
	14.10	0.5551	114	212	2	A13014.1		
	14.20	0.5591	114	212	2	A13014.2		
	14.25	0.5610	114	212	2	A13014.25		A73014.25
9/16	14.29	0.5626	114	212	2	A1309/16		
	14.30	0.5630	114	212	2	A13014.3		
	14.40	0.5669	114	212	2	A13014.4		
	14.50	0.5709	114	212	2	A13014.5	A53014.5	A73014.5
	14.60	0.5748	114	212	2	A13014.6		
37/64	14.68	0.5780	114	212	2	A13037/64		
	14.70	0.5787	114	212	2	A13014.7		
	14.75	0.5807	114	212	2	A13014.75		A73014.75
	14.80	0.5827	114	212	2	A13014.8		

DORMER

d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A130	A530	A730
	14.90	0.5866	114	212	2	A13014.9		
	15.00	0.5906	114	212	2	A13015.0	A53015.0	A73015.0
19/32	15.08	0.5937	120	218	2	A13019/32		
	15.10	0.5945	120	218	2	A13015.1		
	15.20	0.5984	120	218	2	A13015.2		
	15.25	0.6004	120	218	2	A13015.25	A53015.25	A73015.25
39/64	15.48	0.6094	120	218	2	A13039/64		
	15.50	0.6102	120	218	2	A13015.5	A53015.5	A73015.5
	15.70	0.6181	120	218	2	A13015.7		
	15.75	0.6201	120	218	2	A13015.75		A73015.75
	15.80	0.6220	120	218	2	A13015.8		
5/8	15.88	0.6252	120	218	2	A1305/8		
	15.90	0.6260	120	218	2	A13015.9		
	16.00	0.6299	120	218	2	A13016.0	A53016.0	A73016.0
	16.10	0.6339	125	223	2	A13016.1		
	16.20	0.6378	125	223	2	A13016.2		
	16.25	0.6398	120	218	2			A73016.25
	16.25	0.6398	125	223	2	A13016.25		
41/64	16.27	0.6406	125	223	2	A13041/64		
	16.50	0.6496	125	223	2	A13016.5	A53016.5	A73016.5
21/32	16.67	0.6563	125	223	2	A13021/32		
	16.75	0.6594	125	223	2	A13016.75		
	17.00	0.6693	125	223	2	A13017.0	A53017.0	A73017.0
43/64	17.07	0.6720	130	228	2	A13043/64		
	17.25	0.6791	130	228	2	A13017.25		A73017.25
11/16	17.46	0.6874	130	228	2	A13011/16		
	17.50	0.6890	130	228	2	A13017.5	A53017.5	A73017.5
	17.75	0.6988	130	228	2	A13017.75		A73017.75
45/64	17.86	0.7031	130	228	2	A13045/64		
	18.00	0.7087	130	228	2	A13018.0	A53018.0	A73018.0
	18.25	0.7185	135	233	2	A13018.25		A73018.25
23/32	18.26	0.7189	135	233	2	A13023/32		
	18.50	0.7283	135	233	2	A13018.5	A53018.5	A73018.5
47/64	18.65	0.7343	135	233	2	A13047/64		
	18.75	0.7382	135	233	2	A13018.75		A73018.75
	19.00	0.7480	135	233	2	A13019.0	A53019.0	A73019.0
3/4	19.05	0.7500	140	238	2	A1303/4		
	19.25	0.7579	140	238	2	A13019.25		A73019.25
49/64	19.45	0.7657	140	238	2	A13049/64		
	19.50	0.7677	140	238	2	A13019.5	A53019.5	A73019.5
	19.75	0.7776	140	238	2	A13019.75		A73019.75
25/32	19.84	0.7811	140	238	2	A13025/32		
	20.00	0.7874	140	238	2	A13020.0	A53020.0	A73020.0
51/64	20.24	0.7969	145	243	2	A13051/64		
	20.25	0.7972	145	243	2	A13020.25		A73020.25
	20.40	0.8031	145	243	2	A13020.4		
	20.50	0.8071	145	243	2	A13020.5	A53020.5	A73020.5
13/16	20.64	0.8126	145	243	2	A13013/16		
	20.75	0.8169	145	243	2	A13020.75		A73020.75
	21.00	0.8268	145	243	2	A13021.0	A53021.0	A73021.0
53/64	21.03	0.8280	145	243	2	A13053/64		
	21.25	0.8366	150	248	2	A13021.25		
27/32	21.43	0.8437	150	248	2	A13027/32		
	21.50	0.8465	150	248	2	A13021.5	A53021.5	A73021.5
	21.75	0.8563	150	248	2	A13021.75		
55/64	21.83	0.8594	150	248	2	A13055/64		
	22.00	0.8661	150	248	2	A13022.0	A53022.0	A73022.0
7/8	22.22	0.8748	150	248	2	A1307/8		
	22.25	0.8760	150	248	2	A13022.25		
	22.50	0.8858	155	253	2	A13022.5	A53022.5	A73022.5
57/64	22.62	0.8906	155	253	2	A13057/64		
	22.75	0.8957	155	253	2	A13022.75		
	23.00	0.9055	155	253	2	A13023.0	A53023.0	A73023.0
29/32	23.02	0.9063	155	253	2	A13029/32		
	23.25	0.9154	155	276	3	A13023.25		
59/64	23.42	0.9220	155	276	3	A13059/64		
	23.50	0.9252	155	276	3	A13023.5	A53023.5	A73023.5
	23.75	0.9350	160	281	3	A13023.75		
15/16	23.81	0.9374	160	281	3	A13015/16		
	24.00	0.9449	160	281	3	A13024.0	A53024.0	A73024.0

d_1 $Øh_8$ Inch	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A130	A530	A730
61/64	24.21	0.9531	160	281	3	A13061/64		
	24.25	0.9547	160	281	3	A13024.25		
	24.50	0.9646	160	281	3	A13024.5	A53024.5	A73024.5
31/32	24.61	0.9689	160	281	3	A13031/32		
	24.75	0.9744	160	281	3	A13024.75		
	25.00	0.9843	160	281	3	A13025.0	A53025.0	A73025.0
63/64	25.00	0.9843	160	286	3	A13063/64		
	25.25	0.9941	165	286	3	A13025.25		
1“	25.40	1.0000	165	286	3	A1301		
	25.50	1.0039	165	286	3	A13025.5	A53025.5	A73025.5
	25.75	1.0138	165	286	3	A13025.75		
	26.00	1.0236	165	286	3	A13026.0	A53026.0	A73026.0
	26.25	1.0335	165	286	3	A13026.25		
	26.50	1.0433	165	286	3	A13026.5	A53026.5	A73026.5
	26.75	1.0531	170	291	3	A13026.75		
1.1/16	26.99	1.0626	170	291	3	A1301.1/16		
	27.00	1.0630	170	291	3	A13027.0	A53027.0	A73027.0
	27.25	1.0728	170	291	3	A13027.25		
	27.50	1.0827	170	291	3	A13027.5	A53027.5	A73027.5
	27.75	1.0925	170	291	3	A13027.75		
	28.00	1.1024	170	291	3	A13028.0	A53028.0	A73028.0
	28.25	1.1122	175	296	3	A13028.25		
	28.50	1.1220	175	296	3	A13028.5	A53028.5	A73028.5
1.1/8	28.58	1.1252	175	296	3	A1301.1/8		
	28.75	1.1319	175	296	3	A13028.75		
	29.00	1.1417	175	296	3	A13029.0	A53029.0	A73029.0
	29.25	1.1516	175	296	3	A13029.25		
1.5/32	29.37	1.1563	175	296	3	A1301.5/32		
	29.50	1.1614	175	296	3	A13029.5	A53029.5	
	29.75	1.1713	175	296	3	A13029.75		
	30.00	1.1811	175	296	3	A13030.0	A53030.0	A73030.0
1.3/16	30.16	1.1874	180	301	3	A1301.3/16		
	30.25	1.1909	180	301	3	A13030.25		
	30.50	1.2008	180	301	3	A13030.5		
	30.75	1.2106	180	301	3	A13030.75		
1.7/32	30.96	1.2189	180	301	3	A1301.7/32		
	31.00	1.2205	180	301	3	A13031.0	A53031.0	A73031.0
	31.25	1.2303	180	301	3	A13031.25		
	31.50	1.2402	180	301	3	A13031.5		
	31.75	1.2500	185	306	3	A13031.75		
1.1/4	31.75	1.2500	185	306	3	A1301.1/4		
	32.00	1.2598	185	334	4	A13032.0	A53032.0	A73032.0
	32.50	1.2795	185	334	4	A13032.5		
1.9/32	32.54	1.2811	185	334	4	A1301.9/32		
	33.00	1.2992	185	334	4	A13033.0	A53033.0	
1.5/16	33.34	1.3126	185	334	4	A1301.5/16		
	33.50	1.3189	185	334	4	A13033.5		
	34.00	1.3386	190	339	4	A13034.0		
1.11/32	34.13	1.3437	190	339	4	A1301.11/32		
	34.50	1.3583	190	339	4	A13034.5		
1.3/8	34.93	1.3752	190	339	4	A1301.3/8		
	35.00	1.3780	190	339	4	A13035.0	A53035.0	
	35.50	1.3976	190	339	4	A13035.5		
1.13/32	35.72	1.4063	195	344	4	A1301.13/32		
	36.00	1.4173	195	344	4	A13036.0		
	36.50	1.4370	195	344	4	A13036.5		
1.7/16	36.51	1.4374	195	344	4	A1301.7/16		
	37.00	1.4567	195	344	4	A13037.0		
	37.50	1.4764	195	344	4	A13037.5		
	38.00	1.4961	200	349	4	A13038.0		
1.1/2	38.10	1.5000	200	349	4	A1301.1/2		
	38.50	1.5157	200	349	4	A13038.5		
	39.00	1.5354	200	349	4	A13039.0		
	39.50	1.5551	200	349	4	A13039.5		
1.9/16	39.69	1.5626	200	349	4	A1301.9/16		
	40.00	1.5748	200	349	4	A13040.0	A53040.0	
	40.50	1.5945	205	354	4	A13040.5		
	41.00	1.6142	205	354	4	A13041.0		
1.5/8	41.28	1.6252	205	354	4	A1301.5/8		
	41.50	1.6339	205	354	4	A13041.5		

d_1 $Øh_8$ Inch	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A130	A530	A730
	42.00	1.6535	205	354	4	A13042.0		
	42.50	1.6732	205	354	4	A13042.5		
1.11/16	42.86	1.6874	210	359	4	A1301.11/16		
	43.00	1.6929	210	359	4	A13043.0		
	43.50	1.7126	210	359	4	A13043.5		
	44.00	1.7323	210	359	4	A13044.0		
1.3/4	44.45	1.7500	210	359	4	A1301.3/4		
	44.50	1.7520	210	359	4	A13044.5		
	45.00	1.7717	210	359	4	A13045.0		
	45.50	1.7913	215	364	4	A13045.5		
	46.00	1.8110	215	364	4	A13046.0		
	46.50	1.8307	215	364	4	A13046.5		
	47.00	1.8504	215	364	4	A13047.0		
	47.50	1.8701	215	364	4	A13047.5		
	48.00	1.8898	220	369	4	A13048.0		
	48.50	1.9094	220	369	4	A13048.5		
	49.00	1.9291	220	369	4	A13049.0		
	49.50	1.9488	220	369	4	A13049.5		
	50.00	1.9685	220	369	4	A13050.0		
2“	50.80	2.0000	225	374	4	A1302		

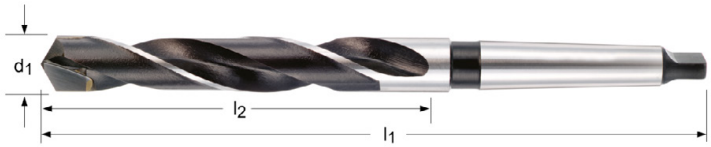
A166

- Kort borr med Mk-fäste och inlödd 4-fasettspets
- MK-vartinen pora, 4-pintahiottu juotettu kovametallikärki
- Morsekon bor med 4 fasset slipt påloddet HM skjær
- Bor med MK. 4-facet m/ HM platte

A166 ▪ 3.1 3.2 3.3 3.4

• 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.2 9.1

A166 HSS HM | DIN 345 | 4XD | 118° | ST | N



A166



10.00 - 33.00

d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A166
10.00	0.3937	87	168	1	A16610.0
10.50	0.4134	87	168	1	A16610.5
11.00	0.4331	94	175	1	A16611.0
11.50	0.4528	94	175	1	A16611.5
12.00	0.4724	101	182	1	A16612.0
13.00	0.5118	101	182	1	A16613.0
13.50	0.5315	108	189	1	A16613.5
14.00	0.5512	108	189	1	A16614.0
15.00	0.5906	114	212	2	A16615.0
16.00	0.6299	120	218	2	A16616.0
17.00	0.6693	125	223	2	A16617.0
17.50	0.6890	130	228	2	A16617.5
18.00	0.7087	130	228	2	A16618.0
19.00	0.7480	135	233	2	A16619.0
20.00	0.7874	140	238	2	A16620.0
21.00	0.8268	145	243	2	A16621.0
22.00	0.8661	150	248	2	A16622.0
22.50	0.8858	155	253	2	A16622.5
23.00	0.9055	155	253	2	A16623.0
24.00	0.9449	160	281	3	A16624.0
25.00	0.9843	160	281	3	A16625.0
26.00	1.0236	165	286	3	A16626.0
27.00	1.0630	170	291	3	A16627.0
28.00	1.1024	170	291	3	A16628.0
29.00	1.1417	175	296	3	A16629.0
30.00	1.1811	175	296	3	A16630.0
32.00	1.2598	185	334	4	A16632.0
33.00	1.2992	185	334	4	A16633.0

DORMER

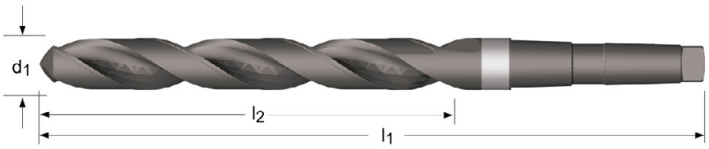
A350

- Långa Borrar
- MK-vartiset porat, pitkät
- Lange Bor
- Lange Bor

A350 ▪ 1.1 1.2

• 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2 8.3 9.1

A350 | HSS | DIN 341 | 6XD | 118° | ST | N



A350



5.00 - 50.00

d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A350
5.00	0.1969	74	155	1	A3505.0
5.50	0.2165	80	161	1	A3505.5
6.00	0.2362	80	161	1	A3506.0
6.70	0.2638	86	167	1	A3506.7
6.80	0.2677	93	174	1	A3506.8
7.00	0.2756	93	174	1	A3507.0
7.50	0.2953	93	174	1	A3507.5
8.00	0.3150	100	181	1	A3508.0
8.40	0.3307	100	181	1	A3508.4
8.50	0.3346	100	181	1	A3508.5
8.75	0.3445	107	188	1	A3508.75
9.00	0.3543	107	188	1	A3509.0
9.50	0.3740	107	188	1	A3509.5
9.80	0.3858	116	197	1	A3509.8
10.00	0.3937	116	197	1	A35010.0
10.20	0.4016	116	197	1	A35010.2
10.50	0.4134	116	197	1	A35010.5
10.70	0.4213	125	206	1	A35010.7
11.00	0.4331	125	206	1	A35011.0
11.50	0.4528	125	206	1	A35011.5
11.75	0.4626	125	206	1	A35011.75
11.80	0.4646	125	206	1	A35011.8
12.00	0.4724	134	215	1	A35012.0
12.50	0.4921	134	215	1	A35012.5
13.00	0.5118	134	215	1	A35013.0
13.50	0.5315	142	223	1	A35013.5
14.00	0.5512	142	223	1	A35014.0
14.25	0.5610	147	245	2	A35014.25
14.50	0.5709	147	245	2	A35014.5
14.75	0.5807	147	245	2	A35014.75
15.00	0.5906	147	245	2	A35015.0
15.25	0.6004	153	251	2	A35015.25
15.50	0.6102	153	251	2	A35015.5
15.75	0.6201	153	251	2	A35015.75

d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A350
16.00	0.6299	153	251	2	A35016.0
16.25	0.6398	159	257	2	A35016.25
16.50	0.6496	159	257	2	A35016.5
16.75	0.6594	159	257	2	A35016.75
17.00	0.6693	159	257	2	A35017.0
17.25	0.6791	165	263	2	A35017.25
17.50	0.6890	165	263	2	A35017.5
18.00	0.7087	165	263	2	A35018.0
18.50	0.7283	171	269	2	A35018.5
19.00	0.7480	171	269	2	A35019.0
19.50	0.7677	177	275	2	A35019.5
19.75	0.7776	177	275	2	A35019.75
20.00	0.7874	177	275	2	A35020.0
20.25	0.7972	184	282	2	A35020.25
20.50	0.8071	184	282	2	A35020.5
21.00	0.8268	184	282	2	A35021.0
21.50	0.8465	191	289	2	A35021.5
22.00	0.8661	191	289	2	A35022.0
22.50	0.8858	198	296	2	A35022.5
23.00	0.9055	198	296	2	A35023.0
23.50	0.9252	198	319	3	A35023.5
24.00	0.9449	206	327	3	A35024.0
24.50	0.9646	206	327	3	A35024.5
25.00	0.9843	206	327	3	A35025.0
25.50	1.0039	214	335	3	A35025.5
26.00	1.0236	214	335	3	A35026.0
26.50	1.0433	214	335	3	A35026.5
27.00	1.0630	222	343	3	A35027.0
27.50	1.0827	222	343	3	A35027.5
28.00	1.1024	222	343	3	A35028.0
29.00	1.1417	230	351	3	A35029.0
30.00	1.1811	230	351	3	A35030.0
30.50	1.2008	239	360	3	A35030.5
31.00	1.2205	239	360	3	A35031.0
31.50	1.2402	239	360	3	A35031.5
32.00	1.2598	248	397	4	A35032.0
33.00	1.2992	248	397	4	A35033.0
34.00	1.3386	257	406	4	A35034.0
35.00	1.3780	257	406	4	A35035.0
36.00	1.4173	267	416	4	A35036.0
37.00	1.4567	267	416	4	A35037.0
38.00	1.4961	277	426	4	A35038.0
39.00	1.5354	277	426	4	A35039.0
40.00	1.5748	277	426	4	A35040.0
41.00	1.6142	287	436	4	A35041.0
42.00	1.6535	287	436	4	A35042.0
43.00	1.6929	298	447	4	A35043.0
44.00	1.7323	298	447	4	A35044.0
45.00	1.7717	298	447	4	A35045.0
46.00	1.8110	310	459	4	A35046.0
47.00	1.8504	310	459	4	A35047.0
48.00	1.8898	321	470	4	A35048.0
50.00	1.9685	321	470	4	A35050.0

DORMER

A345

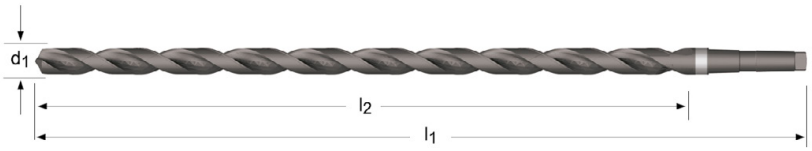
- Extra Långa Borrar Med MK
- MK-vartiset porat, erittäin pitkät
- Ekstra lang bor med MK
- Ekstra Lange Bor

A345

▪ 1.1 1.2

• 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2 8.3 9.1

A345 HSS | DIN 1870/1 | 10XD | 118° | ST | N



A345



8.00 - 40.00

d_1 Øh$_8$ Inch	d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A345
	8.00	0.3150	165	265	1	A3458.0
	8.50	0.3346	165	265	1	A3458.5
	9.00	0.3543	175	275	1	A3459.0
	9.50	0.3740	175	275	1	A3459.5
3/8	9.52	0.3748	185	285	1	A3453/8
	10.00	0.3937	185	285	1	A34510.0
13/32	10.32	0.4063	185	285	1	A34513/32
	10.50	0.4134	185	285	1	A34510.5
	11.00	0.4331	195	300	1	A34511.0
7/16	11.11	0.4374	195	300	1	A3457/16
	11.50	0.4528	195	300	1	A34511.5
29/64	11.51	0.4531	205	310	1	A34529/64
	12.00	0.4724	205	310	1	A34512.0
	12.50	0.4921	205	310	1	A34512.5
1/2	12.70	0.5000	205	310	1	A3451/2
	13.00	0.5118	205	310	1	A34513.0
17/32	13.49	0.5311	220	325	1	A34517/32
	13.50	0.5315	220	325	1	A34513.5
	14.00	0.5512	220	325	1	A34514.0
9/16	14.29	0.5626	220	340	2	A3459/16
37/64	14.68	0.5780	220	340	2	A34537/64
	15.00	0.5906	220	340	2	A34515.0
39/64	15.48	0.6094	230	355	2	A34539/64
	15.50	0.6102	230	355	2	A34515.5
5/8	15.88	0.6252	230	355	2	A3455/8
	16.00	0.6299	230	355	2	A34516.0
41/64	16.27	0.6406	230	355	2	A34541/64
	16.50	0.6496	230	355	2	A34516.5
21/32	16.67	0.6563	230	355	2	A34521/32
	17.00	0.6693	230	355	2	A34517.0
11/16	17.46	0.6874	245	370	2	A34511/16
	17.50	0.6890	245	370	2	A34517.5

d_1 $Øh_8$ Inch	d_1 $Øh_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A345
	18.00	0.7087	245	370	2	A34518.0
	18.50	0.7283	245	370	2	A34518.5
	19.00	0.7480	245	370	2	A34519.0
3/4	19.05	0.7500	260	385	2	A3453/4
	19.50	0.7677	260	385	2	A34519.5
	20.00	0.7874	260	385	2	A34520.0
	20.50	0.8071	260	385	2	A34520.5
	21.00	0.8268	260	385	2	A34521.0
	21.50	0.8465	270	405	2	A34521.5
	22.00	0.8661	270	405	2	A34522.0
7/8	22.22	0.8748	270	405	2	A3457/8
	22.50	0.8858	270	405	3	A34522.5
	23.00	0.9055	270	405	3	A34523.0
	23.50	0.9252	270	425	3	A34523.5
	24.00	0.9449	290	440	3	A34524.0
	24.50	0.9646	290	440	3	A34524.5
	25.00	0.9843	290	440	3	A34525.0
1“	25.40	1.0000	290	440	3	A3451 [3]
	25.50	1.0039	290	440	3	A34525.5 [3]
	26.00	1.0236	290	440	3	A34526.0 [3]
	26.50	1.0433	290	440	3	A34526.5 [3]
	27.00	1.0630	305	460	3	A34527.0 [3]
	28.00	1.1024	305	460	3	A34528.0 [3]
	29.00	1.1417	305	460	3	A34529.0 [3]
	30.00	1.1811	305	460	3	A34530.0 [3]
1.1/4	31.75	1.2500	320	480	3	A3451.1/4 [3]
	31.00	1.2205	320	480	3	A34531.0 [3]
	32.00	1.2598	320	505	4	A34532.0 [3]
	33.00	1.2992	320	505	4	A34533.0 [3]
	34.00	1.3386	340	530	4	A34534.0 [3]
	35.00	1.3780	340	530	4	A34535.0 [3]
	36.00	1.4173	340	530	4	A34536.0 [3]
	37.00	1.4567	340	530	4	A34537.0 [3]
	38.00	1.4961	360	555	4	A34538.0 [3]
1.1/2	38.10	1.5000	360	555	4	A3451.1/2 [3]
	39.00	1.5354	360	555	4	A34539.0 [3]
	40.00	1.5748	360	555	4	A34540.0 [3]

[3] < 10xD

DORMER

A951
A952

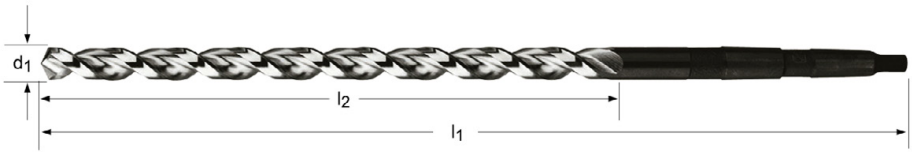
- Extra Långa Borrar Med MK
- MK-vartiset porat, erittäin pitkät
- Ekstra lang bor med MK
- Ekstra Lange Bor

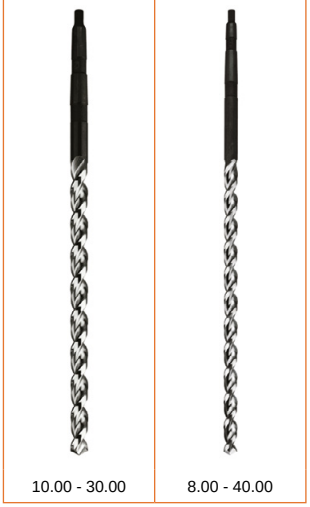
A951; A952

▪ 1.1 1.2 1.3

• 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2 8.3 9.1

A951	HSS	DIN 1870/1	15XD	130°	ST		W				
A952	HSS	DIN 1870/2	20XD	130°	ST		W				





d_1 $\emptyset h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A951	A952
8.00	0.3150	210	330	1		A9528.0
8.50	0.3346	210	330	1		A9528.5
9.00	0.3543	220	345	1		A9529.0
10.00	0.3937	185	285	1	A95110.0	
10.00	0.3937	235	360	1		A95210.0
10.50	0.4134	235	360	1		A95210.5
11.00	0.4331	195	300	1	A95111.0	
11.00	0.4331	250	375	1		A95211.0
11.50	0.4528	250	375	1		A95211.5
12.00	0.4724	205	310	1	A95112.0	
12.00	0.4724	260	395	1		A95212.0
12.50	0.4921	205	310	1	A95112.5	
12.50	0.4921	260	395	1		A95212.5
13.00	0.5118	205	310	1	A95113.0	
13.00	0.5118	260	395	1		A95213.0
13.50	0.5315	220	325	1	A95113.5	
13.50	0.5315	275	410	1		A95213.5
14.00	0.5512	220	325	1	A95114.0	
14.00	0.5512	275	410	1		A95214.0
14.50	0.5709	220	340	2	A95114.5 [5]	
14.50	0.5709	275	425	2		A95214.5 [6]
15.00	0.5906	220	340	2	A95115.0 [5]	
15.00	0.5906	275	425	2		A95215.0 [6]
15.50	0.6102	230	355	2	A95115.5 [5]	
15.50	0.6102	295	445	2		A95215.5 [6]
16.00	0.6299	230	355	2	A95116.0 [5]	
16.00	0.6299	295	445	2		A95216.0 [6]
16.50	0.6496	230	355	2	A95116.5 [5]	

[5] < 15xD
[6] < 20xD

d_1 Øh$_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A951	A952
16.50	0.6496	295	445	2		A95216.5 [6]
17.00	0.6693	230	355	2	A95117.0 [5]	
17.00	0.6693	295	445	2		A95217.0 [6]
17.50	0.6890	245	370	2	A95117.5 [5]	
17.50	0.6890	310	465	2		A95217.5 [6]
18.00	0.7087	245	370	2	A95118.0 [5]	
18.00	0.7087	310	465	2		A95218.0 [6]
18.50	0.7283	245	370	2	A95118.5 [5]	
18.50	0.7283	310	465	2		A95218.5 [6]
19.00	0.7480	245	370	2	A95119.0 [5]	
19.00	0.7480	310	465	2		A95219.0 [6]
19.50	0.7677	260	385	2	A95119.5 [5]	
19.50	0.7677	325	490	2		A95219.5 [6]
20.00	0.7874	260	385	2	A95120.0 [5]	
20.00	0.7874	325	490	2		A95220.0 [6]
21.00	0.8268	260	385	2	A95121.0 [5]	
21.00	0.8268	325	490	2		A95221.0 [6]
22.00	0.8661	270	405	2	A95122.0 [5]	
22.00	0.8661	345	515	2		A95222.0 [6]
23.00	0.9055	270	405	2	A95123.0 [5]	
23.00	0.9055	345	515	2		A95223.0 [6]
24.00	0.9449	290	440	3	A95124.0 [5]	
24.00	0.9449	365	555	3		A95224.0 [6]
25.00	0.9843	290	440	3	A95125.0 [5]	
25.00	0.9843	365	555	3		A95225.0 [6]
26.00	1.0236	290	440	3	A95126.0 [5]	
26.00	1.0236	365	555	3		A95226.0 [6]
27.00	1.0630	305	460	3	A95127.0 [5]	
27.00	1.0630	385	580	3		A95227.0 [6]
28.00	1.1024	305	460	3	A95128.0 [5]	
28.00	1.1024	385	580	3		A95228.0 [6]
29.00	1.1417	305	460	3	A95129.0 [5]	
29.00	1.1417	385	580	3		A95229.0 [6]
30.00	1.1811	305	460	3	A95130.0 [5]	
30.00	1.1811	385	580	3		A95230.0 [6]
31.00	1.2205	410	610	3		A95231.0 [6]
32.00	1.2598	410	635	4		A95232.0 [6]
33.00	1.2992	410	635	4		A95233.0 [6]
34.00	1.3386	430	665	4		A95234.0 [6]
35.00	1.3780	430	665	4		A95235.0 [6]
38.00	1.4961	460	695	4		A95238.0 [6]
40.00	1.5748	460	695	4		A95240.0 [6]

[5] < 15xD
[6] < 20xD

DORMER

A400

- Stegborrar - 90°
- Upotusporat - 90°
- Trinnbor - 90°
- Trinbor - 90°

A400																				
	▪	1.1	1.2	1.3	1.4	3.1	3.2													
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1																	

A400	HSS	DIN 8374	4XD	118°	ST		N			90°



A400



M3 - M10

M	d_1 Ø mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Ø mm	A400
M3	3.20	0.1260	57	93	9	6	A400M3
M4	4.30	0.1693	75	117	11	8	A400M4
M5	5.30	0.2087	87	133	13	10	A400M5
M6	6.40	0.2520	94	142	15	11.5	A400M6
M8	8.40	0.3307	114	169	19	15	A400M8
M10	10.50	0.4134	135	198	23	19	A400M10

A402

- Stegborrar - 180°
- Upotusporat - 180°
- Trinnbor - 180°
- Trinbor - 180°

A402																				
	▪	1.1	1.2	1.3	1.4	3.1	3.2													
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1																	

A402	HSS	DIN 8376	4XD	118°	ST		N			180°



A402



M3 - M10

M	d_1 Ø mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Ø mm	A402
M3	3.40	0.1339	57	93	9	6	A402M3
M4	4.50	0.1772	75	117	11	8	A402M4
M5	5.50	0.2165	87	133	13	10	A402M5
M6	6.60	0.2598	94	142	15	11	A402M6
M8	9.00	0.3543	114	169	19	15	A402M8
M10	11.00	0.4331	130	191	23	18	A402M10

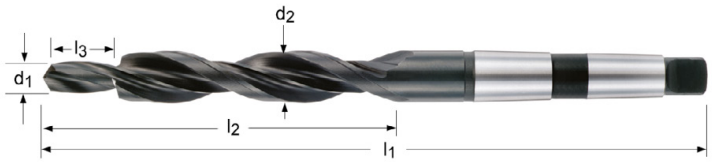
DORMER

A405

- Stegborrar med MK - 180°
- Upotusporat MK - 180°
- Trinnbor med MK - 180°
- Trinbor med MK - 180°

A405	▪	1.1	1.2	1.3	1.4	3.1	3.2													
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1																	

A405 | HSS | DIN 8377 | 4XD | 118° | ST | N | 180°



A405



M6 - M18

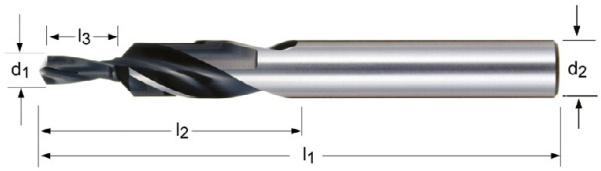
M	d_1 Ø mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Ø mm	MK	A405
M6	6.60	0.2598	94	175	15	11	1	A405M6
M8	9.00	0.3543	114	212	19	15	2	A405M8
M10	11.00	0.4331	130	228	23	18	2	A405M10
M12	13.50	0.5315	140	238	27	20	2	A405M12
M14	15.50	0.6102	160	281	31	24	3	A405M14
M16	17.50	0.6890	165	286	35	26	3	A405M16
M18	20.00	0.7874	175	296	39	30	3	A405M18

A412

- Tappborrar
- Porrasporat
- Tappbor
- Tapbor

A412	▪	1.1	1.2	1.3	1.4	2.1	3.1	3.2												
	•	1.5	1.6	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4
		8.1																		

A412 | HSS | DORMER | 2.5XD | 118° | ST | | | | | 90°



A412



M3 - M10

M	d_1 Ø mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Ø mm	A412
M3	3.40	0.1339	31	70	9	6.6	A412M3
M4	4.50	0.1772	40	84	11	9	A412M4
M5	5.50	0.2165	47	95	13	11	A412M5
M6	6.60	0.2598	51	102	15	13	A412M6
M8	9.00	0.3543	62	123	19	17.2	A412M8
M10	11.00	0.4331	70	141	23	21.5	A412M10

A413

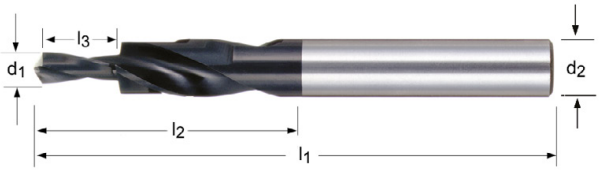
- Tappborrar
- Porrasporat
- Tappbor
- Tapbor

A413

▪ 1.1 1.2 1.3 1.4 2.1 3.1 3.2

• 1.5 1.6 2.2 2.3 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1

A413 HSS DORMER 2.5XD 118° ST 180°



A413



M3 - M10

M	d_1 Ø mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Ø mm	A413
M3	3.40	0.1339	28	66	9	6	A413M3
M4	4.50	0.1772	37	79	11	8	A413M4
M5	5.50	0.2165	43	89	13	10	A413M5
M6	6.60	0.2598	47	95	15	11	A413M6
M8	9.00	0.3543	56	111	19	15	A413M8
M10	11.00	0.4331	62	123	23	18	A413M10

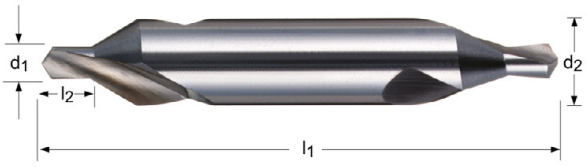
A200 • Dubbhålsborrar - 60°
A205 • Keskiöporat - 60°
A206 • Senterbor - 60°
A266 • Pinolhulsbor - 60°

A200; A205; A206; A266

▪ 1.1 1.2 1.3 1.4 3.1 3.2

• 1.5 1.6 2.1 2.2 2.3 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2 8.3 9.1

A200	HSS	DIN 333A	1XD	118°						60°	A296 136	
A205	HSS	DIN 333A	1XD	118°	TiN					60°		
A206	HSS-E	DIN 333A	1XD	118°						60°		
A266	HSS-E	DIN 333A	1XD	118°	TiAlN					60°		



A200	A205	A206	A266
			
0.50 - 12.50	1.00 - 5.00	1.00 - 5.00	1.00 - 5.00

d_1 Ø mm	d_1 decimal Inch	l_2 max/min mm	l_1 mm	d_2 Ø mm	A200	A205	A206	A266
0.50	0.0197	0.9 - 0.6	25	3.15	A200.5X3.15 [7]			
0.80	0.0315	1.3 - 1.0	25	3.15	A200.8X3.15 [7]			
1.00	0.0394	1.7 - 1.3	31	3.15	A2001.0X3.15	A2051.0X3.15	A2061.0X3.15	A2661.0X3.15
1.25	0.0492	2.0 - 1.6	31	3.15	A2001.25X3.15	A2051.25X3.15	A2061.25X3.15	A2661.25X3.15
1.60	0.0630	2.6 - 2.0	35	4.00	A2001.6X4.0	A2051.6X4.0	A2061.6X4.0	A2661.6X4.0
2.00	0.0787	3.1 - 2.5	40	5.00	A2002.0X5.0	A2052.0X5.0	A2062.0X5.0	A2662.0X5.0
2.50	0.0984	3.8 - 3.1	45	6.30	A2002.5X6.3	A2052.5X6.3	A2062.5X6.3	A2662.5X6.3
3.15	0.1240	4.6 - 3.9	50	8.00	A2003.15X8.0	A2053.15X8.0	A2063.15X8.0	A2663.15X8.0
4.00	0.1575	5.9 - 5.0	55	10.00	A2004.0X10.0	A2054.0X10.0	A2064.0X10.0	A2664.0X10.0
5.00	0.1969	7.2 - 6.3	63	12.50	A2005.0X12.5	A2055.0X12.5	A2065.0X12.5	A2665.0X12.5
6.30	0.2480	8.9 - 8.0	71	16.00	A2006.3X16.0			
8.00	0.3150	11.1 - 10.1	80	20.00	A2008.0X20.0			
10.00	0.3937	13.8 - 12.8	100	25.00	A20010.0X25.0			
12.50	0.4921	17.5 - 16.5	125	31.50	A20012.5X31.5			

[7] Skär endast i en ända / Yksipäinen / Kun skjær i en ende / Kun skær i en ende

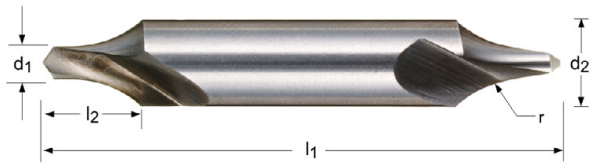
A210

- Dubbhålsborrar
- Keskiöporat
- Senterbor
- Pinolhulsbor

Med radieförsänkning
Säteellinen upotus
Med radie forsenking
Med radieforsænkning

A210																				
	▪	1.1	1.2	1.3	1.4	3.1	3.2													
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1														

A210 HSS DIN 333R 1XD 118°



A210



0.50 - 10.00

d_1 Ø mm	d_1 decimal Inch	l_2 max/min mm	l_1 mm	r max/min mm	d_2 Ø mm	A210
0.50	0.0197	2.6 - 2.3	25.0	2.50 - 2.00	3.15	A210.5X3.15 [7]
0.80	0.0315	2.9 - 2.6	25.0	3.15 - 2.50	3.15	A210.8X3.15 [7]
1.00	0.0394	3.3 - 3.0	31.0	3.65 - 2.90	3.15	A2101.0X3.15
1.25	0.0492	3.6 - 3.3	31.0	3.95 - 3.15	3.15	A2101.25X3.15
1.60	0.0630	4.7 - 4.2	35.0	5.00 - 4.00	4.00	A2101.6X4.0
2.00	0.0787	5.4 - 5.0	40.0	6.25 - 5.00	5.00	A2102.0X5.0
2.50	0.0984	6.8 - 6.3	45.0	7.88 - 6.30	6.30	A2102.5X6.3
3.15	0.1240	8.5 - 8.0	50.0	10.00 - 8.00	8.00	A2103.15X8.0
4.00	0.1575	10.6 - 10.0	55.0	12.50 - 10.00	10.00	A2104.0X10.0
5.00	0.1969	13.1 - 12.5	63.0	15.63 - 12.50	12.50	A2105.0X12.5
6.30	0.2480	16.6 - 16.0	71.0	20.00 - 16.00	16.00	A2106.3X16.0
8.00	0.3150	20.7 - 20.0	80.0	25.00 - 20.00	20.00	A2108.0X20.0
10.00	0.3937	25.7 - 25.0	100.0	31.25 - 25.00	25.00	A21010.0X25.0

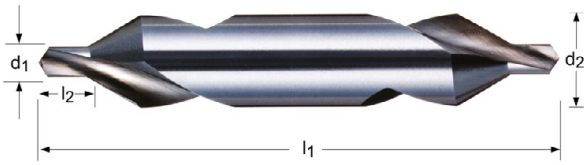
[7] Skär endast i en ända / Yksipäinen / Kun skjær i en ende / Kun skær i en ende

A201

- Dubbhålsborrar - 60°
- Keskiöporat - 60°
- Senterbor - 60°
- Pinolhulsbor - 60°

A201																				
	▪	1.1	1.2	1.3	1.4	3.1	3.2													
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1														

A201 | HSS | DORMER | 1XD | 122° | 60°



A201



0.63 - 6.00

d_1 Ø mm	d_1 decimal Inch	l_2 max/min mm	l_1 mm	d_2 Ø mm	A201
0.63	0.0248	1.2 - 0.9	20	3.15	A201.63X3.15 [7)]
0.75	0.0295	1.3 - 1.0	35	3.50	A201.75X3.5
1.00	0.0394	2.1 - 1.5	35	4.00	A2011.0X4.0
1.50	0.0591	2.8 - 2.0	40	5.00	A2011.5X5.0
1.60	0.0630	2.4 - 2.0	40	5.00	A2011.6X5.0
2.00	0.0787	4.0 - 3.0	45	6.00	A2012.0X6.0
2.00	0.0787	2.9 - 2.5	45	6.30	A2012.0X6.3
2.50	0.0984	4.5 - 3.5	50	8.00	A2012.5X8.0
3.00	0.1181	4.4 - 3.9	50	8.00	A2013.0X8.0
3.00	0.1181	5.0 - 4.0	56	10.00	A2013.0X10.0
3.15	0.1240	4.4 - 3.9	56	10.00	A2013.15X10.0
4.00	0.1575	6.2 - 5.0	66	12.00	A2014.0X12.0
5.00	0.1969	7.7 - 6.5	78	14.00	A2015.0X14.0
6.00	0.2362	9.2 - 8.0	90	18.00	A2016.0X18.0

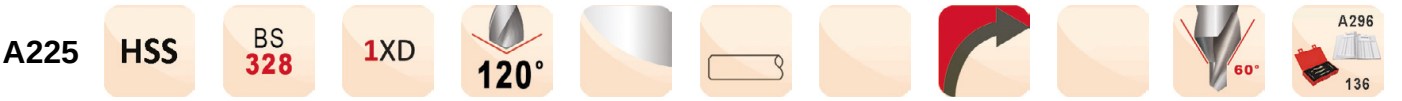
[7)] Skär endast i en ända / Yksipäinen / Kun skjær i en ende / Kun skær i en ende

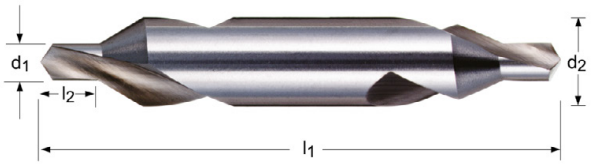
DORMER

A225

- Dubbhålsborrar - 60°
- Keskiöporat - 60°
- Senterbor - 60°
- Pinolhulsbor - 60°

A225																				
	▪	1.1	1.2	1.3	1.4	3.1	3.2													
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1														







Nr.	d_1 Ø Inch	d_1 decimal Inch	l_2 max/min Inch	l_1 Inch	d_2 Ø Inch	A225
BS1	3/64	0.0469	5/64 - 1/16	1.1/2	1/8	A225BS1
BS2	1/16	0.0625	3/32 - 5/64	1.3/4	3/16	A225BS2
BS3	3/32	0.0938	5/32 - 1/8	2“	1/4	A225BS3
BS4	1/8	0.1250	3/16 - 5/32	2.1/4	5/16	A225BS4
BS5	3/16	0.1875	9/32 - 1/4	2.1/2	7/16	A225BS5
BS5A	7/32	0.2188	5/16 - 9/32	2.3/4	1/2	A225BS5A
BS6	1/4	0.2500	3/8 - 5/16	3“	5/8	A225BS6
BS7	5/16	0.3125	15/32 - 13/32	3.1/2	3/4	A225BS7

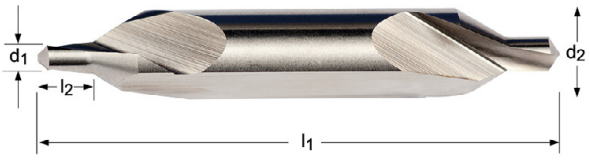
A237

- Dubbhålsborrar - 60°
- Keskiöporat - 60°
- Senterbor - 60°
- Pinolhulsbor - 60°

Spännplatta på skaftet
Varressa lukitustaso
Skaft med spennflate
Spændeflade på skaft

A237	▪	1.1	1.2	1.3	1.4	3.1	3.2													
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1														

A237 HSS-E DIN 333A 1XD 118° d_4 60°



A237



1.60 - 10.00

d_1 Ø mm	d_1 decimal Inch	l_2 max/min mm	l_1 mm	d_2 Ø mm	d4 max/min mm	A237
1.60	0.0630	2.6 - 2.0	35	4.00	3.25 - 3.15	A2371.6X4.0
2.00	0.0787	3.1 - 2.5	40	5.00	4.20 - 4.10	A2372.0X5.0
2.50	0.0984	3.8 - 3.1	45	6.30	5.35 - 5.25	A2372.5X6.3
3.15	0.1240	4.6 - 3.9	50	8.00	6.95- 6.85	A2373.15X8.0
4.00	0.1575	5.9 - 5.0	55	10.00	8.40 - 8.30	A2374.0X10.0
5.00	0.1969	7.2 - 6.3	63	12.50	10.95 - 10.85	A2375.0X12.5
6.30	0.2480	8.9 - 8.0	71	16.00	14.00 -13.90	A2376.3X16.0
8.00	0.3150	11.1 - 10.1	80	20.00	17.90 - 17.80	A2378.0X20.0
10.00	0.3937	13.8 - 12.8	100	25.00	22.50 -22.40	A23710.0X25.0

DORMER

A238

- Dubbhålsborrar
- Keskiöporat
- Senterbor
- Pinolhulsbor

Radieförsänkning och platta på skaftet
Säteellinen muoto ja varressa lukitustaso
Med radius og spennflate
Radius form med spændeflade på skaft

A238																				
	▪	1.1	1.2	1.3	1.4	3.1	3.2													
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1														

A238 HSS-E DIN 333R 1XD 118°



A238



1.60 - 8.00

d_1 Ø mm	d_1 decimal Inch	l_2 max/min mm	l_1 mm	r max/min mm	d_2 Ø mm	d4 max/min mm	A238
1.60	0.0630	4.7 - 4.2	35	5.00 - 4.00	4.00	3.25 - 3.15	A2381.6X4.0
2.00	0.0787	5.4 - 5.0	40	6.25 - 5.00	5.00	4.20 - 4.10	A2382.0X5.0
2.50	0.0984	6.8 - 6.3	45	7.88 - 6.30	6.30	5.35 - 5.25	A2382.5X6.3
3.15	0.1240	8.5 - 8.0	50	10.00 - 8.00	8.00	6.95 - 6.85	A2383.15X8.0
4.00	0.1575	10.6 - 10.0	55	12.50 - 10.00	10.00	8.40 - 8.30	A2384.0X10.0
5.00	0.1969	13.1 - 12.5	63	15.63 - 12.50	12.50	10.95 - 10.85	A2385.0X12.5
6.30	0.2480	16.6 - 16.0	71	20.00 - 16.00	16.00	14.00 - 13.90	A2386.3X16.0
8.00	0.3150	20.7 - 20.0	80	25.00 - 20.00	20.00	17.90 - 17.80	A2388.0X20.0

A242

- Dubbhålsborrar - 60°
- Keskiöporat - 60°
- Senterbor - 60°
- Pinolhulsbor - 60°

A242																				
	▪	1.1	1.2	1.3	1.4	3.1	3.2													
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1														

A242 HSS-E DORMER 1XD 118° 60°



A242



1.00 - 5.00

d_1 Ø mm	d_1 decimal Inch	l_2 max/min mm	l_1 mm	d_2 Ø mm	A242
1.00	0.0394	1.7 - 1.3	100	4.00	A2421.0X4.0
1.50	0.0591	2.6 - 2.0	100	5.00	A2421.5X5.0
2.00	0.0787	3.1 - 2.5	100	6.00	A2422.0X6.0
2.50	0.0984	3.8 - 3.1	100	8.00	A2422.5X8.0
3.00	0.1181	4.6 - 3.9	100	8.00	A2423.0X8.0
3.00	0.1181	4.6 - 3.9	100	10.00	A2423.0X10.0
4.00	0.1575	5.9 - 5.0	100	10.00	A2424.0X10.0
4.00	0.1575	5.9 - 5.0	100	12.00	A2424.0X12.0
5.00	0.1969	7.2 - 6.3	100	12.00	A2425.0X12.0

A088

- Borrkasetter
- Porasarjat, lyhyet porat
- Borsett
- Borsæt

A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
A=Työkalujen malli, B=lkm ja C=halkaisijat
A=Typer i sett. B=Antall i sett. C=Diameter i sett
A=Type i sæt B=Antal bor i sæt C= diameter i sæt.





Set

Set	A	B	C	A088
200S	A022	24	1.0 mm - 10.5 mm x 0.5 mm + 3.3 mm, 4.2 mm, 6.8 mm, 10.2 mm	A088200S

A095

- Borrkasetter — A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
- Porasarjat, lyhyet porat — A=Työkalujen malli, B=lkm ja C=halkaisijat
- Borsett — A=Typer i sett. B=Antall i sett. C=Diameter i sett
- Borsæt — A=Type i sæt B=Antal bor i sæt C= diameter i sæt.





A095

Set

Set	A	B	C	A095
18	A002	29	1/16 inch - 1/2 inch x 1/64 inch	A09518
20	A002	15	1/16 inch - 1/2 inch x 1/32 inch	A09520
200	A002	24	1.0 mm - 10.5 mm x 0.5 mm + 3.3 mm, 4.2 mm, 6.8 mm, 10.2 mm	A095200
201	A002	19	1.0 mm - 10.0 mm x 0.5 mm	A095201
202	A002	51	1.0 mm - 6.0 mm x 0.1 mm	A095202
203	A002	41	6.0 mm - 10.0 mm x 0.1 mm	A095203
204	A002	25	1.0 mm - 13.0 mm x 0.5 mm	A095204
206	A002	29	1.0 mm - 13.0 mm x 0.5 mm + 3.3 mm, 4.2 mm, 6.8 mm, 10.2 mm	A095206
209	A002	91	1.0 mm - 10.0 mm x 0.1 mm	A095209

A087

- Borrsats — A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
- Porasarja, kompakti — A=Työkalujen malli, B=lkm ja C=halkaisijat
- Borsett — A=Typer i sett. B=Antall i sett. C=Diameter i sett
- Kompakt Borsæt — A=Type i sæt B=Antal bor i sæt C= diameter i sæt.





A087

Set

Nr.	A	B	C	A087
201	A002	19	1.0 mm - 10.0 mm x 0.5 mm	A087201

A094

- Borrkasetter — A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
- Porasarjat, lyhyet porat — A=Työkalujen malli, B=lkm ja C=halkaisijat
- Borsett — A=Typer i sett. B=Antall i sett. C=Diameter i sett
- Borsæt — A=Type i sæt B=Antal bor i sæt C= diameter i sæt.



A094



Set

Set	A	B	C	A094
413	A002	13	1.5 mm - 6.5 mm x 0.5 mm + 3.3 mm, 4.2 mm	A094413
419	A002	19	1.0 mm - 10.0 mm x 0.5 mm	A094419

A089

- Borrkasetter
- Porasarjat, lyhyet porat
- Borsett
- Borsæt

A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
A=Työkalujen malli, B=lkm ja C=halkaisijat
A=Typer i sett. B=Antall i sett. C=Diameter i sett
A=Type i sæt B=Antal bor i sæt C= diameter i sæt.





A089

Set

Nr.	A	B	C	A089
10	A002	5	A0024.0, A0025.0, A0026.0, A0028.0, A00210.0	A08910

A099

- Borrdispenser
- Myyntiteline tiskille
- Bordispenser
- Borsæt

A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
A=Työkalujen malli, B=lkm ja C=halkaisijat
A=Typer i sett. B=Antall i sett. C=Diameter i sett
A=Type i sæt B=Antal bor i sæt C= diameter i sæt.



A099



Set

Set	A	B	C	A099
F1	A002	380	5 x (13/32, 7/16, 15/32, 1/2) inch; 10 x (5/64, 7/64, 9/64, 11/64, 13/64, 15/64, 17/64, 9/32, 19/64, 5/16, 21/64, 11/32, 23/64, 3/8) inch; 20 x (1/16, 7/32, 1/4) inch; 30 x 3/32 inch; 40 x (5/32, 3/16) inch; 50 x 1/8 inch	A099F1
M1	A002	340	5 x (10.50, 11.00, 11.50, 12.00, 12.50, 13.00) mm; 10 x (1.50, 2.50, 3.50, 4.50, 5.50, 6.50, 7.00, 7.50, 8.00, 8.50, 9.00, 9.50, 10.00) mm; 20 x (1.00, 5.00, 6.00) mm; 30 x 2.00 mm; 40 x 4.00 mm; 50 x 3.00 mm	A099M1



A099DRILLBOY



Set

Set	A	B	C	A099
DRILLBOY	A002	43	3 x (3.0 mm, 3.3 mm, 3.5 mm, 4.0 mm) 2 x (4.2 mm, 4.5 mm, 5.0 mm, 5.5 mm, 6.0 mm, 6.5 mm, 6.8 mm, 7.0 mm, 7.5 mm, 8.0 mm) + 8.5 mm, 9.0 mm, 9.5 mm, 10.0 mm, 10.2 mm, 10.5 mm, 11.0 mm, 11.5 mm, 12.0 mm, 12.5 mm, 13.0 mm	A099DRILLBOY

A199

- Borrdispenser
- Myyntiteline tiskille
- Bordispenser
- Borsæt

A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
A=Työkalujen malli, B=lkm ja C=halkaisijat
A=Typer i sett. B=Antall i sett. C=Diameter i sett
A=Type i sæt B=Antal bor i sæt C= diameter i sæt.



A199



Set

Set	A	B	C	A199
F1	A100	380	5 x (13/32, 7/16, 15/32, 1/2) inch; 10 x (5/64, 7/64, 9/64, 11/64, 13/64, 15/64, 17/64, 9/32, 19/64, 5/16, 21/64, 11/32, 23/64, 3/8) inch; 20 x (1/16, 7/32, 1/4) inch; 30 x 3/32 inch; 40 x (5/32, 3/16) inch; 50 x 1/8 inch	A199F1
M1	A100	340	5 x (10.50, 11.00, 11.50, 12.00, 12.50, 13.00) mm; 10 x (1.50, 2.50, 3.50, 4.50, 5.50, 6.50, 7.00, 7.50, 8.00, 8.50, 9.00, 9.50, 10.00) mm; 20 x (1.00, 5.00, 6.00) mm; 30 x 2.00 mm; 40 x 4.00 mm; 50 x 3.00 mm	A199M1

A080

- Borrdispenser
- Myyntiteline tiskille
- Bordispenser
- Borsæt

Tom dispenser
Tyhjä myyntiteline
Tom dispenser
Tom borekassette





Nr.	d Ø mm	A080 Set
M1EMPTY	(1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00, 4.50, 5.00, 5.50, 6.00, 6.50, 7.00, 7.50, 8.00, 8.50, 9.00, 9.50, 10.00, 10.50, 11.00, 11.50, 12.00) mm	A080M1EMPTY
F1EMPTY	(1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 11/64, 3/16, 13/64, 7/32, 15/64, 1/4, 17/64, 9/32, 19/64, 5/16, 21/64, 11/32, 3/8, 13/32, 7/16, 1/2) inch	A080F1EMPTY

A190

- Borrkasetter
- Porasarjat, lyhyet porat
- Borsett
- Borsæt

A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
A=Työkalujen malli, B=lkm ja C=halkaisijat
A=Typer i sett. B=Antall i sett. C=Diameter i sett
A=Type i sæt B=Antal bor i sæt C= diameter i sæt.





Set	A	B	C	A190
3	A100	21	1/16 inch - 3/8 inch x 1/64 inch	A1903
12	A100	60	No.1 - No.60	A19012
18	A100	29	1/16 inch - 1/2 inch x 1/64 inch	A19018
20	A100	15	1/16 inch - 1/2 inch x 1/32 inch	A19020
201	A100	19	1.0 mm - 10.0 mm x 0.5 mm	A190201
202	A100	51	1.0 mm - 6.0 mm x 0.1 mm	A190202
203	A100	41	6.0 mm - 10.0 mm x 0.1 mm	A190203
204	A100	25	1.0 mm - 13.0 mm x 0.5 mm	A190204
206	A100	29	1.0 mm - 13.0 mm x 0.5 mm + 3.3 mm, 4.2 mm, 6.8 mm, 10.2 mm	A190206
209	A100	91	1.0 mm - 10.0 mm x 0.1 mm	A190209 [8)]

[8)] A190209 levereras i två kassetter; kassett 1 (1,0-5,9x0,1)+ kassett 2 (6,0-10,0x 0,1mm) / A190209 sisältää 2 koteloa: no 1 (1.0-5.9 x 0.1mm) + no 2 (6.0-10.0 x 0.1mm) / A190209 selges i 2 sett: Sett 1 (1.0-5.9 x 0.1mm) + sett 2 (6.0-10.0 x 0.1mm) / A190209 bliver solgt i 2 kassetter: Kassette 1 (1.0-5.9 x 0.1mm) + kassette 2 (6.0-10.0 x 0.1mm)

A191

- Borrkasetter
- Porasarjat, lyhyet porat
- Borsett
- Borsæt

Blanka under 1.0mm. 3/64”. N60. A=ingående produkter. B=Antal borrar i satsen. C=Diametrar
Halkaisijat < 1,0 mm: -kirkkaita. A=Työkalujen malli, B= lkm ja C=halkaisijat
Blanke under 1,0mm. 3/64”. N60. A=Typer i sett. B=Antall i sett. C=Diameter i sett
Blanke under 1,0mm. 3/64”. N60. A=Type i sæt B=Antal bor i sæt C= diameter i sæt.



A191



Set

Set	A	B	C	A191
31M	A100	20	0.3 mm - 1.0 mm x 0.05 mm + 0.38 mm, 0.52 mm, 0.58 mm, 0.78 mm, 0.82 mm	A19131M
61-80	A100	20	No.61 - No. 80	A19161-80
413	A100	13	1.5 mm - 6.5 mm x 0.5 mm + 3.3 mm, 4.2 mm	A191413
419	A100	19	1.0 mm - 10.0 mm x 0.5 mm	A191419

A188

- Borrkasetter
- Porasarjat, lyhyet porat
- Borsett
- Borsæt

A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
A=Työkalujen malli, B=lkm ja C=halkaisijat
A=Typer i sett. B=Antall i sett. C=Diameter i sett
A=Type i sæt B=Antal bor i sæt C= diameter i sæt.





Set

Nr.	A	B	C	A188
201	A108	19	1.0 mm - 10.0 mm x 0.5 mm	A188201
204	A108	25	1.0 mm - 13.0 mm x 0.5 mm	A188204

A295

- Borrkasetter
- Porasarjat, lyhyet porat
- Borsett
- Borsæt

4 Fasett spets upp till 1,4mm. A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
Halkaisijat <= 1,4 mm: - 4-pintahionta. A=Työkalujen malli, B=porien lkm ja C=halkaisijat
4 Fasett spiss opp til 1,4mm. A=Typer i sett. B=Antall i sett. C=Diameter i sett
4 facet spids op til 1,4mm. A=Type i sæt B=Antal bor i sæt C= diameter i sæt.





A295

Set

Set	A	B	C	A295
219	A777	19	1.0 mm - 10.0 mm x 0.5 mm	A295219
225	A777	25	1.0 mm - 13.0 mm x 0.5 mm	A295225

A296

- Dubbhålsborrar Set
- Keskiöporasarjat
- Senterbor sett
- Pinolbor sæt

A296200 - 118° spetsvinkel DIN333A, A296225 - 120° spetsvinkel BS328 A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
A296200 - 118 ast. kärki, DIN333A, A296225 - 120 ast. kärki BS328. A=Työkalujen malli, B=lkm ja C=halkaisijat
A296200 - 118° spiss DIN333A, A296225 - 120° spiss BS328. A=Typer i sett. B=Antall i sett. C=Diameter i sett
A296200 - 118° spids DIN333A, A296225 - 120° spids BS328. A=Type i sæt B=Antal bor i sæt C= diameter i sæt.



A296



Set

Nr.	A	B	C	A296
200	A200	5	1.00 mm, 2.00 mm, 2.50 mm, 3.15 mm, 4.00 mm	A296200
225	A225	5	BS1, BS2, BS3, BS4, BS5	A296225



B100	158	**B411**	156	**G106**	189	**G171**	196
B101	176	**B441**	155	**G107**	192	**G236**	199
B121	178	**B442**	157	**G125**	198	**G314**	197
B122	166	**B481**	153	**G129**	187	**G335**	184
B157	173	**B901**	162	**G132**	194	**G338**	195
B161	174	**B903**	164	**G135**	184	**G400**	183
B170	170	**B952**	165	**G136**	189	**G506**	189
B180	168	**B953**	167	**G137**	185	**G560**	189
B301	163	**B954**	179	**G138**	195	**G570**	191
B334	160	**B955**	180	**G142**	191	**G600**	193
B335	161	**B956**	181	**G149**	188		
B400	152	**B957**	182	**G154**	186		

DORMER

	Material	Raaka-aine	Materiale	Materiale
	Ytbehandling	Pinnoitteet	Overflatebehandling	Overfladebehandling
	Standard	Standardi	Standard	Standard
	Rotationsriktning	Työstösuunta	Rotasjonsretning	Rotationsretning
	Skaft	Varsi	Skaft	Skaft
	Spårtyp	Lastu-uran muoto	Sportype	Spiral type
	Toleranser	Toleranssit	Toleranse	Tolerance
	Konicitet	Kartiokkuus	Konisitet	Konicitet
■	Förstahandsval	Paras valinta	Førstevalg	Perfekt
●	Andrahandsval	Hyvä valinta	Andrevalg	God
	Exempel 10 = Skärhastighet i meter/minut +/- 10%	Esimerkki 10 = Lastuamisnopeus, m/min +/- 10%	Eksempel 10 = skjærehastighet i meter/minutt +/- 10%	Eksempel 10 = Skærehastighed i meter/min. +/- 10%
	Artikelnummer	Tuotteen koodi	Artikkel kode	Kode
	Dim. område	Halkaisija-alue	Dim. område	Dimension

AMG	Svensk	Suomi	Norsk	Dansk
1.1	Rena järn, mjuka stål	Puhdas rauta, pehmeät teräkset	Rent jern, myke stål	Rent jern, blødt stål
1.2	Konstruktionsstål	Rakenneteräkset, hiilletysteräkset	Konstruksjonsstål	Konstruktionsstål
1.3	Kolstål, låglegerade stål	Hiilli- ja niukkaesosteiset teräset	Kullstål, låglegert stål	Kulstofstål, lavt leg.stål
1.4	Legerade stål	Seostetut teräkset	Legert stål	Legeret stål
1.5	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.6	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.7	Legerade härdade stål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
1.8	Legerade härdade stål, slitstål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
2.1	Rostfria automatstål och verktygsstål	Aut. laadut, työkaluteräkset Cr>10%	Rustfritt automatstål	Rustfrit automatstål
2.2	Austenitiska	Austenittiset	Austenistisk (Syrefast)	Austenitisk
2.3	Ferritaustenitiska (duplex), Martensitiska	Ferriiti + Austeniitti (Duplex), Ferriitismarten-siittiset	Ferritaustenitiske (duplex), Ferritiske, Martensitiske	Ferritisk+Austenitisk, Martensitisk
2.4	Utskiljningshärdade / Austenitiska	Erkautumiskarkenevat	Utskillingsherdet	Udskilningshærdet
3.1	Gråjärn	Harmaa valurauta	Gråjern	Gråt støbejern
3.2	Gråjärn	Harmaa valurauta	Gråjern	Hærdet støbejern
3.3	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
3.4	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
4.1	Titan, ren	Titaani, seostamaton	Titan, ren	Titan, ren
4.2	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
4.3	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
5.1	Nickel, ren	Nikkeli, seostamaton	Nikkel, ren	Nikkel, ren
5.2	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
5.3	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
6.1	Koppar	Kupari	Kopper	Kobber
6.2	Mässing / Brons	ß-Messinki, pronssi	Messing/Bronse	Messing, Bronze
6.3	Mjuk mässing	α-Messinki, pehmeä	Myk messing	Blød messing
6.4	Cu-Al-Fe-Legeringar	Cu-Al-Fe seokset, lujat pronssit	Cu-Al-Fe-Legeringer	Cu-Al-Fe-legeringer
7.1	Ren aluminium, magnesium	Al, Mg, seostamaton	Ren aluminium, magnesium	Ren aluminium, magnesium
7.2	Al Legeringar, Si<0.5%	Al seostettu, Si<0.5%	Al legeringer, Si<0.5%	Al-legeringer, Si<0.5%
7.3	Al Legeringar, Si>0.5%<10%	Al seostettu, Si>0.5% <10%	Al legeringer, Si>0.5%<10%	Al-legeringer, Si>0.5%<10%
7.4	Al Legeringar, Si>10% Whisker förstärkta Al-och Mg- Legeringar	Al seostettu, Si>10% Whisker lujitetut, Al-seokset, Mg-seokset	Al legeringer, Si>10% Whisker forsterket Al-leg., Mg leg.	Al-legeringer, Si>10% Whisker-forstærket, Al-legeringer, Mg-legeringer
8.1	Mjuka plaster	Pehmeät muovit (Thermoplast)	Myk plast	Blød plast
8.2	Hårda plaster	Kovat muovit, Bakeliitti	Hard plast	Hårde plast
8.3	Armerade plaster	Lujitetut muovit	Armert plast	Armerede plastmaterialer
9.1	Cermets (metall-keramik)	Cermetit (metalli-keraamiset)	Cermets (metal-keramikk)	Cermets (metal-keramik)
10.1	Grafit	Standardi Grafiitti	Standard Grafitt	Standard grafit

DORMER

	HM	HM	HM	HM	HM	HSS	HSS	HSS	HSS-E	HSS	HSS	HSS	HSS	HSS-E	HSS-E	HSS-E	HSS-E
						ST			ST	ST	ST		ST Bronze				
	DIN 8093	DIN 8093	DIN 8050	DIN 8094	DIN 8051	DIN 206	DORMER	DORMER	BS 328	BS 328	DIN 9	DIN 9	ANSI	DIN 2179	DIN 212	DIN 212	DIN 212
		DIN 6535HA													DIN 6535HA		
	B	B	A	B	A	B			B	A	A	B			B	B	E
	H7	Ø.95-5.5 0,+0.004 Ø5.51-12 0,+0.005	H7	H7	H7	H7			H7						H7	Ø.95-5.5 0,+0.004 Ø5.51-12 0,+0.005	H7
										1:48	1:50	1:50		1:50			
																		
	B400	B481	B441	B411	B442	B100	B334	B335	B901	B301	B903	B952	B122	B953	B180	B170	B157
	1.00 - 20.00	0.98 - 12.05	10.00 - 20.00	5.00 - 30.00	10.00 - 20.00	1.50 - 50.00	N000 - N16	N000BLADES - N16NUT	1.50 - 1/2	1/16 - 1/2	1.50 - 20.00	1.20 - 50.00	3/8 - 1.1/16	1.00 - 12.00	1.50 - 20.0	0.98 - 12.00	2.00 - 20.00

AMG	152	153	155	156	157	158	160	161	162	163	164	165	166	167	168	170	173	ISO
1.1	●18B	●18B	●18B	●18B	●18B	■18C	■18C		■18C	■18C	■18C	■18C	■18C	●25C	■25C	■25C	■25C	P 1
1.2	●18B	●18B	●18B	●18B	●18B	■14C	■14C		■14C	■14C	■14C	■14C	■14C	●20C	■20C	■20C	■20C	P 1
1.3	●14B	●14B	●14B	●14B	●14B	■11C	■11C		■11C	■11C	■11C	■11C	■11C	●16C	■16C	■16C	■16C	P 2
1.4	●14B	●14B	●14B	●14B	●14B	■10B	■10B		■10B	■10B	■10B	■10B	■10B	●15B	■15B	■15B	■15B	P 3
1.5	■10C	■10C	■10C	■10C	■10C	●5B	●5B		●5B	●5B	●5B	●5B	●5B	●9B	●9B	●9B	●9B	P 4
1.6	■10C	■10C	■10C	■10C	■10C	●4A	●4A		●4A	●4A	●4A	●4A	●4A	●5A	●5A	●5A	●5A	H 1
1.7																		H 3
1.8																		H 4
2.1						■8F	■8F		■8C	■8C	■8C	■8C	■8C	■11C	■11C	■11C	■11C	M 1
2.2										●5B	●5B	●5B	●5B	■6B	●6B	●6B	■6B	M 3
2.3										●6B	●6B	●6B	●6B	■8B	●8B	●8B	■8B	M 2
2.4															●6B			S 2
3.1	■17D	■17D	■17D	■17D	■17D	■14E	■14E		■14E	■14E	■14E	■14E	■14E		●16E	●16E		K 1
3.2	■17D	■17D	■17D	■17D	■17D	●11D	●11D		●11D	●11D	●11D	●11D	●11D		●15D	●15D		K 2
3.3	■17D	■17D	■17D	■17D	■17D	●10C	●10C		●10C	●10C	●10C	●10C	●10C		●13C	●13C		K 3
3.4	■14D	■14D	■14D	■14D	■14D	●9C	●9C		●9C	●9C	●9C	●9C	●9C		●11C	●11C		K 4
4.1	■14C	■14C	■14C	■14C	■14C	■11C	■11C		■11C	■11C	■11C	■11C	■11C	■15C	●15C	●15C	■15C	S 1
4.2	■14C	■14C	■14C	■14C	■14C	●5B	●5B		●5B	●5B	●5B	●5B	●5B	■9B	■9B	■9B	■9B	S 2
4.3	■10B	■10B	■10B	■10B	■10B	●4B	●4B		●4B	●4B	●4B	●4B	●4B	■5B	●5B	●5B	■5B	S 3
5.1	■10C	■10C	■10C	■10C	■10C	●5D	●5D		●5D	●5D	●5D	●5D	●5D	■8D	■8D	■8D	■8D	S 1
5.2	■10B	■10B	■10B	■10B	■10B	●3C	●3C		●3C					■5C	●5C	●5C	■5C	S 2
5.3	■10B	■10B	■10B	■10B	■10B	●2C	●2C		●2C					■3C	●3C	●3C	■3C	S 3
6.1	■38E	■38E	■38E	■38E	■38E	●18D	●18D		●18D	●18D	●18D	●18D	●18D	■25D	●25D	●25D	■25D	N 3
6.2	■38E	■38E	■38E	■38E	■38E	■20E	■20E		■20E	■20E	■20E	■20E	■20E	●28E	●28E	●28E	●28E	N 4
6.3	■38E	■38E	■38E	■38E	■38E	●18D	●18D		●18D	●18D	●18D	●18D	●18D		●25D	●25D		N 3
6.4	■38D	■38D	■38D	■38D	■38D	●11D	●11D		●11D	●11D	●11D	●11D	●11D		●14D	●14D		N 4
7.1	■60D	■60D	■60D	■60D	■60D	●23F	●23F		●23F	●23F	●23F	●23F	●23F	■28F			■28F	N 1
7.2	■60D	■60D	■60D	■60D	■60D	●18F	●18F		●18F	●18F	●18F	●18F	●18F	■25F			■25F	N 1
7.3	■25D	■25D	■25D	■25D	■25D					●15E	●15E	●15E	●15E	■20E			■20E	N 1
7.4	■25D	■25D	■25D	■25D	■25D					●14D	●14D	●14D	●14D	■16D			■16D	N 2
8.1	■25C	■25C	■25C	■25C	■25C									■30B			■30B	O
8.2	■13C	■13C	■13C	■13C	■13C	●21B	●21B		●21B	●21B	●21B	●21B	●21B					O
8.3																		O
9.1														●3A			●3A	H
10.1																		O

DORMER

	HSS-E	HSS-E	HSS	HSS-E	HSS-E	HSS-E	
		ST	ST		ST		
	DIN 208	BS 328	DIN 311	DIN 2180	DIN 219	DIN 217	
	B	B			B		
	H7	H7	k11		H7		
				1:50			
							
	B161	B101	B121	B954	B955	B956	B957
	3.00 - 50.00	3.00 - 2"	10.00 - 30.00	5.00 - 30.00	25.00 - 80.00	13.00 - 40.00	N3DRIVER - N9WASHER

AMG	174	176	178	179	180	181	182	ISO
1.1	■25C	■18C	■18C	●25C	■18C			P 1
1.2	■20C	■14C	■14C	●20C	■14C			P 1
1.3	■16C	■11C	■11C	●16C	■11C			P 2
1.4	■15B	■10B	■10B	●15B	■10B			P 3
1.5	●9B	●5B	●5B	●9B	●5B			P 4
1.6	●5A	●4A	●4A	●5A	●4A			H 1
1.7								H 3
1.8								H 4
2.1	■11C	■8C		■11C	■8C			M 1
2.2	●6B			■6B	●5B			M 3
2.3	●8B			■8B	●6B			M 2
2.4								S 2
3.1	●16E	■14E	■14E		●14E			K 1
3.2	●15D	●11D	●11D					K 2
3.3	●13C	●10C	●10C					K 3
3.4	●11C	●9C	●9C					K 4
4.1	■15C	■11C	■11C	■15C	■11C			S 1
4.2	●9B	●5B		■9B	●5B			S 2
4.3	●5B	●4B		■5B	●4B			S 3
5.1	■8D	●5D		■8D	■5D			S 1
5.2	●5C	●3C		■5C	●3C			S 2
5.3	●3C	●2C		■3C	●2C			S 3
6.1	●25D	●18D		■25D	●18D			N 3
6.2	●28E	■20E		●28E	●20E			N 4
6.3	●25D	●18D						N 3
6.4	●14D	●11D						N 4
7.1		●23F		■28F	●23F			N 1
7.2		●18F		■25F	●18F			N 1
7.3				■20E	●15E			N 1
7.4				■16D	●14D			N 2
8.1				■30B				O
8.2		●21B	●21B		●21B			O
8.3								O
9.1				●3A				H
10.1								O

DORMER

	Material	Raaka-aine	Materiale	Materiale
	Ytbehandling	Pinnoitteet	Overflatebehandling	Overfladebehandling
	Standard	Standardi	Standard	Standard
	Rotationsriktning	Työstösuunta	Rotasjonsretning	Rotationsretning
	Användningsområde	Käyttöalue	Andvendelsesområde	Andvendelsesområde
	Skaft	Varsi	Skaft	Skaft
	Försänkningsvinkel	Upotuskulma	Forsenkingsº	Forsænkningsº
■	Förstahandsval	Paras valinta	Førstevalg	Perfekt
●	Andrahandsval	Hyvä valinta	Andrevalg	God
	Exempel 10 = Skärhastighet i meter/minut +/- 10%	Esimerkki 10 = Lastuamisnopeus, m/min +/- 10%	Eksempel 10 = skjærehastighet i meter/minutt +/- 10%	Eksempel 10 = Skærehastighed i meter/min. +/- 10%
	Artikelnummer	Tuotteen koodi	Artikkel kode	Kode
	Dim. område	Halkaisija-alue	Dim. område	Dimension

AMG	Svensk	Suomi	Norsk	Dansk
1.1	Rena järn, mjuka stål	Puhdas rauta, pehmeät teräkset	Rent jern, myke stål	Rent jern, blødt stål
1.2	Konstruktionsstål	Rakenneteräkset, hiilletysteräkset	Konstruksjonsstål	Konstruktionsstål
1.3	Kolstål, låglegerade stål	Hiilli- ja niukkaesosteiset teräset	Kullstål, låglegert stål	Kulstofstål, lavt leg.stål
1.4	Legerade stål	Seostetut teräkset	Legert stål	Legeret stål
1.5	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.6	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.7	Legerade härdade stål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
1.8	Legerade härdade stål, slitstål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
2.1	Rostfria automatstål och verktygsstål	Aut. laadut, työkaluteräkset Cr>10%	Rustfritt automatstål	Rustfrit automatstål
2.2	Austenitiska	Austenittiset	Austenistisk (Syrefast)	Austenitisk
2.3	Ferritaustenitiska (duplex), Martensitiska	Ferriiti + Austeniitti (Duplex), Ferriitismarten-siittiset	Ferritaustenitiske (duplex), Ferritiske, Martensitiske	Ferritisk+Austenitisk, Martensitisk
2.4	Utskiljningshärdade / Austenitiska	Erkautumiskarkenevat	Utskillingsherdet	Udskilningshærdet
3.1	Gråjärn	Harmaa valurauta	Gråjern	Gråt støbejern
3.2	Gråjärn	Harmaa valurauta	Gråjern	Hærdet støbejern
3.3	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
3.4	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
4.1	Titan, ren	Titaani, seostamaton	Titan, ren	Titan, ren
4.2	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
4.3	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
5.1	Nickel, ren	Nikkeli, seostamaton	Nikkel, ren	Nikkel, ren
5.2	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
5.3	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
6.1	Koppar	Kupari	Kopper	Kobber
6.2	Mässing / Brons	ß-Messinki, pronssi	Messing/Bronse	Messing, Bronze
6.3	Mjuk mässing	α-Messinki, pehmeä	Myk messing	Blød messing
6.4	Cu-Al-Fe-Legeringar	Cu-Al-Fe seokset, lujat pronssit	Cu-Al-Fe-Legeringer	Cu-Al-Fe-legeringer
7.1	Ren aluminium, magnesium	Al, Mg, seostamaton	Ren aluminium, magnesium	Ren aluminium, magnesium
7.2	Al Legeringar, Si<0.5%	Al seostettu, Si<0.5%	Al legeringer, Si<0.5%	Al-legeringer, Si<0.5%
7.3	Al Legeringar, Si>0.5%<10%	Al seostettu, Si>0.5% <10%	Al legeringer, Si>0.5%<10%	Al-legeringer, Si>0.5%<10%
7.4	Al Legeringar, Si>10% Whisker förstärkta Al-och Mg- Legeringar	Al seostettu, Si>10% Whisker lujitetut, Al-seokset, Mg-seokset	Al legeringer, Si>10% Whisker forsterket Al-leg., Mg leg.	Al-legeringer, Si>10% Whisker-forstærket, Al-legeringer, Mg-legeringer
8.1	Mjuka plaster	Pehmeät muovit (Thermoplast)	Myk plast	Blød plast
8.2	Hårda plaster	Kovat muovit, Bakeliitti	Hard plast	Hårde plast
8.3	Armerade plaster	Lujitetut muovit	Armert plast	Armerede plastmaterialer
9.1	Cermets (metall-keramik)	Cermetit (metalli-keraamiset)	Cermets (metal-keramikk)	Cermets (metal-keramik)
10.1	Grafit	Standardi Grafiitti	Standard Grafitt	Standard grafit

DORMER

	HM	HSS	HSS	HSS	HSS	HSS	HSS-E	HSS	HSS	HSS	HSS	HSS	HSS-E	HSS-E	
			TiN						TiAlN		TiAlN		AlTiCN		
	DIN 335C	DIN 334C	DIN 334C	DIN 334D	DIN 335C	DORMER	DORMER	DIN 335C	DIN 335C	DIN 335C	DIN 335C	DIN 335C	DIN 335C	DORMER	
	90°	60°	60°	60°	82°	90°	90°	90°	90°	90°	90°	90°	90°	90°	
															
	G400	G135	G335	G137	G154	G129	G149	G136	G560	G106	G506	G142	G570	G107	
	6.30 - 31.00	6.30 - 25.00	6.30 - 25.00	16.00 - 80.00	6.30 - 25.00	6.00 - 31.50	5.00 - 50.00	4.30 - 31.00	6.30 - 31.00	6.30 - 50.00	6.30 - 50.00	4.80 - 31.00	6.30 - 31.00	6.30 - 20.50	
AMG	183	184	184	185	186	187	188	189	189	189	189	191	191	192	ISO
1.1	■30F	■30F	■50E	■30F	■30F	■30D	■30D	■30F	■50E	■30F	■50E	■30F	●45E	■30F	P 1
1.2	■25E	■25E	■40E	■25E	■25E	■25D	■25D	■25E	■40E	■25E	■40E	■25E	●36E	■25E	P 1
1.3	■20D	■20D	■30D	■20D	■20D	■20C	■20C	■20D	■30D	■20D	■30D	●20D	●27D	■20D	P 2
1.4	■15D	■15D	●20D	■15D	■15D	■15B	■15B	■15D	■20D	■15D	●20D	●15D	■22D	■15D	P 3
1.5	■10B	■10B	●15B	■10B	■10B	●10A	●10A	●10B	■15B	■10B	●15B		■17B	■10B	P 4
1.6	●6A	●6A	●10B	●6A	●6A	●6A	●6A	●6A	●10B	●6A	●10B		●12B	●6A	H 1
1.7															H 3
1.8															H 4
2.1	●8C	●8C		●8C	●8C	●8B	●8B	●8C	■8C	●8C		■8C	■17C	●8C	M 1
2.2	●6B	●6B		●6B	●6B	●6A	●6A	●6B	●6B	●6B		■6B	■12B	●6B	M 3
2.3	●4A	●4A		●4A	●4A			●4A	●4A	●4A		■4A	■15A	●4A	M 2
2.4													●10A		S 2
3.1	●25F	●25F	■45F	●25F	●25F	●25D	●25D	●25F	■45F	●25F	■45F		●40C	●25F	K 1
3.2	●15D	●15D	■35D	●15D	●15D	●15C	●15C	●15D	■35D	●15D	■35D		●32C	●15D	K 2
3.3	●12C	●12C	■30C	●12C	●12C	●12A	●12A	●12C	■30C	●12C	■30C		●27C	●12C	K 3
3.4	●8C	●8C	■30C	●8C	●8C	●8A	●8A	●8C	■30C	●8C	■30C		●24C	●8C	K 4
4.1	■12C	■12C	●20C	■12C	■12C	■12B	■12B	■12C	●20C	■12C	●20C	■12C		■12C	S 1
4.2	■10A	■10A	●15A	■10A	■10A	■10A	■10A	■10A	●15A	■10A	●15A	●10A		■10A	S 2
4.3	■8A	■8A	●10A	■8A	■8A	●8A	●8A	●8A	●10A	■8A	●10A			■8A	S 3
5.1	■12C	■12C	●20C	■12C	■12C	■12B	■12B	■12C	■20C	■12C	●20C	■12C		■12C	S 1
5.2	■6B	■6B	●10B	■6B	■6B	■6A	■6A	■6B	■10B	■6B	●10B	●6B	●6A	■6B	S 2
5.3	■4A	■4A	●6A	■4A	■4A	●4A	●4A	●4A	■6A	■4A	●6A		●4A	■4A	S 3
6.1	■25D	■25D	●40D	■25D	■25D	■25B	■25B	■25D	●40D	■25D	●40D	■25D	●40D	■25D	N 3
6.2	■20F	■20F	●30F	■20F	■20F	■20C	■20C	■20F	●30F	■20F	●30F	■20F	●30F	■20F	N 4
6.3	■25F	■25F	●40F	■25F	■25F	■25C	■25C	■25F	●40F	■25F	●40F	●25F	●40F	■25F	N 3
6.4	●10D	●10D	●15D	●10D	●10D	●10B	●10B	●10D	●15D	●10D	●15D		●15D	●10D	N 4
7.1	●30G	●30G	■50G	●30G	●30G	■30D	■30D	■30G	●50G	●30G	■50G	■30G	●45G	●30G	N 1
7.2	●25F	●25F	■40F	●25F	●25F	■25C	■25C	■25F	●40F	●25F	■40F	■25F	●36F	●25F	N 1
7.3	●20F	●20F	■30F	●20F	●20F	●20C	●20C	●20F	■30F	●20F	■30F	●20F	●27F	●20F	N 1
7.4	●10F	●10F	■15F	●10F	●10F	●10C	●10C	●10F	■15F	●10F	■15F	●10F	●13F	●10F	N 2
8.1	●30G	●30G	●50G	●30G	●30G	●30D	●30D	■30G	●50G	●30G	●50G	■30G		●30G	O
8.2	●20G	●20G	●30G	●20G	●20G	●20D	●20D	●20G	●30G	●20G	●30G	■20G		●20G	O
8.3															O
9.1															H
10.1															O

DORMER

	HSS	HSS	HSS	HSS	HSS	HSS	HSS	
				TiN	TiAlN			
	DORMER	DIN 335A	DIN 335D	DIN 335D	DIN 335C	DORMER	DIN 373	
	90°	90°	90°	90°	100°	20°	180°	
								
	G600	G132	G138	G338	G171	G314	G125	G236
	6.30 - 25.00	8.00 - 20.00	25.00 - 80.00	25.00 - 63.00	6.30 - 25.00	4.00 - 9.00	6.50 - 20.00	Set

AMG	193	194	195	195	196	197	198	199	ISO
1.1	■22F		■30F	■50F	■50E	■30D	■30E		P 1
1.2	■17E		■25E	■40E	■40E	■25D	■25E		P 1
1.3	■15D	●20E	■20D	■30D	■30D	■20C	■20D		P 2
1.4	■12D	●15D	■15D	■20D	●20D	■15B	●15D		P 3
1.5	■8B	■10D	■10B	■15B	●15B	●10A	●10C		P 4
1.6	●6A	■6B	●6A	●10A	●10B	●6A	●6C		H 1
1.7									H 3
1.8									H 4
2.1	●8C		●8C			●8B	■8D		M 1
2.2	●6B		●6B			●6A	●6C		M 3
2.3	●4A	●4B	●4A			●4A			M 2
2.4									S 2
3.1	●25F		●25F	■45F	■45F	●25D	■25E		K 1
3.2	●15D		●15D	■35D	■35D	●15C	■15E		K 2
3.3	●12C		●12C	■30C	■30C	●12A	●12D		K 3
3.4		■8D	●8C	■30C	■30C	●8A	●8C		K 4
4.1			■12C	●20C	●20C	■12B	●12E		S 1
4.2		■8A	■10A	●15A	●15A	■10A	●10E		S 2
4.3		■8A	■8A	●10A	●10A	■8A	●8E		S 3
5.1			■12C	●20C	●20C	■12B	●12E		S 1
5.2		■6C	■6B	●10B	●10B	■6A	●6C		S 2
5.3		■4B	■4A	●6A	●6A	■4A	●4E		S 3
6.1	●25D		■25D	●40D	●40D	■25B	●25C		N 3
6.2	●20F		■20F	●30F	●30F	■20C	●20C		N 4
6.3	●25F		■25F	●40F	●40F	■25C	●25C		N 3
6.4	●10D	■10F	●10D	●15D	●15D	●10B			N 4
7.1	●30G		●30G	■50G	■50G	■30D	■30G		N 1
7.2	●25F		●25F	■40F	■40F	■25C	■25G		N 1
7.3	●20F		●20F	■30F	■30F	●20C	●20G		N 1
7.4	●10F		●10F	■15F	■15F	●10C	●10E		N 2
8.1			●30G	●50G	●50G	■30D	■30C		O
8.2			●20G	●30G	●30G	■20D	●20C		O
8.3		●5G							O
9.1									H
10.1									O



Ø mm												
	1,5	2	3	5	8	10	12	16	20	25	30	40	50
A	0,045	0,055	0,078	0,100	0,150	0,170	0,185	0,220	0,250	0,280	0,320	0,390	0,440
B	0,055	0,072	0,110	0,150	0,180	0,210	0,240	0,280	0,310	0,360	0,400	0,500	0,550
C	0,065	0,085	0,135	0,185	0,220	0,260	0,285	0,335	0,390	0,440	0,480	0,600	0,680
D	0,080	0,110	0,160	0,200	0,270	0,320	0,360	0,410	0,470	0,540	0,600	0,730	0,850
E	0,100	0,140	0,180	0,250	0,350	0,390	0,430	0,500	0,530	0,640	0,750	0,910	1,100
F	0,140	0,180	0,260	0,350	0,440	0,500	0,550	0,630	0,700	0,800	0,930	1,200	1,500
	mm/REV ± 15 %												



Ø mm										
	6	8	10	16	20	25	32	40	60	80
A	0.03	0.04	0.05	0.06	0.08	0.09	0.10	0.12	0.14	0.16
B	0.04	0.05	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.20
C	0.05	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.20	0.22
D	0.06	0.08	0.10	0.12	0.15	0.18	0.20	0.22	0.25	0.28
E	0.08	0.10	0.12	0.15	0.18	0.20	0.25	0.27	0.30	0.32
F	0.09	0.11	0.13	0.16	0.19	0.21	0.26	0.29	0.33	0.36
G	0.10	0.12	0.15	0.18	0.20	0.22	0.28	0.32	0.36	0.40
H	0.12	0.15	0.18	0.20	0.22	0.25	0.30	0.35	0.40	0.45
	mm/REV									

● Generella riktlinjer för avverkning vid förborrade hål ● Ohjeelliset arvot kalvettavien reikien työstövaroista
● Generelle retningslinjer ved forboring av hull ● Generelle retningslinjer ved forboret hul

	Ø (mm)					
	3 - 5mm	5.1 - 10mm	10.1 - 20mm	20.1 - 30mm	> 30mm	
1.1	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.4-.05	P 1
1.2	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.4-.05	P 1
1.3	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.4-.05	P 2
1.4	0.1-0.2	0.2	0.2	0.3	0.3-0.4	P 3
1.5	0.1-0.2	0.2	0.2	0.3	0.3-0.4	P 4
1.6	0.1-0.2	0.2	0.2	0.3	0.3-0.4	H 1
1.7	0.1-0.2	0.2	0.2	0.3	0.3-0.4	H 3
1.8	0.1-0.2	0.2	0.2	0.3	0.3-0.4	H 4
2.1	0.1-0.2	0.2	0.2	0.3	0.3-0.4	M 1
2.2	0.1-0.2	0.2	0.2	0.3	0.3-0.4	M 3
2.3	0.1-0.2	0.2	0.2	0.3	0.3-0.4	M 2
2.4	0.1-0.2	0.2	0.2	0.3	0.3-0.4	S 2
3.1	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.4-0.5	K 1
3.2	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.4-0.5	K 2
3.3	0.1-0.2	0.2	0.3	0.4	0.5	K 3
3.4	0.1-0.2	0.2	0.3	0.4	0.5	K 4
4.1	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.3-0.4	S 1
4.2	0.1-0.2	0.2	0.2	0.3	0.3-0.4	S 2
4.3	0.1-0.2	0.2	0.2	0.3	0.3-0.4	S 3
5.1	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.4-.05	S 1
5.2	0.1-0.2	0.2	0.2	0.3	0.3-0.4	S 2
5.3	0.1-0.2	0.2	0.2	0.3	0.3-0.4	S 3
6.1	0.1-0.2	0.2-0.3	0.3-0.4	0.4-0.5	0.5	N 3
6.2	0.1-0.2	0.2	0.2-0.3	0.3	0.3-0.4	N 4
6.3	0.1-0.2	0.2	0.2-0.3	0.3	0.3-0.4	N 3
6.4	0.1-0.2	0.2	0.2-0.3	0.3	0.3-0.4	N 4
7.1	0.1-0.2	0.2-0.3	0.3-0.4	0.4-0.5	0.5	N 1
7.2	0.1-0.2	0.2-0.3	0.3-0.4	0.4-0.5	0.5	N 1
7.3	0.1-0.2	0.2-0.3	0.3-0.4	0.4-0.5	0.5	N 1
7.4	0.1-0.2	0.2-0.3	0.3-0.4	0.4-0.5	0.5	N 2
8.1	0.1-0.2	0.3	0.4	0.4-0.5	0.5	O
8.2	0.1-0.2	0.2	0.2	0.3	0.3-0.4	O
8.3	0.1-0.2	0.2	0.2	0.3	0.3-0.4	O
9.1	0.1-0.2	0.2	0.2	0.3	0.3-0.4	H
10.1	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.4-0.5	O

För justerbara brotschar reducera avverkning med 30%. För högspiralbrotschar(Toolworks) öka med 50%. / Säädettäville ja lehdellisille kalvimille työstövarat ovat 30% pienemmät. Jyrkkänousuisille kalvimlle työstövarat voivat olla 50% suuremmat. / For justerbare brotsjer reduser matingen med 30%. For høyspiralbrotsjer øke mating med 50%. / For justerbar rival reduceres skærehastigheden med 30%, For højspiral øges med 50%

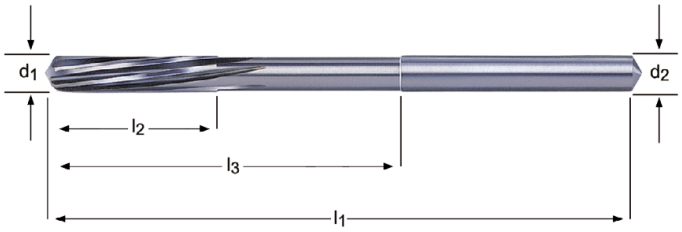
DORMER

B400

- Maskinbrotsch Extremt ojämn delning
- Konekalvimet, Differentialijako Extrem
- Maskinbrotsj , ekstrem ujevn deling
- Maskinrivaler Ekstrem differentialdeling

B400																				
	▪	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4
		8.1	8.2																		
	•	1.1	1.2	1.3	1.4																

B400	HM		DIN 8093			B	H7	





1.00 - 20.00

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Øh$_9$ mm	B400	
1.0	34	6	15	3	1.0	B4001.0	1)
1.2	38	8	16.5	3	1.2	B4001.2	1)
1.4	40	8	18	3	1.4	B4001.4	1)
1.5	40	8	18	3	1.5	B4001.5	1)
1.6	49	11	26	3	1.6	B4001.6	1)
1.8	49	11	25	4	1.8	B4001.8	1)
2.0	49	11	24	4	2.0	B4002.0	1)
2.2	57	15	30	4	2.2	B4002.2	1)
2.5	57	15	28	4	2.5	B4002.5	1)
2.8	61	15	32	4	2.8	B4002.8	1)
3.0	61	15	30	6	3.0	B4003.0	1)
3.2	70	18	33	6	3.2	B4003.2	1)
3.5	70	18	33	6	3.5	B4003.5	1)
4.0	75	19	44	6	4.0	B4004.0	1)
4.5	80	21	46	6	4.5	B4004.5	1)
5.0	86	23	53	6	5.0	B4005.0	1)
5.5	93	26	56	6	5.6	B4005.5	1)
6.0	93	26	56	6	5.6	B4006.0	1)
6.5	101	28	63	6	6.3	B4006.5	2)
7.0	109	31	69	6	7.1	B4007.0	2)
8.0	117	33	75	6	8.0	B4008.0	2)
9.0	125	36	81	6	9.0	B4009.0	2)
10.0	133	38	87	6	10.0	B40010.0	2)
12.0	151	44	105	6	10.0	B40012.0	2)
14.0	160	47	110	8	12.5	B40014.0	2)
16.0	170	52	120	8	12.5	B40016.0	2)
18.0	182	56	130	6	14.0	B40018.0	3)
20.0	195	60	137	6	16.0	B40020.0	3)

[1] Solid Hårdmetall / KM / Hårdmetallkrone / Hårdmetalskrone
[2] Hårdmetallkrona / Kovametallipää / Påloddet HM skjær / Påloddet HM-skær
[3] Pålödda HM-skär / KM paloitetut / Solid hardmetall / Solid hårdmetal

B481

- NC - Hundradelsbrotsch för högprecisionschuckar
- NC - sadasosa kalvimet tarkkuusistukoihin
- NC-Hundredelsbrotsj for høypresisjonschucker
- NC- Præcisionsrival

Extrem differentialdelning
Differentialijako, Extrem
Ekstrem differentialdeling
Ekstrem differentialdeling.

B481 ▪ 1.5 1.6 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2

• 1.1 1.2 1.3 1.4

B481 | HM | DIN 8093 | DIN 6535HA | B | Ø.95-5.5 0,+0.004 Ø5.51-12 0,+0.005



B481



0.98 - 12.05

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Øh$_6$ mm	B481
0.98	49.5	6	21.5	3	4	B4810.98
0.99	49.5	6	21.5	3	4	B4810.99
1.00	49.5	6	21.5	3	4	B4811.00
1.01	49.5	6	21.5	3	4	B4811.01
1.02	49.5	6	21.5	3	4	B4811.02
1.03	49.5	9	21.5	3	4	B4811.03
1.48	49	9	21	3	4	B4811.48
1.49	49	9	21	3	4	B4811.49
1.50	49	9	21	3	4	B4811.50
1.51	49	9	21	3	4	B4811.51
1.52	49	9	21	3	4	B4811.52
1.53	49	9	21	3	4	B4811.53
1.98	49	12	21	4	4	B4811.98
1.99	49	12	21	4	4	B4811.99
2.00	49	12	21	4	4	B4812.00
2.01	49	12	21	4	4	B4812.01
2.02	49	12	21	4	4	B4812.02
2.03	49	12	21	4	4	B4812.03
2.48	59	16	31	4	4	B4812.48
2.49	59	16	31	4	4	B4812.49
2.50	59	16	31	4	4	B4812.50
2.51	59	16	31	4	4	B4812.51
2.52	59	16	31	4	4	B4812.52
2.53	59	16	31	4	4	B4812.53
2.97	62.5	17	35	6	4	B4812.97
2.98	62.5	17	35	6	4	B4812.98
2.99	62.5	17	35	6	4	B4812.99
3.00	62.5	17	35	6	4	B4813.00
3.01	62.5	17	35	6	4	B4813.01
3.02	62.5	17	35	6	4	B4813.02
3.03	62.5	17	35	6	4	B4813.03
3.97	75	19	47	6	4	B4813.97
3.98	75	19	47	6	4	B4813.98
3.99	75	19	47	6	4	B4813.99
4.00	75	19	47	6	4	B4814.00
4.01	75	19	47	6	4	B4814.01
4.02	75	19	47	6	4	B4814.02
4.03	75	19	47	6	4	B4814.03

DORMER

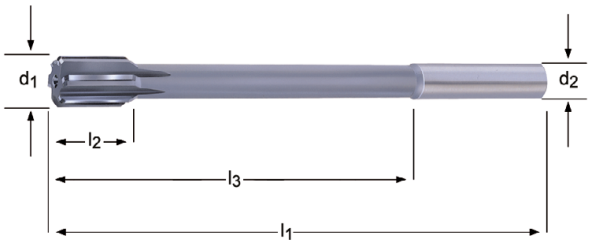
d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Øh_6 mm	B481
4.97	86	23	50	6	6	B4814.97
4.98	86	23	50	6	6	B4814.98
4.99	86	23	50	6	6	B4814.99
5.00	86	23	50	6	6	B4815.00
5.01	86	23	50	6	6	B4815.01
5.02	86	23	50	6	6	B4815.02
5.03	86	23	50	6	6	B4815.03
5.97	93	26	57	6	6	B4815.97
5.98	93	26	57	6	6	B4815.98
5.99	93	26	57	6	6	B4815.99
6.00	93	26	57	6	6	B4816.00
6.01	93	26	57	6	6	B4816.01
6.02	93	26	57	6	6	B4816.02
6.03	93	26	57	6	6	B4816.03
7.97	117	33	81	6	8	B4817.97
7.98	117	33	81	6	8	B4817.98
7.99	117	33	81	6	8	B4817.99
8.00	117	33	81	6	8	B4818.00
8.01	117	33	81	6	8	B4818.01
8.02	117	33	81	6	8	B4818.02
8.03	117	33	81	6	8	B4818.03
8.04	117	33	81	6	8	B4818.04
9.97	133	38	93	6	10	B4819.97
9.98	133	38	93	6	10	B4819.98
9.99	133	38	93	6	10	B4819.99
10.00	133	38	93	6	10	B48110.00
10.01	133	38	93	6	10	B48110.01
10.02	133	38	93	6	10	B48110.02
10.03	133	38	93	6	10	B48110.03
10.04	133	38	93	6	10	B48110.04
10.05	133	38	93	6	10	B48110.05
11.97	151	44	106	6	12	B48111.97
11.98	151	44	106	6	12	B48111.98
11.99	151	44	106	6	12	B48111.99
12.00	151	44	106	6	12	B48112.00
12.01	151	44	106	6	12	B48112.01
12.02	151	44	106	6	12	B48112.02
12.03	151	44	106	6	12	B48112.03
12.04	151	44	106	6	12	B48112.04
12.05	151	44	106	6	12	B48112.05

B441

- Maskinbrotsch Extremt ojämn delning
- Konekalvimet, Differentialijako Extrem
- Maskinbrotsj , ekstrem ujevn deling
- Maskinrivaler Ekstrem differentialdeling

B441	▪	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4
		8.1	8.2																		
	•	1.1	1.2	1.3	1.4																

B441	HM		DIN 8050			A	H7	



B441



10.00 - 20.00

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Øh$_9$ mm	B441
10.0	133	19	87	6	10	B44110.0 [3]
11.0	142	19	96	6	10	B44111.0 [3]
12.0	151	19	105	6	10	B44112.0 [3]
13.0	151	19	105	6	10	B44113.0 [3]
14.0	160	19	110	6	12.5	B44114.0 [3]
15.0	162	19	112	6	12.5	B44115.0 [3]
16.0	170	22	120	6	12.5	B44116.0 [3]
17.0	175	22	123	6	14	B44117.0 [3]
18.0	182	22	130	6	14	B44118.0 [3]
19.0	189	22	131	6	16	B44119.0 [3]
20.0	195	22	137	6	16	B44120.0 [3]

[3] Pålödda HM-skär / KM paloitetut / Solid hardmetall / Solid hårdmetal

DORMER

B411

- Maskinbrotsch Extremt ojämn delning
- Konekalvimet, Differentialijako Extrem
- Maskinbrotsj , ekstrem ujevn deling
- Maskinrivaler Ekstrem differentialdeling

B411	▪	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4
		8.1	8.2																		
	•	1.1	1.2	1.3	1.4																

B411	HM		DIN 8094			B	H7	



B411



5.00 - 30.00

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	MK	B411
5.0	133	23	67.5	6	1	B4115.0 [2]
6.0	138	26	72.5	6	1	B4116.0 [2]
7.0	150	31	84.5	6	1	B4117.0 [2]
8.0	156	33	90.5	6	1	B4118.0 [2]
9.0	162	36	96.5	6	1	B4119.0 [2]
10.0	168	38	102.5	6	1	B41110.0 [2]
12.0	182	44	116.5	6	1	B41112.0 [2]
14.0	189	47	123.5	8	1	B41114.0 [2]
15.0	204	50	124	8	2	B41115.0 [2]
16.0	210	52	130	8	2	B41116.0 [2]
17.0	214	54	134	6	2	B41117.0 [3]
18.0	219	56	139	6	2	B41118.0 [3]
19.0	223	58	143	6	2	B41119.0 [3]
20.0	228	60	148	6	2	B41120.0 [3]
22.0	237	64	157	6	2	B41122.0 [3]
24.0	268	68	169	8	3	B41124.0 [3]
25.0	268	68	169	8	3	B41125.0 [3]
26.0	273	70	174	8	3	B41126.0 [3]
30.0	281	73	182	8	3	B41130.0 [3]

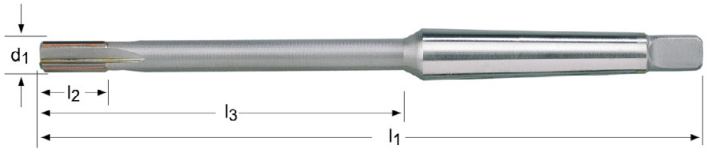
[2] Hårdmetallkrona / Kovametallipää / Påloddet HM skjær / Påloddet HM-skær
[3] Pålödda HM-skär / KM paloitetut / Solid hardmetall / Solid hårdmetal

B442

- Maskinbrotsch Extremt ojämn delning
- Konekalvimet, Differentialijako Extrem
- Maskinbrotsj , ekstrem ujevn deling
- Maskinrivaler Ekstrem differentialdeling

B442	▪	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4
		8.1	8.2																		
	•	1.1	1.2	1.3	1.4																

B442	HM		DIN 8051			A	H7	



B442



10.00 - 20.00

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	MK	B442
10.0	168	19	102.5	6	1	B44210.0
12.0	182	19	116.5	6	1	B44212.0
14.0	189	19	123.5	6	1	B44214.0
15.0	204	19	124	6	2	B44215.0
16.0	210	22	130	6	2	B44216.0
17.0	214	22	134	6	2	B44217.0
18.0	219	22	139	6	2	B44218.0
19.0	223	22	143	6	2	B44219.0
20.0	228	22	148	6	2	B44220.0

DORMER

B100

- Handbrotschar
- Käsikalvimet
- Handbrotsjer
- Håndrivaler

d2=d1 med tolerans e9
d2=d1 toleranssilla e9
d2=d1 med toleranse e9
d2=d1 med toleranse e9

B100 ▪ 1.1 1.2 1.3 1.4 2.1 3.1 4.1 6.2

• 1.5 1.6 3.2 3.3 3.4 4.2 4.3 5.1 5.2 5.3 6.1 6.3 6.4 7.1 7.2 8.2

B100 HSS | ST | DIN 206 | B | H7



B100



1.50 - 50.00

d1 Ø Inch	d1 Ø mm	l1 mm	l2 mm	l3 mm	z	a mm	B100
	1.50	41	20	5	3	1.12	B1001.5
1/16	1.59	41	20	5	3	1.12	B1001/16
	1.60	44	21	5	3	1.25	B1001.6
5/64	1.98	47	23	6	4	1.40	B1005/64
	2.00	50	25	6	4	1.60	B1002.0
3/32	2.38	54	27	7	4	1.80	B1003/32
	2.50	58	29	7	4	2.10	B1002.5
7/64	2.78	62	31	8	6	2.10	B1007/64
	3.00	62	31	8	6	2.40	B1003.0
1/8	3.18	66	33	8	6	2.40	B1001/8
	3.20	66	33	8	6	2.40	B1003.2
	3.50	71	35	9	6	2.70	B1003.5
9/64	3.57	71	35	9	6	2.70	B1009/64
5/32	3.97	76	38	10	6	3.00	B1005/32
	4.00	76	38	10	6	3.00	B1004.0
11/64	4.37	81	41	10	6	3.40	B10011/64
	4.50	81	41	10	6	3.40	B1004.5
3/16	4.76	87	44	11	6	3.80	B1003/16
	5.00	87	44	11	6	3.80	B1005.0
13/64	5.16	87	44	11	6	3.80	B10013/64
	5.50	93	47	12	6	4.30	B1005.5
7/32	5.56	93	47	12	6	4.30	B1007/32
15/64	5.95	93	47	12	6	4.90	B10015/64
	6.00	93	47	12	6	4.90	B1006.0
1/4	6.35	100	50	13	6	4.90	B1001/4
	6.50	100	50	13	6	4.90	B1006.5
17/64	6.75	107	54	14	6	5.50	B10017/64
	7.00	107	54	14	6	5.50	B1007.0
9/32	7.14	107	54	14	6	6.20	B1009/32
	7.50	107	54	14	6	6.20	B1007.5
19/64	7.54	115	58	15	6	6.20	B10019/64
5/16	7.94	115	58	15	6	6.20	B1005/16
	8.00	115	58	15	6	6.20	B1008.0
21/64	8.33	115	58	15	6	7.00	B10021/64
	8.50	115	58	15	6	7.00	B1008.5
11/32	8.73	124	62	16	6	7.00	B10011/32
	9.00	124	62	16	6	7.00	B1009.0
23/64	9.13	124	62	16	6	8.00	B10023/64
	9.50	124	62	16	6	8.00	B1009.5
3/8	9.52	124	62	17	6	8.00	B1003/8

d_1 Ø Inch	d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	◹ a mm	B100
25/64	9.92	133	66	17	6	8.00	B10025/64
	10.00	133	66	17	6	8.00	B10010.0
13/32	10.32	133	66	17	6	8.00	B10013/32
	10.50	133	66	17	6	8.00	B10010.5
	11.00	142	71	18	6	9.00	B10011.0
7/16	11.11	142	71	18	6	9.00	B1007/16
	11.50	142	71	18	6	9.00	B10011.5
	12.00	152	76	19	6	9.00	B10012.0
	12.50	152	76	19	6	10.00	B10012.5
1/2	12.70	152	76	19	6	10.00	B1001/2
	13.00	152	76	19	6	10.00	B10013.0
17/32	13.49	163	81	20	8	11.00	B10017/32
	13.50	163	81	20	8	11.00	B10013.5
	14.00	163	81	20	8	11.00	B10014.0
9/16	14.29	163	81	20	8	11.00	B1009/16
	14.50	163	81	20	8	11.00	B10014.5
	15.00	163	81	20	8	12.00	B10015.0
19/32	15.08	163	81	22	8	12.00	B10019/32
5/8	15.88	175	87	22	8	12.00	B1005/8
	16.00	175	87	22	8	12.00	B10016.0
	17.00	175	87	22	8	13.00	B10017.0
11/16	17.46	188	93	23	8	14.50	B10011/16
	18.00	188	93	23	8	14.50	B10018.0
	19.00	188	93	23	8	14.50	B10019.0
3/4	19.05	188	93	25	8	14.50	B1003/4
	20.00	201	100	25	8	16.00	B10020.0
13/16	20.64	201	100	25	8	16.00	B10013/16
	21.00	201	100	25	8	16.00	B10021.0
	22.00	215	107	27	8	18.00	B10022.0
7/8	22.22	215	107	27	8	18.00	B1007/8
	23.00	215	107	27	8	18.00	B10023.0
	24.00	231	115	29	8	18.00	B10024.0
	25.00	231	115	29	8	20.00	B10025.0
1“	25.40	231	115	29	8	20.00	B1001
	26.00	231	115	29	8	20.00	B10026.0
	27.00	247	124	31	10	22.00	B10027.0
	28.00	247	124	31	10	22.00	B10028.0
	29.00	247	124	31	10	22.00	B10029.0
	30.00	247	124	31	10	24.00	B10030.0
	31.00	265	133	33	10	24.00	B10031.0
	32.00	265	133	33	10	24.00	B10032.0
	33.00	265	133	33	10	26.00	B10033.0
	34.00	284	142	36	10	26.00	B10034.0
	35.00	284	142	36	10	29.00	B10035.0
	36.00	284	142	36	10	29.00	B10036.0
	37.00	284	142	36	10	29.00	B10037.0
	38.00	305	152	38	10	29.00	B10038.0
	39.00	305	152	38	10	32.00	B10039.0
	40.00	305	152	38	10	32.00	B10040.0
	45.00	326	163	41	12	35.00	B10045.0
	50.00	347	174	44	12	39.00	B10050.0

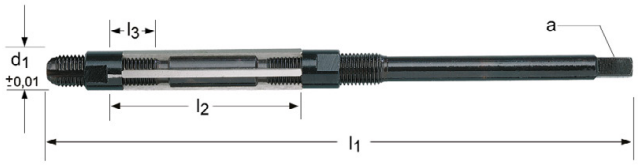
B334

- Justerbara Handbrotschar
- Käsikalvimet, säädettävät
- Stillbare Handbrotsjer
- Justerbare Håndrivaler

B334 ▪ 1.1 1.2 1.3 1.4 2.1 3.1 4.1 6.2

• 1.5 1.6 3.2 3.3 3.4 4.2 4.3 5.1 5.2 5.3 6.1 6.3 6.4 7.1 7.2 8.2

B334 HSS



B334



N000 - N16

Nr.	d min-max mm	l_1 mm	l_2 mm	l_3 mm	z	a mm	B334
000	6.4 - 7.2	110	32	7	4	3.0	B334000
00	7.2 - 8.0	110	32	7	4	3.4	B33400
0	8.0 - 9.0	115	34	9	5	3.8	B3340
1	9.0 - 10.0	115	34	9	5	4.3	B3341
2	10.0 - 11.0	115	34	9	5	4.9	B3342
3	11.0 - 12.0	125	35	9	5	4.9	B3343
4	12.0 - 13.5	135	41	9	5	6.2	B3344
5	13.5 - 15.5	146	50	12	5	7.0	B3345
6	15.5 - 18.0	166	60	12	5	8.0	B3346
7	18.0 - 21.0	178	65	15	5	9.0	B3347
8	21.0 - 24.0	195	76	15	5	11.0	B3348
9	24.0 - 27.5	218	82	18	5	12.0	B3349
10	27.5 - 31.5	245	86	18	5	14.5	B33410
11	31.5 - 37.0	280	98	18	6	18.0	B33411
12	37.0 - 45.0	325	108	20	6	20.0	B33412
13	45.0 - 55.0	370	118	20	6	26.0	B33413
14	55.0 - 67.0	400	125	20	6	32.0	B33414
15	67.0 - 80.0	435	140	23	8	39.0	B33415
16	80.0 - 95.0	475	155	23	8	49.0	B33416

B335

- Justerbara Handbrotschar, Reservdelar (B334)
- Käsikalvimet, säädettävät, varaosat (B334)
- Stillbare Handbrotsjer, Reservedeler (B334)
- Justerbare Håndrivaler, Reservedele (B334)

B335 HSS



BLADES



NUT

B335



N000BLADES - N16NUT

Nr.	B335
000	B335000BLADES
000	B335000NUT
00	B33500BLADES
00	B33500NUT
0	B3350BLADES
0	B3350NUT
1	B3351BLADES
1	B3351NUT
2	B3352BLADES
2	B3352NUT
3	B3353BLADES
3	B3353NUT
4	B3354BLADES
4	B3354NUT
5	B3355BLADES
5	B3355NUT
6	B3356BLADES
6	B3356NUT
7	B3357BLADES
7	B3357NUT
8	B3358BLADES
8	B3358NUT
9	B3359BLADES
9	B3359NUT
10	B33510BLADES
10	B33510NUT
11	B33511BLADES
11	B33511NUT
12	B33512BLADES
12	B33512NUT
13	B33513BLADES
13	B33513NUT
14	B33514BLADES
14	B33514NUT
15	B33515BLADES
15	B33515NUT
16	B33516BLADES
16	B33516NUT

B901

- Maskinbrotschar — d2=d1-0.025
- Konekalvimet — d2=d1 - 0.025
- Maskinbrotsjer — d2=d1 -0,025
- Maskinrivaler — d2=d1 - 0.025

B901

▪ 1.1 | 1.2 | 1.3 | 1.4 | 2.1 | 3.1 | 4.1 | 6.2

• 1.5 | 1.6 | 3.2 | 3.3 | 3.4 | 4.2 | 4.3 | 5.1 | 5.2 | 5.3 | 6.1 | 6.3 | 6.4 | 7.1 | 7.2 | 8.2

B901 HSS-E | ST | BS 328 | B | H7



B901



1.50 - 1/2

d_1 Ø Inch	d_1 Ø mm	l_1 mm	l_2 mm	z	B901
	1.50	44	21	4	B9011.5
1/16	1.59	44	21	4	B9011/16
	2.00	50	25	4	B9012.0
3/32	2.38	58	29	4	B9013/32
	2.50	58	29	4	B9012.5
	3.00	62	31	4	B9013.0
1/8	3.18	66	33	4	B9011/8
	3.50	71	35	4	B9013.5
5/32	3.97	76	38	6	B9015/32
	4.00	76	38	6	B9014.0
	4.50	81	41	6	B9014.5
3/16	4.76	87	44	6	B9013/16
	5.00	87	44	6	B9015.0
13/64	5.16	87	44	6	B90113/64
	5.50	93	47	6	B9015.5
7/32	5.56	93	47	6	B9017/32
15/64	5.95	93	47	6	B90115/64
	6.00	93	47	6	B9016.0
1/4	6.35	100	50	6	B9011/4
	7.00	107	54	6	B9017.0
9/32	7.14	107	54	6	B9019/32
5/16	7.94	115	58	6	B9015/16
	8.00	115	58	6	B9018.0
	9.00	124	62	6	B9019.0
3/8	9.52	133	66	6	B9013/8
	10.00	133	66	6	B90110.0
	11.00	142	71	6	B90111.0
7/16	11.11	142	71	6	B9017/16
	12.00	152	76	6	B90112.0
1/2	12.70	152	76	6	B9011/2

B301

- Handbrotschar För Koniska Pinnhål
- Käsikalvimet kartiosokille
- Handbrotsjer For Koniske Pinnehull
- Håndrivaler For Koniske Stifter

B301

▪ 1.1 1.2 1.3 1.4 2.1 3.1 4.1 6.2

• 1.5 1.6 2.2 2.3 3.2 3.3 3.4 4.2 4.3 5.1 6.1 6.3 6.4 7.1 7.2 7.3 7.4 8.2

B301 HSS ST BS 328 A 1:48





nom Ø	d_1 Ø mm	l_1 mm	l_2 mm	z	⊿ a mm	d_2 Ø mm	B301
1/16	1.10	51	25	4	1.2	1.63	B3011/16 [4]
5/64	1.50	51	25	4	1.6	2.03	B3015/64 [4]
3/32	1.75	57	32	4	2.0	2.41	B3013/32 [4]
7/64	2.03	64	38	4	2.2	2.82	B3017/64 [4]
1/8	2.30	70	44	4	2.5	3.23	B3011/8 [4]
9/64	2.64	73	48	4	2.8	3.63	B3019/64 [4]
5/32	2.95	76	51	4	3.1	4.01	B3015/32 [4]
11/64	3.23	89	57	4	3.6	4.42	B30111/64 [4]
3/16	3.50	102	70	4	4.0	4.95	B3013/16 [4]
7/32	4.13	102	70	6	4.5	5.59	B3017/32 [4]
1/4	4.64	117	86	6	5.0	6.43	B3011/4 [5]
9/32	5.23	143	105	6	5.6	7.42	B3019/32 [5]
5/16	5.84	143	105	6	6.3	8.03	B3015/16 [5]
11/32	6.43	152	114	6	7.1	8.81	B30111/32 [5]
3/8	7.03	165	127	6	8.0	9.68	B3013/8 [5]
13/32	7.42	191	146	6	8.0	10.46	B30113/32 [5]
7/16	8.21	191	146	6	9.0	11.25	B3017/16 [5]
1/2	9.41	210	165	6	10.0	12.85	B3011/2 [5]

[4] Toleransgräns +0.0030 / Toleranssiraja +0.0030 / Toleransegrense +0.0030 / Tolerancegrænse +0.0030
[5] Toleransgräns +0.0050 / Toleranssiraja +0.0050 / Toleransegrense +0,0050 / Tolerancegrænse +0.0050

B903

- Handbrotschar För Koniska Pinnhål
- Käsikalvimet kartiosokille
- Handbrotsjer For Koniske Pinnehull
- Håndrivaler For Koniske Stifter

B903									
	■	1.1	1.2	1.3	1.4	2.1	3.1	4.1	6.2
	●	1.5	1.6	2.2	2.3	3.2	3.3	3.4	4.2	4.3	5.1	6.1	6.3	6.4	7.1	7.2	7.3	7.4	8.2

B903	HSS	ST	DIN 9			A		1:50



B903



1.50 - 20.00

nom Ø	d_1 Ø mm	d_2 Ø mm	l_1 mm	l_2 mm	z	a mm	d_3 Øh_{11} mm	B903	
1.5	1.40	2.14	57	37	4	1.80	2.14	B9031.5	6)
2.0	1.90	2.86	68	48	4	2.24	2.86	B9032.0	6)
2.5	2.40	3.36	68	48	4	2.80	3.36	B9032.5	6)
3.0	2.90	4.06	80	58	4	3.15	4.00	B9033.0	6)
4.0	3.90	5.26	93	68	4	4.00	5.00	B9034.0	6)
5.0	4.90	6.36	100	73	4	5.00	6.30	B9035.0	6)
6.0	5.90	8.00	135	105	6	6.30	7.90	B9036.0	7)
8.0	7.90	10.80	180	145	6	8.00	10.50	B9038.0	7)
10.0	9.90	13.40	215	175	6	10.00	13.30	B90310.0	7)
12.0	11.80	16.00	255	210	8	11.20	16.00	B90312.0	7)
13.0	12.86	16.74	255	210	8	12.50	16.74	B90313.0	7)
14.0	13.86	17.74	255	210	8	12.50	17.74	B90314.0	7)
16.0	15.80	20.40	280	230	8	14.00	20.40	B90316.0	7)
20.0	19.80	24.80	310	250	8	18.00	24.80	B90320.0	7)

[6] Toleransgräns +0.0750 / Toleranssiraja +0.0750 / Toleransegrense +0.0750 / Tolerancegrænse +0.0750
[7] Toleransgräns +0.125 / Toleranssiraja +0.125 / Toleransegrense +0.125 / Tolerancegrænse +0.125

B952

- Handbrotschar För Koniska Pinnhål
- Käsikalvimet kartiosokille
- Handbrotsjer For Koniske Pinnehull
- Håndrivaler For Koniske Stifter

B952																		
	■	1.1	1.2	1.3	1.4	2.1	3.1	4.1	6.2									
	●	1.5	1.6	2.2	2.3	3.2	3.3	3.4	4.2	4.3	5.1	6.1	6.3	6.4	7.1	7.2	7.3	7.4	8.2

B952	HSS		DIN 9			B		1:50



B952



1.20 - 50.00

nom Ø	d_1 Ø mm	d_2 Ø mm	l_1 mm	l_2 mm	z	▨ a mm	d_3 Øh_{11} mm	B952
1.2	1.1	1.74	50	32	3	2.4	3.15	B9521.2 [8]
1.5	1.4	2.14	57	37	3	2.4	3.15	B9521.5 [8]
2.0	1.9	2.86	68	48	3	2.4	3.15	B9522.0 [8]
2.5	2.4	3.36	68	48	4	2.4	3.15	B9522.5 [8]
3.0	2.9	4.06	80	58	5	3.0	4.00	B9523.0
3.5	3.4	4.66	87	63	5	3.4	4.50	B9523.5
4.0	3.9	5.26	93	68	5	3.8	5.00	B9524.0
4.5	4.4	5.80	95	70	5	4.3	5.60	B9524.5
5.0	4.9	6.36	100	73	5	4.9	6.30	B9525.0
5.5	5.4	7.20	118	90	6	5.5	7.10	B9525.5
6.0	5.9	8.00	135	105	6	6.2	8.00	B9526.0
6.5	6.4	8.60	140	110	6	6.2	8.00	B9526.5
7.0	6.9	9.40	160	125	6	7.0	9.00	B9527.0
8.0	7.9	10.8	180	145	6	8.0	10.00	B9528.0
9.0	8.9	12.1	195	160	6	9.0	11.20	B9529.0
10.0	9.9	13.4	215	175	6	10.0	12.50	B95210.0
12.0	11.8	16.0	255	210	8	11.0	14.00	B95212.0
13.0	12.8	17.0	255	210	8	12.0	16.00	B95213.0
14.0	13.8	18.0	255	210	8	12.0	16.00	B95214.0
16.0	15.8	20.4	280	230	8	14.5	18.00	B95216.0
20.0	19.8	24.8	310	250	8	18.0	22.40	B95220.0
25.0	24.7	30.7	370	300	10	22.0	28.00	B95225.0
30.0	29.7	36.1	400	320	10	24.0	31.50	B95230.0
40.0	39.7	46.5	430	340	12	32.0	40.00	B95240.0
50.0	49.7	56.9	460	360	12	39.0	50.00	B95250.0

[8] Rakspår, form A / Suorauraiset, muoto A / Rett spor, form A / Lige Spor, form A

DORMER

B122

- Cylindrisk Maskinbrotsch
- Konekalvimet, ohut lieriövarsi
- Sylindrisk Maskinbrotsj
- Cylindrisk Maskinrival

B122																		
	▪	1.1	1.2	1.3	1.4	2.1	3.1	4.1	6.2									
	•	1.5	1.6	2.2	2.3	3.2	3.3	3.4	4.2	4.3	5.1	6.1	6.3	6.4	7.1	7.2	7.3	7.4	8.2

B122 HSS | ST Bronze | ANSI



B122



3/8 - 1.1/16

d_1 Ø Inch	d_1 decimal Inch	l_1 Inch	l_2 Inch	z	d_2 Ø Inch	B122
3/8	0.3750	4.5/8	2.1/2	4	3/8	B1223/8
1/2	0.5000	5.7/8	3.3/4	5	1/2	B1221/2
9/16	0.5625	5.7/8	3.3/4	5	1/2	B1229/16
5/8	0.6250	6.3/8	4.1/4	5	1/2	B1225/8
11/16	0.6875	6.3/8	4.1/4	5	1/2	B12211/16
3/4	0.7500	6.7/8	4.1/2	5	1/2	B1223/4
13/16	0.8125	6.7/8	4.1/2	5	1/2	B12213/16
7/8	0.8750	6.7/8	4.1/2	5	1/2	B1227/8
15/16	0.9375	6.7/8	4.1/2	5	1/2	B12215/16
1“	1.0000	6.7/8	4.1/2	5	1/2	B1221
1.1/16	1.0625	6.7/8	4.1/2	5	1/2	B1221.1/16

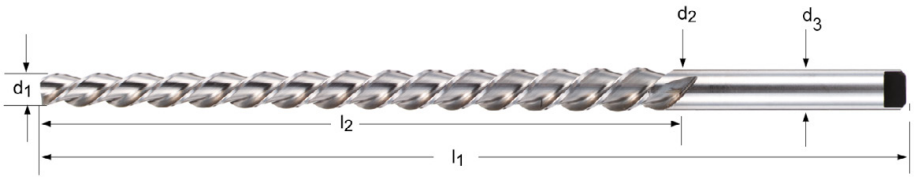
B953

- Maskinbrotsch för koniska pinnhål med 45° vänsterspiral
- Konekalvimet kartiotapeille, vasennous. urat 45°
- Maskinbrotsj for koniske pinnehull, 45° venstrespiral
- Maskinrival for konisk stift, 45° venstresnoet helix

Tunga enl DIN 1809
Lehti - DIN 1809 mukaan
Tunge lik DIN 1809
Tunge i følge DIN 1809

B953															
	■	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	7.1	7.2	7.3	7.4	8.1
	•	1.1	1.2	1.3	1.4	1.5	1.6	6.2	9.1							

B953 HSS-E DIN 2179 1:50



B953



1.00 - 12.00

nom Ø	d_1 Ø mm	d_2 Ø mm	l_1 mm	l_2 mm	z	d_3 Øh_9 mm	B953
1.0	0.8	1.46	60	33	2	1.4	B9531.0
1.5	1.4	2.14	70	37	2	2.1	B9531.5
2.0	1.9	2.86	86	48	3	3.15	B9532.0
2.5	2.4	3.36	86	48	3	3.15	B9532.5
3.0	2.9	4.06	100	58	3	4.0	B9533.0
4.0	3.9	5.26	112	68	3	5.0	B9534.0
5.0	4.9	6.36	122	73	3	6.3	B9535.0
6.0	5.9	8.00	160	105	3	8.0	B9536.0
6.5	6.4	8.78	188	119	3	8.5	B9536.5
8.0	7.9	10.80	207	145	3	10.0	B9538.0
10.0	9.9	13.40	245	175	3	12.5	B95310.0
12.0	11.8	16.00	290	210	3	16.0	B95312.0

DORMER

B180

- NC - Brotsch för högprecisionschuckar
- NC - tarkkuuskalvimet
- NC Brotsj for Høypresisjonschucker
- Præcisionsrivaler

B180 ▪ 1.1 1.2 1.3 1.4 2.1 4.2 5.1

• 1.5 1.6 2.2 2.3 2.4 3.1 3.2 3.3 3.4 4.1 4.3 5.2 5.3 6.1 6.2 6.3 6.4

B180 HSS-E | DIN 212 | DIN 6535HA | B | H7



B180



1.50 - 20.0

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Øh$_6$ mm	B180
1.5	40	8	18	3	2	B1801.5
1.6	43	9	20	3	2	B1801.6
1.7	43	9	20	3	2	B1801.7
1.8	46	10	22	4	2	B1801.8
1.9	46	10	22	4	2	B1801.9
2.0	49	11	24	4	2	B1802.0
2.1	49	11	24	4	2	B1802.1
2.2	53	12	26	4	3	B1802.2
2.3	53	12	26	4	3	B1802.3
2.4	57	14	28	4	3	B1802.4
2.5	57	14	28	4	3	B1802.5
2.6	57	14	28	4	3	B1802.6
2.7	61	15	32	6	3	B1802.7
2.8	61	15	32	6	3	B1802.8
2.9	61	15	32	6	3	B1802.9
3.0	61	15	32	6	3	B1803.0
3.1	65	16	35	6	4	B1803.1
3.2	65	16	35	6	4	B1803.2
3.3	65	16	35	6	4	B1803.3
3.4	70	18	40	6	4	B1803.4
3.5	70	18	40	6	4	B1803.5
3.6	70	18	40	6	4	B1803.6
3.7	70	18	40	6	4	B1803.7
3.8	75	19	43	6	4	B1803.8
3.9	75	19	43	6	4	B1803.9
4.0	75	19	43	6	4	B1804.0
4.1	75	19	43	6	4	B1804.1
4.2	75	19	43	6	4	B1804.2
4.3	80	21	47	6	5	B1804.3
4.4	80	21	47	6	5	B1804.4
4.5	80	21	47	6	5	B1804.5
4.6	80	21	47	6	5	B1804.6
4.7	80	21	47	6	5	B1804.7
4.8	86	23	52	6	5	B1804.8
4.9	86	23	52	6	5	B1804.9
5.0	86	23	52	6	5	B1805.0
5.1	86	23	52	6	5	B1805.1
5.2	86	23	52	6	5	B1805.2
5.3	86	23	52	6	5	B1805.3
5.4	93	26	57	6	6	B1805.4

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Øh$_6$ mm	B180
5.5	93	26	57	6	6	B1805.5
5.6	93	26	57	6	6	B1805.6
5.7	93	26	57	6	6	B1805.7
5.8	93	26	57	6	6	B1805.8
5.9	93	26	57	6	6	B1805.9
6.0	93	26	57	6	6	B1806.0
6.1	101	28	63	6	6	B1806.1
6.2	101	28	63	6	6	B1806.2
6.3	101	28	63	6	6	B1806.3
6.4	101	28	63	6	6	B1806.4
6.5	101	28	63	6	6	B1806.5
6.6	101	28	63	6	6	B1806.6
6.7	101	28	63	6	6	B1806.7
6.8	109	31	69	6	8	B1806.8
6.9	109	31	69	6	8	B1806.9
7.0	109	31	69	6	8	B1807.0
7.1	109	31	69	6	8	B1807.1
7.2	109	31	69	6	8	B1807.2
7.3	109	31	69	6	8	B1807.3
7.4	109	31	69	6	8	B1807.4
7.5	109	31	69	6	8	B1807.5
7.6	117	33	75	6	8	B1807.6
7.7	117	33	75	6	8	B1807.7
7.8	117	33	75	6	8	B1807.8
7.9	117	33	75	6	8	B1807.9
8.0	117	33	75	6	8	B1808.0
8.1	117	33	75	6	8	B1808.1
8.2	117	33	75	6	8	B1808.2
8.3	117	33	75	6	8	B1808.3
8.4	117	33	75	6	8	B1808.4
8.5	117	33	75	6	8	B1808.5
8.6	125	36	81	6	10	B1808.6
8.7	125	36	81	6	10	B1808.7
8.8	125	36	81	6	10	B1808.8
8.9	125	36	81	6	10	B1808.9
9.0	125	36	81	6	10	B1809.0
9.1	125	36	81	6	10	B1809.1
9.2	125	36	81	6	10	B1809.2
9.3	125	36	81	6	10	B1809.3
9.4	125	36	81	6	10	B1809.4
9.5	125	36	81	6	10	B1809.5
9.6	133	38	87	6	10	B1809.6
9.7	133	38	87	6	10	B1809.7
9.8	133	38	87	6	10	B1809.8
9.9	133	38	87	6	10	B1809.9
10.0	133	38	87	6	10	B18010.0
11.0	142	41	96	6	10	B18011.0
12.0	151	44	105	6	10	B18012.0
13.0	151	44	105	6	10	B18013.0
14.0	160	47	110	8	14	B18014.0
15.0	162	50	112	8	14	B18015.0
16.0	170	52	120	8	14	B18016.0
17.0	175	54	123	8	14	B18017.0
18.0	182	56	130	8	14	B18018.0
19.0	189	58	131	8	16	B18019.0
20.0	195	60	137	8	16	B18020.0

DORMER

B170

- Maskin hundradelsbrotsch
- Konekalvimet, sadasosakalvimet
- Maskin Hundredelsbrotsj
- Præcisionsrivaler

B170 ▪ 1.1 1.2 1.3 1.4 2.1 4.2 5.1

B170 • 1.5 1.6 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.3 5.2 5.3 6.1 6.2 6.3 6.4

B170 HSS-E | DIN 212 | B | Ø.95-5.5 0,+0.004 Ø5.51-12 0,+0.005





0.98 - 12.00

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Øh$_9$ mm	B170
0.98	34	5.5	15	3	1.0	B170.98
0.99	34	5.5	15	3	1.0	B170.99
1.00	34	5.5	15	3	1.0	B1701.0
1.01	34	5.5	15	3	1.0	B1701.01
1.02	34	5.5	15	3	1.0	B1701.02
1.03	34	5.5	15	3	1.0	B1701.03
1.04	34	5.5	15	3	1.0	B1701.04
1.05	34	5.5	15	3	1.0	B1701.05
1.49	40	8.0	18	3	1.5	B1701.49
1.50	40	8.0	18	3	1.5	B1701.5
1.51	43	9.0	20	3	1.6	B1701.51
1.52	43	9.0	20	3	1.6	B1701.52
1.98	49	11.0	24	4	2.0	B1701.98
1.99	49	11.0	24	4	2.0	B1701.99
2.00	49	11.0	24	4	2.0	B1702.0
2.01	49	11.0	24	4	2.0	B1702.01
2.02	49	11.0	24	4	2.0	B1702.02
2.03	49	11.0	24	4	2.0	B1702.03
2.04	49	11.0	24	4	2.0	B1702.04
2.05	49	11.0	24	4	2.0	B1702.05
2.49	57	14.0	28	4	2.5	B1702.49
2.50	57	14.0	28	4	2.5	B1702.5
2.51	57	14.0	28	4	2.5	B1702.51
2.52	57	14.0	28	4	2.5	B1702.52
2.98	61	15.0	32	6	3.0	B1702.98
2.99	61	15.0	32	6	3.0	B1702.99
3.00	61	15.0	32	6	3.0	B1703.0
3.01	65	16.0	35	6	3.2	B1703.01
3.02	65	16.0	35	6	3.2	B1703.02
3.03	65	16.0	35	6	3.2	B1703.03
3.04	65	16.0	35	6	3.2	B1703.04
3.05	65	16.0	35	6	3.2	B1703.05
3.49	70	18.0	40	6	3.5	B1703.49
3.50	70	18.0	40	6	3.5	B1703.5
3.51	70	18.0	40	6	3.5	B1703.51
3.52	70	18.0	40	6	3.5	B1703.52
3.98	75	19.0	43	6	4.0	B1703.98
3.99	75	19.0	43	6	4.0	B1703.99
4.00	75	19.0	43	6	4.0	B1704.0
4.01	75	19.0	43	6	4.0	B1704.01

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Øh$_9$ mm	B170
4.02	75	19.0	43	6	4.0	B1704.02
4.03	75	19.0	43	6	4.0	B1704.03
4.04	75	19.0	43	6	4.0	B1704.04
4.05	75	19.0	43	6	4.0	B1704.05
4.49	80	21.0	47	6	4.5	B1704.49
4.50	80	21.0	47	6	4.5	B1704.5
4.51	80	21.0	47	6	4.5	B1704.51
4.52	80	21.0	47	6	4.5	B1704.52
4.98	86	23.0	52	6	5.0	B1704.98
4.99	86	23.0	52	6	5.0	B1704.99
5.00	86	23.0	52	6	5.0	B1705.0
5.01	86	23.0	52	6	5.0	B1705.01
5.02	86	23.0	52	6	5.0	B1705.02
5.03	86	23.0	52	6	5.0	B1705.03
5.04	86	23.0	52	6	5.0	B1705.04
5.05	86	23.0	52	6	5.0	B1705.05
5.49	93	26.0	57	6	5.6	B1705.49
5.50	93	26.0	57	6	5.6	B1705.5
5.51	93	26.0	57	6	5.6	B1705.51
5.52	93	26.0	57	6	5.6	B1705.52
5.98	93	26.0	57	6	5.6	B1705.98
5.99	93	26.0	57	6	5.6	B1705.99
6.00	93	26.0	57	6	5.6	B1706.0
6.01	101	28.0	63	6	6.3	B1706.01
6.02	101	28.0	63	6	6.3	B1706.02
6.03	101	28.0	63	6	6.3	B1706.03
6.04	101	28.0	63	6	6.3	B1706.04
6.05	101	28.0	63	6	6.3	B1706.05
6.49	101	28.0	63	6	6.3	B1706.49
6.50	101	28.0	63	6	6.3	B1706.5
6.51	101	28.0	63	6	6.3	B1706.51
6.52	101	28.0	63	6	6.3	B1706.52
6.98	109	31.0	69	6	7.1	B1706.98
6.99	109	31.0	69	6	7.1	B1706.99
7.00	109	31.0	69	6	7.1	B1707.0
7.01	109	31.0	69	6	7.1	B1707.01
7.02	109	31.0	69	6	7.1	B1707.02
7.03	109	31.0	69	6	7.1	B1707.03
7.04	109	31.0	69	6	7.1	B1707.04
7.05	109	31.0	69	6	7.1	B1707.05
7.49	109	31.0	69	6	7.1	B1707.49
7.50	109	31.0	69	6	7.1	B1707.5
7.51	117	33.0	75	6	8.0	B1707.51
7.52	117	33.0	75	6	8.0	B1707.52
7.98	117	33.0	75	6	8.0	B1707.98
7.99	117	33.0	75	6	8.0	B1707.99
8.00	117	33.0	75	6	8.0	B1708.0
8.01	117	33.0	75	6	8.0	B1708.01
8.02	117	33.0	75	6	8.0	B1708.02
8.03	117	33.0	75	6	8.0	B1708.03
8.04	117	33.0	75	6	8.0	B1708.04
8.05	117	33.0	75	6	8.0	B1708.05
8.49	117	33.0	75	6	8.0	B1708.49
8.50	117	33.0	75	6	8.0	B1708.5
8.51	125	36.0	81	6	9.0	B1708.51
8.52	125	36.0	81	6	9.0	B1708.52
8.98	125	36.0	81	6	9.0	B1708.98
8.99	125	36.0	81	6	9.0	B1708.99
9.00	125	36.0	81	6	9.0	B1709.0
9.01	125	36.0	81	6	9.0	B1709.01
9.02	125	36.0	81	6	9.0	B1709.02
9.03	125	36.0	81	6	9.0	B1709.03
9.04	125	36.0	81	6	9.0	B1709.04
9.05	125	36.0	81	6	9.0	B1709.05
9.49	125	36.0	81	6	9.0	B1709.49
9.50	125	36.0	81	6	9.0	B1709.5
9.51	133	38.0	87	6	10.0	B1709.51
9.52	133	38.0	87	6	10.0	B1709.52
9.98	133	38.0	87	6	10.0	B1709.98
9.99	133	38.0	87	6	10.0	B1709.99

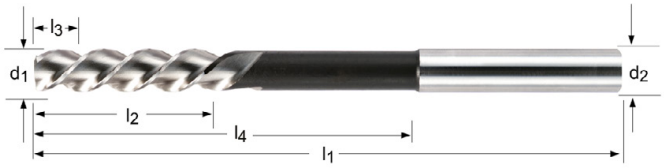
d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Øh_9 mm	B170
10.00	133	38.0	87	6	10.0	B17010.0
10.01	133	38.0	87	6	10.0	B17010.01
10.02	133	38.0	87	6	10.0	B17010.02
10.03	133	38.0	87	6	10.0	B17010.03
10.04	133	38.0	87	6	10.0	B17010.04
10.05	133	38.0	87	6	10.0	B17010.05
10.49	133	38.0	87	6	10.0	B17010.49
10.51	133	38.0	87	6	10.0	B17010.51
10.52	133	38.0	87	6	10.0	B17010.52
10.98	142	41.0	96	6	10.0	B17010.98
10.99	142	41.0	96	6	10.0	B17010.99
11.00	142	41.0	96	6	10.0	B17011.0
11.01	142	41.0	96	6	10.0	B17011.01
11.02	142	41.0	96	6	10.0	B17011.02
11.03	142	41.0	96	6	10.0	B17011.03
11.04	142	41.0	96	6	10.0	B17011.04
11.05	142	41.0	96	6	10.0	B17011.05
11.49	142	41.0	96	6	10.0	B17011.49
11.50	142	41.0	96	6	10.0	B17011.5
11.51	142	41.0	96	6	10.0	B17011.51
11.52	142	41.0	96	6	10.0	B17011.52
11.98	151	44.0	105	6	10.0	B17011.98
11.99	151	44.0	105	6	10.0	B17011.99
12.00	151	44.0	105	6	10.0	B17012.0

B157

- Maskinbrotsch med 45° vänsterspiral
- Konekalvimet, 45° vasennousuiset urat
- Maskinbrotsj med 45° venstrespiral
- Maskinrival, 45° venstresnoet helix

B157																				
	▪	1.1	1.2	1.3	1.4	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	7.1	7.2	7.3	7.4	8.1
	•	1.5	1.6	6.2	9.1															

B157	HSS-E		DIN 212			E	H7	



B157



2.00 - 20.00

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	l_4 mm	z	d_2 Øh$_9$ mm	B157
2.0	49	11	3.5	24	3	2.0	B1572.0
3.0	61	15	4.0	32	3	3.0	B1573.0
4.0	75	19	4.0	43	3	4.0	B1574.0
5.0	86	23	4.5	52	3	5.0	B1575.0
6.0	93	26	6.0	57	3	5.6	B1576.0
7.0	109	31	7.0	69	3	7.1	B1577.0
8.0	117	33	9.0	75	3	8.0	B1578.0
9.0	125	36	9.5	81	3	9.0	B1579.0
10.0	133	38	10.0	87	3	10.0	B15710.0
11.0	142	41	10.5	96	3	10.0	B15711.0
12.0	151	44	11.0	105	3	10.0	B15712.0
13.0	151	44	11.5	105	3	10.0	B15713.0
14.0	160	47	12.0	110	3	12.5	B15714.0
15.0	162	50	12.5	112	3	12.5	B15715.0
16.0	170	52	13.0	120	3	12.5	B15716.0
17.0	175	54	13.5	123	3	14.0	B15717.0
18.0	182	56	14.0	130	3	14.0	B15718.0
19.0	189	58	14.5	131	3	16.0	B15719.0
20.0	195	60	15.0	137	3	16.0	B15720.0

DORMER

B161

- Maskinbrotschar
- Konekalvimet
- Maskinbrotsjer
- Maskinrivaler

B161 ▪ 1.1 1.2 1.3 1.4 2.1 4.1 5.1

• 1.5 1.6 2.2 2.3 3.1 3.2 3.3 3.4 4.2 4.3 5.2 5.3 6.1 6.2 6.3 6.4

B161 HSS-E DIN 208 B H7



B161



3.00 - 50.00

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	MK	B161
3.0	113	15	47.5	6	1	B1613.0
4.0	124	19	58.5	6	1	B1614.0
5.0	133	23	67.5	6	1	B1615.0
6.0	138	26	72.5	6	1	B1616.0
7.0	150	31	84.5	6	1	B1617.0
8.0	156	33	90.5	6	1	B1618.0
9.0	162	36	96.5	6	1	B1619.0
10.0	168	38	102.5	6	1	B16110.0
11.0	175	41	109.5	6	1	B16111.0
12.0	182	44	116.5	6	1	B16112.0
13.0	182	44	116.5	6	1	B16113.0
14.0	189	47	123.5	8	1	B16114.0
15.0	204	50	124	8	2	B16115.0
16.0	210	52	130	8	2	B16116.0
17.0	214	54	134	8	2	B16117.0
18.0	219	56	139	8	2	B16118.0
19.0	223	58	143	8	2	B16119.0
20.0	228	60	148	8	2	B16120.0
21.0	232	62	152	8	2	B16121.0
22.0	237	64	157	8	2	B16122.0
23.0	241	66	161	8	2	B16123.0
24.0	268	68	169	8	3	B16124.0
25.0	268	68	169	8	3	B16125.0
26.0	273	70	174	8	3	B16126.0
27.0	277	71	178	10	3	B16127.0
28.0	277	71	178	10	3	B16128.0
29.0	281	73	182	10	3	B16129.0
30.0	281	73	182	10	3	B16130.0
31.0	285	75	186	10	3	B16131.0
32.0	317	77	193	10	4	B16132.0
33.0	317	77	193	10	4	B16133.0
34.0	321	78	197	10	4	B16134.0
35.0	321	78	197	10	4	B16135.0
36.0	325	79	201	10	4	B16136.0
38.0	329	81	205	10	4	B16138.0
40.0	329	81	205	10	4	B16140.0
42.0	333	82	209	12	4	B16142.0
44.0	336	83	212	12	4	B16144.0

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	MK	B161
45.0	336	83	212	12	4	B16145.0
46.0	340	84	216	12	4	B16146.0
47.0	340	84	216	12	4	B16147.0
48.0	344	86	220	12	4	B16148.0
50.0	344	86	220	12	4	B16150.0

DORMER

B101

- Maskinbrotschar
- Konekalvimet
- Maskinbrotsjer
- Maskinrivaler

B101									
▪	1.1	1.2	1.3	1.4	2.1	3.1	4.1	6.2	
•	1.5	1.6	3.2	3.3	3.4	4.2	4.3	5.1	5.2	5.3	6.1	6.3	6.4	7.1	7.2	8.2

B101 HSS-E ST BS 328 B H7



B101



3.00 - 2"

d_1 Ø Inch	d_1 Ø mm	l_1 mm	l_2 mm	z	MK	B101
	3.00	112	33	4	1	B1013.0
1/8	3.18	112	33	4	1	B1011/8
	3.50	115	35	6	1	B1013.5
	4.00	117	38	6	1	B1014.0
	4.50	120	41	6	1	B1014.5
3/16	4.76	124	44	6	1	B1013/16
	5.00	124	44	6	1	B1015.0
	5.50	127	47	6	1	B1015.5
	6.00	127	47	6	1	B1016.0
1/4	6.35	130	50	6	1	B1011/4
	6.50	130	50	6	1	B1016.5
	7.00	134	54	6	1	B1017.0
5/16	7.94	138	58	6	1	B1015/16
	8.00	138	58	6	1	B1018.0
	8.50	138	58	6	1	B1018.5
	9.00	142	62	6	1	B1019.0
	9.50	142	62	6	1	B1019.5
3/8	9.52	146	66	6	1	B1013/8
	10.00	146	66	6	1	B10110.0
	10.50	146	66	6	1	B10110.5
	11.00	151	71	6	1	B10111.0
7/16	11.11	151	71	6	1	B1017/16
	12.00	156	76	6	1	B10112.0
	12.50	156	76	6	1	B10112.5
1/2	12.70	156	76	6	1	B1011/2
	13.00	156	76	6	1	B10113.0
	13.50	161	81	6	1	B10113.5
	14.00	161	81	8	1	B10114.0
9/16	14.29	181	81	8	2	B1019/16
	14.50	181	81	8	2	B10114.5
	15.00	181	81	8	2	B10115.0
	15.50	187	87	8	2	B10115.5
5/8	15.88	187	87	8	2	B1015/8
	16.00	187	87	8	2	B10116.0
	16.50	187	87	8	2	B10116.5
	17.00	187	87	8	2	B10117.0
	18.00	193	93	8	2	B10118.0
	19.00	193	93	8	2	B10119.0
3/4	19.05	200	100	8	2	B1013/4
	20.00	200	100	8	2	B10120.0

d_1 Ø Inch	d_1 Ø mm	l_1 mm	l_2 mm	z	MK	B101
13/16	20.64	200	100	8	2	B10113/16
	21.00	200	100	8	2	B10121.0
	22.00	207	107	8	2	B10122.0
7/8	22.22	207	107	8	2	B1017/8
	23.00	207	107	8	2	B10123.0
	24.00	242	115	8	3	B10124.0
	25.00	242	115	10	3	B10125.0
1“	25.40	242	115	10	3	B1011
	26.00	242	115	10	3	B10126.0
	27.00	251	124	10	3	B10127.0
	28.00	251	124	10	3	B10128.0
1.1/8	28.58	251	124	10	3	B1011.1/8
	29.00	251	124	10	3	B10129.0
	30.00	251	124	10	3	B10130.0
	31.00	260	133	10	3	B10131.0
1.1/4	31.75	260	133	10	3	B1011.1/4
	32.00	293	133	10	4	B10132.0
	34.00	302	142	10	4	B10134.0
1.3/8	34.93	302	142	10	4	B1011.3/8
	35.00	302	142	10	4	B10135.0
	36.00	302	142	10	4	B10136.0
	37.00	302	142	10	4	B10137.0
	38.00	312	152	10	4	B10138.0
1.1/2	38.10	312	152	10	4	B1011.1/2
	39.00	312	152	10	4	B10139.0
	40.00	312	152	10	4	B10140.0
	41.00	312	152	10	4	B10141.0
	42.00	312	152	10	4	B10142.0
	43.00	323	163	10	4	B10143.0
	44.00	323	163	10	4	B10144.0
1.3/4	44.45	323	163	10	4	B1011.3/4
	45.00	323	163	12	4	B10145.0
	46.00	323	163	12	4	B10146.0
	47.00	323	163	12	4	B10147.0
	48.00	334	174	12	4	B10148.0
	50.00	334	174	12	4	B10150.0
2“	50.80	334	174	12	4	B1012

DORMER

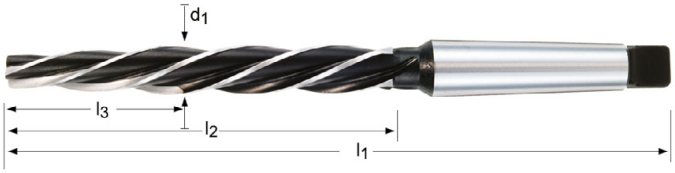
B121

- Brotsch med MK
- Kalvimet, MK-vartisett
- Brotsj med MK
- Rivaler med MK

Inklusive Konicitet 1:10
Kartiokkuus 1:10
Inklusive Konusitet 1:10
Inklusive konicitet 1:10

B121							
	■	1.1	1.2	1.3	1.4	3.1	4.1
	●	1.5	1.6	3.2	3.3	3.4	8.2

B121 | HSS | ST | DIN 311 | k11



B121



10.00 - 30.00

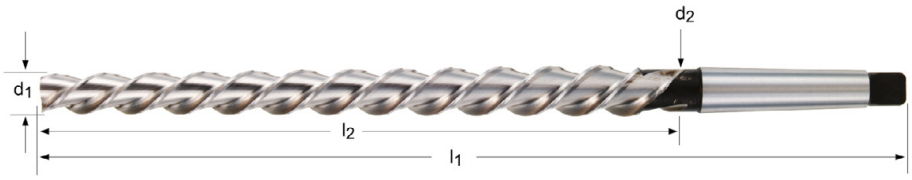
d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	MK	B121
10.0	171	95	30	4	1	B12110.0
11.0	176	100	33	4	1	B12111.0
12.0	199	105	39	4	2	B12112.0
13.0	199	105	39	4	2	B12113.0
14.0	209	115	42	4	2	B12114.0
15.0	219	125	45	4	2	B12115.0
16.0	229	135	48	4	2	B12116.0
17.0	251	135	51	4	3	B12117.0
18.0	261	145	58	4	3	B12118.0
19.0	261	145	58	4	3	B12119.0
20.0	271	155	62	4	3	B12120.0
21.0	271	155	62	4	3	B12121.0
22.0	281	165	66	4	3	B12122.0
23.0	281	165	66	4	3	B12123.0
24.0	296	180	72	4	3	B12124.0
25.0	296	180	72	4	3	B12125.0
26.0	296	180	72	4	3	B12126.0
30.0	311	195	78	5	3	B12130.0

B954

- Maskinbrotsch för koniska pinnhål med 45° vänsterspiral
- Konekalvimet kartiotapeille, vasennous. urat 45°
- Maskinbrotsj for koniske pinnehull, 45° venstrespiral
- Maskinrival for konisk stift, 45° venstresnoet helix

B954															
	▪	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	7.1	7.2	7.3	7.4	8.1
	•	1.1	1.2	1.3	1.4	1.5	1.6	6.2	9.1							

B954 HSS-E DIN 2180 1:50



B954



5.00 - 30.00

nom Ø	d_1 Ø mm	d_2 Ø mm	l_1 mm	l_2 mm	z	MK	B954
5.0	4.90	6.36	155	73	3	1	B9545.0
6.0	5.90	8.00	187	105	3	1	B9546.0
8.0	7.90	10.80	227	145	3	1	B9548.0
10.0	9.90	13.40	257	175	3	1	B95410.0
12.0	11.80	16.00	315	210	3	2	B95412.0
13.0	12.86	16.74	295	194	3	2	B95413.0
14.0	13.86	17.74	295	194	3	2	B95414.0
16.0	15.80	20.40	335	230	3	2	B95416.0
20.0	19.80	24.80	377	250	3	3	B95420.0
25.0	24.70	30.70	427	300	3	3	B95425.0
30.0	29.70	36.10	475	320	4	4	B95430.0

DORMER

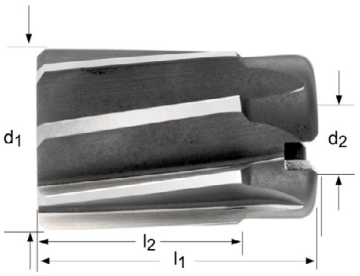
B955

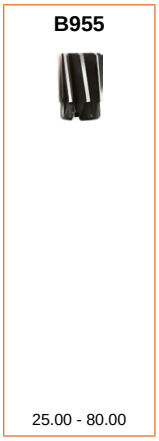
- Påsticksmaskinbrotschar
- Konekalvimet, irtovartiset
- Påstikkmaskinbrotsjer
- Skalrivaler

d2=Nominell diameter d1av B956
d2=B956:n nimellismitta d1
d2=Nominell diameter d1 av B956
d2=Nominal diameter d1 af B956

B955 ▪ 1.1 1.2 1.3 1.4 2.1 4.1 5.1
• 1.5 1.6 2.2 2.3 3.1 4.2 4.3 5.2 5.3 6.1 6.2 7.1 7.2 7.3 7.4 8.2

B955 HSS-E ST DIN 219 B H7





d_1 Ø mm	l_1 mm	l_2 mm	z	d_2 Ø mm	B955
25.0	45	32	8	13	B95525.0
26.0	45	32	8	13	B95526.0
27.0	45	32	8	13	B95527.0
28.0	45	32	8	13	B95528.0
29.0	45	32	8	13	B95529.0
30.0	45	32	8	13	B95530.0
31.0	50	36	10	16	B95531.0
32.0	50	36	10	16	B95532.0
34.0	50	36	10	16	B95534.0
35.0	50	36	10	16	B95535.0
36.0	56	40	10	19	B95536.0
37.0	56	40	10	19	B95537.0
38.0	56	40	10	19	B95538.0
40.0	56	40	10	19	B95540.0
42.0	56	40	10	19	B95542.0
44.0	63	45	12	22	B95544.0
45.0	63	45	12	22	B95545.0
48.0	63	45	12	22	B95548.0
50.0	63	45	12	22	B95550.0
52.0	71	50	12	27	B95552.0
55.0	71	50	12	27	B95555.0
58.0	71	50	12	27	B95558.0
60.0	71	50	12	27	B95560.0
65.0	80	56	14	32	B95565.0
70.0	80	56	14	32	B95570.0
75.0	90	63	14	40	B95575.0
80.0	90	63	14	40	B95580.0

B956

- Dorn för påsticksbrotschar med MK
- Tuurnat, MK-vartiset
- Dor for påstikkbrotsjer med MK
- Dorn for skalrivaler med MK

B956 HSS-E DIN 217



B956

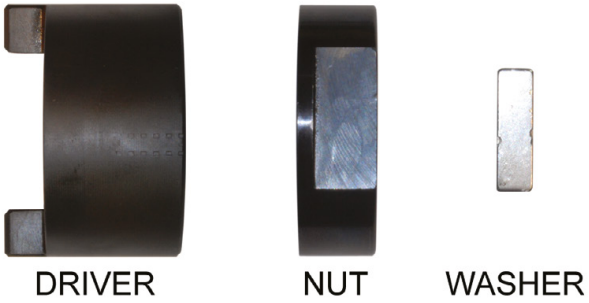


13.00 - 40.00

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	MK	B956
13.0	250	45	151	3	B95613.0
16.0	261	50	162	3	B95616.0
19.0	298	56	174	4	B95619.0
22.0	312	63	188	4	B95622.0
27.0	359	71	203	5	B95627.0
32.0	376	80	220	5	B95632.0
40.0	396	90	240	5	B95640.0

B957

- Reservdelar Till Dorn (B956)
- Tuurnat, varaosat (B956)
- Reservedeler Til Dor (B956)
- Reservedele For Dorn (B956)





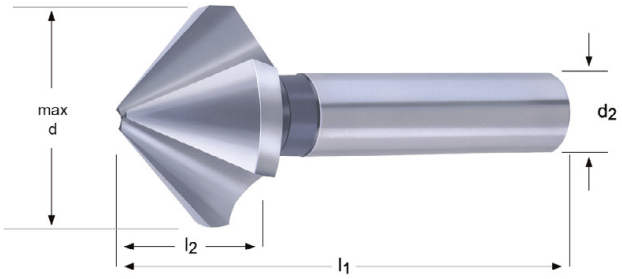
Nr.	d	B957
3	13.00	B957N3DRIVER
3		B957N3NUT
3		B957N3WASHER
4	16.00	B957N4DRIVER
4		B957N4NUT
4		B957N4WASHER
5	19.00	B957N5DRIVER
5		B957N5NUT
5		B957N5WASHER
6	22.00	B957N6DRIVER
6		B957N6NUT
6		B957N6WASHER
7	27.00	B957N7DRIVER
7		B957N7NUT
7		B957N7WASHER
8	32.00	B957N8DRIVER
8		B957N8NUT
8		B957N8WASHER
9	40.00	B957N9DRIVER
9		B957N9NUT
9		B957N9WASHER

G400

- Försänkare högprecisionschuck - 90°
- Kärkiupottimet tarkkuusistukka - 90°
- Forsenker for Høg presisjon Chuck - 90°
- Forsænker for høj præcision chuck -90°

G400															
	■	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1	8.2

G400 HM DIN 335C 90°





6.30 - 31.00

max d mm	min d mm	l_2 mm	l_1 mm	d_2 Øh$_6$ mm	z	G400
6.3	1.5	5.0	45	5	3	G4006.3
8.3	2.0	6.0	50	6	3	G4008.3
10.4	2.5	7.1	50	6	3	G40010.4
12.4	2.8	8.0	56	8	3	G40012.4
16.5	3.2	10.0	60	10	3	G40016.5
20.5	3.5	12.5	63	10	3	G40020.5
25.0	3.8	15.0	67	10	3	G40025.0
31.0	4.2	18.0	71	12	3	G40031.0

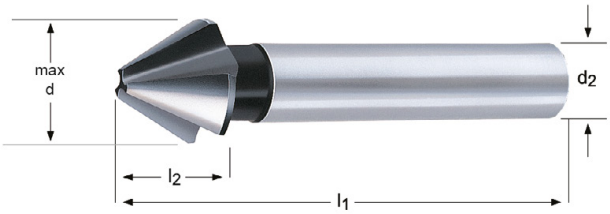
DORMER

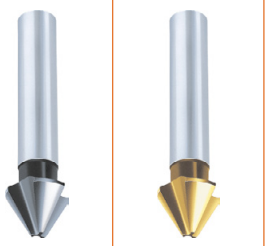
G135
- Försänkare - 60°
- Kärkiupottimet - 60°

G335
- Forsenker - 60°
- Forsænker - 60°

G135	▪	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1	8.2
G335	▪	1.1	1.2	1.3	3.1	3.2	3.3	3.4	7.1	7.2	7.3	7.4			
	•	1.4	1.5	1.6	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	8.1	8.2

G135	HSS		DIN 334C				60°
G335	HSS	TiN	DIN 334C				60°





6.30 - 25.00 | 6.30 - 25.00

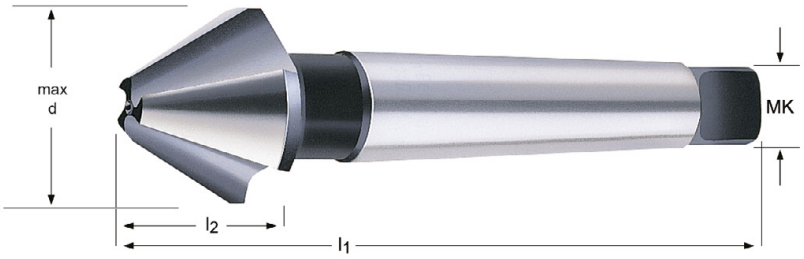
max d mm	min d mm	l_2 mm	l_1 mm	d_2 $Øh_9$ mm	z	G135	G335
6.3	1.6	6.8	45	5	3	G1356.3	G3356.3
8.0	2.0	8.5	50	6	3	G1358.0	G3358.0
10.0	2.5	7.6	50	6	3	G13510.0	G33510.0
12.5	3.2	11.7	56	8	3	G13512.5	G33512.5
16.0	4.0	14.5	63	10	3	G13516.0	G33516.0
20.0	5.0	17.5	67	10	3	G13520.0	G33520.0
25.0	6.3	20.5	71	10	3	G13525.0	G33525.0

G137

- Försänkare med MK - 60°
- Kärkiupottimet - 60°, MK-varsi
- Forsenker med MK - 60°
- Forsænker, MK - 60°

G137															
	■	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1	8.2

G137 HSS DIN 334D 60°





16.00 - 80.00

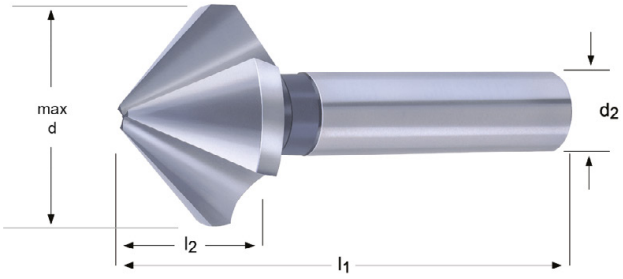
max d mm	min d mm	l_2 mm	l_1 mm	MK	z	G137
16.0	4.0	14.5	90	1	3	G13716.0
20.0	5.0	17.5	106	2	3	G13720.0
25.0	6.3	20.0	112	2	3	G13725.0
31.5	10.0	23.0	118	2	3	G13731.5
40.0	12.5	28.5	150	3	3	G13740.0
50.0	16.0	36.0	160	3	3	G13750.0
63.0	20.0	43.0	190	4	3	G13763.0
80.0	25.0	54.0	200	4	3	G13780.0

G154

- Försänkare - 82°
- Kärkiupottimet - 82°
- Forsenker - 82°
- Forsænker - 82°

G154															
	▪	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1	8.2

G154 HSS DIN 335C 82°



G154



6.30 - 25.00

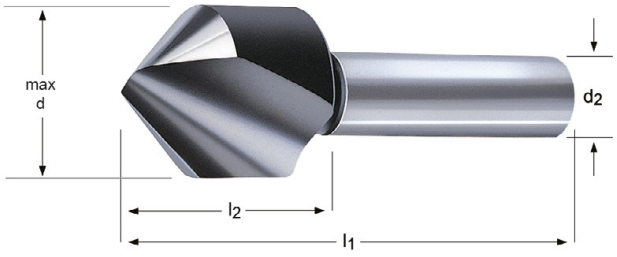
max d mm	min d mm	l_2 mm	l_1 mm	d_2 Øh$_9$ mm	z	G154
6.3	1.5	5.5	45	5	3	G1546.3
8.3	2.0	6.5	50	6	3	G1548.3
10.4	2.5	7.6	50	6	3	G15410.4
12.4	2.8	8.5	56	8	3	G15412.4
16.5	3.2	10.5	60	10	3	G15416.5
20.5	3.5	13.0	63	10	3	G15420.5
25.0	3.8	15.5	67	10	3	G15425.0

G129

- Försänkare - 90°
- Kärkiupottimet - 90°
- Forsenker - 90°
- Forsænker - 90°

G129															
	■	1.1	1.2	1.3	1.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3	7.1	7.2	
	•	1.1	1.6	2.1	2.2	3.1	3.2	3.3	3.4	4.3	5.3	6.4	7.3	7.4	8.1	8.2

G129 HSS DORMER 90°



G129



6.00 - 31.50

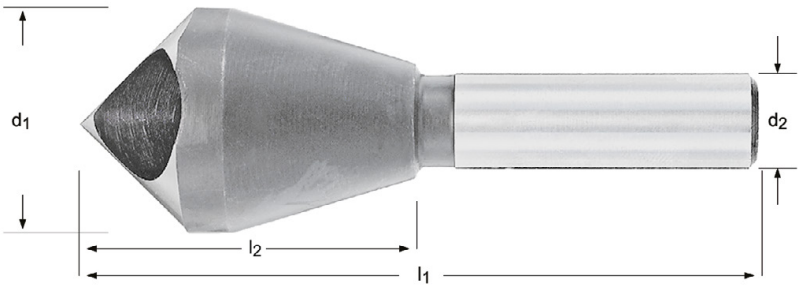
max d mm	l_2 mm	l_1 mm	d_2 Øh$_9$ mm	z	G129
6.0	0.0	45	6	1	G1296.0
8.0	0.0	50	8	1	G1298.0
10.0	17.0	49	8	1	G12910.0
12.5	17.0	49	8	1	G12912.5
16.0	20.0	56	10	1	G12916.0
20.0	24.0	60	10	1	G12920.0
25.0	25.0	75	12	1	G12925.0
31.5	29.0	80	12	1	G12931.5

G149

- Försänkare - 90°
- Kärkiupottimet - 90°
- Forsenker - 90°
- Forsænker - 90°

G149															
	▪	1.1	1.2	1.3	1.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3	7.1	7.2	
	•	1.5	1.6	2.1	2.2	3.1	3.2	3.3	3.4	4.3	5.3	6.4	7.3	7.4	8.1	8.2

G149 HSS-E 90°



G149



5.00 - 50.00

max d mm	min d mm	l_2 mm	l_1 mm	d_2 Ø mm	d_1 Ø mm	z	G149
5	2	19.0	45	6	10	1	G1495
10	5	23.0	48	8	14	1	G14910
15	10	34.0	65	10	21	1	G14915
20	15	43.0	84	12	28	1	G14920
25	20	48.0	102	15	35	1	G14925
30	25	61.0	115	15	44	1	G14930
35	30	65.0	127	15	48	1	G14935
40	35	66.0	136	15	53	1	G14940
50	40	85.0	166	20	60	1	G14950

G136
G560

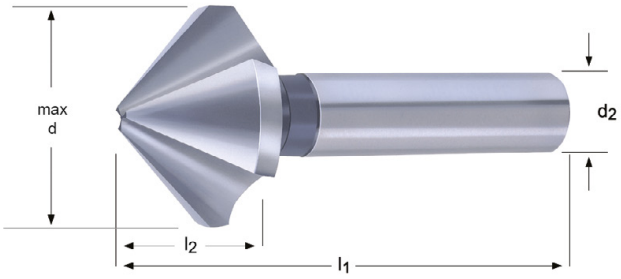
- Försänkare - 90°
- Kärkiupottimet - 90°
- Forsenker - 90°
- Forsænker - 90°

G106
G506

- Försänkare 90° för trebackschuck
- Kärkiupottimet - 90°, kolmitasoinen varsi
- Forsenker med tre slipte flater på skaft - 90°
- Forsænker, skaft slebet med 3 flader - 90°

G136	■	1.1	1.2	1.3	1.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3	7.1	7.2	8.1
	•	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.3	5.3	6.4	7.3	7.4	8.2
G560	■	1.1	1.2	1.3	1.4	1.5	2.1	3.1	3.2	3.3	3.4	5.1	5.2	5.3	7.3	7.4
	•	1.6	2.2	2.3	4.1	4.2	4.3	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	
G106	■	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1	8.2
G506	■	1.1	1.2	1.3	3.1	3.2	3.3	3.4	7.1	7.2	7.3	7.4				
	•	1.4	1.5	1.6	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	8.1	8.2

G136	HSS		DIN 335C				90°	G236 194
G560	HSS	TiAlN	DIN 335C				90°	G236 194
G106	HSS		DIN 335C				90°	G236 194
G506	HSS	TiAlN	DIN 335C				90°	G236 194



G136	G560	G106	G506
			
4.30 - 31.00	6.30 - 31.00	6.30 - 50.00	6.30 - 50.00

max d mm	min d mm	l_2 mm	l_1 mm	d_2 Øh$_9$ mm	z	G136	G560	G106	G506
4.3	1.3	4.0	40	4	3	G1364.3			
5.0	1.5	4.5	40	4	3	G1365.0			
5.3	1.5	4.5	40	4	3	G1365.3			
5.8	1.5	5.0	45	5	3	G1365.8			
6.0	1.5	5.0	45	5	3	G1366.0			
6.3	1.5	5.5	45	5	3	G1366.3	G5606.3		
6.3	1.5	5.6	45	5	3			G1066.3	G5066.3
7.0	1.8	5.5	50	6	3	G1367.0			
7.3	1.8	6.1	50	6	3	G1367.3			
8.0	2.0	6.1	50	6	3	G1368.0	G5608.0		
8.3	2.0	6.5	50	6	3	G1368.3	G5608.3		

DORMER

max d mm	min d mm	l_2 mm	l_1 mm	d_2 Øh_9 mm	z	G136	G560	G106	G506
8.3	2.0	6.9	50	6	3			G1068.3	G5068.3
9.4	2.2	7.2	50	6	3	G1369.4			
10.0	2.5	7.6	50	6	3	G13610.0	G56010.0		
10.4	2.5	7.6	50	6	3	G13610.4	G56010.4		
10.4	2.5	7.8	50	6	3			G10610.4	G50610.4
11.5	2.8	8.0	56	8	3	G13611.5			
12.4	2.8	8.5	56	8	3	G13612.4	G56012.4		
12.4	2.8	8.6	56	8	3			G10612.4	G50612.4
13.4	2.9	9.0	56	8	3	G13613.4			
15.0	3.2	9.5	60	10	3	G13615.0			
16.5	3.2	10.5	60	10	3	G13616.5	G56016.5		
16.5	3.2	11.1	60	10	3			G10616.5	G50616.5
19.0	3.5	11.7	63	10	3	G13619.0			
20.5	3.5	13.0	63	10	3	G13620.5	G56020.5		
20.5	3.5	12.9	63	10	3			G10620.5	G50620.5
23.0	3.8	13.7	67	10	3	G13623.0			
25.0	3.8	15.5	67	10	3	G13625.0	G56025.0		
25.0	3.8	15.7	67	10	3			G10625.0	G50625.0
26.0	3.8	15.5	67	10	3	G13626.0			
28.0	4.0	16.5	71	12	3	G13628.0			
30.0	4.2	18.5	71	12	3	G13630.0			
31.0	4.2	18.5	71	12	3	G13631.0	G56031.0	G10631.0	G50631.0
34.0	4.5	19.0	103	16	3			G10634.0	G50634.0
37.0	4.5	21.2	118	16	3			G10637.0	G50637.0
40.0	4.5	20.0	118	16	3			G10640.0	G50640.0
50.0	5.0	23.6	126	16	3			G10650.0	G50650.0

G142

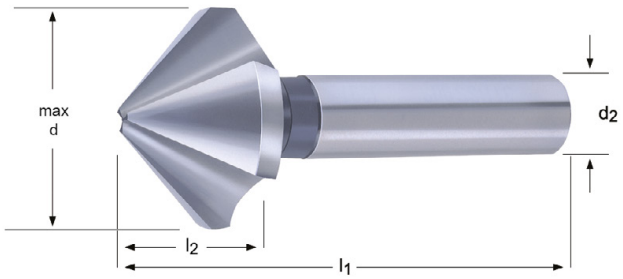
- Försänkare med extra släppning - 90°
- Kärkiupottimet , suuri päästö - 90°
- Forsenker med ekstra radiel frigang- 90°
- Forsænker med ekstra radiel frigang- 90°

G570

- Försänkare - 90°
- Kärkiupottimet - 90°
- Forsenker - 90°
- Forsænker - 90°

G142	■	1.1	1.2	2.1	2.2	2.3	4.1	5.1	6.1	6.2	7.1	7.2	8.1	8.2						
	•	1.3	1.4	4.2	5.2	6.3	7.3	7.4												
G570	■	1.4	1.5	2.1	2.2	2.3														
	•	1.1	1.2	1.3	1.6	2.4	3.1	3.2	3.3	3.4	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4

G142	HSS		DIN 335C				90°
G570	HSS-E	AlTiCN	DIN 335C				90°





G142

4.80 - 31.00



G570

6.30 - 31.00

max d mm	min d mm	l_2 mm	l_1 mm	d_2 $Øh_9$ mm	z	G142	G570
4.8	1.3	4.5	40	4	3	G1424.8	
5.0	1.5	4.5	40	4	3	G1425.0	
6.0	1.5	5.0	45	5	3	G1426.0	
6.3	1.5	5.5	45	5	3	G1426.3	
6.3	1.5	6.5	45	5	3		G5706.3
7.0	1.8	5.5	50	6	3	G1427.0	
7.3	1.8	6.1	50	6	3	G1427.3	
8.0	2.0	6.1	50	6	3	G1428.0	
8.3	2.0	6.5	50	6	3	G1428.3	
8.3	2.0	8.2	50	6	3		G5708.3
10.0	2.5	7.6	50	6	3	G14210.0	
10.4	2.5	7.6	50	6	3	G14210.4	
10.4	2.5	9.7	50	6	3		G57010.4
11.5	2.8	8.0	56	8	3	G14211.5	
12.4	2.8	8.5	56	8	3	G14212.4	
12.4	2.8	10.6	56	8	3		G57012.4
15.0	3.2	9.5	60	10	3	G14215.0	
16.5	3.2	10.5	60	10	3	G14216.5	
16.5	3.2	13.9	60	10	3		G57016.5
19.0	3.5	11.7	63	10	3	G14219.0	
20.5	3.5	13.0	63	10	3	G14220.5	
20.5	3.5	17.1	63	10	3		G57020.5
23.0	3.8	13.7	67	10	3	G14223.0	
25.0	3.8	15.5	67	10	3	G14225.0	
25.0	3.8	21.4	67	10	3		G57025.0
31.0	4.2	18.5	71	12	3	G14231.0	
31.0	4.2	24.4	71	12	3		G57031.0

G107

- Försänkare 90° med 1/4” bits-fäste
- Kärkiupottimet - 90°, kuusikulmainen varsi
- Forsenker med 1/4” bits feste - 90°
- Forsænker, til 1/4” bitsholder - 90°

G107															
	▪	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1	8.2

G107 HSS-E



G107



6.30 - 20.50

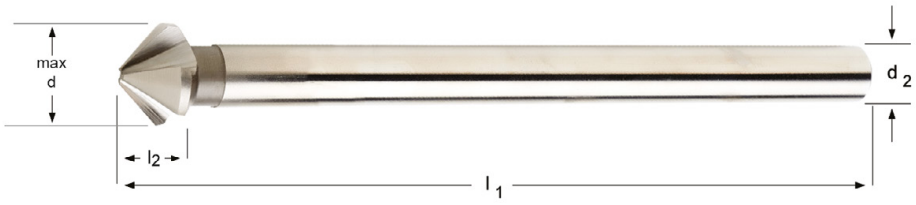
max d mm	min d mm	l_1 mm	d_2 Ø A/F mm	DIN 74	z	G107
6.3	1.5	50	1/4“	M2-M3	3	G1076.3
8.3	2.0	50	1/4“	M4	3	G1078.3
10.4	2.5	50	1/4“	M5	3	G10710.4
12.4	2.8	50	1/4“	M6	3	G10712.4
16.5	3.2	50	1/4“	M8	3	G10716.5
20.5	3.5	50	1/4“	M10	3	G10720.5

G600

- Försänkare extra lång - 90°
- Kärkiupottimet , erit. pitkät - 90°
- Forsenker, ekstra lang - 90°
- Forsænker, ekstra lang - 90°

G600																
	■	1.1	1.2	1.3	1.4	1.5										
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4

G600 HSS DORMER 90°



G600



6.30 - 25.00

max d mm	min d mm	l_2 mm	l_1 mm	d_2 $Øh_9$ mm	z	G600
6.3	1.3	5.6	154	5	3	G6006.3
8.3	1.8	6.9	155	6	3	G6008.3
10.4	2.2	7.8	157	6	3	G60010.4
12.4	2.5	8.6	158	8	3	G60012.4
15.0	2.8	10.3	159	10	3	G60015.0
16.5	2.8	11.1	161	10	3	G60016.5
20.5	3.0	12.9	164	10	3	G60020.5
25.0	3.2	15.7	168	10	3	G60025.0

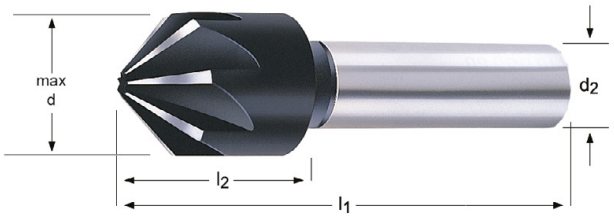
DORMER

G132

- Försänkare - 90°
- Kärkiupottimet - 90°
- Forsenker - 90°
- Forsænker - 90°

G132								
	▪	1.5	1.6	3.4	4.2	4.3	5.2	5.3	6.4
	•	1.3	1.4	2.3	8.3				

G132 HSS DIN 335A 90°



G132



8.00 - 20.00

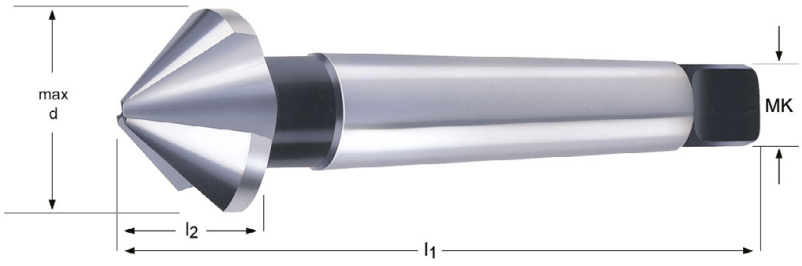
max d mm	min d mm	l_2 mm	l_1 mm	d_2 Øh$_9$ mm	z	G132
8.0	-	0.0	48	8	5	G1328.0
12.5	2.0	15.5	48	8	5	G13212.5
16.0	3.2	19.5	56	10	7	G13216.0
20.0	5.0	23.0	60	10	7	G13220.0

G138
G338

- Försänkare med MK - 90°
- Kärkiupottimet - 90°, MK-varsi
- Forsenker med MK - 90°
- Forsænker med MK - 90°

G138	■	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1	8.2
G338	■	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	7.1	7.2	7.3	7.4		
	•	1.6	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	8.1	8.2		

G138	HSS		DIN 335D				90°
G338	HSS	TiN	DIN 335D				90°







max d mm	min d mm	l_2 mm	l_1 mm	MK	z	G138	G338
25.0	3.8	15.5	106	2	3	G13825.0	G33825.0
30.0	4.2	18.5	112	2	3	G13830.0	
31.0	4.2	20.0	112	2	3	G13831.0	G33831.0
34.0	4.5	19.5	118	2	3	G13834.0	
37.0	4.8	21.7	118	2	3	G13837.0	G33837.0
40.0	10.0	20.5	140	3	3	G13840.0	G33840.0
50.0	14.0	24.1	150	3	3	G13850.0	G33850.0
63.0	16.0	28.5	180	4	3	G13863.0	G33863.0
80.0	22.0	36.0	190	4	3	G13880.0	

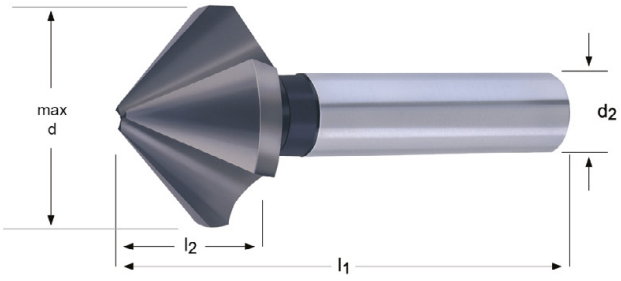
DORMER

G171

- Försänkare - 100°
- Kärkiupottimet - 100°
- Forsenker - 100°
- Forsænker - 100°

G171															
	▪	1.1	1.2	1.3	3.1	3.2	3.3	3.4	7.1	7.2	7.3	7.4			
	•	1.4	1.5	1.6	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	8.1	8.2

G171 HSS TiAlN DIN 335C 100°



G171



6.30 - 25.00

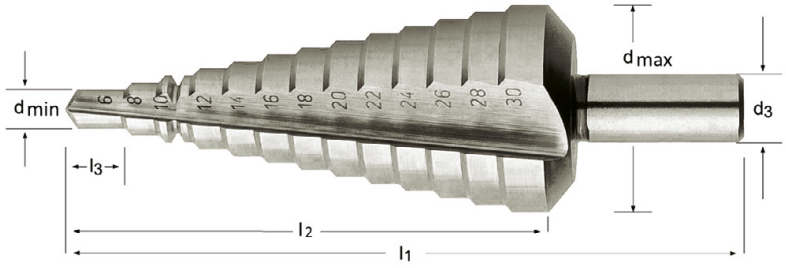
max d mm	min d mm	l_2 mm	l_1 mm	d_2 Øh$_9$ mm	z	G171
6.3	1.5	4.5	44	5	3	G1716.3
8.3	2.0	5.5	49	6	3	G1718.3
10.4	2.5	6.6	49	6	3	G17110.4
12.4	2.8	7.0	53	8	3	G17112.4
16.5	3.2	9.0	56	10	3	G17116.5
20.5	3.5	11.0	61	10	3	G17120.5
25.0	3.8	13.5	65	10	3	G17125.0

G314

- Koniska Plåtborrar
- Kartioporat
- Konisk bor
- Konisk bor

G314																		
	▪	1.1	1.2	1.3	1.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.1	7.2	8.1	8.2
	•	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.3	7.4					

G314 HSS DORMER 20°



G314



4.00 - 9.00

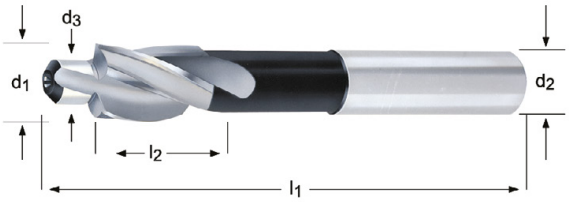
Nr.	d min-max mm	l_3 mm	l_2 mm	l_1 mm	d_3 Ø mm	G314
412	4.0 mm ÷ 12.0 mm x 1.0 mm	5.0	61	80	6.0	G314412
1220	12.0 mm ÷ 20.0 mm x 1.0 mm	4.0	55	76	9.0	G3141220
2030	20.0 mm ÷ 30.0 mm x 1.0 mm	4.0	67	88	12.0	G3142030
3040	30.0 mm ÷ 40.0 mm x 1.0 mm	4.0	74	98	13.0	G3143040
420	4.0 mm ÷ 20.0 mm x 2.0 mm	4.0	48	76	8.0	G314420
630	6.0 mm ÷ 30.0 mm x 2.0 mm	4.0	73	98	10.0	G314630
M	9.0 mm ÷ 36.0 mm x 3.0 mm	3.0	57	86	12.0	G314M

G125

- Tappförsänkare - 180°
- Tasoupottimet - 180°
- Tapforsenker - 180°
- Tapforsænker - 180°

G125	1.1	1.2	1.3	2.1	3.1	3.2	7.1	7.2	8.1
•	1.4	1.5	1.6	2.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.3	7.4	8.2

G125 HSS DIN 373 180°



G125



6.50 - 20.00

d_1 $Øz_9$ mm	d_3 $Øe_8$ mm	M	l_1 mm	l_2 mm	d_2 $Øh_9$ mm	z	G125
6.5	2.5	M 3 t	71	14	5.0	3	G1256.5X2.5 [1]
6.5	3.2	M 3 f	71	14	5.0	3	G1256.5X3.2 [2]
6.5	3.4	M 3 m	71	14	5.0	3	G1256.5X3.4 [3]
8.0	3.3	M 4 t	71	14	5.0	3	G1258.0X3.3 [1]
8.0	4.3	M 4 f	71	14	5.0	3	G1258.0X4.3 [2]
8.0	4.5	M 4 m	71	14	5.0	3	G1258.0X4.5 [3]
10.0	4.2	M 5 t	80	18	8.0	3	G12510.0X4.2 [1]
10.0	5.3	M 5 f	80	18	8.0	3	G12510.0X5.3 [2]
10.0	5.5	M 5 m	80	18	8.0	3	G12510.0X5.5 [3]
11.0	5.0	M 6 t	80	18	8.0	3	G12511.0X5.0 [1]
11.0	6.4	M 6 f	80	18	8.0	3	G12511.0X6.4 [2]
11.0	6.6	M 6 m	80	18	8.0	3	G12511.0X6.6 [3]
15.0	6.8	M 8 t	100	22	12.5	3	G12515.0X6.8 [1]
15.0	8.4	M 8 f	100	22	12.5	3	G12515.0X8.4 [2]
15.0	9.0	M 8 m	100	22	12.5	3	G12515.0X9.0 [3]
18.0	8.5	M 10 t	100	22	12.5	3	G12518.0X8.5 [1]
18.0	10.5	M 10 f	100	22	12.5	3	G12518.0X10.5 [2]
18.0	11.0	M 10 m	100	22	12.5	3	G12518.0X11.0 [3]
20.0	10.2	M 12 t	100	22	12.5	3	G12520.0X10.2 [1]
20.0	13.0	M 12 f	100	22	12.5	3	G12520.0X13.0 [2]
20.0	13.5	M 12 m	100	22	12.5	3	G12520.0X13.5 [3]

[1] t=tapp för hål / t = kierteelle / t=tapp for hull / t= tap for hul
[2] f= för genomgående hål, fin passning / f=läpimenevään reikään / f=for gjennomgående hull, fin passning / f= for gennemgående hul fin pasning
[3] m= för genomgående hål, medium passning / m= läpimenevä reikä, keskikoko / m=for gjennomgående hull, medium passning / m=for gennemgående hul medium pasning

G236

- Försänkare i Sats
- Kärkiupottimet, sarjat
- Forsenker Sett
- Forsænkere i sæt

A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
A=Työkalujen malli, B=lkm ja C=halkaisijat
A=Typer i sett. B=Antall i sett. C=Diameter i sett
A=Type i sæt B=Antal forsænkere i sæt C= diameter i sæt.



G236



Set

Nr.	A	B	C	G236
1	G136	6	6.30 mm, 8.30 mm, 10.40 mm, 12.40 mm, 16.50 mm, 20.50 mm	G2361
2	G136	4	6.30 mm, 10.40 mm, 16.50 mm, 20.50 mm	G2362
3	G560	6	6.30 mm, 8.30 mm, 10.40 mm, 12.40 mm, 16.50 mm, 20.50 mm	G2363
4	G106	6	6.30 mm, 8.30 mm, 10.40 mm, 12.40 mm, 16.50 mm, 20.50 mm	G2364
5	G506	6	6.30 mm, 8.30 mm, 10.40 mm, 12.40 mm, 16.50 mm, 20.50 mm	G2365

201 - 212

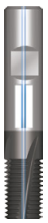


J200	205
J205	205
J210	206
J215	206
J220	207
J225	207
J235	208
J245	209
J260	211
J280	210

DORMER

	Gängform	Kierre	Gjengeform	Gevind
	Standard	Standardi	Standard	Standard
	Djup	Syvyys	Dybde	Dybde
	Material	Raaka-aine	Materiale	Materiale
	Spiralvinkel	Kierukkakulma	Spiralvinkel	Spiral vinkel
	Rotationsriktning	Työstösuunta	Rotasjonsretning	Rotationsretning
	Ytbehandling	Pinnoitteet	Overflatebehandling	Overfladebehandling
	Skaft	Varsi	Skaft	Skaft
	Kylning	Jäähdytys	Kjøling	Kølemiddel
■	Förstahandsval	Paras valinta	Førstevalg	Perfekt
●	Andrahandsval	Hyvä valinta	Andrevalg	God
	Exempel 10 = Skärhastighet i meter/minut +/- 10%	Esimerkki 10 = Lastuamisnopeus, m/min +/- 10%	Eksempel 10 = skjærehastighet i meter/minutt +/- 10%	Eksempel 10 = Skærehastighed i meter/min. +/- 10%
	Artikelnummer	Tuotteen koodi	Artikkel kode	Kode
	Dim. område	Halkaisija-alue	Dim. område	Dimension

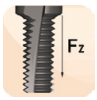
AMG	Svensk	Suomi	Norsk	Dansk
1.1	Rena järn, mjuka stål	Puhdas rauta, pehmeät teräkset	Rent jern, myke stål	Rent jern, blødt stål
1.2	Konstruktionsstål	Rakenneteräkset, hiilletysteräkset	Konstruksjonsstål	Konstruktionsstål
1.3	Kolstål, låglegerade stål	Hiilli- ja niukkaesosteiset teräset	Kullstål, låglegert stål	Kulstofstål, lavt leg.stål
1.4	Legerade stål	Seostetut teräkset	Legert stål	Legeret stål
1.5	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.6	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.7	Legerade härdade stål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
1.8	Legerade härdade stål, slitstål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
2.1	Rostfria automatstål och verktygsstål	Aut. laadut, työkaluteräkset Cr>10%	Rustfritt automatstål	Rustfrit automatstål
2.2	Austenitiska	Austenittiset	Austenistisk (Syrefast)	Austenitisk
2.3	Ferritaustenitiska (duplex), Martensitiska	Ferriiti + Austeniitti (Duplex), Ferriitismarten-siittiset	Ferritaustenitiske (duplex), Ferritiske, Martensitiske	Ferritisk+Austenitisk, Martensitisk
2.4	Utskiljningshärdade / Austenitiska	Erkautumiskarkenevat	Utskillingsherdet	Udskilningshærdet
3.1	Gråjärn	Harmaa valurauta	Gråjern	Gråt støbejern
3.2	Gråjärn	Harmaa valurauta	Gråjern	Hærdet støbejern
3.3	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Strækbart støbejern
3.4	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Strækbart støbejern
4.1	Titan, ren	Titaani, seostamaton	Titan, ren	Titan, ren
4.2	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
4.3	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
5.1	Nickel, ren	Nikkeli, seostamaton	Nikkel, ren	Nikkel, ren
5.2	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
5.3	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
6.1	Koppar	Kupari	Kopper	Kobber
6.2	Mässing / Brons	ß-Messinki, pronssi	Messing/Bronse	Messing, Bronze
6.3	Mjuk mässing	α-Messinki, pehmeä	Myk messing	Blød messing
6.4	Cu-Al-Fe-Legeringar	Cu-Al-Fe seokset, lujat pronssit	Cu-Al-Fe-Legeringer	Cu-Al-Fe-legeringer
7.1	Ren aluminium, magnesium	Al, Mg, seostamaton	Ren aluminium, magnesium	Ren aluminium, magnesium
7.2	Al Legeringar, Si<0.5%	Al seostettu, Si<0.5%	Al legeringer, Si<0.5%	Al-legeringer, Si<0.5%
7.3	Al Legeringar, Si>0.5%<10%	Al seostettu, Si>0.5% <10%	Al legeringer, Si>0.5%<10%	Al-legeringer, Si>0.5%<10%
7.4	Al Legeringar, Si>10% Whisker förstärkta Al-och Mg- Legeringar	Al seostettu, Si>10% Whisker lujitetut, Al-seokset, Mg-seokset	Al legeringer, Si>10% Whisker forsterket Al-leg., Mg leg.	Al-legeringer, Si>10% Whisker-forstærket, Al-legeringer, Mg-legeringer
8.1	Mjuka plaster	Pehmeät muovit (Thermoplast)	Myk plast	Blød plast
8.2	Hårda plaster	Kovat muovit, Bakeliitti	Hard plast	Hårde plast
8.3	Armerade plaster	Lujitetut muovit	Armert plast	Armerede plastmaterialer
9.1	Cermets (metall-keramik)	Cermetit (metalli-keraamiset)	Cermets (metal-keramikk)	Cermets (metal-keramik)
10.1	Grafit	Standardi Grafiitti	Standard Grafitt	Standard grafit

	M	M	M	M	MF	MF	UNC	UNF	G	NPT
	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER
	2XD	2XD	2XD	2XD	1.5XD	1.5XD	2XD	2XD	1.5XD	
	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
	λ10°	λ10°	λ27°	λ27°	λ10°	λ10°	λ10°	λ10°	λ10°	λ10°
	Alcrona Pro	Alcrona Pro	Alcrona Pro	Alcrona Pro	Alcrona Pro	Alcrona Pro	Alcrona Pro	Alcrona Pro	Alcrona Pro	Alcrona Pro
	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HB	DIN 6535HB	DIN 6535HB	DIN 6535HA	DIN 6535HB
										
	J200	J205	J210	J215	J220	J225	J235	J245	J280	J260
	M4 - M16	M8 - M16	M6 - M16	M6 - M16	M6 - M24	M10 - M18	1/4 - 3/4	1/4 - 3/4	1/8 - 3"	1/8 - 2"

AMG	205	205	206	206	207	207	208	209	210	211	ISO
1.1	■170B	■170B	■175B	■175B	■170B	■170B	■170B	■170B	■170B	■170B	P 1
1.2	■170B	■170B	■175B	■175B	■170B	■170B	■170B	■170B	■170B	■170B	P 1
1.3	■140B	■140B	■145B	■145B	■140B	■140B	■140B	■140B	■140B	■140B	P 2
1.4	■130B	■130B	■135B	■135B	■130B	■130B	■130B	■130B	■130B	■130B	P 3
1.5	■100B	■100B	■105B	■105B	■100B	■100B	■100B	■100B	■100B	■100B	P 4
1.6	■80B	■80B	■85B	■85B	■80B	■80B	■80B	■80B	■80B	■80B	H 1
1.7	●50A	●50A	●50A	●50A	●50A	●50A	●50A	●50A	●50A	●50A	H 3
1.8	●30A	●30A	●30A	●30A	●30A	●30A	●30A	●30A	●30A	●30A	H 4
2.1	●50A	■50A	●50A	●50A	●50A	■50A	■50A	■50A	●50A	●50A	M 1
2.2	●40A	■40A	●40A	●40A	●40A	■40A	■40A	■40A	●40A	●40A	M 3
2.3	●30A	■30A	●30A	●30A	●30A	■30A	■30A	■30A	●30A	●30A	M 2
2.4	●25A	■25A	●25A	●25A	●25A	■25A	■25A	■25A	●25A	●25A	S 2
3.1	■150B	■150B	■155B	■155B	■150B	■150B	■150B	■150B	■150B	■150B	K 1
3.2	■130B	■130B	■135B	■135B	■130B	■130B	■130B	■130B	■130B	■130B	K 2
3.3	■150B	■150B	■155B	■155B	■150B	■150B	■150B	■150B	■150B	■150B	K 3
3.4	■120B	■120B	■125B	■125B	■120B	■120B	■120B	■120B	■120B	■120B	K 4
4.1	■170B	■170B	■175B	■175B	■170B	■170B	■170B	■170B	■170B	■170B	S 1
4.2	■80B	■80B	■80B	■80B	■80B	■80B	■80B	■80B	■80B	■80B	S 2
4.3	■50B	■50B	■50B	■50B	■50B	■50B	■50B	■50B	■50B	■50B	S 3
5.1	●250B	■250B	●250B	●255B	●250B	■250B	■250B	■250B	●250B	●250B	S 1
5.2	●40A	■40A	●40A	●40A	●40A	■40A	■40A	■40A	●40A	●40A	S 2
5.3	●25A	●25A	●25A	●25A	●25A	■25A	●25A	●25A	●25A	●25A	S 3
6.1	■400B	■400B	■405B	■405B	■400B	■400B	■400B	■400B	■400B	■400B	N 3
6.2	■400B	■400B	■405B	■405B	■400B	■400B	■400B	■400B	■400B	■400B	N 4
6.3	■400B	■400B	■405B	■405B	■400B	■400B	■400B	■400B	■400B	■400B	N 3
6.4	■60A	■60A	■60A	■60A	■60A	■60A	■60A	■60A	■60A	■60A	N 4
7.1	■800C	■800C	■805C	■805C	■800C	■800C	■800C	■800C	■800C	■800C	N 1
7.2	■800C	■800C	■805C	■805C	■800C	■800C	■800C	■800C	■800C	■800C	N 1
7.3	■700C	■700C	■705C	■705C	■700C	■700C	■700C	■700C	■700C	■700C	N 1
7.4	■340B	■340B	■345B	■345B	■340B	■340B	■340B	■340B	■340B	■340B	N 2
8.1	■340C	■340C	■345C	■345C	■340C	■340C	■340C	■340C	■340C	■340C	O
8.2	■210C	■210C	■215C	■215C	■210C	■210C	■210C	■210C	■210C	■210C	O
8.3	■180C	■180C	■185C	■185C	■180C	■180C	■180C	■180C	■180C	■180C	O
9.1											H
10.1	●200C	●200C	●210C	●205C	●200C	●200C	●200C	●200C	●200C	●200C	O

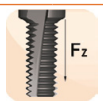
DORMER

M



	A		B		C	
Ø	ap= 1 x d_1	ap= 2 x d_1	ap= 1 x d_1	ap= 2 x d_1	ap= 1 x d_1	ap= 2 x d_1
3,2	0,010	0,005	0,011	0,006	0,017	0,012
4,1	0,009	0.007	0,012	0,008	0,014	0,011
4,8	0,012	0,009	0,015	0,010	0,017	0,014
6,5	0,017	0,014	0,027	0,017	0,030	0,025
8,2	0,021	0,018	0,034	0,029	0,040	0,033
9,9	0,024	0,020	0,039	0,024	0,048	0,032
11,6	0,031	0,025	0,050	0,031	0,059	0,035
13,6	0,039	0,032	0,062	0,051	0,071	0,048
16	0.061	0,033	0,064	0,036	0,066	0,033
19	0,085	0,044	0,089	0,048	0,095	0,044

MF



		A		B		C	
d_1	P	ap= 3/4 x d_1	ap= 1,5 x d_1	ap= 3/4 x d_1	ap= 1,5 x d_1	ap= 3/4 x d_1	ap= 1,5 x d_1
4,8	0,5	0,017	0,014	0,022	0,018	0,025	0,021
6	0,75	0,023	0,018	0,033	0,027	0,037	0,030
6	1	0,020	0,016	0,029	0,023	0,032	0,026
8	1	0,025	0,020	0,041	0,033	0,045	0,037
10	1	0,034	0,028	0,055	0,045	0,069	0,056
10	1,5	0,028	0,023	0,045	0,037	0,056	0,046
12	1	0,048	0,039	0,077	0,065	0,077	0,075
12	1,5	0,040	0,032	0,065	0,053	0.076	0.062
14	1	0,060	0,049	0,084	0,079	0,084	0,084
14	1,5	0,049	0,040	0,079	0,064	0,084	0,074
16	2	0,050	0,041	0,082	0,066	0,089	0,077
20	2	0,067	0,055	0,100	0,093	0,100	0,100

UNC



		A		B		C	
d_1	P	ap= 1 x d_1	ap= 2 x d_1	ap= 1 x d_1	ap= 2 x d_1	ap= 1 x d_1	ap= 2 x d_1
4,8	20	0.003	0,003	0,012	0,006	0,029	0,014
5,5	18	0,004	0,003	0,017	0,009	0,041	0,023
7,5	16	0,008	0,005	0,029	0,016	0,056	0,043
8	14	0,008	0,006	0,031	0,018	0,060	0,049
10	13	0,009	0,007	0,040	0,032	0,071	0,071
10	12	0,008	0,006	0,038	0,029	0,071	0,069
12	11	0,009	0,007	0,036	0,026	0,077	0,077
14	10	0,010	0,008	0,060	0,043	0,084	0,084

UNF



	A		B		C	
d_1	ap= 1 x d_1	ap= 2 x d_1	ap= 1 x d_1	ap= 2 x d_1	ap= 1 x d_1	ap= 2 x d_1
4,8	0.004	0,003	0,016	0,008	0,034	0,021
6	0,006	0,004	0,028	0,016	0,055	0,045
8	0,013	0,007	0,037	0,025	0,063	0,058
10	0,022	0,011	0,046	0,038	0,071	0,071
14	0,036	0,018	0,075	0,061	0,084	0,084

G



	A		B		C	
d_1	ap= 1 x d_1	ap= 2 x d_1	ap= 1 x d_1	ap= 2 x d_1	ap= 1 x d_1	ap= 2 x d_1
3,2	0,010	0,005	0,011	0,006	0,017	0,012
4,1	0,009	0.007	0,012	0,008	0,014	0,011
4,8	0,012	0,009	0,015	0,010	0,017	0,014
6,5	0,017	0,014	0,027	0,017	0,030	0,025
16	0.061	0,033	0,064	0,036	0,066	0,033
19	0,085	0,044	0,089	0,048	0,095	0,044

NPT



d_1	Ap=	A	B	C
7,9	Standard	0,026	0,044	0,069
9.9	Standard	0,029	0,046	0,070
15,9	Standard	0,053	0,087	0,089
19,9	Standard	0,064	0,1	0,1

ap =



d_1 =



J200

- Gängfräs M spiralvinkel 10º
- M Kierrejyrsin, lastua nostavat urat, 10°
- M Gjengefres spiralvinkel 10°
- M Gevindfræsere spiralvinkel 10°

Invändig gänga
Sisäpuoliset kierteet
Invendig gjenge
Indvendig gevind

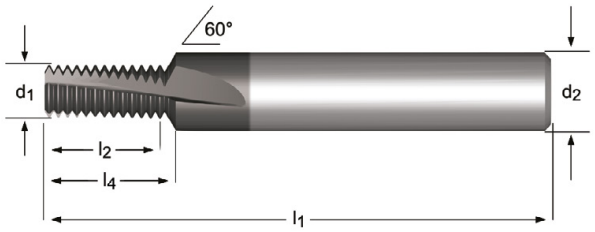
J205

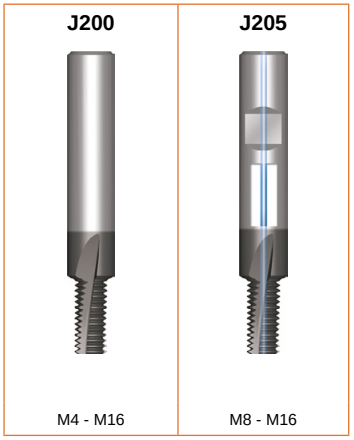
- Gängfräs M spiralvinkel 10º - invändig kylkanal
- M Kierrejyrsin, lastua nostavat urat, 10°, jäähdytyskanavat
- M Gjengefres spiralvinkel 10° innvendig kjøling
- M Gevindfræsere spiralvinkel 10° indvendig køling

Invändig gänga
Sisäpuoliset kierteet
Invendig gjenge
Indvendig gevind

J200	▪	1.1	1.2	1.3	1.4	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3																
	•	1.7	1.8	2.1	2.2	2.3	2.4	5.1	5.2	5.3	10.1										
J205	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	6.1
		6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3										
	•	1.7	1.8	5.3	10.1																

J200	M	DORMER	2XD	HM	λ10°		Alcrona Pro	DIN 6535HA	
J205	M	DORMER	2XD	HM	λ10°		Alcrona Pro	DIN 6535HB	





≥	P mm	d_1 Ø mm	l_2 mm	l_1 mm	d_2 Ø mm	z	l_4 mm	J200	J205
M4	0.70	3.20	8.4	57	6	3	9.5	J2003.2X.7	
M5	0.80	4.10	11.2	57	6	3	12.1	J2004.1X.8	
M6	1.00	4.80	13.0	63	8	3	14.4	J2004.8X1.0	
M8	1.25	6.50	17.5	72	10	3	19.1	J2006.5X1.25	J2056.5X1.25
M10	1.50	8.20	21.0	83	12	3	22.8	J2008.2X1.5	J2058.2X1.50
M12	1.75	9.90	26.25	83	14	4	28.2	J2009.9X1.75	J2059.9X1.75
M14	2.00	11.60	30.0	92	16	4	32.2	J20011.6X2.0	J20511.6X2.0
M16	2.00	13.60	34.0	92	18	4	36.2	J20013.6X2.0	J20513.6X2.0

DORMER

J210

- Gängfräs M spiralvinkel 27°
- M Kierrejyrsin, lastua nostavat urat, 27°
- M Gjengefres spiralvinkel 27°
- M Gevindfræsere spiralvinkel 27°

Invändig gänga
Sisäpuoliset kierteet
Invendig gjenge
Indvendig gevind

J215

- Gängfräs M spiralvinkel 27° - invändig kylkanal
- M Kierrejyrsin, lastua nostavat urat, 27°, jäähdytyskanavat
- M Gjengefres spiralvinkel 27° invendig kjøling
- M Gevindfræsere spiralvinkel 27° indvendig køling

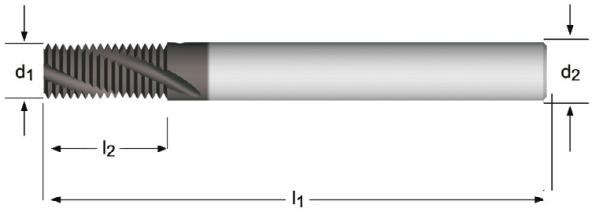
Invändig gänga
Sisäpuoliset kierteet
Invendig gjenge
Indvendig gevind

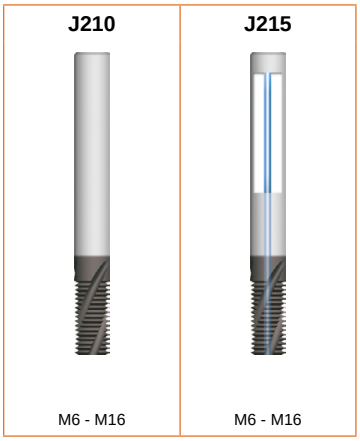
J210; J215

▪ 1.1 1.2 1.3 1.4 1.5 1.6 3.1 3.2 3.3 3.4 4.1 4.2 4.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2 8.3

• 1.7 1.8 2.1 2.2 2.3 2.4 5.1 5.2 5.3 10.1

J210	M	DORMER	2XD	HM	λ27°		Alcrona Pro	DIN 6535HA		
J215	M	DORMER	2XD	HM	λ27°		Alcrona Pro	DIN 6535HA		





≥	P mm	d_1 Ø mm	l_2 mm	l_1 mm	d_2 Ø mm	z	J210	J215
M6	1.00	4.50	13.0	57	6	3	J2104.5X1.0	J2154.5X1.0
M8	1.25	6.00	17.5	65	6	3	J2106.0X1.25	J2156.0X1.25
M10	1.50	7.50	21.0	72	8	3	J2107.5X1.5	J2157.5X1.5
M12	1.75	9.50	26.25	80	10	3	J2109.5X1.75	J2159.5X1.75
M14	2.00	10.00	30.0	83	10	4	J21010.0X2.0	J21510.0X2.0
M16	2.00	12.00	34.0	92	12	4	J21012.0X2.0	J21512.0X2.0

J220

- Gängfräs MF spiralvinkel 10º
- MF Kierrejyrsin, lastua nostavat urat, 10°
- MF Gjengefres spiralvinkel 10°
- MF Gevindfræsere spiralvinkel 10°

Invändig gänga
Sisäpuoliset kierteet
Invendig gjenge
Indvendig gevind

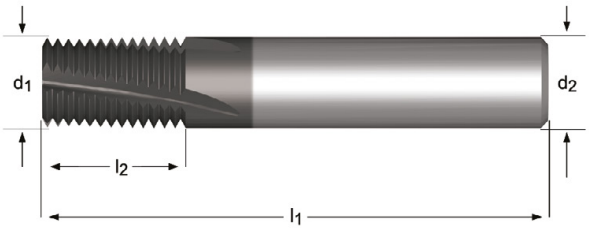
J225

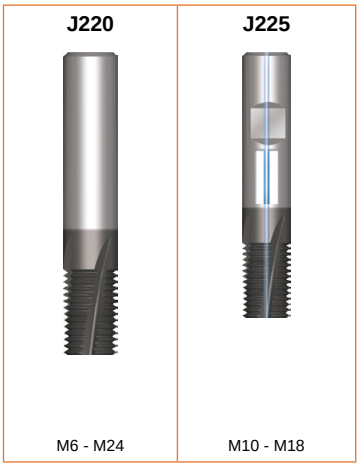
- Gängfräs MF spiralvinkel 10º - invändig kylkanal
- MF Kierrejyrsin, lastua nostavat urat, 10°, jäähdytyskanavat
- MF Gjengefres spiralvinkel 10° invendig kjøling
- MF Gevindfræsere spiralvinkel 10° indvendig køling

Invändig gänga
Sisäpuoliset kierteet
Invendig gjenge
Indvendig gevind

J220	▪	1.1	1.2	1.3	1.4	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3																
	•	1.7	1.8	2.1	2.2	2.3	2.4	5.1	5.2	5.3	10.1										
J225	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3
		6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3									
	•	1.7	1.8	10.1																	

J220	MF	DORMER	1.5XD	HM	λ10°		Alcrona Pro	DIN 6535HA	
J225	MF	DORMER	1.5XD	HM	λ10°		Alcrona Pro	DIN 6535HB	





≥	P mm	d_1 Ø mm	l_2 mm	l_1 mm	d_2 Ø mm	z	J220	J225
M6	0.50	4.80	10.0	57	6	3	J2204.8X.5	
M8	0.75	6.00	12.0	57	6	3	J2206.0X.75	
M8	1.00	6.00	12.0	57	6	3	J2206.0X1.0	
M10	1.00	8.00	16.0	63	8	4	J2208.0X1.0	J2258.0X1.0
M12	1.00	10.00	20.0	72	10	4	J22010.0X1.0	J22510.0X1.0
M12	1.50	10.00	20.0	72	10	4	J22010.0X1.5	J22510.0X1.5
M14	1.00	12.00	22.0	83	12	4	J22012.0X1.0	J22512.0X1.0
M14	1.50	12.00	22.0	83	12	4	J22012.0X1.5	J22512.0X1.5
M16	1.00	14.00	26.0	83	14	5	J22014.0X1.0	J22514.0X1.0
M16	1.50	14.00	26.0	83	14	5	J22014.0X1.5	J22514.0X1.5
M18	1.50	16.00	30.0	92	16	5		J22516.0X1.5
M20	2.00	16.00	30.0	92	16	5	J22016.0X2.0	
M20	2.50	16.00	42.5	105	16	5	J22016.0X2.5	
M24	2.00	20.00	35.0	104	20	5	J22020.0X2.0	
M24	3.00	19.00	50.0	125	20	5	J22019.0X3.0	

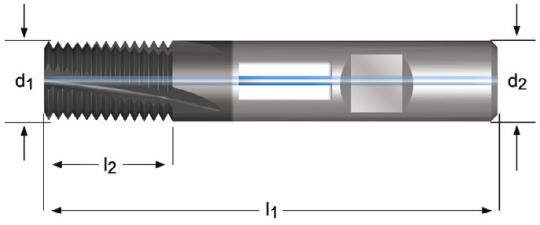
J235

- Gängfräs UNC spiralvinkel 10º - invändig kylkanal
- UNC Kierrejyrsin, lastua nostavat urat, 10°, jäähdytyskanavat
- UNC Gjengefres spiralvinkel 10° invendig kjøling
- UNC Gevindfræsere spiralvinkel 10° indvendig køling

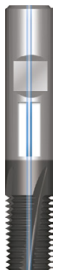
Invändig gänga
Sisäpuoliset kierteet
Invendig gjenge
Indvendig gevind

J235																				
	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	6.1
		6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3										
	•	1.7	1.8	5.3	10.1																

J235 UNC DORMER 2XD HM λ10° Alcrona Pro DIN 6535HB



J235



1/4 - 3/4

≥	TPI	d_1 Ø mm	l_2 mm	l_1 mm	d_2 Ø mm	z	J235
1/4	20	4.80	14.0	57	6	3	J2354.8-20
5/16	18	5.50	14.0	57	6	3	J2355.5-18
3/8	16	7.50	19.0	63	8	4	J2357.5-16
7/16	14	8.00	19.0	63	8	4	J2358.0-14
1/2	13	10.00	22.0	72	10	4	J23510.0-13
9/16	12	10.00	22.0	72	10	4	J23510.0-12
5/8	11	12.00	26.0	83	12	4	J23512.0-11
3/4	10	14.00	32.0	83	14	5	J23514.0-10

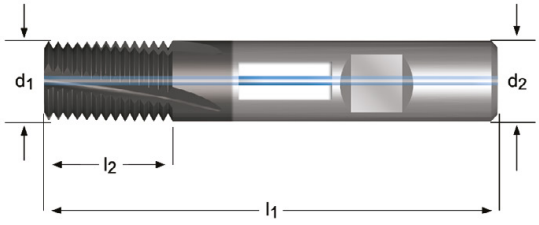
J245

- Gängfräs UNF spiralvinkel 10º - invändig kylkanal
- UNF Kierrejyrsin, lastua nostavat urat, 10°, jäähdytyskanavat
- UNF Gjengefres spiralvinkel 10° invendig kjøling
- UNF Gevindfræsere spiralvinkel 10° indvendig køling

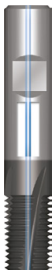
Invändig gänga
Sisäpuoliset kierteet
Invendig gjenge
Indvendig gevind

J245																				
	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	6.1
		6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3										
	•	1.7	1.8	5.3	10.1																

J245 UNF DORMER 2XD HM λ10° Alcrona Pro DIN 6535HB



J245



1/4 - 3/4

≥	TPI	d_1 Ø mm	l_2 mm	l_1 mm	d_2 Ø mm	z	J245
1/4	28	4.80	14.0	57	6	3	J2454.8-28
5/16. 3/8	24	6.00	14.0	57	6	3	J2456.0-24
7/16. 1/2	20	8.00	19.0	63	8	4	J2458.0-20
9/16. 5/8	18	10.00	22.0	72	10	4	J24510.0-18
3/4	16	14.00	32.0	83	14	5	J24514.0-16

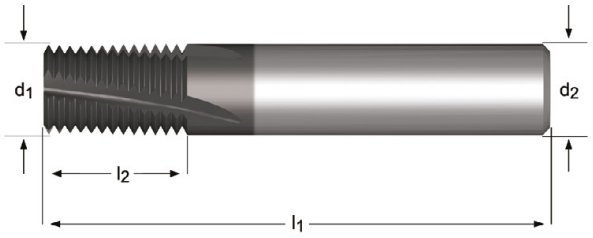
J280

- Gängfräs G(BSP) spiralvinkel 10º
- G(BSP) Kierrejyrsin, lastua nostavat urat, 10°
- G(BSP) Gjengefres spiralvinkel 10°
- G(BSP) Gevindfræsere spiralvinkel 10°

Invändig och utvändig gänga
Sisäpuoliset ja ulkopuoliset kierteet
Invendig og utvendig gjenge
Indvendig og udvendig gevind

J280																				
	▪	1.1	1.2	1.3	1.4	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3																
	•	1.7	1.8	2.1	2.2	2.3	2.4	5.1	5.2	5.3	10.1										

J280	G	DORMER	1.5XD	HM	λ10°		Alcrona Pro	DIN 6535HA	



J280



1/8 - 3"

≥	TPI	d_1 Ø mm	l_2 mm	l_1 mm	d_2 Ø mm	z	J280
1/8	28	6.00	15.0	57	6	3	J2806.0-28
1/4	19	10.00	20.0	72	10	4	J28010.0-19
3/8	19	14.00	26.0	83	14	5	J28014.0-19
1/2. 5/8	14	16.00	30.0	92	16	5	J28016.0-14
5/8. 3/4. 7/8	14	20.00	35.0	104	20	5	J28020.0-14
1". 3"	11	25.00	45.0	121	25	6	J28025.0-11

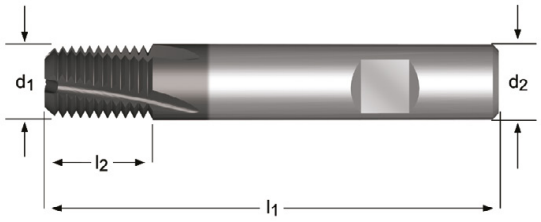
J260

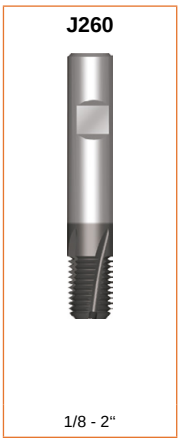
- Gängfräs NPT spiralvinkel 10º
- NPT Kierrejyrsin, lastua nostavat urat, 10°
- NPT Gjengefres spiralvinkel 10°
- NPT Gevindfræsere spiralvinkel 10°

Invändig gänga
Sisäpuoliset kierteet
Invendig gjenge
Indvendig gevind

J260																				
	▪	1.1	1.2	1.3	1.4	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3																
	•	1.7	1.8	2.1	2.2	2.3	2.4	5.1	5.2	5.3	10.1										

J260	NPT	DORMER		HM	λ10°		Alcrona Pro	DIN 6535HB	





≥	TPI	d_1 Ø mm	l_2 mm	l_1 mm	d_2 Ø mm	z	J260
1/8	27	7.90	11.50	58	8	3	J2607.9-27
1/4. 3/8	18	9.90	15.92	66	10	3	J2609.9-18
1/2. 3/4	14	15.90	20.46	82	16	4	J26015.9-14
1“. 2“	11.5	19.90	27.12	92	20	5	J26019.9-11.5

E000	247	**E258**	250	**E515**	288	**EP30**	300
E000TIN	247	**E260**	256	**E524**	298	**EP31**	300
E001	247	**E261**	256	**E531**	308	**EP40**	321
E002	260	**E263**	250	**E533**	311	**EP41**	321
E002TIN	260	**E266**	249	**E534**	310	**EX006G**	252
E003	260	**E268**	269	**E536**	312	**EX006H**	252
E011	279	**E275**	287	**E538**	314	**EX00TIN**	252
E013	284	**E278**	297	**E539**	313	**EX016H**	252
E021	291	**E282**	319	**E542**	315	**EX10**	280
E023	293	**E286**	305	**E544**	317	**EX10TIN**	280
E031	301	**E287**	295	**E545**	316	**EX11**	280
E033	303	**E288**	285	**E547**	320	**EX20**	292
E041	322	**E289**	263	**E550**	328	**EX21**	292
E043	325	**E290**	269	**E570**	306	**EX30**	302
E100	230	**E291**	263	**E600**	240	**EX31**	302
E101	230	**E292**	263	**E605**	262	**EX40**	323

213 - 350



E102	230	**E293**	264	**E606**	248	**EX41**	323
E105	266	**E294**	263	**E610**	240	**L000**	342
E108	286	**E295**	265	**E620**	326	**L001**	343
E111	296	**E296**	265	**E621**	327	**L002**	344
E115	307	**E297**	243	**E650**	261	**L110**	348
E119	318	**E298**	254	**E651**	294	**L112**	349
E200	232	**E299**	277	**E653**	332	**L113**	339
E201	234	**E300**	282	**E654**	304	**L114**	340
E207	250	**E303**	239	**E708**	335	**L115**	341
E212	250	**E382**	324	**E709**	334	**L119**	337
E216	249	**E383**	283	**E710**	330	**L120**	345
E225	287	**E384**	278	**E711**	331	**L126**	338
E229	297	**E390**	234	**E712**	333	**T200**	226
E237	232	**E412**	255	**E714**	329	**T201**	226
E238	257	**E414**	258	**E720**	334	**T205**	228
E239	257	**E422**	249	**E721**	330	**T206**	228
E240	245	**E423**	249	**EP006G**	241	**T210**	226
E241	245	**E471**	246	**EP006H**	241	**T215**	229
E242	269	**E472**	246	**EP00TiN**	241		
E243	336	**E473**	259	**EP016H**	241		
E250	232	**E474**	259	**EP10**	275		
E251	232	**E500**	235	**EP10TIN**	275		
E252	234	**E501**	235	**EP11**	275		
E255	244	**E504**	235	**EP20**	290		
E256	244	**E513**	271	**EP21**	290		

DORMER

Gängform	Kierre	Gjengeform	Gevind
Standard	Standardi	Standard	Standard
Toleranser	Toleranssit	Toleranse	Tolerance
Håltyp	Reikä	Hulltype	Hul
Djup	Syvyys	Dybde	Dybde
Material	Raaka-aine	Materiale	Materiale
Skärfas	Etuviisteen pituus	Skjærfas	Skærfase
Spårutförande	Lastu-uran muoto	Sporutførelse	Spor geometri
Rotationsriktning	Työstösuunta	Rotasjonsretning	Rotationsretning
Ytbehandling	Pinnoitteet	Overflatebehandling	Overfladebehandling
Kylning	Jäähdytys	Kjøling	Kølemiddel

■	Förstahandsval	Paras valinta	Førstevalg	Perfekt
●	Andrahandsval	Hyvä valinta	Andrevalg	God
	Exempel 10 = Skärhastighet i meter/minut +/- 10%	Esimerkki 10 = Lastuamisnopeus, m/min +/- 10%	Eksempel 10 = skjærehastighet i meter/minutt +/- 10%	Eksempel 10 = Skærehastighed i meter/min. +/- 10%

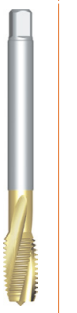
	Artikelnummer	Tuotteen koodi	Artikkel kode	Kode
	Dim. område	Halkaisija-alue	Dim. område	Dimension

AMG	Svensk	Suomi	Norsk	Dansk
1.1	Rena järn, mjuka stål	Puhdas rauta, pehmeät teräkset	Rent jern, myke stål	Rent jern, blødt stål
1.2	Konstruktionsstål	Rakenneteräkset, hiilletysteräkset	Konstruksjonsstål	Konstruktionsstål
1.3	Kolstål, låglegerade stål	Hiilli- ja niukkaesosteiset teräset	Kullstål, låglegert stål	Kulstofstål, lavt leg.stål
1.4	Legerade stål	Seostetut teräkset	Legert stål	Legeret stål
1.5	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.6	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.7	Legerade härdade stål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
1.8	Legerade härdade stål, slitstål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
2.1	Rostfria automatstål och verktygsstål	Aut. laadut, työkaluteräkset Cr>10%	Rustfritt automatstål	Rustfrit automatstål
2.2	Austenitiska	Austenittiset	Austenistisk (Syrefast)	Austenitisk
2.3	Ferritaustenitiska (duplex), Martensitiska	Ferriiti + Austeniitti (Duplex), Ferriitismarten-siittiset	Ferritaustenitiske (duplex), Ferritiske, Martensitiske	Ferritisk+Austenitisk, Martensitisk
2.4	Utskiljningshärdade / Austenitiska	Erkautumiskarkenevat	Utskillingsherdet	Udskilningshærdet
3.1	Gråjärn	Harmaa valurauta	Gråjern	Grå støbejern
3.2	Gråjärn	Harmaa valurauta	Gråjern	Hærdet støbejern
3.3	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
3.4	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
4.1	Titan, ren	Titaani, seostamaton	Titan, ren	Titan, ren
4.2	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
4.3	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
5.1	Nickel, ren	Nikkeli, seostamaton	Nikkel, ren	Nikkel, ren
5.2	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
5.3	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
6.1	Koppar	Kupari	Kopper	Kobber
6.2	Mässing / Brons	ß-Messinki, pronssi	Messing/Bronse	Messing, Bronze
6.3	Mjuk mässing	α-Messinki, pehmeä	Myk messing	Blød messing
6.4	Cu-Al-Fe-Legeringar	Cu-Al-Fe seokset, lujat pronssit	Cu-Al-Fe-Legeringer	Cu-Al-Fe-legeringer
7.1	Ren aluminium, magnesium	Al, Mg, seostamaton	Ren aluminium, magnesium	Ren aluminium, magnesium
7.2	Al Legeringar, Si<0.5%	Al seostettu, Si<0.5%	Al legeringer, Si<0.5%	Al-legeringer, Si<0.5%
7.3	Al Legeringar, Si>0.5%<10%	Al seostettu, Si>0.5% <10%	Al legeringer, Si>0.5%<10%	Al-legeringer, Si>0.5%<10%
7.4	Al Legeringar, Si>10% Whisker förstärkta Al-och Mg- Legeringar	Al seostettu, Si>10% Whisker lujitetut, Al-seokset, Mg-seokset	Al legeringer, Si>10% Whisker forsterket Al-leg., Mg leg.	Al-legeringer, Si>10% Whisker-forstærket, Al-legeringer, Mg-legeringer
8.1	Mjuka plaster	Pehmeät muovit (Thermoplast)	Myk plast	Blød plast
8.2	Hårda plaster	Kovat muovit, Bakeliitti	Hard plast	Hårde plast
8.3	Armerade plaster	Lujitetut muovit	Armert plast	Armerede plastmaterialer
9.1	Cermets (metall-keramik)	Cermetit (metalli-keraamiset)	Cermets (metal-keramikk)	Cermets (metal-keramik)
10.1	Grafit	Standardi Grafiitti	Standard Grafitt	Standard grafit

	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
	DIN 371	DIN 371≤10 376≥12	DIN 371	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 2174	DIN 352	DIN 352	DIN 352	DIN 371	DIN 376	DIN 371	DIN 376	DIN 371	DIN 376	DIN 371≤10 376≥12	
	6H	6HX	6HX	6H	6H	6HX	6H	6HX	6H	6H	6H	6H	6H	6HX	6HX	6HX	
	2XD	2.5XD	2XD	2XD	2.5XD	3XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	2XD	2XD	2XD	
	HM	HM	HM	HM	HM	HM	HSS	HSS-E	HSS	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	
	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3.5	C 2-3	C 2-3	C 2-3	A 6-8 C 2-3	A 6-8 C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	
				λ15°	λ15°												
	TiCN	Super B	TiCN			TiCN		ST						ST	ST	TiAlN	
	T200	T201	T210	T205	T206	T215	E100	E102	E101	E200	E250	E237	E251	E201	E252	E390	
	M3 - M12	M5 - M16	M3 - M12	M3 - M12	M5 - M12	M3 - M10	M1.6 - M52	M3 - M30	M4 - M16	M2 - M10	M3 - M52	M3 - M10	M12 - M24	M3 - M10	M8 - M24	M3 - M20	
AMG	226	226	226	228	228	229	230	230	230	232	232	232	232	234	234	234	ISO
1.1						■60	●1	●1	●1	●12	●12	●12	●12				P 1
1.2						■60	●1	●1	●1	●10	●10	●10	●10				P 1
1.3						■60	●1	●1	●1	●8	●8	●8	●8				P 2
1.4						■40	●1	●1	●1	●6	●6	●6	●6				P 3
1.5						■30	●1	●1	●1	●5	●5	●5	●5				P 4
1.6																	H 1
1.7	■6		●6														H 3
1.8	●4		■4														H 4
2.1						■25		●1									M 1
2.2						■25		●1									M 3
2.3						■25		●1									M 2
2.4						●25											S 2
3.1	●60	■60		●40	●40		●1	●1	●1	●14	●14	●14	●14	■15	■15	■30	K 1
3.2	●30	■25		●15	●15		●1	●1	●1	●8	●8	●8	●8	■8	■8	■25	K 2
3.3		●38		■25	■25		●1	●1	●1	●12	●12	●12	●12	■15	■15	■35	K 3
3.4		●33		■15	■15		●1	●1	●1					●8	●8	●25	K 4
4.1								●1									S 1
4.2								●1									S 2
4.3								●1									S 3
5.1						■35		●1									S 1
5.2						●15		●1									S 2
5.3								●1									S 3
6.1						●40	●1	●1	●1								N 3
6.2							●1	●1	●1	●16	●16	●16	●16	●20	●20	●30	N 4
6.3						●80	●1	●1	●1	●12	●12	●12	●12				N 3
6.4	●7	●10					●1	●1	●1					●5	●5	●5	N 4
7.1						■70											N 1
7.2						■80	●1	●1	●1	●20	●20	●20	●20				N 1
7.3		●50		■35	■35	■80	●1	●1	●1	●12	●12	●12	●12				N 1
7.4	●60	■40		■30	■30		●1	●1	●1					●15	●15	●20	N 2
8.1																	O
8.2	●50	●25		●25	●25		●1	●1	●1	●8	●8	●8	●8	■10	■10	■15	O
8.3	●30	●15		●15	●15		●1	●1	●1								O
9.1																	H
10.1	●25	■25															O

DORMER

	E500	E501	E504	E303	E600	E610	EP006H	EP006G	EP00TIN	EP016H	E297	E255	E256	E240	E241	E471	
	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
	ISO 529	ISO 529	ISO 529	DIN 357	ISO 2283	ISO 2283	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	
	6H	6H	6H	6H	6H	6H	6H	6G	6H	6H	6H	6H	6H	6H	6H	6H	
	1.5XD	1.5XD	1.5XD	2XD	1.5XD	1.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	
	HSS	HSS	HSS	HSS-E	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	
				D18-20 C 2-3	C 2-3	C 2-3	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	
			TiN			TiN			TiN	ST	Cr		TiAlN Top	ST	Super B		
											SHARK LINE	SHARK LINE	SHARK LINE	SHARK LINE	SHARK LINE	SHARK LINE	
	M1 - M56	M3 - M24	M3 - M24	M3 - M20	M3 - M30	M3 - M16	M2 - M30	M3 - M20	M3 - M30	M2 - M30	M3 - M30	M3 - M20	M3 - M20	M3 - M30	M3 - M20	M3 - M20	
AMG	235	235	235	239	240	240	241	241	241	241	243	244	244	245	245	246	ISO
1.1	•7	•7	•14	•12	•7	•14	■25	■25	■40	■25	■25					•25	P 1
1.2	•6	•6	•12	•10	•6	•12	■22	■22	■40	■22	■22				•22	•22	P 1
1.3	•5	•5	•10	•8	•5	•10	■18	■18	■32	■18	■18				•18	•18	P 2
1.4	•4	•4	•8	•6	•4	•8	■16	■16	■27	■16	•16	■16	■30		•16		P 3
1.5	•3	•3	•6	•5	•3	•6	■10	■10	■13	■10	•10	•7	■17	•7	•10		P 4
1.6							•5	•5	•11	•5		•4	•11				H 1
1.7																	H 3
1.8																	H 4
2.1									■8	•7				■8	■14		M 1
2.2									■7	•6				■7	■10		M 3
2.3									•5	•4				■5	■6		M 2
2.4																	S 2
3.1	•12	•12	■18	•14	•12	■18	•15	•15	•22	•15							K 1
3.2	•7	•7	■12	•8	•7	■12	•8	•8	•18	•8							K 2
3.3	•10	•10	■22	•12	•10	■22	•15	•15	•25	•15							K 3
3.4	•5	•5	•12		•5	•12	•8	•8	•18	•8							K 4
4.1							•10	•10	•15								S 1
4.2							•5	•5	•7			•2	•3				S 2
4.3																	S 3
5.1							•12	•12	•18								S 1
5.2							•5	•5	•8			•2	•3				S 2
5.3																	S 3
6.1	•4	•4			•4		■12	■12	■18		■12					•12	N 3
6.2	•10	•10	•20	•16	•10	•20	•30	•30	•45		•30					■30	N 4
6.3	•7	•7	•14	•12	•7	•14	■20	■20	■35		■20					■20	N 3
6.4	•2	•2	•4		•2	•4											N 4
7.1							■16	■16								■16	N 1
7.2	•12	•12	•24	•20	•12	•24	■35	■35								■35	N 1
7.3	•7	•7	•14	•12	•7	•14	■20	■20	■30							■20	N 1
7.4	•5	•5	•10		•5	•10	■15	■15	■22							•15	N 2
8.1							•30	•30								■25	O
8.2	•5	•5	•10	•8	•5	•10			•45								O
8.3	•3	•3	•6		•3	•6											O
9.1																	H
10.1																	O

	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	DIN 371≤10 376≥12	ISO 529	ISO 529	ISO 529	ISO 2283	DIN 371	DIN 376	DIN 371	DIN 376	DIN 371	DIN 376	DIN 371	DIN 376	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12
	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6G	6H
	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	3XD	3XD	3XD	3XD	1.5XD	1.5XD	1.5XD	1.5XD	2.5XD	2.5XD	2.5XD
	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM
	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3
										λ15°	λ15°	λ15°	λ15°	λ45°	λ45°	λ45°
	Super B		TiN	ST				TiN	TiN			TiN	TiN			TiN
																
	SHARK LINE															
	E472	E000	E000TIN	E001	E606	E216	E266	E422	E423	E207	E258	E212	E263	EX006H	EX006G	EX00TIN
	M3 - M20	M1.6 - M24	M3 - M20	M1.6 - M24	M3 - M24	M3 - M10	M12 - M24	M3 - M10	M12 - M24	M2 - M10	M4 - M36	M3 - M10	M12 - M36	M2 - M64	M3 - M20	M3 - M30
AMG	246	247	247	247	248	249	249	249	249	250	250	250	250	252	252	252	ISO
1.1		■25	■40	■25	●20	●22	●22	●35	●35			●35	●35	■25	■25	■40	P 1
1.2	●40	■22	■40	■22	●18	■20	■20	■35	■35	●20	●20	●35	●35	■22	■22	■40	P 1
1.3	●32	■18	■32	■18	●14	■16	■16	■28	■28	■16	■16	■28	■28	■18	■18	■32	P 2
1.4		■16	■27	■16	●10	■12	■12	■24	■24	■12	■12	■24	■24	■16	■16	■27	P 3
1.5		■10	■13	■10	●5	●7	●7	●10	●10	●7	●7	●10	●10	■10	■10	■13	P 4
1.6		●5	●11	●5	●3												H 1
1.7																	H 3
1.8																	H 4
2.1			■8	●7	●6											■8	M 1
2.2			■7	●6	●4											■7	M 3
2.3			●5	●4	●3											●5	M 2
2.4																	S 2
3.1		●15	●22	●15		●12	●12	●18	●18							●22	K 1
3.2		●8	●18	●8		●7	●7	●15	●15							●18	K 2
3.3		●15	●25	●15		●10	●10	●20	●20							●25	K 3
3.4		●8	●18	●8		●5	●5	●15	●15							●18	K 4
4.1		●10	●15			●15	●15	●27	●27					●10	●10	●15	S 1
4.2		●5	●7									●10	●10	●5	●5	●7	S 2
4.3					●3	●4	●4	●5	●5			●7	●7				S 3
5.1		●12	●18		●10	●12	●12	●20	●20					●12	●12	●18	S 1
5.2		●5	●8		●4	●5	●5	●8	●8					●5	●5	●8	S 2
5.3																	S 3
6.1		■12	■18		●10	●12	●12	●18	●18								N 3
6.2	■45	●30	●45			●30	●30	●45	●45								N 4
6.3	●35	■20	■35		●15	●20	●20	●35	●35								N 3
6.4																	N 4
7.1	●35	■16			●10	●16	●16	●25	●25					■16	■16		N 1
7.2	■45	■35			●25	●35	●35	●45	●45	●30	●30	●35	●35	■35	■35		N 1
7.3	■30	■20	■30		●13	●20	●20	●30	●30	●15	●15	●20	●20	■20	■20	■30	N 1
7.4	■20	■15	■22		●10	●15	●15	●20	●20					■15	■15	■22	N 2
8.1	●30	●30			●20	●25	●25	●30	●30								O
8.2			●45														O
8.3																	O
9.1																	H
10.1																	O

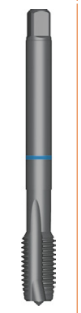
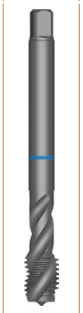
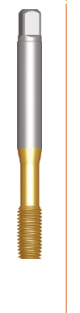
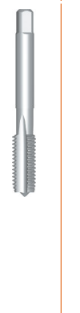
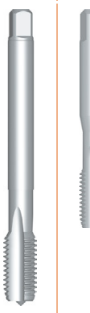
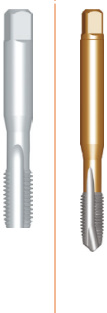
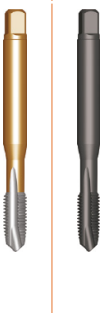
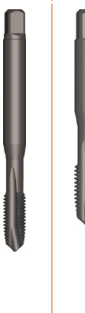
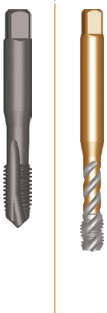
DORMER

	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	DIN 371≤10 376≥12	ISO 529	ISO 529	ISO 529	DORMER ISO	ISO 2283	DIN 2174
	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6HX
	2.5XD	2XD	3XD	2.5XD	2.5XD	2.5XD	2.5XD	3XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	1.5XD	2XD	3XD
	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS	HSS-E PM	HSS-E
	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3.5
	λ45°	λ40°	λ48°	λ45°	λ45°	λ40°	λ40°	λ48°	λ35°	λ35°	λ45°	λ45°	λ45°	λ30°	λ40°	
	ST	Cr	TiAlN Top		TiAlN Top	ST	Super B	Super B		Super B		TiN	ST	ST		
	EX016H	E298	E412	E260	E261	E238	E239	E414	E473	E474	E002	E002TIN	E003	E650	E605	E291
	M2 - M64	M3 - M30	M3 - M30	M3 - M20	M3 - M20	M3 - M30	M3 - M20	M3 - M20	M3 - M20	M3 - M20	M2 - M24	M3 - M20	M2 - M24	M3 - M16	M3 - M20	M1.6 - M16
AMG	252	254	255	256	256	257	257	258	259	259	260	260	260	261	262	263	ISO
1.1	■25	■25	■50						●25		■25	■40	■25	●25		■30	P 1
1.2	■22	■22	■50				●22		●22	●40	■22	■40	■22	●22	●18	■27	P 1
1.3	■18	■18	■35				●18	●32	●18	●32	■18	■32	■18	●18	●14	■23	P 2
1.4	■16	●16	■30	■16	■35		●16	●27			■16	■27	■16	●15	●10	■20	P 3
1.5	■10	●10	■16	●7	■20	●7	●10	●13			■10	■13	■10		●5		P 4
1.6				●4	●11												H 1
1.7																	H 3
1.8																	H 4
2.1	■7		●14			■8	■14	■16				■8	●7		●6		M 1
2.2	■6		●10			■7	■10	■12				■7	●6		●4		M 3
2.3	●4		●6			■5	■6	■8				●5	●4		●3		M 2
2.4								■6									S 2
3.1												●22					K 1
3.2												●18		●8			K 2
3.3												●25					K 3
3.4												●18					K 4
4.1											●10	●15					S 1
4.2				●2	●3						●5	●7					S 2
4.3																	S 3
5.1											●12	●18					S 1
5.2				●2	●3						●5	●8			●4		S 2
5.3																	S 3
6.1		■12							●12								N 3
6.2		●30							■30	■45				●30			N 4
6.3		■20							■20	●35				●20			N 3
6.4																	N 4
7.1			●16						■16	●35	■16			●18	●10	■26	N 1
7.2			●16						■35	■45	■35			●35	●25	■38	N 1
7.3			●35						■20	■30	■20	■30			●13	●22	N 1
7.4			●35						●15	■20	■15	■22			●10		N 2
8.1									■25	●30				●30			O
8.2																	O
8.3																	O
9.1																	H
10.1																	O

DORMER

	M	M	M	M	M	M	MF	MF	MF	MF	MF	MF	MF	MF	MF
	DIN 2174	DIN 2174	DIN 2174	DIN 2174	DIN 2174	DIN 2174	DIN 2181	DIN 374	DIN 371	DIN 374	ISO 529	DIN 374	DIN 374	DIN 374	DIN 374
	6HX	6HX	6HX	6HX	6GX	6GX	6H	6H	6H	6H	6H	6H	6H	6H	6H
	3XD	3.5XD	3.5XD	3XD	3XD	3XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	2.5XD	2.5XD	2.5XD	2.5XD
	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS	HSS-E PM	HSS-E PM	HSS-E PM	HSS	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM
	C 2-3.5	C 2-3.5	C 2-3.5	E 1.5-2	C 2-3.5	E 1.5-2	C 2-3	C 2-3	C 2-3	C 2-3		B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5
	TiN	TiN	TiN	TiN	TiN	TiN							TiN	ST	Cr
	E292	E294	E289	E293	E295	E296	E105	E268	E242	E290	E513	EP10	EP10TIN	EP11	E299
	M1.6 - M16	M3 - M16	M5 - M12	M3 - M16	M3 - M12	M3 - M10	M2.5 - M50	M4 - M50	M8 - M10	M12 - M24	M3 - M50	M4 - M30	M8 - M20	M4 - M30	M4 - M30
AMG	263	263	263	264	265	265	266	269	269	269	271	275	275	275	277	ISO
1.1	■55	■55	■55	■55	■55	■55	•1	•12	•12	•12	•7	■25	■40	■25	■25	P 1
1.2	■50	■50	■50	■50	■50	■50	•1	•10	•10	•10	•6	■22	■40	■22	■22	P 1
1.3	■45	■45	■45	■45	■45	■45	•1	•8	•8	•8	•5	■18	■32	■18	■18	P 2
1.4	■40	■40	■40	■40	■40	■40	•1	•6	•6	•6	•4	■16	■27	■16	•16	P 3
1.5	•20	•20	•20	•20	•20	•20	•1	•5	•5	•5	•3	■10	■13	■10	•10	P 4
1.6												•5	•11	•5		H 1
1.7																H 3
1.8																H 4
2.1	■18	■18	■18	■18	■18	■18							■8	•7		M 1
2.2	■15	■15	■15	■15	■15	■15							■7	•6		M 3
2.3	•10	•10	•10	•10	•10	•10							•5	•4		M 2
2.4																S 2
3.1							•1	•14	•14	•14	•12	•15	•22	•15		K 1
3.2							•1	•8	•8	•8	•7	•8	•18	•8		K 2
3.3							•1	•12	•12	•12	•10	•15	•25	•15		K 3
3.4							•1				•5	•8	•18	•8		K 4
4.1	■35	■35	■35	■35	■35	■35						•10	•15			S 1
4.2												•5	•7			S 2
4.3																S 3
5.1	■20	■20	■20	■20	■20	■20						•12	•18			S 1
5.2	•8	•8	•8	•8	•8	•8						•5	•8			S 2
5.3																S 3
6.1	•25	•25	•25	•25	•25	•25	•1				•4	■12	■18		■12	N 3
6.2							•1	•16	•16	•16	•10	•30	•45		•30	N 4
6.3	•40	•40	•40	•40	•40	•40	•1	•12	•12	•12	•7	■20	■35		■20	N 3
6.4							•1				•2					N 4
7.1	■55	■55	■55	■55	■55	■55						■16				N 1
7.2	■55	■55	■55	■55	■55	■55	•1	•20	•20	•20	•12	■35				N 1
7.3	■40	■40	■40	■40	■40	■40	•1	•12	•12	•12	•7	■20	■30			N 1
7.4	•25	•25	•25	•25	•25	•25	•1				•5	■15	■22			N 2
8.1												•30				O
8.2							•1	•8	•8	•8	•5		•45			O
8.3							•1				•3					O
9.1																H
10.1																O

DORMER

	MF	MF	MF	MF	MF	MF	MF	MF	MF	UNC	UNC	UNC	UNC	UNC	UNC	UNC	UNC
	DIN 374	ISO 529	DIN 374	DIN 374	DIN 374	DIN 374	DIN 374	ISO 529	DIN 2174	DIN 352	DIN 371	DIN 376	ISO 529	DIN 2184-1	DIN 2184-1	ISO 529	DIN 2184-1
	6H	6H	6H	6H	6H	6H	6H	6H	6HX	2B	2B	2B	2B	2B	2B	2B	2B
	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2XD	2XD	2.5XD	3XD	1.5XD	1.5XD	1.5XD	1.5XD	2.5XD	2.5XD	2.5XD	2.5XD
	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E	HSS	HSS-E PM	HSS-E PM	HSS	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM
	B 3.5-5	B 3.5-5	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3.5	C 2-3	C 2-3	C 2-3		B 3.5-5	B 3.5-5	B 3.5-5	C 2-3
			λ45°	λ45°	λ45°	λ40°	λ40°	λ45°									λ45°
	ST	ST		TiN	ST	Cr	ST	ST	TiN						ST	ST	
																	
	SHARK LINE					SHARK LINE	SHARK LINE										
	E384	E011	EX10	EX10TIN	EX11	E300	E383	E013	E288	E108	E225	E275	E515	EP20	EP21	E021	EX20
	M6 - M20	M4 - M24	M4 - M30	M8 - M20	M4 - M30	M4 - M30	M6 - M20	M4 - M22	M5 - M12	No.5 - 1"	No.2 - 1/4	5/16 - 1.1/2	No.1 - 2"	No.4 - 1"	No.4 - 1"	No.2 - 1"	No.4 - 1"

AMG	278	279	280	280	280	282	283	284	285	286	287	287	288	290	290	291	292	ISO
1.1		■25	■25	■40	■25	■25		■25	■55	●1	●12	●12	●7	■25	■25	■25	■25	P 1
1.2		■22	■22	■40	■22	■22		■22	■50	●1	●10	●10	●6	■22	■22	■22	■22	P 1
1.3		■18	■18	■32	■18	■18		■18	■45	●1	●8	●8	●5	■18	■18	■18	■18	P 2
1.4		■16	■16	■27	■16	●16		■16	■40	●1	●6	●6	●4	■16	■16	■16	■16	P 3
1.5	●7	■10	■10	■13	■10	●10	●7	■10	●20	●1	●5	●5	●3	■10	■10	■10	■10	P 4
1.6		●5												●5	●5	●5		H 1
1.7																		H 3
1.8																		H 4
2.1	■8	●7		■8	■7		■8	●7	■18						●7	●7		M 1
2.2	■7	●6		■7	■6		■7	●6	■15						●6	●6		M 3
2.3	■5	●4		●5	●4		■5	●4	●10						●4	●4		M 2
2.4																		S 2
3.1		●15		●22						●1	●14	●14	●12	●15	●15	●15		K 1
3.2		●8		●18						●1	●8	●8	●7	●8	●8	●8		K 2
3.3		●15		●25						●1	●12	●12	●10	●15	●15	●15		K 3
3.4		●8		●18						●1			●5	●8	●8	●8		K 4
4.1			●10	●15					■35					●10			●10	S 1
4.2			●5	●7										●5			●5	S 2
4.3																		S 3
5.1			●12	●18					■20					●12			●12	S 1
5.2			●5	●8					●8					●5			●5	S 2
5.3																		S 3
6.1						■12			●25	●1			●4	■12				N 3
6.2						●30				●1	●16	●16	●10	●30				N 4
6.3						■20			●40	●1	●12	●12	●7	■20				N 3
6.4										●1			●2					N 4
7.1			■16						■55					■16			■16	N 1
7.2			■35						■55	●1	●20	●20	●12	■35			■35	N 1
7.3			■20	■30					■40	●1	●12	●12	●7	■20			■20	N 1
7.4			■15	■22					●25	●1			●5	■15			■15	N 2
8.1														●30				O
8.2										●1	●8	●8	●5					O
8.3										●1			●3					O
9.1																		H
10.1																		O

DORMER

	UNC	UNC	UNC	UNC	UNF	UNF	UNF	UNF	UNF	UNF	UNF	UNF	UNF	UNF	UNF	UNF	UN	BSW
	DIN 2184-1	ISO 529	DORMER DIN	DIN 2184-1	DIN 2181	DIN 371	DIN 374	ISO 529	DIN 2184-1	DIN 2184-1	ISO 529	DIN 2184-1	DIN 2184-1	ISO 529	DORMER DIN	DIN 2184-1	ISO 529	DIN 351
	2B	2B	2B	2BX	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	Medium	2BX	2B	Medium
	2.5XD	2.5XD	1.5XD	3.5XD	1.5XD	1.5XD	1.5XD	1.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	1.5XD	3.5XD	1.5XD	1.5XD
	HSS-E PM	HSS-E PM	HSS	HSS-E	HSS	HSS-E PM	HSS-E PM	HSS	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS	HSS-E	HSS	HSS
	C 2-3	C 2-3	C 2-3	C 2-3.5	C 2-3	C 2-3	C 2-3		C 2-3	C 2-3	B 3.5-5	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3.5	C 2-3	C 2-3
	λ45°	λ45°	λ30°									λ45°	λ45°	λ45°	λ30°			
	ST	ST	ST	TiN						ST	ST		ST	ST	ST	TiN		
																		
	EX21	E023	E651	E287	E111	E229	E278	E524	EP30	EP31	E031	EX30	EX31	E033	E654	E286	E570	E115
	No.4 - 1"	No.2 - 1"	No.6 - 5/8	No.4 - 1/2	No.5 - 1"	No.2 - 1/4	5/16 - 1.1/2	No.0 - 1.1/2	No.8 - 1"	No.8 - 1"	No.8 - 1"	No.8 - 1"	No.8 - 1"	No.8 - 1"	No.8 - 5/8	No.4 - 1/2	1/4 - 1.5/16	1/8 - 1"

AMG	292	293	294	295	296	297	297	298	300	300	301	302	302	303	304	305	306	307	ISO
1.1	■25	■25	●25	■55	●1	●12	●12	●7	■25	■25	■25	■25	■25	■25	●25	■55	●7	●1	P 1
1.2	■22	■22	●22	■50	●1	●10	●10	●6	■22	■22	■22	■22	■22	■22	●22	■50	●6	●1	P 1
1.3	■18	■18	●18	■45	●1	●8	●8	●5	■18	■18	■18	■18	■18	■18	●18	■45	●5	●1	P 2
1.4	■16	■16	●15	■40	●1	●6	●6	●4	■16	■16	■16	■16	■16	■16	●15	■40	●4	●1	P 3
1.5	■10	■10		●20	●1	●5	●5	●3	■10	■10	■10	■10	■10	■10		●20	●3	●1	P 4
1.6									●5	●5	●5			●5					H 1
1.7																			H 3
1.8																			H 4
2.1	■7	●7		■18						●7	●7		■7	●7		■18			M 1
2.2	■6	●6		■15						●6	●6		■6	●6		■15			M 3
2.3	●4	●4		●10						●4	●4		●4	●4		●10			M 2
2.4																			S 2
3.1					●1	●14	●14	●12	●15	●15	●15						●12	●1	K 1
3.2			●8		●1	●8	●8	●7	●8	●8	●8				●8		●7	●1	K 2
3.3					●1	●12	●12	●10	●15	●15	●15						●10	●1	K 3
3.4					●1			●5	●8	●8	●8						●5	●1	K 4
4.1				■35					●10			●10				■35			S 1
4.2									●5			●5							S 2
4.3																			S 3
5.1				■20					●12			●12				■20			S 1
5.2				●8					●5			●5				●8			S 2
5.3																			S 3
6.1				●25	●1			●4	■12							●25	●4	●1	N 3
6.2			●30		●1	●16	●16	●10	●30						●30		●10	●1	N 4
6.3			●20	●40	●1	●12	●12	●7	■20						●20	●40	●7	●1	N 3
6.4					●1			●2									●2	●1	N 4
7.1			●18	■55					■16			■16			●18	■55			N 1
7.2			●35	■55	●1	●20	●20	●12	■35			■35			●35	■55	●12	●1	N 1
7.3				■40	●1	●12	●12	●7	■20			■20				■40	●7	●1	N 1
7.4				●25	●1			●5	■15			■15				●25	●5	●1	N 2
8.1			●30						●30						●30				O
8.2					●1	●8	●8	●5									●5	●1	O
8.3					●1			●3									●3	●1	O
9.1																			H
10.1																			O

DORMER

	BSW	BSW	BSW	BSF	BSF	BSF	BA	BA	BA	G	G	G	G	G	G	G
	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	DIN 5157	DIN 5156	ISO 2284	DIN 5156	DIN 5156	DORMER ISO	DIN 5156
	Medium	Medium	Medium	Medium	Medium	Medium	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
	1.5XD	2.5XD	2XD	1.5XD	2.5XD	2XD	1.5XD	2.5XD	2XD	1.5XD	1.5XD	1.5XD	2.5XD	2.5XD	2.5XD	2.5XD
	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS-E PM	HSS	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM
		B 3.5-5	C 2-3		B 3.5-5	C 2-3		B 3.5-5	C 2-3	C 2-3	C 2-3		B 3.5-5	B 3.5-5	B 3.5-5	C 2-3
			λ40°			λ40°			λ40°							λ45°
		ST	ST		ST	ST		ST	ST					ST	ST	
																
	E531	E534	E533	E536	E539	E538	E542	E545	E544	E119	E282	E547	EP40	EP41	E041	EX40
	1/8 - 1"	1/8 - 3/4	1/8 - 3/4	3/16 - 1"	1/4 - 1/2	1/4 - 1/2	No.10 - No.0	No.10 - No.2	No.8 - No.2	1/8 - 3"	1/8 - 1.1/2	1/8 - 2"	1/8 - 1"	1/8 - 1"	1/8 - 3/4	1/8 - 1.1/2

AMG	308	310	311	312	313	314	315	316	317	318	319	320	321	321	322	323	ISO
1.1	•7	■20		•22	■20		•7	■20		•1	•12	•7	■25	■25	■25	■25	P 1
1.2	•6	■18	■18	•20	■18	■18	•6	■18	■18	•1	•10	•6	■22	■22	■22	■22	P 1
1.3	•5	■14	■14	•16	■14	■14	•5	■14	■14	•1	•8	•5	■18	■18	■18	■18	P 2
1.4	•4	■10	■10	•12	■10	■10	•4	■10	■10	•1	•6	•4	■16	■16	■16	■16	P 3
1.5	•3	•5	•5	•7	•5	•5	•3	•5	•5	•1	•5	•3	■10	■10	■10	■10	P 4
1.6		•3		•4	•3			•3					•5	•5	•5		H 1
1.7																	H 3
1.8																	H 4
2.1		■6	■6	•7	■6	■6		•6	■6					•7	•7		M 1
2.2		■4	■4	•5	■4	■4		•4	■4					•6	•6		M 3
2.3		■3	■3	•7	■3	■3		•3	■3					•4	•4		M 2
2.4																	S 2
3.1	•12			•12			•12			•1	•14	•12	•15	•15	•15		K 1
3.2	•7			•7			•7			•1	•8	•7	•8	•8	•8		K 2
3.3	•10			•10			•10			•1	•12	•10	•15	•15	•15		K 3
3.4	•5			•5			•5			•1		•5	•8	•8	•8		K 4
4.1													•10			•10	S 1
4.2													•5			•5	S 2
4.3		•3			•3			•3									S 3
5.1		•10			•10			•10					•12			•12	S 1
5.2		•4	•4		•4	•4		•4	•4				•5			•5	S 2
5.3																	S 3
6.1	•4	•10		■12	•10		•4	•10		•1		•4	■12				N 3
6.2	•10			•30			•10			•1	•16	•10	•30				N 4
6.3	•7	•15		•20	•15		•7	•15		•1	•12	•7	■20				N 3
6.4	•2			•4			•2			•1		•2					N 4
7.1		•10	•10		•10	•10		•10	•10				■16			■16	N 1
7.2	•12	•25	•25	•35	•25	•25	•12	•25	•25	•1	•20	•12	■35			■35	N 1
7.3	•7	•13	•13	•20	•13	•13	•7	•13	•13	•1	•12	•7	■20			■20	N 1
7.4	•5	•10	•10	•15	•10	•10	•5	•10	•10	•1		•5	■15			■15	N 2
8.1		•20			•20			•20					•30			•30	O
8.2	•5			•12			•5			•1	•8	•5					O
8.3	•3			•7			•3			•1		•3					O
9.1																	H
10.1																	O

	G	G	G	EGM	EGM	Rc	NPT	NPT	NPT	NPT	NPT	NPTF	NPSF	NPSF	NPSM	PG
	DIN 5156	DIN 5156	DORMER ISO	DORMER ISO	DORMER ISO	ISO 2284	DORMER ANSI	ANSI B94.9	ANSI B94.9	ANSI B94.9	ANSI	ANSI B94.9	ANSI B94.9	ANSI B94.9	ANSI B94.9	DIN 40432
	Normal	Normal	Normal	6H	6H	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
	2.5XD	2XD	2.5XD	1.5XD	2XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD
	HSS-E PM	HSS-E PM	HSS-E PM	HSS	HSS	HSS	HSS-E PM	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS
	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3		C 2-3	C 2-3	C 2-3	C 2-3	
	λ45°	λ40°	λ45°		λ40°						λ27°					
	ST	ST	ST						TiN					TiN		
	EX41	E382	E043	E620	E621	E550	E714	E710	E721	E711	E653	E712	E709	E720	E708	E243
	1/8 - 1.1/2	1/8 - 1"	1/8 - 3/4	M3 - M16	M3 - M16	1/8 - 2"	1/8 - 1"	1/16 - 2"	1/8 - 1"	1/8 - 1.1/2	1/8 - 1"	1/16 - 1.1/4	1/8 - 3/4	1/8 - 3/4	1/8 - 1"	No.7 - No.36
AMG	323	324	325	326	327	328	329	330	330	331	332	333	334	334	335	336	ISO
1.1	■25		■25	●7		●22	●4	●4	●4	●4	●25	●4	●4	●4	●4	●12	P 1
1.2	■22		■22	●6	●18	●20	●4	●4	●4	●4	●22	●4	●4	●4	●4	●10	P 1
1.3	■18		■18	●5	●14	●16	■6	●6	■6	■6	●18	■6	■6	■6	■6	●8	P 2
1.4	■16		■16	●4	●10	●12	■5	●5	■5	■5	●15	■5	■5	■5	■5	●6	P 3
1.5	■10	●7	■10	●3	●5	●7	●3	●3	●3	●3		●3	●3	●3	●3	●5	P 4
1.6			●5			●4											H 1
1.7																	H 3
1.8																	H 4
2.1	■7	■8	●7		●6	●7											M 1
2.2	■6	■7	●6		●4	●5											M 3
2.3	●4	■5	●4		●3	●7											M 2
2.4																	S 2
3.1				●12		■12	●6	●6	■6	●6		●6	●6	■6	●6	●14	K 1
3.2				●7		■7	●4	●4	■4	●4	●8	●4	●4	■4	●4	●8	K 2
3.3				●10		■10	●6	●6	■6	●6		●6	●6	■6	●6	●12	K 3
3.4				●5		■5	●4	●4	■4	●4		●4	●4	■4	●4		K 4
4.1																	S 1
4.2																	S 2
4.3																	S 3
5.1																	S 1
5.2					●4												S 2
5.3																	S 3
6.1				●4		■12											N 3
6.2				●10		●30	●11	●11	●11	●11	●30	●11	●11	●11	●11	●16	N 4
6.3				●7		●20					●20					●12	N 3
6.4				●2		●4											N 4
7.1					●10						●18						N 1
7.2				●12	●25	●35					●35					●20	N 1
7.3				●7	●13	●20	●11	●11	●11	●11		●11	●11	●11	●11	●12	N 1
7.4				●5	●10	●15	●7	●7	●7	●7		●7	●7	●7	●7		N 2
8.1							●4	●4	●4	●4	●30	●4	●4	●4	●4		O
8.2				●5		●12										●8	O
8.3				●3		●7											O
9.1																	H
10.1																	O

DORMER







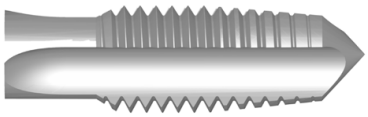


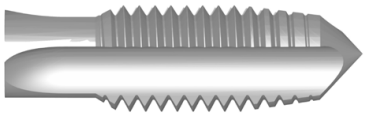


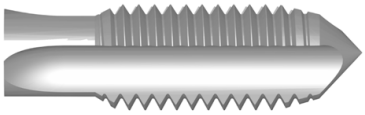


	L119	L126	L113	L114	L115	L000	L001	L002	L120	L110	L112	
	Set	Set	Set	Set	Set	Set	Set	Set	Set	16.00 - 4“	BT1 - No.7	
AMG	337	338	339	340	341	342	343	344	345	348	349	ISO
1.1												P 1
1.2												P 1
1.3												P 2
1.4												P 3
1.5												P 4
1.6												H 1
1.7												H 3
1.8												H 4
2.1												M 1
2.2												M 3
2.3												M 2
2.4												S 2
3.1												K 1
3.2												K 2
3.3												K 3
3.4												K 4
4.1												S 1
4.2												S 2
4.3												S 3
5.1												S 1
5.2												S 2
5.3												S 3
6.1												N 3
6.2												N 4
6.3												N 3
6.4												N 4
7.1												N 1
7.2												N 1
7.3												N 1
7.4												N 2
8.1												O
8.2												O
8.3												O
9.1												H
10.1												O

NO1 - NO9

NO1 =  A 6-8 

NO2 =  B 4-6 

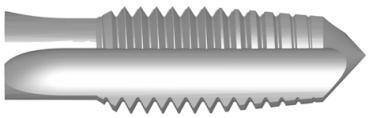
NO3 =  C 2-3 

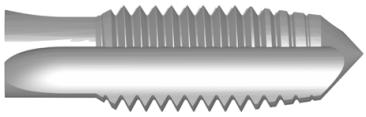
ISO

NO6 = NO1 + NO2 + NO3

NO7 = NO2 + NO3 *

ANSI NO6 = NO1 (taper) + NO2 (plug) + NO3 (bottoming)

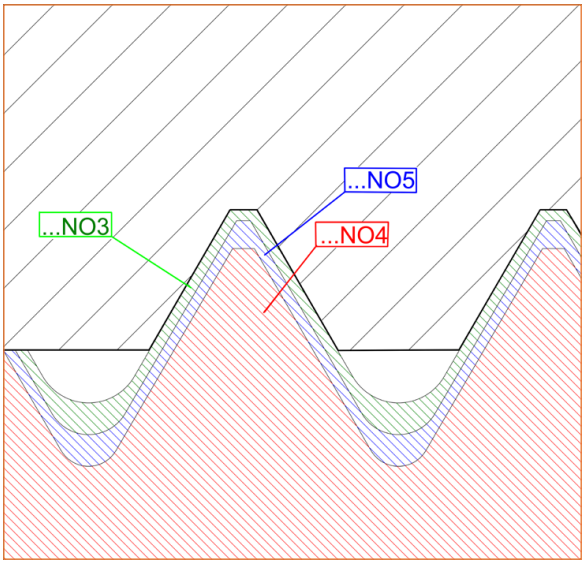
NO4 =  A 6-8 

NO5 =  B 3.5-5 

DIN ISO

NO8 = NO3 + NO4 + NO5

NO9 = NO3 + NO4



* E550 E710 NO7 = NO3 (truncated) + NO3

DORMER

T200

- M Maskingängtappar Raka spår
- M Konekierretapit, suorauraiset
- M Maskingjengetapp Rett sportapp
- M Maskingevindtappe Lige spor

T201

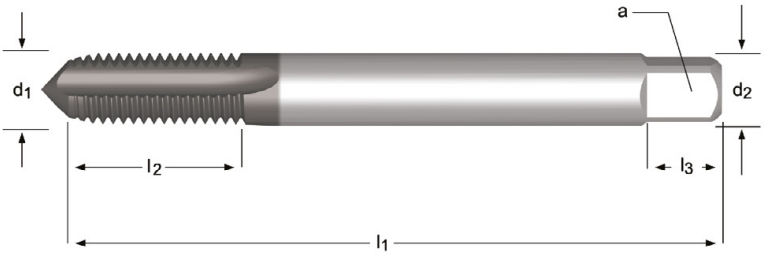
- M Rakspårstapp med inv. kylkanaler
- M Konekierretapit, suorauraiset, jäähdytyskanavat
- M Maskingjengetapp Rette spor, Innvendig kjøling
- M Maskintap lige spor og indvendig køl

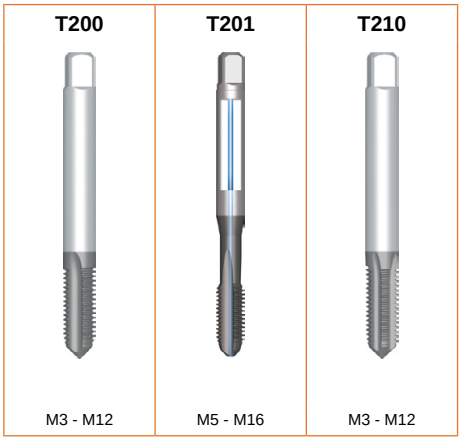
T210

- M Maskingängtappar Raka spår
- M Konekierretapit, suorauraiset
- M Maskingjengetapp Rett sportapp
- M Maskingevindtappe Lige spor

T200	▪	1.7
	•	1.8 3.1 3.2 6.4 7.4 8.2 8.3 10.1
T201	▪	3.1 3.2 7.4 10.1
	•	3.3 3.4 6.4 7.3 8.2 8.3
T210	▪	1.8
	•	1.7

T200	M	DIN 371	6H		2XD	HM	C 2-3			TiCN	
T201	M	DIN 371≤10 376≥12	6HX		2.5XD	HM	C 2-3			Super B	
T210	M	DIN 371	6HX		2XD	HM	C 2-3			TiCN	





M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	◪ a mm	l_3 mm	z	↔	l_4 mm	T200	T201	T210
3	0.50	56	10	3.5	2.7	6	3	2.6	-	T200M3		
3	0.50	56	8	3.5	2.7	6	4	2.6				T210M3
4	0.70	63	11	4.5	3.4	6	5	3.4				T210M4
4	0.70	63	13	4.5	3.4	6	3	3.4	-	T200M4		
5	0.80	70	13.5	6.0	4.9	8	5	4.3				T210M5
5	0.80	70	16	6.0	4.9	8	3	4.3	-	T200M5		
5	0.80	70	16	6.0	4.9	8	4	4.3	-		T201M5	
6	1.00	80	16.5	6.0	4.9	8	5	5.1				T210M6
6	1.00	80	19	6.0	4.9	8	3	5.1	30	T200M6		
6	1.00	80	19	6.0	4.9	8	4	5.1	30		T201M6	
8	1.25	90	21.5	8.0	6.2	9	5	6.9				T210M8
8	1.25	90	22	8.0	6.2	9	3	6.9	35	T200M8		

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z		l_4 mm	T200	T201	T210
8	1.25	90	22	8.0	6.2	9	4	6.9	35		T201M8	
10	1.50	100	24	10.0	8.0	11	3	8.7	39	T200M10		
10	1.50	100	24	10.0	8.0	11	4	8.7	39		T201M10	
10	1.50	100	27	10.0	8.0	11	5	8.7				T210M10
12	1.75	110	23	9.0	7.0	10	3	10.4	-	T200M12		
12	1.75	110	23	9.0	7.0	10	4	10.4	-		T201M12	
12	1.75	110	32	12.0	9.0	12	6	10.4				T210M12
16	2.00	110	25	12.0	9.0	12	4	14.25	-		T201M16	

DORMER

T205

- M Maskingängtappar Spiralspår 15°
- M Konekierretapit, lastua nostavat urat 15°
- M Maskingjengetapp Spiral spor 15°
- M Maskingevindtappe Spiralspor 15°

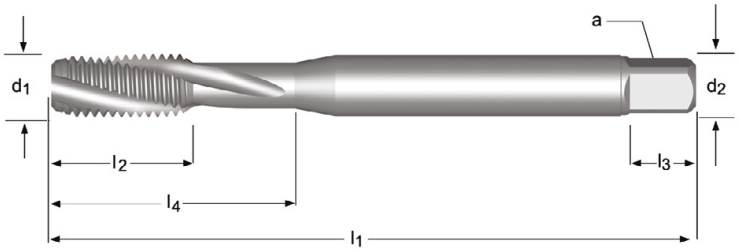
T206

- M Maskingängtappar Spiralspår 15° med inv. kylkanaler
- M Konekierretapi, lastua nostavat urat 15°, jäähdytyskanavat
- M Maskingjengetapp Spiralspor 15°, Innvendig kjøling
- M Maskintap spiralspor 15°, indvendig køl

T205; T206

▪	3.3	3.4	7.3	7.4
•	3.1	3.2	8.2	8.3

T205	M	DIN 371≤10 376≥12	6H		2XD	HM	C 2-3	λ15°			
T206	M	DIN 371≤10 376≥12	6H		2.5XD	HM	C 2-3	λ15°			





T205

M3 - M12



T206

M5 - M12

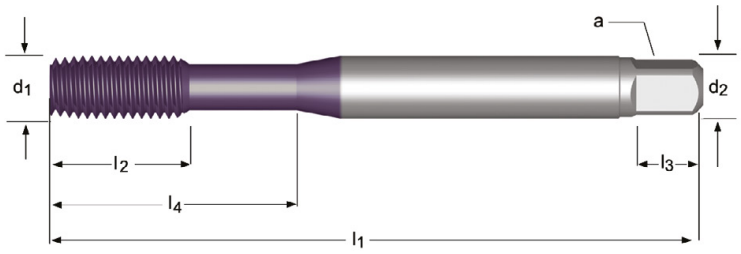
M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	▨ a mm	l_3 mm	z	↔	l_4 mm	T205	T206
3	0.50	56	10	3.5	2.7	6	3	2.6	-	T205M3	
4	0.70	63	13	4.5	3.4	6	3	3.4	-	T205M4	
5	0.80	70	16	6.0	4.9	8	3	4.3	-	T205M5	T206M5
6	1.00	80	19	6.0	4.9	8	3	5.1	30	T205M6	T206M6
8	1.25	90	22	8.0	6.2	9	3	6.9	35	T205M8	T206M8
10	1.50	100	24	10.0	8.0	11	3	8.7	39	T205M10	T206M10
12	1.75	110	23	9.0	7.0	10	3	10.4	-	T205M12	T206M12

T215

- M Maskinpressgängtappar
- M Konekierretapit Manglaavat
- M Maskinpressgjengtapper
- M Maskinrulletap

T215													
	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	5.1	7.1	7.2	7.3
	•	2.4	5.2	6.1	6.3								

T215	M	DIN 2174	6HX		3XD	HM	C 2-3.5			TiCN	





T215

M3 - M10

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊿ a mm	l_3 mm	z		l_4 mm	T215
3	0.50	56	10	3.5	2.7	6	4	2.8	-	T215M3
4	0.70	63	13	4.5	3.4	6	5	3.7	-	T215M4
5	0.80	70	16	6.0	4.9	8	5	4.6	-	T215M5
6	1.00	80	19	6.0	4.9	8	5	5.5	30	T215M6
8	1.25	90	22	8.0	6.2	9	5	7.4	35	T215M8
10	1.50	100	24	10.0	8.0	11	5	9.3	39	T215M10

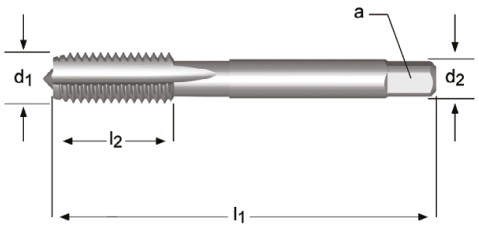
DORMER

E100
E102
E101

- M Handgängtappar Raka spår
- M Käsikierretapit, suorauriset
- M Handgjengetapper Rett sportapp
- M Håndtappe Lige spor

E100	•	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.2	7.3	7.4	8.2	8.3	
E102	•	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2
		6.3	6.4	7.2	7.3	7.4	8.2	8.3												
E101	•	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.2	7.3	7.4	8.2	8.3	

E100	M	DIN 352	6H		1.5XD	HSS	C 2-3				L119 331	L120 339
E102	M	DIN 352	6HX		1.5XD	HSS-E	C 2-3			ST		
E101	M	DIN 352	6H		1.5XD	HSS	C 2-3					



E100	E102	E101
		
M1.6 - M52	M3 - M30	M4 - M16

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	◹ a mm	z		E100	E102	E101
1.6	0.35	32	7	2.5	2.1	3	1.25	E100M1.6NO3		
1.6	0.35	32	7	2.5	2.1	3	1.25	E100M1.6NO8		
2	0.40	36	8	2.8	2.1	3	1.6	E100M2NO3		
2	0.40	36	8	2.8	2.1	3	1.6	E100M2NO8		
2.5	0.45	40	9	2.8	2.1	3	2.05	E100M2.5NO3		
2.5	0.45	40	9	2.8	2.1	3	2.05	E100M2.5NO8		
3	0.50	40	10	3.5	2.7	3	2.5	E100M3NO3		
3	0.50	40	10	3.5	2.7	3	2.5	E100M3NO8	E102M3NO8 [1)]	
3.5	0.60	45	10	4.0	3.0	3	2.9	E100M3.5NO3		
3.5	0.60	45	10	4.0	3.0	3	2.9	E100M3.5NO8		
4	0.70	45	12	4.5	3.4	3	3.3	E100M4NO3		E101M4NO3
4	0.70	45	12	4.5	3.4	3	3.3	E100M4NO8	E102M4NO8 [1)]	E101M4NO8
5	0.80	50	14	6.0	4.9	3	4.2	E100M5NO3		E101M5NO3
5	0.80	50	14	6.0	4.9	3	4.2	E100M5NO8	E102M5NO8 [1)]	E101M5NO8
6	1.00	56	16	6.0	4.9	3	5	E100M6NO3		E101M6NO3
6	1.00	56	16	6.0	4.9	3	5	E100M6NO8	E102M6NO8 [1)]	E101M6NO8
7	1.00	56	16	6.0	4.9	3	6	E100M7NO3		
7	1.00	56	16	6.0	4.9	3	6	E100M7NO8		
8	1.25	63	19	6.0	4.9	3	6.8	E100M8NO3		E101M8NO3
8	1.25	63	19	6.0	4.9	3	6.8	E100M8NO8	E102M8NO8 [1)]	E101M8NO8
9	1.25	63	20	7.0	5.5	3	7.8	E100M9NO3		
9	1.25	63	20	7.0	5.5	3	7.8	E100M9NO8		
10	1.50	70	22	7.0	5.5	3	8.5	E100M10NO3		E101M10NO3
10	1.50	70	22	7.0	5.5	3	8.5	E100M10NO8	E102M10NO8 [1)]	E101M10NO8

NO1 - NO9 219

[1)] NO4 med styrtapp / NO4, ohjaimella / NO4 med styring / NO4 med styr

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	▨ a mm	z	↔	E100	E102	E101
12	1.75	75	25	9.0	7.0	4	10.3	E100M12NO3		E101M12NO3
12	1.75	75	25	9.0	7.0	4	10.3	E100M12NO8	E102M12NO8 [1)]	E101M12NO8
14	2.00	80	25	11.0	9.0	4	12	E100M14NO3		E101M14NO3
14	2.00	80	25	11.0	9.0	4	12	E100M14NO8	E102M14NO8 [1)]	E101M14NO8
16	2.00	80	25	12.0	9.0	4	14	E100M16NO3		E101M16NO3
16	2.00	80	25	12.0	9.0	4	14	E100M16NO8	E102M16NO8 [1)]	E101M16NO8
18	2.50	95	32	14.0	11.0	4	15.5	E100M18NO3		
18	2.50	95	32	14.0	11.0	4	15.5	E100M18NO8	E102M18NO8 [1)]	
20	2.50	95	32	16.0	12.0	4	17.5	E100M20NO3		
20	2.50	95	32	16.0	12.0	4	17.5	E100M20NO8	E102M20NO8 [1)]	
22	2.50	100	34	18.0	14.5	4	19.5	E100M22NO3		
22	2.50	100	34	18.0	14.5	4	19.5	E100M22NO8		
24	3.00	110	38	18.0	14.5	4	21	E100M24NO3		
24	3.00	110	38	18.0	14.5	4	21	E100M24NO8	E102M24NO8 [1)]	
27	3.00	110	38	20.0	16.0	4	24	E100M27NO3		
27	3.00	110	38	20.0	16.0	4	24	E100M27NO8	E102M27NO8 [1)]	
30	3.50	125	45	22.0	18.0	4	26.5	E100M30NO3		
30	3.50	125	45	22.0	18.0	4	26.5	E100M30NO8	E102M30NO8 [1)]	
33	3.50	125	50	25.0	20.0	4	29.5	E100M33NO3		
33	3.50	125	50	25.0	20.0	4	29.5	E100M33NO8		
36	4.00	150	56	28.0	22.0	4	32	E100M36NO3		
36	4.00	150	56	28.0	22.0	4	32	E100M36NO8		
39	4.00	150	60	32.0	24.0	4	35	E100M39NO3		
39	4.00	150	60	32.0	24.0	4	35	E100M39NO8		
42	4.50	150	60	32.0	24.0	4	37.5	E100M42NO3		
42	4.50	150	60	32.0	24.0	4	37.5	E100M42NO8		
45	4.50	160	65	36.0	29.0	6	40.5	E100M45NO3		
45	4.50	160	65	36.0	29.0	6	40.5	E100M45NO8		
48	5.00	180	70	36.0	29.0	6	43	E100M48NO3		
48	5.00	180	70	36.0	29.0	6	43	E100M48NO8		
52	5.00	180	70	40.0	32.0	6	47	E100M52NO3		
52	5.00	180	70	40.0	32.0	6	47	E100M52NO8		

NO1 - NO9
219

[1)] NO4 med styrtapp/ NO4, ohjaimella / NO4 med styring / NO4 med styr

DORMER

E200 • M Maskingängtappar Raka spår — Levereras som HSS-E tills nytt lager finns

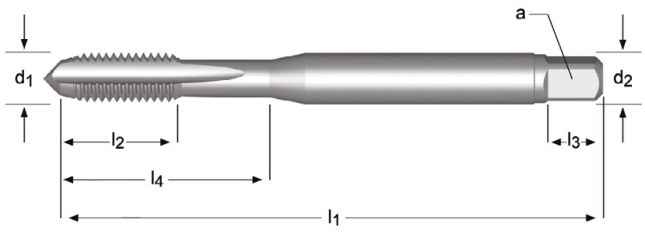
E250 • M Konekierretapit, suorauraiset — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.

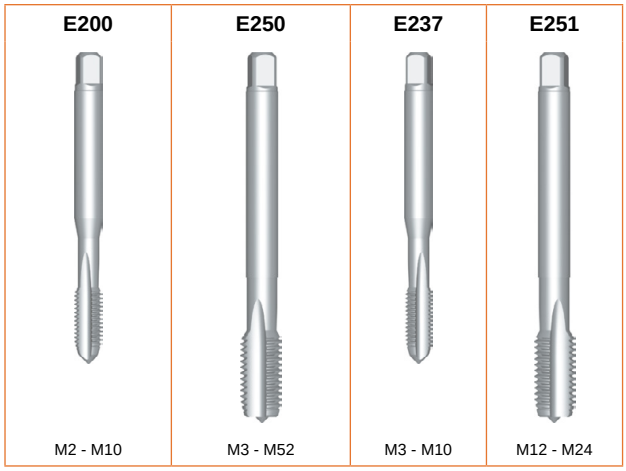
E237 • M Maskingjengetapp Rett sportapp — Leveres i HSS-E til ny lager tilgjengelig

E251 • M Maskingevindtappe Lige spor — Leveres i HSS-E til nyt lager er tilgængeligt

E200; E250; E237; E251 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 6.2 6.3 7.2 7.3 8.2

E200	M	DIN 371	6H		1.5XD	HSS-E PM	A 6-8 C 2-3					
E250	M	DIN 376	6H		1.5XD	HSS-E PM	A 6-8 C 2-3					
E237	M	DIN 371	6H		1.5XD	HSS-E PM	C 2-3					
E251	M	DIN 376	6H		1.5XD	HSS-E PM	C 2-3					





M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z	↔	l_4 mm	E200	E250	E237	E251
2	0.40	45	6	2.8	2.1	5	3	1.6	9	E200M2			
2.5	0.45	50	8	2.8	2.1	5	3	2.05	12.5	E200M2.5			
3	0.50	56	10	2.2	2.1	5	3	2.5			E250M3		
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E200M3		E237M3	
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E200M3NO1			
4	0.70	63	12	2.8	2.1	5	3	3.3			E250M4		
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E200M4		E237M4	
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E200M4NO1			
5	0.80	70	13	3.5	2.7	6	3	4.2			E250M5		
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E200M5		E237M5	
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E200M5NO1			
6	1.00	80	15	4.5	3.4	6	3	5.0			E250M6		
6	1.00	80	15	6.0	4.9	8	3	5	30	E200M6		E237M6	
6	1.00	80	15	4.5	3.4	6	3	5.0			E250M6NO1		
6	1.00	80	15	6.0	4.9	8	3	5	30	E200M6NO1			
8	1.25	90	18	6.0	4.9	8	3	6.8			E250M8		
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E200M8		E237M8	
8	1.25	90	18	6.0	4.9	8	3	6.8			E250M8NO1		
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E200M8NO1			
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E200M10		E237M10	
10	1.50	100	20	7.0	5.5	8	3	8.5			E250M10		
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E200M10NO1			
12	1.75	110	23	9.0	7.0	10	3	10.3			E250M12		
12	1.75	110	23	9.0	7.0	10	4	10.3					E251M12

NO1 - NO9
219

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z	↔	l_4 mm	E200	E250	E237	E251
12	1.75	110	23	9.0	7.0	10	3	10.3			E250M12NO1		
14	2.00	110	25	11.0	9.0	12	3	12.0			E250M14		
14	2.00	110	25	11.0	9.0	12	4	12.0					E251M14
14	2.00	110	25	11.0	9.0	12	3	12.0			E250M14NO1		
16	2.00	110	25	12.0	9.0	12	3	14.0			E250M16		
16	2.00	110	25	12.0	9.0	12	4	14.0					E251M16
16	2.00	110	25	12.0	9.0	12	3	14.0			E250M16NO1		
18	2.50	125	30	14.0	11.0	14	3	15.5			E250M18		
18	2.50	125	30	14.0	11.0	14	4	15.5					E251M18
18	2.50	125	30	14.0	11.0	14	3	15.5			E250M18NO1		
20	2.50	140	30	16.0	12.0	15	3	17.5			E250M20		
20	2.50	140	30	16.0	12.0	15	4	17.5					E251M20
20	2.50	140	30	16.0	12.0	15	3	17.5			E250M20NO1		
22	2.50	140	34	18.0	14.5	17	4	19.5			E250M22		E251M22
22	2.50	140	34	18.0	14.5	17	4	19.5			E250M22NO1		
24	3.00	160	38	18.0	14.5	17	4	21.0			E250M24		E251M24
27	3.00	160	38	20.0	16.0	19	4	24.0			E250M27		
30	3.50	180	45	22.0	18.0	21	4	26.5			E250M30		
33	3.50	180	50	25.0	20.0	23	4	29.5			E250M33		
36	4.00	200	55	28.0	22.0	25	4	32.0			E250M36		
39	4.00	200	60	32.0	24.0	27	4	35.0			E250M39		
42	4.50	200	60	32.0	24.0	27	4	37.5			E250M42 [1]		
45	4.50	220	65	36.0	29.0	32	6	40.5			E250M45 [1]		
48	5.00	250	70	36.0	29.0	32	6	43.0			E250M48 [1]		
52	5.00	250	70	40.0	32.0	35	6	47.0			E250M52 [1]		



1) HSS-E

DORMER

E201
E252
E390

- M Maskintapp rakspårig, Vit Shark
- M Konekierretapit, suorauraiset, Valkoinen Shark
- M Maskingjengetapp Rett sportapp Hvit Shark
- M Maskingevindtappe Lige spor , Hvid Shark

Levereras som HSS-E tills nytt lager finns

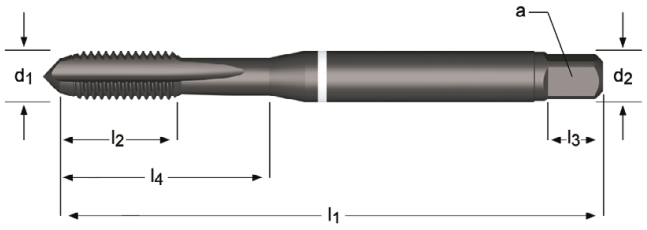
Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.

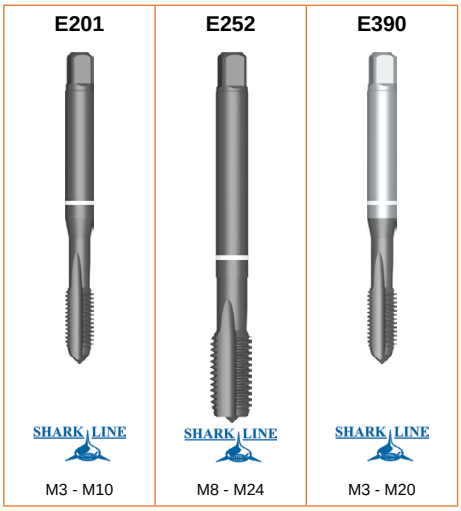
Leveres i HSS-E til ny lager tilgjengelig

Leveres i HSS-E til nyt lager er tilgængeligt

E201; E252; E390 ▪ 3.1 3.2 3.3 8.2
• 3.4 6.2 6.4 7.4

E201	M	DIN 371	6HX		2XD	HSS-E PM	C 2-3			ST	
E252	M	DIN 376	6HX		2XD	HSS-E PM	C 2-3			ST	
E390	M	DIN 371≤10 376≥12	6HX		2XD	HSS-E PM	C 2-3			TiAlN	





M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z	↔	l_4 mm	E201	E252	E390
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E201M3		E390M3
4	0.70	63	12	4.5	3.4	6	4	3.3	21	E201M4		E390M4
5	0.80	70	13	6.0	4.9	8	4	4.2	25	E201M5		E390M5
6	1.00	80	15	6.0	4.9	8	4	5.0	30	E201M6		E390M6
8	1.25	90	18	6.0	4.9	8	4	6.8			E252M8	
8	1.25	90	18	8.0	6.2	9	4	6.8	35	E201M8		E390M8
10	1.50	100	20	10.0	8.0	11	4	8.5	39	E201M10		E390M10
10	1.50	100	20	7.0	5.5	8	4	8.5			E252M10	
12	1.75	110	23	9.0	7.0	10	4	10.3			E252M12	E390M12
14	2.00	110	25	11.0	9.0	12	4	12.0			E252M14	
16	2.00	110	25	12.0	9.0	12	4	14.0			E252M16	E390M16
18	2.50	125	30	14.0	11.0	14	4	15.5			E252M18	
20	2.50	140	30	16.0	12.0	15	4	17.5			E252M20	E390M20
22	2.50	140	34	18.0	14.5	17	4	19.5			E252M22	
24	3.00	160	38	18.0	14.5	17	4	21.0			E252M24	

E500
E501
E504

- M Maskingängtappar Raka spår
- M Konekierretapit, suorauraiset
- M Maskingjengetapp Rett sportapp
- M Maskingevindtappe Lige spor

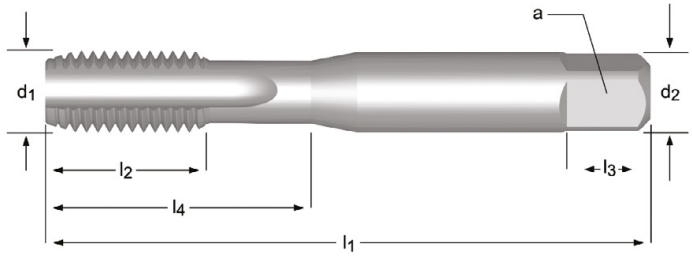
E500; E501	•	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.2	7.3	7.4	8.2	8.3
E504	▪	3.1	3.2	3.3															
	•	1.1	1.2	1.3	1.4	1.5	3.4	6.2	6.3	6.4	7.2	7.3	7.4	8.2	8.3				

E500	M	ISO 529	6H		1.5XD	HSS						
E501	M	ISO 529	6H		1.5XD	HSS						
E504	M	ISO 529	6H		1.5XD	HSS					TiN	









E500	E501	E504
		
M1 - M56	M3 - M24	M3 - M24

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z	↔	l_4 mm	E500	E501	E504
1	0.25	38	4.5	2.50	2.00	4	2	0.75	4.5	E500M1NO1 [1]		
1	0.25	38	4.5	2.50	2.00	4	2	0.75	4.5	E500M1NO2 [1]		
1	0.25	38	4.5	2.50	2.00	4	2	0.75	4.5	E500M1NO3 [1]		
1.2	0.25	38	4.5	2.50	2.00	4	2	0.95	4.5	E500M1.2NO1 [1]		
1.2	0.25	38	4.5	2.50	2.00	4	2	0.95	4.5	E500M1.2NO2 [1]		
1.2	0.25	38	4.5	2.50	2.00	4	2	0.95	4.5	E500M1.2NO3 [1]		
1.4	0.30	40	6	2.50	2.00	4	2	1.1	6	E500M1.4NO1 [1]		
1.4	0.30	40	6	2.50	2.00	4	2	1.1	6	E500M1.4NO2 [1]		
1.4	0.30	40	6	2.50	2.00	4	2	1.1	6	E500M1.4NO3 [1]		
1.6	0.35	41	8	2.50	2.00	4	2	1.25	8	E500M1.6NO1		
1.6	0.35	41	8	2.50	2.00	4	2	1.25	8	E500M1.6NO2		
1.6	0.35	41	8	2.50	2.00	4	2	1.25	8	E500M1.6NO3	NO1 - NO9 219	
1.6	0.35	41	8	2.50	2.00	4	2	1.25	8	E500M1.6NO6		
1.7	0.35	41	8	2.50	2.00	4	2	1.35	8	E500M1.7NO1		
1.7	0.35	41	8	2.50	2.00	4	2	1.35	8	E500M1.7NO2		
1.7	0.35	41	8	2.50	2.00	4	2	1.35	8	E500M1.7NO3		
1.7	0.35	41	8	2.50	2.00	4	2	1.35	8	E500M1.7NO6		
1.7	0.35	41	8	2.50	2.00	4	2	1.35	8	E500M1.7NO8		

1) 5H

DORMER

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z	↔	l_4 mm	E500	E501	E504
1.8	0.35	41	8	2.50	2.00	4	2	1.45	8	E500M1.8NO1		
1.8	0.35	41	8	2.50	2.00	4	2	1.45	8	E500M1.8NO2		
1.8	0.35	41	8	2.50	2.00	4	2	1.45	8	E500M1.8NO3		
2	0.40	41	8	2.50	2.00	4	3	1.6	8	E500M2NO1		
2	0.45	41	8	2.50	2.00	4	3	1.55	8	E500M2X.45NO1		
2	0.40	41	8	2.50	2.00	4	3	1.6	8	E500M2NO2		
2	0.45	41	8	2.50	2.00	4	3	1.55	8	E500M2X.45NO2		
2	0.40	41	8	2.50	2.00	4	3	1.6	8	E500M2NO3		
2	0.45	41	8	2.50	2.00	4	3	1.55	8	E500M2X.45NO3		
2	0.40	41	8	2.50	2.00	4	3	1.6	8	E500M2NO6		
2	0.40	41	8	2.50	2.00	4	3	1.6	8	E500M2NO8		
2.2	0.45	44.5	9.5	2.80	2.24	5	3	1.75	9.5	E500M2.2NO1		
2.2	0.45	44.5	9.5	2.80	2.24	5	3	1.75	9.5	E500M2.2NO2		
2.2	0.45	44.5	9.5	2.80	2.24	5	3	1.75	9.5	E500M2.2NO3		
2.3	0.45	44.5	9.5	2.80	2.24	5	3	1.85	9.5	E500M2.3NO1		
2.3	0.45	44.5	9.5	2.80	2.24	5	3	1.85	9.5	E500M2.3NO2		
2.3	0.45	44.5	9.5	2.80	2.24	5	3	1.85	9.5	E500M2.3NO3		
2.5	0.45	44.5	9.5	2.80	2.24	5	3	2.05	9.5	E500M2.5NO1		
2.5	0.45	44.5	9.5	2.80	2.24	5	3	2.05	9.5	E500M2.5NO2		
2.5	0.45	44.5	9.5	2.80	2.24	5	3	2.05	9.5	E500M2.5NO3		
2.5	0.45	44.5	9.5	2.80	2.24	5	3	2.05	9.5	E500M2.5NO6		
2.5	0.45	44.5	9.5	2.80	2.24	5	3	2.05	9.5	E500M2.5NO8	NO1 - NO9 219	
2.6	0.45	44.5	9.5	2.80	2.24	5	3	2.15	9.5	E500M2.6NO1		
2.6	0.45	44.5	9.5	2.80	2.24	5	3	2.15	9.5	E500M2.6NO2		
2.6	0.45	44.5	9.5	2.80	2.24	5	3	2.15	9.5	E500M2.6NO3		
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E500M3NO1	E501M3NO1	
3	0.60	48	12.5	3.15	2.50	5	3	2.4	12.5	E500M3X.6NO1		
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E500M3NO2	E501M3NO2	
3	0.60	48	12.5	3.15	2.50	5	3	2.4	12.5	E500M3X.6NO2		
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E500M3NO3	E501M3NO3	E504M3NO3
3	0.60	48	12.5	3.15	2.50	5	3	2.4	12.5	E500M3X.6NO3		
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E500M3NO6		
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E500M3NO7		
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E500M3NO8		
3.5	0.60	50	14	3.55	2.80	5	3	2.9	14	E500M3.5NO1		
3.5	0.60	50	14	3.55	2.80	5	3	2.9	14	E500M3.5NO2		
3.5	0.60	50	14	3.55	2.80	5	3	2.9	14	E500M3.5NO3		
3.5	0.60	50	14	3.55	2.80	5	3	2.9	14	E500M3.5NO6		
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E500M4NO1	E501M4NO1	
4	0.75	53	14	4.00	3.15	6	3	3.25	14	E500M4X.75NO1		
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E500M4NO2	E501M4NO2	
4	0.75	53	14	4.00	3.15	6	3	3.25	14	E500M4X.75NO2		
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E500M4NO3	E501M4NO3	E504M4NO3
4	0.75	53	14	4.00	3.15	6	3	3.25	14	E500M4X.75NO3		
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E500M4NO6		
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E500M4NO7		
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E500M4NO8		
4.5	0.75	53	9.5	4.50	3.55	6	3	3.8	18	E500M4.5NO1		
4.5	0.75	53	9.5	4.50	3.55	6	3	3.8	18	E500M4.5NO2		
4.5	0.75	53	9.5	4.50	3.55	6	3	3.8	18	E500M4.5NO3		
4.5	0.75	53	9.5	4.50	3.55	6	3	3.8	18	E500M4.5NO6		
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E500M5NO1		
5	0.90	58	11	5.00	4.00	7	3	4.1	22	E500M5X.9NO1		
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E500M5NO2	E501M5NO2	
5	0.90	58	11	5.00	4.00	7	3	4.1	22	E500M5X.9NO2		
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E500M5NO3	E501M5NO3	E504M5NO3
5	0.90	58	11	5.00	4.00	7	3	4.1	22	E500M5X.9NO3		
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E500M5NO6		
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E500M5NO7		
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E500M5NO8		
5.5	0.90	62	12	5.60	4.50	7	3	4.6	21	E500M5.5X.9NO1		
5.5	0.90	62	12	5.60	4.50	7	3	4.6	21	E500M5.5X.9NO2		
5.5	0.90	62	12	5.60	4.50	7	3	4.6	21	E500M5.5X.9NO3		
6	1.00	66	13	6.30	5.00	8	3	5	26	E500M6NO1	E501M6NO1	
6	1.00	66	13	6.30	5.00	8	3	5	26	E500M6NO2	E501M6NO2	
6	1.00	66	13	6.30	5.00	8	3	5	26	E500M6NO3	E501M6NO3	E504M6NO3
6	1.00	66	13	6.30	5.00	8	3	5	26	E500M6NO6		
6	1.00	66	13	6.30	5.00	8	3	5	26	E500M6NO7		
6	1.00	66	13	6.30	5.00	8	3	5	26	E500M6NO8		
7	1.00	66	13	7.10	5.60	8	3	6	26	E500M7NO1		

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z		l_4 mm	E500	E501	E504
7	1.00	66	13	7.10	5.60	8	3	6	26	E500M7NO2		
7	1.00	66	13	7.10	5.60	8	3	6	26	E500M7NO3		
7	1.00	66	13	7.10	5.60	8	3	6	26	E500M7NO6		
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E500M8NO1	E501M8NO1	
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E500M8NO2	E501M8NO2	
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E500M8NO3	E501M8NO3	E504M8NO3
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E500M8NO6		
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E500M8NO7		
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E500M8NO8		
9	1.25	72	16	9.00	7.10	10	3	7.8	29	E500M9NO1		
9	1.25	72	16	9.00	7.10	10	3	7.8	29	E500M9NO2		
9	1.25	72	16	9.00	7.10	10	3	7.8	29	E500M9NO3		
9	1.25	72	16	9.00	7.10	10	3	7.8	29	E500M9NO6		
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E500M10NO1	E501M10NO1	
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E500M10NO2	E501M10NO2	
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E500M10NO3	E501M10NO3	E504M10NO3
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E500M10NO6		
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E500M10NO7		
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E500M10NO8	NO1 - NO9  219	
11	1.50	85	19	8.00	6.30	9	3	9.5	-	E500M11NO1		
11	1.50	85	19	8.00	6.30	9	3	9.5	-	E500M11NO2		
11	1.50	85	19	8.00	6.30	9	3	9.5	-	E500M11NO3		
11	1.50	85	19	8.00	6.30	9	3	9.5	-	E500M11NO6		
12	1.75	89	22	9.00	7.10	10	3	10.3	-	E500M12NO1	E501M12NO1	
12	1.75	89	22	9.00	7.10	10	3	10.3	-	E500M12NO2	E501M12NO2	
12	1.75	89	22	9.00	7.10	10	3	10.3	-	E500M12NO3	E501M12NO3	
12	1.75	89	22	9.00	7.10	10	3	10.3	-	E500M12NO6		
12	1.75	89	22	9.00	7.10	10	3	10.3	-	E500M12NO7		
12	1.75	89	22	9.00	7.10	10	3	10.3	-	E500M12NO8		
14	2.00	95	24	11.20	9.00	12	4	12	-	E500M14NO1	E501M14NO1	
14	2.00	95	24	11.20	9.00	12	4	12	-	E500M14NO2	E501M14NO2	
14	2.00	95	24	11.20	9.00	12	4	12	-	E500M14NO3	E501M14NO3	
14	2.00	95	24	11.20	9.00	12	4	12	-	E500M14NO6		
14	2.00	95	24	11.20	9.00	12	4	12	-	E500M14NO7		
14	2.00	95	24	11.20	9.00	12	4	12	-	E500M14NO8		
16	2.00	102	24	12.50	10.00	13	4	14	-	E500M16NO1	E501M16NO1	
16	2.00	102	24	12.50	10.00	13	4	14	-	E500M16NO2	E501M16NO2	
16	2.00	102	24	12.50	10.00	13	4	14	-	E500M16NO3	E501M16NO3	
16	2.00	102	24	12.50	10.00	13	4	14	-	E500M16NO6		
16	2.00	102	24	12.50	10.00	13	4	14	-	E500M16NO7		
16	2.00	102	24	12.50	10.00	13	4	14	-	E500M16NO8		
18	2.50	112	29	14.00	11.20	14	4	15.5	-	E500M18NO1		
18	2.50	112	29	14.00	11.20	14	4	15.5	-	E500M18NO2		
18	2.50	112	29	14.00	11.20	14	4	15.5	-	E500M18NO3	E501M18NO3	
18	2.50	112	29	14.00	11.20	14	4	15.5	-	E500M18NO6		
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E500M20NO1	E501M20NO1	
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E500M20NO2	E501M20NO2	
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E500M20NO3	E501M20NO3	
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E500M20NO6		
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E500M20NO7		
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E500M20NO8		
22	2.50	118	29	16.00	12.50	16	4	19.5	-	E500M22NO1		
22	2.50	118	29	16.00	12.50	16	4	19.5	-	E500M22NO2		
22	2.50	118	29	16.00	12.50	16	4	19.5	-	E500M22NO3	E501M22NO3	
22	2.50	118	29	16.00	12.50	16	4	19.5	-	E500M22NO6		
24	3.00	130	35	18.00	14.00	18	4	21	-	E500M24NO1		
24	3.00	130	35	18.00	14.00	18	4	21	-	E500M24NO2	E501M24NO2	
24	3.00	130	35	18.00	14.00	18	4	21	-	E500M24NO3	E501M24NO3	
24	3.00	130	35	18.00	14.00	18	4	21	-	E500M24NO6		
24	3.00	130	35	18.00	14.00	18	4	21	-	E500M24NO7		
27	3.00	135	35	20.00	16.00	20	4	24	-	E500M27NO1		
27	3.00	135	35	20.00	16.00	20	4	24	-	E500M27NO2		
27	3.00	135	35	20.00	16.00	20	4	24	-	E500M27NO3		
30	3.50	138	41	20.00	16.00	20	4	26.5	-	E500M30NO1		
30	3.50	138	41	20.00	16.00	20	4	26.5	-	E500M30NO2		
30	3.50	138	41	20.00	16.00	20	4	26.5	-	E500M30NO3		
33	3.50	151	41	22.40	18.00	22	4	29.5	-	E500M33NO1		
33	3.50	151	41	22.40	18.00	22	4	29.5	-	E500M33NO2		
33	3.50	151	41	22.40	18.00	22	4	29.5	-	E500M33NO3		
36	4.00	162	47	25.00	20.00	24	4	32	-	E500M36NO1		

DORMER

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z	↔	l_4 mm	E500	E501	E504
36	4.00	162	47	25.00	20.00	24	4	32	-	E500M36NO2		
36	4.00	162	47	25.00	20.00	24	4	32	-	E500M36NO3		
39	4.00	170	47	28.00	22.40	26	4	35	-	E500M39NO1		
39	4.00	170	47	28.00	22.40	26	4	35	-	E500M39NO2		
39	4.00	170	47	28.00	22.40	26	4	35	-	E500M39NO3		
42	4.50	170	53	28.00	22.40	26	6	37.5	-	E500M42NO1		
42	4.50	170	53	28.00	22.40	26	6	37.5	-	E500M42NO2		
42	4.50	170	53	28.00	22.40	26	6	37.5	-	E500M42NO3		
45	4.50	187	54	31.50	25.00	28	6	40.5	-	E500M45NO1		
45	4.50	187	54	31.50	25.00	28	6	40.5	-	E500M45NO2		
45	4.50	187	54	31.50	25.00	28	6	40.5	-	E500M45NO3		
48	5.00	187	60	31.50	25.00	28	6	43	-	E500M48NO1		
48	5.00	187	60	31.50	25.00	28	6	43	-	E500M48NO2		
48	5.00	187	60	31.50	25.00	28	6	43	-	E500M48NO3		
52	5.00	200	60	35.50	28.00	31	6	47	-	E500M52NO3		
56	5.50	200	60	35.50	28.00	31	6	50.5	-	E500M56NO3		

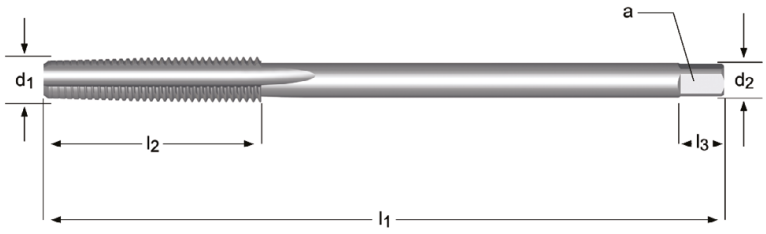


E303

- M Maskingängtappar Raka spår
- M Konekierretapit, suorauraiset
- M Maskingjengetapp Rett sportapp
- M Maskingevindtappe Lige spor

E303 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 6.2 6.3 7.2 7.3 8.2

E303 | M | DIN 357 | 6H | 2XD | HSS-E | D18-20 C 2-3



E303



M3 - M20

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z		E303
3	0.50	70	22	2.2	2.1	5	3	2.5	E303M3NO1
3	0.50	70	22	2.2	2.1	5	3	2.5	E303M3NO3
4	0.70	90	25	2.8	2.1	5	3	3.3	E303M4NO1
4	0.70	90	25	2.8	2.1	5	3	3.3	E303M4NO3
5	0.80	100	28	3.5	2.7	6	3	4.2	E303M5NO1
5	0.80	100	28	3.5	2.7	6	3	4.2	E303M5NO3
6	1.00	110	32	4.5	3.4	6	3	5.0	E303M6NO1
6	1.00	110	32	4.5	3.4	6	3	5.0	E303M6NO3
8	1.25	125	40	6.0	4.9	8	3	6.8	E303M8NO1
8	1.25	125	40	6.0	4.9	8	3	6.8	E303M8NO3
10	1.50	140	45	7.0	5.5	8	3	8.5	E303M10NO1
10	1.50	140	45	7.0	5.5	8	3	8.5	E303M10NO3
12	1.75	180	50	9.0	7.0	10	3	10.3	E303M12NO1
12	1.75	180	50	9.0	7.0	10	3	10.3	E303M12NO3
14	2.00	200	56	11.0	9.0	12	3	12.0	E303M14NO1
14	2.00	200	56	11.0	9.0	12	3	12.0	E303M14NO3
16	2.00	200	63	12.0	9.0	12	3	14.0	E303M16NO1
16	2.00	200	63	12.0	9.0	12	3	14.0	E303M16NO3
20	2.50	250	70	16.0	12.0	15	3	17.5	E303M20NO1
20	2.50	250	70	16.0	12.0	15	3	17.5	E303M20NO3

NO1 - NO9
219

DORMER

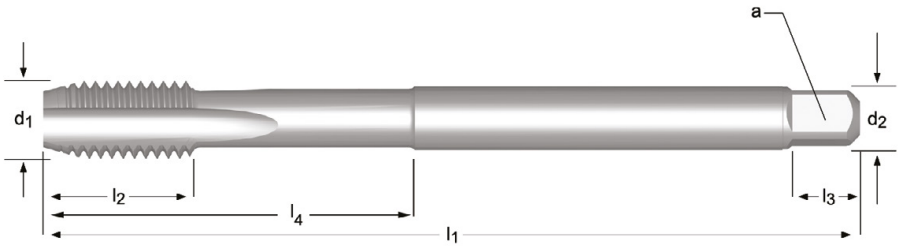
E600
E610

- M Maskingängtapp, extra lång, Raka spår
- M Konekierretapit, erit. pitkät, suorauraiset
- M Maskingjengtapp, ekstra lang, Rett sportapp
- M Maskintap, ekstra lang, Lige spor

Levereras som HSS-E tills nytt lager finns
Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
Leveres i HSS-E til ny lager tilgjengelig
Leveres i HSS-E til nyt lager er tilgængeligt

E600	•	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.2	7.3	7.4	8.2	8.3
E610	▪	3.1	3.2	3.3															
	•	1.1	1.2	1.3	1.4	1.5	3.4	6.2	6.3	6.4	7.2	7.3	7.4	8.2	8.3				

E600	M	ISO 2283	6H		1.5XD	HSS-E PM	C 2-3					
E610	M	ISO 2283	6H		1.5XD	HSS-E PM	C 2-3				TiN	




E600

M3 - M30


E610

M3 - M16

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z	↔	l_4 mm	E600	E610
3	0.50	66	9	3.15	2.50	5	3	2.5	18	E600M3NO3	E610M3NO3
4	0.70	73	12	3.15	2.50	5	3	3.3	-	E600M4NO1	
4	0.70	73	12	3.15	2.50	5	3	3.3	-	E600M4NO2	
4	0.70	73	12	3.15	2.50	5	3	3.3	-	E600M4NO3	E610M4NO3
5	0.80	79	12	4.00	3.15	6	3	4.2	-	E600M5NO1	
5	0.80	79	12	4.00	3.15	6	3	4.2	-	E600M5NO2	
5	0.80	79	12	4.00	3.15	6	3	4.2	-	E600M5NO3	E610M5NO3
6	1.00	89	14	4.50	3.55	6	3	5	-	E600M6NO1	
6	1.00	89	14	4.50	3.55	6	3	5	-	E600M6NO2	
6	1.00	89	14	4.50	3.55	6	3	5	-	E600M6NO3	E610M6NO3
8	1.25	97	17	6.30	5.00	8	3	6.8	-	E600M8NO1	
8	1.25	97	17	6.30	5.00	8	3	6.8	-	E600M8NO2	
8	1.25	97	17	6.30	5.00	8	3	6.8	-	E600M8NO3	E610M8NO3
10	1.50	108	19	8.00	6.30	9	3	8.5	-	E600M10NO1	
10	1.50	108	19	8.00	6.30	9	3	8.5	-	E600M10NO2	
10	1.50	108	19	8.00	6.30	9	3	8.5	-	E600M10NO3	E610M10NO3
12	1.75	119	23	9.00	7.10	10	3	10.3	-	E600M12NO1	
12	1.75	119	23	9.00	7.10	10	3	10.3	-	E600M12NO2	
12	1.75	119	23	9.00	7.10	10	3	10.3	-	E600M12NO3	E610M12NO3
16	2.00	137	25	12.50	10.0	13	4	14	-	E600M16NO3	E610M16NO3
20	2.50	149	30	14.00	11.2	14	4	17.5	-	E600M20NO3	

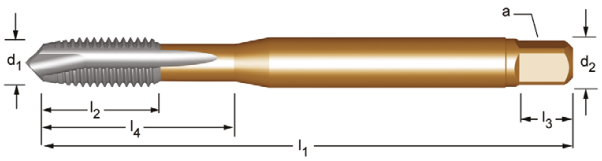
NO1 - NO9
219

EP006H
EP006G
EP00TiN
EP016H

- M Maskingängtappar Spåndrivande skär — Levereras som HSS-E tills nytt lager finns
- M Konekierretapit, lastua työntävä kärki — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- M Maskingjengetapp Spondrivende tapp — Leveres i HSS-E til ny lager tilgjengelig
- M Maskingevindtappe Spåndrivende skær — Leveres i HSS-E til nyt lager er tilgængeligt

EP006H; EP006G	▪	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4
	•	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1
EP00TIN	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	6.1	6.3	7.3	7.4
	•	1.6	2.3	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.2
EP016H	▪	1.1	1.2	1.3	1.4	1.5						
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4			

EP006H	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	B 3.5-5			L001 337	L114 334
EP006G	M	DIN 371≤10 376≥12	6G		2.5XD	HSS-E PM	B 3.5-5				
EP00TIN	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	B 3.5-5			TiN	
EP016H	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	B 3.5-5			ST	



EP006H	EP006G	EP00TIN	EP016H
			
M2 - M30	M3 - M20	M3 - M30	M2 - M30

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	◹ a mm	l_3 mm	z	↔	l_4 mm	EP006H	EP006G	EP00TIN	EP016H
2	0.40	50	6	2.8	2.1	5	2	1.6	9	EP00M2			EP01M2
2.5	0.45	50	8	2.8	2.1	5	2	2.1	12.5	EP00M2.5			EP01M2.5
3	0.50	56	10	2.2	1.8	4	3	2.5	18	EP00M3DIN376			EP01M3DIN376
3	0.50	56	9	3.5	2.7	6	3	2.5	18	EP00M3	EP006GM3	EP00TINM3	EP01M3
3.5	0.60	56	11	4.0	3.0	6	3	2.9	20	EP00M3.5			EP01M3.5
4	0.70	63	12	2.8	2.1	5	3	3.3	21	EP00M4DIN376			EP01M4DIN376
4	0.70	63	12	4.5	3.4	6	3	3.3	21	EP00M4	EP006GM4	EP00TINM4	EP01M4
4.5	0.75	70	13	6.0	4.9	8	3	3.8	25	EP00M4.5			EP01M4.5
5	0.80	70	13	3.5	2.7	6	3	4.2	25	EP00M5DIN376			EP01M5DIN376
5	0.80	70	13	6.0	4.9	8	3	4.2	25	EP00M5	EP006GM5	EP00TINM5	EP01M5
6	1.00	80	15	4.5	3.4	6	3	5	30	EP00M6DIN376			EP01M6DIN376
6	1.00	80	15	6.0	4.9	8	3	5	30	EP00M6	EP006GM6	EP00TINM6	EP01M6
7	1.00	80	15	7.0	5.5	8	3	6	30	EP00M7			EP01M7
8	1.25	90	18	6.0	4.9	8	3	6.8	35	EP00M8DIN376			EP01M8DIN376
8	1.25	90	18	8.0	6.2	9	3	6.8	35	EP00M8	EP006GM8	EP00TINM8	EP01M8
10	1.50	100	20	10.0	8.0	11	3	8.5	39	EP00M10	EP006GM10	EP00TINM10	EP01M10

DORMER

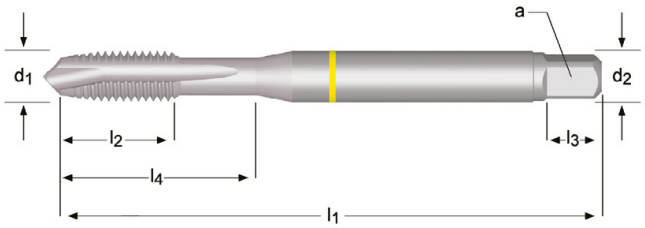
M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z		l_4 mm	EP006H	EP006G	EP00TIN	EP016H
10	1.50	100	20	7.0	5.5	8	3	8.5	-	EP00M10DIN376			EP01M10DIN376
12	1.75	110	23	9.0	7.0	10	3	10.3	-	EP00M12	EP006GM12	EP00TINM12	EP01M12
14	2.00	110	25	11.0	9.0	12	3	12	-	EP00M14		EP00TINM14	EP01M14
16	2.00	110	25	12.0	9.0	12	3	14	-	EP00M16	EP006GM16	EP00TINM16	EP01M16
18	2.50	125	30	14.0	11.0	14	4	15.5	-	EP00M18		EP00TINM18	EP01M18
20	2.50	140	30	16.0	12.0	15	4	17.5	-	EP00M20	EP006GM20	EP00TINM20	EP01M20
22	2.50	140	34	18.0	14.5	17	4	19.5	-	EP00M22		EP00TINM22	EP01M22
24	3.00	160	38	18.0	14.5	17	4	21	-	EP00M24		EP00TINM24	EP01M24
27	3.00	160	38	20.0	16.0	19	4	24	-	EP00M27		EP00TINM27	EP01M27
30	3.50	180	45	22.0	18.0	21	4	26.5	-	EP00M30		EP00TINM30	EP01M30

E297

- M Maskintapp spåndrivande, Gul Shark
- M Konekierretapit, Lastua työntävä kärki, Keltainen Shark
- M Maskingjengetapp Spondrivende tapp Gul Shark
- M Maskingevindtappe Spåndrivende skær , Gul Shark

E297 ▪ 1.1 1.2 1.3 6.1 6.3
• 1.4 1.5 6.2







M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z	↔	l_4 mm	E297
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E297M3
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E297M4
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E297M5
6	1.00	80	15	6.0	4.9	8	3	5.0	30	E297M6
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E297M8
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E297M10
12	1.75	110	23	9.0	7.0	10	3	10.3	-	E297M12
14	2.00	110	25	11.0	9.0	12	3	12.0	-	E297M14
16	2.00	110	25	12.0	9.0	12	3	14.0	-	E297M16
18	2.50	125	30	14.0	11.0	14	3	15.5	-	E297M18
20	2.50	140	30	16.0	12.0	15	3	17.5	-	E297M20
22	2.50	140	34	18.0	14.5	17	4	19.5	-	E297M22
24	3.00	160	38	18.0	14.5	17	4	21.0	-	E297M24
27	3.00	160	38	20.0	16.0	19	4	24.0	-	E297M27
30	3.50	180	45	22.0	18.0	21	4	26.5	-	E297M30

DORMER

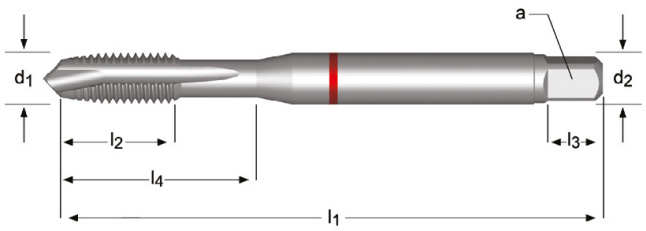
E255
E256

- M Maskintapp spåndrivande, Röd Shark
- M Konekierretapit, Lastua työntävä kärki, Punainen Shark
- M Maskingjengetapp Spondrivende tapp Rød Shark
- M Maskingevindtappe Spåndrivende skær , Rød Shark

Levereras som HSS-E tills nytt lager finns
Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
Leveres i HSS-E til ny lager tilgjengelig
Leveres i HSS-E til nyt lager er tilgængeligt

E255	▪	1.4
	•	1.5 1.6 4.2 5.2
E256	▪	1.4 1.5
	•	1.6 4.2 5.2

E255	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	B 3.5-5				
E256	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	B 3.5-5			TiAlN Top	





E255 M3 - M20



E256 M3 - M20

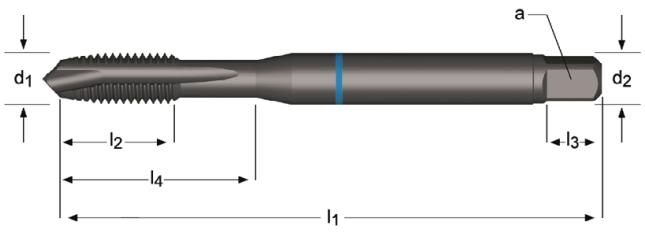
M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z	↔	l_4 mm	E255	E256
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E255M3	E256M3
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E255M4	E256M4
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E255M5	E256M5
6	1.00	80	15	6.0	4.9	8	3	5.0	30	E255M6	E256M6
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E255M8	E256M8
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E255M10	E256M10
12	1.75	110	23	9.0	7.0	10	3	10.3	-	E255M12	E256M12
14	2.00	110	25	11.0	9.0	12	3	12.0	-	E255M14	
16	2.00	110	25	12.0	9.0	12	3	14.0	-	E255M16	E256M16
20	2.50	140	30	16.0	12.0	15	4	17.5	-	E255M20	E256M20

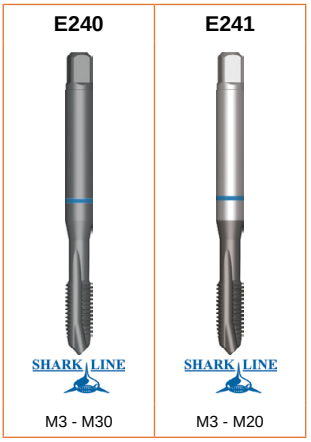
E240
- M Maskintapp spåndrivande, Blå Shark
- M Konekierretapit, Lastua työntävä kärki, Sininen Shark

E241
- M Maskingjengetapp Spondrivende tapp Blå Shark
- M Maskingevindtappe Spåndrivende skær, Blå Shark

E240	▪	2.1	2.2	2.3	
	•	1.5			
E241	▪	2.1	2.2	2.3	
	•	1.2	1.3	1.4	1.5

E240	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	B 3.5-5			ST	L114 334
E241	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	B 3.5-5			Super B	





M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z		l_4 mm	E240	E241
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E240M3	E241M3
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E240M4	E241M4
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E240M5	E241M5
6	1.00	80	15	6.0	4.9	8	3	5.0	30	E240M6	E241M6
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E240M8	E241M8
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E240M10	E241M10
12	1.75	110	23	9.0	7.0	10	4	10.3	-	E240M12	E241M12
14	2.00	110	25	11.0	9.0	12	4	12.0	-	E240M14	E241M14
16	2.00	110	25	12.0	9.0	12	4	14.0	-	E240M16	E241M16
18	2.50	125	30	14.0	11.0	14	4	15.5	-	E240M18	E241M18
20	2.50	140	30	16.0	12.0	15	4	17.5	-	E240M20	E241M20
22	2.50	140	34	18.0	14.5	17	4	19.5	-	E240M22	
24	3.00	160	38	18.0	14.5	17	4	21.0	-	E240M24	
27	3.00	160	38	20.0	16.0	19	4	24.0	-	E240M27	
30	3.50	180	45	22.0	18.0	21	4	26.5	-	E240M30	

DORMER

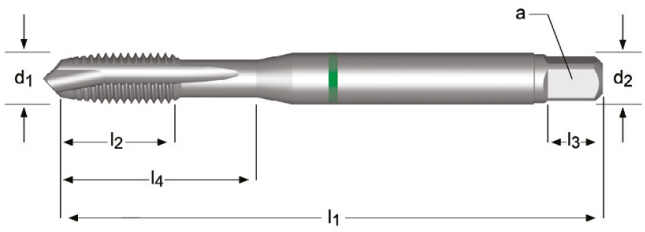
E471
E472

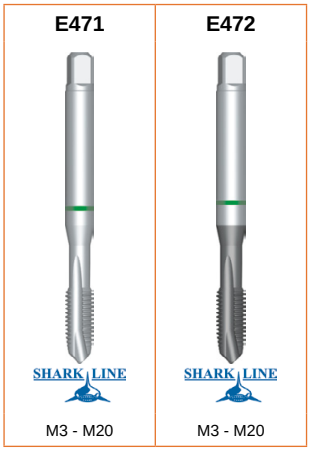
- M Maskintapp spåndrivande, Grön Shark
- M Konekierretapit, Lastua työntävä kärki, Vihreä Shark
- M Maskingjengetapp Spondrivende tapp Grønn Shark
- M Maskingevindtappe Spåndrivende skær, Grøn Shark

Levereras som HSS-E tills nytt lager finns
Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
Leveres i HSS-E til ny lager tilgjengelig
Leveres i HSS-E til nyt lager er tilgængeligt

E471	▪	6.2	6.3	7.1	7.2	7.3	8.1	
	•	1.1	1.2	1.3	6.1	7.4		
E472	▪	6.2	7.2	7.3	7.4			
	•	1.2	1.3	6.3	7.1	8.1		

E471	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	B 3.5-5					
E472	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	B 3.5-5			Super B		





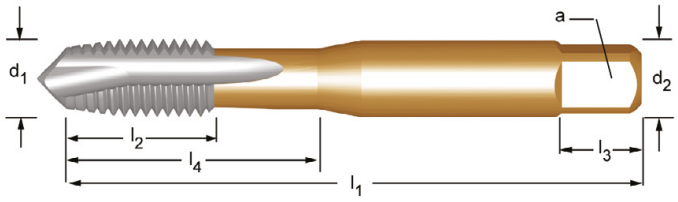
M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	◪ a mm	l_3 mm	z	↔	l_4 mm	E471	E472
3	0.50	56	9	3.5	2.7	6	2	2.5	18	E471M3	E472M3
4	0.70	63	12	4.5	3.4	6	2	3.3	21	E471M4	E472M4
5	0.80	70	13	6.0	4.9	8	2	4.2	25	E471M5	E472M5
6	1.00	80	15	6.0	4.9	8	3	5.0	30	E471M6	E472M6
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E471M8	E472M8
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E471M10	E472M10
12	1.75	110	23	9.0	7.0	10	3	10.3	-	E471M12	E472M12
16	2.00	110	25	12.0	9.0	12	4	14.0	-	E471M16	E472M16
20	2.50	140	30	16.0	12.0	15	4	17.5	-	E471M20	E472M20

E000
E000TIN
E001

- M Maskingängtappar Spåndrivande skär — Levereras som HSS-E tills nytt lager finns
- M Konekierretapit, lastua työntävä kärki — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- M Maskingjengetapp Spondrivende tapp — Leveres i HSS-E til ny lager tilgjengelig
- M Maskingevindtappe Spåndrivende skær — Leveres i HSS-E til nyt lager er tilgængeligt

E000	▪	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4	
	•	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1	
E000TIN	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	6.1	6.3	7.3	7.4	
	•	1.6	2.3	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.2
E001	▪	1.1	1.2	1.3	1.4	1.5							
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4				

E000	M	ISO 529	6H		2.5XD	HSS-E PM	B 3.5-5				L002 338	L113 333
E000TIN	M	ISO 529	6H		2.5XD	HSS-E PM	B 3.5-5			TiN		
E001	M	ISO 529	6H		2.5XD	HSS-E PM	B 3.5-5			ST	L113 333	



E000	E000TIN	E001
		
M1.6 - M24	M3 - M20	M1.6 - M24

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	▨ a mm	l_3 mm	z	↔	l_4 mm	E000	E000TIN	E001
1.6	0.35	41	7	2.50	2.00	4	2	1.25	7	E000M1.6		E001M1.6
2	0.40	41	8	2.50	2.00	4	2	1.6	8	E000M2		E001M2
2.5	0.45	44.5	9.5	2.80	2.24	5	2	2.05	9.5	E000M2.5		E001M2.5
3	0.50	48	15	3.15	2.50	5	3	2.5	15	E000M3	E000TINM3	E001M3
3.5	0.60	50	16	3.55	2.80	5	3	2.9	16	E000M3.5		E001M3.5
4	0.70	53	17	4.00	3.15	6	3	3.3	17	E000M4	E000TINM4	E001M4
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E000M5	E000TINM5	E001M5
6	1.00	66	13	6.30	5.00	8	3	5.0	26	E000M6	E000TINM6	E001M6
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E000M8	E000TINM8	E001M8
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E000M10	E000TINM10	E001M10
12	1.75	89	22	9.00	7.10	10	3	10.3	-	E000M12	E000TINM12	E001M12
14	2.00	95	24	11.20	9.00	12	3	12.0	-	E000M14		E001M14
16	2.00	102	24	12.50	10.00	13	3	14.0	-	E000M16	E000TINM16	E001M16
18	2.50	112	29	14.00	11.20	14	4	15.5	-	E000M18		E001M18
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E000M20	E000TINM20	E001M20
22	2.50	118	29	16.00	12.50	16	4	19.5	-	E000M22		E001M22
24	3.00	130	35	18.00	14.00	18	4	21.0	-	E000M24		E001M24

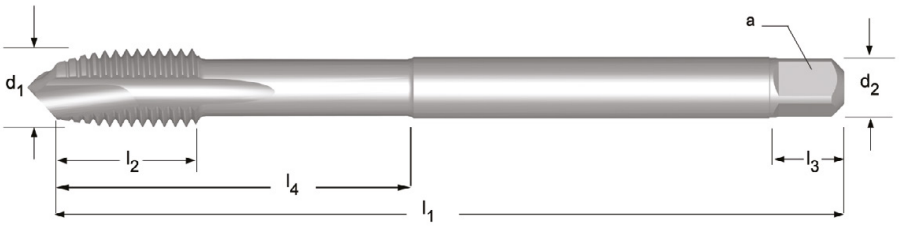
E606

- M Maskingängtapp, extra lång, Spåndrivande skär
- M Konekierretapit, erit. pitkät, lastua työntävä kärki
- M Maskingjengtapp, ekstra lang, Spondrivende tapp
- M Maskintap, ekstra lang, Spåndrivende skær

Levereras som HSS-E tills nytt lager finns
Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
Leveres i HSS-E til ny lager tilgjengelig
Leveres i HSS-E til nyt lager er tilgængeligt

E606	•	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	4.3	5.1	5.2	6.1	6.3	7.1	7.2	7.3	7.4	8.1

E606	M	ISO 2283	6H		2.5XD	HSS-E PM	B 3.5-5				



E606



M3 - M24

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	▨ a mm	l_3 mm	z	↔	l_4 mm	E606
3	0.50	66	9	3.15	2.50	5	3	2.5	18	E606M3
4	0.70	73	12	3.15	2.50	5	3	3.3	-	E606M4
5	0.80	79	12	4.00	3.15	6	3	4.2	-	E606M5
6	1.00	89	14	4.50	3.55	6	3	5	-	E606M6
8	1.25	97	17	6.30	5.00	8	3	6.8	-	E606M8
10	1.50	108	19	8.00	6.30	9	3	8.5	-	E606M10
12	1.75	119	23	9.00	7.10	10	3	10.3	-	E606M12
14	2.00	127	25	11.20	9.00	12	3	12	-	E606M14
16	2.00	137	25	12.50	10.00	13	3	14	-	E606M16
20	2.50	149	30	14.00	11.20	14	4	17.5	-	E606M20
24	3.00	172	36	18.00	14.00	18	4	21	-	E606M24

DORMER

E216 • M Maskingängtappar Varannan Gänga Spåndrivande skär — Levereras som HSS-E tills nytt lager finns

E266 • M Konekierretapit, kevennetty, lastua työntävä kärki — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.

E422 • M Maskingjengetapp Annenhver Gjenge Bortslipt Spondrivende tapp — Leveres i HSS-E til ny lager tilgjengelig

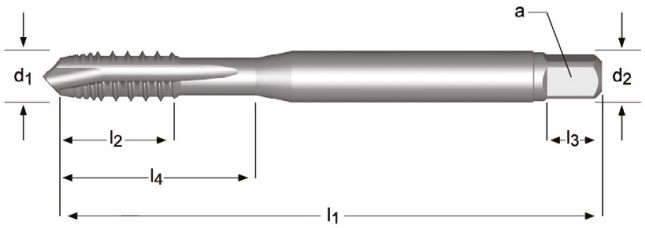
E423 • M Maskingevindtappe Hveranden Gevind Bortslebet Spåndrivende skær — Leveres i HSS-E til nyt lager er tilgængeligt

E216; E266; E422; E423

▪ 1.2 1.3 1.4

• 1.1 1.5 3.1 3.2 3.3 3.4 4.1 4.3 5.1 5.2 6.1 6.2 6.3 7.1 7.2 7.3 7.4 8.1

E216	M	DIN 371	6H		3XD	HSS-E PM	B 3.5-5					
E266	M	DIN 376	6H		3XD	HSS-E PM	B 3.5-5					
E422	M	DIN 371	6H		3XD	HSS-E PM	B 3.5-5			TiN		
E423	M	DIN 376	6H		3XD	HSS-E PM	B 3.5-5			TiN		



E216	E266	E422	E423
			
M3 - M10	M12 - M24	M3 - M10	M12 - M24

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z	↔	l_4 mm	E216	E266	E422	E423
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E216M3		E422M3	
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E216M4		E422M4	
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E216M5		E422M5	
6	1.00	80	15	6.0	4.9	8	3	5.0	30	E216M6		E422M6	
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E216M8		E422M8	
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E216M10		E422M10	
12	1.75	110	23	9.0	7.0	10	3	10.3			E266M12		E423M12
14	2.00	110	25	11.0	9.0	12	3	12.0			E266M14		E423M14
16	2.00	110	25	12.0	9.0	12	3	14.0			E266M16		E423M16
20	2.50	140	30	16.0	12.0	15	3	17.5			E266M20		E423M20
24	3.00	160	38	18.0	14.5	17	4	21.0			E266M24		E423M24

DORMER

E207 • M Maskingängtappar Spiralspår 15° — Levereras som HSS-E tills nytt lager finns

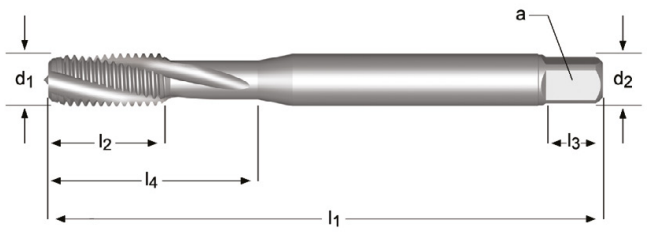
E258 • M Konekierretapit, lastua nostavat urat 15° — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.

E212 • M Maskingjengetapp Spiral spor 15° — Leveres i HSS-E til ny lager tilgjengelig

E263 • M Maskingevindtappe Spiralspor 15° — Leveres i HSS-E til nyt lager er tilgængeligt

E207; E258	▪	1.3	1.4									
	•	1.2	1.5	7.2	7.3							
E212; E263	▪	1.3	1.4									
	•	1.1	1.2	1.5	4.2	4.3	7.2	7.3				

E207	M	DIN 371	6H		1.5XD	HSS-E PM	C 2-3	λ15°			
E258	M	DIN 376	6H		1.5XD	HSS-E PM	C 2-3	λ15°			
E212	M	DIN 371	6H		1.5XD	HSS-E PM	C 2-3	λ15°		TiN	
E263	M	DIN 376	6H		1.5XD	HSS-E PM	C 2-3	λ15°		TiN	



E207	E258	E212	E263
			
M2 - M10	M4 - M36	M3 - M10	M12 - M36

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z	↔	l_4 mm	E207	E258	E212	E263
2	0.40	45	4	2.8	2.1	5	3	1.6	9	E207M2			
2.5	0.45	50	4	2.8	2.1	5	3	2.05	12.5	E207M2.5			
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E207M3		E212M3	
4	0.70	63	12	2.8	2.1	5	3	3.3			E258M4		
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E207M4		E212M4	
5	0.80	70	13	3.5	2.7	6	3	4.2			E258M5		
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E207M5		E212M5	
6	1.00	80	15	4.5	3.4	6	3	5.0			E258M6		
6	1.00	80	15	6.0	4.9	8	3	5	30	E207M6		E212M6	
8	1.25	90	18	6.0	4.9	8	3	6.8			E258M8		
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E207M8		E212M8	
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E207M10		E212M10	
10	1.50	100	20	7.0	5.5	8	3	8.5			E258M10		
12	1.75	110	23	9.0	7.0	10	3	10.3			E258M12		E263M12
14	2.00	110	25	11.0	9.0	12	3	12.0			E258M14		E263M14
16	2.00	110	25	12.0	9.0	12	3	14.0			E258M16		E263M16
18	2.50	125	30	14.0	11.0	14	3	15.5			E258M18		E263M18
20	2.50	140	30	16.0	12.0	15	3	17.5			E258M20		E263M20

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	▨ a mm	l_3 mm	z	↔	l_4 mm	E207	E258	E212	E263
22	2.50	140	34	18.0	14.5	17	4	19.5			E258M22		E263M22
24	3.00	160	38	18.0	14.5	17	4	21.0			E258M24		E263M24
27	3.00	160	38	20.0	16.0	19	4	24.0			E258M27		E263M27
30	3.50	180	45	22.0	18.0	21	4	26.5			E258M30		E263M30
36	4.00	200	55	28.0	22.0	25	4	32.0			E258M36		E263M36

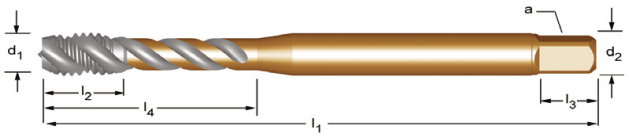
DORMER

EX006H
EX006G
EX00TIN
EX016H

- M Maskingängtappar Spiralspår 45° — Levereras som HSS-E tills nytt lager finns
- M Konekierretapit, lastua nostavat urat 45° — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- M Maskingjengetapp Spiral spor 45° — Leveres i HSS-E til ny lager tilgjengelig
- M Maskingevindtappe Spiralspor 45° — Leveres i HSS-E til nyt lager er tilgængeligt

EX006H; EX006G	■	1.1 1.2 1.3 1.4 1.5 7.1 7.2 7.3 7.4
	•	4.1 4.2 5.1 5.2
EX00TIN	■	1.1 1.2 1.3 1.4 1.5 2.1 2.2 7.3 7.4
	•	2.3 3.1 3.2 3.3 3.4 4.1 4.2 5.1 5.2
EX016H	■	1.1 1.2 1.3 1.4 1.5 2.1 2.2
	•	2.3

EX006H	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3	λ45°			L001 337	L114 334
EX006G	M	DIN 371≤10 376≥12	6G		2.5XD	HSS-E PM	C 2-3	λ45°				
EX00TIN	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3	λ45°		TiN		
EX016H	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3	λ45°		ST		



EX006H	EX006G	EX00TIN	EX016H
			
M2 - M64	M3 - M20	M3 - M30	M2 - M64

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z	↔	l_4 mm	EX006H	EX006G	EX00TIN	EX016H
2	0.40	45	4	2.8	2.1	5	3	1.6	9	EX00M2			EX01M2
2.5	0.45	50	4	2.8	2.1	5	3	2.05	12.5	EX00M2.5			EX01M2.5
3	0.50	56	6	3.5	2.7	6	3	2.5	18	EX00M3	EX00M36G	EX00TINM3	EX01M3
3.5	0.60	56	7	4.0	3.0	6	3	2.9	20	EX00M3.5			EX01M3.5
4	0.70	63	7	4.5	3.4	6	3	3.3	21	EX00M4	EX00M46G	EX00TINM4	EX01M4
5	0.80	70	8	6.0	4.9	8	3	4.2	25	EX00M5	EX00M56G	EX00TINM5	EX01M5
6	1.00	80	10	4.5	3.4	6	3	5	31	EX00M6DIN376			EX01M6DIN376
6	1.00	80	10	6.0	4.9	8	3	5	31	EX00M6	EX00M66G	EX00TINM6	EX01M6
7	1.00	80	10	7.0	5.5	8	3	6	31	EX00M7			EX01M7
8	1.25	90	12	8.0	6.2	9	3	6.8	35	EX00M8	EX00M86G	EX00TINM8	EX01M8
8	1.25	90	13	6.0	4.9	8	3	6.8	35	EX00M8DIN376			EX01M8DIN376
10	1.50	100	15	10.0	8.0	11	3	8.5	39	EX00M10	EX00M106G	EX00TINM10	EX01M10
10	1.50	100	15	7.0	5.5	8	3	8.5	39	EX00M10DIN376			EX01M10DIN376
12	1.75	110	16	9.0	7.0	10	3	10.3	-	EX00M12	EX00M126G	EX00TINM12	EX01M12
14	2.00	110	20	11.0	9.0	12	3	12	-	EX00M14	EX00M146G	EX00TINM14	EX01M14
16	2.00	110	20	12.0	9.0	12	4	14	-	EX00M16	EX00M166G	EX00TINM16	EX01M16
18	2.50	125	25	14.0	11.0	14	4	15.5	-	EX00M18		EX00TINM18	EX01M18
20	2.50	140	25	16.0	12.0	15	4	17.5	-	EX00M20	EX00M206G	EX00TINM20	EX01M20

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z		l_4 mm	EX006H	EX006G	EX00TIN	EX016H
22	2.50	140	25	18.0	14.5	17	4	19.5	-	EX00M22		EX00TINM22	EX01M22
24	3.00	160	30	18.0	14.5	17	4	21	-	EX00M24		EX00TINM24	EX01M24
27	3.00	160	30	20.0	16.0	19	4	24	-	EX00M27		EX00TINM27	EX01M27
30	3.50	180	36	22.0	18.0	21	4	26.5	-	EX00M30		EX00TINM30	EX01M30
33	3.50	180	36	25.0	20.0	23	4	29.5	-	EX00M33			EX01M33
36	4.00	200	40	28.0	22.0	25	4	32	-	EX00M36			EX01M36
39	4.00	200	40	32.0	24.0	27	4	35	-	EX00M39			EX01M39
42	4.50	200	45	32.0	24.0	27	4	37.5	-	EX00M42 [1)]			EX01M42 [1)]
48	5.00	250	50	36.0	29.0	32	4	43	-	EX00M48 [1)]			EX01M48 [1)]
52	5.00	250	50	40.0	32.0	35	5	47	-	EX00M52 [1)]			EX01M52 [1)]
56	5.50	250	55	40.0	32.0	35	5	50.5	-	EX00M56 [1)]			EX01M56 [1)]
64	6.00	315	60	50.0	39.0	42	6	58	-	EX00M64 [1)]			EX01M64 [1)]

1) HSS-E

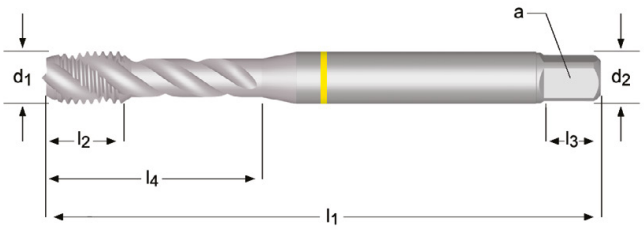
DORMER

E298

- M Maskingängtappar Spiralspår 40º Gul Shark
- M Konekierretapit, Lastua nostavat urat 40º, Keltainen Shark
- M Maskingjengetapp Spiral spor 40º Gul Shark
- M Maskingevindtappe Spiralspor 40º , Gul Shark

E298 ▪ 1.1 1.2 1.3 6.1 6.3
• 1.4 1.5 6.2

E298 | M | DIN 371≤10 376≥12 | 6H | | 2XD | HSS-E PM | C 2-3 | λ40° | | Cr | L114 334



E298



M3 - M30

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z	↔	l_4 mm	E298
3	0.50	56	6	3.5	2.7	6	3	2.5	18	E298M3
4	0.70	63	7	4.5	3.4	6	3	3.3	21	E298M4
5	0.80	70	8	6.0	4.9	8	3	4.2	25	E298M5
6	1.00	80	10	6.0	4.9	8	3	5.0	30	E298M6
8	1.25	90	13	8.0	6.2	9	3	6.8	35	E298M8
10	1.50	100	15	10.0	8.0	11	3	8.5	39	E298M10
12	1.75	110	18	9.0	7.0	10	3	10.3	-	E298M12
14	2.00	110	20	11.0	9.0	12	3	12.0	-	E298M14
16	2.00	110	20	12.0	9.0	12	4	14.0	-	E298M16
18	2.50	125	25	14.0	11.0	14	4	15.5	-	E298M18
20	2.50	140	25	16.0	12.0	15	4	17.5	-	E298M20
22	2.50	140	25	18.0	14.5	17	4	19.5	-	E298M22
24	3.00	160	30	18.0	14.5	17	4	21.0	-	E298M24
27	3.00	160	30	20.0	16.0	19	4	24.0	-	E298M27
30	3.50	160	36	22.0	18.0	21	4	26.5	-	E298M30

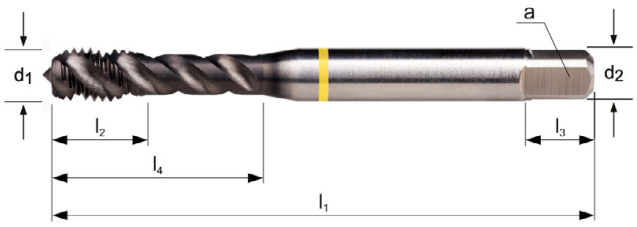
E412

- M Maskintapp spiralspår 48º, Gul Shark, bakfasad
- M Konekierretapit, Lastua nostavat urat 48º, Keltainen Shark, kevennetty takaosa
- M Maskingjengetapp Spiral spor 48º Gul Shark, Bakfaset
- M Maskingevindtappe Spiralspor 48º, Gul Shark, Bagfaset

E412 ▪ 1.1 1.2 1.3 1.4 1.5

• 2.1 2.2 2.3 7.1 7.2 7.3 7.4

E412 | M | DIN 371≤10 376≥12 | 6H | | 3XD | HSS-E PM | C 2-3 | λ48° | | TiAlN Top |



E412



M3 - M30

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊿ a mm	l_3 mm	z		l_4 mm	E412
3	0.50	56	6	3.5	2.7	6	3	2.5	18	E412M3
4	0.70	63	7	4.5	3.4	6	3	3.3	21	E412M4
5	0.80	70	8	6.0	4.9	8	3	4.2	25	E412M5
6	1.00	80	10	6.0	4.9	8	3	5.0	30	E412M6
8	1.25	90	13	8.0	6.2	9	3	6.8	35	E412M8
10	1.50	100	15	10.0	8.0	11	3	8.5	39	E412M10
12	1.75	110	18	9.0	7.0	10	3	10.3	-	E412M12
14	2.00	110	20	11.0	9.0	12	3	12.0	-	E412M14
16	2.00	110	20	12.0	9.0	12	4	14.0	-	E412M16
20	2.50	140	25	16.0	12.0	15	4	17.5	-	E412M20
22	2.50	140	25	18.0	14.5	17	4	19.5	-	E412M22
24	3.00	160	30	18.0	14.5	17	4	21.0	-	E412M24
27	3.00	160	30	20.0	16.0	19	4	24.0	-	E412M27
30	3.50	180	36	22.0	18.0	21	4	26.5	-	E412M30

DORMER

E260
E261

- M Maskintapp spiralspår 45º, Röd Shark, bakfasad
- M Konekierretapit, Lastua nostavat urat 45º, Punainen Shark, kevennetty takaosa
- M Maskingjengetapp Spiral spor 45º Rød Shark Bakfaset
- M Maskingevindtappe Spiralspor 45º, Rød Shark, Bagfaset

Levereras som HSS-E tills nytt lager finns

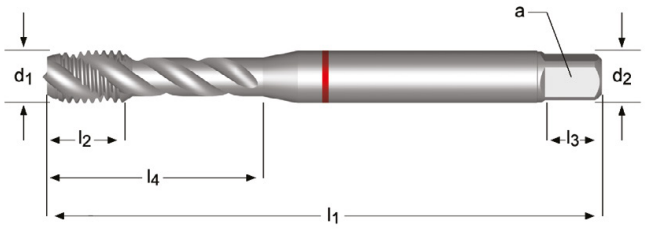
Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.

Leveres i HSS-E til ny lager tilgjengelig

Leveres i HSS-E til nyt lager er tilgængeligt

E260	▪	1.4
	•	1.5 1.6 4.2 5.2
E261	▪	1.4 1.5
	•	1.6 4.2 5.2

E260	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3	λ45°			
E261	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3	λ45°		TiAlN Top	





E260 — M3 - M20



E261 — M3 - M20

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z	↔	l_4 mm	E260	E261
3	0.50	56	6	3.5	2.7	6	3	2.5	18	E260M3	E261M3
4	0.70	63	7	4.5	3.4	6	3	3.3	21	E260M4	E261M4
5	0.80	70	8	6.0	4.9	8	3	4.2	25	E260M5	E261M5
6	1.00	80	10	6.0	4.9	8	3	5.0	30	E260M6	E261M6
8	1.25	90	12	8.0	6.2	9	3	6.8	35	E260M8	E261M8
10	1.50	100	15	10.0	8.0	11	3	8.5	39	E260M10	E261M10
12	1.75	110	16	9.0	7.0	10	3	10.3	-	E260M12	E261M12
14	2.00	110	20	11.0	9.0	12	3	12.0	-	E260M14	
16	2.00	110	20	12.0	9.0	12	4	14.0	-	E260M16	E261M16
20	2.50	140	25	16.0	12.0	15	4	17.5	-	E260M20	E261M20

E238
E239

- M Maskintapp spiralspår 40º, Blå Shark, bakfasad
- M Konekierretapit, Lastua nostavat urat 40º, Sininen Shark, kevennetty takaosa
- M Maskingjengetapp Spiral spor 40º Blå Shark, Bakfaset
- M Maskingevindtappe Spiralspor 40º, Blå Shark, Bagfaset

Levereras som HSS-E tills nytt lager finns

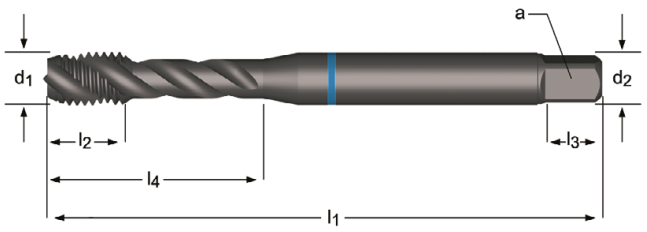
Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.

Leveres i HSS-E til ny lager tilgjengelig

Leveres i HSS-E til nyt lager er tilgængeligt

E238	▪	2.1	2.2	2.3									
	•	1.5											
E239	▪	2.1	2.2	2.3									
	•	1.2	1.3	1.4	1.5								

E238	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3	λ40°		ST	L114 334
E239	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3	λ40°		Super B	





M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z		l_4 mm	E238	E239
3	0.50	56	6	3.5	2.7	6	3	2.5	18	E238M3	E239M3
4	0.70	63	7	4.5	3.4	6	3	3.3	21	E238M4	E239M4
5	0.80	70	8	6.0	4.9	8	3	4.2	25	E238M5	E239M5
6	1.00	80	10	6.0	4.9	8	3	5.0	30	E238M6	E239M6
8	1.25	90	13	8.0	6.2	9	3	6.8	33	E238M8	E239M8
10	1.50	100	15	10.0	8.0	11	3	8.5	39	E238M10	E239M10
12	1.75	110	18	9.0	7.0	10	4	10.3	-	E238M12	E239M12
14	2.00	110	20	11.0	9.0	12	4	12.0	-	E238M14	E239M14
16	2.00	110	20	12.0	9.0	12	4	14.0	-	E238M16	E239M16
18	2.50	125	25	14.0	11.0	14	4	15.5	-	E238M18	
20	2.50	140	25	16.0	12.0	15	4	17.5	-	E238M20	E239M20
22	2.50	140	25	18.0	14.5	17	4	19.8	-	E238M22	
24	3.00	160	30	18.0	14.5	17	4	21.0	-	E238M24	
27	3.00	160	30	20.0	16.0	19	4	24.0	-	E238M27	
30	3.50	180	36	22.0	18.0	21	4	26.5	-	E238M30	

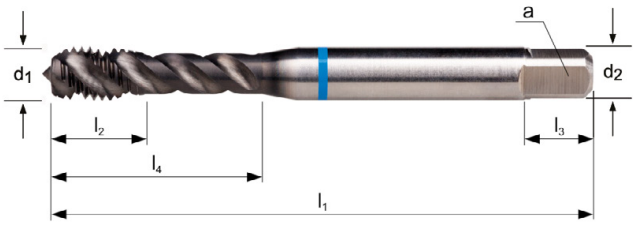
DORMER

E414

- M Maskintapp spiralspår 48º, Blå Shark, bakfasad
- M Konekierretapit, Lastua nostavat urat 48º, Sininen Shark, kevennetty takaosa
- M Maskingjengetapp Spiral spor 48º Blå Shark, Bakfaset
- M Maskingevindtappe Spiralspor 48º, Blå Shark, Bagfaset

E414 ▪ 2.1 2.2 2.3 2.4
E414 • 1.3 1.4 1.5

E414 | M | DIN 371≤10 376≥12 | 6H | | 3XD | HSS-E PM | C 2-3 | λ48° | | Super B |



E414



M3 - M20

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z		l_4 mm	E414
3	0.50	56	6	3.5	2.7	6	3	2.5	18	E414M3
4	0.70	63	7	4.5	3.4	6	3	3.3	21	E414M4
5	0.80	70	8	6.0	4.9	8	3	4.2	25	E414M5
6	1.00	80	10	6.0	4.9	8	3	5.0	30	E414M6
8	1.25	90	13	8.0	6.2	9	3	6.8	35	E414M8
10	1.50	100	15	10.0	8.0	11	3	8.5	39	E414M10
12	1.75	110	18	9.0	7.0	10	3	10.3	-	E414M12
14	2.00	110	20	11.0	9.0	12	3	12.0	-	E414M14
16	2.00	110	20	12.0	9.0	12	4	14.0	-	E414M16
20	2.50	140	25	16.0	12.0	15	4	17.5	-	E414M20

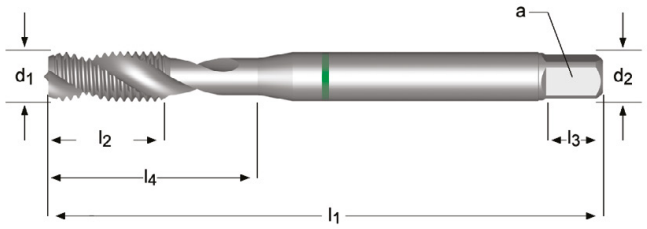
E473
E474

- M Maskintapp spiralspår 35º, Grön Shark
- M Konekierretapit, Lastua nostavat urat 35º, Vihreä Shark
- M Maskingjengetapp Spiral spor 35º Grønn Shark
- M Maskingevindtappe Spiralspor 35º, Grøn Shark

Levereras som HSS-E tills nytt lager finns
Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
Leveres i HSS-E til ny lager tilgjengelig
Leveres i HSS-E til nyt lager er tilgængeligt

E473	▪	6.2	6.3	7.1	7.2	7.3	8.1
	•	1.1	1.2	1.3	6.1	7.4	
E474	▪	6.2	7.2	7.3	7.4		
	•	1.2	1.3	6.3	7.1	8.1	

E473	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3	λ35°			
E474	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3	λ35°		Super B	



E473	E474
	
M3 - M20	M3 - M20

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z	↔	l_4 mm	E473	E474
3	0.50	56	9	3.5	2.7	6	2	2.5	18	E473M3	E474M3
4	0.70	63	12	4.5	3.4	6	2	3.3	21	E473M4	E474M4
5	0.80	70	13	6.0	4.9	8	2	4.2	25	E473M5	E474M5
6	1.00	80	15	6.0	4.9	8	2	5.0	30	E473M6	E474M6
8	1.25	90	18	8.0	6.2	9	2	6.8	35	E473M8	E474M8
10	1.50	100	20	10.0	8.0	11	2	8.5	39	E473M10	E474M10
12	1.75	110	23	9.0	7.0	10	3	10.3	-	E473M12	E474M12
16	2.00	110	25	12.0	9.0	12	3	14.0	-	E473M16	E474M16
20	2.50	140	30	16.0	12.0	15	3	17.5	-	E473M20	E474M20

E002
E002TIN
E003

- M Maskingängtappar Spiralspår 45°
- M Konekierretapit, lastua nostavat urat 45°
- M Maskingjengetapp Spiral spor 45°
- M Maskingevindtappe Spiralspor 45°

Levereras som HSS-E tills nytt lager finns

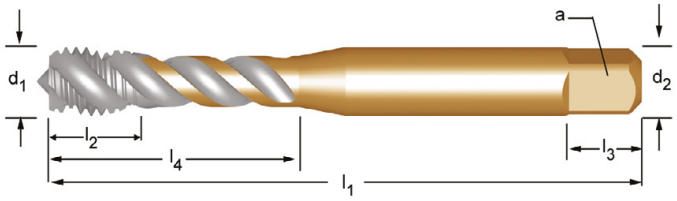
Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.

Leveres i HSS-E til ny lager tilgjengelig

Leveres i HSS-E til nyt lager er tilgængeligt

E002	▪	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4
	•	4.1	4.2	5.1	5.2					
E002TIN	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	7.3	7.4
	•	2.3	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2
E003	▪	1.1	1.2	1.3	1.4	1.5				
	•	2.1	2.2	2.3						

E002	M	ISO 529	6H		2.5XD	HSS-E PM	C 2-3	λ45°			L002 338	L113 333
E002TIN	M	ISO 529	6H		2.5XD	HSS-E PM	C 2-3	λ45°		TiN		
E003	M	ISO 529	6H		2.5XD	HSS-E PM	C 2-3	λ45°		ST	L113 333	



E002	E002TIN	E003
		
M2 - M24	M3 - M20	M2 - M24

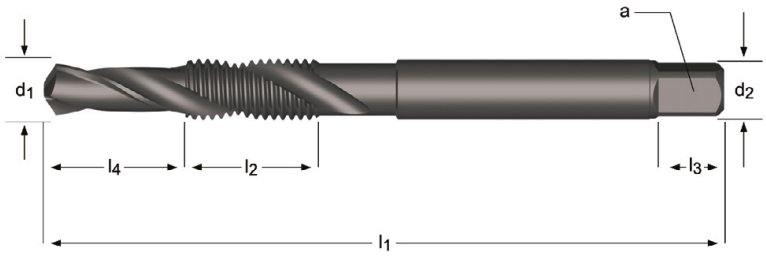
M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z	↔	l_4 mm	E002	E002TIN	E003
2	0.40	41	8	2.50	2.00	4	2	1.6	8	E002M2		E003M2
2.5	0.45	44.5	9.5	2.80	2.24	5	2	2.05	9.5	E002M2.5		E003M2.5
3	0.50	48	6	3.15	2.50	5	3	2.5	12.5	E002M3	E002TINM3	E003M3
4	0.70	53	7	4.00	3.15	6	3	3.3	19	E002M4	E002TINM4	E003M4
5	0.80	58	8	5.00	4.00	7	3	4.2	22	E002M5	E002TINM5	E003M5
6	1.00	66	10	6.30	5.00	8	3	5.0	27	E002M6	E002TINM6	E003M6
8	1.25	72	12	8.00	6.30	9	3	6.8	31	E002M8	E002TINM8	E003M8
10	1.50	80	15	10.00	8.00	11	3	8.5	35	E002M10	E002TINM10	E003M10
12	1.75	89	16	9.00	7.10	10	3	10.3	-	E002M12	E002TINM12	E003M12
14	2.00	95	18	11.20	9.00	12	3	12.0	-	E002M14		E003M14
16	2.00	102	18	12.50	10.00	13	4	14.0	-	E002M16	E002TINM16	E003M16
18	2.50	112	29	14.00	11.20	14	4	15.5	-	E002M18		E003M18
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E002M20	E002TINM20	E003M20
22	2.50	118	29	16.00	12.50	16	4	19.5	-	E002M22		E003M22
24	3.00	130	35	18.00	14.00	18	4	21.0	-	E002M24		E003M24

E650

- M Kombinerad Borr - Gängtapp Spiralspår 30°
- M Pora-kierretapit, lastua nostavat urat 30°
- M Kombinert Bor - Gjengetapp Spiralspor 30°
- M Kombineret Bor - Gevindtap Spiralspor 30°

E650 • 1.1 1.2 1.3 1.4 3.2 6.2 6.3 7.1 7.2 8.1







M	P mm	d_1 nom mm	l_1 mm	l_2 mm	l_4 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z	E650
3	0.50	2.5	56	10	6	3.15	2.5	5.0	2	E650M3
4	0.70	3.3	65	12	8	4.0	3.15	6.0	2	E650M4
5	0.80	4.2	69	15	10	5.0	4.00	7.0	2	E650M5
6	1.00	5.0	84	18	12	6.3	5.00	8.0	2	E650M6
8	1.25	6.8	96	21	16	8.0	6.30	9.0	2	E650M8
10	1.50	8.5	108	22	20	10.0	8.00	11.0	2	E650M10
12	1.75	10.2	113	29	24	9.0	7.10	10.0	2	E650M12
14	2.00	12.0	123	30	28	11.2	9.00	12.0	2	E650M14
16	2.00	14.0	134	32	32	12.5	10.00	13.0	2	E650M16

DORMER

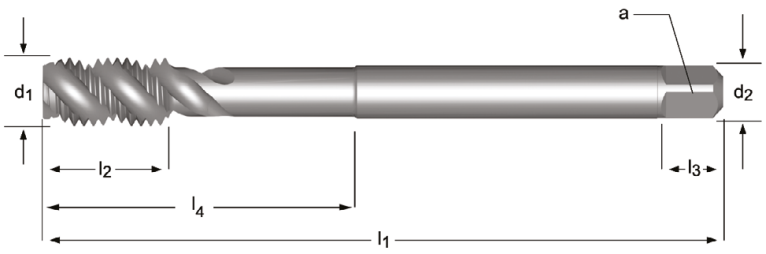
E605

- M Maskingängtapp, extra lång Spiralspår 40°
- M Konekierretapit, erit. pitkät, lastua nostavat urat 40°
- M Maskingjengtapp, ekstra lang Spiral spor 40°
- M Maskintap, ekstra lang spiralspor 40°

Levereras som HSS-E tills nytt lager finns
Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
Leveres i HSS-E til ny lager tilgjengelig
Leveres i HSS-E til nyt lager er tilgængeligt

E605 • 1.2 1.3 1.4 1.5 2.1 2.2 2.3 5.2 7.1 7.2 7.3 7.4

E605 | M | ISO 2283 | 6H | 2XD | HSS-E PM | C 2-3 | λ40°



E605



M3 - M20

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z		l_4 mm	E605
3	0.50	66	9	3.15	2.50	5	2	2.5	21	E605M3
4	0.70	73	9	4.00	3.15	6	2	3.3	22	E605M4
5	0.80	79	12	5.00	4.00	7	3	4.2	26	E605M5
6	1.00	89	12	6.30	5.00	8	3	5	29	E605M6
8	1.25	97	12	6.30	5.00	8	3	6.8	-	E605M8
10	1.50	108	14	8.00	6.30	9	3	8.5	-	E605M10
12	1.75	119	23	9.00	7.10	10	3	10.3	-	E605M12
14	2.00	127	25	11.20	9.00	12	3	12	-	E605M14
16	2.00	137	25	12.50	10.00	13	3	14	-	E605M16
20	2.50	149	30	14.00	11.20	14	3	17.5	-	E605M20

E291
- M Maskinpressgängtappar
- M Konekierretapit Manglaavat

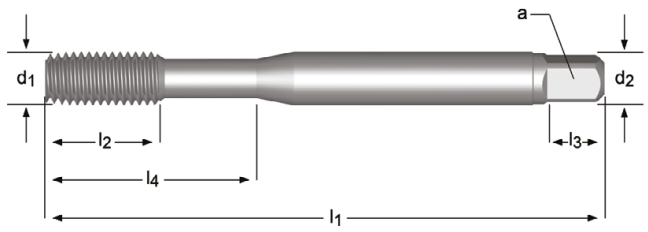
E292
- M Maskinpressgjengtapper
- M Maskinrulletap

E294
- M Maskinpressgängtappar, oljespår
- M Konekierretapit, manglaavat, voitelu-urat
- M Maskinpressgjengtapper
- M Maskin Rulletap, oliespor

E289
- M Maskinpressgängtappar, oljespår och inv. kylkanaler
- M Konekierretapit, manglaavat, voitelu-urat ja jäähdytyskanavat
- M Maskinpressgjengetapp med oljespor og innv kjøling
- M Maskin Rulletap, oliespor och indvendig køl

E291	▪	1.1	1.2	1.3	1.4	7.1	7.2					
	•	7.3										
E292: E294; E289	▪	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.1	7.2	7.3
	•	1.5	2.3	5.2	6.1	6.3	7.4					

E291	M	DIN 2174	6HX		3XD	HSS-E	C 2-3.5				
E292	M	DIN 2174	6HX		3XD	HSS-E	C 2-3.5			TiN	
E294	M	DIN 2174	6HX		3.5XD	HSS-E	C 2-3.5			TiN	
E289	M	DIN 2174	6HX		3.5XD	HSS-E	C 2-3.5			TiN	



E291	E292	E294	E289
			
M1.6 - M16	M1.6 - M16	M3 - M16	M5 - M12

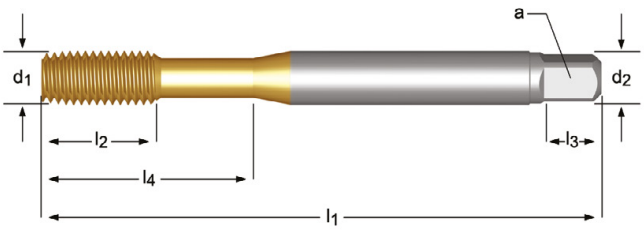
M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z		l_4 mm	E291	E292	E294	E289
1.6	0.35	40	8	2.5	2.1	5	3	1.4	-	E291M1.6	E292M1.6		
2	0.40	45	6	2.8	2.1	5	3	1.8	11	E291M2	E292M2		
2.5	0.45	50	8	2.8	2.1	5	3	2.3	12.5	E291M2.5	E292M2.5		
3	0.50	56	9	3.5	2.7	6	4	2.8	18	E291M3	E292M3	E294M3	
3.5	0.60	56	11	4.0	3.0	6	4	3.2	20	E291M3.5	E292M3.5		
4	0.70	63	12	4.5	3.4	6	5	3.7	21	E291M4	E292M4	E294M4	
5	0.80	70	13	6.0	4.9	8	5	4.6	25	E291M5	E292M5	E294M5	E289M5
6	1.00	80	15	6.0	4.9	8	5	5.5	30	E291M6	E292M6	E294M6	E289M6
8	1.25	90	18	8.0	6.2	9	5	7.4	35	E291M8	E292M8	E294M8	E289M8
10	1.50	100	20	10.0	8.0	11	5	9.3	39	E291M10	E292M10	E294M10	E289M10
12	1.75	110	23	9.0	7.0	10	5	11.2	-	E291M12	E292M12	E294M12	E289M12
14	2.00	110	25	11.0	9.0	12	6	13.0	-			E294M14	
16	2.00	110	25	12.0	9.0	12	6	15.0	-	E291M16	E292M16	E294M16	

E293

- M Maskinpressgängtappar
- M Konekierretapit Manglaavat
- M Maskinpressgjengtapper
- M Maskinrulletap

E293 ▪ 1.1 1.2 1.3 1.4 2.1 2.2 4.1 5.1 7.1 7.2 7.3
E293 • 1.5 2.3 5.2 6.1 6.3 7.4

E293 | M | DIN 2174 | 6HX | 3XD | HSS-E | E 1.5-2 | TiN



E293



M3 - M16

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z		l_4 mm	E293
3	0.50	56	9	3.5	2.7	6	4	2.8	18	E293M3
4	0.70	63	12	4.5	3.4	6	5	3.7	21	E293M4
5	0.80	70	13	6.0	4.9	8	5	4.6	25	E293M5
6	1.00	80	15	6.0	4.9	8	5	5.5	30	E293M6
8	1.25	90	18	8.0	6.2	9	5	7.4	35	E293M8
10	1.50	100	20	10.0	8.0	11	5	9.3	39	E293M10
12	1.75	110	23	9.0	7.0	10	5	11.2	-	E293M12
16	2.00	110	25	12.0	9.0	12	6	15.0	-	E293M16

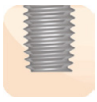
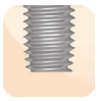
E295
- M Maskinpressgängtappar
- M Konekierretapit Manglaavat

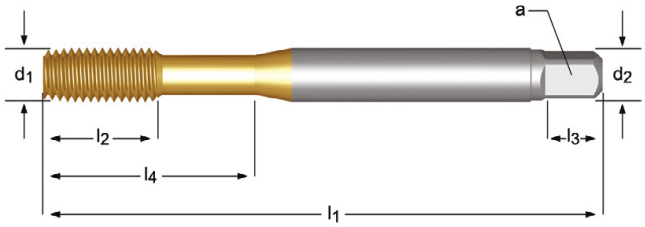
E296
- M Maskinpressgjengtapper
- M Maskinrulletap

E295; E296

▪ 1.1 1.2 1.3 1.4 2.1 2.2 4.1 5.1 7.1 7.2 7.3

• 1.5 2.3 5.2 6.1 6.3 7.4

E295	M	DIN 2174	6GX		3XD	HSS-E	C 2-3.5				
E296	M	DIN 2174	6GX		3XD	HSS-E	E 1.5-2				



E295	E296
	
M3 - M12	M3 - M10

M	P mm	l_1 mm	l_2 mm	d_2 Ø mm	▨ a mm	l_3 mm	z	↔	l_4 mm	E295	E296
3	0.50	56	9	3.5	2.7	6	4	2.8	18	E295M3	E296M3
3.5	0.60	56	11	4.0	3.0	6	4	3.2	20	E295M3.5	
4	0.70	63	12	4.5	3.4	6	5	3.7	21	E295M4	E296M4
5	0.80	70	13	6.0	4.9	8	5	4.6	25	E295M5	E296M5
6	1.00	80	15	6.0	4.9	8	5	5.5	30	E295M6	E296M6
8	1.25	90	18	8.0	6.2	9	5	7.4	35	E295M8	E296M8
10	1.50	100	20	10.0	8.0	11	5	9.3	39	E295M10	E296M10
12	1.75	110	23	9.0	7.0	10	5	11.2	-	E295M12	

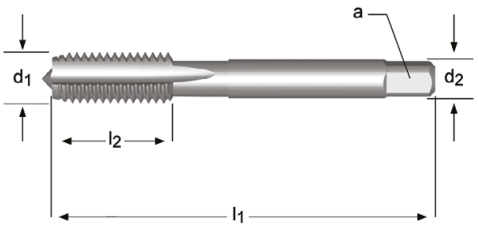
DORMER

E105

- MF Handgängtappar Raka spår
- MF Käsikierretapit, suorauraiset
- MF Handgjengetapper Rett sportapp
- MF Håndtappe Lige spor

E105 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E105 MF DIN 2181 6H 1.5XD HSS C 2-3





MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	◹ a mm	z	↔	E105
2.5	0.35	40	9	2.8	2.1	3	2.15	E105M2.5X.35NO3
2.5	0.35	40	9	2.8	2.1	3	2.15	E105M2.5X.35NO9
3	0.35	40	9	3.5	2.7	3	2.65	E105M3X.35NO3
3	0.35	40	9	3.5	2.7	3	2.65	E105M3X.35NO9
3.5	0.35	45	10	4.0	3.0	3	3.2	E105M3.5X.35NO3
3.5	0.35	45	10	4.0	3.0	3	3.2	E105M3.5X.35NO9
4	0.50	45	12	4.5	3.4	3	3.5	E105M4X.5NO3
4	0.50	45	12	4.5	3.4	3	3.5	E105M4X.5NO9
5	0.50	50	14	6.0	4.9	3	4.5	E105M5X.5NO3
5	0.50	50	14	6.0	4.9	3	4.5	E105M5X.5NO9
5.5	0.50	56	16	6.0	4.9	3	5	E105M5.5X.5NO9
6	0.75	56	16	6.0	4.9	3	5.3	E105M6X.75NO3
6	0.75	56	16	6.0	4.9	3	5.3	E105M6X.75NO9
7	0.75	56	16	6.0	4.9	3	6.3	E105M7X.75NO3
7	0.75	56	16	6.0	4.9	3	6.3	E105M7X.75NO9
8	0.75	56	16	6.0	4.9	3	7.3	E105M8X.75NO3
8	0.75	56	16	6.0	4.9	3	7.3	E105M8X.75NO9
8	1.00	63	19	6.0	4.9	3	7	E105M8X1.0NO3
8	1.00	63	19	6.0	4.9	3	7	E105M8X1.0NO9
9	0.75	63	19	7.0	5.5	3	8.3	E105M9X.75NO3
9	0.75	63	19	7.0	5.5	3	8.3	E105M9X.75NO9
9	1.00	63	19	7.0	5.5	3	8	E105M9X1.0NO3
9	1.00	63	19	7.0	5.5	3	8	E105M9X1.0NO9
10	0.75	63	16	7.0	5.5	3	9.3	E105M10X.75NO3
10	0.75	63	16	7.0	5.5	3	9.3	E105M10X.75NO9
10	1.00	63	16	7.0	5.5	3	9	E105M10X1.0NO3
10	1.00	63	16	7.0	5.5	3	9	E105M10X1.0NO9
10	1.25	70	22	7.0	5.5	3	8.8	E105M10X1.25NO3
10	1.25	70	22	7.0	5.5	3	8.8	E105M10X1.25NO9
11	0.75	63	15	8.0	6.2	3	10.3	E105M11X.75NO3
11	0.75	63	15	8.0	6.2	3	10.3	E105M11X.75NO9
11	1.00	63	15	8.0	6.2	3	10	E105M11X1.0NO3
11	1.00	63	15	8.0	6.2	3	10	E105M11X1.0NO9
12	1.00	70	16	9.0	7.0	3	11	E105M12X1.0NO3
12	1.00	70	16	9.0	7.0	3	11	E105M12X1.0NO9
12	1.25	70	16	9.0	7.0	3	10.8	E105M12X1.25NO3
12	1.25	70	16	9.0	7.0	3	10.8	E105M12X1.25NO9
12	1.50	70	16	9.0	7.0	3	10.5	E105M12X1.5NO3
12	1.50	70	16	9.0	7.0	3	10.5	E105M12X1.5NO9
14	1.00	70	16	11.0	9.0	4	13	E105M14X1.0NO3

NO1 - NO9 219

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	z	↔	E105
14	1.00	70	16	11.0	9.0	4	13	E105M14X1.0NO9
14	1.25	70	16	11.0	9.0	4	12.8	E105M14X1.25NO3
14	1.25	70	16	11.0	9.0	4	12.8	E105M14X1.25NO9
14	1.50	70	16	11.0	9.0	4	12.5	E105M14X1.5NO3
14	1.50	70	16	11.0	9.0	4	12.5	E105M14X1.5NO9
15	1.00	70	16	12.0	9.0	4	14	E105M15X1.0NO3
15	1.00	70	16	12.0	9.0	4	14	E105M15X1.0NO9
15	1.50	70	16	12.0	9.0	4	13.5	E105M15X1.5NO3
15	1.50	70	16	12.0	9.0	4	13.5	E105M15X1.5NO9
16	1.00	70	16	12.0	9.0	4	15	E105M16X1.0NO3
16	1.00	70	16	12.0	9.0	4	15	E105M16X1.0NO9
16	1.50	70	16	12.0	9.0	4	14.5	E105M16X1.5NO3
16	1.50	70	16	12.0	9.0	4	14.5	E105M16X1.5NO9
18	1.00	80	18	14.0	11.0	4	17	E105M18X1.0NO3
18	1.00	80	18	14.0	11.0	4	17	E105M18X1.0NO9
18	1.50	80	18	14.0	11.0	4	16.5	E105M18X1.5NO3
18	1.50	80	18	14.0	11.0	4	16.5	E105M18X1.5NO9
20	1.00	80	18	16.0	12.0	4	19	E105M20X1.0NO3
20	1.00	80	18	16.0	12.0	4	19	E105M20X1.0NO9
20	1.50	80	18	16.0	12.0	4	18.5	E105M20X1.5NO3
20	1.50	80	18	16.0	12.0	4	18.5	E105M20X1.5NO9
22	1.00	80	22	18.0	14.5	4	21	E105M22X1.0NO3
22	1.00	80	22	18.0	14.5	4	21	E105M22X1.0NO9
22	1.50	80	22	18.0	14.5	4	20.5	E105M22X1.5NO3
22	1.50	80	22	18.0	14.5	4	20.5	E105M22X1.5NO9
24	1.00	90	22	18.0	14.5	4	23	E105M24X1.0NO3
24	1.00	90	22	18.0	14.5	4	23	E105M24X1.0NO9
24	1.50	90	22	18.0	14.5	4	22.5	E105M24X1.5NO3
24	1.50	90	22	18.0	14.5	4	22.5	E105M24X1.5NO9
24	2.00	90	22	18.0	14.5	4	22	E105M24X2.0NO3
24	2.00	90	22	18.0	14.5	4	22	E105M24X2.0NO9
25	1.50	90	22	18.0	14.5	4	23.5	E105M25X1.5NO3
25	1.50	90	22	18.0	14.5	4	23.5	E105M25X1.5NO9
25	2.00	90	22	18.0	14.5	4	23	E105M25X2.0NO3
25	2.00	90	22	18.0	14.5	4	23	E105M25X2.0NO9
27	1.50	90	22	20.0	16.0	4	25.5	E105M27X1.5NO3
27	1.50	90	22	20.0	16.0	4	25.5	E105M27X1.5NO9
27	2.00	90	22	20.0	16.0	4	25	E105M27X2.0NO3
27	2.00	90	22	20.0	16.0	4	25	E105M27X2.0NO9
28	1.50	90	22	20.0	16.0	4	26.5	E105M28X1.5NO3
28	1.50	90	22	20.0	16.0	4	26.5	E105M28X1.5NO9
28	2.00	90	22	20.0	16.0	4	26	E105M28X2.0NO3
28	2.00	90	22	20.0	16.0	4	26	E105M28X2.0NO9
30	1.50	90	22	22.0	18.0	4	28.5	E105M30X1.5NO3
30	1.50	90	22	22.0	18.0	4	28.5	E105M30X1.5NO9
30	2.00	90	22	22.0	18.0	4	28	E105M30X2.0NO3
30	2.00	90	22	22.0	18.0	4	28	E105M30X2.0NO9
32	1.50	90	22	22.0	18.0	4	30.5	E105M32X1.5NO3
32	1.50	90	22	22.0	18.0	4	30.5	E105M32X1.5NO9
32	2.00	90	22	22.0	18.0	4	30	E105M32X2.0NO3
32	2.00	90	22	22.0	18.0	4	30	E105M32X2.0NO9
36	1.50	100	25	28.0	22.0	4	34.5	E105M36X1.5NO3
36	1.50	100	25	28.0	22.0	4	34.5	E105M36X1.5NO9
36	2.00	125	40	28.0	22.0	4	34	E105M36X2.0NO3
36	2.00	125	40	28.0	22.0	4	34	E105M36X2.0NO9
36	3.00	125	40	28.0	22.0	4	33	E105M36X3.0NO3
36	3.00	125	40	28.0	22.0	4	33	E105M36X3.0NO9
40	1.50	110	25	32.0	24.0	4	38.5	E105M40X1.5NO3
40	1.50	110	25	32.0	24.0	4	38.5	E105M40X1.5NO9
40	2.00	125	40	32.0	24.0	4	38	E105M40X2.0NO3
40	2.00	125	40	32.0	24.0	4	38	E105M40X2.0NO9
40	3.00	125	40	32.0	24.0	4	37	E105M40X3.0NO3
40	3.00	125	40	32.0	24.0	4	37	E105M40X3.0NO9
42	1.50	110	25	32.0	24.0	4	40.5	E105M42X1.5NO3
42	1.50	110	25	32.0	24.0	4	40.5	E105M42X1.5NO9
42	2.00	125	40	32.0	24.0	4	40	E105M42X2.0NO3
42	2.00	125	40	32.0	24.0	4	40	E105M42X2.0NO9
42	3.00	125	40	32.0	24.0	4	39	E105M42X3.0NO3
42	3.00	125	40	32.0	24.0	4	39	E105M42X3.0NO9
45	1.50	110	25	36.0	29.0	6	43.5	E105M45X1.5NO3

NO1 - NO9
219

DORMER

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	z	↔	E105
45	1.50	110	25	36.0	29.0	6	43.5	E105M45X1.5NO9
45	2.00	125	40	36.0	29.0	6	43	E105M45X2.0NO3
45	2.00	125	40	36.0	29.0	6	43	E105M45X2.0NO9
45	3.00	125	40	36.0	29.0	6	42	E105M45X3.0NO3
45	3.00	125	40	36.0	29.0	6	42	E105M45X3.0NO9
48	1.50	140	40	36.0	29.0	6	46.5	E105M48X1.5NO3
48	1.50	140	40	36.0	29.0	6	46.5	E105M48X1.5NO9
48	2.00	140	40	36.0	29.0	6	46	E105M48X2.0NO3
48	2.00	140	40	36.0	29.0	6	46	E105M48X2.0NO9
48	3.00	140	40	36.0	29.0	6	45	E105M48X3.0NO3
48	3.00	140	40	36.0	29.0	6	45	E105M48X3.0NO9
50	1.50	140	40	36.0	29.0	6	48.5	E105M50X1.5NO3
50	1.50	140	40	36.0	29.0	6	48.5	E105M50X1.5NO9
50	2.00	140	40	36.0	29.0	6	48	E105M50X2.0NO3
50	2.00	140	40	36.0	29.0	6	48	E105M50X2.0NO9
50	3.00	140	40	36.0	29.0	6	47	E105M50X3.0NO3
50	3.00	140	40	36.0	29.0	6	47	E105M50X3.0NO9

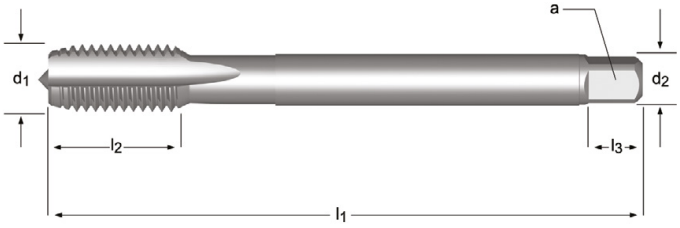


E268
E242
E290

- MF Maskingängtappar Raka spår — Levereras som HSS-E tills nytt lager finns
- MF Konekierretapit, suorauraiset — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- MF Maskingjengetapp Rett sportapp — Leveres i HSS-E til ny lager tilgjengelig
- MF Maskingevindtappe Lige spor — Leveres i HSS-E til nyt lager er tilgængeligt

E268; E242; E290 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 6.2 6.3 7.2 7.3 8.2

E268	MF	DIN 374	6H		1.5XD	HSS-E PM	C 2-3					
E242	MF	DIN 371	6H		1.5XD	HSS-E PM	C 2-3					
E290	MF	DIN 374	6H		1.5XD	HSS-E PM	C 2-3					



E268	E242	E290
		
M4 - M50	M8 - M10	M12 - M24

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z	↔	l_4 mm	E268	E242	E290
4	0.50	63	10	2.8	2.1	5	3	3.5		E268M4X.5		
5	0.50	70	13	3.5	2.7	6	3	4.5		E268M5X.5		
6	0.75	80	15	4.5	3.4	6	3	5.3		E268M6X.75		
7	0.75	80	15	5.5	4.3	7	3	6.3		E268M7X.75		
8	0.75	80	15	6.0	4.9	8	3	7.3		E268M8X.75		
8	1.00	90	18	6.0	4.9	8	3	7.0		E268M8X1.0		
8	1.00	90	18	8.0	6.2	9	3	7.0	35		E242M8X1.0	
9	1.00	90	18	6.0	4.9	8	3	8.0		E268M9X1.0		
10	0.75	90	20	7.0	5.5	8	3	9.3		E268M10X.75		
10	1.00	100	20	10.0	8.0	11	3	9.0	39		E242M10X1.0	
10	1.00	90	20	7.0	5.5	8	3	9.0		E268M10X1.0		
10	1.25	100	20	7.0	5.5	8	3	8.8		E268M10X1.25		
11	1.00	90	20	8.0	6.2	9	3	10.0		E268M11X1.0		
12	1.00	100	21	9.0	7.0	10	4	11.0		E268M12X1.0		E290M12X1.0
12	1.25	100	21	9.0	7.0	10	4	10.8		E268M12X1.25		
12	1.50	100	21	9.0	7.0	10	4	10.5		E268M12X1.5		E290M12X1.5
14	1.00	100	21	11.0	9.0	12	4	13.0		E268M14X1.0		E290M14X1.0
14	1.25	100	21	11.0	9.0	12	4	12.8		E268M14X1.25		
14	1.50	100	21	11.0	9.0	12	4	12.5		E268M14X1.5		E290M14X1.5
15	1.50	100	21	12.0	9.0	12	4	13.5		E268M15X1.5		
16	1.00	100	21	12.0	9.0	12	4	15.0		E268M16X1.0		E290M16X1.0
16	1.50	100	21	12.0	9.0	12	4	14.5		E268M16X1.5		E290M16X1.5
18	1.00	110	24	14.0	11.0	14	4	17.0		E268M18X1.0		
18	1.50	110	24	14.0	11.0	14	4	16.5		E268M18X1.5		E290M18X1.5
20	1.00	125	24	16.0	12.0	15	4	19.0		E268M20X1.0		
20	1.50	125	24	16.0	12.0	15	4	18.5		E268M20X1.5		E290M20X1.5
22	1.00	125	25	18.0	14.5	17	4	21.0		E268M22X1.0		
22	1.50	125	25	18.0	14.5	17	4	20.5		E268M22X1.5		E290M22X1.5

DORMER

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z		l_4 mm	E268	E242	E290
24	1.00	140	28	18.0	14.5	17	4	23.0		E268M24X1.0		
24	1.50	140	28	18.0	14.5	17	4	22.5		E268M24X1.5		E290M24X1.5
24	2.00	140	28	18.0	14.5	17	4	22.0		E268M24X2.0		
25	1.50	140	28	18.0	14.5	17	4	23.5		E268M25X1.5		
25	2.00	140	28	18.0	14.5	17	4	23.0		E268M25X2.0		
26	1.50	140	28	18.0	14.5	17	4	24.5		E268M26X1.5		
26	2.00	140	28	18.0	14.5	17	4	24.0		E268M26X2.0		
27	1.50	140	28	20.0	16.0	19	4	25.5		E268M27X1.5		
27	2.00	140	28	20.0	16.0	19	4	25.0		E268M27X2.0		
28	1.50	140	28	20.0	16.0	19	4	26.5		E268M28X1.5		
28	2.00	140	28	20.0	16.0	19	4	26.0		E268M28X2.0		
30	1.50	150	28	22.0	18.0	21	4	28.5		E268M30X1.5		
30	2.00	150	28	22.0	18.0	21	4	28.0		E268M30X2.0		
32	1.50	150	28	22.0	18.0	21	4	30.5		E268M32X1.5		
32	2.00	150	28	22.0	18.0	21	4	30.0		E268M32X2.0		
33	1.50	160	30	25.0	20.0	23	4	31.5		E268M33X1.5		
34	1.50	170	30	28.0	22.0	25	4	32.5		E268M34X1.5		
35	1.50	170	30	28.0	22.0	25	4	33.5		E268M35X1.5		
36	1.50	170	30	28.0	22.0	25	4	34.5		E268M36X1.5		
36	2.00	170	30	28.0	22.0	25	4	34.0		E268M36X2.0		
36	3.00	200	55	28.0	22.0	25	4	33.0		E268M36X3.0		
40	1.50	170	30	32.0	24.0	27	4	38.5		E268M40X1.5		
40	2.00	170	30	32.0	24.0	27	4	38.0		E268M40X2.0		
40	3.00	200	60	32.0	24.0	27	4	37.0		E268M40X3.0		
42	1.50	170	30	32.0	24.0	27	4	40.5		E268M42X1.5 [1)]		
42	2.00	170	30	32.0	24.0	27	4	40.0		E268M42X2.0 [1)]		
42	3.00	200	60	32.0	24.0	27	4	39.0		E268M42X3.0 [1)]		
45	1.50	180	32	36.0	29.0	32	6	43.5		E268M45X1.5 [1)]		
45	2.00	180	32	36.0	29.0	32	6	43.0		E268M45X2.0 [1)]		
45	3.00	200	42	36.0	29.0	32	6	42.0		E268M45X3.0 [1)]		
48	1.50	190	32	36.0	29.0	32	6	46.5		E268M48X1.5 [1)]		
48	2.00	190	32	36.0	29.0	32	6	46.0		E268M48X2.0 [1)]		
48	3.00	225	50	36.0	29.0	32	6	45.0		E268M48X3.0 [1)]		
50	1.50	190	32	36.0	29.0	32	6	48.5		E268M50X1.5 [1)]		
50	2.00	190	30	36.0	29.0	32	6	48.0		E268M50X2.0 [1)]		
50	3.00	225	50	36.0	29.0	32	6	47.0		E268M50X3.0 [1)]		

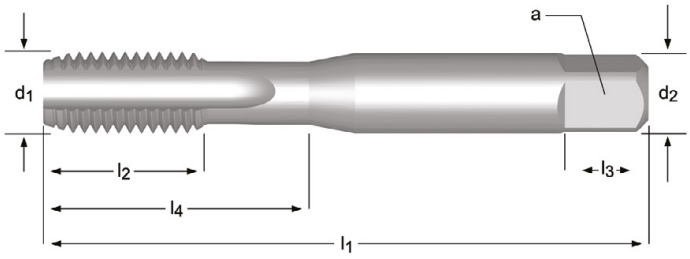
1) HSS-E

E513

- MF Maskingängtappar Raka spår
- MF Konekierretapit, suorauraiset
- MF Maskingjengetapp Rett sportapp
- MF Maskingevindtappe Lige spor

E513 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E513 | MF | ISO 529 | 6H | 1.5XD | HSS



E513



M3 - M50

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z		l_4 mm	E513
3	0.35	48	12.5	3.15	2.50	5	3	2.65	12.5	E513M3X.35NO1
3	0.35	48	12.5	3.15	2.50	5	3	2.65	12.5	E513M3X.35NO2
3	0.35	48	12.5	3.15	2.50	5	3	2.65	12.5	E513M3X.35NO3
3.5	0.35	48	12.5	3.15	2.50	5	3	3.2	12.5	E513M3.5X.35NO3
4	0.50	53	14	4.00	3.15	6	3	3.5	14	E513M4X.5NO1
4	0.50	53	14	4.00	3.15	6	3	3.5	14	E513M4X.5NO2
4	0.50	53	14	4.00	3.15	6	3	3.5	14	E513M4X.5NO3
4	0.50	53	14	4.00	3.15	6	3	3.5	14	E513M4X.5NO7
5	0.50	58	11	5.00	4.00	7	3	4.5	22	E513M5X.5NO1
5	0.50	58	11	5.00	4.00	7	3	4.5	22	E513M5X.5NO2
5	0.50	58	11	5.00	4.00	7	3	4.5	22	E513M5X.5NO3
5	0.50	58	11	5.00	4.00	7	3	4.5	22	E513M5X.5NO7
5	0.75	58	11	5.00	4.00	7	3	4.3	22	E513M5X.75NO1
5	0.75	58	11	5.00	4.00	7	3	4.3	22	E513M5X.75NO2
5	0.75	58	11	5.00	4.00	7	3	4.3	22	E513M5X.75NO3
6	0.50	66	13	6.30	5.00	8	3	5.5	26	E513M6X.5NO1
6	0.50	66	13	6.30	5.00	8	3	5.5	26	E513M6X.5NO2
6	0.50	66	13	6.30	5.00	8	3	5.5	26	E513M6X.5NO3
6	0.75	66	13	6.30	5.00	8	3	5.3	26	E513M6X.75NO1
6	0.75	66	13	6.30	5.00	8	3	5.3	26	E513M6X.75NO2
6	0.75	66	13	6.30	5.00	8	3	5.3	26	E513M6X.75NO3
6	0.75	66	13	6.30	5.00	8	3	5.3	26	E513M6X.75NO7
7	0.75	66	13	7.10	5.60	8	3	6.3	26	E513M7X.75NO1
7	0.75	66	13	7.10	5.60	8	3	6.3	26	E513M7X.75NO2
7	0.75	66	13	7.10	5.60	8	3	6.3	26	E513M7X.75NO3
8	0.50	72	16	8.00	6.30	9	3	7.5	29	E513M8X.5NO1
8	0.50	72	16	8.00	6.30	9	3	7.5	29	E513M8X.5NO2
8	0.50	72	16	8.00	6.30	9	3	7.5	29	E513M8X.5NO3
8	0.75	72	16	8.00	6.30	9	3	7.3	29	E513M8X.75NO1
8	0.75	72	16	8.00	6.30	9	3	7.3	29	E513M8X.75NO2
8	0.75	72	16	8.00	6.30	9	3	7.3	29	E513M8X.75NO3
8	0.75	72	16	8.00	6.30	9	3	7.3	29	E513M8X.75NO7
8	1.00	72	16	8.00	6.30	9	3	7	29	E513M8X1.0NO1
8	1.00	72	16	8.00	6.30	9	3	7	29	E513M8X1.0NO2
8	1.00	72	16	8.00	6.30	9	3	7	29	E513M8X1.0NO3
8	1.00	72	16	8.00	6.30	9	3	7	29	E513M8X1.0NO7
9	0.75	72	16	9.00	7.10	10	3	8.3	29	E513M9X.75NO3
9	1.00	72	16	9.00	7.10	10	3	8	29	E513M9X1.0NO1
9	1.00	72	16	9.00	7.10	10	3	8	29	E513M9X1.0NO2
9	1.00	72	16	9.00	7.10	10	3	8	29	E513M9X1.0NO3

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MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z	↔	l_4 mm	E513
10	0.50	80	18	10.00	8.00	11	3	9.5	34	E513M10X.5NO3
10	0.75	80	18	10.00	8.00	11	3	9.3	34	E513M10X.75NO1
10	0.75	80	18	10.00	8.00	11	3	9.3	34	E513M10X.75NO2
10	0.75	80	18	10.00	8.00	11	3	9.3	34	E513M10X.75NO3
10	1.00	80	18	10.00	8.00	11	3	9	34	E513M10X1.0NO1
10	1.00	80	18	10.00	8.00	11	3	9	34	E513M10X1.0NO2
10	1.00	80	18	10.00	8.00	11	3	9	34	E513M10X1.0NO3
10	1.00	80	18	10.00	8.00	11	3	9	34	E513M10X1.0NO6
10	1.00	80	18	10.00	8.00	11	3	9	34	E513M10X1.0NO7
10	1.25	80	18	10.00	8.00	11	3	8.8	34	E513M10X1.25NO1
10	1.25	80	18	10.00	8.00	11	3	8.8	34	E513M10X1.25NO2
10	1.25	80	18	10.00	8.00	11	3	8.8	34	E513M10X1.25NO3
10	1.25	80	18	10.00	8.00	11	3	8.8	34	E513M10X1.25NO6
10	1.25	80	18	10.00	8.00	11	3	8.8	34	E513M10X1.25NO7
11	0.75	85	19	8.00	6.30	9	3	10.3	-	E513M11X.75NO1
11	0.75	85	19	8.00	6.30	9	3	10.3	-	E513M11X.75NO2
11	0.75	85	19	8.00	6.30	9	3	10.3	-	E513M11X.75NO3
11	1.00	85	19	8.00	6.30	9	3	10	-	E513M11X1.0NO1
11	1.00	85	19	8.00	6.30	9	3	10	-	E513M11X1.0NO2
11	1.00	85	19	8.00	6.30	9	3	10	-	E513M11X1.0NO3
11	1.25	85	19	8.00	6.30	9	3	9.8	-	E513M11X1.25NO3
12	0.75	89	22	9.00	7.10	10	3	11.3	-	E513M12X.75NO3
12	1.00	89	22	9.00	7.10	10	3	11	-	E513M12X1.0NO1
12	1.00	89	22	9.00	7.10	10	3	11	-	E513M12X1.0NO2
12	1.00	89	22	9.00	7.10	10	3	11	-	E513M12X1.0NO3
12	1.00	89	22	9.00	7.10	10	3	11	-	E513M12X1.0NO7
12	1.25	89	22	9.00	7.10	10	3	10.8	-	E513M12X1.25NO1
12	1.25	89	22	9.00	7.10	10	3	10.8	-	E513M12X1.25NO2
12	1.25	89	22	9.00	7.10	10	3	10.8	-	E513M12X1.25NO3
12	1.25	89	22	9.00	7.10	10	3	10.8	-	E513M12X1.25NO6
12	1.25	89	22	9.00	7.10	10	3	10.8	-	E513M12X1.25NO7
12	1.50	89	22	9.00	7.10	10	3	10.5	-	E513M12X1.5NO1
12	1.50	89	22	9.00	7.10	10	3	10.5	-	E513M12X1.5NO2
12	1.50	89	22	9.00	7.10	10	3	10.5	-	E513M12X1.5NO3
12	1.50	89	22	9.00	7.10	10	3	10.5	-	E513M12X1.5NO6
12	1.50	89	22	9.00	7.10	10	3	10.5	-	E513M12X1.5NO7
13	1.50	89	22	9.00	7.10	10	3	11.5	-	E513M13X1.5NO3
14	1.00	95	24	11.20	9.00	12	4	13	-	E513M14X1.0NO1
14	1.00	95	24	11.20	9.00	12	4	13	-	E513M14X1.0NO2
14	1.00	95	24	11.20	9.00	12	4	13	-	E513M14X1.0NO3
14	1.00	95	24	11.20	9.00	12	4	13	-	E513M14X1.0NO7
14	1.25	95	24	11.20	9.00	12	4	12.8	-	E513M14X1.25NO1
14	1.25	95	24	11.20	9.00	12	4	12.8	-	E513M14X1.25NO2
14	1.25	95	24	11.20	9.00	12	4	12.8	-	E513M14X1.25NO3
14	1.25	95	24	11.20	9.00	12	4	12.8	-	E513M14X1.25NO6
14	1.50	95	24	11.20	9.00	12	4	12.5	-	E513M14X1.5NO1
14	1.50	95	24	11.20	9.00	12	4	12.5	-	E513M14X1.5NO2
14	1.50	95	24	11.20	9.00	12	4	12.5	-	E513M14X1.5NO3
14	1.50	95	24	11.20	9.00	12	4	12.5	-	E513M14X1.5NO6
14	1.50	95	24	11.20	9.00	12	4	12.5	-	E513M14X1.5NO7
15	1.50	95	24	11.20	9.00	12	4	13.5	-	E513M15X1.5NO2
15	1.50	95	24	11.20	9.00	12	4	13.5	-	E513M15X1.5NO3
16	1.00	102	24	12.50	10.00	13	4	15	-	E513M16X1.0NO1
16	1.00	102	24	12.50	10.00	13	4	15	-	E513M16X1.0NO2
16	1.00	102	24	12.50	10.00	13	4	15	-	E513M16X1.0NO3
16	1.00	102	24	12.50	10.00	13	4	15	-	E513M16X1.0NO7
16	1.25	102	24	12.50	10.00	13	4	14.8	-	E513M16X1.25NO3
16	1.50	102	24	12.50	10.00	13	4	14.5	-	E513M16X1.5NO1
16	1.50	102	24	12.50	10.00	13	4	14.5	-	E513M16X1.5NO2
16	1.50	102	24	12.50	10.00	13	4	14.5	-	E513M16X1.5NO3
16	1.50	102	24	12.50	10.00	13	4	14.5	-	E513M16X1.5NO6
16	1.50	102	24	12.50	10.00	13	4	14.5	-	E513M16X1.5NO7
18	1.00	112	29	14.00	11.20	14	4	17	-	E513M18X1.0NO1
18	1.00	112	29	14.00	11.20	14	4	17	-	E513M18X1.0NO2
18	1.00	112	29	14.00	11.20	14	4	17	-	E513M18X1.0NO3
18	1.00	112	29	14.00	11.20	14	4	17	-	E513M18X1.0NO7
18	1.50	112	29	14.00	11.20	14	4	16.5	-	E513M18X1.5NO1
18	1.50	112	29	14.00	11.20	14	4	16.5	-	E513M18X1.5NO2
18	1.50	112	29	14.00	11.20	14	4	16.5	-	E513M18X1.5NO3
18	1.50	112	29	14.00	11.20	14	4	16.5	-	E513M18X1.5NO6

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MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z	↔	l_4 mm	E513
18	1.50	112	29	14.00	11.20	14	4	16.5	-	E513M18X1.5NO7
18	2.00	112	29	14.00	11.20	14	4	16	-	E513M18X2.0NO1
18	2.00	112	29	14.00	11.20	14	4	16	-	E513M18X2.0NO2
18	2.00	112	29	14.00	11.20	14	4	16	-	E513M18X2.0NO3
18	2.00	112	29	14.00	11.20	14	4	16	-	E513M18X2.0NO7
20	1.00	112	29	14.00	11.20	14	4	19	-	E513M20X1.0NO1
20	1.00	112	29	14.00	11.20	14	4	19	-	E513M20X1.0NO2
20	1.00	112	29	14.00	11.20	14	4	19	-	E513M20X1.0NO3
20	1.00	112	29	14.00	11.20	14	4	19	-	E513M20X1.0NO7
20	1.50	112	29	14.00	11.20	14	4	18.5	-	E513M20X1.5NO1
20	1.50	112	29	14.00	11.20	14	4	18.5	-	E513M20X1.5NO2
20	1.50	112	29	14.00	11.20	14	4	18.5	-	E513M20X1.5NO3
20	1.50	112	29	14.00	11.20	14	4	18.5	-	E513M20X1.5NO6
20	1.50	112	29	14.00	11.20	14	4	18.5	-	E513M20X1.5NO7
20	2.00	112	29	14.00	11.20	14	4	18	-	E513M20X2.0NO1
20	2.00	112	29	14.00	11.20	14	4	18	-	E513M20X2.0NO2
20	2.00	112	29	14.00	11.20	14	4	18	-	E513M20X2.0NO3
20	2.00	112	29	14.00	11.20	14	4	18	-	E513M20X2.0NO7
22	1.00	118	29	16.00	12.50	16	4	21	-	E513M22X1.0NO2
22	1.00	118	29	16.00	12.50	16	4	21	-	E513M22X1.0NO3
22	1.00	118	29	16.00	12.50	16	4	21	-	E513M22X1.0NO7
22	1.50	118	29	16.00	12.50	16	4	20.5	-	E513M22X1.5NO1
22	1.50	118	29	16.00	12.50	16	4	20.5	-	E513M22X1.5NO2
22	1.50	118	29	16.00	12.50	16	4	20.5	-	E513M22X1.5NO3
22	1.50	118	29	16.00	12.50	16	4	20.5	-	E513M22X1.5NO7
22	2.00	118	29	16.00	12.50	16	4	20	-	E513M22X2.0NO1
22	2.00	118	29	16.00	12.50	16	4	20	-	E513M22X2.0NO2
22	2.00	118	29	16.00	12.50	16	4	20	-	E513M22X2.0NO3
22	2.00	118	29	16.00	12.50	16	4	20	-	E513M22X2.0NO7
24	1.00	130	35	18.00	14.00	18	4	23	-	E513M24X1.0NO2
24	1.00	130	35	18.00	14.00	18	4	23	-	E513M24X1.0NO3
24	1.50	130	35	18.00	14.00	18	4	22.5	-	E513M24X1.5NO1
24	1.50	130	35	18.00	14.00	18	4	22.5	-	E513M24X1.5NO2
24	1.50	130	35	18.00	14.00	18	4	22.5	-	E513M24X1.5NO3
24	1.50	130	35	18.00	14.00	18	4	22.5	-	E513M24X1.5NO7
24	2.00	130	35	18.00	14.00	18	4	22	-	E513M24X2.0NO1
24	2.00	130	35	18.00	14.00	18	4	22	-	E513M24X2.0NO2
24	2.00	130	35	18.00	14.00	18	4	22	-	E513M24X2.0NO3
24	2.00	130	35	18.00	14.00	18	4	22	-	E513M24X2.0NO7
25	1.50	130	35	18.00	14.00	18	4	23.5	-	E513M25X1.5NO1
25	1.50	130	35	18.00	14.00	18	4	23.5	-	E513M25X1.5NO2
25	1.50	130	35	18.00	14.00	18	4	23.5	-	E513M25X1.5NO3
25	1.50	130	35	18.00	14.00	18	4	23.5	-	E513M25X1.5NO6
25	1.50	130	35	18.00	14.00	18	4	23.5	-	E513M25X1.5NO7
26	1.50	130	35	18.00	14.00	18	4	24.5	-	E513M26X1.5NO2
26	1.50	130	35	18.00	14.00	18	4	24.5	-	E513M26X1.5NO3
27	1.50	135	35	20.00	16.00	20	4	25.5	-	E513M27X1.5NO2
27	1.50	135	35	20.00	16.00	20	4	25.5	-	E513M27X1.5NO3
27	2.00	135	35	20.00	16.00	20	4	25	-	E513M27X2.0NO3
28	1.50	138	35	20.00	16.00	20	4	26.5	-	E513M28X1.5NO2
28	1.50	138	35	20.00	16.00	20	4	26.5	-	E513M28X1.5NO3
30	1.50	138	41	20.00	16.00	20	4	28.5	-	E513M30X1.5NO2
30	1.50	138	41	20.00	16.00	20	4	28.5	-	E513M30X1.5NO3
30	2.00	138	41	20.00	16.00	20	4	28	-	E513M30X2.0NO2
30	2.00	138	41	20.00	16.00	20	4	28	-	E513M30X2.0NO3
32	1.50	151	41	22.40	18.00	22	4	30.5	-	E513M32X1.5NO1
32	1.50	151	41	22.40	18.00	22	4	30.5	-	E513M32X1.5NO2
32	1.50	151	41	22.40	18.00	22	4	30.5	-	E513M32X1.5NO3
33	2.00	151	41	22.40	18.00	22	4	31	-	E513M33X2.0NO2
33	2.00	151	41	22.40	18.00	22	4	31	-	E513M33X2.0NO3
35	1.50	162	47	25.00	20.00	24	4	33.5	-	E513M35X1.5NO2
35	1.50	162	47	25.00	20.00	24	4	33.5	-	E513M35X1.5NO3
36	1.50	162	47	25.00	20.00	24	4	34.5	-	E513M36X1.5NO3
36	2.00	162	47	25.00	20.00	24	4	34	-	E513M36X2.0NO2
36	2.00	162	47	25.00	20.00	24	4	34	-	E513M36X2.0NO3
36	3.00	162	47	25.00	20.00	24	4	33	-	E513M36X3.0NO2
36	3.00	162	47	25.00	20.00	24	4	33	-	E513M36X3.0NO3
39	3.00	170	47	28.00	22.40	26	4	36	-	E513M39X3.0NO2
39	3.00	170	47	28.00	22.40	26	4	36	-	E513M39X3.0NO3
40	1.50	170	53	28.00	22.40	26	6	38.5	-	E513M40X1.5NO2



DORMER

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z	↔	l_4 mm	E513
40	1.50	170	53	28.00	22.40	26	6	38.5	-	E513M40X1.5NO3
42	1.50	170	53	28.00	22.40	26	6	40.5	-	E513M42X1.5NO2
42	1.50	170	53	28.00	22.40	26	6	40.5	-	E513M42X1.5NO3
42	3.00	170	53	28.00	22.40	26	6	39	-	E513M42X3.0NO3
45	1.50	187	54	31.50	25.00	28	6	43.5	-	E513M45X1.5NO2
45	1.50	187	54	31.50	25.00	28	6	43.5	-	E513M45X1.5NO3
48	1.50	187	60	31.50	25.00	28	6	46.5	-	E513M48X1.5NO3
48	2.00	187	60	31.50	25.00	28	6	46	-	E513M48X2.0NO3
48	3.00	187	60	31.50	25.00	28	6	45	-	E513M48X3.0NO3
50	1.50	187	60	31.50	25.00	28	6	48.5	-	E513M50X1.5NO2
50	1.50	187	60	31.50	25.00	28	6	48.5	-	E513M50X1.5NO3

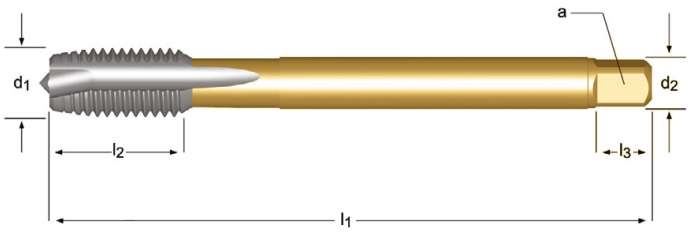
NO1 - NO9
219

EP10
EP10TIN
EP11

- MF Maskingängtappar Spåndrivande skär — Levereras som HSS-E tills nytt lager finns
- MF Konekierretapit, lastua työntävä kärki — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- MF Maskingjengetapp Spondrivende tapp — Leveres i HSS-E til ny lager tilgjengelig
- MF Maskingevindtappe Spåndrivende skær — Leveres i HSS-E til nyt lager er tilgængeligt

EP10	▪	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4
	•	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1
EP10TIN	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	6.1	6.3	7.3	7.4
	•	1.6	2.3	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.2
EP11	▪	1.1	1.2	1.3	1.4	1.5						
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4			

EP10	MF	DIN 374	6H		2.5XD	HSS-E PM	B 3.5-5				
EP10TIN	MF	DIN 374	6H		2.5XD	HSS-E PM	B 3.5-5			TiN	
EP11	MF	DIN 374	6H		2.5XD	HSS-E PM	B 3.5-5			ST	



EP10	EP10TIN	EP11
		
M4 - M30	M8 - M20	M4 - M30

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z	↔	EP10	EP10TIN	EP11
4	0.50	63	12	2.8	2.1	5	3	3.5	EP10M4X.5		EP11M4X.5
5	0.50	70	13	3.5	2.7	6	3	4.5	EP10M5X.5		EP11M5X.5
6	0.75	80	15	4.5	3.4	6	3	5.3	EP10M6X.75		EP11M6X.75
8	0.75	80	15	6.0	4.9	8	3	7.3	EP10M8X.75		EP11M8X.75
8	1.00	90	18	6.0	4.9	8	3	7	EP10M8X1.0	EP10TINM8X1.0	EP11M8X1.0
10	0.75	90	18	7.0	5.5	8	3	9.3	EP10M10X.75		EP11M10X.75
10	1.00	90	18	7.0	5.5	8	3	9	EP10M10X1.0	EP10TINM10X1.0	EP11M10X1.0
10	1.25	100	20	7.0	5.5	8	3	8.8	EP10M10X1.25	EP10TINM10X1.25	EP11M10X1.25
12	1.00	100	21	9.0	7.0	10	3	11	EP10M12X1.0	EP10TINM12X1.0	EP11M12X1.0
12	1.25	100	21	9.0	7.0	10	3	10.8	EP10M12X1.25	EP10TINM12X1.25	EP11M12X1.25
12	1.50	100	21	9.0	7.0	10	3	10.5	EP10M12X1.5	EP10TINM12X1.5	EP11M12X1.5
14	1.00	100	21	11.0	9.0	12	3	13	EP10M14X1.0		EP11M14X1.0
14	1.25	100	21	11.0	9.0	12	3	13	EP10M14X1.25		EP11M14X1.25
14	1.50	100	21	11.0	9.0	12	3	12.5	EP10M14X1.5	EP10TINM14X1.5	EP11M14X1.5
16	1.00	100	21	12.0	9.0	12	3	15	EP10M16X1.0		EP11M16X1.0
16	1.50	100	21	12.0	9.0	12	3	14.5	EP10M16X1.5	EP10TINM16X1.5	EP11M16X1.5
18	1.00	110	24	14.0	11.0	14	4	17	EP10M18X1.0		EP11M18X1.0
18	1.50	110	24	14.0	11.0	14	4	16.5	EP10M18X1.5	EP10TINM18X1.5	EP11M18X1.5
20	1.00	125	24	16.0	12.0	15	4	19	EP10M20X1.0		EP11M20X1.0
20	1.50	125	24	16.0	12.0	15	4	18.5	EP10M20X1.5	EP10TINM20X1.5	EP11M20X1.5

DORMER

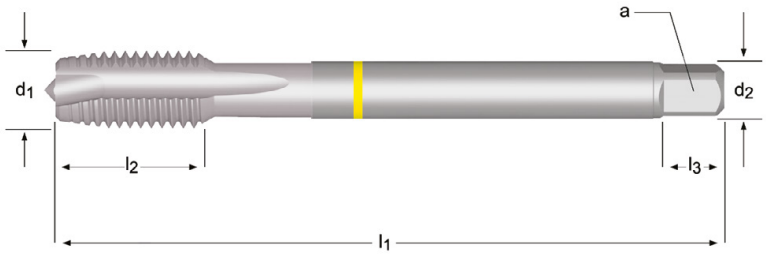
MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z		EP10	EP10TIN	EP11
22	1.50	125	25	18.0	14.5	17	4	20.5	EP10M22X1.5		EP11M22X1.5
24	1.50	140	28	18.0	14.5	17	4	22.5	EP10M24X1.5		EP11M24X1.5
24	2.00	140	28	18.0	14.5	17	4	22	EP10M24X2.0		EP11M24X2.0
25	1.50	140	28	18.0	14.5	17	4	23.5	EP10M25X1.5		EP11M25X1.5
26	1.50	140	28	18.0	14.5	17	4	24.5	EP10M26X1.5		EP11M26X1.5
27	1.50	140	28	20.0	16.0	19	4	25.5	EP10M27X1.5		EP11M27X1.5
27	2.00	140	28	20.0	16.0	19	4	25	EP10M27X2.0		EP11M27X2.0
28	1.50	140	28	20.0	16.0	19	4	26.5	EP10M28X1.5		EP11M28X1.5
30	1.50	150	28	22.0	18.0	21	4	28.5	EP10M30X1.5		EP11M30X1.5
30	2.00	150	28	22.0	18.0	21	4	28	EP10M30X2.0		EP11M30X2.0

E299

- MF Maskintapp spåndrivande, Gul Shark
- MF Konekierretapit, Lastua työntävä kärki, Keltainen Shark
- MF Maskingjengetapp Spondrivende tapp Gul Shark
- MF Maskingevindtappe Spåndrivende skær , Gul Shark

E299 ▪ 1.1 1.2 1.3 6.1 6.3
E299 • 1.4 1.5 6.2

E299 | MF | DIN 374 | 6H | 2.5XD | HSS-E PM | B 3.5-5 | Cr



E299



M4 - M30

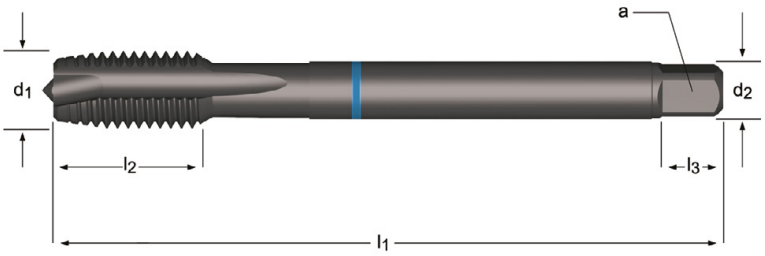
MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z		E299
4	0.50	63	12	2.8	2.1	5	3	3.5	E299M4X.5
5	0.50	70	13	3.5	2.7	6	3	4.5	E299M5X.5
6	0.75	80	15	4.5	3.4	6	3	5.3	E299M6X.75
8	0.75	80	15	6.0	4.9	8	3	7.3	E299M8X.75
8	1.00	90	18	6.0	4.9	8	3	7.0	E299M8X1.0
10	0.75	90	20	7.0	5.5	8	3	9.3	E299M10X.75
10	1.00	90	20	7.0	5.5	8	3	9.0	E299M10X1.0
10	1.25	100	20	7.0	5.5	8	3	8.8	E299M10X1.25
12	1.00	100	21	9.0	7.0	10	4	11.0	E299M12X1.0
12	1.25	100	21	9.0	7.0	10	4	10.8	E299M12X1.25
12	1.50	110	21	9.0	7.0	10	4	10.5	E299M12X1.5
14	1.00	100	21	11.0	9.0	12	4	13.0	E299M14X1.0
14	1.25	100	21	11.0	9.0	12	4	12.8	E299M14X1.25
14	1.50	100	21	11.0	9.0	12	4	12.5	E299M14X1.5
16	1.00	100	21	12.0	9.0	12	4	15.0	E299M16X1.0
16	1.50	100	21	12.0	9.0	12	4	14.5	E299M16X1.5
18	1.00	110	24	14.0	11.0	14	4	17.0	E299M18X1.0
18	1.50	110	24	14.0	11.0	14	4	16.5	E299M18X1.5
20	1.50	125	24	16.0	12.0	15	4	18.5	E299M20X1.5
22	1.50	125	25	18.0	14.5	17	4	20.5	E299M22X1.5
24	1.50	140	28	18.0	14.5	17	4	22.5	E299M24X1.5
24	2.00	140	28	18.0	14.5	17	4	22.0	E299M24X2.0
27	2.00	140	28	20.0	16.0	19	4	25.0	E299M27X2.0
30	2.00	150	28	22.0	18.0	21	4	28.0	E299M30X2.0

E384

- MF Maskintapp spåndrivande, Blå Shark
- MF Konekierretapit, Lastua työntävä kärki, Sininen Shark
- MF Maskingjengetapp Spondrivende tapp, Blå Shark
- MF Maskingevindtappe Spåndrivende skær, Blå Shark

E384 ▪ 2.1 2.2 2.3
• 1.5

E384 | MF | DIN 374 | 6H | 2.5XD | HSS-E PM | B 3.5-5 | ST



E384



SHARK LINE

M6 - M20

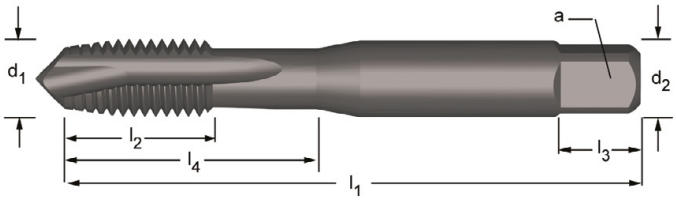
MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z	↔	E384
6	0.75	80	15	4.5	3.4	6	3	5.3	E384M6X.75
8	1.00	90	18	6.0	4.9	8	3	7.0	E384M8X1.0
10	1.00	90	20	7.0	5.5	8	3	9.0	E384M10X1.0
10	1.25	100	20	7.0	5.5	8	3	8.8	E384M10X1.25
12	1.00	100	21	9.0	7.0	10	4	11.0	E384M12X1.0
12	1.25	100	21	9.0	7.0	10	4	10.8	E384M12X1.25
12	1.50	100	21	9.0	7.0	10	4	10.5	E384M12X1.5
14	1.50	100	21	11.0	9.0	12	4	12.5	E384M14X1.5
16	1.50	100	21	12.0	9.0	12	5	14.5	E384M16X1.5
18	1.50	110	24	14.0	11.0	14	5	16.5	E384M18X1.5
20	1.50	125	24	16.0	12.0	15	5	18.5	E384M20X1.5

E011

- MF Maskingängtappar Spåndrivande skär — Levereras som HSS-E tills nytt lager finns
- MF Konekierretapit, lastua työntävä kärki — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- MF Maskingjengetapp Spondrivende tapp — Leveres i HSS-E til ny lager tilgjengelig
- MF Maskingevindtappe Spåndrivende skær — Leveres i HSS-E til nyt lager er tilgængeligt

E011								
▪	1.1	1.2	1.3	1.4	1.5			
•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4







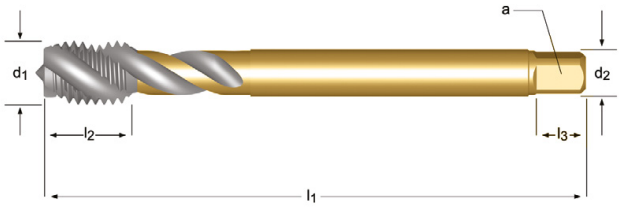
MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z		l_4 mm	E011
4	0.50	53	17	4.0	3.15	6	3	3.5	17	E011M4X.5
5	0.50	58	11	5.0	4.00	7	3	4.5	22	E011M5X.5
6	0.50	66	13	6.3	5.00	8	3	5.5	26	E011M6X.5
6	0.75	66	13	6.3	5.00	8	3	5.3	26	E011M6X.75
8	0.75	72	16	8.0	6.30	9	3	7.3	29	E011M8X.75
8	1.00	72	16	8.0	6.30	9	3	7.0	29	E011M8X1.0
10	1.00	80	18	10.0	8.00	11	3	9.0	34	E011M10X1.0
10	1.25	80	18	10.0	8.00	11	3	8.8	34	E011M10X1.25
12	1.00	89	22	9.0	7.10	10	3	11.0	-	E011M12X1.0
12	1.25	89	22	9.0	7.10	10	3	10.8	-	E011M12X1.25
12	1.50	89	22	9.0	7.10	10	3	10.5	-	E011M12X1.5
14	1.00	95	24	11.2	9.00	12	3	13.0	-	E011M14X1.0
14	1.25	95	24	11.2	9.00	12	3	12.8	-	E011M14X1.25
14	1.50	95	24	11.2	9.00	12	3	12.5	-	E011M14X1.5
16	1.00	102	24	12.5	10.00	13	3	15.0	-	E011M16X1.0
16	1.50	102	24	12.5	10.00	13	3	14.5	-	E011M16X1.5
18	1.00	112	29	14.0	11.20	14	4	17.0	-	E011M18X1.0
18	1.50	112	29	14.0	11.20	14	4	16.5	-	E011M18X1.5
20	1.00	112	29	14.0	11.20	14	4	19.0	-	E011M20X1.0
20	1.50	112	29	14.0	11.20	14	4	18.5	-	E011M20X1.5
20	2.00	112	29	14.0	11.20	14	4	18.0	-	E011M20X2.0
22	1.50	118	29	16.0	12.50	16	4	20.5	-	E011M22X1.5
24	1.50	130	35	18.0	14.00	18	4	22.5	-	E011M24X1.5
24	2.00	130	35	18.0	14.00	18	4	22.0	-	E011M24X2.0

EX10
EX10TIN
EX11

- MF Maskingängtappar Spiralspår 45° — Levereras som HSS-E tills nytt lager finns
- MF Konekierretapit, lastua nostavat urat 45° — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- MF Maskingjengetapp Spiral spor 45° — Leveres i HSS-E til ny lager tilgjengelig
- MF Maskingevindtappe Spiralspor 45° — Leveres i HSS-E til nyt lager er tilgængeligt

EX10	▪	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4
	•	4.1	4.2	5.1	5.2					
EX10TIN	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	7.3	7.4
	•	2.3	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2
EX11	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2		
	•	2.3								

EX10	MF	DIN 374	6H		2.5XD	HSS-E PM	C 2-3	λ45°		
EX10TIN	MF	DIN 374	6H		2.5XD	HSS-E PM	C 2-3	λ45°		TiN
EX11	MF	DIN 374	6H		2.5XD	HSS-E PM	C 2-3	λ45°		ST



EX10	EX10TIN	EX11
		
M4 - M30	M8 - M20	M4 - M30

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z	↔	EX10	EX10TIN	EX11
4	0.50	63	7	2.8	2.1	5	3	3.5	EX10M4X.50		EX11M4X.50
5	0.50	70	8	3.5	2.7	6	3	4.5	EX10M5X.50		EX11M5X.50
6	0.75	80	10	4.5	3.4	6	3	5.3	EX10M6X.75		EX11M6X.75
8	0.75	80	13	6.0	4.9	8	3	7.3	EX10M8X.75		EX11M8X.75
8	1.00	90	13	6.0	4.9	8	3	7	EX10M8X1.0	EX10TINM8X1.0	EX11M8X1.0
10	0.75	90	13	7.0	5.5	8	3	9.3	EX10M10X.75		EX11M10X.75
10	1.00	90	13	7.0	5.5	8	3	9	EX10M10X1.0	EX10TINM10X1.0	EX11M10X1.0
10	1.25	100	15	7.0	5.5	8	3	8.8	EX10M10X1.25	EX10TINM10X1.25	EX11M10X1.25
12	1.00	100	15	9.0	7.0	10	3	11	EX10M12X1.0	EX10TINM12X1.0	EX11M12X1.0
12	1.25	100	15	9.0	7.0	10	3	10.8	EX10M12X1.25	EX10TINM12X1.25	EX11M12X1.25
12	1.50	100	15	9.0	7.0	10	3	10.5	EX10M12X1.5	EX10TINM12X1.5	EX11M12X1.5
14	1.00	100	15	11.0	9.0	12	3	13	EX10M14X1.0		EX11M14X1.0
14	1.25	100	15	11.0	9.0	12	3	12.8	EX10M14X1.25		EX11M14X1.25
14	1.50	100	15	11.0	9.0	12	3	12.5	EX10M14X1.5	EX10TINM14X1.5	EX11M14X1.5
16	1.00	100	15	12.0	9.0	12	4	15	EX10M16X1.0		EX11M16X1.0
16	1.50	100	15	12.0	9.0	12	4	14.5	EX10M16X1.5	EX10TINM16X1.5	EX11M16X1.5
18	1.00	110	17	14.0	11.0	14	4	17	EX10M18X1.0		EX11M18X1.0
18	1.50	110	17	14.0	11.0	14	4	16.5	EX10M18X1.5	EX10TINM18X1.5	EX11M18X1.5

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z	↔	EX10	EX10TIN	EX11
20	1.00	125	17	16.0	12.0	15	4	19	EX10M20X1.0		EX11M20X1.0
20	1.50	125	17	16.0	12.0	15	4	18.5	EX10M20X1.5	EX10TINM20X1.5	EX11M20X1.5
22	1.50	125	17	18.0	14.5	17	4	20.5	EX10M22X1.5		EX11M22X1.5
24	1.50	140	20	18.0	14.5	17	4	22.5	EX10M24X1.5		EX11M24X1.5
24	2.00	140	20	18.0	14.5	17	4	22	EX10M24X2.0		EX11M24X2.0
25	1.50	140	20	18.0	14.5	17	4	23.5	EX10M25X1.5		EX11M25X1.5
26	1.50	140	20	18.0	14.5	17	4	24.5	EX10M26X1.5		EX11M26X1.5
27	1.50	140	20	20.0	16.0	19	4	25.5	EX10M27X1.5		EX11M27X1.5
27	2.00	140	20	20.0	16.0	19	4	25	EX10M27X2.0		EX11M27X2.0
28	1.50	140	20	20.0	16.0	19	4	26.5	EX10M28X1.5		EX11M28X1.5
30	1.50	150	20	22.0	18.0	21	4	28.5	EX10M30X1.5		EX11M30X1.5
30	2.00	150	20	22.0	18.0	21	4	28	EX10M30X2.0		EX11M30X2.0

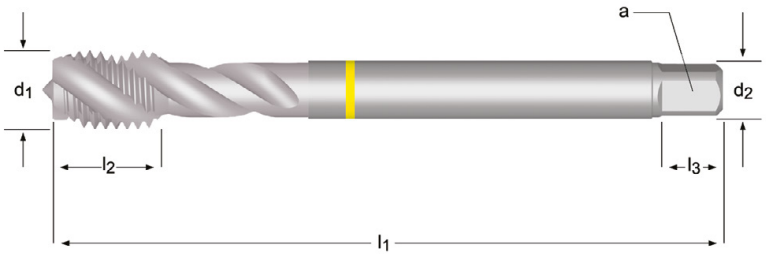
DORMER

E300

- MF Maskingängtappar Spiralspår 40º, Gul Shark
- MF Konekierretapit, Lastua nostavat urat 40º, Keltainen Shark
- MF Maskingjengetapp Spiral spor 40º, Gul Shark
- MF Maskingevindtappe Spiralspor 40º , Gul Shark

E300 ▪ 1.1 1.2 1.3 6.1 6.3
• 1.4 1.5 6.2

E300 MF | DIN 374 | 6H | 2XD | HSS-E PM | C 2-3 | λ40° | Cr





M4 - M30

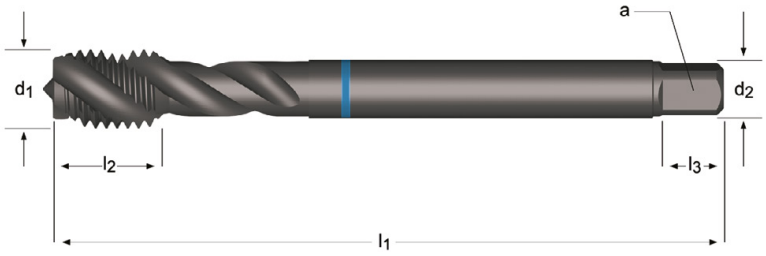
MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z	↔	E300
4	0.50	63	6.5	2.8	2.1	5	3	3.5	E300M4X.5
5	0.50	70	7.5	3.5	2.7	6	3	4.5	E300M5X.5
6	0.75	80	10	4.5	3.4	6	3	5.3	E300M6X.75
8	0.75	80	13	6.0	4.9	8	3	7.3	E300M8X.75
8	1.00	90	13	6.0	4.9	8	3	7.0	E300M8X1.0
10	0.75	90	13	7.0	5.5	8	3	9.3	E300M10X.75
10	1.00	90	12	7.0	5.5	8	3	9.0	E300M10X1.0
10	1.25	100	15	7.0	5.5	8	3	8.8	E300M10X1.25
12	1.00	100	15	9.0	7.0	10	4	11.0	E300M12X1.0
12	1.25	100	13	9.0	7.0	10	4	10.8	E300M12X1.25
12	1.50	100	13	9.0	7.0	10	4	10.5	E300M12X1.5
14	1.00	100	15	11.0	9.0	12	4	13.0	E300M14X1.0
14	1.25	100	15	11.0	9.0	12	4	12.8	E300M14X1.25
14	1.50	100	15	11.0	9.0	12	4	12.5	E300M14X1.5
16	1.00	100	15	12.0	9.0	12	5	15.0	E300M16X1.0
16	1.50	100	15	12.0	9.0	12	5	14.5	E300M16X1.5
18	1.00	110	17	14.0	11.0	14	5	17.0	E300M18X1.0
18	1.50	110	17	14.0	11.0	14	5	16.5	E300M18X1.5
20	1.50	125	17	16.0	12.0	15	5	18.5	E300M20X1.5
22	1.50	125	17	18.0	14.5	17	5	20.5	E300M22X1.5
24	1.50	140	20	18.0	14.5	17	5	22.5	E300M24X1.5
24	2.00	140	20	18.0	14.5	17	5	22.0	E300M24X2.0
27	2.00	140	20	20.0	16.0	19	5	25.0	E300M27X2.0
30	2.00	150	20	22.0	18.0	21	5	28.0	E300M30X2.0

E383

- MF Maskintapp spiralspår 40º, Blå Shark
- MF Konekierretapit, Lastua nostavat urat 40º, Sininen Shark
- MF Maskingjengetapp Spiral spor 40º, Blå Shark
- MF Maskingevindtappe Spiralspor 40º, Blå Shark

E383 ▪ 2.1 2.2 2.3
• 1.5

E383 | MF | DIN 374 | 6H | 2XD | HSS-E PM | C 2-3 | λ40° | ST



E383



M6 - M20

MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z		E383
6	0.75	80	10	4.5	3.4	6	3	5.3	E383M6X.75
8	1.00	90	13	6.0	4.9	8	3	7.0	E383M8X1.0
10	1.00	90	12	7.0	5.5	8	3	9.0	E383M10X1.0
10	1.25	100	15	7.0	5.5	8	3	8.8	E383M10X1.25
12	1.00	100	13	9.0	7.0	10	4	11.0	E383M12X1.0
12	1.25	100	13	9.0	7.0	10	4	10.8	E383M12X1.25
12	1.50	100	13	9.0	7.0	10	4	10.5	E383M12X1.5
14	1.50	100	21	11.0	9.0	12	4	12.5	E383M14X1.5
16	1.50	100	21	12.0	9.0	12	5	14.5	E383M16X1.5
18	1.50	110	24	14.0	11.0	14	5	16.5	E383M18X1.5
20	1.50	125	24	16.0	12.0	15	5	18.5	E383M20X1.5

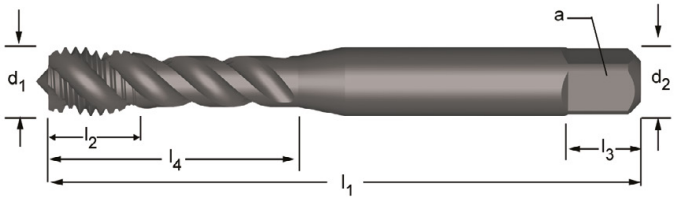
E013

- MF Maskingängtappar Spiralspår 45°
- MF Konekierretapit, lastua nostavat urat 45°
- MF Maskingjengetapp Spiral spor 45°
- MF Maskingevindtappe Spiralspor 45°

Levereras som HSS-E tills nytt lager finns
Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
Leveres i HSS-E til ny lager tilgjengelig
Leveres i HSS-E til nyt lager er tilgængeligt

E013 ▪ 1.1 1.2 1.3 1.4 1.5
• 2.1 2.2 2.3

E013 | MF | ISO 529 | 6H | 2.5XD | HSS-E PM | C 2-3 | λ45° | ST



E013



M4 - M22

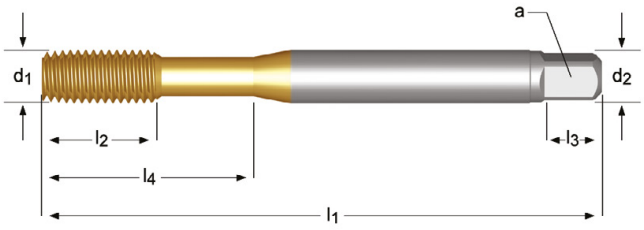
MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⊿ a mm	l_3 mm	z	↔	l_4 mm	E013
4	0.50	53	7	4.0	3.15	6	3	3.5	19	E013M4X.5
5	0.50	58	8	5.0	4.0	7	3	4.5	22	E013M5X.5
6	0.50	66	10	6.3	5.0	8	3	5.5	27	E013M6X.5
6	0.75	66	10	6.3	5.0	8	3	5.3	27	E013M6X.75
8	0.75	72	12	8.0	6.3	9	3	7.3	31	E013M8X.75
8	1.00	72	12	8.0	6.3	9	3	7.0	31	E013M8X1.0
10	1.00	80	15	10.0	8.0	11	3	9.0	35	E013M10X1.0
10	1.25	80	15	10.0	8.0	11	3	8.8	35	E013M10X1.25
12	1.00	89	16	9.0	7.1	10	3	11.0	-	E013M12X1.0
12	1.25	89	16	9.0	7.1	10	3	10.8	-	E013M12X1.25
12	1.50	89	16	9.0	7.1	10	3	10.5	-	E013M12X1.5
14	1.50	95	18	11.2	9.0	12	3	12.5	-	E013M14X1.5
16	1.00	102	18	12.5	10.0	13	4	15.0	-	E013M16X1.0
16	1.50	102	18	12.5	10.0	13	4	14.5	-	E013M16X1.5
18	1.50	112	29	14.0	11.2	14	4	16.5	-	E013M18X1.5
20	1.50	112	29	14.0	11.2	14	4	18.5	-	E013M20X1.5
22	1.50	118	29	16.0	12.5	16	4	20.5	-	E013M22X1.5

E288

- MF Maskinpressgängtappar
- MF Konekierretapit, manglaavat
- MF Maskinpressgjengtapper
- MF Maskinrulletap

E288												
	■	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.1	7.2	7.3
	•	1.5	2.3	5.2	6.1	6.3	7.4					

E288	MF	DIN 2174	6HX		3XD	HSS-E	C 2-3.5			TiN	



E288



M5 - M12

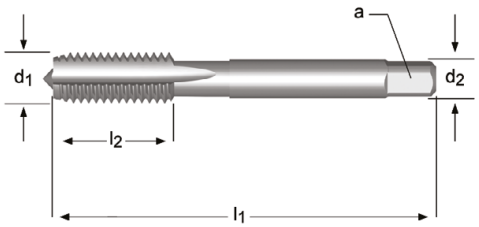
MF	P mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z		l_4 mm	E288
5	0.50	70	13	6.0	4.9	8	5	4.8	25	E288M5X.5
6	0.75	80	15	6.0	4.9	8	5	5.7	30	E288M6X.75
8	1.00	90	18	6.0	4.9	8	5	7.5	-	E288M8X1.0
10	1.00	90	20	7.0	5.5	8	5	9.5	-	E288M10X1.0
10	1.25	100	20	7.0	5.5	8	5	9.4	-	E288M10X1.25
12	1.50	100	21	9.0	7.0	10	5	11.3	-	E288M12X1.5

E108

- UNC Handgängtappar Raka spår
- UNC Käsikierretapit, suorauraiset
- UNC Handgjengetapper Rett sportapp
- UNC Håndtappe Lige spor

E108 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E108 UNC | DIN 352 | 2B | 1.5XD | HSS | C 2-3



E108



No.5 - 1“

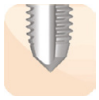
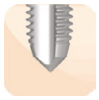
UNC	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	z		E108
5	40	3.18	45	13	4.0	3.0	3	2.65	E1085-40NO3
5	40	3.18	45	13	4.0	3.0	3	2.65	E1085-40NO8
6	32	3.51	45	10	4.0	3.0	3	2.85	E1086-32NO3
6	32	3.51	45	10	4.0	3.0	3	2.85	E1086-32NO8
8	32	4.17	50	14	6.0	4.9	3	3.5	E1088-32NO3
8	32	4.17	50	14	6.0	4.9	3	3.5	E1088-32NO8
10	24	4.83	50	14	6.0	4.9	3	3.9	E10810-24NO3
10	24	4.83	50	14	6.0	4.9	3	3.9	E10810-24NO8
12	24	5.49	56	16	6.0	4.9	3	4.5	E10812-24NO3
12	24	5.49	56	16	6.0	4.9	3	4.5	E10812-24NO8
1/4	20	6.35	56	17	6.0	4.9	3	5.1	E1081/4NO3
1/4	20	6.35	56	17	6.0	4.9	3	5.1	E1081/4NO8
5/16	18	7.94	63	19	6.0	4.9	3	6.6	E1085/16NO3
5/16	18	7.94	63	19	6.0	4.9	3	6.6	E1085/16NO8
3/8	16	9.53	70	22	7.0	5.5	3	8	E1083/8NO3
3/8	16	9.53	70	22	7.0	5.5	3	8	E1083/8NO8
7/16	14	11.11	75	30	8.0	6.2	3	9.4	E1087/16NO3
7/16	14	11.11	75	30	8.0	6.2	3	9.4	E1087/16NO8
1/2	13	12.70	75	27	9.0	7.0	3	10.8	E1081/2NO3
1/2	13	12.70	75	27	9.0	7.0	3	10.8	E1081/2NO8
9/16	12	14.29	80	30	11.0	9.0	4	12.2	E1089/16NO3
9/16	12	14.29	80	30	11.0	9.0	4	12.2	E1089/16NO8
5/8	11	15.88	80	32	12.0	9.0	4	13.5	E1085/8NO3
5/8	11	15.88	80	32	12.0	9.0	4	13.5	E1085/8NO8
3/4	10	19.05	95	34	14.0	11.0	4	16.5	E1083/4NO3
3/4	10	19.05	95	34	14.0	11.0	4	16.5	E1083/4NO8
7/8	9	22.23	110	38	18.0	14.5	4	19.5	E1087/8NO3
7/8	9	22.23	110	38	18.0	14.5	4	19.5	E1087/8NO8
1“	8	25.40	110	38	20.0	16.0	4	22.25	E1081NO8

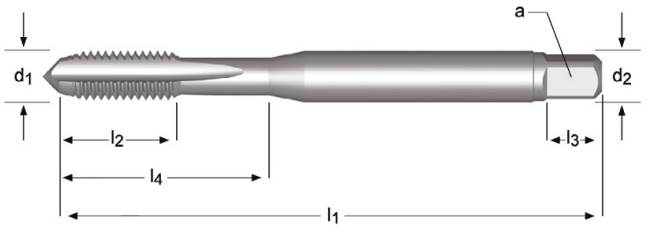
NO1 - NO9
219

E225
E275

- UNC Maskingängtappar Raka spår — Levereras som HSS-E tills nytt lager finns
- UNC Konekierretapit, suorauraiset — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- UNC Maskingjengetapp Rett sportapp — Leveres i HSS-E til ny lager tilgjengelig
- UNC Maskingevindtappe Lige spor — Leveres i HSS-E til nyt lager er tilgængeligt

E225; E275 • 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 3.1 | 3.2 | 3.3 | 6.2 | 6.3 | 7.2 | 7.3 | 8.2

E225	UNC	DIN 371	2B		1.5XD	HSS-E PM	C 2-3					
E275	UNC	DIN 376	2B		1.5XD	HSS-E PM	C 2-3					



E225	E275
 No.4 - 1/4	 5/16 - 1.1/2

UNC	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z	↔	l_4 mm	E225	E275
4	40	2.845	56	9	3.5	2.7	6	3	2.35	18	E2254-40	
5	40	3.175	56	10	3.5	2.7	6	3	2.65	18	E2255-40	
6	32	3.505	56	11	4.0	3.0	6	3	2.85	20	E2256-32	
8	32	4.166	63	12	4.5	3.4	8	3	3.5	21	E2258-32	
10	24	4.826	70	13	6.0	4.9	8	3	3.9	25	E22510-24	
12	24	5.486	80	15	6.0	4.9	8	3	4.5	30	E22512-24	
1/4	20	6.350	80	16	7.0	5.5	8	3	5.1	30	E2251/4	
5/16	18	7.94	90	18	6.0	4.9	8	3	6.6			E2755/16
3/8	16	9.53	100	24	7.0	5.5	8	3	8.0			E2753/8
7/16	14	11.11	110	23	9.0	7.0	10	3	9.4			E2757/16
1/2	13	12.7	110	23	9.0	7.0	10	3	10.8			E2751/2
9/16	12	14.29	110	25	11.0	9.0	12	3	12.2			E2759/16
5/8	11	15.88	110	25	12.0	9.0	12	4	13.5			E2755/8
3/4	10	19.05	140	34	14.0	11.0	14	4	16.5			E2753/4
7/8	9	22.23	140	34	18.0	14.5	17	4	19.5			E2757/8
1“	8	25.40	160	38	20.0	16.0	19	4	22.25			E2751
1.1/8	7	28.58	180	45	22.0	18.0	21	4	25.0			E2751.1/8
1.1/4	7	31.75	180	50	25.0	20.0	23	4	28.0			E2751.1/4
1.1/2	6	38.10	200	60	32.0	24.0	27	4	34.0			E2751.1/2

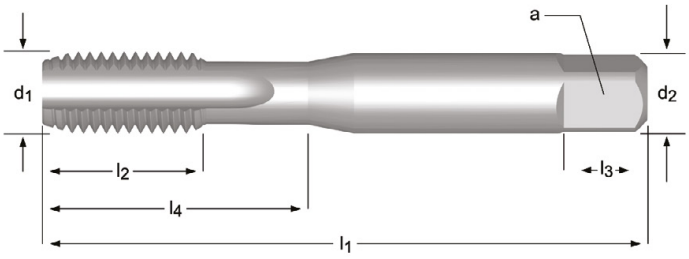
DORMER

E515

- UNC Maskingängtappar Raka spår
- UNC Konekierretapit, suorauraiset
- UNC Maskingjengetapp Rett sportapp
- UNC Maskingevindtappe Lige spor

E515 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E515 | UNC | ISO 529 | 2B | 1.5XD | HSS | L120 339



E515



No.1 - 2"

UNC	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z		l_4 mm	E515
1	64	1.854	41	8	2.50	2.00	4	2	1.55	8	E5151-64NO1
1	64	1.854	41	8	2.50	2.00	4	2	1.55	8	E5151-64NO2
1	64	1.854	41	8	2.50	2.00	4	2	1.55	8	E5151-64NO3
1	64	1.854	41	8	2.50	2.00	4	2	1.55	8	E5151-64NO6
2	56	2.184	44.5	9.5	2.80	2.24	5	3	1.85	9.5	E5152-56NO1
2	56	2.184	44.5	9.5	2.80	2.24	5	3	1.85	9.5	E5152-56NO2
2	56	2.184	44.5	9.5	2.80	2.24	5	3	1.85	9.5	E5152-56NO3
2	56	2.184	44.5	9.5	2.80	2.24	5	3	1.85	9.5	E5152-56NO6
3	48	2.515	44.5	9.5	2.80	2.24	5	3	2.1	9.5	E5153-48NO1
3	48	2.515	44.5	9.5	2.80	2.24	5	3	2.1	9.5	E5153-48NO2
3	48	2.515	44.5	9.5	2.80	2.24	5	3	2.1	9.5	E5153-48NO3
3	48	2.515	44.5	9.5	2.80	2.24	5	3	2.1	9.5	E5153-48NO6
4	40	2.845	48	12.5	3.15	2.50	5	3	2.35	12.5	E5154-40NO1
4	40	2.845	48	12.5	3.15	2.50	5	3	2.35	12.5	E5154-40NO2
4	40	2.845	48	12.5	3.15	2.50	5	3	2.35	12.5	E5154-40NO3
4	40	2.845	48	12.5	3.15	2.50	5	3	2.35	12.5	E5154-40NO6
5	40	3.175	48	12.5	3.15	2.50	5	3	2.65	12.5	E5155-40NO1
5	40	3.175	48	12.5	3.15	2.50	5	3	2.65	12.5	E5155-40NO2
5	40	3.175	48	12.5	3.15	2.50	5	3	2.65	12.5	E5155-40NO3
5	40	3.175	48	12.5	3.15	2.50	5	3	2.65	12.5	E5155-40NO6
6	32	3.505	50	14	3.55	2.80	5	3	2.85	14	E5156-32NO1
6	32	3.505	50	14	3.55	2.80	5	3	2.85	14	E5156-32NO2
6	32	3.505	50	14	3.55	2.80	5	3	2.85	14	E5156-32NO3
6	32	3.505	50	14	3.55	2.80	5	3	2.85	14	E5156-32NO6
8	32	4.166	53	9.5	4.50	3.55	6	3	3.5	17	E5158-32NO1
8	32	4.166	53	9.5	4.50	3.55	6	3	3.5	17	E5158-32NO2
8	32	4.166	53	9.5	4.50	3.55	6	3	3.5	17	E5158-32NO3
8	32	4.166	53	9.5	4.50	3.55	6	3	3.5	17	E5158-32NO6
10	24	4.826	58	11	5.00	4.00	7	3	3.9	20	E51510-24NO1
10	24	4.826	58	11	5.00	4.00	7	3	3.9	20	E51510-24NO2
10	24	4.826	58	11	5.00	4.00	7	3	3.9	20	E51510-24NO3
10	24	4.826	58	11	5.00	4.00	7	3	3.9	20	E51510-24NO6
12	24	5.486	62	12	5.60	4.50	7	3	4.5	21	E51512-24NO1
12	24	5.486	62	12	5.60	4.50	7	3	4.5	21	E51512-24NO2
12	24	5.486	62	12	5.60	4.50	7	3	4.5	21	E51512-24NO3
12	24	5.486	62	12	5.60	4.50	7	3	4.5	21	E51512-24NO6
1/4	20	6.350	66	13	6.30	5.00	8	3	5.1	26	E5151/4NO1
1/4	20	6.350	66	13	6.30	5.00	8	3	5.1	26	E5151/4NO2
1/4	20	6.350	66	13	6.30	5.00	8	3	5.1	26	E5151/4NO3
1/4	20	6.350	66	13	6.30	5.00	8	3	5.1	26	E5151/4NO6
5/16	18	7.938	72	16	8.00	6.30	9	3	6.6	29	E5155/16NO1
5/16	18	7.938	72	16	8.00	6.30	9	3	6.6	29	E5155/16NO2

NO1 - NO9 219

UNC	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z	↔	l_4 mm	E515
5/16	18	7.938	72	16	8.00	6.30	9	3	6.6	29	E5155/16NO3
5/16	18	7.938	72	16	8.00	6.30	9	3	6.6	29	E5155/16NO6
3/8	16	9.525	80	18	10.00	8.00	11	3	8	32	E5153/8NO1
3/8	16	9.525	80	18	10.00	8.00	11	3	8	32	E5153/8NO2
3/8	16	9.525	80	18	10.00	8.00	11	3	8	32	E5153/8NO3
3/8	16	9.525	80	18	10.00	8.00	11	3	8	32	E5153/8NO6
7/16	14	11.112	85	19	8.00	6.30	9	3	9.4	-	E5157/16NO1
7/16	14	11.112	85	19	8.00	6.30	9	3	9.4	-	E5157/16NO2
7/16	14	11.112	85	19	8.00	6.30	9	3	9.4	-	E5157/16NO3
7/16	14	11.112	85	19	8.00	6.30	9	3	9.4	-	E5157/16NO6
1/2	13	12.700	89	22	9.00	7.10	10	3	10.8	-	E5151/2NO1
1/2	13	12.700	89	22	9.00	7.10	10	3	10.8	-	E5151/2NO2
1/2	13	12.700	89	22	9.00	7.10	10	3	10.8	-	E5151/2NO3
1/2	13	12.700	89	22	9.00	7.10	10	3	10.8	-	E5151/2NO6
9/16	12	14.288	95	24	11.20	9.00	12	4	12.2	-	E5159/16NO1
9/16	12	14.288	95	24	11.20	9.00	12	4	12.2	-	E5159/16NO2
9/16	12	14.288	95	24	11.20	9.00	12	4	12.2	-	E5159/16NO3
9/16	12	14.288	95	24	11.20	9.00	12	4	12.2	-	E5159/16NO6
5/8	11	15.875	102	24	12.50	10.00	13	4	13.5	-	E5155/8NO1
5/8	11	15.875	102	24	12.50	10.00	13	4	13.5	-	E5155/8NO2
5/8	11	15.875	102	24	12.50	10.00	13	4	13.5	-	E5155/8NO3
5/8	11	15.875	102	24	12.50	10.00	13	4	13.5	-	E5155/8NO6
3/4	10	19.050	112	29	14.00	11.20	14	4	16.5	-	E5153/4NO1
3/4	10	19.050	112	29	14.00	11.20	14	4	16.5	-	E5153/4NO2
3/4	10	19.050	112	29	14.00	11.20	14	4	16.5	-	E5153/4NO3
3/4	10	19.050	112	29	14.00	11.20	14	4	16.5	-	E5153/4NO6
7/8	9	22.225	118	29	16.00	12.50	16	4	19.5	-	E5157/8NO1
7/8	9	22.225	118	29	16.00	12.50	16	4	19.5	-	E5157/8NO2
7/8	9	22.225	118	29	16.00	12.50	16	4	19.5	-	E5157/8NO3
7/8	9	22.225	118	29	16.00	12.50	16	4	19.5	-	E5157/8NO6
1“	8	25.400	130	35	18.00	14.00	18	4	22.25	-	E5151NO3
1“	8	25.400	130	35	18.00	14.00	18	4	22.25	-	E5151NO1
1“	8	25.400	130	35	18.00	14.00	18	4	22.25	-	E5151NO2
1“	8	25.400	130	35	18.00	14.00	18	4	22.25	-	E5151NO6
1.1/8	7	28.575	138	35	20.00	16.00	20	4	25	-	E5151.1/8NO1
1.1/8	7	28.575	138	35	20.00	16.00	20	4	25	-	E5151.1/8NO2
1.1/8	7	28.575	138	35	20.00	16.00	20	4	25	-	E5151.1/8NO3
1.1/4	7	31.750	151	41	22.40	18.00	22	4	28	-	E5151.1/4NO1
1.1/4	7	31.750	151	41	22.40	18.00	22	4	28	-	E5151.1/4NO2
1.1/4	7	31.750	151	41	22.40	18.00	22	4	28	-	E5151.1/4NO3
1.3/8	6	34.925	162	47	25.00	20.00	24	4	30.75	-	E5151.3/8NO1
1.3/8	6	34.925	162	47	25.00	20.00	24	4	30.75	-	E5151.3/8NO2
1.3/8	6	34.925	162	47	25.00	20.00	24	4	30.75	-	E5151.3/8NO3
1.1/2	6	38.100	170	47	28.00	22.40	26	4	34	-	E5151.1/2NO1
1.1/2	6	38.100	170	47	28.00	22.40	26	4	34	-	E5151.1/2NO2
1.1/2	6	38.100	170	47	28.00	22.40	26	4	34	-	E5151.1/2NO3
1.3/4	5	44.450	187	54	31.50	25.00	28	6	39.5	-	E5151.3/4NO1
1.3/4	5	44.450	187	54	31.50	25.00	28	6	39.5	-	E5151.3/4NO2
1.3/4	5	44.450	187	54	31.50	25.00	28	6	39.5	-	E5151.3/4NO3
2“	4.5	50.800	200	60	35.50	28.00	31	6	45	-	E5152NO3
2“	4.5	50.800	200	60	35.50	28.00	31	6	45	-	E5152NO1
2“	4.5	50.800	200	60	35.50	28.00	31	6	45	-	E5152NO2

NO1 - NO9
219

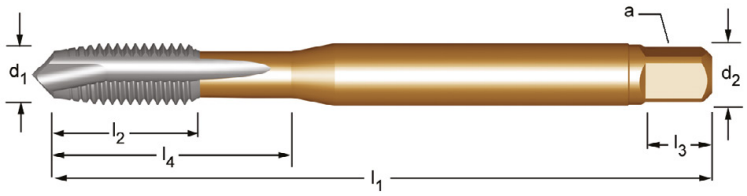
DORMER

EP20
EP21

- UNC Maskingängtappar Spåndrivande skär — Levereras som HSS-E tills nytt lager finns
- UNC Konekierretapit, lastua työntävä kärki — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- UNC Maskingjengetapp Spondrivende tapp — Leveres i HSS-E til ny lager tilgjengelig
- UNC Maskingevindtappe Spåndrivende skær — Leveres i HSS-E til nyt lager er tilgængeligt

EP20	▪	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4
	•	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1
EP21	▪	1.1	1.2	1.3	1.4	1.5						
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4			

EP20	UNC	DIN 2184-1	2B		2.5XD	HSS-E PM	B 3.5-5				
EP21	UNC	DIN 2184-1	2B		2.5XD	HSS-E PM	B 3.5-5			ST	




EP20

No.4 - 1“


EP21

No.4 - 1“

UNC	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	◪ a mm	l_3 mm	z		l_4 mm	EP20	EP21
4	40	2.845	56	9	3.5	2.7	6	3	2.35	18	EP204-40	EP214-40
5	40	3.175	56	10	3.5	2.7	6	3	2.65	18	EP205-40	EP215-40
6	32	3.505	56	11	4.0	3.0	6	3	2.85	20	EP206-32	EP216-32
8	32	4.166	63	12	4.5	3.4	8	3	3.5	21	EP208-32	EP218-32
10	24	4.826	70	13	6.0	4.9	8	3	3.9	25	EP2010-24	EP2110-24
12	24	5.486	80	15	6.0	4.9	8	3	4.5	30	EP2012-24	EP2112-24
1/4	20	6.350	80	15	7.0	5.5	8	3	5.1	30	EP201/4	EP211/4
5/16	18	7.938	90	18	8.0	6.2	9	3	6.6	35	EP205/16	EP215/16
3/8	16	9.525	100	20	10.0	8.0	11	3	8	39	EP203/8	EP213/8
7/16	14	11.112	100	20	8.0	6.2	9	3	9.4	-	EP207/16	EP217/16
1/2	13	12.700	110	23	9.0	7.0	10	3	10.8	-	EP201/2	EP211/2
5/8	11	15.875	110	25	12.0	9.0	12	3	13.5	-	EP205/8	EP215/8
3/4	10	19.050	125	30	14.0	11.0	14	4	16.5	-	EP203/4	EP213/4
7/8	9	22.225	140	34	18.0	14.5	17	4	19.5	-	EP207/8	EP217/8
1“	8	25.400	160	38	18.0	14.5	17	4	22.25	-	EP201	EP211

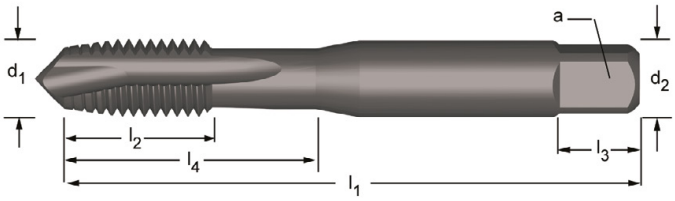
E021

- UNC Maskingängtappar Spåndrivande skär — Levereras som HSS-E tills nytt lager finns
- UNC Konekierretapit, lastua työntävä kärki — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- UNC Maskingjengetapp Spondrivende tapp — Leveres i HSS-E til ny lager tilgjengelig
- UNC Maskingevindtappe Spåndrivende skær — Leveres i HSS-E til nyt lager er tilgængeligt

E021 ▪ 1.1 1.2 1.3 1.4 1.5

• 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4

E021 UNC | ISO 529 | 2B | 2.5XD | HSS-E PM | B 3.5-5 | ST





No.2 - 1“

UNC	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z	↔	l_4 mm	E021
2	56	2.184	44.5	9.5	2.80	2.24	5	2	1.85	9.5	E0212-56
4	40	2.845	48	14	3.15	2.50	5	3	2.35	14	E0214-40
5	40	3.175	48	12.5	3.15	2.50	5	3	2.65	12.5	E0215-40
6	32	3.505	50	16	3.55	2.80	5	3	2.85	16	E0216-32
8	32	4.166	53	9.5	4.50	3.55	6	3	3.50	17	E0218-32
10	24	4.826	58	11	5.00	4.00	7	3	3.90	20	E02110-24
12	24	5.486	62	12	5.60	4.50	7	3	4.50	21	E02112-24
1/4	20	6.350	66	13	6.30	5.00	8	3	5.10	26	E0211/4
5/16	18	7.938	72	16	8.00	6.30	9	3	6.60	29	E0215/16
3/8	16	9.525	80	18	10.00	8.00	11	3	8.00	32	E0213/8
7/16	14	11.112	85	19	8.00	6.30	9	3	9.40	-	E0217/16
1/2	13	12.700	89	22	9.00	7.10	10	3	10.80	-	E0211/2
5/8	11	15.875	102	24	12.50	10.00	13	3	13.50	-	E0215/8
3/4	10	19.050	112	29	14.00	11.20	14	4	16.50	-	E0213/4
7/8	9	22.225	118	29	16.00	12.50	16	4	19.50	-	E0217/8
1“	8	25.400	130	35	18.00	14.00	18	4	22.25	-	E0211

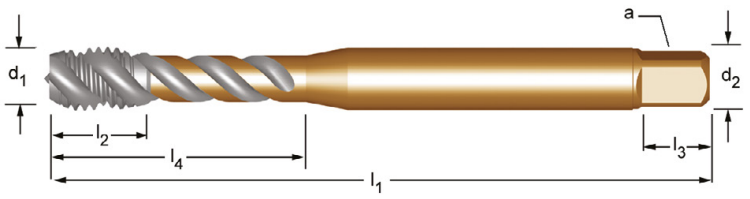
DORMER

EX20 • UNC Maskingängtappar Spiralspår 45° — Levereras som HSS-E tills nytt lager finns
• UNC Konekierretapit, lastua nostavat urat 45° — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.

EX21 • UNC Maskingjengetapp Spiral spor 45° — Leveres i HSS-E til ny lager tilgjengelig
• UNC Maskingevindtappe Spiralspor 45° — Leveres i HSS-E til nyt lager er tilgængeligt

EX20	▪	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4
	•	4.1	4.2	5.1	5.2					
EX21	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2		
	•	2.3								

EX20	UNC	DIN 2184-1	2B		2.5XD	HSS-E PM	C 2-3	λ45°			
EX21	UNC	DIN 2184-1	2B		2.5XD	HSS-E PM	C 2-3	λ45°		ST	




EX20
No.4 - 1“


EX21
No.4 - 1“

UNC	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	▨ a mm	l_3 mm	z		l_4 mm	EX20	EX21
4	40	2.845	56	6	3.5	2.7	6	3	2.35	18	EX204-40	EX214-40
5	40	3.175	56	6	3.5	2.7	6	3	2.65	18	EX205-40	EX215-40
6	32	3.505	56	7	4.0	3.0	6	3	2.85	20	EX206-32	EX216-32
8	32	4.166	63	7	4.5	3.4	8	3	3.5	21	EX208-32	EX218-32
10	24	4.826	70	8	6.0	4.9	8	3	3.9	25	EX2010-24	EX2110-24
12	24	5.486	80	10	6.0	4.9	8	3	4.5	30	EX2012-24	EX2112-24
1/4	20	6.350	80	10	7.0	5.5	8	3	5.1	30	EX201/4	EX211/4
5/16	18	7.938	90	12	8.0	6.2	9	3	6.6	35	EX205/16	EX215/16
3/8	16	9.525	100	15	10.0	8.0	11	3	8.0	39	EX203/8	EX213/8
7/16	14	11.112	100	15	8.0	6.2	9	3	9.4	-	EX207/16	EX217/16
1/2	13	12.700	110	18	9.0	7.0	10	3	10.8	-	EX201/2	EX211/2
5/8	11	15.875	110	20	12.0	9.0	12	4	13.5	-	EX205/8	EX215/8
3/4	10	19.050	125	25	14.0	11.0	14	4	16.5	-	EX203/4	EX213/4
7/8	9	22.225	140	25	18.0	14.5	17	4	19.5	-	EX207/8	EX217/8
1“	8	25.400	160	30	18.0	14.5	17	4	22.25	-	EX201	EX211

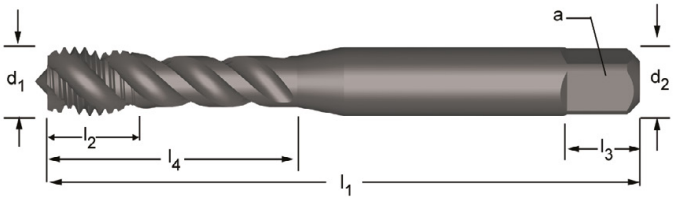
E023

- UNC Maskingängtappar Spiralspår 45°
- UNC Konekierretapit, lastua nostavat urat 45°
- UNC Maskingjengetapp Spiral spor 45°
- UNC Maskingevindtappe Spiralspor 45°

Levereras som HSS-E tills nytt lager finns
Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
Leveres i HSS-E til ny lager tilgjengelig
Leveres i HSS-E til nyt lager er tilgængeligt

E023 ▪ 1.1 1.2 1.3 1.4 1.5
• 2.1 2.2 2.3

E023 UNC | ISO 529 | 2B | 2.5XD | HSS-E PM | C 2-3 | λ45° | ST



E023



No.2 - 1“

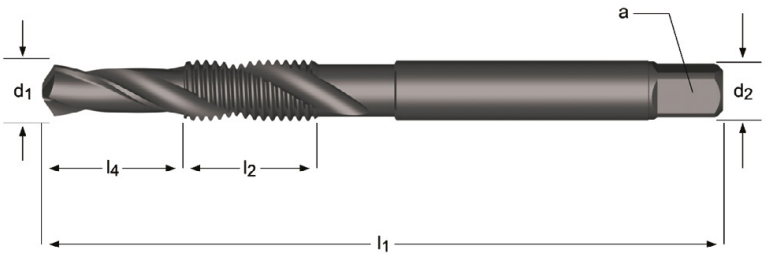
UNC	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊿ a mm	l_3 mm	z		l_4 mm	E023
2	56	2.184	44.5	9.5	2.80	2.24	5	2	1.85	9.5	E0232-56
4	40	2.845	48	6	3.15	2.50	5	3	2.35	14	E0234-40
5	40	3.175	48	6	3.15	2.50	5	3	2.65	12.5	E0235-40
6	32	3.505	50	6	3.55	2.80	5	3	2.85	16	E0236-32
8	32	4.166	53	7	4.50	3.55	6	3	3.50	17	E0238-32
10	24	4.826	58	8	5.00	4.00	7	3	3.90	20	E02310-24
12	24	5.486	62	12	5.60	4.50	7	3	4.50	21	E02312-24
1/4	20	6.350	66	10	6.30	5.00	8	3	5.10	28	E0231/4
5/16	18	7.938	72	12	8.00	6.30	9	3	6.60	31	E0235/16
3/8	16	9.525	80	15	10.00	8.00	11	3	8.00	34	E0233/8
7/16	14	11.112	85	19	8.00	6.30	9	3	9.40	-	E0237/16
1/2	13	12.700	89	19	9.00	7.10	10	3	10.80	-	E0231/2
5/8	11	15.875	102	24	12.50	10.00	13	4	13.50	-	E0235/8
3/4	10	19.050	112	29	14.00	11.20	14	4	16.50	-	E0233/4
7/8	9	22.225	118	29	16.00	12.50	16	4	19.50	-	E0237/8
1“	8	25.400	130	35	18.00	14.00	18	4	22.25	-	E0231

E651

- UNC Kombinerad Borr - Gängtapp Spiralspår 30°
- UNC Pora-kierretapit, lastua nostavat urat 30°
- UNC Kombinert Bor - Gjengetapp Spiralspor 30°
- UNC Kombineret Bor - Gevindtap Spiralspor 30°

E651 • 1.1 1.2 1.3 1.4 3.2 6.2 6.3 7.1 7.2 8.1







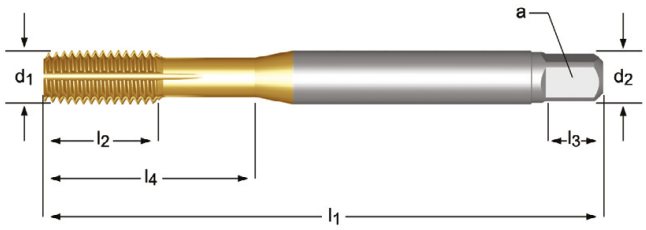
UNC	TPI	d_1 nom mm	l_1 mm	l_2 mm	l_4 mm	d_2 Ø mm	▨ a mm	z	E651
6	32	2.85	56.9	12	6.0	3.50	2.90	2	E6516-32
8	32	3.50	64.0	12	8.0	4.50	3.55	2	E6518-32
10	24	3.90	72.0	15	10.0	5.00	4.00	2	E65110-24
12	24	4.50	77.0	15	11.0	5.60	4.50	2	E65112-24
1/4	20	5.10	83.0	17	13.0	6.30	5.00	2	E6511/4
5/16	18	6.60	94.0	21	16.0	8.00	6.30	2	E6515/16
3/8	16	8.00	107.0	23	19.0	10.00	8.00	2	E6513/8
7/16	14	9.40	107.0	25	22.0	8.00	6.30	2	E6517/16
1/2	13	10.80	114.0	29	25.0	9.00	7.10	2	E6511/2
9/16	12	12.20	124.0	29	28.0	11.20	9.00	2	E6519/16
5/8	11	13.50	134.0	31	32.5	12.50	10.00	2	E6515/8

E287

- UNC Maskinpressgängtappar, oljespår
- UNC Konekierretapit, manglaavat, voitelu-urat
- UNC Maskinpressgjengetapp med oljespor
- UNC Maskin Rulletap, oliespor

E287 ▪ 1.1 1.2 1.3 1.4 2.1 2.2 4.1 5.1 7.1 7.2 7.3
E287 • 1.5 2.3 5.2 6.1 6.3 7.4

E287 | UNC | DIN 2184-1 | 2BX | 3.5XD | HSS-E | C 2-3.5 | TiN



E287



No.4 - 1/2

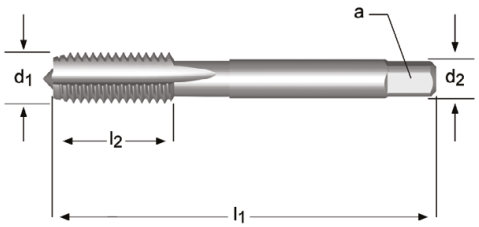
M	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z		l_4 mm	E287
4	40	2.845	56	9	3.5	2.7	6	4	2.6	18	E2874-40
6	32	3.505	56	11	4.0	3.0	6	4	3.2	20	E2876-32
8	32	4.166	63	12	4.5	3.4	6	5	3.8	21	E2878-32
10	24	4.826	70	13	6.0	4.9	8	5	4.4	25	E28710-24
1/4	20	6.350	80	15	7.0	5.5	8	5	5.8	30	E2871/4
5/16	18	7.938	90	18	8.0	6.2	9	5	7.3	35	E2875/16
3/8	16	9.525	100	20	10.0	8.0	11	5	8.8	39	E2873/8
7/16	14	11.112	100	20	8.0	6.2	9	5	10.3	-	E2877/16
1/2	13	12.700	110	23	9.0	7.0	10	5	11.9	-	E2871/2

E111

- UNF Handgängtappar Raka spår
- UNF Käsikierretapit, suorauraiset
- UNF Handgjengetapper Rett sportapp
- UNF Håndtappe Lige spor

E111 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E111 | UNF | DIN 2181 | 2B | 1.5XD | HSS | C 2-3



E111



No.5 - 1“

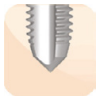
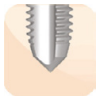
UNF	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	z		E111
5	44	3.18	45	13	4.0	3.0	3	2.7	E1115-44NO3
5	44	3.18	45	13	4.0	3.0	3	2.7	E1115-44NO9
6	40	3.51	45	10	4.0	3.0	3	2.95	E1116-40NO3
6	40	3.51	45	10	4.0	3.0	3	2.95	E1116-40NO9
8	36	4.17	50	14	6.0	4.9	3	3.5	E1118-36NO3
8	36	4.17	50	14	6.0	4.9	3	3.5	E1118-36NO9
10	32	4.82	50	14	6.0	4.9	3	4.1	E11110-32NO3
10	32	4.82	50	14	6.0	4.9	3	4.1	E11110-32NO9
1/4	28	6.35	56	17	6.0	4.9	3	5.5	E1111/4NO3
1/4	28	6.35	56	17	6.0	4.9	3	5.5	E1111/4NO9
5/16	24	7.94	63	19	6.0	4.9	3	6.9	E1115/16NO3
5/16	24	7.94	63	19	6.0	4.9	3	6.9	E1115/16NO9
3/8	24	9.53	63	16	7.0	5.5	3	8.5	E1113/8NO3
3/8	24	9.53	63	16	7.0	5.5	3	8.5	E1113/8NO9
7/16	20	11.11	63	15	8.0	6.2	3	9.9	E1117/16NO3
7/16	20	11.11	63	15	8.0	6.2	3	9.9	E1117/16NO9
1/2	20	12.70	70	22	9.0	7.0	3	11.5	E1111/2NO3
1/2	20	12.70	70	22	9.0	7.0	3	11.5	E1111/2NO9
9/16	18	14.29	70	16	11.0	9.0	4	12.9	E1119/16NO3
9/16	18	14.29	70	16	11.0	9.0	4	12.9	E1119/16NO9
5/8	18	15.88	70	16	12.0	9.0	4	14.5	E1115/8NO3
5/8	18	15.88	70	16	12.0	9.0	4	14.5	E1115/8NO9
3/4	16	19.05	80	22	14.0	11.0	4	17.5	E1113/4NO3
3/4	16	19.05	80	22	14.0	11.0	4	17.5	E1113/4NO9
7/8	14	22.23	90	22	18.0	14.5	4	20.4	E1117/8NO3
7/8	14	22.23	90	22	18.0	14.5	4	20.4	E1117/8NO9
1“	12	25.40	90	22	20.0	16.0	4	23.25	E1111NO3
1“	12	25.40	90	22	20.0	16.0	4	23.25	E1111NO9

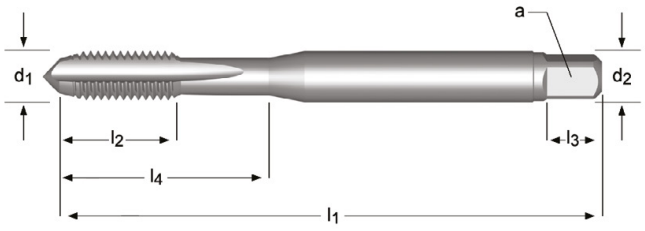
NO1 - NO9
219

E229
E278

- UNF Maskingängtappar Raka spår — Levereras som HSS-E tills nytt lager finns
- UNF Konekierretapit, suorauraiset — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- UNF Maskingjengetapp Rett sportapp — Leveres i HSS-E til ny lager tilgjengelig
- UNF Maskingevindtappe Lige spor — Leveres i HSS-E til nyt lager er tilgængeligt

E229; E278 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 6.2 6.3 7.2 7.3 8.2

E229	UNF	DIN 371	2B		1.5XD	HSS-E PM	C 2-3					
E278	UNF	DIN 374	2B		1.5XD	HSS-E PM	C 2-3					



E229	E278
 No.2 - 1/4	 5/16 - 1.1/2

UNF	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	▨ a mm	l_3 mm	z	↔	l_4 mm	E229	E278
2	64	2.184	45	7	2.8	2.1	5	3	1.9	12	E2292-64	
3	56	2.515	50	8	2.8	2.1	5	3	2.15	12.5	E2293-56	
4	48	2.845	56	9	3.5	2.7	6	3	2.4	18	E2294-48	
5	44	3.175	56	10	3.5	2.7	6	3	2.7	18	E2295-44	
6	40	3.505	56	11	4.0	3.0	6	3	2.95	20	E2296-40	
8	36	4.166	63	12	4.5	3.4	6	3	3.5	21	E2298-36	
10	32	4.826	70	13	6.0	4.9	8	3	4.1	25	E22910-32	
12	28	5.486	80	15	6.0	4.9	8	3	4.7	30	E22912-28	
1/4	28	6.350	80	15	7.0	5.5	8	3	5.5	30	E2291/4	
5/16	24	7.94	90	18	6.0	4.9	8	3	6.9			E2785/16
3/8	24	9.53	100	24	7.0	5.5	8	3	8.5			E2783/8
7/16	20	11.11	100	22	9.0	7.0	10	3	9.9			E2787/16
1/2	20	12.70	100	21	9.0	7.0	10	3	11.5			E2781/2
9/16	18	14.29	100	21	11.0	9.0	12	4	12.9			E2789/16
5/8	18	15.88	100	21	12.0	9.0	12	4	14.5			E2785/8
3/4	16	19.05	125	25	14.0	11.0	14	4	17.5			E2783/4
7/8	14	22.23	140	28	18.0	14.5	17	4	20.4			E2787/8
1“	12	25.40	140	26	18.0	14.5	17	4	23.25			E2781
1.1/8	12	28.58	150	28	22.0	18.0	21	4	26.5			E2781.1/8
1.1/4	12	31.75	150	28	25.0	20.0	23	4	29.5			E2781.1/4
1.3/8	12	34.93	170	30	28.0	22.0	25	4	32.75			E2781.3/8
1.1/2	12	38.10	170	30	32.0	24.0	27	4	36.0			E2781.1/2 [1]

[1] HSS-E

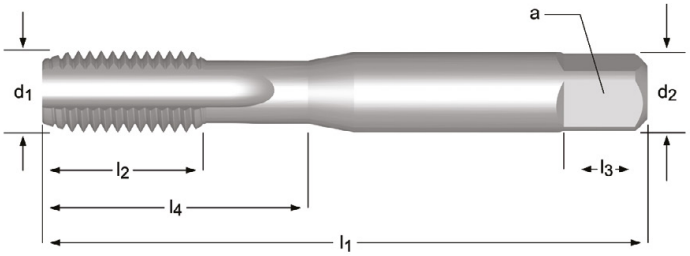
DORMER

E524

- UNF Maskingängtappar Raka spår
- UNF Konekierretapit, suorauraiset
- UNF Maskingjengetapp Rett sportapp
- UNF Maskingevindtappe Lige spor

E524 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E524 | UNF | ISO 529 | 2B | 1.5XD | HSS | L120 339



E524



No.0 - 1.1/2

UNF	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	◹ a mm	l_3 mm	z	↔	l_4 mm	E524
0	80	1.524	41	7	2.50	2.00	4	2	1.25	7	E5240-80NO1
0	80	1.524	41	7	2.50	2.00	4	2	1.25	7	E5240-80NO2
0	80	1.524	41	7	2.50	2.00	4	2	1.25	7	E5240-80NO3
1	72	1.854	41	8	2.50	2.00	4	2	1.55	8	E5241-72NO1
1	72	1.854	41	8	2.50	2.00	4	2	1.55	8	E5241-72NO2
1	72	1.854	41	8	2.50	2.00	4	2	1.55	8	E5241-72NO3
2	64	2.184	44.5	9.5	2.80	2.24	5	3	1.9	9.5	E5242-64NO1
2	64	2.184	44.5	9.5	2.80	2.24	5	3	1.9	9.5	E5242-64NO2
2	64	2.184	44.5	9.5	2.80	2.24	5	3	1.9	9.5	E5242-64NO3
4	48	2.845	48	12.5	3.15	2.50	5	3	2.4	12.5	E5244-48NO1
4	48	2.845	48	12.5	3.15	2.50	5	3	2.4	12.5	E5244-48NO2
4	48	2.845	48	12.5	3.15	2.50	5	3	2.4	12.5	E5244-48NO3
5	44	3.175	48	12.5	3.15	2.50	5	3	2.7	12.5	E5245-44NO1
5	44	3.175	48	12.5	3.15	2.50	5	3	2.7	12.5	E5245-44NO2
5	44	3.175	48	12.5	3.15	2.50	5	3	2.7	12.5	E5245-44NO3
6	40	3.505	50	14	3.55	2.80	5	3	2.95	14	E5246-40NO1
6	40	3.505	50	14	3.55	2.80	5	3	2.95	14	E5246-40NO2
6	40	3.505	50	14	3.55	2.80	5	3	2.95	14	E5246-40NO3
8	36	4.166	53	9.5	4.50	3.55	6	3	3.5	17	E5248-36NO1
8	36	4.166	53	9.5	4.50	3.55	6	3	3.5	17	E5248-36NO2
8	36	4.166	53	9.5	4.50	3.55	6	3	3.5	17	E5248-36NO3
10	32	4.826	58	11	5.00	4.00	7	3	4.1	20	E52410-32NO1
10	32	4.826	58	11	5.00	4.00	7	3	4.1	20	E52410-32NO2
10	32	4.826	58	11	5.00	4.00	7	3	4.1	20	E52410-32NO3
10	32	4.826	58	11	5.00	4.00	7	3	4.1	20	E52410-32NO6
12	28	5.486	62	12	5.60	4.50	7	3	4.7	21	E52412-28NO1
12	28	5.486	62	12	5.60	4.50	7	3	4.7	21	E52412-28NO2
12	28	5.486	62	12	5.60	4.50	7	3	4.7	21	E52412-28NO3
12	28	5.486	62	12	5.60	4.50	7	3	4.7	21	E52412-28NO6
1/4	28	6.350	66	13	6.30	5.00	8	3	5.5	26	E5241/4NO1
1/4	28	6.350	66	13	6.30	5.00	8	3	5.5	26	E5241/4NO2
1/4	28	6.350	66	13	6.30	5.00	8	3	5.5	26	E5241/4NO3
1/4	28	6.350	66	13	6.30	5.00	8	3	5.5	26	E5241/4NO6
5/16	24	7.938	72	16	8.00	6.30	9	3	6.9	29	E5245/16NO1
5/16	24	7.938	72	16	8.00	6.30	9	3	6.9	29	E5245/16NO2
5/16	24	7.938	72	16	8.00	6.30	9	3	6.9	29	E5245/16NO3
5/16	24	7.938	72	16	8.00	6.30	9	3	6.9	29	E5245/16NO6
3/8	24	9.525	80	18	10.00	8.00	11	3	8.5	32	E5243/8NO1
3/8	24	9.525	80	18	10.00	8.00	11	3	8.5	32	E5243/8NO2
3/8	24	9.525	80	18	10.00	8.00	11	3	8.5	32	E5243/8NO3

NO1 - NO9 219

UNF	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	◹ a mm	l_3 mm	z	↔	l_4 mm	E524
3/8	24	9.525	80	18	10.00	8.00	11	3	8.5	32	E5243/8NO6
7/16	20	11.112	85	19	8.00	6.30	9	3	9.9	-	E5247/16NO1
7/16	20	11.112	85	19	8.00	6.30	9	3	9.9	-	E5247/16NO2
7/16	20	11.112	85	19	8.00	6.30	9	3	9.9	-	E5247/16NO3
7/16	20	11.112	85	19	8.00	6.30	9	3	9.9	-	E5247/16NO6
1/2	20	12.700	89	22	9.00	7.10	10	3	11.5	-	E5241/2NO1
1/2	20	12.700	89	22	9.00	7.10	10	3	11.5	-	E5241/2NO2
1/2	20	12.700	89	22	9.00	7.10	10	3	11.5	-	E5241/2NO3
1/2	20	12.700	89	22	9.00	7.10	10	3	11.5	-	E5241/2NO6
9/16	18	14.288	95	24	11.20	9.00	12	4	12.9	-	E5249/16NO1
9/16	18	14.288	95	24	11.20	9.00	12	4	12.9	-	E5249/16NO2
9/16	18	14.288	95	24	11.20	9.00	12	4	12.9	-	E5249/16NO3
9/16	18	14.288	95	24	11.20	9.00	12	4	12.9	-	E5249/16NO6
5/8	18	15.875	102	24	12.50	10.00	13	4	14.5	-	E5245/8NO1
5/8	18	15.875	102	24	12.50	10.00	13	4	14.5	-	E5245/8NO2
5/8	18	15.875	102	24	12.50	10.00	13	4	14.5	-	E5245/8NO3
5/8	18	15.875	102	24	12.50	10.00	13	4	14.5	-	E5245/8NO6
3/4	16	19.050	112	29	14.00	11.20	14	4	17.5	-	E5243/4NO1
3/4	16	19.050	112	29	14.00	11.20	14	4	17.5	-	E5243/4NO2
3/4	16	19.050	112	29	14.00	11.20	14	4	17.5	-	E5243/4NO3
3/4	16	19.050	112	29	14.00	11.20	14	4	17.5	-	E5243/4NO6
7/8	14	22.225	118	29	16.00	12.50	16	4	20.4	-	E5247/8NO1
7/8	14	22.225	118	29	16.00	12.50	16	4	20.4	-	E5247/8NO2
7/8	14	22.225	118	29	16.00	12.50	16	4	20.4	-	E5247/8NO3
7/8	14	22.225	118	29	16.00	12.50	16	4	20.4	-	E5247/8NO6
1“	12	25.400	130	35	18.00	14.00	18	4	23.25	-	E5241NO1
1“	12	25.400	130	35	18.00	14.00	18	4	23.25	-	E5241NO2
1“	12	25.400	130	35	18.00	14.00	18	4	23.25	-	E5241NO3
1“	12	25.400	130	35	18.00	14.00	18	4	23.25	-	E5241NO6
1.1/8	12	28.575	138	35	20.00	16.00	20	4	26.5	-	E5241.1/8NO1
1.1/8	12	28.575	138	35	20.00	16.00	20	4	26.5	-	E5241.1/8NO2
1.1/8	12	28.575	138	35	20.00	16.00	20	4	26.5	-	E5241.1/8NO3
1.1/4	12	31.750	151	41	22.40	18.00	22	4	29.5	-	E5241.1/4NO1
1.1/4	12	31.750	151	41	22.40	18.00	22	4	29.5	-	E5241.1/4NO2
1.1/4	12	31.750	151	41	22.40	18.00	22	4	29.5	-	E5241.1/4NO3
1.3/8	12	34.925	162	47	25.00	20.00	24	4	32.75	-	E5241.3/8NO1
1.3/8	12	34.925	162	47	25.00	20.00	24	4	32.75	-	E5241.3/8NO2
1.3/8	12	34.925	162	47	25.00	20.00	24	4	32.75	-	E5241.3/8NO3
1.1/2	12	38.100	170	47	28.00	22.40	26	4	36	-	E5241.1/2NO1
1.1/2	12	38.100	170	47	28.00	22.40	26	4	36	-	E5241.1/2NO2
1.1/2	12	38.100	170	47	28.00	22.40	26	4	36	-	E5241.1/2NO3



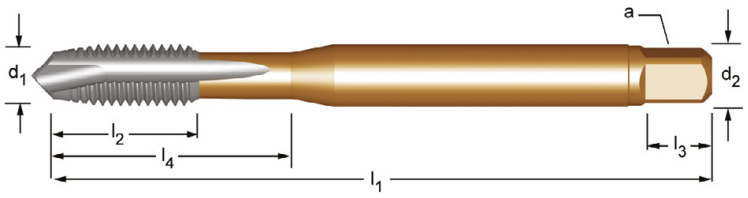
DORMER

EP30
EP31

- UNF Maskingängtappar Spåndrivande skär — Levereras som HSS-E tills nytt lager finns
- UNF Konekierretapit, lastua työntävä kärki — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- UNF Maskingjengetapp Spondrivende tapp — Leveres i HSS-E til ny lager tilgjengelig
- UNF Maskingevindtappe Spåndrivende skær — Leveres i HSS-E til nyt lager er tilgængeligt

EP30	▪	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4
	•	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1
EP31	▪	1.1	1.2	1.3	1.4	1.5						
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4			

EP30	UNF	DIN 2184-1	2B		2.5XD	HSS-E PM	C 2-3			
EP31	UNF	DIN 2184-1	2B		2.5XD	HSS-E PM	C 2-3			ST



EP30	EP31
	
No.8 - 1“	No.8 - 1“

UNF	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	◹ a mm	l_3 mm	z	↔	l_4 mm	EP30	EP31
8	36	4.166	63	12	4.5	3.4	8	3	3.5	21	EP308-36	EP318-36
10	32	4.826	70	13	6.0	4.9	8	3	4.1	25	EP3010-32	EP3110-32
1/4	28	6.350	80	15	7.0	5.5	8	3	5.5	30	EP301/4	EP311/4
5/16	24	7.938	90	18	8.0	6.2	9	3	6.9	35	EP305/16	EP315/16
3/8	24	9.525	100	20	10.0	8.0	11	3	8.5	39	EP303/8	EP313/8
7/16	20	11.112	100	20	8.0	6.2	9	3	9.9	-	EP307/16	EP317/16
1/2	20	12.700	110	23	9.0	7.0	10	3	11.5	-	EP301/2	EP311/2
5/8	18	15.875	110	25	12.0	9.0	12	3	14.5	-	EP305/8	EP315/8
3/4	16	19.050	125	30	14.0	11.0	14	4	17.5	-	EP303/4	EP313/4
7/8	14	22.225	140	34	18.0	14.5	17	4	20.4	-	EP307/8	EP317/8
1“	12	25.400	160	38	18.0	14.5	17	4	23.25	-	EP301	EP311

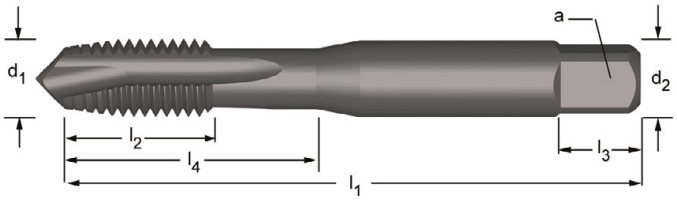
E031

- UNF Maskingängtappar Spåndrivande skär — Levereras som HSS-E tills nytt lager finns
- UNF Konekierretapit, lastua työntävä kärki — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- UNF Maskingjengetapp Spondrivende tapp — Leveres i HSS-E til ny lager tilgjengelig
- UNF Maskingevindtappe Spåndrivende skær — Leveres i HSS-E til nyt lager er tilgængeligt

E031 ▪ 1.1 1.2 1.3 1.4 1.5

• 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4

E031 UNF | ISO 529 | 2B | 2.5XD | HSS-E PM | B 3.5-5 | ST



E031



No.8 - 1“

UNF	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z	↔	l_4 mm	E031
8	36	4.166	53	9.5	4.5	3.55	6	3	3.50	17	E0318-36
10	32	4.826	58	11	5.0	4.00	7	3	4.10	20	E03110-32
1/4	28	6.350	66	13	6.3	5.00	8	3	5.50	26	E0311/4
5/16	24	7.938	72	16	8.0	6.30	9	3	6.90	29	E0315/16
3/8	24	9.525	80	18	10.0	8.00	11	3	8.50	32	E0313/8
7/16	20	11.112	85	19	8.0	6.30	9	3	9.90	-	E0317/16
1/2	20	12.700	89	22	9.0	7.10	10	3	11.50	-	E0311/2
9/16	18	14.288	95	24	11.2	9.00	12	3	12.90	-	E0319/16
5/8	18	15.875	102	24	12.5	10.00	13	3	14.50	-	E0315/8
3/4	16	19.050	112	29	14.0	11.20	14	4	17.50	-	E0313/4
7/8	14	22.225	118	29	16.0	12.50	16	4	20.40	-	E0317/8
1“	12	25.400	130	35	18.0	14.00	18	4	23.25	-	E0311

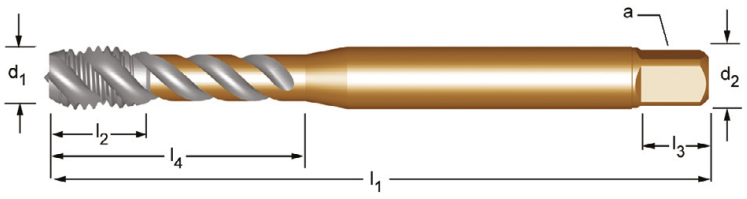
DORMER

EX30
EX31

- UNF Maskingängtappar Spiralspår 45° — Levereras som HSS-E tills nytt lager finns
- UNF Konekierretapit, lastua nostavat urat 45° — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- UNF Maskingjengetapp Spiral spor 45° — Leveres i HSS-E til ny lager tilgjengelig
- UNF Maskingevindtappe Spiralspor 45° — Leveres i HSS-E til nyt lager er tilgængeligt

EX30	▪	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4			
	•	4.1	4.2	5.1	5.2								
EX31	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2					
	•	2.3											

EX30	UNF	DIN 2184-1	2B		2.5XD	HSS-E PM	C 2-3	λ45°				
EX31	UNF	DIN 2184-1	2B		2.5XD	HSS-E PM	C 2-3	λ45°		ST		



EX30	EX31
	
No.8 - 1“	No.8 - 1“

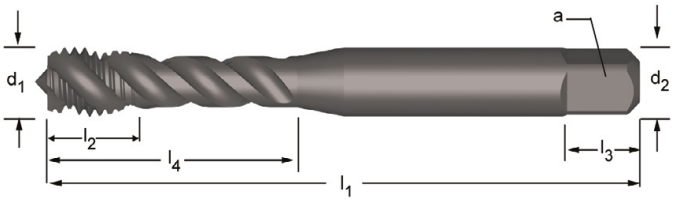
UNF	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z		l_4 mm	EX30	EX31
8	36	4.166	63	7	4.5	3.4	8	3	3.5	21	EX308-36	EX318-36
10	32	4.826	70	8	6.0	4.9	8	3	4.1	25	EX3010-32	EX3110-32
1/4	28	6.350	80	10	7.0	5.5	8	3	5.5	30	EX301/4	EX311/4
5/16	24	7.938	90	12	8.0	6.2	9	3	6.9	35	EX305/16	EX315/16
3/8	24	9.525	100	15	10.0	8.0	11	3	8.5	39	EX303/8	EX313/8
7/16	20	11.112	100	15	8.0	6.2	9	3	9.9	-	EX307/16	EX317/16
1/2	20	12.700	110	18	9.0	7.0	10	3	11.5	-	EX301/2	EX311/2
5/8	18	15.875	110	20	12.0	9.0	12	4	14.5	-	EX305/8	EX315/8
3/4	16	19.050	125	25	14.0	11.0	14	4	17.5	-	EX303/4	EX313/4
7/8	14	22.225	140	25	18.0	14.5	17	4	20.4	-	EX307/8	EX317/8
1“	12	25.400	160	30	18.0	14.5	17	4	23.25	-	EX301	EX311

E033

- UNF Maskingängtappar Spiralspår 45° — Levereras som HSS-E tills nytt lager finns
- UNF Konekierretapit, lastua nostavat urat 45° — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- UNF Maskingjengetapp Spiral spor 45° — Leveres i HSS-E til ny lager tilgjengelig
- UNF Maskingevindtappe Spiralspor 45° — Leveres i HSS-E til nyt lager er tilgængeligt

E033 ▪ 1.1 1.2 1.3 1.4 1.5
• 1.6 2.1 2.2 2.3







UNF	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊿ a mm	l_3 mm	z	↔	l_4 mm	E033
8	36	4.166	53	7	4.5	3.55	6	3	3.50	17	E0338-36
10	32	4.826	58	8	5.0	4.00	7	3	4.10	20	E03310-32
1/4	28	6.350	66	10	6.3	5.00	8	3	5.50	28	E0331/4
5/16	24	7.938	72	12	8.0	6.30	9	3	6.90	31	E0335/16
3/8	24	9.525	80	15	10.0	8.00	11	3	8.50	34	E0333/8
7/16	20	11.112	85	19	8.0	6.30	9	3	9.90	-	E0337/16
1/2	20	12.700	89	22	9.0	7.10	10	3	11.50	-	E0331/2
9/16	18	14.288	95	24	11.2	9.00	12	3	12.90	-	E0339/16
5/8	18	15.875	102	24	12.5	10.00	13	4	14.50	-	E0335/8
3/4	16	19.050	112	29	14.0	11.20	14	4	17.50	-	E0333/4
7/8	14	22.225	118	29	16.0	12.50	16	4	20.40	-	E0337/8
1“	12	25.400	130	35	18.0	14.00	18	4	23.25	-	E0331

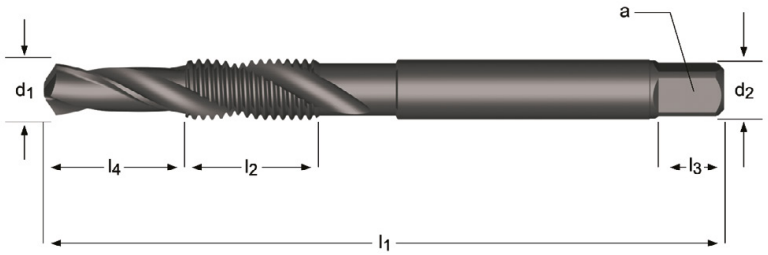
DORMER

E654

- UNF Kombinerad Borr - Gängtapp Spiralspår 30°
- UNF Pora-kierretapit, lastua nostavat urat 30°
- UNF Kombinert Bor - Gjengetapp Spiralspor 30°
- UNF Kombineret Bor - Gevindtap Spiralspor 30°

E654 • 1.1 1.2 1.3 1.4 3.2 6.2 6.3 7.1 7.2 8.1







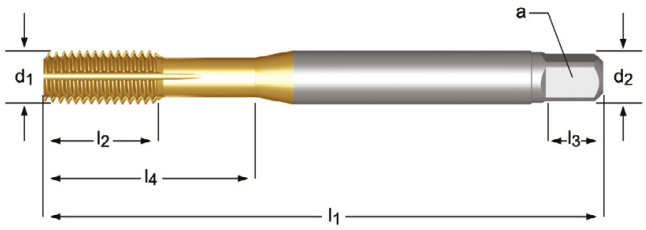
UNF	TPI	d_1 nom mm	l_1 mm	l_2 mm	l_4 mm	d_2 Ø mm	⧄ a mm	z	E654
8	36	3.50	64	13	8	4.5	3.55	2	E6548-36
10	32	4.10	72	16	10	5.0	4.00	2	E65410-32
12	28	4.70	77	17	11	5.6	4.50	2	E65412-28
1/4	28	5.50	83	19	13	6.3	5.00	2	E6541/4
5/16	24	6.90	94	22	16	8.0	6.30	2	E6545/16
3/8	24	8.50	104	24	19	10.0	8.00	2	E6543/8
7/16	20	9.90	107	25	22	8.0	6.30	2	E6547/16
1/2	20	11.50	114	29	25	9.0	7.10	2	E6541/2
5/8	18	14.50	134	32	32	12.5	10.00	2	E6545/8

E286

- UNF Maskinpressgängtappar, oljespår
- UNF Konekierretapit, manglaavat, voitelu-urat
- UNF Maskinpressgjengetapp med oljespor
- UNF Maskin Rulletap, oliespor

E286												
	▪	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.1	7.2	7.3
	•	1.5	2.3	5.2	6.1	6.3	7.4					

E286	UNF	DIN 2184-1	2BX		3.5XD	HSS-E	C 2-3.5			TiN	



E286



No.4 - 1/2

UNF	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊿ a mm	l_3 mm	z		l_4 mm	E286
4	48	2.845	56	9	3.5	2.7	6	4	2.6	18	E2864-48
6	40	3.505	56	11	4.0	3.0	6	4	3.2	20	E2866-40
8	36	4.166	63	12	4.5	3.4	6	5	3.9	21	E2868-36
10	32	4.826	70	13	6.0	4.9	8	5	4.5	25	E28610-32
1/4	28	6.350	80	15	7.0	5.5	8	5	6.0	30	E2861/4
5/16	24	7.938	90	18	8.0	6.2	9	5	7.5	35	E2865/16
3/8	24	9.525	100	20	10.0	8.0	11	5	9.1	39	E2863/8
7/16	20	11.112	100	20	8.0	6.2	9	5	10.6	-	E2867/16
1/2	20	12.700	100	21	9.0	7.0	10	5	12.1	-	E2861/2

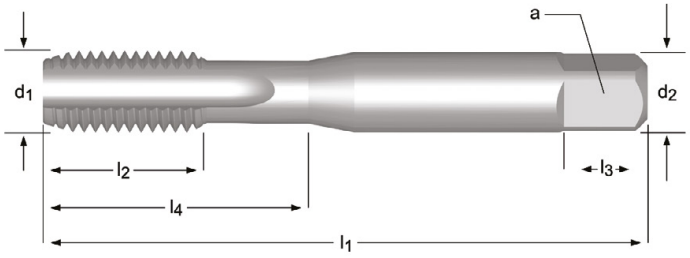
DORMER

E570

- UN Maskingängtappar Raka spår
- UN Konekierretapit, suorauraiset
- UN Maskingjengetapp Rett sportapp
- UN Maskingevindtappe Lige spor

E570 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E570 | UN | ISO 529 | 2B | 1.5XD | HSS | C 2-3



E570



1/4 - 1.5/16

UN	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	z		l_4 mm	E570
1/4	32	6.350	66	13	6.3	5.00	3	5.6	26	E5701/4X32NO3
1/4	36	6.350	66	13	6.3	5.00	3	5.7	26	E5701/4X36NO3
1/4	40	6.350	66	13	6.3	5.00	3	5.7	26	E5701/4X40NO3
5/16	32	7.938	72	16	8.0	6.30	3	7.2	29	E5705/16X32NO3
3/8	32	9.525	80	18	10.0	8.00	3	8.8	32	E5703/8X32NO3
7/16	24	11.112	85	19	8.0	6.30	3	10	-	E5707/16X24NO3
7/16	28	11.112	85	19	8.0	6.30	3	10.2	-	E5707/16X28NO3
1/2	28	12.700	89	22	9.0	7.10	3	11.8	-	E5701/2X28NO3
9/16	24	14.288	95	24	11.2	9.00	4	13.25	-	E5709/16X24NO3
5/8	24	15.875	102	24	12.5	10.00	4	14.8	-	E5705/8X24NO3
3/4	20	19.050	112	29	14.0	11.20	4	17.8	-	E5703/4X20NO3
7/8	20	22.225	118	30	16.0	12.50	4	21	-	E5707/8X20NO3
1“	14	25.400	130	36	18.0	14.00	4	23.5	-	E5701X14NO3
1.1/16	12	26.988	127	37	20.0	16.00	4	24.75	-	E5701.1/16X12NO3
1.1/8	8	28.575	138	35	20.0	16.00	4	25.5	-	E5701.1/8X8NO3
1.3/16	12	30.163	137	37	22.4	18.00	4	28	-	E5701.3/16X12NO3
1.1/4	8	31.750	151	41	22.4	18.00	4	28.5	-	E5701.1/4X8NO3
1.5/16	12	33.338	137	37	22.4	18.00	4	31.25	-	E5701.5/16X12NO3

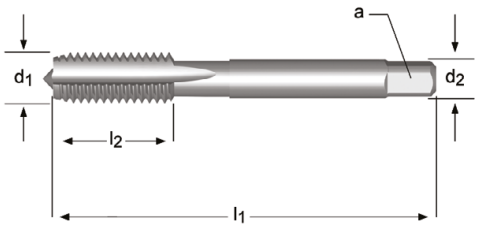
NO1 - NO9
219

E115

- BSW Handgängtappar Raka spår
- BSW Käsikierretapit, suorauraiset
- BSW Handgjengetapper Rett sportapp
- BSW Håndtappe Lige spor

E115 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E115 BSW DIN 351 Medium 1.5XD HSS C 2-3



E115



1/8 - 1“

BSW	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	z	↔	E115
1/8	40	3.175	40	10	3.5	2.7	3	2.55	E1151/8NO3
1/8	40	3.175	40	10	3.5	2.7	3	2.55	E1151/8NO8
5/32	32	3.969	45	12	4.5	3.4	3	3.2	E1155/32NO3
5/32	32	3.969	45	12	4.5	3.4	3	3.2	E1155/32NO8
3/16	24	4.763	50	16	5.5	4.3	3	3.7	E1153/16NO3
3/16	24	4.763	50	16	5.5	4.3	3	3.7	E1153/16NO8
1/4	20	6.350	56	17	6.0	4.9	3	5.1	E1151/4NO3
1/4	20	6.350	56	17	6.0	4.9	3	5.1	E1151/4NO8
5/16	18	7.938	63	25	6.0	4.9	3	6.5	E1155/16NO3
5/16	18	7.938	63	25	6.0	4.9	3	6.5	E1155/16NO8
3/8	16	9.525	70	22	7.0	5.5	3	7.9	E1153/8NO3
3/8	16	9.525	70	22	7.0	5.5	3	7.9	E1153/8NO8
7/16	14	11.113	75	30	8.0	6.2	3	9.2	E1157/16NO3
7/16	14	11.113	75	30	8.0	6.2	3	9.2	E1157/16NO8
1/2	12	12.700	80	30	9.0	7.0	3	10.5	E1151/2NO3
1/2	12	12.700	80	30	9.0	7.0	3	10.5	E1151/2NO8
9/16	12	14.288	80	30	11.0	9.0	4	12	E1159/16NO3
9/16	12	14.288	80	30	11.0	9.0	4	12	E1159/16NO8
5/8	11	15.875	90	36	12.0	9.0	4	13.5	E1155/8NO3
5/8	11	15.875	90	36	12.0	9.0	4	13.5	E1155/8NO8
3/4	10	19.050	105	40	14.0	11.0	4	16.5	E1153/4NO3
3/4	10	19.050	105	40	14.0	11.0	4	16.5	E1153/4NO8
7/8	9	22.225	110	45	18.0	14.5	4	19.25	E1157/8NO3
7/8	9	22.225	110	45	18.0	14.5	4	19.25	E1157/8NO8
1“	8	25.400	110	50	20.0	16.0	4	22	E1151NO3
1“	8	25.400	110	50	20.0	16.0	4	22	E1151NO8

NO1 - NO9
219

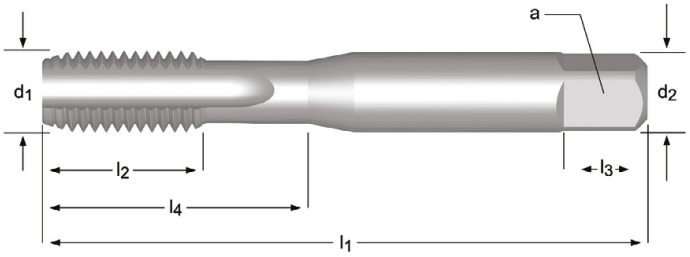
DORMER

E531

- BSW Maskingängtappar Raka spår
- BSW Konekierretapit, suorauraiset
- BSW Maskingjengetapp Rett sportapp
- BSW Maskingevindtappe Lige spor

E531 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E531 BSW | ISO 529 | Medium | 1.5XD | HSS



E531



1/8 - 1"

BSW	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	z		l_4 mm	E531
1/8	40	3.175	48	12.5	3.15	2.50	3	2.55	12.5	E5311/8NO1
1/8	40	3.175	48	12.5	3.15	2.50	3	2.55	12.5	E5311/8NO2
1/8	40	3.175	48	12.5	3.15	2.50	3	2.55	12.5	E5311/8NO3
1/8	40	3.175	48	12.5	3.15	2.50	3	2.55	12.5	E5311/8NO6
5/32	32	3.969	53	14	4.00	3.15	3	3.2	14	E5315/32NO1
5/32	32	3.969	53	14	4.00	3.15	3	3.2	14	E5315/32NO2
5/32	32	3.969	53	14	4.00	3.15	3	3.2	14	E5315/32NO3
5/32	32	3.969	53	14	4.00	3.15	3	3.2	14	E5315/32NO6
3/16	24	4.763	58	11	5.00	4.00	3	3.7	20	E5313/16NO1
3/16	24	4.763	58	11	5.00	4.00	3	3.7	20	E5313/16NO2
3/16	24	4.763	58	11	5.00	4.00	3	3.7	20	E5313/16NO3
3/16	24	4.763	58	11	5.00	4.00	3	3.7	20	E5313/16NO6
1/4	20	6.350	66	13	6.30	5.00	3	5.1	26	E5311/4NO1
1/4	20	6.350	66	13	6.30	5.00	3	5.1	26	E5311/4NO2
1/4	20	6.350	66	13	6.30	5.00	3	5.1	26	E5311/4NO3
1/4	20	6.350	66	13	6.30	5.00	3	5.1	26	E5311/4NO6
5/16	18	7.938	72	16	8.00	6.30	3	6.5	29	E5315/16NO1
5/16	18	7.938	72	16	8.00	6.30	3	6.5	29	E5315/16NO2
5/16	18	7.938	72	16	8.00	6.30	3	6.5	29	E5315/16NO3
5/16	18	7.938	72	16	8.00	6.30	3	6.5	29	E5315/16NO6
3/8	16	9.525	80	18	10.00	8.00	3	7.9	32	E5313/8NO1
3/8	16	9.525	80	18	10.00	8.00	3	7.9	32	E5313/8NO2
3/8	16	9.525	80	18	10.00	8.00	3	7.9	32	E5313/8NO3
3/8	16	9.525	80	18	10.00	8.00	3	7.9	32	E5313/8NO6
7/16	14	11.112	85	19	8.00	6.30	3	9.2	-	E5317/16NO1
7/16	14	11.112	85	19	8.00	6.30	3	9.2	-	E5317/16NO2
7/16	14	11.112	85	19	8.00	6.30	3	9.2	-	E5317/16NO3
7/16	14	11.112	85	19	8.00	6.30	3	9.2	-	E5317/16NO6
1/2	12	12.700	89	22	9.00	7.10	3	10.5	-	E5311/2NO1
1/2	12	12.700	89	22	9.00	7.10	3	10.5	-	E5311/2NO2
1/2	12	12.700	89	22	9.00	7.10	3	10.5	-	E5311/2NO3
1/2	12	12.700	89	22	9.00	7.10	3	10.5	-	E5311/2NO6
5/8	11	15.875	102	24	12.50	10.00	4	13.5	-	E5315/8NO1
5/8	11	15.875	102	24	12.50	10.00	4	13.5	-	E5315/8NO2
5/8	11	15.875	102	24	12.50	10.00	4	13.5	-	E5315/8NO3
5/8	11	15.875	102	24	12.50	10.00	4	13.5	-	E5315/8NO6
3/4	10	19.050	112	29	14.00	11.20	4	16.5	-	E5313/4NO1
3/4	10	19.050	112	29	14.00	11.20	4	16.5	-	E5313/4NO2
3/4	10	19.050	112	29	14.00	11.20	4	16.5	-	E5313/4NO3
3/4	10	19.050	112	29	14.00	11.20	4	16.5	-	E5313/4NO6

NO1 - NO9
219

BSW	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	z	↔	l_4 mm	E531
1“	8	25.400	130	35	18.00	14.00	4	22	-	E5311NO1
1“	8	25.400	130	35	18.00	14.00	4	22	-	E5311NO2
1“	8	25.400	130	35	18.00	14.00	4	22	-	E5311NO3
1“	8	25.400	130	35	18.00	14.00	4	22	-	E5311NO6

NO1 - NO9
219

DORMER

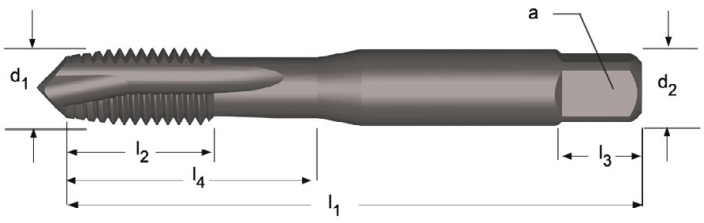
E534

- BSW Maskingängtappar Spåndrivande skär
- BSW Konekierretapit, lastua työntävä kärki
- BSW Maskingjengetapp Spondrivende tapp
- BSW Maskingevindtappe Spåndrivende skær

E534 ▪ 1.1 1.2 1.3 1.4 2.1 2.2 2.3

E534 • 1.5 1.6 4.3 5.1 5.2 6.1 6.3 7.1 7.2 7.3 7.4 8.1

E534 | BSW | ISO 529 | Medium | 2.5XD | HSS | B 3.5-5 | ST



E534



1/8 - 3/4

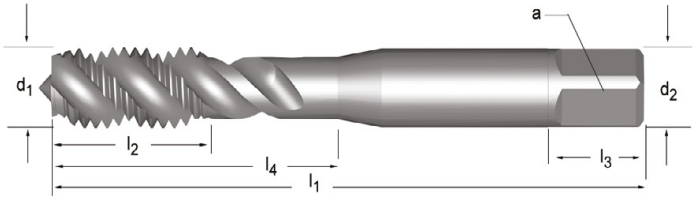
BSW	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	z		l_4 mm	E534
1/8	40	3.175	48	12.5	3.15	2.50	3	2.55	12.5	E5341/8
5/32	32	3.969	53	14	4.00	3.15	3	3.2	14	E5345/32
3/16	24	4.763	58	11	5.00	4.00	3	3.7	20	E5343/16
1/4	20	6.350	66	13	6.30	5.00	3	5.1	26	E5341/4
5/16	18	7.938	72	16	8.00	6.30	3	6.5	29	E5345/16
3/8	16	9.525	80	18	10.00	8.00	3	7.9	32	E5343/8
7/16	14	11.112	85	19	8.00	6.30	3	9.2	-	E5347/16
1/2	12	12.700	89	22	9.00	7.10	3	10.5	-	E5341/2
5/8	11	15.875	102	24	12.50	10.00	3	13.5	-	E5345/8
3/4	10	19.050	112	29	14.00	11.20	4	16.5	-	E5343/4

E533

- BSW Maskingängtappar Spiralspår 40°
- BSW Konekierretapit, lastua nostavat urat 40°
- BSW Maskingjengetapp Spiral spor 40°
- BSW Maskingevindtappe Spiralspor 40°

E533							
	▪	1.2	1.3	1.4	2.1	2.2	2.3
	•	1.5	5.2	7.1	7.2	7.3	7.4







BSW	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	▨ a mm	z		l_4 mm	E533
1/8	40	3.175	48	12.5	3.15	2.50	3	2.55	12.5	E5331/8 [3]
1/8	40	3.175	48	12.5	3.15	2.50	3	2.55	12.5	E5331/8BLUE
3/16	24	4.763	58	11	5.00	4.00	3	3.7	20	E5333/16 [3]
3/16	24	4.763	58	11	5.00	4.00	3	3.7	20	E5333/16BLUE
1/4	20	6.350	66	13	6.30	5.00	3	5.1	26	E5331/4 [3]
1/4	20	6.350	66	13	6.30	5.00	3	5.1	26	E5331/4BLUE
5/16	18	7.938	72	16	8.00	6.30	3	6.5	31	E5335/16 [3]
5/16	18	7.938	72	16	8.00	6.30	3	6.5	31	E5335/16BLUE
3/8	16	9.525	80	18	10.00	8.00	3	7.9	34	E5333/8 [3]
3/8	16	9.525	80	18	10.00	8.00	3	7.9	34	E5333/8BLUE
1/2	12	12.700	89	22	9.00	7.10	3	10.5	-	E5331/2 [3]
1/2	12	12.700	89	22	9.00	7.10	3	10.5	-	E5331/2BLUE
5/8	11	15.875	102	24	12.50	10.00	3	13.5	-	E5335/8 [3]
5/8	11	15.875	102	24	12.50	10.00	3	13.5	-	E5335/8BLUE
3/4	10	19.050	112	29	14.00	11.20	3	16.5	-	E5333/4 [3]
3/4	10	19.050	112	29	14.00	11.20	3	16.5	-	E5333/4BLUE

[3] Blank / Kirkas / Blank / Blank

DORMER

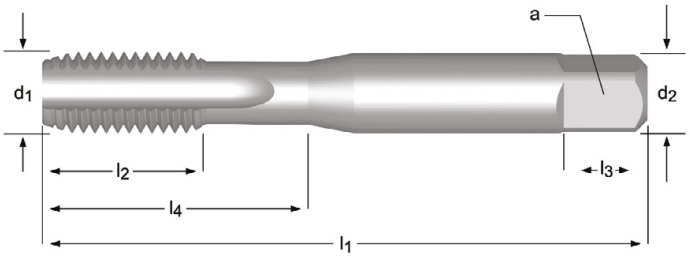
E536

- BSF Maskingängtappar Raka spår
- BSF Konekierretapit, suorauraiset
- BSF Maskingjengetapp Rett sportapp
- BSF Maskingevindtappe Lige spor

E536 ▪ 6.1

E536 • 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E536 | BSF | ISO 529 | Medium | 1.5XD | HSS



E536



3/16 - 1“

BSF	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	z		l_4 mm	E536
3/16	32	4.76	58	12	5.0	4.0	3	4	20	E5363/16NO1
3/16	32	4.76	58	12	5.0	4.0	3	4	20	E5363/16NO2
3/16	32	4.76	58	12	5.0	4.0	3	4	20	E5363/16NO3
3/16	32	4.76	58	12	5.0	4.0	3	4	20	E5363/16NO6
1/4	26	6.35	66	14	6.3	5.0	3	5.3	26	E5361/4NO1
1/4	26	6.35	66	14	6.3	5.0	3	5.3	26	E5361/4NO2
1/4	26	6.35	66	14	6.3	5.0	3	5.3	26	E5361/4NO3
1/4	26	6.35	66	14	6.3	5.0	3	5.3	26	E5361/4NO6
5/16	22	7.94	72	18	8.0	6.3	3	6.8	29	E5365/16NO1
5/16	22	7.94	72	18	8.0	6.3	3	6.8	29	E5365/16NO2
5/16	22	7.94	72	18	8.0	6.3	3	6.8	29	E5365/16NO3
5/16	22	7.94	72	18	8.0	6.3	3	6.8	29	E5365/16NO6
3/8	20	9.53	80	20	10.0	8.0	3	8.3	32	E5363/8NO1
3/8	20	9.53	80	20	10.0	8.0	3	8.3	32	E5363/8NO2
3/8	20	9.53	80	20	10.0	8.0	3	8.3	32	E5363/8NO3
3/8	20	9.53	80	20	10.0	8.0	3	8.3	32	E5363/8NO6
7/16	18	11.11	85	20	8.0	6.3	3	9.7	-	E5367/16NO1
7/16	18	11.11	85	20	8.0	6.3	3	9.7	-	E5367/16NO2
7/16	18	11.11	85	20	8.0	6.3	3	9.7	-	E5367/16NO3
1/2	16	12.70	89	23	9.0	7.1	3	11	-	E5361/2NO1
1/2	16	12.70	89	23	9.0	7.1	3	11	-	E5361/2NO2
1/2	16	12.70	89	23	9.0	7.1	3	11	-	E5361/2NO3
1/2	16	12.70	89	23	9.0	7.1	3	11	-	E5361/2NO6
9/16	16	14.28	95	25	11.2	9.0	4	12.7	-	E5369/16NO1
9/16	16	14.28	95	25	11.2	9.0	4	12.7	-	E5369/16NO2
9/16	16	14.28	95	25	11.2	9.0	4	12.7	-	E5369/16NO3
5/8	14	15.88	102	25	12.5	10.0	4	14	-	E5365/8NO1
5/8	14	15.88	102	25	12.5	10.0	4	14	-	E5365/8NO2
5/8	14	15.88	102	25	12.5	10.0	4	14	-	E5365/8NO3
3/4	12	19.05	112	30	14.0	11.2	4	17	-	E5363/4NO1
3/4	12	19.05	112	30	14.0	11.2	4	17	-	E5363/4NO2
3/4	12	19.05	112	30	14.0	11.2	4	17	-	E5363/4NO3
7/8	11	22.23	118	30	16.0	12.5	4	19.75	-	E5367/8NO1
7/8	11	22.23	118	30	16.0	12.5	4	19.75	-	E5367/8NO2
7/8	11	22.23	118	30	16.0	12.5	4	19.75	-	E5367/8NO3
7/8	11	22.23	118	30	16.0	12.5	4	19.75	-	E5367/8NO6
1“	10	25.40	130	36	18.0	14.0	4	22.75	-	E5361NO1
1“	10	25.40	130	36	18.0	14.0	4	22.75	-	E5361NO2
1“	10	25.40	130	36	18.0	14.0	4	22.75	-	E5361NO3

NO1 - NO9
219

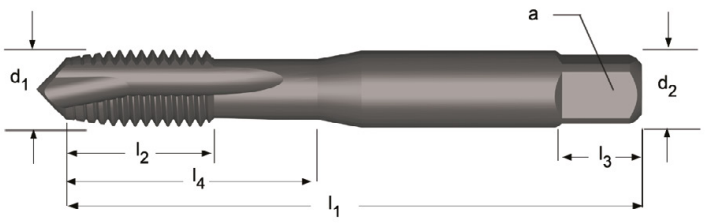
E539

- BSF Maskingängtappar Spåndrivande skär
- BSF Konekierretapit, lastua työntävä kärki
- BSF Maskingjengetapp Spondrivende tapp
- BSF Maskingevindtappe Spåndrivende skær

E539 ▪ 1.1 1.2 1.3 1.4 2.1 2.2 2.3

E539 • 1.5 1.6 4.3 5.1 5.2 6.1 6.3 7.1 7.2 7.3 7.4 8.1

E539 | BSF | ISO 529 | Medium | 2.5XD | HSS | B 3.5-5 | ST



E539



1/4 - 1/2

BSF	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	z		l_4 mm	E539
1/4	26	6.35	66	14	6.3	5.0	3	5.3	26	E5391/4
5/16	22	7.94	72	18	8.0	6.3	3	6.8	29	E5395/16
3/8	20	9.53	80	20	10.0	8.0	3	8.3	32	E5393/8
1/2	16	12.70	89	23	9.0	7.1	3	11	-	E5391/2

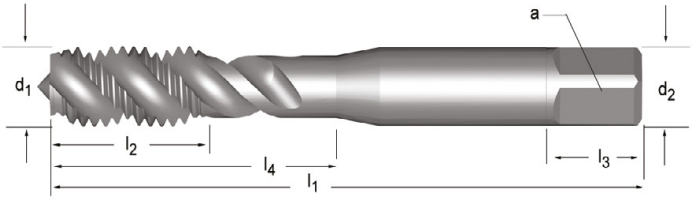
DORMER

E538

- BSF Maskingängtappar Spiralspår 40°
- BSF Konekierretapit, lastua nostavat urat 40°
- BSF Maskingjengetapp Spiralspor 40°
- BSF Maskingevindtappe Spiralspor 40°

E538 ▪ 1.2 1.3 1.4 2.1 2.2 2.3
• 1.5 5.2 7.1 7.2 7.3 7.4

E538 BSF | ISO 529 | Medium | 2XD | HSS | C 2-3 | λ40° | ST



E538



1/4 - 1/2

BSF	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊿ a mm	z		l_4 mm	E538
1/4	26	6.350	66	13	6.3	5.00	3	5.3	26	E5381/4 [3]
1/4	26	6.350	66	13	6.3	5.00	3	5.3	26	E5381/4BLUE
5/16	22	7.938	72	16	8.0	6.30	3	6.8	31	E5385/16 [3]
5/16	22	7.938	72	16	8.0	6.30	3	6.8	31	E5385/16BLUE
3/8	20	9.525	80	18	10.0	8.00	3	8.3	34	E5383/8 [3]
3/8	20	9.525	80	18	10.0	8.00	3	8.3	34	E5383/8BLUE
1/2	16	12.700	89	22	9.0	7.10	3	11	-	E5381/2 [3]
1/2	16	12.700	89	22	9.0	7.10	3	11	-	E5381/2BLUE

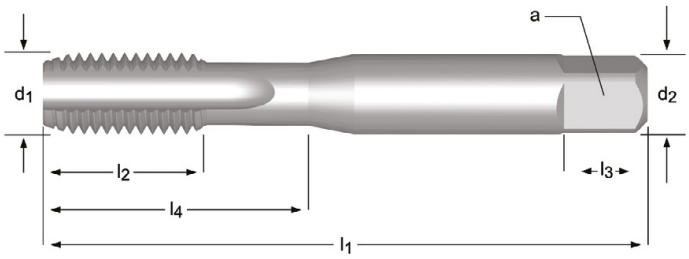
[3] Blank / Kirkas / Blank / Blank

E542

- BA Maskingängtappar Raka spår
- BA Konekierretapit, suorauraiset
- BA Maskingjengetapp rett sportapp
- BA Maskingevindtappe Lige spor

E542 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E542 | BA | ISO 529 | Normal | 1.5XD | HSS





BA	P mm	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊿ a mm	l_3 mm	z		l_4 mm	E542
BA10	0.35	1.70	41	7.0	2.50	2.0	4	2	1.3	7	E542BA10NO1
BA10	0.35	1.70	41	7.0	2.50	2.0	4	2	1.3	7	E542BA10NO2
BA10	0.35	1.70	41	7.0	2.50	2.0	4	2	1.3	7	E542BA10NO3
BA10	0.35	1.70	41	7.0	2.50	2.0	4	2	1.3	7	E542BA10NO6
BA 8	0.43	2.20	44.5	9.5	2.80	2.2	5	3	1.8	9.5	E542BA8NO1
BA 8	0.43	2.20	44.5	9.5	2.80	2.2	5	3	1.8	9.5	E542BA8NO2
BA 8	0.43	2.20	44.5	9.5	2.80	2.2	5	3	1.8	9.5	E542BA8NO3
BA 8	0.43	2.20	44.5	9.5	2.80	2.2	5	3	1.8	9.5	E542BA8NO6
BA 6	0.53	2.80	44.5	9.5	2.80	2.2	5	3	2.3	9.5	E542BA6NO1
BA 6	0.53	2.80	44.5	9.5	2.80	2.2	5	3	2.3	9.5	E542BA6NO2
BA 6	0.53	2.80	44.5	9.5	2.80	2.2	5	3	2.3	9.5	E542BA6NO3
BA 6	0.53	2.80	44.5	9.5	2.80	2.2	5	3	2.3	9.5	E542BA6NO6
BA 5	0.59	3.20	48	14.5	3.15	2.5	5	3	2.65	14.5	E542BA5NO1
BA 5	0.59	3.20	48	14.5	3.15	2.5	5	3	2.65	14.5	E542BA5NO2
BA 5	0.59	3.20	48	14.5	3.15	2.5	5	3	2.65	14.5	E542BA5NO3
BA 5	0.59	3.20	48	14.5	3.15	2.5	5	3	2.65	14.5	E542BA5NO6
BA 4	0.66	3.60	50	16.5	3.55	2.8	5	3	3	16.5	E542BA4NO1
BA 4	0.66	3.60	50	16.5	3.55	2.8	5	3	3	16.5	E542BA4NO2
BA 4	0.66	3.60	50	16.5	3.55	2.8	5	3	3	16.5	E542BA4NO3
BA 4	0.66	3.60	50	16.5	3.55	2.8	5	3	3	16.5	E542BA4NO6
BA 3	0.73	4.10	53	10.0	4.50	3.5	6	3	3.4	17	E542BA3NO1
BA 3	0.73	4.10	53	10.0	4.50	3.5	6	3	3.4	17	E542BA3NO2
BA 3	0.73	4.10	53	10.0	4.50	3.5	6	3	3.4	17	E542BA3NO3
BA 3	0.73	4.10	53	10.0	4.50	3.5	6	3	3.4	17	E542BA3NO6
BA 2	0.81	4.70	58	12.0	5.00	4.0	7	3	4	20	E542BA2NO1
BA 2	0.81	4.70	58	12.0	5.00	4.0	7	3	4	20	E542BA2NO2
BA 2	0.81	4.70	58	12.0	5.00	4.0	7	3	4	20	E542BA2NO3
BA 2	0.81	4.70	58	12.0	5.00	4.0	7	3	4	20	E542BA2NO6
BA 0	1.00	6.00	66	14.0	6.30	5.0	8	3	5.1	26	E542BA0NO1
BA 0	1.00	6.00	66	14.0	6.30	5.0	8	3	5.1	26	E542BA0NO2
BA 0	1.00	6.00	66	14.0	6.30	5.0	8	3	5.1	26	E542BA0NO3
BA 0	1.00	6.00	66	14.0	6.30	5.0	8	3	5.1	26	E542BA0NO6

NO1 - NO9
219

DORMER

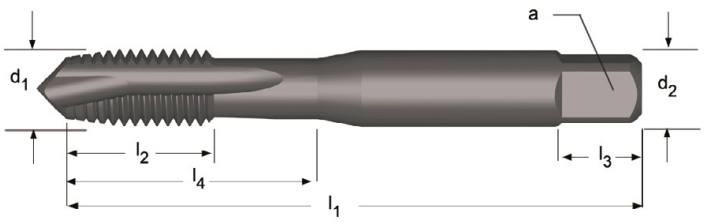
E545

- BA Maskingängtappar Spåndrivande skär
- BA Konekierretapit, lastua työntävä kärki
- BA Maskingjengetapp Spondrivende tapp
- BA Maskingevindtappe Spåndrivende skær

E545 ▪ 1.1 1.2 1.3 1.4

E545 • 1.5 1.6 2.1 2.2 2.3 4.3 5.1 5.2 6.1 6.3 7.1 7.2 7.3 7.4 8.1

E545 | BA | ISO 529 | Normal | 2.5XD | HSS | B 3.5-5 | ST



E545



No.10 - No.2

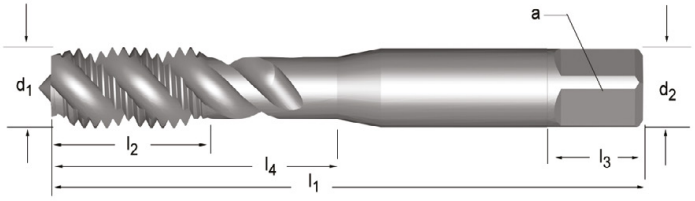
BA	P mm	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z		l_4 mm	E545
BA10	0.35	1.70	41	7.0	2.50	2.0	4	2	1.3	7	E545BA10
BA 8	0.43	2.20	44.5	9.5	2.80	2.2	5	3	1.8	9.5	E545BA8
BA 6	0.53	2.80	44.5	9.5	2.80	2.2	5	3	2.3	9.5	E545BA6
BA 4	0.66	3.60	50	16.5	3.55	2.8	5	3	3	16.5	E545BA4
BA 2	0.81	4.70	58	12.0	5.00	4.0	7	3	4	20	E545BA2

E544

- BA Maskingängtappar Spiralspår 40°
- BA Konekierretapit, lastua nostavat urat 40°
- BA Maskingjengetapp Spiral spor 40°
- BA Maskingevindtappe Spiralspor 40°

E544							
	▪	1.2	1.3	1.4	2.1	2.2	2.3
	•	1.5	5.2	7.1	7.2	7.3	7.4







BA	P mm	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z	↔	l_4 mm	E544
BA 8	0.43	2.20	44.5	9.5	2.80	2.2	5	2	1.8	9.5	E544BA8 [3]
BA 8	0.43	2.20	44.5	9.5	2.80	2.2	5	2	1.8	9.5	E544BA8BLUE
BA 6	0.53	2.80	44.5	9.5	2.80	2.2	5	2	2.3	9.5	E544BA6 [3]
BA 6	0.53	2.80	44.5	9.5	2.80	2.2	5	2	2.3	9.5	E544BA6BLUE
BA 4	0.66	3.60	50	16.5	3.55	2.8	5	3	3	16.5	E544BA4 [3]
BA 4	0.66	3.60	50	16.5	3.55	2.8	5	3	3	16.5	E544BA4BLUE
BA 2	0.81	4.70	58	12.0	5.00	4.0	7	3	4	20	E544BA2 [3]
BA 2	0.81	4.70	58	12.0	5.00	4.0	7	3	4	20	E544BA2BLUE

[3] Blank / Kirkas / Blank / Blank

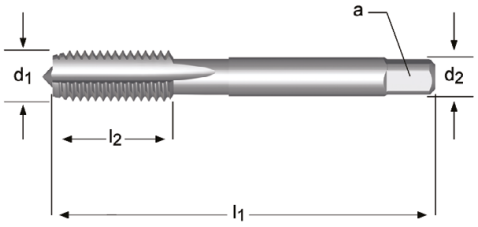
DORMER

E119

- G(BSP) Handgängtappar Raka spår
- G(BSP) Käsikierretapit, suorauraiset
- G(BSP) Handgjengetapper Rett sportapp
- G(BSP) Håndtappe Lige spor

E119 • 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 3.1 | 3.2 | 3.3 | 3.4 | 6.1 | 6.2 | 6.3 | 6.4 | 7.2 | 7.3 | 7.4 | 8.2 | 8.3

E119 G | DIN 5157 | Normal | 1.5XD | HSS | C 2-3





G(BSP)	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	z	↔	E119
1/8	28	9.73	63	15	7.0	5.5	3	8.8	E1191/8NO3
1/8	28	9.73	63	15	7.0	5.5	3	8.8	E1191/8NO9
1/4	19	13.16	70	16	11.0	9.0	4	11.8	E1191/4NO3
1/4	19	13.16	70	16	11.0	9.0	4	11.8	E1191/4NO9
3/8	19	16.66	70	16	12.0	9.0	4	15.25	E1193/8NO3
3/8	19	16.66	70	16	12.0	9.0	4	15.25	E1193/8NO9
1/2	14	20.96	80	18	16.0	12.0	4	19	E1191/2NO3
1/2	14	20.96	80	18	16.0	12.0	4	19	E1191/2NO9
5/8	14	22.91	80	22	18.0	14.5	4	21	E1195/8NO3
5/8	14	22.91	80	22	18.0	14.5	4	21	E1195/8NO9
3/4	14	26.44	90	22	20.0	16.0	4	24.5	E1193/4NO3
3/4	14	26.44	90	22	20.0	16.0	4	24.5	E1193/4NO9
7/8	14	30.20	90	22	22.0	18.0	6	28.25	E1197/8NO3
7/8	14	30.20	90	22	22.0	18.0	6	28.25	E1197/8NO9
1“	11	33.25	100	25	25.0	20.0	6	30.75	E1191NO3
1“	11	33.25	100	25	25.0	20.0	6	30.75	E1191NO9
1.1/8	11	37.90	125	40	28.0	22.0	6	35	E1191.1/8NO3
1.1/8	11	37.90	125	40	28.0	22.0	6	35	E1191.1/8NO9
1.1/4	11	41.91	125	40	32.0	24.0	6	39.5	E1191.1/4NO3
1.1/4	11	41.91	125	40	32.0	24.0	6	39.5	E1191.1/4NO9
1.1/2	11	47.80	140	40	36.0	29.0	6	45	E1191.1/2NO3
1.1/2	11	47.80	140	40	36.0	29.0	6	45	E1191.1/2NO9
1.3/4	11	53.75	140	40	40.0	32.0	6	51	E1191.3/4NO3
1.3/4	11	53.75	140	40	40.0	32.0	6	51	E1191.3/4NO9
2“	11	59.61	160	40	45.0	35.0	6	57	E1192NO3
2“	11	59.61	160	40	45.0	35.0	6	57	E1192NO9
2.1/4	11	65.71	160	40	50.0	39.0	6	63	E1192.1/4NO3
2.1/4	11	65.71	160	40	50.0	39.0	6	63	E1192.1/4NO9
2.1/2	11	75.18	160	40	50.0	39.0	6	72.5	E1192.1/2NO3
2.1/2	11	75.18	160	40	50.0	39.0	6	72.5	E1192.1/2NO9
2.3/4	11	81.53	160	40	50.0	39.0	8	79	E1192.3/4NO3
2.3/4	11	81.53	160	40	50.0	39.0	8	79	E1192.3/4NO9
3“	11	87.88	160	40	50.0	39.0	8	85.5	E1193NO3
3“	11	87.88	160	40	50.0	39.0	8	85.5	E1193NO9

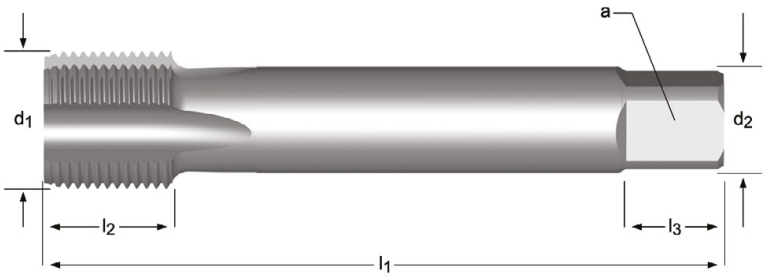
NO1 - NO9
219

E282

- G(BSP) Maskingängtappar Raka spår — Levereras som HSS-E tills nytt lager finns
- G(BSP) Konekierretapit, suorauraiset — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- G(BSP) Maskingjengetapp rette spor — Leveres i HSS-E til ny lager tilgjengelig
- G(BSP) Maskingevindtappe Lige spor — Leveres i HSS-E til nyt lager er tilgængeligt

E282 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 6.2 6.3 7.2 7.3 8.2

E282 | G | DIN 5156 | Normal | 1.5XD | HSS-E PM | C 2-3



E282



1/8 - 1.1/2

G(BSP)	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z		E282
1/8	28	9.73	90	20	7.0	5.5	8	3	8.8	E2821/8
1/4	19	13.16	100	21	11.0	9.0	12	4	11.8	E2821/4
3/8	19	16.66	100	21	12.0	9.0	12	4	15.25	E2823/8
1/2	14	20.96	125	24	16.0	12.0	15	4	19.0	E2821/2
3/4	14	26.44	140	28	20.0	16.0	19	4	24.5	E2823/4
1“	11	33.25	160	30	25.0	20.0	23	4	30.75	E2821
1.1/4	11	41.91	170	30	32.0	24.0	27	4	39.5	E2821.1/4 [1]
1.1/2	11	47.80	190	32	36.0	29.0	32	6	45.0	E2821.1/2 [1]

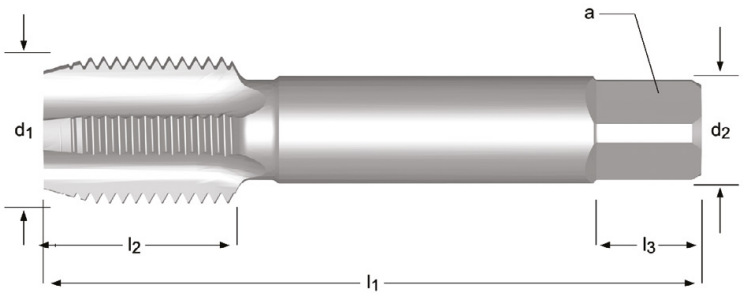
1) HSS-E

E547

- G(BSP) Maskingängtappar Raka spår
- G(BSP) Konekierretapit, suorauraiset
- G(BSP) Maskingjengetapp rette spor
- G(BSP) Maskingevindtappe Lige spor

E547 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E547 | G | ISO 2284 | Normal | 1.5XD | HSS



E547



1/8 - 2“

G(BSP)	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z		E547
1/8	28	9.728	59	15	8.0	8.0	9	4	8.8	E5471/8NO1
1/8	28	9.728	59	15	8.0	6.3	9	4	8.8	E5471/8NO2
1/8	28	9.728	59	15	8.0	6.3	9	4	8.8	E5471/8NO3
1/8	28	9.728	59	15	8.0	6.3	9	4	8.8	E5471/8NO7
1/4	19	13.157	67	19	10.0	8.0	11	4	11.8	E5471/4NO1
1/4	19	13.157	67	19	10.0	8.0	11	4	11.8	E5471/4NO2
1/4	19	13.157	67	19	10.0	8.0	11	4	11.8	E5471/4NO3
1/4	19	13.157	67	19	10.0	8.0	11	4	11.8	E5471/4NO7
3/8	19	16.662	75	21	12.5	10.0	13	4	15.25	E5473/8NO1
3/8	19	16.662	75	21	12.5	10.0	13	4	15.25	E5473/8NO2
3/8	19	16.662	75	21	12.5	10.0	13	4	15.25	E5473/8NO3
3/8	19	16.662	75	21	12.5	10.0	13	4	15.25	E5473/8NO7
1/2	14	20.955	87	26	16.0	12.5	16	4	19	E5471/2NO1
1/2	14	20.955	87	26	16.0	12.5	16	4	19	E5471/2NO2
1/2	14	20.955	87	26	16.0	12.5	16	4	19	E5471/2NO3
1/2	14	20.955	87	26	16.0	12.5	16	4	19	E5471/2NO7
5/8	14	22.911	91	26	18.0	14.0	18	4	21	E5475/8NO1
5/8	14	22.911	91	26	18.0	14.0	18	4	21	E5475/8NO2
5/8	14	22.911	91	26	18.0	14.0	18	4	21	E5475/8NO3
5/8	14	22.911	91	26	18.0	14.0	18	4	21	E5475/8NO7
3/4	14	26.441	96	28	20.0	16.0	20	4	24.5	E5473/4NO1
3/4	14	26.441	96	28	20.0	16.0	20	4	24.5	E5473/4NO2
3/4	14	26.441	96	28	20.0	16.0	20	4	24.5	E5473/4NO3
3/4	14	26.441	96	28	20.0	16.0	20	4	24.5	E5473/4NO7
7/8	14	30.201	102	29	22.4	18.0	22	4	28.25	E5477/8NO1
7/8	14	30.201	102	29	22.4	18.0	22	4	28.25	E5477/8NO2
7/8	14	30.201	102	29	22.4	18.0	22	4	28.25	E5477/8NO3
1“	11	33.249	109	33	25.0	20.0	24	4	30.75	E5471NO1
1“	11	33.249	109	33	25.0	20.0	24	4	30.75	E5471NO2
1“	11	33.249	109	33	25.0	20.0	24	4	30.75	E5471NO3
1.1/4	11	41.910	119	36	31.5	25.0	28	6	39.5	E5471.1/4NO1
1.1/4	11	41.910	119	36	31.5	25.0	28	6	39.5	E5471.1/4NO2
1.1/4	11	41.910	119	36	31.5	25.0	28	6	39.5	E5471.1/4NO3
1.1/2	11	47.803	125	37	35.5	28.0	31	6	45	E5471.1/2NO1
1.1/2	11	47.803	125	37	35.5	28.0	31	6	45	E5471.1/2NO2
1.1/2	11	47.803	125	37	35.5	28.0	31	6	45	E5471.1/2NO3
2“	11	59.614	140	41	40.0	31.5	34	6	57	E5472NO1
2“	11	59.614	140	41	40.0	31.5	34	6	57	E5472NO2
2“	11	59.614	140	41	40.0	31.5	34	6	57	E5472NO3

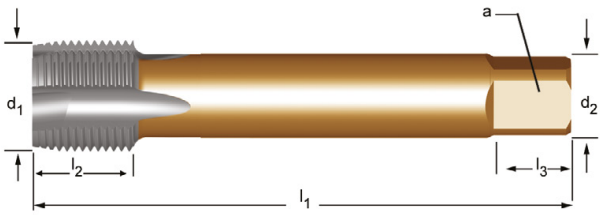
NO1 - NO9
219

EP40
EP41

- G(BSP) Maskingängtappar Spåndrivande skär — Levereras som HSS-E tills nytt lager finns
- G(BSP) Konekierretapit, lastua työntävä kärki — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- G(BSP) Maskingjengetapp spondrivende spor — Leveres i HSS-E til ny lager tilgjengelig
- G(BSP) Maskingevindtappe Spåndrivende skær — Leveres i HSS-E til nyt lager er tilgængeligt

EP40	▪	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4
	•	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1
EP41	▪	1.1	1.2	1.3	1.4	1.5						
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4			

EP40	G	DIN 5156	Normal		2.5XD	HSS-E PM	B 3.5-5				
EP41	G	DIN 5156	Normal		2.5XD	HSS-E PM	B 3.5-5			ST	





EP40 — 1/8 - 1“



EP41 — 1/8 - 1“

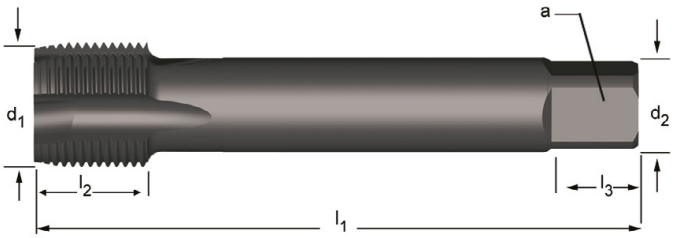
G(BSP)	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	a mm	l_3 mm	z		EP40	EP41
1/8	28	9.728	90	18	7.0	5.5	8	3	8.8	EP401/8	EP411/8
1/4	19	13.157	100	21	11.0	9.0	12	3	11.8	EP401/4	EP411/4
3/8	19	16.662	100	21	12.0	9.0	12	4	15.25	EP403/8	EP413/8
1/2	14	20.955	125	24	16.0	12.0	15	4	19.0	EP401/2	EP411/2
5/8	14	22.911	125	24	18.0	14.5	17	4	21	EP405/8	EP415/8
3/4	14	26.441	140	28	20.0	16.0	19	4	24.5	EP403/4	EP413/4
7/8	14	30.201	150	28	22.0	18.0	21	4	28.25	EP407/8	EP417/8
1“	11	33.249	160	30	25.0	20.0	23	4	30.75	EP401	EP411

E041

- G(BSP) Maskingängtappar Spåndrivande skär — Levereras som HSS-E tills nytt lager finns
- G(BSP) Konekierretapit, lastua työntävä kärki — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- G(BSP) Maskingjengetapp spondrivende spor — Leveres i HSS-E til ny lager tilgjengelig
- G(BSP) Maskingevindtappe Spåndrivende skær — Leveres i HSS-E til nyt lager er tilgængeligt

E041 ▪ 1.1 1.2 1.3 1.4 1.5
• 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4

E041 | G | DORMER ISO | Normal | 2.5XD | HSS-E PM | B 3.5-5 | ST



E041



1/8 - 3/4

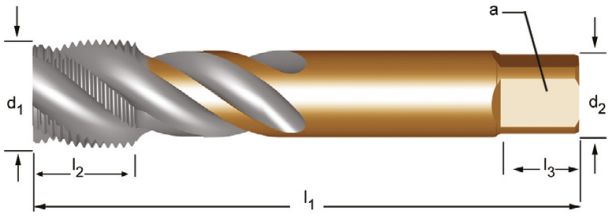
G(BSP)	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z		E041
1/8	28	9.728	90	15	8.0	6.3	9	3	8.80	E0411/8
1/4	19	13.157	100	19	10.0	8.0	11	3	11.80	E0411/4
3/8	19	16.662	100	21	12.5	10.0	13	3	15.25	E0413/8
1/2	14	20.955	125	26	16.0	12.5	16	4	19.00	E0411/2
3/4	14	26.441	140	28	20.0	16.0	20	4	24.50	E0413/4

EX40
EX41

- G(BSP) Maskingängtappar Spiralspår 45° — Levereras som HSS-E tills nytt lager finns
- G(BSP) Konekierretapit, lastua nostavat urat 45° — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- G(BSP) Maskingjengetapp spiral spor 45° — Leveres i HSS-E til ny lager tilgjengelig
- G(BSP) Maskingevindtappe Spiralspor 45° — Leveres i HSS-E til nyt lager er tilgængeligt

EX40	▪	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4
	•	4.1	4.2	5.1	5.2	8.1				
EX41	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2		
	•	2.3								

EX40	G	DIN 5156	Normal		2.5XD	HSS-E PM	C 2-3	λ45°			
EX41	G	DIN 5156	Normal		2.5XD	HSS-E PM	C 2-3	λ45°		ST	



EX40	EX41
	
1/8 - 1.1/2	1/8 - 1.1/2

G(BSP)	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊿ a mm	l_3 mm	z	↔	EX40	EX41
1/8	28	9.728	90	13	7.0	5.5	8	3	8.8	EX401/8	EX411/8
1/4	19	13.157	100	15	11.0	9.0	12	3	11.8	EX401/4	EX411/4
3/8	19	16.662	100	15	12.0	9.0	12	4	15.25	EX403/8	EX413/8
1/2	14	20.955	125	18	16.0	12.0	15	4	19.0	EX401/2	EX411/2
5/8	14	22.911	125	18	18.0	14.5	17	4	21	EX405/8	EX415/8
3/4	14	26.441	140	20	20.0	16.0	19	4	24.5	EX403/4	EX413/4
7/8	14	30.201	150	20	22.0	18.0	21	4	28.25	EX407/8	EX417/8
1“	11	33.249	160	22	25.0	20.0	23	4	30.75	EX401	EX411
1.1/8	11	37.897	170	22	28.0	22.0	25	4	35	EX401.1/8	EX411.1/8
1.1/4	11	41.910	170	22	32.0	24.0	27	4	39.5	EX401.1/4 [1]	EX411.1/4 [1]
1.1/2	11	47.803	190	23	36.0	29.0	32	4	45	EX401.1/2 [1]	EX411.1/2 [1]

[1] HSS-E

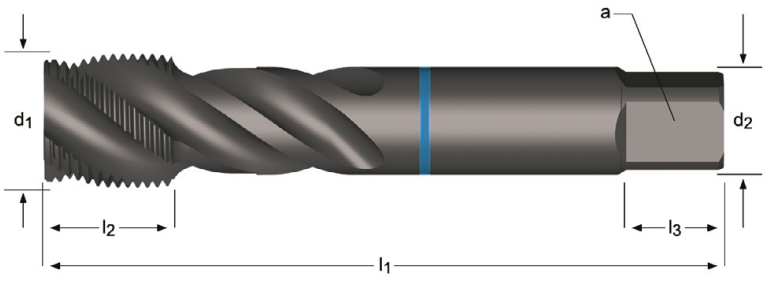
DORMER

E382

- G(BSP) Maskintapp spiralspår 40º, Blå Shark
- G(BSP) Konekierretapit, Lastua nostavat urat 40º, Sininen Shark
- G(BSP) Maskingjengetapp Spiral spor 40º, Blå Shark
- G(BSP) Maskingevindtappe Spiralspor 40º, Blå Shark

E382 ▪ 2.1 2.2 2.3
• 1.5

E382 G | DIN 5156 | Normal | 2XD | HSS-E PM | C 2-3 | λ40° | ST



E382



SHARK LINE

1/8 - 1“

G(BSP)	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z	↔	E382
1/8	28	9.73	90	12	7.0	5.5	8	3	8.8	E3821/8
1/4	19	13.16	100	15	11.0	9.0	12	4	11.8	E3821/4
3/8	19	16.66	100	15	12.0	9.0	12	4	15.25	E3823/8
1/2	14	20.96	125	24	16.0	12.0	15	4	19.0	E3821/2
3/4	14	26.44	140	20	20.0	16.0	19	4	24.5	E3823/4
1“	11	33.25	160	24	25.0	20.0	23	4	30.75	E3821

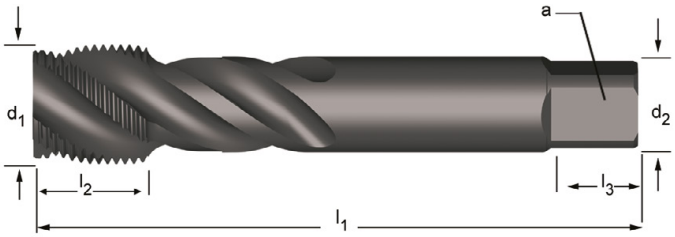
E043

- G(BSP) Maskingängtappar Spiralspår 45°
- G(BSP) Konekierretapit, lastua nostavat urat 45°
- G(BSP) Maskingjengetapp spiral spor 45°
- G(BSP) Maskingevindtappe Spiralspor 45°

Levereras som HSS-E tills nytt lager finns
Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
Leveres i HSS-E til ny lager tilgjengelig
Leveres i HSS-E til nyt lager er tilgængeligt

E043						
	▪	1.1	1.2	1.3	1.4	1.5
	•	1.6	2.1	2.2	2.3	







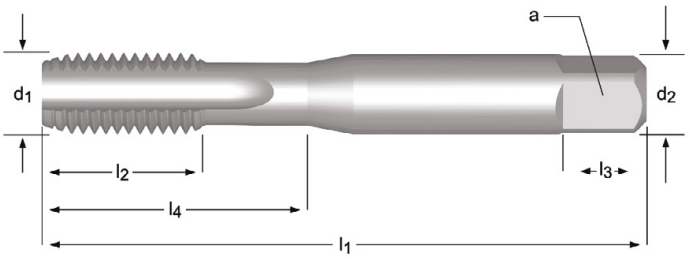
G(BSP)	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	▨ a mm	l_3 mm	z	↔	E043
1/8	28	9.728	90	15	8.0	6.3	9	3	8.80	E0431/8
1/4	19	13.157	100	19	10.0	8.0	11	3	11.80	E0431/4
3/8	19	16.662	100	21	12.5	10.0	13	4	15.25	E0433/8
1/2	14	20.955	125	26	16.0	12.5	16	4	19.00	E0431/2
3/4	14	26.441	140	28	20.0	16.0	20	4	24.50	E0433/4

E620

- EGM Maskingängtappar Raka spår
- EGM Konekierretapit, suorauraiset
- EGM Maskingjengetappe Rett sportapp
- EGM Maskingevindtappe Lige spor

E620 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E620 EGM | DORMER ISO | 6H | 1.5XD | HSS | C 2-3





E620

M3 - M16

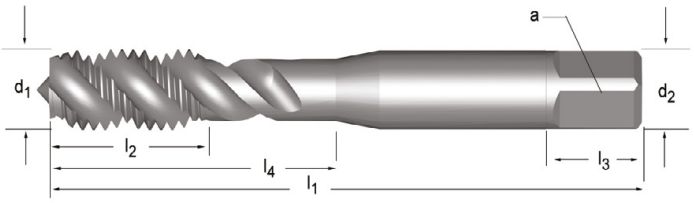
M	P mm	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⊠ a mm	l_3 mm	z		l_4 mm	E620
3	0.50	3.65	53	14	4.0	3.15	6	3	3.2	14	E620M3
4	0.70	4.91	58	11	5.0	4.00	7	3	4.2	20	E620M4
5	0.80	6.04	66	13	6.3	5.00	8	3	5.2	26	E620M5
6	1.00	7.30	72	16	8.0	6.30	9	3	6.3	29	E620M6
8	1.25	9.62	80	18	10.0	8.00	11	3	8.4	32	E620M8
10	1.50	11.95	89	22	9.0	7.10	10	3	10.5	-	E620M10
12	1.75	14.27	95	24	11.2	9.00	12	4	12.5	-	E620M12
14	2.00	16.60	112	29	14.0	11.20	14	4	14.5	-	E620M14
16	2.00	18.60	112	29	14.0	11.20	14	4	16.5	-	E620M16

E621

- EGM Maskingängtappar Spiralspår 40°
- EGM Konekierretapit, lastua nostavat urat 40°
- EGM Maskingjengetapp Spiralspor 40°
- EGM Maskingevindtappe Spiralspor 40°

E621 • 1.2 1.3 1.4 1.5 2.1 2.2 2.3 5.2 7.1 7.2 7.3 7.4

E621 EGM DORMER ISO 6H 2XD HSS C 2-3 λ40°



E621



M3 - M16

M	P mm	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	▨ a mm	l_3 mm	z	↔	l_4 mm	E621
3	0.50	3.65	53	14	4.00	3.15	6	3	3.2	14	E621M3
4	0.70	4.91	58	11	5.00	4.00	7	3	4.2	20	E621M4
5	0.80	6.04	66	13	6.30	5.00	8	3	5.2	26	E621M5
6	1.00	7.3	72	16	8.00	6.30	9	3	6.3	31	E621M6
8	1.25	9.62	80	18	10.00	8.00	11	3	8.4	34	E621M8
10	1.50	11.95	89	22	9.00	7.10	10	3	10.5	-	E621M10
12	1.75	14.27	95	24	11.20	9.00	12	3	12.5	-	E621M12
14	2.00	16.6	112	29	14.00	11.20	14	3	14.5	-	E621M14
16	2.00	18.6	112	29	14.00	11.20	14	3	16.5	-	E621M16

DORMER

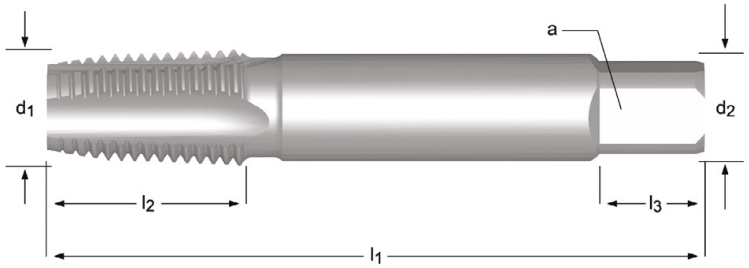
E550

- Rc Maskingängtappar Raka spår
- Rc Konekierretapit, suorauraiset
- Rc Maskingjengetapp Rett sportapp
- Rc Maskingevindtappe Lige spor

E550 ▪ 3.1 3.2 3.3 3.4 6.1

E550 • 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E550 | Rc | ISO 2284 | Normal | 1.5XD | HSS | C 2-3



E550



1/8 - 2"

Rc	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	▨ a mm	l_3 mm	z	↔	E550
1/8	28	9.728	59	15	8.0	6.3	9	3	8.4	E5501/8
1/8	28	9.728	59	15	8.0	6.3	9	3	8.4	E5501/8NO7
1/4	19	13.157	67	19	10.0	8.0	11	3	11.2	E5501/4
1/4	19	13.157	67	19	10.0	8.0	11	3	11.2	E5501/4NO7
3/8	19	16.662	75	21	12.5	10.0	13	3	14.75	E5503/8
3/8	19	16.662	75	21	12.5	10.0	13	3	14.75	E5503/8NO7
1/2	14	20.955	87	26	16.0	12.5	16	5	18.25	E5501/2
1/2	14	20.955	87	26	16.0	12.5	16	5	18.25	E5501/2NO7
3/4	14	26.441	96	28	20.0	16.0	20	5	23.75	E5503/4
3/4	14	26.441	96	28	20.0	16.0	20	5	23.75	E5503/4NO7
1“	11	33.249	109	33	25.0	20.0	24	5	30	E5501
1.1/4	11	41.910	119	36	31.5	25.0	28	5	38.5	E5501.1/4
1.1/2	11	47.803	125	37	35.5	28.0	31	7	44.5	E5501.1/2
2“	11	59.614	140	41	40.0	31.5	34	7	56	E5502

NO1 - NO9
219

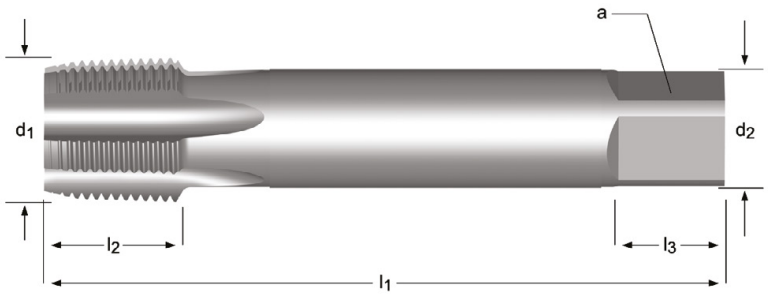
E714

- NPT Maskingängtappar Raka spår — Levereras som HSS-E tills nytt lager finns
- NPT Konekierretapit, suorauraiset — Toimitetaan HSS-E laatuna, niin kauan varstoa riittää.
- NPT Maskingjengetapp Rett sportapp — Leveres i HSS-E til ny lager tilgjengelig
- NPT Maskingevindtappe Lige spor — Leveres i HSS-E til nyt lager er tilgængeligt

E714 ▪ 1.3 1.4

• 1.1 1.2 1.5 3.1 3.2 3.3 3.4 6.2 7.3 7.4 8.1

E714 | NPT | DORMER ANSI | Normal | 1.5XD | HSS-E PM | C 2-3



E714



1/8 - 1“

NPT	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	▨ a mm	l_3 mm	z	↔	E714
1/8	27	10.23	90	14	11.0	9.0	12	3	8.5	E7141/8
1/4	18	13.60	100	20	14.0	11.0	14	3	11	E7141/4
3/8	18	17.04	110	20	16.0	12.0	15	4	14.5	E7143/8
1/2	14	21.20	125	26	18.0	14.5	17	4	18	E7141/2
3/4	14	26.54	140	26	22.0	18.0	21	5	23	E7143/4
1“	11.5	33.20	150	31	28.0	22.0	25	5	29	E7141

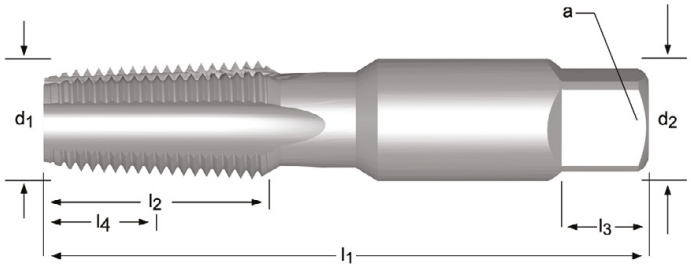
DORMER

E710 E721

- NPT Maskingängtappar Raka spår
- NPT Konekierretapit, suorauraiset
- NPT Maskingjengetapp Rett sportapp
- NPT Maskingevindtappe Lige spor

E710	•	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	6.2	7.3	7.4	8.1
E721	▪	1.3	1.4	3.1	3.2	3.3	3.4							
	•	1.1	1.2	1.5	6.2	7.3	7.4	8.1						

E710	NPT	ANSI B94.9	Normal	1.5XD	HSS	C 2-3				
E721	NPT	ANSI B94.9	Normal	1.5XD	HSS	C 2-3			TiN	



E710



1/16 - 2“

E721



1/8 - 1“

NPT	TPI	d_1 nom mm	l_1 mm	l_2 mm	l_4 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z	↔	E710	E721
1/16	27	7.94	65	17	11.7	8.1	6.0	8	4	6.3	E7101/16NO3	
1/8	27	10.29	70	19	11.9	11.1	8.3	10	4	8.5	E7101/8	E7211/8
1/8	27	10.29	70	19	11.9	11.1	8.3	10	4	8.5	E7101/8NO7	
1/4	18	13.72	75	27	17.6	14.3	10.7	11	4	11.0	E7101/4	E7211/4
1/4	18	13.72	75	27	17.6	14.3	10.7	11	4	11.0	E7101/4NO7	
3/8	18	17.15	80	27	19.5	17.8	13.5	13	4	14.5	E7103/8	E7213/8
3/8	18	17.15	80	27	19.5	17.8	13.5	13	4	14.5	E7103/8NO7	
1/2	14	21.34	100	35	22.7	17.5	13.1	16	4	18.0	E7101/2	E7211/2
1/2	14	21.34	100	35	22.7	17.5	13.1	16	4	18.0	E7101/2NO7	
3/4	14	26.67	105	35	24.4	23.0	17.2	17	5	23.0	E7103/4	E7213/4
3/4	14	26.67	105	35	24.4	23.0	17.2	17	5	23.0	E7103/4NO7	
1“	11.5	33.40	115	43	29.4	28.6	21.4	21	5	29.0	E7101	E7211
1.1/4	11.5	42.16	125	43	27.7	33.3	25.0	24	5	38.0	E7101.1/4	
1.1/2	11.5	48.26	135	43	28.9	38.1	28.6	25	7	44.0	E7101.1/2	
2“	11.5	60.33	145	43	26.6	47.6	35.7	29	7	56.0	E7102	

NO1 - NO9

219

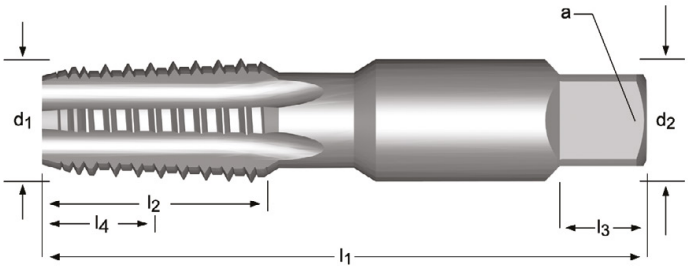
E711

- NPT Maskingängtappar Varannan Gänga Raka spår
- NPT Konekierretapit, kevennety, suorauraiset
- NPT Maskingjengetapp Annenhver Gjenge Bortslipt Rett sportapp
- NPT Maskingevindtappe Hveranden Gevind Bortslebet Lige spor

E711 ▪ 1.3 1.4

• 1.1 1.2 1.5 3.1 3.2 3.3 3.4 6.2 7.3 7.4 8.1

E711 NPT | ANSI B94.9 | Normal | 1.5XD | HSS | C 2-3





E711

1/8 - 1.1/2

NPT	TPI	d_1 nom mm	l_1 mm	l_2 mm	l_4 mm	d_2 Ø mm	⊿ a mm	l_3 mm	z		E711
1/8	27	10.29	70	19	11.9	11.1	8.3	10	5	8.5	E7111/8
1/4	18	13.72	75	27	17.6	14.3	10.7	11	5	11.0	E7111/4
3/8	18	17.15	80	27	19.5	17.8	13.5	13	5	14.5	E7113/8
1/2	14	21.33	100	35	22.7	17.5	13.1	16	5	18.0	E7111/2
3/4	14	26.67	105	35	24.4	23.0	17.2	17	5	23.0	E7113/4
1“	11.5	33.40	115	43	29.4	28.6	21.4	21	5	29.0	E7111
1.1/2	11.5	48.26	135	43	28.9	38.1	28.6	25	7	44.0	E7111.1/2

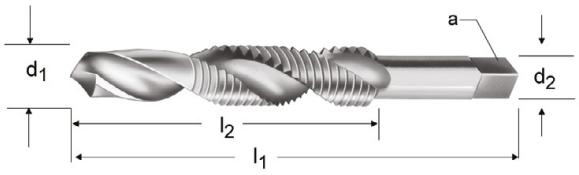
DORMER

E653

- NPT Kombinerad Borr - Gängtapp Spiralspår 27°
- NPT Pora-kierretapit, lastua nostavat urat 27°
- NPT Kombinert Bor - Gjengetapp Spiralspor 27°
- NPT Kombineret Bor - Gevindtap Spiralspor 27°

E653 • 1.1 1.2 1.3 1.4 3.2 6.2 6.3 7.1 7.2 8.1







NPT	TPI	d_1 nom Inch	l_1 Inch	l_2 Inch	d_2 Ø Inch	▨ a Inch	z	E653
1/8	27	0.3346	2.7/8	3/4	0.4370	0.3280	2	E6531/8
1/4	18	0.4331	3.5/16	1.1/16	0.5620	0.4210	2	E6531/4
3/8	18	0.5709	3.1/2	1.1/16	0.7000	0.5310	2	E6533/8
1/2	14	0.7087	4.3/8	1.3/8	0.6870	0.5150	2	E6531/2
3/4	14	0.9055	4.9/16	1.3/8	0.9060	0.6790	2	E6533/4
1“	11.5	1.1417	5.3/8	1.3/4	1.1250	0.8430	2	E6531

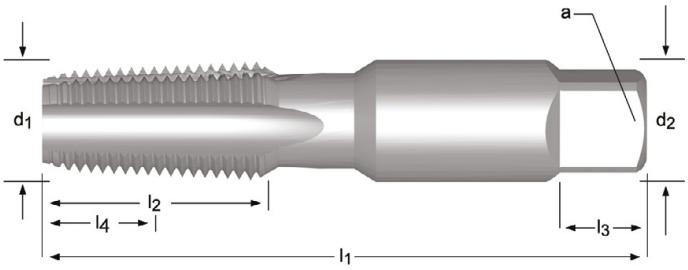
E712

- NPTF Maskingängtappar Raka spår
- NPTF Konekierretapit, suorauraiset
- NPTF Maskingjengetapp Rett sportapp
- NPTF Maskingevindtappe Lige spor

E712 ▪ 1.3 1.4

• 1.1 1.2 1.5 3.1 3.2 3.3 3.4 6.2 7.3 7.4 8.1

E712 NPTF | ANSI B94.9 | Normal | 1.5XD | HSS | C 2-3



E712



1/16 - 1.1/4

NPTF	TPI	d_1 nom mm	l_1 mm	l_2 mm	l_4 mm	d_2 Ø mm	⧄ a mm	l_3 mm	z	↔	E712
1/16	27	7.94	65	17	11.7	8.1	6.0	8	4	6.20	E7121/16
1/8	27	10.29	70	19	11.9	11.1	8.3	10	4	8.40	E7121/8
1/4	18	13.72	75	27	17.6	14.3	10.7	11	4	10.90	E7121/4
3/8	18	17.15	80	27	19.5	17.8	13.5	13	4	14.25	E7123/8
1/2	14	21.34	100	35	22.7	17.5	13.1	16	4	17.75	E7121/2
3/4	14	26.67	105	35	24.4	23.0	17.2	17	5	23.00	E7123/4
1“	11.5	33.40	115	43	29.4	28.6	21.4	21	5	29.00	E7121
1.1/4	11.5	42.16	125	43	27.7	33.4	24.9	23	5	37.75	E7121.1/4

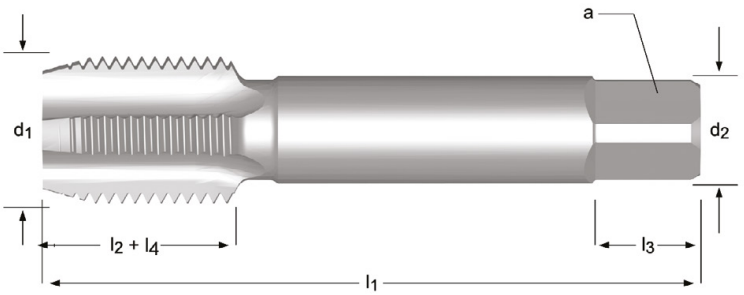
DORMER

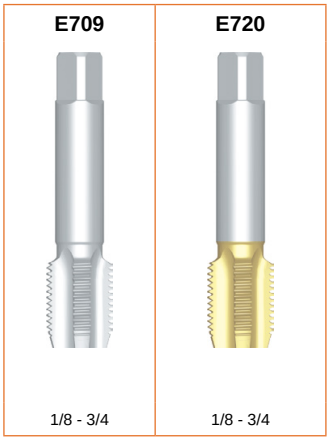
E709
E721

- NPSF Maskingängtappar Raka spår
- NPSF Konekierretapit, suorauraiset
- NPSF Maskingjengetapp Rett sportapp
- NPSF Maskingevindtappe Lige spor

E709	▪	1.3	1.4								
	•	1.1	1.2	1.5	3.1	3.2	3.3	3.4	6.2	7.3	7.4	8.1
E720	▪	1.3	1.4	3.1	3.2	3.3	3.4					
	•	1.1	1.2	1.5	6.2	7.3	7.4	8.1				

E709	NPSF	ANSI B94.9	Normal		1.5XD	HSS	C 2-3				
E720	NPSF	ANSI B94.9	Normal		1.5XD	HSS	C 2-3			TiN	





NPSF	TPI	d_1 nom mm	l_1 mm	l_2 mm	l_4 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z		E709	E720
1/8	27	10.29	70	19	19	11.1	8.3	10	4	8.70	E7091/8	E7201/8NO3
1/4	18	13.72	75	27	27	14.3	10.7	11	4	11.30	E7091/4	E7201/4NO3
3/8	18	17.15	80	27	27	17.8	13.5	13	4	14.75	E7093/8	E7203/8NO3
1/2	14	21.34	100	35	-	17.5	13.1	16	4	18.25	E7091/2	E7201/2NO3
3/4	14	26.67	105	35	-	23.0	17.2	17	5	23.50	E7093/4	E7203/4NO3

NO1 - NO9
219

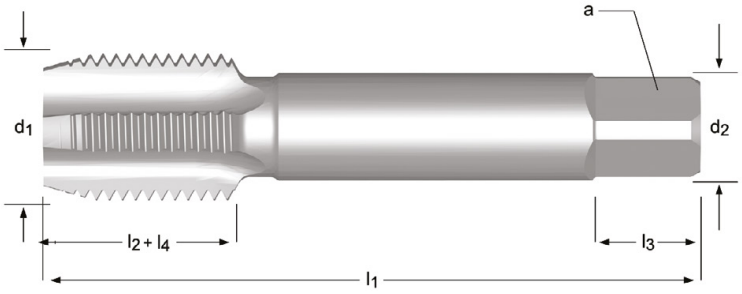
E708

- NPSM Maskingängtappar Raka spår
- NPSM Konekierretapit, suorauraiset
- NPSM Maskingjengetapp Rett sportapp
- NPSM Maskingevindtappe Lige spor

E708 ▪ 1.3 1.4

• 1.1 1.2 1.5 3.1 3.2 3.3 3.4 6.2 7.3 7.4 8.1

E708 NPSM | ANSI B94.9 | Normal | 1.5XD | HSS | C 2-3



E708



1/8 - 1“

NPSM	TPI	d_1 nom mm	l_1 mm	l_2 mm	l_4 mm	d_2 Ø mm	▨ a mm	l_3 mm	z	↔	E708
1/8	27	10.29	70	19	19	11.1	8.3	10	4	9.1	E7081/8
1/4	18	13.72	75	27	27	14.3	10.7	11	4	12.0	E7081/4
3/8	18	17.15	80	27	27	17.8	13.5	13	4	15.5	E7083/8
1/2	14	21.33	100	35	-	17.5	13.1	16	4	19.0	E7081/2
3/4	14	26.67	105	35	-	23.0	17.2	17	5	24.5	E7083/4
1“	11.5	33.40	115	43	-	28.6	21.4	21	5	30.5	E7081

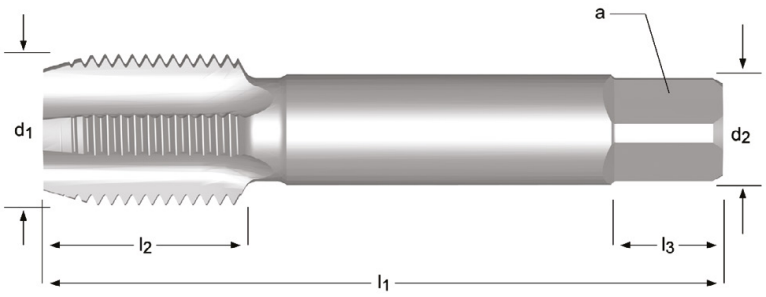
DORMER

E243

- PG Maskingängtappar Raka spår
- PG Konekierretapit, suorauraiset
- PG Maskingjengetapp Rett sportapp
- PG Maskingevindtappe Lige spor

E243 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 6.2 6.3 7.2 7.3 8.2

E243 PG DIN 40432 Normal 1.5XD HSS



E243



No.7 - No.36

PG	TPI	d_1 nom mm	l_1 mm	l_2 mm	d_2 Ø mm	⍁ a mm	l_3 mm	z	↔	E243
7	20	12.5	70	22	9.0	7.0	10	4	11.4	E243PG7NO2
7	20	12.5	70	22	9.0	7.0	10	4	11.4	E243PG7NO3
9	18	15.2	70	22	12.0	9.0	12	4	13.9	E243PG9NO2
9	18	15.2	70	22	12.0	9.0	12	4	13.9	E243PG9NO3
11	18	18.6	80	22	14.0	11.0	14	4	17.25	E243PG11NO2
11	18	18.6	80	22	14.0	11.0	14	4	17.25	E243PG11NO3
13.5	18	20.4	80	22	16.0	12.0	15	4	19	E243PG13.5NO2
13.5	18	20.4	80	22	16.0	12.0	15	4	19	E243PG13.5NO3
16	18	22.5	80	22	18.0	14.5	17	4	21.25	E243PG16NO2
16	18	22.5	80	22	18.0	14.5	17	4	21.25	E243PG16NO3
21	16	28.3	90	22	22.0	18.0	21	4	27	E243PG21NO2
21	16	28.3	90	22	22.0	18.0	21	4	27	E243PG21NO3
29	16	37.0	100	25	28.0	22.0	25	6	35.5	E243PG29NO2
29	16	37.0	100	25	28.0	22.0	25	6	35.5	E243PG29NO3
36	16	47.0	140	32	36.0	29.0	32	6	45.5	E243PG36NO2
36	16	47.0	140	32	36.0	29.0	32	6	45.5	E243PG36NO3

NO1 - NO9
219

L119

- M Gängtappsats
- Kierretapit, M-vakio, peltikotelossa
- M Maskingjengetapp i sett
- M Maskingevindtappe i sæt

A=ingående produkter. B=Antal i satsen. M=Tappdimensioner i satsen
A=Työkalujen malli, B=lkm ja M= konekierretapit halkaisijat
A=Typer i sett. B=kvantitet i sett. M=Diameter Tapper i sett.
A=Typer i saet. B=Antal i saet. M=Diameter i saet





L119

Set

Set	A	B	M	L119
Nr.17	E100	21	E100M3NO8, E100M4NO8, E100M5NO8, E100M6NO8, E100M8NO8, E100M10NO8, E100M12NO8	L11917

L126

- Kombination Borr/gängtappsats
- Pora-kierretapit sarjat
- Kombination Bor/Gjengetapp
- Kombination Bor/Gevindtap

A=ingående produkter. B=Antal i satsen. M=Tappdimensioner i satsen.
A=Työkalujen malli, B=lkm ja M= konekierretapit halkaisijat
A=Typer i sett. B=kvantitet i sett. M=Diameter Tapper i sett.
A=Typer i sæt. B=Antal i sæt. M=Diameterne





L126

Set

Set	A	B	M	L126
650	E650	6	E650M4, E650M5, E650M6, E650M8, E650M10, E650M12	L126650

L113

- Kombinerad Borr - Gängtappssats ISO
- Kierretapit/ porat, sarjat ISO
- Gjengetapper/ Bor ISO
- Gevindtappe/ Bor ISO

A=ingående produkter. B=Antal i satsen. M=Tappdimensioner i satsenn. D= Borrardiametrar i satsen

A=Työkalujen malli, B=lkm ja M= konekierretapit halkaisijat , D=porat halkaisijat

A=Typer i sett. B=kvantitet i sett. M=Diameter Tapper i sett. D=Diameter bor I sett

A=Typer i sæt. B=Antal i sæt. M=Diameter Tappe i sæt. D=Diameter bor i sæt.





L113



Set

Set	A	B	M	D	L113
Nr.201	E000 + A002	14	E000M3, E000M4, E000M5, E000M6, E000M8, E000M10, E000M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L113201
Nr.202	E001 + A002	14	E001M3, E001M4, E001M5, E001M6, E001M8, E001M10, E001M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L113202
Nr.203	E002 + A002	14	E002M3, E002M4, E002M5, E002M6, E002M8, E002M10, E002M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L113203
Nr.204	E003 + A002	14	E003M3, E003M4, E003M5, E003M6, E003M8, E003M10, E003M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L113204

L114

- Kombinerad Borr - Gängtappssats DIN
- Kierretapit/ porat, sarjat DIN
- Gjengetapp/ Bor DIN
- Gevindtappe/ Bor DIN

A=ingående produkter. B=Antal i satsen. M=Tappdimensioner i satsenn.
D= Borrardiametrar i satsen

A=Työkalujen malli, B=lkm ja M= konekierretapit halkaisijat , D=porat halkaisijat

A=Typer i sett. B=kvantitet i sett. M=Diameter Tapper i sett. D=Diameter bor I sett

A=Typer i sæt. B=Antal i sæt. M=Diameter Tappe i sæt. D=Diameter bor i sæt.





L114



Set

Set	A	B	M	D	L114
Nr.301	EP006H + A002	14	EP00M3, EP00M4, EP00M5, EP00M6, EP00M8, EP00M10, EP00M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L114301
Nr.302	EX006H + A002	14	EX00M3, EX00M4, EX00M5, EX00M6, EX00M8, EX00M10, EX00M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L114302
Nr.303	E297 + A002 SHARK LINE	14	E297M3, E297M4, E297M5, E297M6, E297M8, E297M10, E297M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L114303
Nr.304	E298 + A002 SHARK LINE	14	E298M3, E298M4, E298M5, E298M6, E298M8, E298M10, E298M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L114304
Nr.305	E238 + A108 SHARK LINE	14	E238M3, E238M4, E238M5, E238M6, E238M8, E238M10, E238M12	A1082.5, A1083.3, A1084.2, A1085.0, A1086.8, A1088.5, A10810.2	L114305
Nr.306	E240 + A108 SHARK LINE	14	E240M3, E240M4, E240M5, E240M6, E240M8, E240M10, E240M12	A1082.5, A1083.3, A1084.2, A1085.0, A1086.8, A1088.5, A10810.2	L114306

L115

- Kombinerad Borr - Handgängtappssats
- Käsikierretapit/ porat, sarjat
- Handgjengetapper/ Bor
- Håndtappe/ Bor i sæt

A=ingående produkter. B=Antal i satsen. M=Tappdimensioner i satsenn.
D= Borrardiametrar i satsen

A=Työkalujen malli, B=lkm ja M= konekierretapit halkaisijat , D=porat halkaisijat

A=Typer i sett. B=kvantitet i sett. M=Diameter Tapper i sett. D=Diameter bor I sett

A=Typer i sæt. B=Antal i sæt. M=Diameter Tappe i sæt. D=Diameter bor i sæt.





L115



Set

Set	A	B	M	D	L115
Nr.100	E500 + A022	21	E500M3NO2, E500M3NO3, E500M4NO2, E500M4NO3, E500M5NO2, E500M5NO3, E500M6NO2, E500M6NO3, E500M8NO2, E500M8NO3, E500M10NO2, E500M10NO3, E500M12NO2, E500M12NO3	A0222.5, A0223.3, A0224.2, A0225.0, A0226.8, A0228.5, A02210.2	L115100
Nr.101	E500 + A002	14	E500M3NO3, E500M4NO3, E500M5NO3, E500M6NO3, E500M8NO3, E500M10NO3, E500M12NO3	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L115101

L000

- Kombinerad Borr och Handtappsats — A=ingående produkter. B=Antal i satsen. M=Tappdimensioner i satsenn. D= Borrardiametrar i satsen
- Käsikierretappi ja Pora (2 kpl) — A=Työkalujen malli, B=lkm ja M= konekierretapit halkaisijat , D=porat halkaisijat
- Kombinert bor og handtappsett — A=Typer i sett. B=kvantitet i sett. M=Diameter Tapper i sett. D=Diameter bor I sett
- Håndtap-bor sæt (2 stk) — A=Typer i sæt. B=Antal i sæt. M=Diameter Tappe i sæt. D=Diameter bor i sæt.



L000



Set

Nr.	A	B	M	D	L000
Nr.1	E500 + A002	2	E500M3NO2	A0022.5	L000E500M3NO2XA002
Nr.2	E500 + A002	2	E500M4NO2	A0023.3	L000E500M4NO2XA002
Nr.3	E500 + A002	2	E500M5NO2	A0024.2	L000E500M5NO2XA002
Nr.4	E500 + A002	2	E500M6NO2	A0025.0	L000E500M6NO2XA002
Nr.5	E500 + A002	2	E500M8NO2	A0026.8	L000E500M8NO2XA002
Nr.6	E500 + A002	2	E500M10NO2	A0028.5	L000E500M10NO2XA002
Nr.7	E500 + A002	2	E500M12NO2	A00210.2	L000E500M12NO2XA002
Nr.8	E500 + A002	2	E500M3NO3	A0022.5	L000E500M3NO3XA002
Nr.9	E500 + A002	2	E500M4NO3	A0023.3	L000E500M4NO3XA002
Nr.10	E500 + A002	2	E500M5NO3	A0024.2	L000E500M5NO3XA002
Nr.11	E500 + A002	2	E500M6NO3	A0025.0	L000E500M6NO3XA002
Nr.12	E500 + A002	2	E500M8NO3	A0026.8	L000E500M8NO3XA002
Nr.13	E500 + A002	2	E500M10NO3	A0028.5	L000E500M10NO3XA002
Nr.14	E500 + A002	2	E500M12NO3	A00210.2	L000E500M12NO3XA002

L001

- Kombinerad Borr och Gängtappsats DIN
- DIN Konekierretappi ja pora (2 kpl)
- Kombinert bor og gjengetappsett DIN
- DIN Tap-bor sæt (2 stk)

A=ingående produkter. B=Antal i satsen. M=Tappdimensioner i satsenn.
D= Borrardiametrar i satsen

A=Työkalujen malli, B=lkm ja M= konekierretapit halkaisijat , D=porat halkaisijat

A=Typer i sett. B=kvantitet i sett. M=Diameter Tapper i sett. D=Diameter bor I sett

A=Typer i sæt. B=Antal i sæt. M=Diameter Tappe i sæt. D=Diameter bor i sæt.



L001



Set

Nr.	A	B	M	D	L001
Nr.1	EP006H + A002	2	EP00M3	A0022.5	L001EP00M3XA002
Nr.2	EP006H + A002	2	EP00M4	A0023.3	L001EP00M4XA002
Nr.3	EP006H + A002	2	EP00M5	A0024.2	L001EP00M5XA002
Nr.4	EP006H + A002	2	EP00M6	A0025.0	L001EP00M6XA002
Nr.5	EP006H + A002	2	EP00M8	A0026.8	L001EP00M8XA002
Nr.6	EP006H + A002	2	EP00M10	A0028.5	L001EP00M10XA002
Nr.7	EP006H + A002	2	EP00M12	A00210.2	L001EP00M12XA002
Nr.8	EX006H + A002	2	EX00M3	A0022.5	L001EX00M3XA002
Nr.9	EX006H + A002	2	EX00M4	A0023.3	L001EX00M4XA002
Nr.10	EX006H + A002	2	EX00M5	A0024.2	L001EX00M5XA002
Nr.11	EX006H + A002	2	EX00M6	A0025.0	L001EX00M6XA002
Nr.12	EX006H + A002	2	EX00M8	A0026.8	L001EX00M8XA002
Nr.13	EX006H + A002	2	EX00M10	A0028.5	L001EX00M10XA002
Nr.14	EX006H + A002	2	EX00M12	A00210.2	L001EX00M12XA002

L002

- Kombinerad Borr och Gängtappsats ISO
- ISO Konekierretappi ja pora (2 kpl)
- Kombinert bor og gjengetappsett ISO
- ISO Tap-bor sæt (2 stk)

A=ingående produkter. B=Antal i satsen. M=Tappdimensioner i satsenn.
D= Borrardiametrar i satsen

A=Työkalujen malli, B=lkm ja M= konekierretapit halkaisijat , D=porat halkaisijat

A=Typer i sett. B=kvantitet i sett. M=Diameter Tapper i sett. D=Diameter bor I sett

A=Typer i sæt. B=Antal i sæt. M=Diameter Tappe i sæt. D=Diameter bor i sæt.



L002



Set

Nr.	A	B	M	D	L002
Nr.1	E000 + A002	2	E000M3	A0022.5	L002E000M3XA002
Nr.2	E000 + A002	2	E000M4	A0023.3	L002E000M4XA002
Nr.3	E000 + A002	2	E000M5	A0024.2	L002E000M5XA002
Nr.4	E000 + A002	2	E000M6	A0025.0	L002E000M6XA002
Nr.5	E000 + A002	2	E000M8	A0026.8	L002E000M8XA002
Nr.6	E000 + A002	2	E000M10	A0028.5	L002E000M10XA002
Nr.7	E000 + A002	2	E000M12	A00210.2	L002E000M12XA002
Nr.8	E002 + A002	2	E002M3	A0022.5	L002E002M3XA002
Nr.9	E002 + A002	2	E002M4	A0023.3	L002E002M4XA002
Nr.10	E002 + A002	2	E002M5	A0024.2	L002E002M5XA002
Nr.11	E002 + A002	2	E002M6	A0025.0	L002E002M6XA002
Nr.12	E002 + A002	2	E002M8	A0026.8	L002E002M8XA002
Nr.13	E002 + A002	2	E002M10	A0028.5	L002E002M10XA002
Nr.14	E002 + A002	2	E002M12	A00210.2	L002E002M12XA002

L120

- Gängutrustning, Metalletui
- Kierretyökalusarjat, metallikotelossa
- Gjengesett i metalkasse
- Gevindsæt i metalkasse

A=ingående produkter. B=Antal i satsen. M=Tappdimensioner i satsenn. F= Gängsnittdiametrar i satsen. L112= Svängjärn Ställbart i sats, L110= Gängkloppor, För Runda Gängsnitt i sats

A=Työkalujen malli, B=lkm ja M= konekierretapit halkaisijat, F= Kierreleuat halkausijat, L112= Vääntimet jierretapeille, säädettävät, L110= Vääntiöt pyröeille kierreleuoille

A=Typer i sett. B=kvantitet i sett. M=Diameter Tapper i sett. F= Diameter Gjengesnitt i sett. L112= Svingjern Stillbart I sett. L110= Gjengeholder for Runde Gjengesnitt i sett

A=Typer i sæt. B=Antal i sæt. M=Diameter Tappe i sæt. F=Diameter i sæt. L112= Vindjern i sæt. L110= Bakkeholder i sæt.



L120



Set

Set	A	B	M	F	L112	L110	L120
21	E100 + F100 + L112 + L110	21	E100M3NO8, E100M4NO8, E100M5NO8, E100M6NO8, E100M8NO8, E100M10NO8, E100M12NO8	F100M3, F100M4, F100M5, F100M6, F100M8, F100M10, F100M12	L112NO1.1/2, L112NO3	L1102A, L1102B, L1103, L1104, L1105	L12021
30	E100 + F100 + L112 + L110	30	E100M3NO8, E100M4NO8, E100M5NO8, E100M6NO8, E100M8NO8, E100M10NO8, E100M12NO8, E100M14NO8, E100M16NO8, E100M18NO8, E100M20NO8	F100M3, F100M4, F100M5, F100M6, F100M8, F100M10, F100M12, F100M14, F100M16, F100M18, F100M20	L112NO1.1/2, L112NO4	L1102A, L1102B, L1103, L1104, L1105, L1106	L12030
HS-2M	E500 + F300 + L112 + L110	23	E500M2NO1, E500M2NO3, E500M2.5NO1, E500M2.5NO3, E500M3NO1, E500M3NO3, E500M3.5NO1, E500M3.5NO3, E500M4NO1, E500M4NO3, E500M5NO1, E500M5NO3, E500M6NO1, E500M6NO3	F300M2X13/16, F300M2.5X13/16, F300M3X13/16, F300M3.5X13/16, F300M4X13/16, F300M5X13/16, F300M6X13/16	L112BT1	L11013/16	L1202M
HS-4M	E500 + F300 + L112 + L110	32	E500M5NO1, E500M5NO3, E500M6NO1, E500M6NO3, E500M7NO1, E500M7NO3, E500M8NO1, E500M8NO3, E500M9NO1, E500M9NO3, E500M10NO1, E500M10NO3, E500M11NO1, E500M11NO3, E500M12NO1, E500M12NO3	F300M5X13/16, F300M6X13/16, F300M7X13/16, F300M8X1.5/16, F300M9X1.5/16, F300M10X1.5/16, F300M11X1.5/16, F300M12X1.5/16, F300M5X13/16, F300M6X13/16, F300M7X13/16, F300M8X1.5/16, F300M9X1.5/16	L112BT2	L11013/16, L1101.5/16	L1204M

Set	A	B	M	F	L112	L110	L120
HS-8M	E500 + F300 + L112 + L110	17	E500M2NO1, E500M2NO3, E500M3NO1, E500M3NO3, E500M4NO1, E500M4NO3, E500M5NO1, E500M5NO3, E500M6NO1, E500M6NO3	F300M2X13/16, F300M3X13/16, F300M4X13/16, F300M5X13/16, F300M6X13/16	L112BT1	L11013/16	L1208M
HS-10M	E500 + F300 + L112 + L110	27	E500M3NO1, E500M3NO3, E500M4NO1, E500M4NO3, E500M5NO1, E500M5NO3, E500M6NO1, E500M6NO3, E500M7NO1, E500M7NO3, E500M8NO1, E500M8NO3, E500M9NO1, E500M9NO3, E500M10NO1, E500M10NO3	F300M3X13/16, F300M4X13/16, F300M5X13/16, F300M6X1, F300M7X1, F300M8X1, F300M9X1, F300M10X1	L112BT2	L11013/16, L1101INCH	L12010M
HS-12M	E500 + F300 + L112 + L110	35	E500M2NO1, E500M2NO3, E500M3NO1, E500M3NO3, E500M4NO1, E500M4NO3, E500M5NO1, E500M5NO3, E500M6NO1, E500M6NO3, E500M7NO1, E500M7NO3, E500M8NO1, E500M8NO3, E500M9NO1, E500M9NO3, E500M10NO1, E500M10NO3, E500M12NO1, E500M12NO3	F300M2X13/16, F300M3X13/16, F300M4X13/16, F300M5X13/16, F300M6X13/16, F300M7X13/16, F300M8X1, F300M9X1, F300M10X1, F300M12X1.5/16	L112BT1, L112BT2	L11013/16, L1101INCH, L1101.5/16	L12012M
HS-14M	E500 + F300 + L112 + L110	34	E500M6NO1, E500M6NO3, E500M7NO1, E500M7NO3, E500M8NO1, E500M8NO3, E500M9NO1, E500M9NO3, E500M10NO1, E500M10NO3, E500M12NO1, E500M12NO3, E500M14NO1, E500M14NO3, E500M16NO1, E500M16NO3, E500M18NO1, E500M18NO3, E500M20NO1, E500M20NO3	F300M6X1, F300M7X1, F300M8X1, F300M9X1, F300M10X1, F300M12X1.5/16, F300M14X1.5/16, F300M16X1.1/2, F300M18X1.1/2, F300M20X1.1/2	L112NO3	L1101INCH, L1101.5/16, L1101.1/2	L12014M
HS-30UNC	E515 + F320 + L112 + L110	18	E5151/2NO1, E5151/2NO3, E5151/4NO1, E5151/4NO3, E5155/16NO1, E5155/16NO3, E5153/8NO1, E5153/8NO3, E5157/16NO1, E5157/16NO3	F3201/4X1, F3205/16X1, F3207/16X1.5/16, F3203/8X1, F3201/2X1.5/16	L112BT2	L1101INCH, L1101.5/16	L12030UNC
HS-32UNC	E515 + F320 + L112 + L110	27	E5151/2NO1, E5151/2NO3, E5151/4NO1, E5151/4NO3, E5155/16NO1, E5155/16NO3, E5153/8NO1, E5153/8NO3, E5157/16NO1, E5157/16NO3, E5155/8NO1, E5155/8NO3, E5153/4NO1, E5153/4NO3	F3201/4X1, F3205/16X1, F3207/16X1.5/16, F3203/8X1, F3207/16X1.1/2, F3201/2X1.5/16, F3201/2X1.1/2, F3205/8X1.1/2, F3203/4X1.1/2	L112BT2, L112NO3	L1101INCH, L1101.1/2	L12032UNC

Set	A	B	M	F	L112	L110	L120
HS-24UNF	E524 + F330 + L112 + L110	18	E5241/2NO1, E5241/2NO3, E5241/4NO1, E5241/4NO3, E5245/16NO1, E5245/16NO3, E5243/8NO1, E5243/8NO3, E5247/16NO1, E5247/16NO3	F3301/4X1, F3305/16X1, F3307/16X1.5/16, F3303/8X1, F3301/2X1.5/16	L112BT2	L1101INCH, L1101.5/16	L12024UNF
HS-26UNF	E524 + F330 + L112 + L110	25	E5241/2NO1, E5241/2NO3, E5241/4NO1, E5241/4NO3, E5245/16NO1, E5245/16NO3, E5243/8NO1, E5243/8NO3, E5247/16NO1, E5247/16NO3, E5245/8NO1, E5245/8NO3, E5243/4NO1, E5243/4NO3	F3301/4X1, F3305/16X1, F3303/8X1, F3307/16X1.1/2, F3301/2X1.1/2, F3305/8X1.1/2, F3303/4X1.1/2	L112BT2, L112NO3	L1101INCH, L1101.1/2	L12026UNF

L110

- Gängkloppor, För Runda Gängsnitt
- Vääntiöt pyöreille kierreleuoille
- Snittholder For Runde Gjengesnitt
- Bakkeholder For Runde Gevindbakker





L110



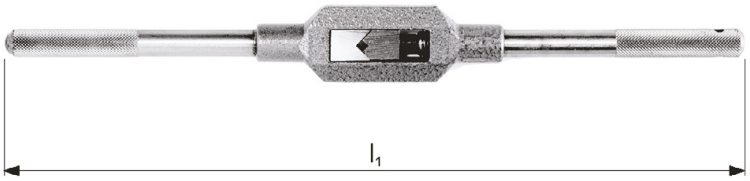
16.00 - 4“

Nr.	Ø x H	L110
1“	16 x 5	L1101
2a	20 x 5	L1102A
2b	20 x 7	L1102B
3	25 x 9	L1103
4“	30 x 11	L1104
5	38 x 14	L1105
5f	38 x 10	L1105F
6	45 x 18	L1106
6f	45 x 14	L1106F
7	55 x 22	L1107
7f	55 x 16	L1107F
8	65 x 25	L1108
8f	65 x 18	L1108F
9	75 x 30	L1109
9f	75 x 20	L1109F
10	90 x 36	L11010
10f	90 x 22	L11010F
	13/16 x 1/4	L11013/16
	1 x 3/8	L1101INCH
	1.5/16 x 7/16	L1101.5/16
	1.1/2 x 1/2	L1101.1/2
	2 x 5/8	L1102INCH
	2.1/4 x 11/16	L1102.1/4
	3 x 7/8	L1103INCH
	4 x 1	L1104INCH

L112

- Svängjärn Ställbart
- Vääntimet kierretapeille, säädettävät
- Svingjern Stillbart
- Vindjern





L112



BT1 - No.7

Nr.	l_1 mm	⍁ a mm	⍁ a Inch	Tap Range (M)	Tap Range (Inch)	L112
BT1	105	1.0 - 6.5	0.0394 - 0.2559	M1 - M8	No. 0 - 5/16	L112BT1
BT2	162	1.0 - 10.0	0.0394 - 0.3937	M1 - M14	No. 0 - 5/8	L112BT2
0	130	2.0 - 5.0	0.0787 - 0.1969	M1 - M5	No. 0 - 1/4	L112NO0
1.1/2	205	2.1 - 8.0	0.0827 - 0.3150	M2.2 - M12	No. 0 - 1/2	L112NO1.1/2
3	380	4.9 - 12.0	0.1929 - 0.4724	M5 - M20	5/16 - 3/4	L112NO3
4	500	5.5 - 16.0	0.2165 - 0.6299	M7 - M30	5/16 - 1“	L112NO4
6	1000	11.0 - 24.0	0.4331 - 0.9449	M18 - M42	3/4 - 1.1/2	L112NO6
7	1250	16.0 - 32.0	0.6299 - 1.2598	M27 - M48	1.1/8 - 2“	L112NO7

351 - 372





F100	355
F108	355
F110	356
F120	357
F130	358
F140	359
F150	360
F170	361
F180	362
F190	363
F201	355
F202	369
F272	372
F300	364
F302	370
F310	365
F312	371
F320	366
F330	367
F370	368

DORMER

	Gängform	Kierre	Gjengeform	Gevind
	Standard	Standardi	Standard	Standard
	Toleranser	Toleranssit	Toleranse	Tolerance
	Skärfas	Etuviisteen pituus	Skjærfas	Skærfase
	Material	Raaka-aine	Materiale	Materiale
	Rotationsriktning	Työstösuunta	Rotasjonsretning	Rotationsretning
	Ytbehandling	Pinnoitteet	Overflatebehandling	Overfladebehandling
■	Förstahandsval	Paras valinta	Førstevalg	Perfekt
●	Andrahandsval	Hyvä valinta	Andrevalg	God
	Exempel 10 = Skärhastighet i meter/minut +/- 10%	Esimerkki 10 = Lastuamisnopeus, m/min +/- 10%	Eksempel 10 = skjærehastighet i meter/minutt +/- 10%	Eksempel 10 = Skærehastighed i meter/min. +/- 10%
	Artikelnummer	Tuotteen koodi	Artikkel kode	Kode
	Dim. område	Halkaisija-alue	Dim. område	Dimension

AMG	Svensk	Suomi	Norsk	Dansk
1.1	Rena järn, mjuka stål	Puhdas rauta, pehmeät teräkset	Rent jern, myke stål	Rent jern, blødt stål
1.2	Konstruktionsstål	Rakenneteräkset, hiilletysteräkset	Konstruksjonsstål	Konstruktionsstål
1.3	Kolstål, låglegerade stål	Hiilli- ja niukkaesosteiset teräset	Kullstål, låglegert stål	Kulstofstål, lavt leg.stål
1.4	Legerade stål	Seostetut teräkset	Legert stål	Legeret stål
1.5	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.6	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.7	Legerade härdade stål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
1.8	Legerade härdade stål, slitstål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
2.1	Rostfria automatstål och verktygsstål	Aut. laadut, työkaluteräkset Cr>10%	Rustfritt automatstål	Rustfrit automatstål
2.2	Austenitiska	Austenittiset	Austenistisk (Syrefast)	Austenitisk
2.3	Ferritaustenitiska (duplex), Martensitiska	Ferriiti + Austeniitti (Duplex), Ferriitismarten-siittiset	Ferritaustenitiske (duplex), Ferritiske, Martensitiske	Ferritisk+Austenitisk, Martensitisk
2.4	Utskiljningshärdade / Austenitiska	Erkautumiskarkenevat	Utskillingsherdet	Udskilningshærdet
3.1	Gråjärn	Harmaa valurauta	Gråjern	Gråt støbejern
3.2	Gråjärn	Harmaa valurauta	Gråjern	Hærdet støbejern
3.3	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
3.4	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
4.1	Titan, ren	Titaani, seostamaton	Titan, ren	Titan, ren
4.2	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
4.3	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
5.1	Nickel, ren	Nikkeli, seostamaton	Nikkel, ren	Nikkel, ren
5.2	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
5.3	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
6.1	Koppar	Kupari	Kopper	Kobber
6.2	Mässing / Brons	ß-Messinki, pronssi	Messing/Bronse	Messing, Bronze
6.3	Mjuk mässing	α-Messinki, pehmeä	Myk messing	Blød messing
6.4	Cu-Al-Fe-Legeringar	Cu-Al-Fe seokset, lujat pronssit	Cu-Al-Fe-Legeringer	Cu-Al-Fe-legeringer
7.1	Ren aluminium, magnesium	Al, Mg, seostamaton	Ren aluminium, magnesium	Ren aluminium, magnesium
7.2	Al Legeringar, Si<0.5%	Al seostettu, Si<0.5%	Al legeringer, Si<0.5%	Al-legeringer, Si<0.5%
7.3	Al Legeringar, Si>0.5%<10%	Al seostettu, Si>0.5% <10%	Al legeringer, Si>0.5%<10%	Al-legeringer, Si>0.5%<10%
7.4	Al Legeringar, Si>10% Whisker förstärkta Al-och Mg- Legeringar	Al seostettu, Si>10% Whisker lujitetut, Al-seokset, Mg-seokset	Al legeringer, Si>10% Whisker forsterket Al-leg., Mg leg.	Al-legeringer, Si>10% Whisker-forstærket, Al-legeringer, Mg-legeringer
8.1	Mjuka plaster	Pehmeät muovit (Thermoplast)	Myk plast	Blød plast
8.2	Hårda plaster	Kovat muovit, Bakeliitti	Hard plast	Hårde plast
8.3	Armerade plaster	Lujitetut muovit	Armert plast	Armerede plastmaterialer
9.1	Cermets (metall-keramik)	Cermetit (metalli-keraamiset)	Cermets (metal-keramikk)	Cermets (metal-keramik)
10.1	Grafit	Standardi Grafiitti	Standard Grafitt	Standard grafit

	M	M	M	MF	UNC	UNF	BSW	BSF	G	NPT	PG
	ISO 2568	ISO 2568	ISO 2568	ISO 2568	ISO 2568	ISO 2568	ISO 2568	ISO 2568	ISO 2568	ISO 2568	ISO 2568
	6g	6g	6g	6g	2A	2A	Medium	Medium	Class A	Normal	Normal
	1.75XP	1.75XP	2.25XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP
	HSS	HSS	HSS-E	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS



	F100	F201	F108	F110	F120	F130	F140	F150	F170	F180	F190	
	M2 - M42	M3 - M20	M2 - M20	M4 - M40	No.8 - 1"	No.10 - 1"	1/8 - 1"	3/16 - 1/2	1/8 - 2"	1/8 - 1"	No.7 - No.36	
AMG	355	355	355	356	357	358	359	360	361	362	363	ISO
1.1	■8	■8	●8	■8	■8	■8	■8	■8	■8	■8	■8	P 1
1.2	■7	■7	●7	■7	■7	■7	■7	■7	■7	■7	■7	P 1
1.3	■6	■6	■6	■6	■6	■6	■6	■6	■6	■6	■6	P 2
1.4	●5	●5	■5	●5	●5	●5	●5	●5	●5	●5	●5	P 3
1.5			●4									P 4
1.6												H 1
1.7												H 3
1.8												H 4
2.1	●4	●4	■4	●4	●4	●4	●4	●4	●4	●4	●4	M 1
2.2	●2	●2	■2	●2	●2	●2	●2	●2	●2	●2	●2	M 3
2.3			●1									M 2
2.4												S 2
3.1	■8	■8	■8	■8	■8	■8	■8	■8	■8	■8	■8	K 1
3.2	■7	■7	■7	■7	■7	■7	■7	■7	■7	■7	■7	K 2
3.3	■6	■6	■6	■6	■6	■6	■6	■6	■6	■6	■6	K 3
3.4	●5	●5	●5	●5	●5	●5	●5	●5	●5	●5	●5	K 4
4.1			●2									S 1
4.2												S 2
4.3	●2	●2	●2	●2	●2	●2	●2	●2	●2	●2	●2	S 3
5.1	●9	●9	●9	●9	●9	●9	●9	●9	●9	●9	●9	S 1
5.2	●2	●2	●2	●2	●2	●2	●2	●2	●2	●2	●2	S 2
5.3	●2	●2	●2	●2	●2	●2	●2	●2	●2	●2	●2	S 3
6.1	●9	●9	●9	●9	●9	●9	●9	●9	●9	●9	●9	N 3
6.2	●8	●8	●8	●8	●8	●8	●8	●8	●8	●8	●8	N 4
6.3	●7	●7	●7	●7	●7	●7	●7	●7	●7	●7	●7	N 3
6.4			●2									N 4
7.1	■10	■10	■10	■10	■10	■10	■10	■10	■10	■10	■10	N 1
7.2	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	N 1
7.3	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	N 1
7.4	●10	●10	●10	●10	●10	●10	●10	●10	●10	●10	●10	N 2
8.1	●15	●15	●15	●15	●15	●15	●15	●15	●15	●15	●15	O
8.2	●10	●10	●10	●10	●10	●10	●10	●10	●10	●10	●10	O
8.3	●5	●5	●5	●5	●5	●5	●5	●5	●5	●5	●5	O
9.1												H
10.1												O

DORMER

	M	MF	UNC	UNF	G	M	M	MF	G
	BS 1127: 1950	BS 1127: 1950	BS 1127: 1950	BS 1127: 1950	BS 1127: 1950	DIN 382	BS 1127: 1950	BS 1127: 1950	DIN 382
						6g	6g	6g	Class A
	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP
	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS





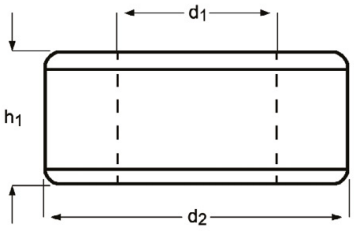
	F300	F310	F320	F330	F370	F202	F302	F312	F272	
	M2 - M36	M3 - M30	No.4 - 1.1/4	No.4 - 1.1/2	1/8 - 1.1/2	M3 - M36	M3 - M36	M8 - M24	1/8 - 1.1/2	
AMG	364	365	366	367	368	369	370	371	372	ISO
1.1	■8	■8	■8	■8	■8	■8	■8	■8	■8	P 1
1.2	■7	■7	■7	■7	■7	■7	■7	■7	■7	P 1
1.3	■6	■6	■6	■6	■6	■6	■6	■6	■6	P 2
1.4	●5	●5	●5	●5	●5	●5	●5	●5	●5	P 3
1.5										P 4
1.6										H 1
1.7										H 3
1.8										H 4
2.1	●4	●4	●4	●4	●4	●4	●4	●4	●4	M 1
2.2	●2	●2	●2	●2	●2	●2	●2	●2	●2	M 3
2.3										M 2
2.4										S 2
3.1	■8	■8	■8	■8	■8	■8	■8	■8	■8	K 1
3.2	■7	■7	■7	■7	■7	■7	■7	■7	■7	K 2
3.3	■6	■6	■6	■6	■6	■6	■6	■6	■6	K 3
3.4	●5	●5	●5	●5	●5	●5	●5	●5	●5	K 4
4.1										S 1
4.2										S 2
4.3	●2	●2	●2	●2	●2	●2	●2	●2	●2	S 3
5.1	●9	●9	●9	●9	●9	●9	●9	●9	●9	S 1
5.2	●2	●2	●2	●2	●2	●2	●2	●2	●2	S 2
5.3	●2	●2	●2	●2	●2	●2	●2	●2	●2	S 3
6.1	●9	●9	●9	●9	●9	●9	●9	●9	●9	N 3
6.2	●8	●8	●8	●8	●8	●8	●8	●8	●8	N 4
6.3	●7	●7	●7	●7	●7	●7	●7	●7	●7	N 3
6.4										N 4
7.1	■10	■10	■10	■10	■10	■10	■10	■10	■10	N 1
7.2	■15	■15	■15	■15	■15	■15	■15	■15	■15	N 1
7.3	■15	■15	■15	■15	■15	■15	■15	■15	■15	N 1
7.4	●10	●10	●10	●10	●10	●10	●10	●10	●10	N 2
8.1	●15	●15	●15	●15	●15	●15	●15	●15	●15	O
8.2	●10	●10	●10	●10	●10	●10	●10	●10	●10	O
8.3	●5	●5	●5	●5	●5	●5	●5	●5	●5	O
9.1										H
10.1										O

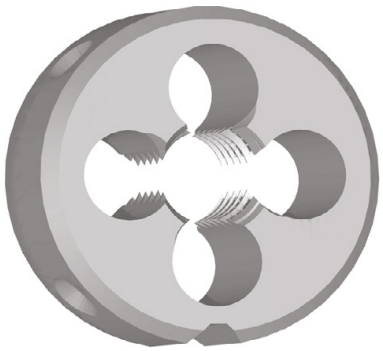
F100
F201
F108

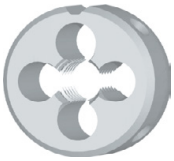
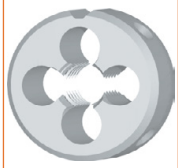
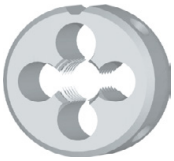
- M Gängsnitt, Spåndrivande Skär
- M Kierreleuat, lastua työntävä kärki
- M Gjengesnitt, Spondrivende skjær
- M Gevindbakker, Spåndrivende Skær

F100; F201	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3								
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3		
F108	▪	1.3	1.4	2.1	2.2	3.1	3.2	3.3	7.1	7.2	7.3							
	•	1.1	1.2	1.5	2.3	3.4	4.1	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.4	8.1	8.2	8.3

F100	M	ISO 2568	6g	1.75XP	HSS		L120 339
F201	M	ISO 2568	6g	1.75XP	HSS		
F108	M	ISO 2568	6g	2.25XP	HSS-E		





F100	F201	F108
		
M2 - M42	M3 - M20	M2 - M20

M	P mm	d_2 Ø mm	h_1 mm	F100	F201	F108
2	0.40	16	5	F100M2 [1]		F108M2 [1]
2.5	0.45	16	5	F100M2.5 [1]		F108M2.5 [1]
2.6	0.45	16	5	F100M2.6 [1]		
3	0.50	20	5	F100M3	F201M3	F108M3
3.5	0.60	20	5	F100M3.5		
4	0.70	20	5	F100M4	F201M4	F108M4
4.5	0.75	20	7	F100M4.5		
5	0.80	20	7	F100M5	F201M5	F108M5
6	1.00	20	7	F100M6	F201M6	F108M6
7	1.00	25	9	F100M7		
8	1.25	25	9	F100M8	F201M8	F108M8
9	1.25	25	9	F100M9		
10	1.50	30	11	F100M10	F201M10	F108M10
11	1.50	30	11	F100M11		
12	1.75	38	14	F100M12	F201M12	F108M12
14	2.00	38	14	F100M14	F201M14	F108M14
16	2.00	45	18	F100M16	F201M16	F108M16
18	2.50	45	18	F100M18	F201M18	F108M18
20	2.50	45	18	F100M20	F201M20	F108M20
22	2.50	55	22	F100M22		
24	3.00	55	22	F100M24		
27	3.00	65	25	F100M27		
30	3.50	65	25	F100M30		
33	3.50	65	25	F100M33		
36	4.00	65	25	F100M36		
39	4.00	75	30	F100M39		
42	4.50	75	30	F100M42		

[1] Ej spåndrivande skär / Ei lastua työntävä kärki / Ikke spondrivende skjær / Ikke spåndrivende skjær

DORMER

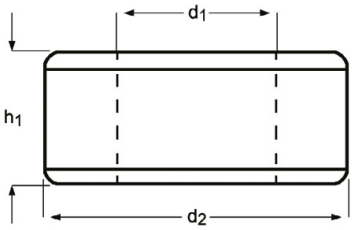
F110

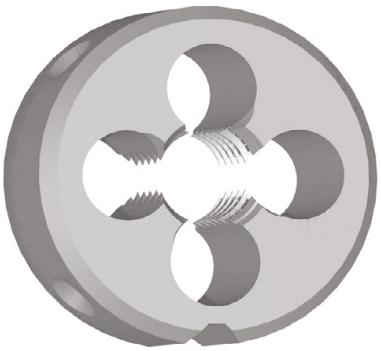
- MF Gängsnitt, Spåndrivande Skär
- MF Kierreleuat, lastua työntävä kärki
- MF Gjengesnitt, Spondrivende Skjær
- MF Gevindbakker, Spåndrivende Skær

F110 ▪ 1.1 1.2 1.3 3.1 3.2 3.3 7.1 7.2 7.3

F110 • 1.4 2.1 2.2 3.4 4.3 5.1 5.2 5.3 6.1 6.2 6.3 7.4 8.1 8.2 8.3

F110 | MF | ISO 2568 | 6g | 1.75XP | HSS





F110



M4 - M40

MF	P mm	d_2 Ø mm	h_1 mm	F110
4	0.50	20	5	F110M4X.5
5	0.50	20	5	F110M5X.5
6	0.75	20	7	F110M6X.75
7	0.75	25	9	F110M7X.75
8	0.75	25	9	F110M8X.75
8	1.00	25	9	F110M8X1.0
9	1.00	25	9	F110M9X1.0
10	0.75	30	11	F110M10X.75
10	1.00	30	11	F110M10X1.0
10	1.25	30	11	F110M10X1.25
11	1.00	30	11	F110M11X1.0
12	1.00	38	10	F110M12X1.0
12	1.25	38	10	F110M12X1.25
12	1.50	38	10	F110M12X1.5
13	1.00	38	10	F110M13X1.0
14	1.00	38	10	F110M14X1.0
14	1.25	38	10	F110M14X1.25
14	1.50	38	10	F110M14X1.5
15	1.00	38	10	F110M15X1.0
15	1.50	38	10	F110M15X1.5
16	1.00	45	14	F110M16X1.0
16	1.50	45	14	F110M16X1.5
18	1.00	45	14	F110M18X1.0
18	1.50	45	14	F110M18X1.5
20	1.00	45	14	F110M20X1.0
20	1.50	45	14	F110M20X1.5
22	1.00	55	16	F110M22X1.0
22	1.50	55	16	F110M22X1.5
24	1.00	55	16	F110M24X1.0
24	1.50	55	16	F110M24X1.5
24	2.00	55	16	F110M24X2.0
25	1.50	55	16	F110M25X1.5
26	1.50	55	16	F110M26X1.5
27	1.50	65	18	F110M27X1.5
27	2.00	65	18	F110M27X2.0
28	1.50	65	18	F110M28X1.5
30	1.50	65	18	F110M30X1.5
32	1.50	65	18	F110M32X1.5
35	1.50	65	18	F110M35X1.5
36	1.50	65	18	F110M36X1.5
40	1.50	75	20	F110M40X1.5

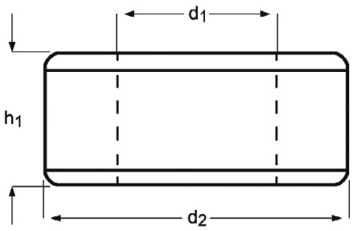
F120

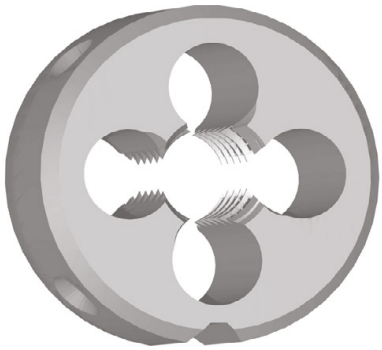
- UNC Gängsnitt, Spåndrivande Skär
- UNC Kierreleuat, lastua työntävä kärki
- UNC Gjengesnitt, Spondrivende Skjær
- UNC Gevindbakker, Spåndrivende Skær

F120 ▪ 1.1 1.2 1.3 3.1 3.2 3.3 7.1 7.2 7.3

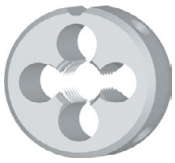
• 1.4 2.1 2.2 3.4 4.3 5.1 5.2 5.3 6.1 6.2 6.3 7.4 8.1 8.2 8.3

F120 UNC ISO 2568 2A 1.75XP HSS





F120



No.8 - 1“

UNC	TPI	d_1 nom mm	d_2 Ø mm	h_1 mm	F120
8	32	4.17	20	7	F1208-32
10	24	4.83	20	7	F12010-24
1/4	20	6.35	20	7	F1201/4
5/16	18	7.94	25	9	F1205/16
3/8	16	9.53	30	11	F1203/8
7/16	14	11.11	30	11	F1207/16
1/2	13	12.70	38	14	F1201/2
9/16	12	14.29	38	14	F1209/16
5/8	11	15.88	45	18	F1205/8
3/4	10	19.05	45	18	F1203/4
7/8	9	22.23	55	22	F1207/8
1“	8	25.40	55	22	F1201

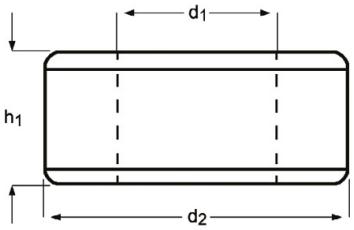
DORMER

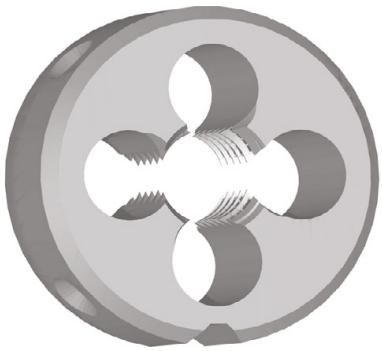
F130

- UNF Gängsnitt, Spåndrivande Skär
- UNF Kierreleuat, lastua työntävä kärki
- UNF Gjengesnitt, Spondrivende Skjær
- UNF Gevindbakker, Spåndrivende Skær

F130 ▪ 1.1 1.2 1.3 3.1 3.2 3.3 7.1 7.2 7.3
F130 • 1.4 2.1 2.2 3.4 4.3 5.1 5.2 5.3 6.1 6.2 6.3 7.4 8.1 8.2 8.3

F130 UNF ISO 2568 2A 1.75XP HSS





F130



No.10 - 1"

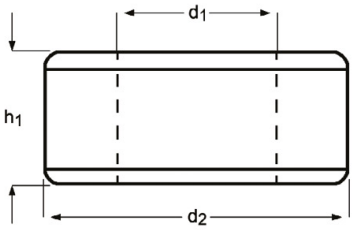
UNF	TPI	d_1 nom mm	d_2 Ø mm	h_1 mm	F130
10	32	4.83	20	7	F13010-32
1/4	28	6.35	20	7	F1301/4
5/16	24	7.94	25	9	F1305/16
3/8	24	9.53	30	11	F1303/8
7/16	20	11.11	30	11	F1307/16
1/2	20	12.70	38	10	F1301/2
9/16	18	14.29	38	10	F1309/16
5/8	18	15.88	45	14	F1305/8
3/4	16	19.05	45	14	F1303/4
7/8	14	22.23	55	16	F1307/8
1“	12	25.40	55	16	F1301

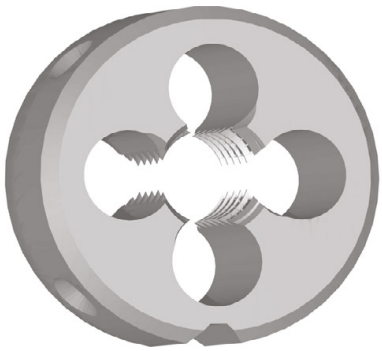
F140

- BSW Gängsnitt, Spåndrivande Skär
- BSW Kierreleuat, lastua työntävä kärki
- BSW Gjengesnitt, Spondrivende skjær
- BSW Gevindbakker, Spåndrivende Skær

F140															
	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3					
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F140 BSW ISO 2568 Medium 1.75XP HSS





F140



1/8 - 1“

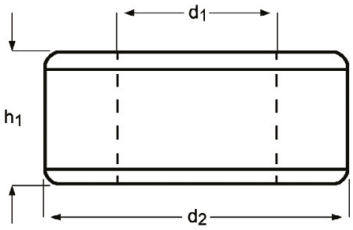
BSW	TPI	d_1 nom mm	d_2 Ø mm	h_1 mm	F140
1/8	40	3.17	20	5	F1401/8
3/16	24	4.76	20	7	F1403/16
1/4	20	6.35	20	7	F1401/4
5/16	18	7.94	25	9	F1405/16
3/8	16	9.53	30	11	F1403/8
7/16	14	11.11	30	11	F1407/16
1/2	12	12.70	38	14	F1401/2
5/8	11	15.88	45	18	F1405/8
3/4	10	19.05	45	18	F1403/4
7/8	9	22.23	55	22	F1407/8
1“	8	25.40	55	22	F1401

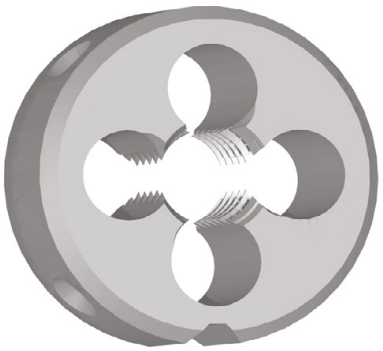
F150

- BSF Gängsnitt, Spåndrivande Skär
- BSF Kierreleuat, lastua työntävä kärki
- BSF Gjengesnitt, Spondrivende skjær
- BSF Gevindbakker, Spåndrivende Skær

F150															
	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3					
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F150 BSF ISO 2568 Medium 1.75XP HSS





F150



3/16 - 1/2

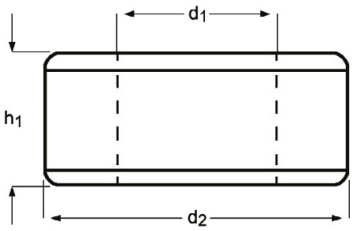
BSF	TPI	d_1 nom mm	d_2 Ø mm	h_1 mm	F150
3/16	32	4.76	20	7	F1503/16
1/4	26	6.35	20	7	F1501/4
5/16	22	7.94	25	9	F1505/16
3/8	20	9.53	30	11	F1503/8
7/16	18	11.11	30	11	F1507/16
1/2	16	12.70	38	10	F1501/2

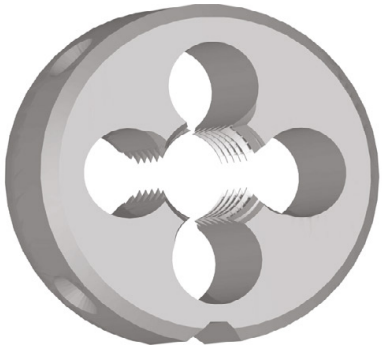
F170

- G(BSP) Gängsnitt, Spåndrivande Skär
- G(BSP) Kierreleuat, lastua työntävä kärki
- G(BSP) Gjengesnitt, Spondrivende skjær
- G(BSP) Gevindbakker, Spåndrivende Skær

F170									
▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3
•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F170 G ISO 2568 Class A 1.75XP HSS





F170



1/8 - 2“

G(BSP)	TPI	d_1 nom mm	d_2 Ø mm	h_1 mm	F170
1/8	28	9.73	30	11	F1701/8
1/4	19	13.16	38	10	F1701/4
3/8	19	16.66	45	14	F1703/8
1/2	14	20.96	45	14	F1701/2
5/8	14	22.91	55	16	F1705/8
3/4	14	26.44	55	16	F1703/4
7/8	14	30.20	65	18	F1707/8
1“	11	33.25	65	18	F1701
1.1/8	11	37.89	75	20	F1701.1/8
1.1/4	11	41.91	75	20	F1701.1/4
1.1/2	11	47.80	90	22	F1701.1/2
2“	11	59..61	105	22	F1702

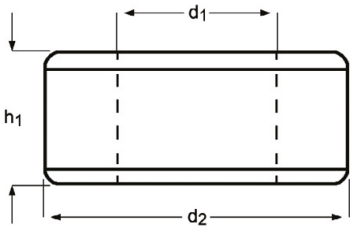
DORMER

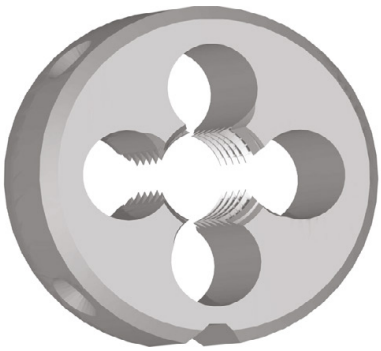
F180

- NPT Gängsnitt, Spåndrivande Skär
- NPT Kierreleuat, lastua työntävä kärki
- NPT Gjengesnitt, Spondrivende Skjær
- NPT Gevindbakker, Spåndrivende Skær

F180															
	■	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3					
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F180 | NPT | ISO 2568 | Normal | 1.75XP | HSS





F180



1/8 - 1“

NPT	TPI	d_1 nom mm	d_2 Ø mm	h_1 mm	F180
1/8	27	9.49	30	11	F1801/8
1/4	18	12.49	38	14	F1801/4
3/8	18	15.93	45	14	F1803/8
1/2	14	19.77	45	18	F1801/2
3/4	14	25.12	55	22	F1803/4
1“	11.5	31.46	65	25	F1801

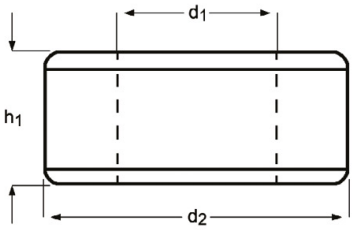
F190

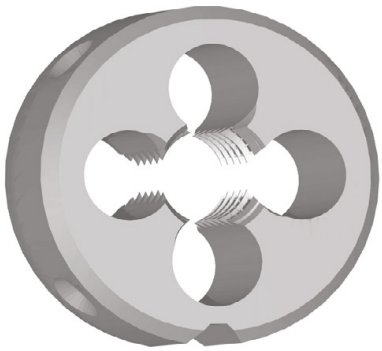
- PG Gängsnitt, Spåndrivande Skär
- PG Kierreleuat, lastua työntävä kärki
- PG Gjengesnitt, Spondrivende Skjær
- PG Gevindbakker, Spåndrivende Skær

F190 ▪ 1.1 1.2 1.3 3.1 3.2 3.3 7.1 7.2 7.3

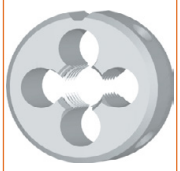
• 1.4 2.1 2.2 3.4 4.3 5.1 5.2 5.3 6.1 6.2 6.3 7.4 8.1 8.2 8.3

F190 PG ISO 2568 Normal 1.75XP HSS





F190



No.7 - No.36

PG	TPI	d_1 nom mm	d_2 Ø mm	h_1 mm	F190
7	20	12.5	38	10	F190PG7
9	18	15.2	38	10	F190PG9
11	18	18.6	45	14	F190PG11
13.5	18	20.4	45	14	F190PG13.5
16	18	22.5	55	16	F190PG16
21	16	28.3	65	18	F190PG21
29	16	37.0	65	18	F190PG29
36	16	47.0	90	22	F190PG36

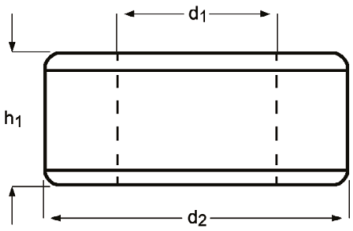
DORMER

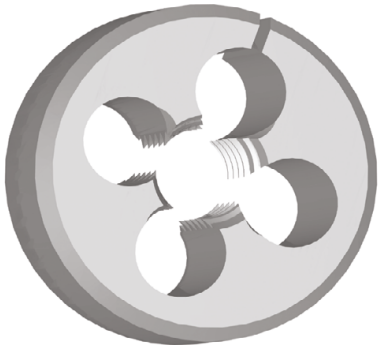
F300

- M Gängsnitt, Justerbara
- M Kierreleuat, säädettävät
- M Gjengesnitt, Stillbare
- M Gevindbakker, Justerbar

F300															
	■	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3					
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F300	M	BS 1127: 1950		1.75XP	HSS			L120 339





F300



M2 - M36

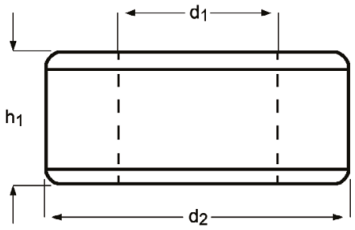
M	P mm	d_2 Ø Inch	h_1 Inch	F300
2	0.40	13/16	1/4	F300M2X13/16
2.5	0.45	13/16	1/4	F300M2.5X13/16
3	0.50	13/16	1/4	F300M3X13/16
3.5	0.60	13/16	1/4	F300M3.5X13/16
4	0.70	13/16	1/4	F300M4X13/16
5	0.80	13/16	1/4	F300M5X13/16
5	0.80	1“	3/8	F300M5X1
6	1.00	13/16	1/4	F300M6X13/16
6	1.00	1“	3/8	F300M6X1
6	1.00	1.5/16	7/16	F300M6X1.5/16
7	1.00	13/16	1/4	F300M7X13/16
7	1.00	1“	3/8	F300M7X1
8	1.25	1“	3/8	F300M8X1
8	1.25	1.5/16	7/16	F300M8X1.5/16
9	1.25	1“	3/8	F300M9X1
9	1.25	1.5/16	7/16	F300M9X1.5/16
10	1.50	1“	3/8	F300M10X1
10	1.50	1.5/16	7/16	F300M10X1.5/16
10	1.50	1.1/2	1/2	F300M10X1.1/2
11	1.50	1.5/16	7/16	F300M11X1.5/16
12	1.75	1.5/16	7/16	F300M12X1.5/16
12	1.75	1.1/2	1/2	F300M12X1.1/2
14	2.00	1.5/16	7/16	F300M14X1.5/16
14	2.00	1.1/2	1/2	F300M14X1.1/2
16	2.00	1.1/2	1/2	F300M16X1.1/2
16	2.00	2“	5/8	F300M16X2
18	2.50	1.1/2	1/2	F300M18X1.1/2
18	2.50	2“	5/8	F300M18X2
20	2.50	1.1/2	1/2	F300M20X1.1/2
20	2.50	2“	5/8	F300M20X2
22	2.50	2“	5/8	F300M22X2
24	3.00	2“	5/8	F300M24X2
27	3.00	3“	7/8	F300M27X3
30	3.50	3“	7/8	F300M30X3
36	4.00	3“	7/8	F300M36X3

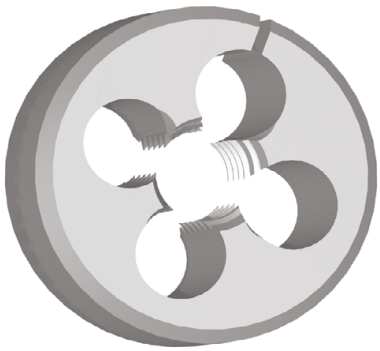
F310

- MF Gängsnitt, Justerbara
- MF Kierreleuat, säädettävät
- MF Gjengesnitt. Stillbare
- MF Gevindbakker, Justerbar

F310									
	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F310 | MF | BS 1127: 1950 | | 1.75XP | HSS





F310



M3 - M30

MF	P mm	d_2 Ø Inch	h_1 Inch	F310
3	0.35	13/16	1/4	F310M3X.35X13/16
4	0.50	13/16	1/4	F310M4X.5X13/16
4	0.75	13/16	1/4	F310M4X.75X13/16
5	0.50	13/16	1/4	F310M5X.5X13/16
5	0.90	13/16	1/4	F310M5X.9X13/16
6	0.75	13/16	1/4	F310M6X.75X13/16
8	0.75	1“	3/8	F310M8X.75X1
8	1.00	1“	3/8	F310M8X1.0X1
9	1.00	1“	3/8	F310M9X1.0X1
10	0.75	1“	3/8	F310M10X.75X1
10	1.00	1“	3/8	F310M10X1.0X1
10	1.25	1“	3/8	F310M10X1.25X1
10	1.25	1.5/16	7/16	F310M10X1.25X1.5/16
12	1.00	1.5/16	7/16	F310M12X1.0X1.5/16
12	1.25	1.5/16	7/16	F310M12X1.25X1.5/16
12	1.50	1.5/16	7/16	F310M12X1.5X1.5/16
14	1.25	1.5/16	7/16	F310M14X1.25X1.5/16
14	1.50	1.5/16	7/16	F310M14X1.5X1.5/16
16	1.00	1.1/2	1/2	F310M16X1.0X1.1/2
16	1.50	1.1/2	1/2	F310M16X1.5X1.1/2
18	1.50	1.1/2	1/2	F310M18X1.5X1.1/2
20	1.00	1.1/2	1/2	F310M20X1.0X1.1/2
20	1.50	2“	5/8	F310M20X1.5X2
20	2.00	1.1/2	1/2	F310M20X2.0X1.1/2
22	1.50	2“	5/8	F310M22X1.5X2
24	1.50	2“	5/8	F310M24X1.5X2
24	2.00	2“	5/8	F310M24X2.0X2
25	1.50	2“	5/8	F310M25X1.5X2
27	2.00	2.1/4	11/16	F310M27X2.0X2.1/4
30	2.00	2.1/4	11/16	F310M30X2.0X2.1/4

DORMER

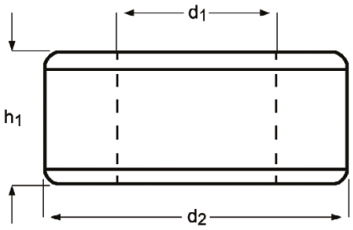
F320

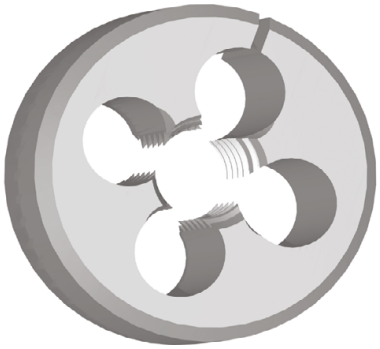
- UNC Gängsnitt, Justerbara
- UNC Kierreleuat, säädettävät
- UNC Gjengesnitt. Stillbare
- UNC Gevindbakker, Justerbar

F320 ▪ 1.1 1.2 1.3 3.1 3.2 3.3 7.1 7.2 7.3

F320 • 1.4 2.1 2.2 3.4 4.3 5.1 5.2 5.3 6.1 6.2 6.3 7.4 8.1 8.2 8.3

F320 | UNC | BS 1127: 1950 | | 1.75XP | HSS | | | L120 339





F320



No.4 - 1.1/4

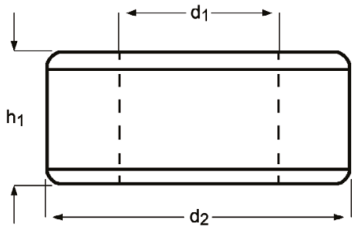
UNC	TPI	d_1 nom mm	d_2 Ø Inch	h_1 Inch	F320
4	40	2.85	13/16	1/4	F3204-40X13/16
5	40	3.18	13/16	1/4	F3205-40X13/16
6	32	3.51	13/16	1/4	F3206-32X13/16
8	32	4.17	13/16	1/4	F3208-32X13/16
8	32	4.17	1“	3/8	F3208-32X1
10	24	4.83	13/16	1/4	F32010-24X13/16
10	24	4.83	1“	3/8	F32010-24X1
12	24	5.49	13/16	1/4	F32012-24X13/16
1/4	20	6.35	13/16	1/4	F3201/4X13/16
1/4	20	6.35	1“	3/8	F3201/4X1
1/4	20	6.35	1.5/16	7/16	F3201/4X1.5/16
1/4	20	6.35	1.1/2	1/2	F3201/4X1.1/2
5/16	18	7.94	1“	3/8	F3205/16X1
5/16	18	7.94	1.1/2	1/2	F3205/16X1.1/2
3/8	16	9.53	1“	3/8	F3203/8X1
3/8	16	9.53	1.5/16	7/16	F3203/8X1.5/16
3/8	16	9.53	1.1/2	1/2	F3203/8X1.1/2
7/16	14	11.11	1.5/16	7/16	F3207/16X1.5/16
7/16	14	11.11	1.1/2	1/2	F3207/16X1.1/2
1/2	13	12.70	1.5/16	7/16	F3201/2X1.5/16
1/2	13	12.70	1.1/2	1/2	F3201/2X1.1/2
1/2	13	12.70	2“	5/8	F3201/2X2
9/16	12	14.29	1.1/2	1/2	F3209/16X1.1/2
5/8	11	15.88	1.1/2	1/2	F3205/8X1.1/2
5/8	11	15.88	2“	5/8	F3205/8X2
3/4	10	19.05	1.1/2	1/2	F3203/4X1.1/2
3/4	10	19.05	2“	5/8	F3203/4X2
7/8	9	22.23	2“	5/8	F3207/8X2
1“	8	25.40	2“	5/8	F3201X2
1.1/8	7	28.58	3“	7/8	F3201.1/8X3
1.1/4	7	31.75	3“	7/8	F3201.1/4X3

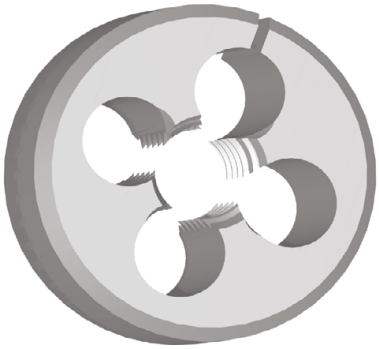
F330

- UNF Gängsnitt, Justerbara
- UNF Kierreleuat, säädettävät
- UNF Gjengesnitt. Stillbare
- UNF Gevindbakker, Justerbar

F330															
	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3					
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F330 | UNF | BS 1127: 1950 | | 1.75XP | HSS | L120 339





F330



No.4 - 1.1/2

UNF	TPI	d_1 nom mm	d_2 Ø Inch	h_1 Inch	F330
4	48	2.85	13/16	1/4	F3304-48X13/16
5	44	3.18	13/16	1/4	F3305-44X13/16
6	40	3.51	13/16	1/4	F3306-40X13/16
8	36	4.17	13/16	1/4	F3308-36X13/16
10	32	4.83	13/16	1/4	F33010-32X13/16
10	32	4.83	1“	3/8	F33010-32X1
12	28	5.49	13/16	1/4	F33012-28X13/16
1/4	28	6.35	13/16	1/4	F3301/4X13/16
1/4	28	6.35	1“	3/8	F3301/4X1
1/4	28	6.35	1.1/2	1/2	F3301/4X1.1/2
5/16	24	7.94	1“	3/8	F3305/16X1
5/16	24	7.94	1.5/16	7/16	F3305/16X1.5/16
5/16	24	7.94	1.1/2	1/2	F3305/16X1.1/2
3/8	24	9.53	1“	3/8	F3303/8X1
3/8	24	9.53	1.5/16	7/16	F3303/8X1.5/16
3/8	24	9.53	1.1/2	1/2	F3303/8X1.1/2
7/16	20	11.11	1“	3/8	F3307/16X1
7/16	20	11.11	1.5/16	7/16	F3307/16X1.5/16
7/16	20	11.11	1.1/2	1/2	F3307/16X1.1/2
1/2	20	12.70	1.5/16	7/16	F3301/2X1.5/16
1/2	20	12.70	1.1/2	1/2	F3301/2X1.1/2
9/16	18	14.29	1.5/16	7/16	F3309/16X1.5/16
9/16	18	14.29	1.1/2	1/2	F3309/16X1.1/2
5/8	18	15.88	1.1/2	1/2	F3305/8X1.1/2
5/8	18	15.88	2“	5/8	F3305/8X2
3/4	16	19.05	1.1/2	1/2	F3303/4X1.1/2
3/4	16	19.05	2“	5/8	F3303/4X2
7/8	14	22.23	2“	5/8	F3307/8X2
1“	12	25.40	2“	5/8	F3301X2
1.1/8	12	28.58	3“	7/8	F3301.1/8X3
1.1/4	12	31.75	3“	7/8	F3301.1/4X3
1.1/2	12	38.10	3“	7/8	F3301.1/2X3

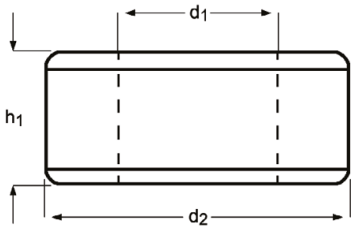
DORMER

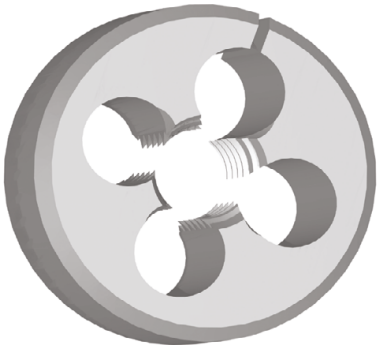
F370

- G(BSP) Gängsnitt, Justerbara
- G(BSP) Kierreleuat, säädettävät
- G(BSP) Gjengesnitt, Justerbar
- G(BSP) Gevindbakker, Justerbar

F370															
	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3					
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F370 G BS 1127: 1950 1.75XP HSS





F370



1/8 - 1.1/2

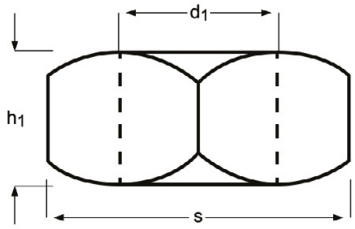
G(BSP)	TPI	d_1 nom mm	d_2 Ø Inch	h_1 Inch	F370
1/8	28	9.73	1“	3/8	F3701/8X1
1/4	19	13.16	1.5/16	7/16	F3701/4X1.5/16
3/8	19	16.66	1.1/2	1/2	F3703/8X1.1/2
1/2	14	20.96	2“	5/8	F3701/2X2
5/8	14	22.91	2“	5/8	F3705/8X2
3/4	14	26.44	2“	5/8	F3703/4X2
7/8	14	30.20	2.1/4	11/16	F3707/8X2.1/4
1“	11	33.25	2.1/4	11/16	F3701X2.1/4
1.1/4	11	41.91	3“	7/8	F3701.1/4X3
1.1/2	11	47.80	4“	1“	F3701.1/2X4

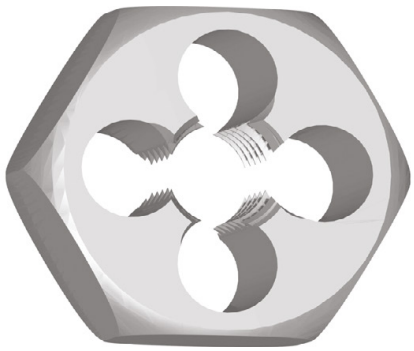
F202

- M Rensmutter
- M Kierremutterit
- M Rensemutter
- M Rensemøtrikker

F202									
▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3
•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F202 | M | DIN 382 | 6g | 1.75XP | HSS





F202



M3 - M36

M	P mm	S mm	h_1 mm	F202
3	0.50	19	5	F202M3
4	0.70	19	5	F202M4
5	0.80	19	7	F202M5
6	1.00	19	7	F202M6
7	1.00	22	9	F202M7
8	1.25	22	9	F202M8
10	1.50	27	11	F202M10
12	1.75	36	14	F202M12
14	2.00	36	14	F202M14
16	2.00	41	18	F202M16
18	2.50	41	18	F202M18
20	2.50	41	18	F202M20
22	2.50	50	22	F202M22
24	3.00	50	22	F202M24
27	3.00	60	25	F202M27
30	3.50	60	25	F202M30
36	4.00	60	25	F202M36

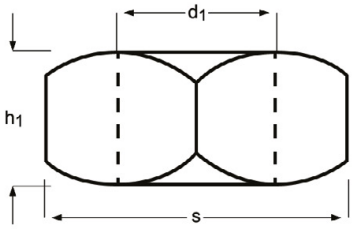
F302

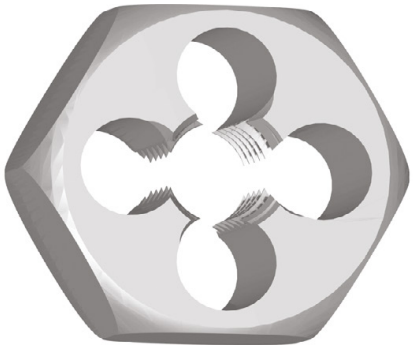
- M Rensmutter
- M Kierremutterit
- M Rensemutter
- M Rensemøtrikker

F302 ■ 1.1 1.2 1.3 3.1 3.2 3.3 7.1 7.2 7.3

• 1.4 2.1 2.2 3.4 4.3 5.1 5.2 5.3 6.1 6.2 6.3 7.4 8.1 8.2 8.3

F302 | M | BS 1127: 1950 | 6g | 1.75XP | HSS





F302



M3 - M36

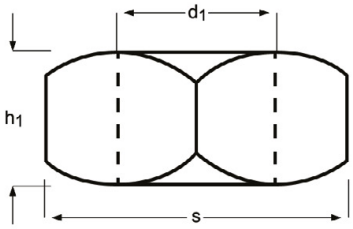
M	P mm	S decimal Inch	h_1 Inch	F302
3	0.50	0.7100	1/4	F302M3
4	0.70	0.7100	1/4	F302M4
5	0.80	0.7100	1/4	F302M5
6	1.00	0.7100	1/4	F302M6
7	1.00	0.8200	5/16	F302M7
8	1.25	0.8200	5/16	F302M8
10	1.50	0.9200	3/8	F302M10
11	1.50	1.0100	7/16	F302M11
12	1.75	1.1000	1/2	F302M12
14	2.00	1.3000	5/8	F302M14
16	2.00	1.3000	5/8	F302M16
18	2.50	1.4800	11/16	F302M18
20	2.50	1.4800	11/16	F302M20
22	2.50	1.6700	13/16	F302M22
24	3.00	2.0500	15/16	F302M24
27	3.00	2.2200	1.1/16	F302M27
30	3.50	2.2200	1.1/16	F302M30
33	3.50	2.5800	1.1/8	F302M33
36	4.00	2.7600	1.1/4	F302M36

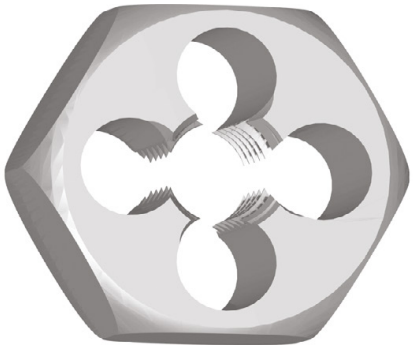
F312

- MF Rensmutter
- MF Kierremutterit
- MF Rensemutter
- MF Rensemøtrikker

F312															
	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3					
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F312 MF BS 1127: 1950 6g 1.75XP HSS





F312



M8 - M24

MF	P mm	S decimal Inch	h_1 Inch	F312
8	0.75	0.8200	5/16	F312M8X.75
8	1.00	0.8200	5/16	F312M8X1.0
10	1.00	0.9200	3/8	F312M10X1.0
10	1.25	0.9200	3/8	F312M10X1.25
12	1.00	1.0100	7/16	F312M12X1.0
12	1.25	1.0100	7/16	F312M12X1.25
12	1.50	1.0100	7/16	F312M12X1.5
14	1.50	1.3000	5/8	F312M14X1.5
16	1.50	1.3000	5/8	F312M16X1.5
18	1.50	1.4800	11/16	F312M18X1.5
20	1.50	1.4800	11/16	F312M20X1.5
22	1.50	1.6700	13/16	F312M22X1.5
24	1.50	2.0500	15/16	F312M24X1.5
24	2.00	2.0500	15/16	F312M24X2.0

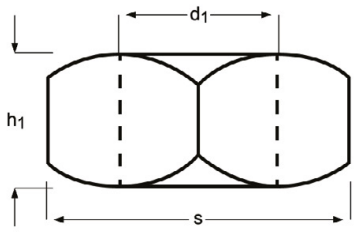
DORMER

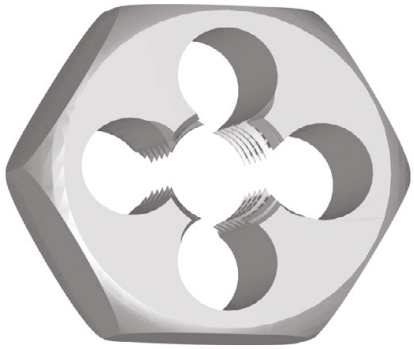
F272

- G(BSP) Rensmutter
- G(BSP) Kierremutterit
- G(BSP) Rensemutter
- G(BSP) Rensemøtrikker

F272									
▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3
•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F272 G DIN 382 Class A 1.75XP HSS





F272



1/8 - 1.1/2

G(BSP)	TPI	d_1 nom mm	S mm	h_1 mm	F272
1/8	28	9.73	27	11	F2721/8
1/4	19	13.16	36	10	F2721/4
3/8	19	16.66	41	14	F2723/8
1/2	14	20.96	41	14	F2721/2
3/4	14	26.44	60	18	F2723/4
1“	11	33.25	60	18	F2721
1.1/4	11	41.91	70	20	F2721.1/4
1.1/2	11	47.80	85	22	F2721.1/2

C110	443	**C831**	482	**S525**	417	**S813HA**	394
C122	454	**C835**	480	**S526**	418	**S813HB**	394
C123	445	**C837**	479	**S527**	419	**S814HA**	408
C126	443	**C907**	456	**S529**	433	**S814HB**	408
C135	447	**C908**	466	**S531**	434	**S822**	392
C139	445	**C920**	457	**S533**	435	**S823**	395
C159	451	**C922**	463	**S534**	437	**S902**	397
C167	453	**C948**	467	**S535**	438	**S903**	399
C246	458	**D200**	485	**S536**	429	**S904**	412
C247	458	**D400**	492	**S610**	404	**S922**	397
C273	460	**D402**	493	**S611**	405	**S933**	399
C295	460	**D420**	492	**S612**	410	**S944**	412
C299	456	**D422**	493	**S629**	440	**S991**	442
C305	450	**D745**	486	**S637**	402		
C306	448	**D747**	488	**S638**	403		
C333	462	**D750**	491	**S710**	396		
C336	452	**D751**	491	**S713**	398		
C346	455	**D752**	490	**S714**	400		
C352	450	**D753**	490	**S715**	401		
C353	448	**D763**	485	**S716**	409		
C367	449	**S216**	411	**S717**	413		
C400	468	**S217**	413	**S718**	414		
C403	469	**S218**	414				

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C407	466	**S219**	407	**S739**	441		
C413	468	**S225**	417	**S740**	441		
C428	464	**S226**	418	**S761**	415		
C492	465	**S227**	419	**S763**	425		
C500	470	**S229**	430	**S765**	420		
C505	471	**S231**	431	**S766**	416		
C700	484	**S233**	432	**S767**	428		
C710	483	**S260**	415	**S802HA**	390		
C800	472	**S262**	426	**S802HB**	390		
C801	475	**S264**	421	**S803HA**	393		
C810	473	**S501**	436	**S803HB**	393		
C820	477	**S511**	439	**S804HA**	406		
C822	476	**S521**	423	**S804HB**	406		
C825	474	**S523**	424	**S812HA**	391		
C830	481	**S524**	422	**S812HB**	391		

DORMER

	Material	Raaka-aine	Materiale	Materiale
	Användningsområde	Käyttöalue	Andvendelsesområde	Andvendelsesområde
	Utförande	Malli	Utførelse	Type
	tänder (z)	hammasluku	tenner	tænder
	Skärlängd	Lastuamispituus	Skjærelengde	Skære længde
	Spiralvinkel/Spånvinkel	Kierukka-/rintakulma	Spiralvinkel/Sponvinkel	Spiral vinkel
	Skaft	Varsi	Skaft	Skaft
	Ytbehandling	Pinnoitteet	Overflatebehandling	Overfladebehandling
	Toleranser	Toleranssit	Toleranse	Tolerance
	Rotationsriktning	Työstösuunta	Rotasjonsretning	Rotationsretning
	Standard	Standardi	Standard	Standard
■	Förstahandsval	Paras valinta	Førstevalg	Perfekt
●	Andrahandsval	Hyvä valinta	Andrevalg	God
	Exempel 10 = Skärhastighet i meter/minut +/- 10%	Esimerkki 10 = Lastuamisnopeus, m/min +/- 10%	Eksempel 10 = skjærehastighet i meter/minutt +/- 10%	Eksempel 10 = Skærehastighed i meter/min. +/- 10%
	Artikelnummer	Tuotteen koodi	Artikkel kode	Kode
	Dim. område	Halkaisija-alue	Dim. område	Dimension

AMG	Svensk	Suomi	Norsk	Dansk
1.1	Rena järn, mjuka stål	Puhdas rauta, pehmeät teräkset	Rent jern, myke stål	Rent jern, blødt stål
1.2	Konstruktionsstål	Rakenneteräkset, hiilletysteräkset	Konstruksjonsstål	Konstruktionsstål
1.3	Kolstål, låglegerade stål	Hiilli- ja niukkaesosteiset teräset	Kullstål, låglegert stål	Kulstofstål, lavt leg.stål
1.4	Legerade stål	Seostetut teräkset	Legert stål	Legeret stål
1.5	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.6	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.7	Legerade härdade stål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
1.8	Legerade härdade stål, slitstål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
2.1	Rostfria automatstål och verktygsstål	Aut. laadut, työkaluteräkset Cr>10%	Rustfritt automatstål	Rustfrit automatstål
2.2	Austenitiska	Austenittiset	Austenistisk (Syrefast)	Austenitisk
2.3	Ferritaustenitiska (duplex), Martensitiska	Ferriiti + Austeniitti (Duplex), Ferriitismarten-siittiset	Ferritaustenitiske (duplex), Ferritiske, Martensitiske	Ferritisk+Austenitisk, Martensitisk
2.4	Utskiljningshärdade / Austenitiska	Erkautumiskarkenevat	Utskillingsherdet	Udskilningshærdet
3.1	Gråjärn	Harmaa valurauta	Gråjern	Gråt støbejern
3.2	Gråjärn	Harmaa valurauta	Gråjern	Hærdet støbejern
3.3	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
3.4	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
4.1	Titan, ren	Titaani, seostamaton	Titan, ren	Titan, ren
4.2	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
4.3	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
5.1	Nickel, ren	Nikkeli, seostamaton	Nikkel, ren	Nikkel, ren
5.2	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
5.3	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
6.1	Koppar	Kupari	Kopper	Kobber
6.2	Mässing / Brons	ß-Messinki, pronssi	Messing/Bronse	Messing, Bronze
6.3	Mjuk mässing	α-Messinki, pehmeä	Myk messing	Blød messing
6.4	Cu-Al-Fe-Legeringar	Cu-Al-Fe seokset, lujat pronssit	Cu-Al-Fe-Legeringer	Cu-Al-Fe-legeringer
7.1	Ren aluminium, magnesium	Al, Mg, seostamaton	Ren aluminium, magnesium	Ren aluminium, magnesium
7.2	Al Legeringar, Si<0.5%	Al seostettu, Si<0.5%	Al legeringer, Si<0.5%	Al-legeringer, Si<0.5%
7.3	Al Legeringar, Si>0.5%<10%	Al seostettu, Si>0.5% <10%	Al legeringer, Si>0.5%<10%	Al-legeringer, Si>0.5%<10%
7.4	Al Legeringar, Si>10% Whisker förstärkta Al-och Mg- Legeringar	Al seostettu, Si>10% Whisker lujitetut, Al-seokset, Mg-seokset	Al legeringer, Si>10% Whisker forsterket Al-leg., Mg leg.	Al-legeringer, Si>10% Whisker-forstærket, Al-legeringer, Mg-legeringer
8.1	Mjuka plaster	Pehmeät muovit (Thermoplast)	Myk plast	Blød plast
8.2	Hårda plaster	Kovat muovit, Bakeliitti	Hard plast	Hårde plast
8.3	Armerade plaster	Lujitetut muovit	Armert plast	Armerede plastmaterialer
9.1	Cermets (metall-keramik)	Cermetit (metalli-keraamiset)	Cermets (metal-keramikk)	Cermets (metal-keramik)
10.1	Grafit	Standardi Grafiitti	Standard Grafitt	Standard grafit

DORMER

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
	P9	P9	P9	P9	P9	P9	P9	P9	P9	P9						
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	Z 2	Z 2	Z 2	Z 2	Z 2	Z 3	Z 3	Z 3	Z 3	Z 3	Z 2	Z 2	Z 2	Z 3	Z 3	Z 3
	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 40° γ 10°	λ 30° γ 12°	λ 30° γ 12°	λ 40° γ 10°	λ 30° γ 12°	λ 30° γ 12°
	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HB
	Alcrona	Alcrona	Alcrona	Alcrona	Alcrona	Alcrona	Alcrona	Alcrona	Alcrona	Alcrona	AlCrN		TiAlN	AlCrN		TiAlN
											h9	h10	h10	h9	h10	h10
	DIN 6527K	DIN 6527K	DIN 6527L	DIN 6527L	DORMER	DIN 6527K	DIN 6527K	DIN 6527L	DIN 6527L	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER
	S802HA	S802HB	S812HA	S812HB	S822	S803HA	S803HB	S813HA	S813HB	S823	S710	S902	S922	S713	S903	S933
	1.00 - 20.00	1.80 - 20.00	2.00 - 20.00	2.00 - 20.00	2.00 - 20.00	1.00 - 20.00	1.80 - 20.00	2.00 - 20.00	2.00 - 20.00	2.00 - 20.00	1.00 - 20.00	2.00 - 20.00	2.00 - 20.00	1.50 - 20.00	2.00 - 20.00	2.00 - 20.00
AMG	390	390	391	391	392	393	393	394	394	395	396	397	397	398	399	399	ISO
1.1	■260B	■260B	■210B	■210B	■180B	■260B	■260B	■210B	■210B	■180B	■140C	■65B	■95B	■140C	■65B	■95B	P 1
1.2	■260B	■260B	■210B	■210B	■180B	■260B	■260B	■210B	■210B	■180B	■140C	■65B	■95B	■140C	■65B	■95B	P 1
1.3	■155B	■155B	■125B	■125B	■110B	■155B	■155B	■125B	■125B	■110B	■130C	■55B	■80B	■130C	■55B	■80B	P 2
1.4	■155B	■155B	■125B	■125B	■110B	■155B	■155B	■125B	■125B	■110B	■130C	■50B	■75B	■130C	■50B	■75B	P 3
1.5	■115B	■115B	■90B	■90B	■80B	■115B	■115B	■90B	■90B	■80B	■120C	●30B	■45B	■120C	●30B	■45B	P 4
1.6	■90B	■90B	■75B	■75B	■65B	■90B	■90B	●75B	●75B	●65B			●30B			●30B	H 1
1.7																	H 3
1.8																	H 4
2.1	■105A	■105A	■75A	■75A	■70A	■105A	■105A	■85A	■85A	■70A	■80B			■80B			M 1
2.2	■70A	■70A	■55A	■55A	■50A	■70A	■70A	●55A	●55A	●50A	■70B			■70B			M 3
2.3	●70A	●70A	■55A	■55A	■50A	●70A	●70A	●55A	●55A	●50A							M 2
2.4	●50A	●50A				●50A	●50A										S 2
3.1	■180B	■180B	■145B	■145B	■125B	■180B	■180B	■145B	■145B	■125B	■170C	■55B	■80B	■170C	■55B	■80B	K 1
3.2	■110B	■110B	■85B	■85B	■75B	■110B	■110B	■85B	■85B	■75B	■150C	●30B	■45B	■150C	●30B	■45B	K 2
3.3	■145B	■145B	■115B	■115B	■100B	■145B	■145B	■115B	■115B	■100B	■130C	■55B	■80B	■130C	■55B	■80B	K 3
3.4	■95B	■95B	■75B	■75B	■65B	■95B	■95B	■75B	■75B	■65B	■120C	●30B	■45B	■120C	●30B	■45B	K 4
4.1	●170B	●170B	■140B	■140B	■120B	●170B	●170B	●140B	●140B	●120B		■65B	■95B		■65B	■95B	S 1
4.2	●115B	●115B	■90B	■90B	■80B	●115B	●115B	●90B	●90B	■80B	■70B	●30B	●45B	■70B	●30B	●45B	S 2
4.3												●15B	●20B		●15B	●20B	S 3
5.1	●165B	●165B	■130B	■130B	■115B	●165B	●165B	●130B	●130B	●115B		■65B	■95B		■65B	■95B	S 1
5.2	●35A	●35A	■25A	■25A	■25A	●35A	●35A	●25A	●25A	●25A	■70B			■70B			S 2
5.3																	S 3
6.1	●320C	●320C	■255C	■255C	■220C	●320C	●320C	●255C	●255C	●220C		■110C	■155C		■110C	■155C	N 3
6.2	■320C	■320C	■255C	■255C	■220C	■320C	■320C	■255C	■255C	■220C		■110C	■155C		■110C	■155C	N 4
6.3	■320C	■320C	■255C	■255C	■220C	■320C	■320C	■255C	■255C	■220C		■110C	■155C		■110C	■155C	N 3
6.4	■40B	■40B	■30C	■30C	■25B	■40B	■40B	■30C	■30C	■25B		●15B	●20B		●15B	●20B	N 4
7.1	●800C	●800C	■640C	■640C	■550C	●800C	●800C	●640C	●640C	●550C		●275C	●390C		●275C	●390C	N 1
7.2	■800C	■800C	■640C	■640C	■550C	■800C	■800C	■640C	■640C	■550C		●275C	●390C		●275C	●390C	N 1
7.3	■480C	■480C	■380C	■380C	■330C	■480C	■480C	■380C	■380C	■330C		●165C	●235C		●165C	●235C	N 1
7.4	■240B	■240B	■190B	■190B	■160B	■240B	■240B	■190B	■190B	■160B							N 2
8.1	●320C	●320C	■255C	■255C	■245C	●320C	●320C	●255C	●255C	●245C		●110C	●155C		●110C	●155C	O
8.2	●320C	●320C	■255C	■255C	■245C	●320C	●320C	●255C	●255C	●245C		●110C	●155C		●110C	●155C	O
8.3												●30B	●45B		●30B	●45B	O
9.1																	H
10.1																	O

DORMER

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
	N	N	W	W	W	W	N	N	N	N	N	N	N	N	N	N
	Z 3	Z 3	Z 1	Z 2	Z 2	Z 2	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4
	λ40° γ10°	λ40° γ10°	λ25° γ20°	λ30° γ20°	λ30° γ20°	λ30° γ20°	λ34° γ9°	λ34° γ9°	λ40° γ3°	λ34° γ9°	λ34° γ9°	λ40° γ10°	λ40° γ10°	λ40° γ3°	λ30° γ12°	λ30° γ12°
	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HB
	AlCrN	AlCrN	Hi	Hi	Hi	Hi	Alcrona	Alcrona	AlTiN	Alcrona	Alcrona	AlCrN	Diamond	AlTiN		TiAlN
	h9	h9	h9	h9	h9	h9	h10	h10	h9	h10	h10	h9	h9	h9	h12	h12
	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DIN 6527K	DIN 6527K	DORMER	DIN 6527L	DIN 6527L	DORMER	DORMER	DORMER	DORMER	DORMER
	S714	S715	S637	S638	S610	S611	S804HA	S804HB	S219	S814HA	S814HB	S716	S612	S216	S904	S944
	3.00 - 20.00	3.00 - 20.00	2.00 - 12.00	6.20 - 20.30	3.00 - 20.00	6.00 - 20.00	2.00 - 25.00	2.00 - 25.00	3.00 - 20.00	2.00 - 25.00	2.00 - 25.00	2.00 - 20.00	1.00 - 12.00	2.00 - 20.00	2.00 - 20.00	2.00 - 20.00
AMG	400	401	402	403	404	405	406	406	407	408	408	409	410	411	412	412	
1.1	■110C	■70C					■360B	■360B		■270B	■270B	■140C			■95B	■140B	P 1
1.2	■110C	■70C					■300B	■300B		■225B	■225B	■140C			■95B	■140B	P 1
1.3	■100C	■65C					■230B	■230B		■175B	■175B	■130C			■80B	■120B	P 2
1.4	■100C	■65C					■230B	■230B		■175B	■175B	■130C			■70B	■105B	P 3
1.5	■95C	■60C					■165B	■165B		■125B	■125B	■120C			●55B	■80B	P 4
1.6							■130B	■130B	■90C	●100B	●100B			■90C	●30B	●45B	H 1
1.7																	H 3
1.8																	H 4
2.1	■65B	■40B					■165A	■165A		■125A	■125A	■80B					M 1
2.2	■55B	■35B					■110A	■110A		●85A	●85A	■70B					M 3
2.3							●110A	●110A	■70B	●85A	●85A			■70B			M 2
2.4							●75A	●75A	■50B					■50B			S 2
3.1	■135C	■85C					■275B	■275B		■205B	■205B	■170C			■80B	■120B	K 1
3.2	■120C	■75C					■165B	■165B		■125B	■125B	■150C			●55B	■80B	K 2
3.3	■100C	■65C					■165B	■165B		■125B	■125B	■130C			■70B	■105B	K 3
3.4	■95C	■60C					■135B	■135B		■105B	■105B	■120C			●55B	■80B	K 4
4.1							●275B	●275B		●205B	●205B				■95B	■140B	S 1
4.2	■55B	■35B					●140B	●140B		●105B	●105B	■70B			●40B	●60B	S 2
4.3									■50B					■50B	●30B	●45B	S 3
5.1							●275B	●275B		●205B	●205B				■135B	■200B	S 1
5.2	■55B	■35B					●55A	●55A		●40A	●40A	■70B			●30A	●45A	S 2
5.3									■50B					■50B	●25A	●35A	S 3
6.1	●200E	●125E	■350E	■400E	■350E	■280E	●320C	●320C		●255C	●255C				■110C	■155C	N 3
6.2	●190E	●115E	■300E	■345E	■300E	■240E	■320C	■320C		■255C	■255C				■110C	■155C	N 4
6.3	●175E	●110E	■250E	■290E	■250E	■200E	■320C	■320C		■255C	■255C				■110C	■155C	N 3
6.4	●160E	●100E	■200E	■230E	■200E	■160E	■40B	■40B		■32C	■32C				●15B	●20B	N 4
7.1	●200E	●125E	■600E	■690E	■600E	■480E	●800C	●800C		●640C	●640C				●275C	●390C	N 1
7.2	●190E	●115E	■500E	■575E	■500E	■400E	●800C	●800C		●640C	●640C				●275C	●390C	N 1
7.3	●175E	●110E	■400E	■460E	■400E	■320E	●480C	●480C		●380C	●380C				●165C	●235C	N 1
7.4	●160E	●100E	■350E	■400E	■350E	■280E	●240B	●240B		●190B	●190B						N 2
8.1			■800E	■980E	■800E	■640E	●320C	●320C		●255C	●255C				●110C	●155C	O
8.2			■800E	■980E	■800E	■640E	●320C	●320C		●255C	●255C				●110C	●155C	O
8.3															●55B	●80B	O
9.1																	H
10.1													■350A				O

DORMER

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
	N	N	N	N	N	N	N	N	N	N	N	N	N	NR	NR	N	N
	Z 4	Z 4	Z 4	Z 4	Z 4 ≠	Z 4 ≠	Z 4 ≠	Z 6-8	Z 6-8	Z 6-8	Z 6-8	Z 6-8	Z 6-8	Z 4 ≠	Z 4 ≠	Z 4	Z 4
	λ40° γ10°	λ40° γ3°	λ40° γ10°	λ40° γ3°	λ40° γ10°	λ40° γ4°	λ≠ γ10°	λ50° γ3°	λ50° γ-26°	λ50° γ3°	λ50° γ-26°	λ50° γ3°	λ50° γ-26°	λ40° γ10°	λ40° γ4°	λ40° γ-6°	λ45° γ-10°
	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA
	AlCrN	AlTiN	AlCrN	AlTiN	AlCrN	AlCrN	TiSiN	AlTiN	TiSiN	AlTiN	TiSiN	AlTiN	TiSiN	AlCrN	AlCrN	TiSiN	TiSiN
	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9
	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER
																		
	S717	S217	S718	S218	S761	S260	S766	S225	S525	S226	S526	S227	S527	S765	S264	S524	S521
	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	4.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	6.00 - 20.00	3.00 - 20.00	6.00 - 20.00	6.00 - 20.00	3.00 - 16.00	3.00 - 16.00

AMG	413	413	414	414	415	415	416	417	417	418	418	419	419	420	421	422	423	ISO
1.1	■110C		■70C		■140D		■140D							■140D				P 1
1.2	■110C		■70C		■140D		■140D							■140D				P 1
1.3	■100C		■65C		■130D		■130D							■130D				P 2
1.4	■100C		■65C		■130D		■130D							■130D				P 3
1.5	■95C		■60C		■120D		■120D							■120D				P 4
1.6		■72C		■45C		■110D		■90C		■72C		■45C			■110D			H 1
1.7						■85B			■70A		■56A		■35A		■85B	■56A	■70A	H 3
1.8									■50A		■40A		■25A			■40A	■50A	H 4
2.1	■65B		■40B		■80C		■80C							■80C				M 1
2.2	■55B		■35B		■70C		■70C							■70C				M 3
2.3		■56B		■35B		■70C		■70B		■56B		■35B			■70C			M 2
2.4		■40B		■25B		■50C		■50B		■40B		■25B			■50C			S 2
3.1	■135C		■85C		■170D		■170D							■170D				K 1
3.2	■120C		■75C		■150D		■150D							■150D				K 2
3.3	■100C		■65C		■130D		■130D							■130D				K 3
3.4	■95C		■60C		■120D		■120D							■120D				K 4
4.1																		S 1
4.2	■55B		■35B		■70C		■70C							■70C				S 2
4.3		■40B		■25B		■50C		■50B		■40B		■25B			■50C			S 3
5.1																		S 1
5.2	■55B		■35B		■70C		■70C							■70C				S 2
5.3		■40B		■25B		■50C		■50B		■40B		■25B			■50C			S 3
6.1	●200E		●125E															N 3
6.2	●190E		●115E															N 4
6.3	●175E		●110E															N 3
6.4	●160E		●100E															N 4
7.1	●200E		●125E															N 1
7.2	●190E		●115E															N 1
7.3	●175E		●110E															N 1
7.4	●160E		●100E															N 2
8.1																		O
8.2																		O
8.3																		O
9.1																		H
10.1																		O

DORMER

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	W	N	N
	Z 4	Z 4 ≠	Z 4 ≠	Z 4 ≠	Z 4-6	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 4	Z 4	Z 4	Z 2	Z 2	Z 2
	λ40° γ-6°	λ40° γ10°	λ40° γ4°	λ≠ γ10°	λ25° γ0°	λ30° γ3°	λ30° γ3°	λ30° γ3°	λ30° γ-10°	λ30° γ-10°	λ30° γ-10°	λ30° γ10°	λ30° γ-10°	λ30° γ-10°	λ30° γ10°	λ30° γ15°	λ40° γ10°	λ40° γ10°
	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA
	TiSiN	AlCrN	AlCrN	TiSiN	TiSiN	TiSiN	TiSiN	TiSiN	TiSiN	TiSiN	TiSiN	X-CEED	TiSiN	TiSiN	X-CEED	Hi	AlTiN	AlTiN
	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9
	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER
																		
	S523	S763	S262	S767	S536	S229	S231	S233	S529	S531	S533	S501	S534	S535	S511	S629	S739	S740
	1.50 - 16.00	3.00 - 20.00	3.00 - 20.00	4.00 - 20.00	6.00 - 12.00	1.50 - 16.00	1.50 - 16.00	2.00 - 16.00	1.50 - 16.00	1.50 - 16.00	2.00 - 16.00	1.00 - 16.00	3.00 - 16.00	3.00 - 16.00	3.00 - 16.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00

AMG	424	425	426	428	429	430	431	432	433	434	435	436	437	438	439	440	441	441	ISO
1.1		■140D		■140D								■181B			■230B		■140C	■140C	P 1
1.2		■140D		■140D								■181B			■192B		■140C	■140C	P 1
1.3		■130D		■130D								■118B			■153B		■130C	■130C	P 2
1.4		■130D		■130D								■118B			■153B		■130C	■130C	P 3
1.5		■120D		■120D								■90B			■115B		■120C	■120C	P 4
1.6			■110D			■630C	■500C	■315C				■72B			■92B				H 1
1.7	■70A		■85B		■105E				■330A	■260A	■165A	●45A	■330A	■260A	●61A				H 3
1.8	■50A				■75E				■280A	■225A	■140A		■280A	■225A					H 4
2.1		■80C		■80C								■81A			■115A		■80B	■80B	M 1
2.2		■70C		■70C								■54A			■76A		■70B	■70B	M 3
2.3			■70C			■540B	■430B	■270B				■54A			■76A				M 2
2.4			■50C			■315B	■250B	■155B											S 2
3.1		■170D		■170D								■136B			■192B		■170C	■170C	K 1
3.2		■150D		■150D								■81B			■115B		■155C	■155C	K 2
3.3		■130D		■130D								■109B			■115B		■145C	■145C	K 3
3.4		■120D		■120D								■72B			■96B		■130C	■130C	K 4
4.1												■136B			■192B				S 1
4.2		■70C		■70C								■90B			■96B		■70B	■70B	S 2
4.3			■50C			■315B	■250B	■155B				■45B			■61B				S 3
5.1												■136B			■192B				S 1
5.2		■70C		■70C								■27A			■38A		■70B	■70B	S 2
5.3			■50C			■315B	■250B	■155B				■22A			■30A				S 3
6.1												■363C			●384C	■350E	■250E	■250E	N 3
6.2												■363C			●384C	■300E	■235E	■235E	N 4
6.3												■363C			●384C	■250E	■220E	■220E	N 3
6.4												■54B			●61B	■200E	■200E	■200E	N 4
7.1												■950C			●950C	■600E	■250E	■250E	N 1
7.2												■950C			●950C	■500E	■235E	■235E	N 1
7.3												■681C			■576C	■400E	■220E	■220E	N 1
7.4												■363B			■307B	■350E	■200E	■200E	N 2
8.1												■318C			●307C	■800E			O
8.2												■318C			■307C	■800E			O
8.3												■318B			■307B				O
9.1												■5A			■9A				H
10.1																			O

DORMER

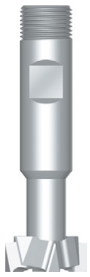
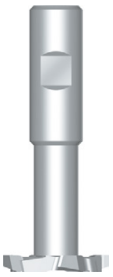
		HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E	HSS-E PM	HSS-E	
		P9	P9	P9	P9	P9	P9	P9	P9	P9	P9	P9			
		N	N	N	N	N	N	N	N	N	N	W	W	N	
		Z 2	Z 2	Z 2	Z 2	Z 2	Z 3	Z 3	Z 3	Z 3	Z 3	Z 2	Z 3	Z 2	
		λ30° γ12°	λ30° γ12°	λ30° γ12°	λ30° γ12°	λ30° γ12°	λ30° γ12°	λ30° γ12°	λ40° γ15°	λ30° γ12°	λ30° γ12°	λ40° γ20°	λ40° γ25°	λ30° γ12°	
		DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835A	
			TiCN		TiCN			Alcrona	Alcrona		Alcrona				
		e8	e8	e8	e8	e8	e8 h10	e8 h10	e8	e8	e8	e8	k10	js14	
		DIN 327D	DIN 327D	DIN 844K	DIN 844K	DORMER	DIN 327D	DIN 327D	DIN 327D	DIN 844K	DIN 844K	DIN 844K	DIN 844K	DORMER	
															
	S991	C110	C126	C123	C139	C135	C306	C353	C367	C305	C352	C159	C336	C167	
	Set	1.00 - 40.00	1.00 - 30.00	1/16 - 30.00	2.00 - 25.00	2.00 - 20.00	3.00 - 30.00	3.00 - 30.00	2.00 - 20.00	2.00 - 32.00	3.00 - 20.00	2.00 - 20.00	10.00 - 30.00	6.00 - 16.00	
AMG	442	443	443	445	445	447	448	448	449	450	450	451	452	453	ISO
1.1		■60A	■135A	■55A	■120A	■50A	●53A	●145A	■146A	●56A	●135A	■50A	●55A	■50A	P 1
1.2		■50A	■105A	■45A	■95A	■40A	■49A	■120A	■117A	■44A	■105A	●40A	●44A	■40A	P 1
1.3		●40B	■95B	■40B	■85B	●35B	■41B	■100B	●102B	■39B	■95B	●35B	●38B	●35B	P 2
1.4		●35B	■80B	■35B	■70B	●30B	●35B	■85B	●87B	●33B	■80B			●30B	P 3
1.5			●55C		●50C			■60C			■55C				P 4
1.6			●25C		●20C			●25C			●25C				H 1
1.7															H 3
1.8															H 4
2.1		●30F	●45F	●25F	●45F	●25F	●26F	●50F	■67F	●26F	●50F	●23F	●25F	●25F	M 1
2.2								●45F	■55F		●40F	●19F	●21F		M 3
2.3			●25F		●25F			●30F	■35F		●25F				M 2
2.4									■25F						S 2
3.1		●35A	■60A	●30A	■55A	●30A	●32A	■65A		●30A	■60A			●30A	K 1
3.2		●30A	■50A	●25A	■45A	●25A	●27A	■55A		●25A	■50A			●25A	K 2
3.3		●50B	■90B	●45B	■80B	●40B	●48B	■95B		●45B	■90B			●40B	K 3
3.4		●30B	■55B	●30B	■50B	●25B	●30B	■60B		●27B	■55B			●25B	K 4
4.1		■35D	■45D	■30D	■45D	●30D	■33D	■50D	●50D	■29D	■45D	●28D	●30D	●30D	S 1
4.2		●25D	■40D	●25D	■35D	●25D	●26D	■40D		●24D	■35D			●25D	S 2
4.3			●15D		●15D			●20D			●15D				S 3
5.1		■60D	■130D	■50D	■115D	■50D	■58D	■140D	●140D	■51D	■125D	●48D	●52D	■50D	S 1
5.2		●15C	■25C	●15C	■25C	●15C	●15C	■30C		■13C	■25C			●15C	S 2
5.3			●10D		●10D			●15D			●10D				S 3
6.1		■85C	■190C	■80C	■170C	■70C	■110C	■210C	■209C	■100C	■190C	■100C	■100C	■75C	N 3
6.2		■85C	■190C	■80C	■170C	■70C	■110C	■210C	●209C	■100C	■190C	■100C	■100C	■75C	N 4
6.3		■85C	■190C	■80C	■170C	■70C	■110C	■210C	●209C	■100C	■190C	■100C	■100C	■75C	N 3
6.4			●25C		●25C			●30C			●25C				N 4
7.1		●220E	●480E	●200E	●435E	●180E			■528E			■250E	■250E	●200E	N 1
7.2		●220E	●480E	●200E	●435E	●180E	●219E	●530E	●528E	●198E	●480E	■250E	■250E	●200E	N 1
7.3		●85E	●190E	●80E	●170E	●70E	●86E	●210E	●209E	●79E	●190E	■100E	■100E	●75E	N 1
7.4			●95A		●85A			●105A			●95A				N 2
8.1		●90C	●190C	●80C	●175C	●70C	●72C	●210C	●209C	●65C	●190C	■100C	■100E	●80C	O
8.2												■100C	■100E		O
8.3															O
9.1															H
10.1															O

DORMER

	HSS-E	HSS-E	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM
	N	N	N	N	N	N	N	N	N	W	HRA	HRA	HRA
	Z 2	Z 3	Z 3-5	Z 3-6	Z 3-5	Z 4-8	Z 4-6	Z 4-6	Z 4-6	Z 3	Z 3-4	Z 4-6	Z 3-6
	λ30° γ12°	λ30° γ12°	λ45° γ12°	λ45° γ12°	λ45° γ12°	λ30° γ12°	λ30° γ12°	λ30° γ12°	λ30° γ12°	λ40° γ25°	λ35° γ12°	λ35° γ12°	λ35° γ12°
	DIN 1835A	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B
				Alcrona	Alcrona		TiCN		TiCN		Alcrona	Alcrona	Alcrona
	e8	e8	k10	k10	k10	k10	k10	k10	k10	k10	k12	k12	k12
	DORMER	DIN 844L	DIN 844K	DIN 844K	DIN 844L	DIN 844K	DIN 844K	DIN 844L	DIN 844L	DIN 844L	DIN 844K	DIN 844K	DIN 844L
													
	C122	C346	C299	C907	C920	C247	C246	C273	C295	C333	C922	C428	C492
	5.00 - 22.00	3.00 - 20.00	3.00 - 20.00	3.00 - 32.00	6.00 - 25.00	2.00 - 50.00	2.00 - 25.00	2.00 - 40.00	2.00 - 40.00	10.00 - 30.00	6.00 - 32.00	6.00 - 40.00	6.00 - 30.00

AMG	454	455	456	456	457	458	458	460	460	462	463	464	465	ISO
1.1	■45A	●45A				■55S	■120S	■50S	■110S					P 1
1.2	■36A	■35A				■45S	■95S	■50S	■85S					P 1
1.3	●31B	●30B	■37T	■95T	■85T	■40T	■85T	■35T	■75T		●95H	●93H	■83H	P 2
1.4	●27B	●25B	■33T	■80T	■70T	●35T	■70T	●30T	■65T		■80H	■79H	■71H	P 3
1.5			■22U	■55U	■50U		●50U		●45U		■55I	■54I	■49I	P 4
1.6			●10U	■25U	■20U		●20U		●20U		■25I	■24I	■21I	H 1
1.7														H 3
1.8														H 4
2.1	●20F	●20F	■26Y	■50Y	■45Y	●25Y	●45Y	●10Y	●40Y		■50L	■48L	■43L	M 1
2.2			●21Y	■40Y	■35Y						■40L	■40L	■36L	M 3
2.3			■13Y	■25Y	■25Y		●25Y		●20Y		■25L	■26L	■23L	M 2
2.4														S 2
3.1	●25A	●25A	■30S	■60S	■55S	●30S	■55S	●25S	■50S		■60G	■61G	■55G	K 1
3.2	●20A	●20A	■25S	■50S	■45S	●25S	■45S	●20S	■40S		■50G	■50G	■45G	K 2
3.3	●36B	●35B	■45T	■90T	■80T	●45T	■79T	●40T	■70T		■90H	■88H	■79H	K 3
3.4	●22B	●20B	■27T	■55T	■50T	●25T	■49T	●25T	■45T		■55H	■55H	■49H	K 4
4.1	●25D	■25D	●29V	●45V	●40V	■30V	■43V	■25V	■40V		●45J	●46J	●41J	S 1
4.2	●20D	●20D	■57V	■85V	■35V	●25V	■35V	●20V	■30V		■35J	■37J	■34J	S 2
4.3			■10V	■15V	■15V		●15V		●15V		■15J	■16J	■15J	S 3
5.1	■43D	■45D	■51V	■125V	■115V	■50V	■116V	■45V	■105V		●125J	●127J	●114J	S 1
5.2	●11C	●10C	■13U	■25U	■25U	●15U	■24U	●10U	■20U		■25I	■27I	■24I	S 2
5.3			■5V	■10V	■10V		●10V		●10V		■10J	■11J	■10J	S 3
6.1	■112C	■70C				■80U	■170U	■70U	■155U	■90C				N 3
6.2	■112C	■70C	■100U	■190U	■170U	■80U	■170U	■70U	■155U	■90C	■190I	■190I	■170I	N 4
6.3	■112C	■70C				■80U	■170U	■70U	■155U	■90C				N 3
6.4							●25U		●20U		●25I	●25I	●23I	N 4
7.1	●270E	●180E				●200X	●435X	●180X	●390X	■225E				N 1
7.2	●270E	●180E				●200X	●435X	●180X	●390X	■225E				N 1
7.3	●81E					●80X	●170X	●70X	●155X	■90E				N 1
7.4			■39S	■95S	■85S		●85S		●75S		■95G	■95G	■85G	N 2
8.1	●112C	●70C				●80U	●175U	●70U	●155U	■90E				O
8.2										■90E				O
8.3														O
9.1														H
10.1														O

DORMER

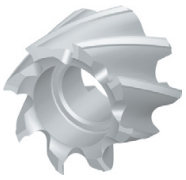
	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS	HSS-E
	NRA	NRA	NRA	NF	NF	NF	N	N	N	N	N
	Z 4-6	Z 4-6	Z 4-6	Z 4-6	Z 4-6	Z 4-6	Z 2	Z 2	Z 6-8	Z 6-8	Z 8-12
	λ35° γ12°	λ35° γ12°	λ35° γ12°	λ30° γ12°	λ30° γ12°	λ30° γ12°	λ30° γ12°	λ30° γ12°	λ15° γ10°	λ12° γ10°	λ15° γ15°
	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835 D B	DIN 1835D	DIN 1835B
		Alcrona	Alcrona		TiCN						
	k12	k12	k12	k12	k12	k12	e8	e8	d11	d11	js16
	DIN 844K	DIN 844K	DIN 844L	DIN 844K	DIN 844K	DIN 844L	DIN 327D	DIN 844K	DIN 851	DORMER	DORMER
											
	C407	C908	C948	C400	C413	C403	C500	C505	C800	C810	C825
	6.00 - 20.00	6.00 - 32.00	6.00 - 32.00	6.00 - 20.00	6.00 - 20.00	10.00 - 50.00	2.00 - 25.00	3.00 - 30.00	11.00 - 50.00	12.50 - 40.00	40.00 - 63.00

AMG	466	466	467	468	468	469	470	471	472	473	474	ISO
1.1	●55G			●50G	●100G	●45G	■55S	■50S	■35P	■25P	■35P	P 1
1.2	■44G			■40G	■80G	■35G	■45S	■40S	■35P	■25P	■30P	P 1
1.3	■38H	■93H	■83H	■35H	■70H	■30H	●40T	●35T	■30O	■20O	■30O	P 2
1.4	■33H	■79H	■71H	●30H	■60H	●25H	●35T	●30T	■25O	■15O	■20O	P 3
1.5	■22I	■54I	■49I		●40I				■20N	●10N	■15N	P 4
1.6	●10I	●24I	■21I		●20I				■15N	●10N	■10N	H 1
1.7												H 3
1.8												H 4
2.1	■25L	■48L	■43L	●25L	●35L	●20L	●25Y	●25Y	■20M	■15M	■15M	M 1
2.2	●21L	■40L	■36L						■15M	●10M	■10M	M 3
2.3	■13L	■26L	■23L		●20L				■10M	●10M	■10M	M 2
2.4												S 2
3.1	■30G	■61G	■55G	●30G	■45G	●25G	●30S	●30S	■20P	■20P	■25P	K 1
3.2	■25G	■50G	■45G	●25G	■35G	●20G	●25S	●25S	■20P	■20P	■20P	K 2
3.3	■44H	■88H	■79H	●40H	■65H	●35H	●45T	●40T	■30O	■20O	■30O	K 3
3.4	■27H	■55H	■49H	●25H	■40H	●20H	●30T	●25T	■20O	■10O	■20O	K 4
4.1	●30J	●46J	●41J	●30J	●35J	●25J	■30V	■30V	■30P	■20P	■35P	S 1
4.2	■25J	■37J	■34J	●25J	■30J	●20J	●25V	●25V	■20P	●15P	■20P	S 2
4.3	■11J	■16J	■15J		●10J				■10O	●5O	■10O	S 3
5.1	●52J	●127J	●114J	●50J	●95J	●45J	■50V	■50V	■35P	■25P	■35P	S 1
5.2	■14I	■27I	■24I	●15I	■20I	●10I	●15U	●15U	■10O	●5O	■5O	S 2
5.3	■6J	■11J	■10J		●10J				■5N	●5N	■5N	S 3
6.1				●70I	●140I	●65I	■85U	■80U	■100Q	■50Q	■30Q	N 3
6.2	■100I	■190I	■170I	■70I	■140I	■65I	■85U	■80U	■100P	■55P	■35P	N 4
6.3				■70I	■140I	■65I	■85U	■80U	■35P	■20P	■35P	N 3
6.4	●13I	●25I	●23I		●20I				■15O	■5O	■10O	N 4
7.1							●220X	●200X	■250R	■60R	■70R	N 1
7.2				●180K	●360K	●160K	●220X	●200X	■250R	■50R	■70R	N 1
7.3				●70K	●140K	●65K	●85X	●80X	■65R	■30R	■30R	N 1
7.4	●39G	●95G	■85G		●70G				■45Q	●20Q	■20Q	N 2
8.1				●70I	●145I	●65I	●90U	●80U	■100R	●50R	■35R	O
8.2												O
8.3												O
9.1												H
10.1									■45Q	●20Q	■20Q	O

DORMER

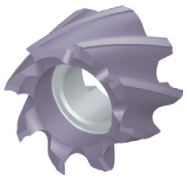
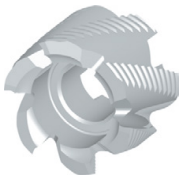
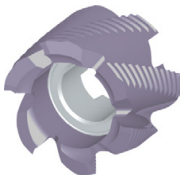
	HSS-E	HSS-E	HSS	HSS	HSS	HSS-E	HSS-E	HSS	HSS-E	HSS-E
	NF	N	N	N	N	N	N	N	N	
	Z 6-8	Z 6-12	Z 6-12	Z 6-8	Z 6-8	Z 10-12	Z 10-12	Z 4	Z 4-6	Z 16-30
	λ12° γ10°	λ10° γ10°	λ12° γ10°	λ0° γ0°	λ0° γ0°	λ0° γ0°	λ0° γ0°	λ0° γ0°	λ0° γ0°	λ15° γ10°
	DIN 1835B	DIN 1835 D B	DIN 1835D	DIN 1835D	DIN 1835D	DIN 1835B	DIN 1835B		DIN 1835B	
	d11	h11				js16	js16			js16
	DIN 851	DIN 850	DORMER	DORMER	DORMER	DIN 1833C	DIN 1833D	BS 122/4	DORMER	DIN 885A
	C801	C822	C820	C837	C835	C830	C831	C710	C700	D200
	16.00 - 32.00	4.50 - 45.50	10.50 - 45.50	13.00 - 38.00	1/2 - 1.1/2	12.00 - 32.00	12.00 - 32.00	1/16 - 1/2	1.00 - 20.00	50.00 - 125.00

AMG	475	476	477	479	480	481	482	483	484	485	ISO
1.1	■40P	■40P	■25P	■20P	■20P	■30P	■30P	■20P	■35P	■45P	P 1
1.2	■40P	■40P	■25P	■20P	■20P	■30P	■30P	■20P	■35P	■40P	P 1
1.3	■30O	■30O	■20O	■15O	■15O	■25O	■25O	■15O	■25O	■35P	P 2
1.4	■25O	■25O	■20O	■15O	■15O	■20O	■20O	■15O	■25O	■30P	P 3
1.5	■20N	■20N	●10N	●10N	●10N	■15N	■15N	●10N	■15N	■20P	P 4
1.6	■15N	■15N	●10N	●5N	●5N	■10N	■10N	●10N	■15N	■10P	H 1
1.7											H 3
1.8											H 4
2.1	■25M	■25M	■15M	■10M	■10M	■20M	■20M	■15M	■20M	■30P	M 1
2.2	■15M	■15M	■10M	●10M	●10M	■15M	■15M	■10M	■15M	■20P	M 3
2.3	■15M	■15M	●10M	●5M	●5M	■10M	■10M	●5M	■10M	■10Q	M 2
2.4											S 2
3.1	■25P	■25P	■20P	■15P	■15P	■20P	■20P	■20P	■20P	■30Q	K 1
3.2	■20P	■20P	■20P	■15P	■15P	■15P	■15P	■15P	■15P	■25Q	K 2
3.3	■35O	■30O	■20O	■15O	■15O	■25O	■25O	■15O	■25O	■40Q	K 3
3.4	■20O	■20O	■15O	■10O	■10O	■15O	■15O	■10O	■15O	■25Q	K 4
4.1	■30P	■30P	■20P	■15P	■15P	■25P	■25P	■15P	■25P	■30N	S 1
4.2	■20P	■20P	●15P	●10P	●10P	■15P	■15P	■10P	■20P	■20O	S 2
4.3	■10O	■10O	●10O	●5O	●5O	■10O	■10O	●5O	■10O	■15O	S 3
5.1	■40P	■35P	■25P	■20P	■20P	■30P	■30P	■20P	■35P	■40P	S 1
5.2	■10O	■10O	●5O	●5O	●5O	■10O	■10O	■5O	■10O	■15O	S 2
5.3	■5N	■5N	●5N	●5N	●5N	■5N	■5N	●5N	■5N	■10M	S 3
6.1	■110Q	■100Q	■50Q	■40Q	■40Q	■90Q	■90Q	■40Q	■90Q	■150P	N 3
6.2	■110P	■100P	■55P	■45P	■45P	■90P	■90P	■45P	■90P	■150P	N 4
6.3	■40P	■100P	■55P	■15P	■15P	■75P	■75P	■45P	■90P	■150P	N 3
6.4	■15O	■15O	●5O	●5O	●5O	■10O	■10O	●5O	■15O	■15M	N 4
7.1	■275R	■260R	■65R	■50R	■50R	■190R	■190R	■55R	■245R	■400Q	N 1
7.2	■275R	■260R	■50R	■40R	■40R	■190R	■190R	■40R	■230R	■400Q	N 1
7.3	■70R	■66R	■35R	■25R	■25R	■55R	■55R	■25R	■60R	■100Q	N 1
7.4	■45Q	■44Q	●20Q	●17Q	●17Q	■35Q	■35Q	●15Q	■40Q	■70Q	N 2
8.1	■110R	■100R	●50R	●40R	●40R	■75R	■75R			■150M	O
8.2											O
8.3											O
9.1											H
10.1	■45Q	■45Q	●20Q			■35Q	■35Q	●15Q	■40Q		O

	HSS-E	HSS	HSS	HSS	HSS	HSS	HSS	HSS-E
								N
	Z 28-44	Z 28-100	Z 40-200	Z 80-180	Z 100-140	Z 128-220	Z 160-350	Z 8-12
	λ15° γ10°	γ15°	γ5°	γ18°	γ18°	γ18°	γ18°	λ30° γ12°
				ST	ST	ST	ST	
	js16							js16
	DIN 885A	DIN 1838	DIN 1837	DORMER	DORMER	DORMER	DORMER	DIN 1880
								
	D763	**D745**	**D747**	**D752**	**D753**	**D750**	**D751**	**D400**
	63.00 - 125.00	50.00 - 250.00	32.00 - 200.00	250.00 - 350.00	250.00 - 350.00	200.00 - 350.00	200.00 - 350.00	40.00 - 63.00

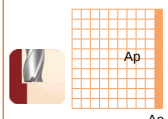
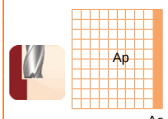
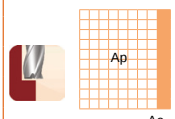
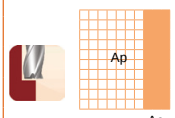
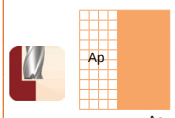
AMG	485	486	488	490	490	491	491	492	ISO
1.1	■45P	■40R	■40R	■40R	■40R	■40R	■40R	■40J	P 1
1.2	■40P	■30R	■30R	■30R	■30R	■30R	■30R	■40J	P 1
1.3	■35P	■30R	■30R	■30R	■30R	■30R	■30R	■30I	P 2
1.4	■30P	■20S	■20S	■20S	■20S	■20S	■20S	■25I	P 3
1.5	■20P							●20H	P 4
1.6	■10P							●15H	H 1
1.7									H 3
1.8									H 4
2.1	■30P	●10S	●10S	●10S	●10S	●10S	●10S	■25H	M 1
2.2	■20P	●10S	●10S	●10S	●10S	●10S	●10S	●15G	M 3
2.3	■10Q							■10G	M 2
2.4									S 2
3.1	■30Q	■40R	■40R	■40R	■40R	■40R	■40R	■20J	K 1
3.2	■25Q	■40R	■40R	■40R	■40R	■40R	■40R	■20J	K 2
3.3	■40Q	■30R	■30R	■30R	■30R	■30R	■30R	■30I	K 3
3.4	■25Q							■20I	K 4
4.1	■30N							■30J	S 1
4.2	■20O							●20I	S 2
4.3	■15O							●10I	S 3
5.1	■40P							■35J	S 1
5.2	■15O							●10I	S 2
5.3	■10M							●5H	S 3
6.1	■150P	■200R	■200R	■200R	■200R	■200R	■200R	■105M	N 3
6.2	■150P	■200T	■200T	■200T	■200T	■200T	■200T	■105K	N 4
6.3	■150P	■200T	■200T	■200T	■200T	■200T	■200T	■35K	N 3
6.4	■15M							●15H	N 4
7.1	■400Q	■600T	■600T	■600T	■600T	■600T	■600T	●260N	N 1
7.2	■400Q	■500T	■500T	■500T	■500T	■500T	■500T	■260N	N 1
7.3	■100Q	■500T	■500T	■500T	■500T	■500T	■500T	■65N	N 1
7.4	■70Q							●45L	N 2
8.1	■150M	■60T	■60T	■60T	■60T	■60T	■60T	●105N	O
8.2								●30N	O
8.3								●5L	O
9.1									H
10.1								●45K	O

DORMER

HSS-E	HSS-E	HSS-E	
N	NR	NR	
Z 8-12	Z 6-10	Z 6-10	
λ30° γ12°	λ30° γ12°	λ30° γ12°	
TiCN		TiCN	
js16	js16	js16	
DIN 1880	DIN 1880	DIN 1880	
			
D420	**D402**	**D422**	
40.00 - 63.00	40.00 - 63.00	40.00 - 63.00	

AMG	492	493	493	ISO
1.1	■75J	■40J	■75J	P 1
1.2	■75J	■40J	■75J	P 1
1.3	■65l	■30l	■65l	P 2
1.4	■50l	■25l	■50l	P 3
1.5	■35H	●20H	■35H	P 4
1.6	■30H	●15H	■30H	H 1
1.7				H 3
1.8				H 4
2.1	■35H	■25H	■35H	M 1
2.2	■30G	●15G	■30G	M 3
2.3	■20G	■10G	■20G	M 2
2.4				S 2
3.1	■35J	■20J	■35J	K 1
3.2	■30J	■20J	■30J	K 2
3.3	■50l	■30l	■50l	K 3
3.4	■30l	■20l	■30l	K 4
4.1	■35J	■30J	■35J	S 1
4.2	■25l	●20l	■25l	S 2
4.3	■15l	●10l	■15l	S 3
5.1	■75J	■35J	■75J	S 1
5.2	■20l	●10l	■20l	S 2
5.3	■10H	●5H	■10H	S 3
6.1	■150M	■105M	■150M	N 3
6.2	■150K	■105K	■150K	N 4
6.3	■50K	■35K	■50K	N 3
6.4	■20H	●15H	■20H	N 4
7.1	●260N	●260N	●260N	N 1
7.2	■260N	■260N	■260N	N 1
7.3	■135N	■65N	■135N	N 1
7.4	■75L	●45L	■75L	N 2
8.1	■120N	●105N	■120N	O
8.2	●60N	●30N	●60N	O
8.3	●15L	●5L	●15L	O
9.1				H
10.1	■125K	●45K	■125K	O

HM

Z 1	Z 2	Z 3	Z 4	Z >4	Ae (x Ø)	Ap (x Ø)	ø [mm] fz [mm/Z] ± 25 %	Ø	1	2	3	4	5	6	8	10	12	14	16	18	20
			●	■	0.05	1.5		A	0.012	0.024	0.035	0.045	0.055	0.065	0.080	0.093	0.107	0.121	0.134	0.149	0.162
								B	0.016	0.032	0.047	0.061	0.074	0.087	0.107	0.124	0.143	0.162	0.179	0.198	0.216
								C	0.020	0.040	0.058	0.076	0.092	0.108	0.134	0.156	0.179	0.202	0.224	0.248	0.271
								D	0.024	0.048	0.070	0.091	0.111	0.130	0.160	0.187	0.214	0.242	0.268	0.297	0.325
								E	0.028	0.056	0.081	0.106	0.129	0.152	0.187	0.218	0.250	0.283	0.313	0.347	0.379
								F	0.032	0.064	0.093	0.121	0.148	0.173	0.214	0.249	0.286	0.323	0.358	0.396	0.433
								G	0.037	0.071	0.105	0.136	0.166	0.195	0.240	0.280	0.321	0.364	0.403	0.446	0.487
								H	0.041	0.079	0.116	0.152	0.185	0.216	0.267	0.311	0.357	0.404	0.447	0.495	0.541
		●	■	■	0.08	1.5		A	0.010	0.019	0.028	0.036	0.044	0.052	0.064	0.074	0.085	0.096	0.107	0.118	0.129
								B	0.013	0.025	0.037	0.048	0.059	0.069	0.085	0.099	0.114	0.128	0.142	0.157	0.172
								C	0.016	0.032	0.046	0.060	0.073	0.086	0.106	0.124	0.142	0.161	0.178	0.197	0.215
								D	0.019	0.038	0.055	0.072	0.088	0.103	0.127	0.148	0.170	0.193	0.213	0.236	0.258
								E	0.023	0.044	0.065	0.084	0.103	0.120	0.149	0.173	0.199	0.225	0.249	0.276	0.301
								F	0.026	0.050	0.074	0.096	0.118	0.138	0.170	0.198	0.227	0.257	0.284	0.315	0.344
								G	0.029	0.057	0.083	0.108	0.132	0.155	0.191	0.223	0.256	0.289	0.320	0.354	0.387
								H	0.032	0.063	0.092	0.120	0.147	0.172	0.212	0.247	0.284	0.321	0.356	0.394	0.430
		■	■	●	0.15	1.5		A	0.007	0.014	0.021	0.027	0.033	0.038	0.047	0.055	0.063	0.071	0.079	0.087	0.095
								B	0.010	0.019	0.027	0.036	0.043	0.051	0.063	0.073	0.084	0.095	0.105	0.116	0.127
								C	0.012	0.023	0.034	0.045	0.054	0.064	0.078	0.091	0.105	0.119	0.132	0.146	0.159
								D	0.014	0.028	0.041	0.053	0.065	0.076	0.094	0.110	0.126	0.143	0.158	0.175	0.191
								E	0.017	0.033	0.048	0.062	0.076	0.089	0.110	0.128	0.147	0.166	0.184	0.204	0.223
								F	0.019	0.037	0.055	0.071	0.087	0.102	0.126	0.146	0.168	0.190	0.210	0.233	0.255
								G	0.021	0.042	0.062	0.080	0.098	0.115	0.141	0.165	0.189	0.214	0.237	0.262	0.286
								H	0.024	0.047	0.068	0.089	0.109	0.127	0.157	0.183	0.210	0.238	0.263	0.291	0.318
		■	■		0.30	1.5		A	0.005	0.010	0.015	0.019	0.024	0.028	0.034	0.040	0.046	0.052	0.058	0.064	0.070
								B	0.007	0.014	0.020	0.026	0.032	0.037	0.046	0.053	0.061	0.069	0.077	0.085	0.093
								C	0.009	0.017	0.025	0.032	0.040	0.046	0.057	0.067	0.077	0.087	0.096	0.106	0.116
								D	0.010	0.020	0.030	0.039	0.048	0.056	0.069	0.080	0.092	0.104	0.115	0.127	0.139
								E	0.012	0.024	0.035	0.045	0.055	0.065	0.080	0.093	0.107	0.121	0.134	0.149	0.162
								F	0.014	0.027	0.040	0.052	0.063	0.074	0.092	0.107	0.122	0.138	0.153	0.170	0.185
								G	0.016	0.031	0.045	0.058	0.071	0.083	0.103	0.120	0.138	0.156	0.173	0.191	0.209
								H	0.017	0.034	0.050	0.065	0.079	0.093	0.114	0.133	0.153	0.173	0.192	0.212	0.232
		●	■		0.60	1.5		A	0.004	0.008	0.011	0.015	0.018	0.021	0.026	0.031	0.035	0.040	0.044	0.049	0.053
								B	0.005	0.010	0.015	0.020	0.024	0.028	0.035	0.041	0.047	0.053	0.059	0.065	0.071
								C	0.007	0.013	0.019	0.025	0.030	0.035	0.044	0.051	0.058	0.066	0.073	0.081	0.089
								D	0.008	0.016	0.023	0.030	0.036	0.043	0.052	0.061	0.070	0.079	0.088	0.097	0.106
								E	0.009	0.018	0.027	0.035	0.042	0.050	0.061	0.071	0.082	0.093	0.103	0.114	0.124
								F	0.011	0.021	0.030	0.040	0.048	0.057	0.070	0.082	0.094	0.106	0.117	0.130	0.142
								G	0.012	0.023	0.034	0.045	0.054	0.064	0.079	0.092	0.105	0.119	0.132	0.146	0.159
								H	0.013	0.026	0.038	0.050	0.061	0.071	0.087	0.102	0.117	0.132	0.146	0.162	0.177

■ Förstahandsval
Paras valinta
Førstevalg
Perfekt

● Andrahandsval
Hyvä valinta
Andrevalg
God

DORMER

HM

Z 1	Z 2	Z 3	Z 4	Z >4	Ae (x Ø)	Ap (x Ø)	ø [mm] fz [mm/Z] ± 25 %	Ø 1	2	3	4	5	6	8	10	12	14	16	18	20
■	■	■			1.0	0.5	A	0.003	0.006	0.009	0.012	0.014	0.017	0.021	0.024	0.028	0.032	0.035	0.039	0.042
							B	0.004	0.008	0.012	0.016	0.019	0.023	0.028	0.033	0.037	0.042	0.047	0.052	0.057
							C	0.005	0.010	0.015	0.020	0.024	0.028	0.035	0.041	0.047	0.053	0.058	0.065	0.071
							D	0.006	0.012	0.018	0.024	0.029	0.034	0.042	0.049	0.056	0.063	0.070	0.078	0.085
							E	0.007	0.015	0.021	0.028	0.034	0.040	0.049	0.057	0.065	0.074	0.082	0.091	0.099
							F	0.008	0.017	0.024	0.032	0.039	0.045	0.056	0.065	0.075	0.084	0.093	0.103	0.113
							G	0.010	0.019	0.027	0.036	0.043	0.051	0.063	0.073	0.084	0.095	0.105	0.116	0.127
							H	0.011	0.021	0.030	0.040	0.048	0.057	0.070	0.081	0.093	0.106	0.117	0.129	0.141
■	■	■			1.0	1.0	A	0.003	0.005	0.007	0.010	0.012	0.014	0.017	0.020	0.022	0.025	0.028	0.031	0.034
							B	0.003	0.007	0.010	0.013	0.015	0.018	0.022	0.026	0.030	0.034	0.037	0.041	0.045
							C	0.004	0.008	0.012	0.016	0.019	0.023	0.028	0.033	0.037	0.042	0.047	0.052	0.057
							D	0.005	0.010	0.015	0.019	0.023	0.027	0.033	0.039	0.045	0.051	0.056	0.062	0.068
							E	0.006	0.012	0.017	0.022	0.027	0.032	0.039	0.046	0.052	0.059	0.065	0.072	0.079
							F	0.007	0.013	0.019	0.025	0.031	0.036	0.045	0.052	0.060	0.068	0.075	0.083	0.090
							G	0.008	0.015	0.022	0.029	0.035	0.041	0.050	0.059	0.067	0.076	0.084	0.093	0.102
							H	0.008	0.017	0.024	0.032	0.039	0.045	0.056	0.065	0.075	0.084	0.093	0.103	0.113
	■		■		0.10	0.05	A	0.004	0.008	0.012	0.016	0.020	0.023	0.029	0.033	0.038	0.043	0.048	0.053	0.058
							B	0.006	0.011	0.017	0.022	0.026	0.031	0.038	0.044	0.051	0.058	0.064	0.071	0.077
							C	0.007	0.014	0.021	0.027	0.033	0.039	0.048	0.056	0.064	0.072	0.080	0.088	0.097
							D	0.009	0.017	0.025	0.032	0.040	0.046	0.057	0.067	0.076	0.086	0.096	0.106	0.116
							E	0.010	0.020	0.029	0.038	0.046	0.054	0.067	0.078	0.089	0.101	0.112	0.124	0.135
							F	0.012	0.023	0.033	0.043	0.053	0.062	0.076	0.089	0.102	0.115	0.128	0.141	0.154
							G	0.013	0.025	0.037	0.049	0.059	0.069	0.086	0.100	0.115	0.130	0.144	0.159	0.174
							H	0.014	0.028	0.042	0.054	0.066	0.077	0.095	0.111	0.127	0.144	0.160	0.177	0.193

■ Förstahandsval
Paras valinta
Førstevalg
Perfekt

● Andrahandsval
Hyvä valinta
Andrevalg
God

DORMER

HSS | HSS-E | HSS-E PM

Z 2	Z 3	Z 4	Z >4	Ø	Ae (x Ø)	Ap (x Ø)	fz	Ø [mm] fz [mm/Z] ± 25 %

Ø	1	2	3	4	5	6	8	10	12	14	16	18	20	22	25	28	30	32	36	40	50
A	0.004	0.008	0.013	0.017	0.024	0.029	0.043	0.060	0.072	0.084	0.096	0.097	0.096	0.099	0.105	0.109	0.108	0.106	0.108	0.108	0.105
B	0.004	0.007	0.012	0.015	0.022	0.026	0.039	0.054	0.065	0.076	0.086	0.087	0.086	0.089	0.095	0.098	0.097	0.095	0.097	0.097	0.095
C	0.003	0.006	0.011	0.014	0.019	0.023	0.035	0.049	0.058	0.068	0.078	0.079	0.078	0.080	0.085	0.088	0.087	0.086	0.087	0.087	0.085
D	0.004	0.007	0.011	0.014	0.020	0.024	0.037	0.051	0.061	0.071	0.081	0.082	0.081	0.084	0.089	0.099	0.091	0.097	0.091	0.101	0.101
E	0.007	0.012	0.018	0.024	0.035	0.042	0.063	0.087	0.105	0.122	0.140	0.141	0.140	0.144	0.153	0.171	0.157	0.168	0.157	0.175	0.175
F	0.007	0.009	0.013	0.018	0.021	0.025	0.033	0.041	0.050	0.055	0.064	0.072	0.079	0.079	0.085	0.085	0.085	0.085	0.085	0.085	0.085
G						0.026	0.034	0.036	0.043	0.050	0.057	0.064	0.071	0.071	0.054	0.053	0.054	0.053	0.056	0.057	0.060
H						0.023	0.031	0.032	0.039	0.045	0.051	0.058	0.064	0.064	0.049	0.048	0.049	0.048	0.050	0.051	0.054
I						0.021	0.028	0.029	0.035	0.041	0.046	0.052	0.058	0.058	0.044	0.043	0.044	0.043	0.045	0.046	0.049
J						0.024	0.031	0.033	0.039	0.046	0.052	0.059	0.065	0.065	0.049	0.049	0.049	0.049	0.051	0.052	0.055
K						0.035	0.047	0.065	0.079	0.092	0.105	0.088	0.098	0.097	0.110	0.110	0.110	0.110	0.115	0.118	0.123
L						0.010	0.013	0.017	0.020	0.025	0.028	0.030	0.032	0.033	0.034	0.036	0.038	0.039	0.040	0.042	0.042
M		0.008	0.012	0.018	0.023	0.031	0.041	0.057	0.069	0.080	0.091	0.103	0.114	0.090	0.103	0.085	0.091	0.097	0.110	0.107	0.086
N		0.007	0.011	0.016	0.021	0.028	0.037	0.051	0.062	0.072	0.082	0.093	0.103	0.081	0.093	0.077	0.082	0.087	0.099	0.096	0.077
O		0.006	0.010	0.015	0.019	0.025	0.033	0.046	0.056	0.065	0.074	0.083	0.092	0.073	0.083	0.069	0.074	0.079	0.089	0.087	0.070
P		0.007	0.010	0.016	0.020	0.027	0.035	0.049	0.059	0.069	0.079	0.088	0.098	0.078	0.088	0.073	0.079	0.084	0.094	0.092	0.074
Q		0.009	0.014	0.021	0.026	0.036	0.048	0.066	0.079	0.092	0.106	0.089	0.099	0.098	0.111	0.111	0.119	0.127	0.143	0.139	0.148
R		0.012	0.016	0.020	0.025	0.029	0.038	0.047	0.056	0.065	0.073	0.083	0.092	0.092	0.092	0.092	0.092	0.104	0.104	0.108	0.108
S		0.010	0.015	0.023	0.029	0.039	0.051	0.071	0.086	0.100	0.114	0.129	0.143	0.113	0.129	0.107	0.114	0.122	0.137	0.133	0.107
T		0.009	0.014	0.021	0.026	0.035	0.046	0.064	0.077	0.090	0.103	0.116	0.129	0.102	0.116	0.096	0.103	0.110	0.123	0.120	0.096
U		0.008	0.012	0.019	0.023	0.032	0.041	0.058	0.070	0.081	0.092	0.104	0.116	0.092	0.104	0.087	0.092	0.099	0.111	0.108	0.087
V		0.009	0.013	0.020	0.025	0.033	0.044	0.061	0.074	0.086	0.098	0.110	0.123	0.097	0.110	0.092	0.098	0.105	0.118	0.115	0.092
X		0.012	0.017	0.026	0.033	0.045	0.059	0.082	0.099	0.115	0.132	0.111	0.124	0.122	0.139	0.139	0.148	0.158	0.178	0.173	0.186
Y		0.015	0.020	0.025	0.031	0.036	0.047	0.059	0.070	0.081	0.092	0.104	0.115	0.115	0.115	0.115	0.115	0.130	0.130	0.136	0.136

■ Förstahandsval
Paras valinta
Førstevalg
Perfekt

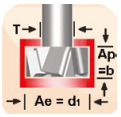
● Andrahandsval
Hyvä valinta
Andrevalg
God

DORMER

HSS | HSS-E | HSS-E PM

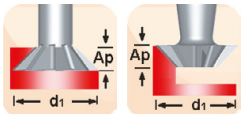
Ø — Ø [mm] fz [mm/Z] ± 25 %

C800 C801 C810 C820 C822 C825



Ø	10	12	16	20	25	32	38	50	63	80	100	125	160	200	300	350
M		0.017	0.022	0.036	0.038	0.041	0.044	0.045	0.047							
N		0.022	0.027	0.045	0.046	0.052	0.058	0.06	0.062							
O		0.025	0.03	0.052	0.055	0.056	0.058	0.06	0.062							
P		0.030	0.043	0.063	0.064	0.062	0.068	0.07	0.072							
Q		0.045	0.048	0.063	0.064	0.066	0.068	0.07	0.072							
R		0.055	0.07	0.115	0.119	0.123	0.126	0.128	0.13							

C830 C835 C837 C831



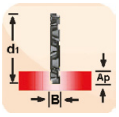
Ø	10	12	16	20	25	32	38	50	63	80	100	125	160	200	300	350
M		0.036	0.045	0.057	0.064	0.074	0.084									
N		0.048	0.058	0.073	0.084	0.095	0.105									
O		0.052	0.063	0.081	0.092	0.103	0.114									
P		0.059	0.071	0.089	0.1	0.112	0.125									
Q		0.072	0.088	0.106	0.12	0.133	0.147									
R		0.079	0.095	0.114	0.13	0.143	0.157									

C700 C710



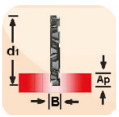
Ø	10	12	16	20	25	32	38	50	63	80	100	125	160	200	300	350
M	0.03	0.03	0.03	0.04	0.05	0.05										
N	0.04	0.04	0.04	0.05	0.06	0.07										
O	0.04	0.04	0.05	0.06	0.07	0.08										
P	0.04	0.04	0.05	0.07	0.08	0.08										
Q	0.05	0.05	0.07	0.08	0.09	0.10										
R	0.06	0.06	0.07	0.09	0.10	0.11										

D745 D747 D750 D751 D752 D753



Ø	10	12	16	20	25	32	38	50	63	80	100	125	160	200	300	350
R						0.040		0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
S						0.020		0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
T						0.060		0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060

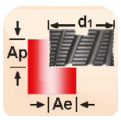
D200 D763



Ap= 0.1 X Ø

Ø	10	12	16	20	25	32	38	50	63	80	100	125	160	200	300	350
M								0.040	0.050	0.060	0.070	0.080	0.090	0.100		
N								0.060	0.070	0.080	0.090	0.100	0.105	0.115		
O								0.070	0.080	0.090	0.100	0.105	0.110	0.120		
P								0.080	0.090	0.095	0.110	0.115	0.115	0.125		
Q								0.090	0.100	0.105	0.110	0.115	0.125	0.135		

D402 D422

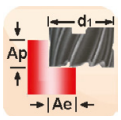


Ae= 0.75 x Ø

Ap= 0.25 x Ø

Ø	40	50	60	80	100	125										
G	0.042	0.049	0.040	0.047	0.040	0.037										
H	0.050	0.059	0.047	0.055	0.048	0.044										
I	0.062	0.071	0.058	0.066	0.058	0.054										
J	0.082	0.095	0.078	0.090	0.078	0.073										
K	0.118	0.140	0.110	0.130	0.110	0.103										
L	0.145	0.171	0.136	0.160	0.136	0.127										
M	0.185	0.160	0.170	0.200	0.170	0.160										
N	0.270	0.320	0.250	0.290	0.250	0.230										

D400 D420

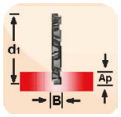


Ae= 0.75 x Ø

Ap= 0.1 x Ø

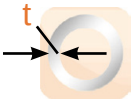
Ø	40	50	60	80	100											
G	0.042	0.049	0.040	0.047	0.040											
H	0.050	0.059	0.047	0.055	0.048											
I	0.062	0.071	0.058	0.066	0.058											
J	0.082	0.095	0.078	0.090	0.078											
K	0.118	0.140	0.110	0.130	0.110											
L	0.145	0.171	0.136	0.160	0.136											
M	0.185	0.160	0.170	0.200	0.170											
N	0.270	0.320	0.250	0.290	0.250											

DORMER



D750
D751
D752
D753

Val av tanddelning
Hammasjaon valinta
Tanndelings valg
Valg af tanddeling



t (mm)



Ø (mm)

	<1.0 mm	1.0 - 1.5 mm	1.5 - 2.0 mm	2.0 - 3.0 mm	3.0 - 4.0 mm	>4.0 mm	10 - 20 mm	20 - 40 mm	40 - 60 mm	
1.1	3	4	5	5	6	7	5	8		P 1
1.2	3	4	4	5	6	7	5	6		P 1
1.3	3	4	4	5	6	7	5	6		P 2
1.4	3	4	4	5	6	7	5	6		P 3
1.5	3	3	4	5	5	6	5	6	8	P 4
1.6										H 1
1.7										H 3
1.8										H 4
2.1	3	4	5	5	6	6	5	6	8	M 1
2.2	3	4	5	5	6	6	5	6	8	M 3
2.3	3	4	5	5	6	6	5	6	8	M 2
2.4	3	4	5	5	6	6	5	6	8	S 2
3.1							6	8		K 1
3.2							6	8		K 2
3.3							6	8		K 3
3.4							6	8		K 4
4.1										S 1
4.2										S 2
4.3										S 3
5.1										S 1
5.2										S 2
5.3										S 3
6.1	4	5	6	7	8	8	6	8		N 3
6.2	4	5	6	7	8	8	8			N 4
6.3	4	5	6	7	8	8	8			N 3
6.4	4	5	6	7	8		6	8		N 4
7.1	4	5	6	7	8	8	6	8		N 1
7.2	4	5	6	7	8	8	6	8		N 1
7.3	4	5	6	7	8	8	6	8		N 1
7.4	4	5	6	7	8	8	6	8		N 2
8.1										O
8.2										O
8.3										O
9.1										H
10.1										O



Rör
Putki
Rør
Rør



Stång
Tanko
Stang
Stang

DORMER

S802HA
S802HB

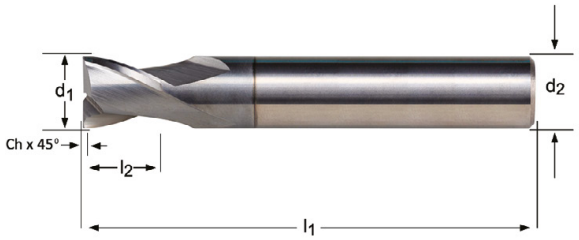
- Spårfräsar
- Kiilaurajyrsimet
- Sporfres
- Sporfræsere

S802HA; S802HB

▪ 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 3.1 3.2 3.3 3.4 6.2 6.3 6.4 7.2 7.3 7.4

• 2.3 2.4 4.1 4.2 5.1 5.2 6.1 7.1 8.1 8.2

S802HA	HM	P9	N	Z 2		λ 28° γ 9°	DIN 6535HA	Alcrona				DIN 6527K
S802HB	HM	P9	N	Z 2		λ 28° γ 9°	DIN 6535HB	Alcrona				DIN 6527K



S802HA	S802HB
	
1.00 - 20.00	1.80 - 20.00

d_1 Ø mm	Ch ±0.03x45° mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S802HA	S802HB
1.00	-	3	3	38	2	S802HA1.0	
1.50	-	3	3	38	2	S802HA1.5	
2.00	-	6	3	50	2	S802HA2.0	S802HB2.0
2.50	0.08	6	3	50	2	S802HA2.5	S802HB2.5
3.00	0.08	6	4	50	2	S802HA3.0	S802HB3.0
3.50	0.08	6	4	50	2	S802HA3.5	S802HB3.5
4.00	0.13	6	5	54	2	S802HA4.0	S802HB4.0
4.50	0.13	6	5	54	2	S802HA4.5	S802HB4.5
5.00	0.13	6	6	54	2	S802HA5.0	S802HB5.0
6.00	0.13	6	7	54	2	S802HA6.0	S802HB6.0
7.00	0.13	8	8	58	2	S802HA7.0	S802HB7.0
8.00	0.20	8	9	58	2	S802HA8.0 [1)]	S802HB8.0 [1)]
9.00	0.20	10	10	66	2	S802HA9.0 [1)]	S802HB9.0 [1)]
10.00	0.20	10	11	66	2	S802HA10.0 [1)]	S802HB10.0 [1)]
12.00	0.20	12	12	73	2	S802HA12.0 [1)]	S802HB12.0 [1)]
14.00	0.20	14	14	75	2	S802HA14.0 [1)]	S802HB14.0 [1)]
16.00	0.20	16	16	82	2	S802HA16.0 [1)]	S802HB16.0 [1)]
18.00	0.20	18	18	84	2	S802HA18.0 [1)]	S802HB18.0 [1)]
20.00	0.30	20	20	92	2	S802HA20.0 [1)]	S802HB20.0 [1)]

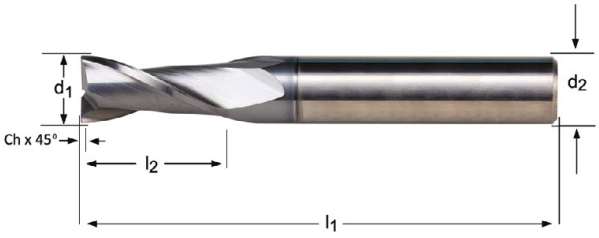
[1)] Ch ± 0.05x45° mm

S812HA
S812HB

- Spårfräsar
- Kiilaurajyrsimet
- Sporfres
- Sporfræsere

S812HA; S812HB ▪ 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.2 5.1 5.2 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2

S812HA	HM	P9	N	Z 2		λ 28° γ 9°	DIN 6535HA	Alcrona				DIN 6527L
S812HB	HM	P9	N	Z 2		λ 28° γ 9°	DIN 6535HB	Alcrona				DIN 6527L





S812HA: 2.00 - 20.00



S812HB: 2.00 - 20.00

d_1 Ø mm	Ch ±0.03x45° mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S812HA	S812HB
2.00	-	6	6	57	2	S812HA2.0	S812HB2.0
2.50	0.08	6	7	57	2	S812HA2.5	S812HB2.5
3.00	0.08	6	7	57	2	S812HA3.0	S812HB3.0
3.50	0.08	6	7	57	2	S812HA3.5	S812HB3.5
4.00	0.13	6	8	57	2	S812HA4.0	S812HB4.0
4.50	0.13	6	8	57	2	S812HA4.5	S812HB4.5
5.00	0.13	6	10	57	2	S812HA5.0	S812HB5.0
6.00	0.13	6	10	57	2	S812HA6.0	S812HB6.0
7.00	0.13	8	13	63	2	S812HA7.0	S812HB7.0
8.00	0.20	8	16	63	2	S812HA8.0 [1)]	S812HB8.0 [1)]
9.00	0.20	10	16	72	2	S812HA9.0 [1)]	S812HB9.0 [1)]
10.00	0.20	10	19	72	2	S812HA10.0 [1)]	S812HB10.0 [1)]
12.00	0.20	12	22	83	2	S812HA12.0 [1)]	S812HB12.0 [1)]
14.00	0.20	14	22	83	2	S812HA14.0 [1)]	S812HB14.0 [1)]
16.00	0.20	16	26	92	2	S812HA16.0 [1)]	S812HB16.0 [1)]
18.00	0.20	18	26	92	2	S812HA18.0 [1)]	S812HB18.0 [1)]
20.00	0.30	20	32	104	2	S812HA20.0 [1)]	S812HB20.0 [1)]

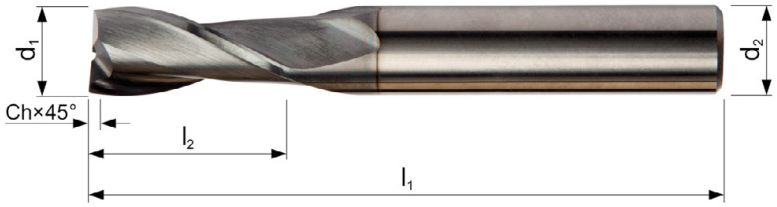
[1)] Ch ± 0.05x45° mm

S822

- Spårfräsar
- Kiilaurajyrsimet
- Sporfres
- Sporfræsere

S822 ▪ 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.2 5.1 5.2 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2

S822 | HM | P9 | N | Z 2 | λ 28° γ 9° | DIN 6535HA | Alcrona | DORMER



S822



2.00 - 20.00

d_1 Ø mm	Ch ±0.03x45° mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S822
2.00	-	6	8	57	2	S8222.0
2.50	0.08	6	12	57	2	S8222.5
3.00	0.08	6	12	57	2	S8223.0
4.00	0.13	6	14	57	2	S8224.0
5.00	0.13	6	16	57	2	S8225.0
6.00	0.13	6	19	57	2	S8226.0
7.00	0.13	8	19	63	2	S8227.0
8.00	0.20	8	19	63	2	S8228.0 [1)]
9.00	0.20	10	21	72	2	S8229.0 [1)]
10.00	0.20	10	22	72	2	S82210.0 [1)]
12.00	0.20	12	25	83	2	S82212.0 [1)]
14.00	0.20	14	30	83	2	S82214.0 [1)]
16.00	0.20	16	32	92	2	S82216.0 [1)]
18.00	0.20	18	32	92	2	S82218.0 [1)]
20.00	0.30	20	38	104	2	S82220.0 [1)]

[1)] Ch ± 0.05x45° mm

S803HA
S803HB

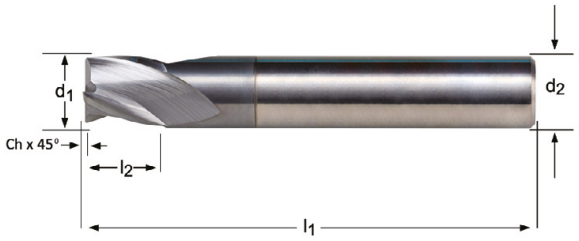
- Spårfräsar
- Kiilaurajyrsimet
- Sporfres
- Sporfræsere

S803HA; S803HB

▪ 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 3.1 3.2 3.3 3.4 6.2 6.3 6.4 7.2 7.3 7.4

• 2.3 2.4 4.1 4.2 5.1 5.2 6.1 7.1 8.1 8.2

S803HA	HM	P9	N	Z 3		λ 28° γ 9°	DIN 6535HA	Alcrona			DIN 6527K
S803HB	HM	P9	N	Z 3		λ 28° γ 9°	DIN 6535HB	Alcrona			DIN 6527K



S803HA	S803HB
	
1.00 - 20.00	1.80 - 20.00

d_1 Ø mm	Ch ±0.03x45° mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S803HA	S803HB
1.00	-	3	3	38	3	S803HA1.0	
1.50	-	3	3	38	3	S803HA1.5	
2.00	-	6	3	50	3	S803HA2.0	S803HB2.0
2.50	0.08	6	3	50	3	S803HA2.5	S803HB2.5
2.80	0.08	6	4	50	3	S803HA2.8	S803HB2.8
3.00	0.08	6	4	50	3	S803HA3.0	S803HB3.0
3.50	0.08	6	4	50	3	S803HA3.5	S803HB3.5
3.80	0.08	6	5	54	3	S803HA3.8	S803HB3.8
4.00	0.13	6	5	54	3	S803HA4.0	S803HB4.0
4.50	0.13	6	5	54	3	S803HA4.5	S803HB4.5
4.80	0.13	6	6	54	3	S803HA4.8	S803HB4.8
5.00	0.13	6	6	54	3	S803HA5.0	S803HB5.0
5.75	0.13	6	7	54	3		S803HB5.75
6.00	0.13	6	7	54	3	S803HA6.0	S803HB6.0
6.75	0.13	8	8	58	3		S803HB6.75
7.00	0.13	8	8	58	3	S803HA7.0	S803HB7.0
7.75	0.13	8	9	58	3		S803HB7.75
8.00	0.20	8	9	58	3	S803HA8.0 [1)]	S803HB8.0 [1)]
9.00	0.20	10	10	66	3	S803HA9.0 [1)]	S803HB9.0 [1)]
9.70	0.20	10	11	66	3	[1)]	S803HB9.7 [1)]
10.00	0.20	10	11	66	3	S803HA10.0 [1)]	S803HB10.0 [1)]
11.70	0.20	12	12	73	3	[1)]	S803HB11.7 [1)]
12.00	0.20	12	12	73	3	S803HA12.0 [1)]	S803HB12.0 [1)]
14.00	0.20	14	14	75	3	S803HA14.0 [1)]	S803HB14.0 [1)]
16.00	0.20	16	16	82	3	S803HA16.0 [1)]	S803HB16.0 [1)]
18.00	0.20	18	18	84	3	S803HA18.0 [1)]	S803HB18.0 [1)]
20.00	0.30	20	20	92	3	S803HA20.0 [1)]	S803HB20.0 [1)]

[1)] Ch ± 0.05x45° mm

S813HA
S813HB

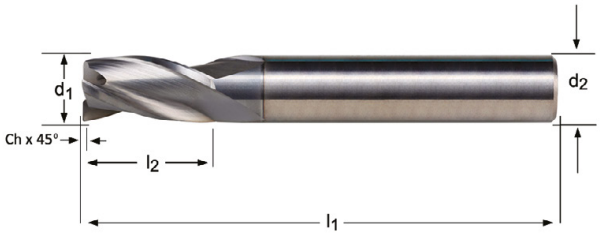
- Spårfräsar
- Kiilaurajyrsimet
- Sporfres
- Sporfræsere

S813HA; S813HB

▪ 1.1 1.2 1.3 1.4 1.5 2.1 3.1 3.2 3.3 3.4 6.2 6.3 6.4 7.2 7.3 7.4

• 1.6 2.2 2.3 4.1 4.2 5.1 5.2 6.1 7.1 8.1 8.2

S813HA	HM	P9	N	Z 3		λ 28° γ 9°	DIN 6535HA	Alcrona			DIN 6527L
S813HB	HM	P9	N	Z 3		λ 28° γ 9°	DIN 6535HB	Alcrona			DIN 6527L



S813HA	S813HB
	
2.00 - 20.00	2.00 - 20.00

d_1 Ø mm	Ch ±0.03x45° mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S813HA	S813HB
2.00	0.00	6	6	57	3	S813HA2.0	S813HB2.0
2.50	0.08	6	7	57	3	S813HA2.5	S813HB2.5
3.00	0.08	6	7	57	3	S813HA3.0	S813HB3.0
3.50	0.08	6	7	57	3	S813HA3.5	S813HB3.5
4.00	0.13	6	8	57	3	S813HA4.0	S813HB4.0
4.50	0.13	6	8	57	3	S813HA4.5	S813HB4.5
5.00	0.13	6	10	57	3	S813HA5.0	S813HB5.0
6.00	0.13	6	10	57	3	S813HA6.0	S813HB6.0
7.00	0.13	8	13	63	3	S813HA7.0	S813HB7.0
8.00	0.20	8	16	63	3	S813HA8.0 [1)]	S813HB8.0 [1)]
9.00	0.20	10	16	72	3	S813HA9.0 [1)]	S813HB9.0 [1)]
10.00	0.20	10	19	72	3	S813HA10.0 [1)]	S813HB10.0 [1)]
12.00	0.20	12	22	83	3	S813HA12.0 [1)]	S813HB12.0 [1)]
14.00	0.20	14	22	83	3	S813HA14.0 [1)]	S813HB14.0 [1)]
16.00	0.20	16	26	92	3	S813HA16.0 [1)]	S813HB16.0 [1)]
18.00	0.20	18	26	92	3	S813HA18.0 [1)]	S813HB18.0 [1)]
20.00	0.30	20	32	104	3	S813HA20.0 [1)]	S813HB20.0 [1)]

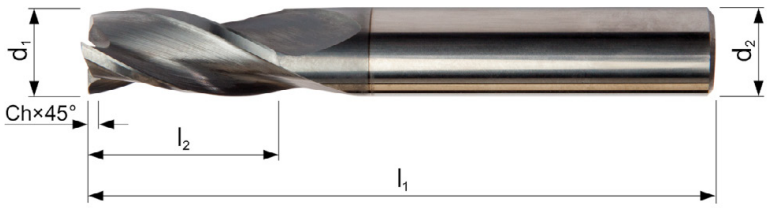
[1)] Ch ± 0.05x45° mm

S823

- Spårfräsar
- Kiilaurajyrsimet
- Sporfres
- Sporfræsere

S823																	
	▪	1.1	1.2	1.3	1.4	1.5	2.1	3.1	3.2	3.3	3.4	6.2	6.3	6.4	7.2	7.3	7.4
	•	1.6	2.2	2.3	4.1	4.2	5.1	5.2	6.1	7.1	8.1	8.2					

S823	HM	P9	N	Z 3		λ 28° γ 9°	DIN 6535HA	Alcrona			DORMER



S823



2.00 - 20.00

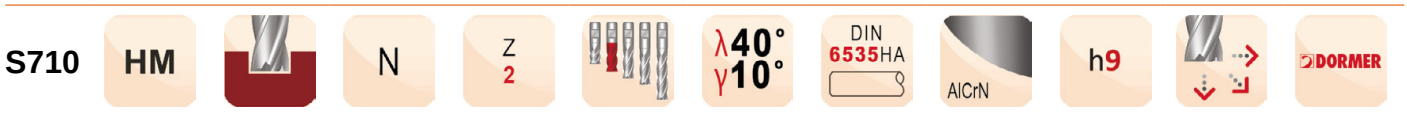
d_1 Ø mm	Ch ±0.03x45° mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	S823
2.00	-	6	8	57	3	S8232.0
2.50	0.08	6	12	57	3	S8232.5
3.00	0.08	6	12	57	3	S8233.0
4.00	0.13	6	14	57	3	S8234.0
5.00	0.13	6	16	57	3	S8235.0
6.00	0.13	6	19	57	3	S8236.0
7.00	0.13	8	19	63	3	S8237.0
8.00	0.20	8	19	63	3	S8238.0 [1)]
9.00	0.20	10	21	72	3	S8239.0 [1)]
10.00	0.20	10	22	72	3	S82310.0 [1)]
12.00	0.20	12	25	83	3	S82312.0 [1)]
14.00	0.20	14	30	83	3	S82314.0 [1)]
16.00	0.20	16	32	92	3	S82316.0 [1)]
18.00	0.20	18	32	92	3	S82318.0 [1)]
20.00	0.30	20	38	104	3	S82320.0 [1)]

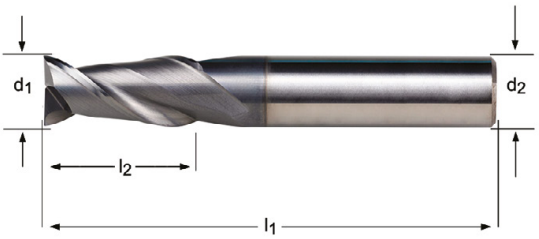
[1)] Ch ± 0.05x45° mm

S710

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S710 ▪ **1.1** **1.2** **1.3** **1.4** **1.5** **2.1** **2.2** 3.1 3.2 3.3 3.4 **4.2** **5.2**







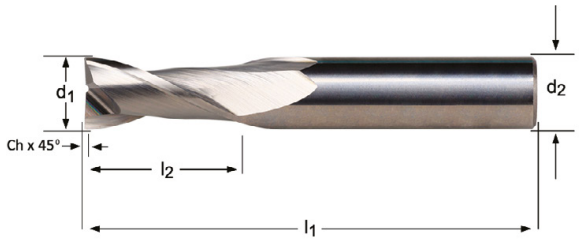
d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	S710
1.00	3	3	40	2	S7101.0
1.50	3	4.5	40	2	S7101.5
2.00	3	6.5	40	2	S7102.0
2.50	3	6.5	40	2	S7102.5
3.00	6	9	50	2	S7103.0
4.00	6	12	50	2	S7104.0
5.00	6	15	50	2	S7105.0
6.00	6	20	60	2	S7106.0
8.00	8	20	64	2	S7108.0
10.00	10	22	75	2	S71010.0
12.00	12	25	75	2	S71012.0
16.00	16	32	90	2	S71016.0
20.00	20	38	100	2	S71020.0

S902
S922

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S902	▪	1.1	1.2	1.3	1.4	3.1	3.3	4.1	5.1	6.1	6.2	6.3		
	•	1.5	3.2	3.4	4.2	4.3	6.4	7.1	7.2	7.3	8.1	8.2	8.3	
S922	▪	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3
	•	1.6	4.2	4.3	6.4	7.1	7.2	7.3	8.1	8.2	8.3				

S902	HM		N	Z 2		λ30° γ12°	DIN 6535HA		h10		DORMER	
S922	HM		N	Z 2		λ30° γ12°	DIN 6535HB	TiAlN	h10		DORMER	S991 437



S902	S922
	
2.00 - 20.00	2.00 - 20.00

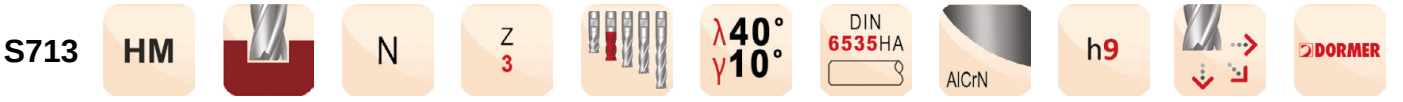
d_1 Ø mm	Ch ±0.03x45° mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S902	S922
2.00	0.08	3	6	38	2	S9022.0	S9222.0 [2]
2.50	0.08	3	9	38	2	S9022.5	S9222.5 [2]
3.00	0.08	3	12	38	2	S9023.0	S9223.0 [2]
4.00	0.08	4	14	50	2	S9024.0	S9224.0 [2]
5.00	0.13	5	16	50	2	S9025.0	S9225.0 [2]
6.00	0.13	6	19	57	2	S9026.0	S9226.0
7.00	0.13	8	19	63	2	S9027.0	S9227.0
8.00	0.13	8	19	63	2	S9028.0	S9228.0
9.00	0.13	10	21	72	2	S9029.0	S9229.0
10.00	0.18	10	22	72	2	S90210.0	S92210.0
12.00	0.20	12	25	73	2	S90212.0 [1]	S92212.0 [1]
14.00	0.20	14	30	83	2	S90214.0 [1]	S92214.0 [1]
16.00	0.20	16	32	92	2	S90216.0 [1]	S92216.0 [1]
18.00	0.20	18	32	92	2	S90218.0 [1]	S92218.0 [1]
20.00	0.30	20	38	104	2	S90220.0 [1]	S92220.0 [1]

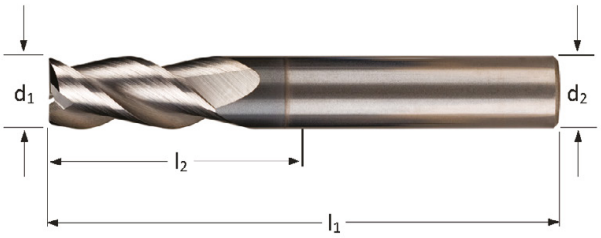
[1] Ch ± 0.05x45° mm
[2] Cylindriskt Skaft / Lieriövarsi / sylindrisk skaft / Cylindrisk skaft

S713

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S713 ▪ **1.1** **1.2** **1.3** **1.4** **1.5** **2.1** **2.2** **3.1** **3.2** **3.3** **3.4** **4.2** **5.2**







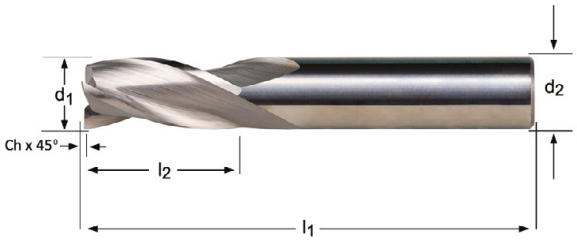
d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	S713
1.50	4	4.5	40	3	S7131.5
2.00	4	6.5	40	3	S7132.0
3.00	3	9	40	3	S7133.0
4.00	4	12	50	3	S7134.0
5.00	5	15	50	3	S7135.0
6.00	6	16	50	3	S7136.0
8.00	8	20	64	3	S7138.0
10.00	10	22	70	3	S71310.0
12.00	12	25	75	3	S71312.0
14.00	14	32	90	3	S71314.0
16.00	16	32	90	3	S71316.0
18.00	18	38	100	3	S71318.0
20.00	20	38	100	3	S71320.0

S903
S933

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S903	■	1.1	1.2	1.3	1.4	3.1	3.3	4.1	5.1	6.1	6.2	6.3		
	•	1.5	3.2	3.4	4.2	4.3	6.4	7.1	7.2	7.3	8.1	8.2	8.3	
S933	■	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3
	•	1.6	4.2	4.3	6.4	7.1	7.2	7.3	8.1	8.2	8.3				

S903	HM		N	Z 3		λ 30° γ 12°	DIN 6535HA		h10		DORMER		
S933	HM		N	Z 3		λ 30° γ 12°	DIN 6535HB	 TiAlN	h10		DORMER	 S991 437	



S903	S933
	
2.00 - 20.00	2.00 - 20.00

d_1 Ø mm	Ch ±0.03x45° mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S903	S933
2.00	0.08	3	6	38	3	S9032.0	S9332.0 [2]
2.50	0.08	3	9	38	3	S9032.5	S9332.5 [2]
3.00	0.08	3	12	38	3	S9033.0	S9333.0 [2]
4.00	0.08	4	14	50	3	S9034.0	S9334.0 [2]
5.00	0.13	5	16	50	3	S9035.0	S9335.0 [2]
6.00	0.13	6	19	57	3	S9036.0	S9336.0
7.00	0.13	8	19	63	3	S9037.0	S9337.0
8.00	0.13	8	19	63	3	S9038.0	S9338.0
9.00	0.13	10	21	72	3	S9039.0	S9339.0
10.00	0.20	10	22	72	3	S90310.0 [1]	S93310.0 [1]
12.00	0.20	12	25	73	3	S90312.0 [1]	S93312.0 [1]
14.00	0.20	14	30	83	3	S90314.0 [1]	S93314.0 [1]
16.00	0.20	16	32	92	3	S90316.0 [1]	S93316.0 [1]
18.00	0.20	18	32	92	3	S90318.0 [1]	S93318.0 [1]
20.00	0.30	20	38	104	3	S90320.0 [1]	S93320.0 [1]

[1] Ch ± 0.05x45° mm
[2] Cylindriskt Skaft / Lieriövarsi / sylindrisk skaft / Cylindrisk skaft

DORMER

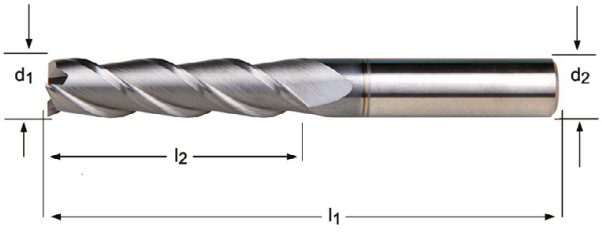
S714

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S714 ▪ 1.1 1.2 1.3 1.4 1.5 2.1 2.2 3.1 3.2 3.3 3.4 4.2 5.2

S714 • 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4

S714 | HM | N | Z 3 | λ40° γ10° | DIN 6535HA | AlCrN | h9 | DORMER



S714



3.00 - 20.00

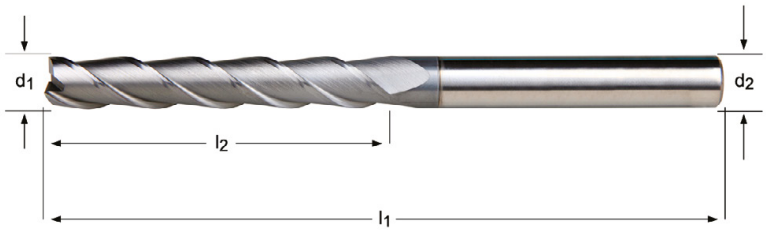
d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	S714
3.00	3	19	60	3	S7143.0
4.00	4	19	60	3	S7144.0
5.00	5	19	60	3	S7145.0
6.00	6	31	75	3	S7146.0
8.00	8	31	75	3	S7148.0
10.00	10	31	75	3	S71410.0
12.00	12	50	100	3	S71412.0
14.00	14	57	125	3	S71414.0
16.00	16	57	125	3	S71416.0
18.00	18	57	125	3	S71418.0
20.00	20	57	125	3	S71420.0

S715

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S715													
	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	3.1	3.2	3.3	3.4	4.2	5.2
	•	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4					







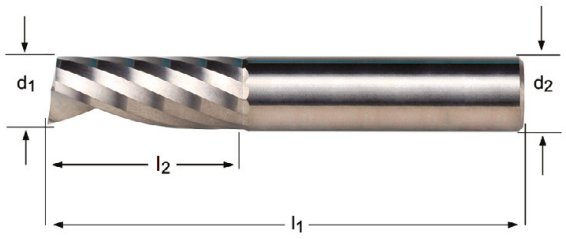
d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	S715
3.00	3	25	100	3	S7153.0
4.00	4	31	100	3	S7154.0
5.00	5	31	100	3	S7155.0
6.00	6	38	100	3	S7156.0
8.00	8	41	100	3	S7158.0
10.00	10	57	125	3	S71510.0
12.00	12	75	150	3	S71512.0
14.00	14	75	150	3	S71514.0
16.00	16	75	150	3	S71516.0
18.00	18	75	150	3	S71518.0
20.00	20	75	150	3	S71520.0

S637

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S637 ▪ **6.1** **6.2** **6.3** **6.4** **7.1** **7.2** **7.3** **7.4** **8.1** **8.2**

S637 HM W Z 1 λ25° γ20° DIN 6535HA Hi h9 DORMER



S637



2.00 - 12.00

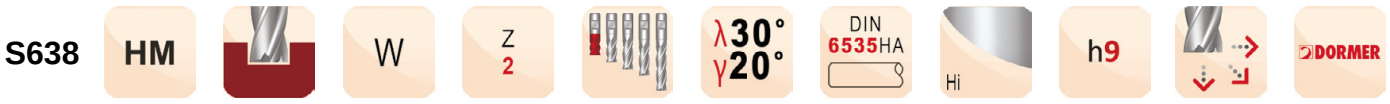
d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	S637
2.00	2	10	40	1	S6372.0
3.00	3	12	40	1	S6373.0
4.00	4	15	50	1	S6374.0
5.00	5	16	50	1	S6375.0
6.00	6	20	60	1	S6376.0
8.00	8	22	63	1	S6378.0
10.00	10	25	72	1	S63710.0
12.00	12	30	83	1	S63712.0

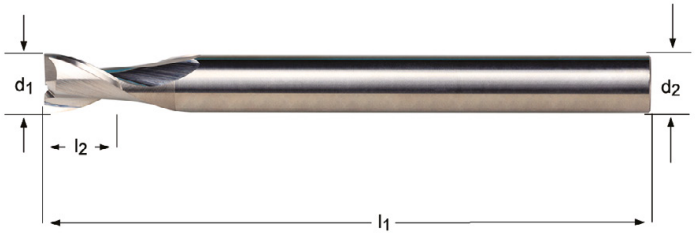
S638

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

Reducerad skaftdiameter
Ohennettu varsi
Redusert skaft
Reduceret skaft

S638 ▪ **6.1** **6.2** **6.3** **6.4** **7.1** **7.2** **7.3** **7.4** **8.1** **8.2**







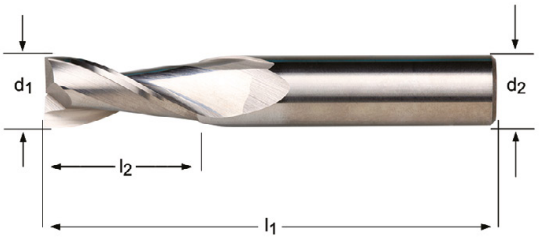
d_1 Ø mm	r ±0.02 mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S638
6.20	0.10	6	8	100	2	S6386.2
8.20	0.10	8	10	100	2	S6388.2
10.30	0.10	10	14	125	2	S63810.3
12.30	0.10	12	16	125	2	S63812.3
16.30	0.10	16	20	125	2	S63816.3
20.30	0.10	20	25	125	2	S63820.3

S610

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S610 ▪ 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2

S610 HM W Z 2 λ30° γ20° DIN 6535HA Hi h9 DORMER



S610



3.00 - 20.00

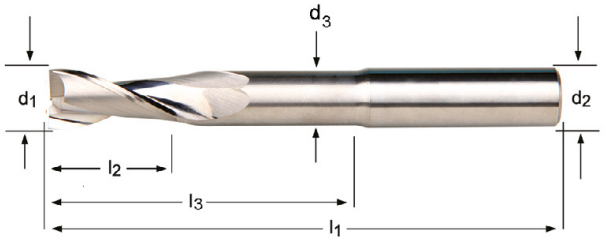
d_1 Ø mm	r ±0.02 mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S610
3.00	0.10	3	9	40	2	S6103.0XD3
3.00	0.10	6	9	50	2	S6103.0XD6
4.00	0.10	4	12	50	2	S6104.0XD4
4.00	0.10	6	12	50	2	S6104.0XD6
5.00	0.10	6	15	50	2	S6105.0
6.00	0.10	6	20	50	2	S6106.0
8.00	0.10	8	20	64	2	S6108.0
10.00	0.10	10	22	75	2	S61010.0
12.00	0.10	12	25	75	2	S61012.0
14.00	0.10	14	32	90	2	S61014.0
16.00	0.10	16	32	90	2	S61016.0
20.00	0.10	20	38	100	2	S61020.0

S611

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S611 ▪ 6.1 | 6.2 | 6.3 | 6.4 | 7.1 | 7.2 | 7.3 | 7.4 | 8.1 | 8.2

S611	HM		W	Z 2		λ 30° γ 20°	DIN 6535HA	Hi	h9		DORMER



S611



6.00 - 20.00

d_1 Ø mm	r ±0.02 mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S611
6.00	0.10	6	16	80	2	40.0	5.5	S6116.0
8.00	0.10	8	20	80	2	40.0	7.4	S6118.0
10.00	0.10	10	22	100	2	60.0	9.2	S61110.0
12.00	0.10	12	25	100	2	60.0	11.0	S61112.0
14.00	0.10	14	32	125	2	75.0	13.0	S61114.0
16.00	0.10	16	32	125	2	75.0	15.0	S61116.0
20.00	0.10	20	38	125	2	75.0	19.0	S61120.0

S804HA
S804HB

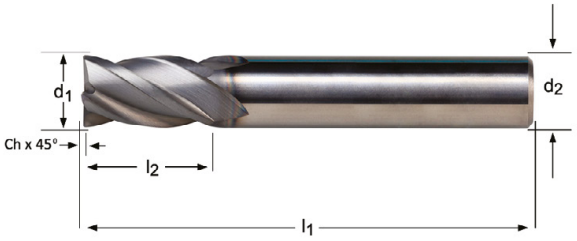
- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S804HA; S804HB

▪ 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 3.1 3.2 3.3 3.4 6.2 6.3 6.4

• 2.3 2.4 4.1 4.2 5.1 5.2 6.1 7.1 7.2 7.3 7.4 8.1 8.2

S804HA	HM		N	Z 4		λ 34° γ 9°	DIN 6535HA	 Alcrona	h10		DIN 6527K
S804HB	HM		N	Z 4		λ 34° γ 9°	DIN 6535HB	 Alcrona	h10		DIN 6527K



S804HA	S804HB
	
2.00 - 25.00	2.00 - 25.00

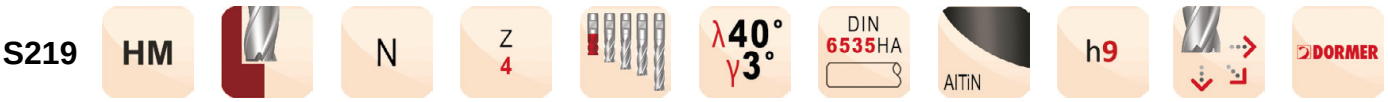
d_1 Ø mm	Ch ±0.03x45° mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S804HA	S804HB
2.00	-	6	4	50	4	S804HA2.0	S804HB2.0
3.00	0.08	6	5	50	4	S804HA3.0	S804HB3.0
4.00	0.13	6	8	54	4	S804HA4.0	S804HB4.0
5.00	0.13	6	9	54	4	S804HA5.0	S804HB5.0
6.00	0.13	6	10	54	4	S804HA6.0	S804HB6.0
8.00	0.13	8	12	58	4	S804HA8.0	S804HB8.0
10.00	0.20	10	14	66	4	S804HA10.0 [1)]	S804HB10.0 [1)]
12.00	0.20	12	16	73	4	S804HA12.0 [1)]	S804HB12.0 [1)]
16.00	0.20	16	22	82	4	S804HA16.0 [1)]	S804HB16.0 [1)]
20.00	0.30	20	26	92	4	S804HA20.0 [1)]	S804HB20.0 [1)]
25.00	0.30	25	32	121	4	S804HA25.0 [1)]	S804HB25.0 [1)]

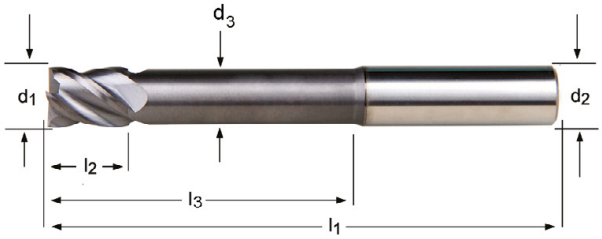
[1)] Ch ± 0.05x45° mm

S219

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S219 ▪ **1.6** **2.3** **2.4** **4.3** **5.3**







d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S219
3.00	3	5	60	4	30.0	2.8	S2193.0
4.00	4	8	60	4	32.0	3.7	S2194.0
5.00	5	9	60	4	32.0	4.6	S2195.0
6.00	6	10	75	4	40.0	5.5	S2196.0
8.00	8	12	75	4	40.0	7.4	S2198.0
10.00	10	14	75	4	40.0	9.2	S21910.0
12.00	12	16	100	4	60.0	11.0	S21912.0
14.00	14	22	125	4	85.0	13.0	S21914.0
16.00	16	22	125	4	85.0	15.0	S21916.0
18.00	18	26	125	4	85.0	17.0	S21918.0
20.00	20	26	125	4	85.0	19.0	S21920.0

DORMER

S814HA
S814HB

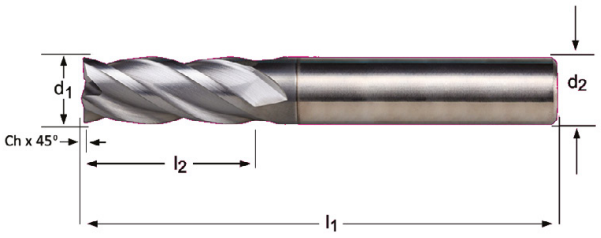
- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S814HA; S814HB

▪ 1.1 1.2 1.3 1.4 1.5 2.1 3.1 3.2 3.3 3.4 6.2 6.3 6.4

• 1.6 2.2 2.3 4.1 4.2 5.1 5.2 6.1 7.1 7.2 7.3 7.4 8.1 8.2

S814HA	HM		N	Z 4		λ 34° γ 9°	DIN 6535HA	 Alcrona	h10		DIN 6527L
S814HB	HM		N	Z 4		λ 34° γ 9°	DIN 6535HB	 Alcrona	h10		DIN 6527L



S814HA	S814HB
	
2.00 - 25.00	2.00 - 25.00

d_1 Ø mm	Ch ±0.03x45° mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S814HA	S814HB
2.00	0.00	6	7	57	4	S814HA2.0	S814HB2.0
3.00	0.08	6	8	57	4	S814HA3.0	S814HB3.0
4.00	0.13	6	11	57	4	S814HA4.0	S814HB4.0
5.00	0.13	6	13	57	4	S814HA5.0	S814HB5.0
6.00	0.13	6	13	57	4	S814HA6.0	S814HB6.0
8.00	0.13	8	19	63	4	S814HA8.0	S814HB8.0
10.00	0.20	10	22	72	4	S814HA10.0 [1)]	S814HB10.0 [1)]
12.00	0.20	12	26	83	4	S814HA12.0 [1)]	S814HB12.0 [1)]
16.00	0.20	16	32	92	4	S814HA16.0 [1)]	S814HB16.0 [1)]
20.00	0.30	20	38	104	4	S814HA20.0 [1)]	S814HB20.0 [1)]
25.00	0.30	25	45	121	4	S814HA25.0 [1)]	S814HB25.0 [1)]

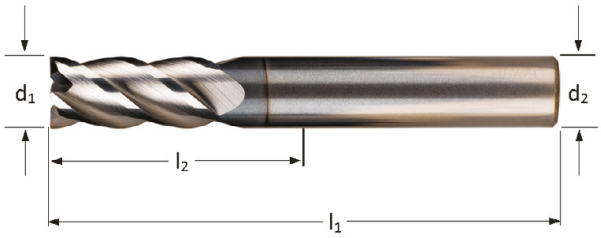
[1)] Ch ± 0.05x45° mm

S716

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S716 ▪ 1.1 1.2 1.3 1.4 1.5 2.1 2.2 3.1 3.2 3.3 3.4 4.2 5.2

S716 HM N Z 4 λ40° γ10° DIN 6535HA AlCrN h9 DORMER



S716



2.00 - 20.00

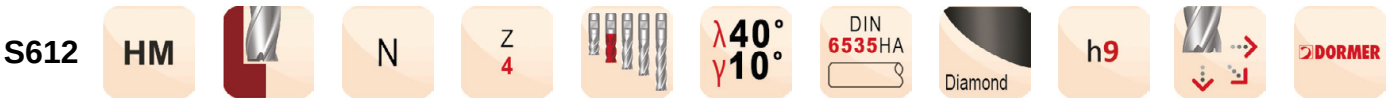
d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S716
2.00	4	6.5	40	4	S7162.0
3.00	3	9	40	4	S7163.0
4.00	4	12	50	4	S7164.0
5.00	5	15	50	4	S7165.0
6.00	6	16	50	4	S7166.0
8.00	8	20	64	4	S7168.0
10.00	10	22	70	4	S71610.0
12.00	12	25	75	4	S71612.0
14.00	14	32	90	4	S71614.0
16.00	16	32	90	4	S71616.0
18.00	18	38	100	4	S71618.0
20.00	20	38	100	4	S71620.0

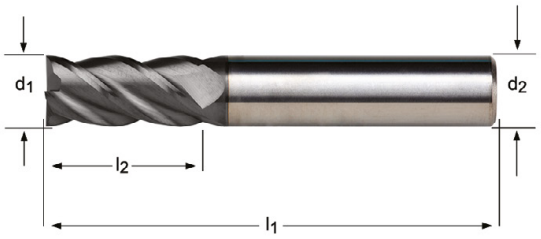
DORMER

S612

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S612 ▪ 10.1







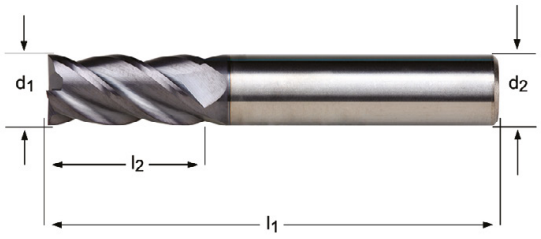
d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	S612
1.00	3	3	50	4	S6121.0
1.50	3	4.5	50	4	S6121.5
2.00	3	6.5	50	4	S6122.0
2.50	3	6.5	50	4	S6122.5
3.00	3	9	50	4	S6123.0
4.00	4	12	50	4	S6124.0
5.00	5	15	50	4	S6125.0
6.00	6	20	60	4	S6126.0
8.00	8	20	64	4	S6128.0
10.00	10	22	70	4	S61210.0
12.00	12	25	75	4	S61212.0

S216

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S216 ▪ **1.6** **2.3** **2.4** **4.3** **5.3**







2.00 - 20.00

d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S216
2.00	4	6.5	40	4	S2162.0
3.00	3	9	40	4	S2163.0XD3
3.00	6	9	50	4	S2163.0XD6
4.00	4	12	50	4	S2164.0XD4
4.00	6	12	50	4	S2164.0XD6
5.00	5	15	50	4	S2165.0
6.00	6	16	50	4	S2166.0
8.00	8	20	64	4	S2168.0
10.00	10	22	70	4	S21610.0
12.00	12	25	75	4	S21612.0
14.00	14	32	90	4	S21614.0
16.00	16	32	90	4	S21616.0
18.00	18	38	100	4	S21618.0
20.00	20	38	100	4	S21620.0

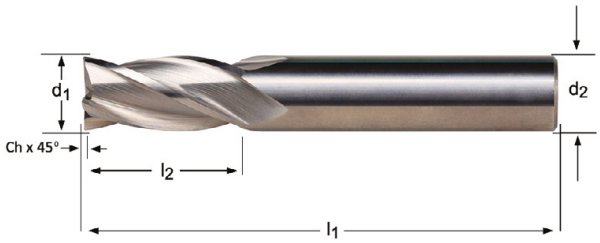
DORMER

S904
S944

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S904	■	1.1	1.2	1.3	1.4	3.1	3.3	4.1	5.1	6.1	6.2	6.3			
	•	1.5	1.6	3.2	3.4	4.2	4.3	5.2	5.3	6.4	7.1	7.2	7.3	8.1	8.2	8.3
S944	■	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3	
	•	1.6	4.2	4.3	5.2	5.3	6.4	7.1	7.2	7.3	8.1	8.2	8.3			

S904	HM		N	Z 4		λ30° γ12°	DIN 6535HA		h12		DORMER	
S944	HM		N	Z 4		λ30° γ12°	DIN 6535HB	TiAlN	h12		DORMER	S991 437







S904	S944
2.00 - 20.00	2.00 - 20.00

d_1 Ø mm	Ch ±0.03x45° mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S904	S944
2.00	0.08	3	6	38	4	S9042.0	S9442.0 [2]
2.50	0.08	3	9	38	4	S9042.5	S9442.5 [2]
3.00	0.08	3	12	38	4	S9043.0	S9443.0 [2]
4.00	0.08	4	14	50	4	S9044.0	S9444.0 [2]
5.00	0.13	5	16	50	4	S9045.0	S9445.0 [2]
6.00	0.13	6	19	57	4	S9046.0	S9446.0
7.00	0.13	8	19	63	4	S9047.0	S9447.0
8.00	0.13	8	19	63	4	S9048.0	S9448.0
9.00	0.13	10	21	72	4	S9049.0	S9449.0
10.00	0.20	10	22	72	4	S90410.0 [1]	S94410.0 [1]
12.00	0.20	12	25	73	4	S90412.0 [1]	S94412.0 [1]
14.00	0.20	14	30	83	4	S90414.0 [1]	S94414.0 [1]
16.00	0.20	16	32	92	4	S90416.0 [1]	S94416.0 [1]
18.00	0.20	18	32	92	4	S90418.0 [1]	S94418.0 [1]
20.00	0.30	20	38	104	4	S90420.0 [1]	S94420.0 [1]

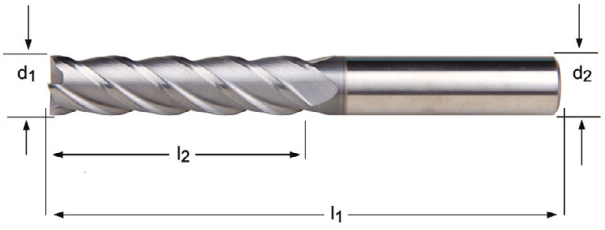
[1] Ch ± 0.05x45° mm
[2] Cylindriskt Skaft / Lieriövarsi / sylindrisk skaft / Cylindrisk skaft

S717
S217

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S717	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	3.1	3.2	3.3	3.4	4.2	5.2
	•	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4					
S217	▪	1.6	2.3	2.4	4.3	5.3								

S717	HM		N	Z 4		λ40° γ10°	DIN 6535HA	AlCrN	h9		DORMER
S217	HM		N	Z 4		λ40° γ3°	DIN 6535HA	AlTiN	h9		DORMER



S717	S217
	
3.00 - 20.00	3.00 - 20.00

d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S717	S217
3.00	3	19	60	4	S7173.0	S2173.0XD3
3.00	6	19	75	4		S2173.0XD6
4.00	4	19	60	4	S7174.0	S2174.0XD4
4.00	6	19	75	4		S2174.0XD6
5.00	5	19	60	4	S7175.0	S2175.0
6.00	6	31	75	4	S7176.0	S2176.0
8.00	8	31	75	4	S7178.0	S2178.0
10.00	10	31	75	4	S71710.0	S21710.0
12.00	12	50	100	4	S71712.0	S21712.0
14.00	14	57	125	4	S71714.0	S21714.0
16.00	16	57	125	4	S71716.0	S21716.0
18.00	18	57	125	4	S71718.0	S21718.0
20.00	20	57	125	4	S71720.0	S21720.0

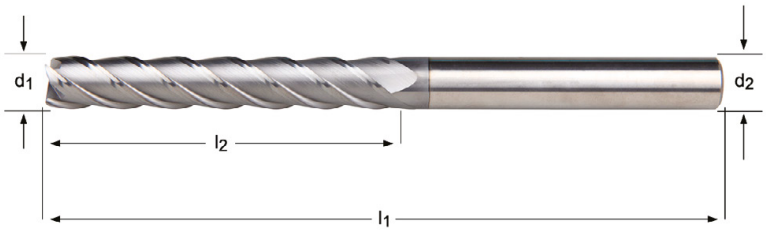
DORMER

S718
S218

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S718	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	3.1	3.2	3.3	3.4	4.2	5.2
	•	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4					
S218	▪	1.6	2.3	2.4	4.3	5.3								

S718	HM		N	Z 4		λ40° γ10°	DIN 6535HA	AlCrN	h9		DORMER
S218	HM		N	Z 4		λ40° γ3°	DIN 6535HA	AlTiN	h9		DORMER





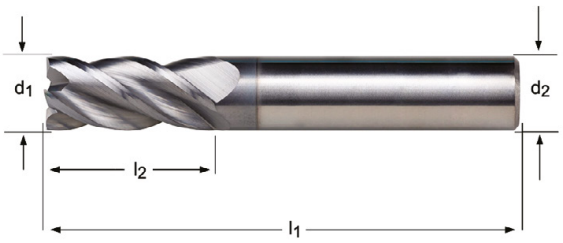
d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	S718	S218
3.00	3	25	100	4	S7183.0	S2183.0
4.00	4	31	100	4	S7184.0	S2184.0
5.00	5	31	100	4	S7185.0	S2185.0
6.00	6	38	100	4	S7186.0	S2186.0
8.00	8	41	100	4	S7188.0	S2188.0
10.00	10	57	125	4	S71810.0	S21810.0
12.00	12	75	150	4	S71812.0	S21812.0
14.00	14	75	150	4	S71814.0	S21814.0
16.00	16	75	150	4	S71816.0	S21816.0
18.00	18	75	150	4	S71818.0	S21818.0
20.00	20	75	150	4	S71820.0	S21820.0

S761
S260

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S761	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	3.1	3.2	3.3	3.4	4.2	5.2
S260	▪	1.6	1.7	2.3	2.4	4.3	5.3							

S761	HM		N	Z 4 ≠		λ40° γ10°	DIN 6535HA	AlCrN	h9		DORMER
S260	HM		N	Z 4 ≠		λ40° γ4°	DIN 6535HA	AlCrN	h9		DORMER



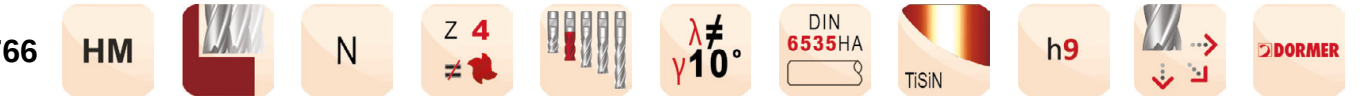
S761	S260
	
3.00 - 20.00	3.00 - 20.00

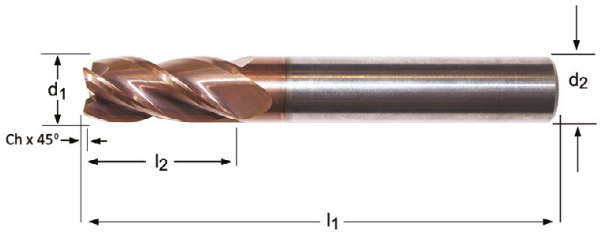
d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S761	S260
3.00	6	9	57	4	S7613.0	S2603.0
4.00	6	12	57	4	S7614.0	S2604.0
5.00	6	13	57	4	S7615.0	S2605.0
6.00	6	13	57	4	S7616.0	S2606.0
8.00	8	20	64	4	S7618.0	S2608.0
10.00	10	22	72	4	S76110.0	S26010.0
12.00	12	26	83	4	S76112.0	S26012.0
14.00	14	32	83	4	S76114.0	S26014.0
16.00	16	32	92	4	S76116.0	S26016.0
18.00	18	38	92	4		S26018.0
20.00	20	38	104	4	S76120.0	S26020.0

S766

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

S766 ▪ **1.1** **1.2** **1.3** **1.4** **1.5** **2.1** **2.2** **3.1** **3.2** **3.3** **3.4** **4.2** **5.2**







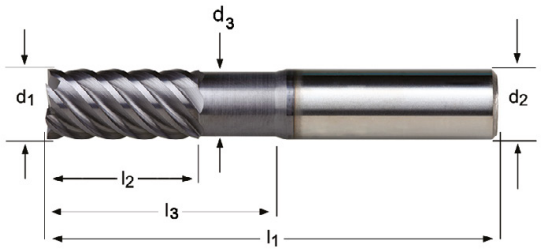
d_1 Ø mm	Ch ±0.02x45° mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S766
4.00	0.10	6	11	57	4	S7664.0
5.00	0.10	6	13	57	4	S7665.0
6.00	0.10	6	13	57	4	S7666.0
8.00	0.20	8	20	64	4	S7668.0
10.00	0.20	10	22	72	4	S76610.0
12.00	0.20	12	26	83	4	S76612.0
14.00	0.30	14	26	83	4	S76614.0
16.00	0.30	16	32	92	4	S76616.0
20.00	0.40	20	38	104	4	S76620.0

S225
S525

- Pinnfräs för finfräsning
- Varsijyrsimet, viimeistelyyn
- Finfres pinnefres
- Sletfræser

S225	▪	1.6	2.3	2.4	4.3	5.3						
S525	▪	1.7	1.8									

S225	HM		N	Z 6-8		λ50° γ3°	DIN 6535HA	AlTiN	h9		DORMER
S525	HM		N	Z 6-8		λ50° γ-26°	DIN 6535HA	TiSiN	h9		DORMER



S225	S525
	
3.00 - 20.00	3.00 - 20.00

d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S225	S525
3.00	6	8	50	6	20.0	2.8	S2253.0	S5253.0
4.00	6	11	50	6	20.0	3.7	S2254.0	S5254.0
6.00	6	15	50	6	20.0	5.5	S2256.0	S5256.0
8.00	8	20	64	6	30.0	7.4	S2258.0	S5258.0
10.00	10	22	70	6	32.0	9.2	S22510.0	S52510.0
12.00	12	25	75	6	37.0	11.0	S22512.0	S52512.0
14.00	14	30	90	6	44.0	13.0	S22514.0	S52514.0
16.00	16	30	90	8	46.0	15.0	S22516.0	S52516.0
18.00	18	35	100	8	53.0	17.0	S22518.0	S52518.0
20.00	20	38	100	8	58.0	19.0	S22520.0	S52520.0

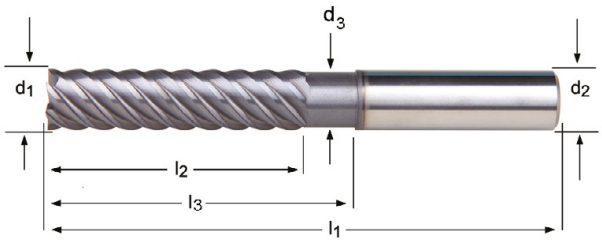
DORMER

S226
S526

- Pinnfräs för finfräsning
- Varsijyrsimet, viimeistelyyn
- Finfres pinnefres
- Sletfræser

S226	▪	1.6	2.3	2.4	4.3	5.3	
S526	▪	1.7	1.8				

S226	HM		N	Z 6-8		λ50° γ3°	DIN 6535HA	 AlTiN	h9		DORMER
S526	HM		N	Z 6-8		λ50° γ-26°	DIN 6535HA	 TiSiN	h9		DORMER



S226	S526
	
3.00 - 20.00	3.00 - 20.00

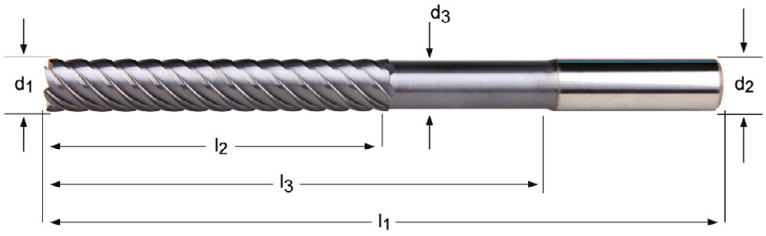
d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S226	S526
3.00	6	19	75	6	30.0	2.8	S2263.0	S5263.0
4.00	6	19	75	6	32.0	3.7	S2264.0	S5264.0
6.00	6	31	75	6	40.0	5.5	S2266.0	S5266.0
8.00	8	31	75	6	40.0	7.4	S2268.0	S5268.0
10.00	10	45	100	6	60.0	9.2	S22610.0	S52610.0
12.00	12	50	100	6	60.0	11.0	S22612.0	S52612.0
14.00	14	57	125	6	85.0	13.0	S22614.0	S52614.0
16.00	16	57	125	8	85.0	15.0	S22616.0	S52616.0
18.00	18	57	125	8	85.0	17.0	S22618.0	S52618.0
20.00	20	57	125	8	85.0	19.0	S22620.0	S52620.0

S227
S527

- Pinnfräs för finfräsning
- Varsijyrsimet, viimeistelyyn
- Finfres pinnefres
- Sletfræser

S227	▪	1.6	2.3	2.4	4.3	5.3						
S527	▪	1.7	1.8									

S227	HM		N	Z 6-8		λ50° γ3°	DIN 6535HA	AlTiN	h9		DORMER
S527	HM		N	Z 6-8		λ50° γ-26°	DIN 6535HA	TiSiN	h9		DORMER



S227	S527
	
6.00 - 20.00	3.00 - 20.00

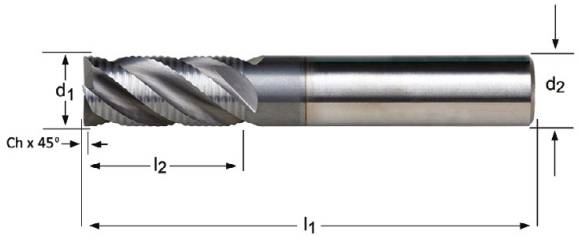
d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S227	S527
3.00	6	25	100	6	60.0	2.8		S5273.0
4.00	6	31	100	6	60.0	3.7		S5274.0
6.00	6	38	100	6	60.0	5.5	S2276.0	S5276.0
8.00	8	41	100	6	60.0	7.4	S2278.0	S5278.0
10.00	10	57	125	6	85.0	9.2	S22710.0	S52710.0
12.00	12	75	150	6	110.0	11.0	S22712.0	S52712.0
14.00	14	75	150	6	110.0	13.0	S22714.0	
16.00	16	75	150	8	110.0	15.0	S22716.0	S52716.0
18.00	18	75	150	8	110.0	17.0	S22718.0	
20.00	20	75	150	8	110.0	19.0	S22720.0	S52720.0

S765

- Spåndelande Pinnfräsar
- Rouhintajyrsimet
- Spondelende Pinnefresere
- Spåndelende Pindfræser

S765 ▪ **1.1** **1.2** **1.3** **1.4** **1.5** **2.1** **2.2** **3.1** **3.2** **3.3** **3.4** **4.2** **5.2**

S765 HM NR Z 4 ≠ λ40° γ10° DIN 6535HA AlCrN h9 DORMER



S765



6.00 - 20.00

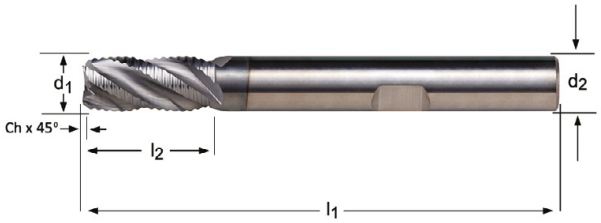
d_1 Ø mm	Ch ±0.02x45° mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S765
6.00	0.10	6	16	50	4	S7656.0
8.00	0.20	8	20	64	4	S7658.0
10.00	0.20	10	22	70	4	S76510.0
12.00	0.20	12	26	75	4	S76512.0
14.00	0.30	14	32	90	4	S76514.0
16.00	0.30	16	32	90	4	S76516.0
18.00	0.30	18	38	100	4	S76518.0
20.00	0.40	20	38	100	4	S76520.0

S264

- Spåndelande Pinnfräsar
- Rouhintajyrsimet
- Spondelende Pinnefresere
- Spåndelende Pindfræser

S264 ▪ 1.6 1.7 2.3 2.4 4.3 5.3







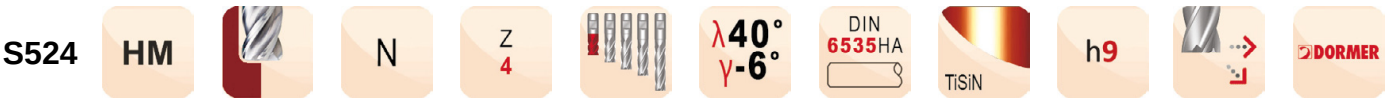
d_1 Ø mm	Ch ±0.02x45° mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S264
6.00	0.10	6	13	57	4	S2646.0
8.00	0.20	8	20	64	4	S2648.0
10.00	0.20	10	22	72	4	S26410.0
12.00	0.20	12	26	83	4	S26412.0
14.00	0.30	14	26	83	4	S26414.0
16.00	0.30	16	32	92	4	S26416.0
18.00	0.30	18	32	92	4	S26418.0
20.00	0.40	20	38	104	4	S26420.0

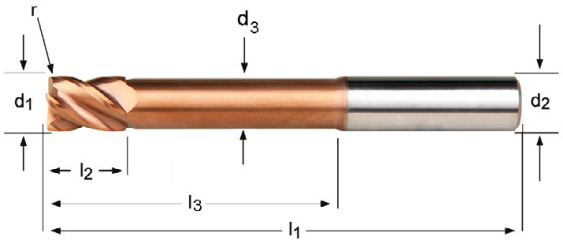
DORMER

S524

- Pinnfräsar med hörnradie
- Varsijyrsimet, säteelliset nurkat
- Pinnefresere Med Hjørneradie
- Pindfræser med hjørneradie

S524 ▪ **1.7** **1.8**







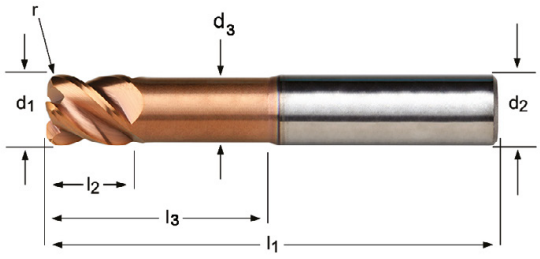
d_1 Ø mm	r ±0.01 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S524
3.00	0.30	6	5	75	4	30.0	2.8	S5243.0XR0.3
4.00	0.30	6	8	75	4	32.0	3.7	S5244.0XR0.3
4.00	0.50	6	8	75	4	32.0	3.7	S5244.0XR0.5
5.00	0.30	6	9	75	4	32.0	4.6	S5245.0XR0.3
5.00	0.50	6	9	75	4	32.0	4.6	S5245.0XR0.5
6.00	0.30	6	10	75	4	40.0	5.5	S5246.0XR0.3
6.00	0.50	6	10	75	4	40.0	5.5	S5246.0XR0.5
6.00	1.00	6	10	75	4	40.0	5.5	S5246.0XR1.0
8.00	0.30	8	12	75	4	40.0	7.4	S5248.0XR0.3
8.00	0.50	8	12	75	4	40.0	7.4	S5248.0XR0.5
8.00	1.00	8	12	75	4	40.0	7.4	S5248.0XR1.0
10.00	0.50	10	14	75	4	40.0	9.2	S52410.0XR0.5
10.00	1.00	10	14	75	4	40.0	9.2	S52410.0XR1.0
10.00	2.00	10	14	75	4	40.0	9.2	S52410.0XR2.0
12.00	0.50	12	16	100	4	60.0	11.0	S52412.0XR0.5
12.00	1.00	12	16	100	4	60.0	11.0	S52412.0XR1.0
12.00	2.00	12	16	100	4	60.0	11.0	S52412.0XR2.0
16.00	0.50	16	22	125	4	85.0	15.0	S52416.0XR0.5
16.00	1.00	16	22	125	4	85.0	15.0	S52416.0XR1.0
16.00	2.00	16	22	125	4	85.0	15.0	S52416.0XR2.0
16.00	3.00	16	22	125	4	85.0	15.0	S52416.0XR3.0

S521

- Pinnfräsar med hörnradie
- Varsijyrsimet, säteelliset nurkat
- Pinnefresere Med Hjørneradie
- Pindfræser med hjørneradie

S521 ▪ **1.7** **1.8**





S521



3.00 - 16.00

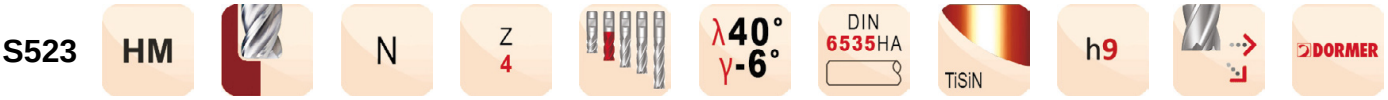
d_1 Ø mm	r ±0.01 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S521
3.00	0.30	6	4	60	4	14.0	2.8	S5213.0XR0.3
4.00	0.30	6	5	60	4	16.0	3.7	S5214.0XR0.3
4.00	0.50	6	5	60	4	16.0	3.7	S5214.0XR0.5
5.00	0.30	6	6	60	4	18.0	4.6	S5215.0XR0.3
5.00	0.50	6	6	60	4	18.0	4.6	S5215.0XR0.5
6.00	0.50	6	7	60	4	20.0	5.5	S5216.0XR0.5
6.00	1.00	6	7	60	4	20.0	5.5	S5216.0XR1.0
8.00	0.50	8	9	64	4	26.0	7.4	S5218.0XR0.5
8.00	1.00	8	9	64	4	26.0	7.4	S5218.0XR1.0
10.00	1.00	10	11	70	4	31.0	9.2	S52110.0XR1.0
10.00	2.00	10	11	70	4	31.0	9.2	S52110.0XR2.0
12.00	1.00	12	13	75	4	37.0	11.0	S52112.0XR1.0
12.00	2.00	12	13	75	4	37.0	11.0	S52112.0XR2.0
16.00	1.00	16	17	90	4	43.0	15.0	S52116.0XR1.0
16.00	2.00	16	17	90	4	43.0	15.0	S52116.0XR2.0
16.00	3.00	16	17	90	4	43.0	15.0	S52116.0XR3.0

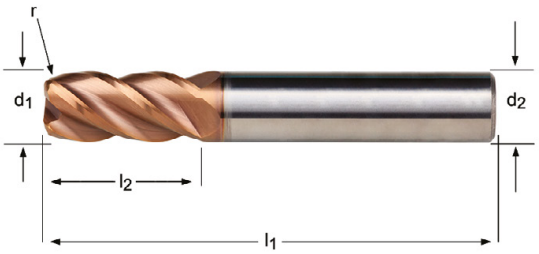
DORMER

S523

- Pinnfräsar med hörnradie
- Varsijyrsimet, säteelliset nurkat
- Pinnefresere Med Hjørneradie
- Pindfræser med hjørneradie

S523 ▪ **1.7** **1.8**







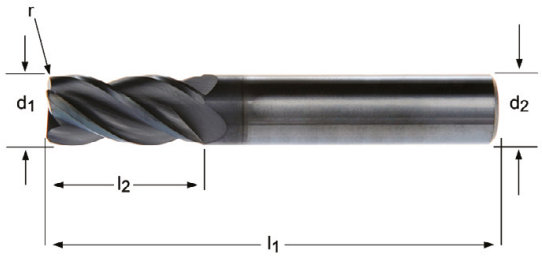
d_1 Ø mm	r ±0.01 mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S523
1.50	0.20	6	4.5	50	4	S5231.5XR0.2
2.00	0.20	6	6.5	50	4	S5232.0XR0.2
3.00	0.20	3	9	50	4	S5233.0XR0.2XD3
3.00	0.30	3	9	50	4	S5233.0XR0.3XD3
3.00	0.20	6	9	50	4	S5233.0XR0.2XD6
3.00	0.30	6	9	50	4	S5233.0XR0.3XD6
3.00	0.50	6	9	50	4	S5233.0XR0.5XD6
4.00	0.30	4	12	50	4	S5234.0XR0.3XD4
4.00	0.50	4	12	50	4	S5234.0XR0.5XD4
4.00	0.30	6	12	50	4	S5234.0XR0.3XD6
4.00	0.50	6	12	50	4	S5234.0XR0.5XD6
5.00	0.30	5	15	50	4	S5235.0XR0.3XD5
5.00	0.50	5	15	50	4	S5235.0XR0.5XD5
5.00	0.30	6	15	50	4	S5235.0XR0.3XD6
5.00	0.50	6	15	50	4	S5235.0XR0.5XD6
6.00	0.30	6	16	50	4	S5236.0XR0.3
6.00	0.50	6	16	50	4	S5236.0XR0.5
6.00	1.00	6	16	50	4	S5236.0XR1.0
8.00	0.30	8	20	64	4	S5238.0XR0.3
8.00	0.50	8	20	64	4	S5238.0XR0.5
8.00	1.00	8	20	64	4	S5238.0XR1.0
8.00	2.00	8	20	64	4	S5238.0XR2.0
10.00	0.50	10	22	70	4	S52310.0XR0.5
10.00	1.00	10	22	70	4	S52310.0XR1.0
10.00	1.50	10	22	70	4	S52310.0XR1.5
10.00	2.00	10	22	70	4	S52310.0XR2.0
12.00	0.50	12	25	75	4	S52312.0XR0.5
12.00	1.00	12	25	75	4	S52312.0XR1.0
12.00	2.00	12	25	75	4	S52312.0XR2.0
12.00	3.00	12	25	75	4	S52312.0XR3.0
16.00	0.50	16	32	90	4	S52316.0XR0.5
16.00	1.00	16	32	90	4	S52316.0XR1.0
16.00	2.00	16	32	90	4	S52316.0XR2.0
16.00	3.00	16	32	90	4	S52316.0XR3.0

S763

- Pinnfräsar med hörnradie
- Varsijyrsimet, säteelliset nurkat
- Pinnefresere Med Hjørneradie
- Pindfræser med hjørneradie

S763 ▪ 1.1 1.2 1.3 1.4 1.5 2.1 2.2 3.1 3.2 3.3 3.4 4.2 5.2







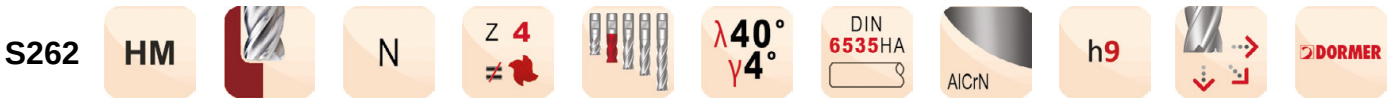
d_1 Ø mm	r ±0.01 mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S763
3.00	0.30	3	9	40	4	S7633.0XR0.3
4.00	0.30	4	12	50	4	S7634.0XR0.3
4.00	0.50	4	12	50	4	S7634.0XR0.5
5.00	0.30	5	15	50	4	S7635.0XR0.3
5.00	0.50	5	15	50	4	S7635.0XR0.5
6.00	0.50	6	16	50	4	S7636.0XR0.5
6.00	1.00	6	16	50	4	S7636.0XR1.0
8.00	0.50	8	20	64	4	S7638.0XR0.5
8.00	1.00	8	20	64	4	S7638.0XR1.0
10.00	0.50	10	22	70	4	S76310.0XR0.5
10.00	1.00	10	22	70	4	S76310.0XR1.0
10.00	2.00	10	22	70	4	S76310.0XR2.0
12.00	1.00	12	25	75	4	S76312.0XR1.0
12.00	2.00	12	25	75	4	S76312.0XR2.0
12.00	3.00	12	25	75	4	S76312.0XR3.0
14.00	1.50	14	32	90	4	S76314.0XR1.5
16.00	1.00	16	32	90	4	S76316.0XR1.0
16.00	2.00	16	32	90	4	S76316.0XR2.0
16.00	3.00	16	32	90	4	S76316.0XR3.0
18.00	2.00	18	38	100	4	S76318.0XR2.0
20.00	3.00	20	38	100	4	S76320.0XR3.0

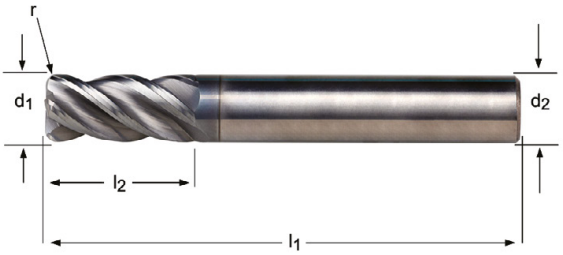
DORMER

S262

- Pinnfräsar med hörnradie
- Varsijyrsimet, säteelliset nurkat
- Pinnefresere Med Hjørneradie
- Pindfræser med hjørneradie

S262 ▪ 1.6 1.7 2.3 2.4 4.3 5.3







d_1 Ø mm	r ±0.01 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	S262
3.00	0.30	6	9	50	4	S2623.0XR0.3
3.00	0.50	6	9	50	4	S2623.0XR0.5
4.00	0.30	6	12	57	4	S2624.0XR0.3
4.00	0.50	6	12	57	4	S2624.0XR0.5
4.00	1.00	6	12	57	4	S2624.0XR1.0
5.00	0.30	6	15	57	4	S2625.0XR0.3
5.00	0.50	6	15	57	4	S2625.0XR0.5
6.00	0.30	6	16	57	4	S2626.0XR0.3
6.00	0.50	6	16	57	4	S2626.0XR0.5
6.00	1.00	6	16	57	4	S2626.0XR1.0
8.00	0.30	8	20	64	4	S2628.0XR0.3
8.00	0.50	8	20	64	4	S2628.0XR0.5
8.00	1.00	8	20	64	4	S2628.0XR1.0
8.00	1.50	8	20	64	4	S2628.0XR1.5
8.00	2.00	8	20	64	4	S2628.0XR2.0
10.00	0.30	10	22	72	4	S26210.0XR0.3
10.00	0.50	10	22	72	4	S26210.0XR0.5
10.00	1.00	10	22	72	4	S26210.0XR1.0
10.00	1.50	10	22	72	4	S26210.0XR1.5
10.00	2.00	10	22	72	4	S26210.0XR2.0
12.00	0.30	12	26	83	4	S26212.0XR0.3
12.00	0.50	12	26	83	4	S26212.0XR0.5
12.00	1.00	12	26	83	4	S26212.0XR1.0
12.00	2.00	12	26	83	4	S26212.0XR2.0
12.00	2.50	12	26	83	4	S26212.0XR2.5
12.00	3.00	12	26	83	4	S26212.0XR3.0
14.00	0.30	14	32	83	4	S26214.0XR0.3
14.00	0.50	14	32	83	4	S26214.0XR0.5
14.00	1.00	14	32	83	4	S26214.0XR1.0
14.00	2.00	14	32	83	4	S26214.0XR2.0
14.00	3.00	14	32	83	4	S26214.0XR3.0
16.00	0.30	16	32	92	4	S26216.0XR0.3
16.00	0.50	16	32	92	4	S26216.0XR0.5
16.00	1.00	16	32	92	4	S26216.0XR1.0
16.00	2.00	16	32	92	4	S26216.0XR2.0
16.00	2.50	16	32	92	4	S26216.0XR2.5
16.00	3.00	16	32	92	4	S26216.0XR3.0
16.00	4.00	16	32	92	4	S26216.0XR4.0
18.00	0.30	18	38	92	4	S26218.0XR0.3
18.00	0.50	18	38	92	4	S26218.0XR0.5

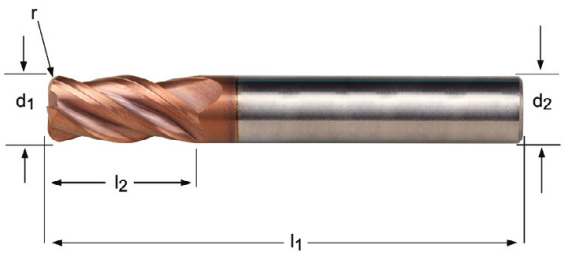
d_1 Ø mm	r ±0.01 mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S262
18.00	1.00	18	38	92	4	S26218.0XR1.0
18.00	2.00	18	38	92	4	S26218.0XR2.0
18.00	3.00	18	38	92	4	S26218.0XR3.0
20.00	0.30	20	38	104	4	S26220.0XR0.3
20.00	0.50	20	38	104	4	S26220.0XR0.5
20.00	1.00	20	38	104	4	S26220.0XR1.0
20.00	2.00	20	38	104	4	S26220.0XR2.0
20.00	2.50	20	38	104	4	S26220.0XR2.5
20.00	3.00	20	38	104	4	S26220.0XR3.0
20.00	4.00	20	38	104	4	S26220.0XR4.0

S767

- Pinnfräsar med hörnradie
- Varsijyrsimet, säteelliset nurkat
- Pinnefresere Med Hjørneradie
- Pindfræser med hjørneradie

S767 ▪ 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 2.1 | 2.2 | 3.1 | 3.2 | 3.3 | 3.4 | 4.2 | 5.2





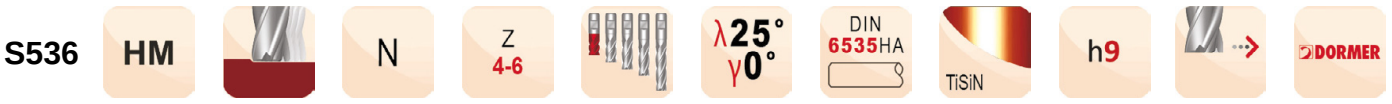


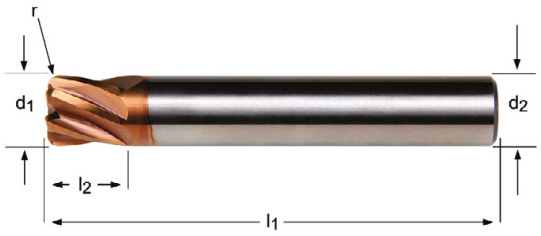
d_1 Ø mm	r ±0.01 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	S767
4.00	0.30	6	11	57	4	S7674.0XR0.3
4.00	0.50	6	11	57	4	S7674.0XR0.5
5.00	0.30	6	13	57	4	S7675.0XR0.3
5.00	0.50	6	13	57	4	S7675.0XR0.5
6.00	0.30	6	13	57	4	S7676.0XR0.3
6.00	0.50	6	13	57	4	S7676.0XR0.5
6.00	1.00	6	13	57	4	S7676.0XR1.0
8.00	0.30	8	20	64	4	S7678.0XR0.3
8.00	0.50	8	20	64	4	S7678.0XR0.5
8.00	1.00	8	20	64	4	S7678.0XR1.0
10.00	0.30	10	22	72	4	S76710.0XR0.3
10.00	0.50	10	22	72	4	S76710.0XR0.5
10.00	1.00	10	22	72	4	S76710.0XR1.0
12.00	0.30	12	26	83	4	S76712.0XR0.3
12.00	0.50	12	26	83	4	S76712.0XR0.5
12.00	1.00	12	26	83	4	S76712.0XR1.0
12.00	2.00	12	26	83	4	S76712.0XR2.0
16.00	0.30	16	32	92	4	S76716.0XR0.3
16.00	0.50	16	32	92	4	S76716.0XR0.5
16.00	1.00	16	32	92	4	S76716.0XR1.0
16.00	2.00	16	32	92	4	S76716.0XR2.0
20.00	0.30	20	38	104	4	S76720.0XR0.3
20.00	0.50	20	38	104	4	S76720.0XR0.5
20.00	1.00	20	38	104	4	S76720.0XR1.0
20.00	2.00	20	38	104	4	S76720.0XR2.0

S536

- Högmatningsfräs
- Varsijyrsimet, suuret syötöt
- Høy mating pinnefres
- High Feed fræser

S536 ▪ **1.7** **1.8**







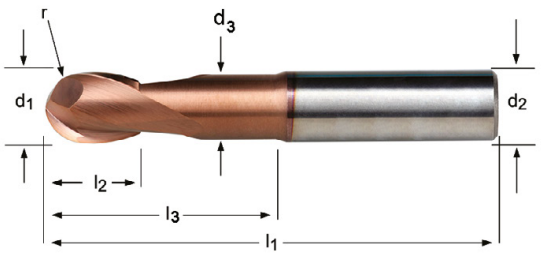
d_1 Ø mm	r ±0.01 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	S536
6.00	1.00	6	6	60	4	S5366.0XR1.0
8.00	2.00	8	8	64	6	S5368.0XR2.0
10.00	2.00	10	10	75	6	S53610.0XR2.0
12.00	2.00	12	12	75	6	S53612.0XR2.0

S229

- Radiepinnfräsar
- Sädejyrsimet
- Radiepinnefresere
- Radiesporfræsere

S229 ▪ 1.6 2.3 2.4 4.3 5.3

S229	HM		N	Z 2		λ 30° γ 3°	DIN 6535HA	TiSiN	h9		DORMER



S229



1.50 - 16.00

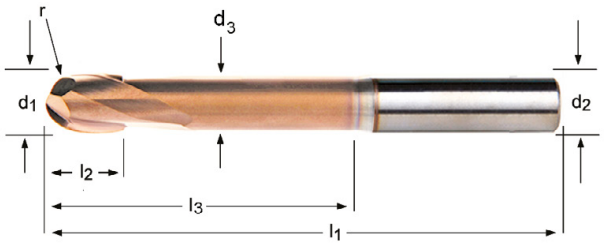
d_1 Ø mm	r +0/-0.02 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S229
1.50	0.75	4	3	50	2	6.0	1.4	S2291.5XD4
2.00	1.00	3	4	50	2	8.0	1.9	S2292.0XD3
2.00	1.00	4	4	50	2	8.0	1.9	S2292.0XD4
3.00	1.50	3	5	50	2	14.0	2.8	S2293.0XD3
3.00	1.50	6	5	50	2	14.0	2.8	S2293.0XD6
4.00	2.00	4	8	50	2	20.0	3.7	S2294.0XD4
4.00	2.00	6	8	50	2	20.0	3.7	S2294.0XD6
5.00	2.50	5	9	50	2	20.0	4.6	S2295.0XD5
5.00	2.50	6	9	50	2	20.0	4.6	S2295.0XD6
6.00	3.00	6	10	50	2	20.0	5.5	S2296.0
8.00	4.00	8	12	64	2	30.0	7.4	S2298.0
10.00	5.00	10	14	70	2	32.0	9.2	S22910.0
12.00	6.00	12	16	75	2	38.0	11.0	S22912.0
14.00	7.00	14	32	90	2	44.0	13.0	S22914.0
16.00	8.00	16	32	90	2	46.0	15.0	S22916.0

S231

- Radiepinnfräsar
- Sädejyrsimet
- Radiepinnefresere
- Radiesporfræsere

S231 ▪ 1.6 2.3 2.4 4.3 5.3

S231	HM		N	Z 2		λ 30° γ 3°	DIN 6535HA	TiSiN	h9		DORMER



S231



1.50 - 16.00

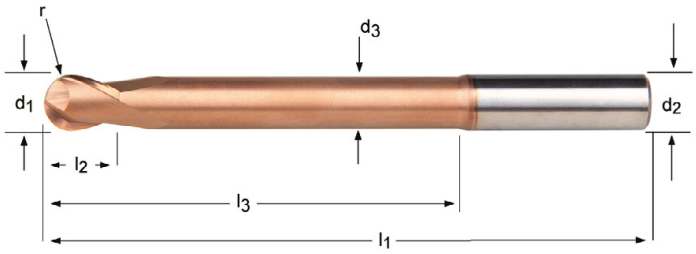
d_1 Ø mm	r +0/-0.02 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S231
1.50	0.75	4	3	75	2	10.0	1.4	S2311.5XD4
2.00	1.00	3	4	60	2	14.0	1.9	S2312.0XD3
2.00	1.00	4	4	75	2	14.0	1.9	S2312.0XD4
3.00	1.50	3	5	60	2	21.0	2.8	S2313.0XD3
3.00	1.50	6	5	75	2	21.0	2.8	S2313.0XD6
4.00	2.00	4	8	60	2	28.0	3.7	S2314.0XD4
4.00	2.00	6	8	75	2	28.0	3.7	S2314.0XD6
5.00	2.50	5	9	60	2	32.0	4.6	S2315.0
6.00	3.00	6	10	75	2	40.0	5.5	S2316.0
8.00	4.00	8	10	75	2	40.0	7.4	S2318.0
10.00	5.00	10	12	75	2	40.0	9.2	S23110.0
12.00	6.00	12	16	100	2	60.0	11.0	S23112.0
16.00	8.00	16	32	125	2	80.0	15.0	S23116.0

S233

- Radiepinnfräsar
- Sädejyrsimet
- Radiepinnefresere
- Radiesporfræsere

S233 ▪ 1.6 2.3 2.4 4.3 5.3





S233



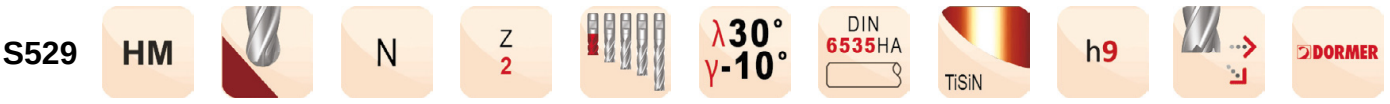
2.00 - 16.00

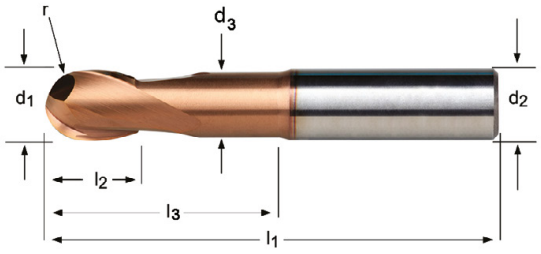
d_1 Ø mm	r +0/-0.02 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S233
2.00	1.00	3	4	100	2	20.0	1.9	S2332.0XD3
2.00	1.00	4	4	100	2	20.0	1.9	S2332.0XD4
3.00	1.50	3	5	100	2	30.0	2.8	S2333.0XD3
3.00	1.50	6	5	100	2	30.0	2.8	S2333.0XD6
4.00	2.00	4	8	100	2	40.0	3.7	S2334.0XD4
4.00	2.00	6	8	100	2	40.0	3.7	S2334.0XD6
5.00	2.50	5	9	100	2	50.0	4.6	S2335.0
6.00	3.00	6	10	100	2	60.0	5.5	S2336.0
8.00	4.00	8	12	100	2	60.0	7.4	S2338.0
10.00	5.00	10	14	125	2	85.0	9.2	S23310.0
12.00	6.00	12	16	125	2	85.0	11.0	S23312.0
14.00	7.00	14	32	150	2	110.0	13.0	S23314.0
16.00	8.00	16	32	150	2	110.0	15.0	S23316.0

S529

- Radiepinnfräsar
- Sädejyrsimet
- Radiepinnefresere
- Radiesporfræsere

S529 ▪ **1.7** **1.8**







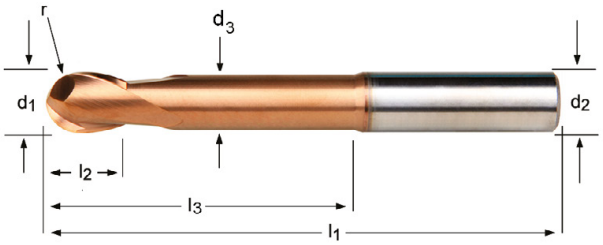
d_1 Ø mm	r +0/-0.02 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S529
1.50	0.75	6	3	50	2	6.0	1.4	S5291.5
2.00	1.00	4	4	50	2	8.0	1.9	S5292.0XD4
2.00	1.00	6	4	50	2	8.0	1.9	S5292.0XD6
3.00	1.50	3	5	50	2	14.0	2.8	S5293.0XD3
3.00	1.50	6	5	50	2	14.0	2.8	S5293.0XD6
4.00	2.00	4	8	50	2	20.0	3.7	S5294.0XD4
4.00	2.00	6	8	50	2	20.0	3.7	S5294.0XD6
5.00	2.50	5	9	50	2	20.0	4.6	S5295.0XD5
5.00	2.50	6	9	50	2	20.0	4.6	S5295.0XD6
6.00	3.00	6	10	50	2	20.0	5.5	S5296.0
8.00	4.00	8	12	64	2	30.0	7.4	S5298.0
10.00	5.00	10	14	70	2	32.0	9.2	S52910.0
12.00	6.00	12	16	75	2	38.0	11.0	S52912.0
16.00	8.00	16	32	90	2	46.0	15.0	S52916.0

S531

- Radiepinnfräsar
- Sädejyrsimet
- Radiepinnefresere
- Radiesporfræsere

S531 ▪ **1.7** **1.8**







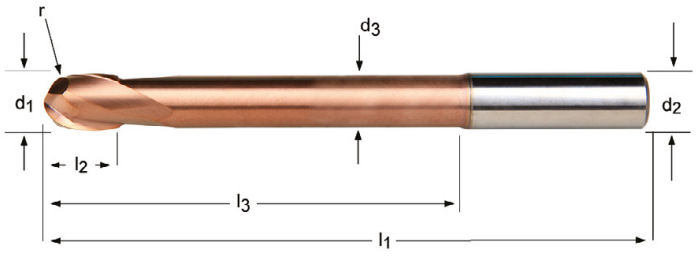
d_1 Ø mm	r +0/-0.02 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S531
1.50	0.75	6	3	75	2	10.0	1.4	S5311.5
2.00	1.00	4	4	75	2	14.0	1.9	S5312.0XD4
2.00	1.00	6	4	75	2	14.0	1.9	S5312.0XD6
3.00	1.50	3	5	60	2	21.0	2.8	S5313.0XD3
3.00	1.50	6	5	75	2	21.0	2.8	S5313.0XD6
4.00	2.00	4	8	60	2	28.0	3.7	S5314.0XD4
4.00	2.00	6	8	75	2	28.0	3.7	S5314.0XD6
5.00	2.50	5	9	60	2	32.0	4.6	S5315.0XD5
5.00	2.50	6	9	75	2	32.0	4.6	S5315.0XD6
6.00	3.00	6	10	75	2	40.0	5.5	S5316.0
8.00	4.00	8	12	75	2	40.0	7.4	S5318.0
10.00	5.00	10	14	75	2	40.0	9.2	S53110.0
12.00	6.00	12	16	100	2	60.0	11.0	S53112.0
16.00	8.00	16	32	125	2	80.0	15.0	S53116.0

S533

- Radiepinnfräsar
- Sädejyrsimet
- Radiepinnefresere
- Radiesporfræsere

S533 ▪ **1.7** **1.8**





S533



2.00 - 16.00

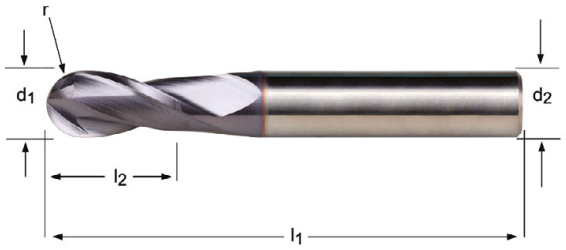
d_1 Ø mm	r +0/-0.02 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S533
2.00	1.00	4	4	100	2	20.0	1.9	S5332.0XD4
2.00	1.00	6	4	100	2	20.0	1.9	S5332.0XD6
3.00	1.50	4	5	100	2	30.0	2.8	S5333.0XD4
3.00	1.50	6	5	100	2	30.0	2.8	S5333.0XD6
4.00	2.00	4	8	100	2	40.0	3.7	S5334.0XD4
4.00	2.00	6	8	100	2	40.0	3.7	S5334.0XD6
5.00	2.50	5	9	100	2	50.0	4.6	S5335.0XD5
5.00	2.50	6	9	100	2	50.0	4.6	S5335.0XD6
6.00	3.00	6	10	100	2	60.0	5.5	S5336.0
8.00	4.00	8	12	100	2	60.0	7.4	S5338.0
10.00	5.00	10	14	125	2	85.0	9.2	S53310.0
12.00	6.00	12	16	125	2	85.0	11.0	S53312.0
14.00	7.00	14	32	150	2	110.0	13.0	S53314.0
16.00	8.00	16	32	150	2	110.0	15.0	S53316.0

S501

- Radiepinnfräsar
- Sädejyrsimet
- Radiepinnefresere
- Radiesporfræsere

S501																					
	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1
		6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3	9.1									
	•	1.7																			

S501	HM		N	Z 2		λ 30° γ 10°	DIN 6535HA	X-CEED	h9		DORMER



S501



1.00 - 16.00

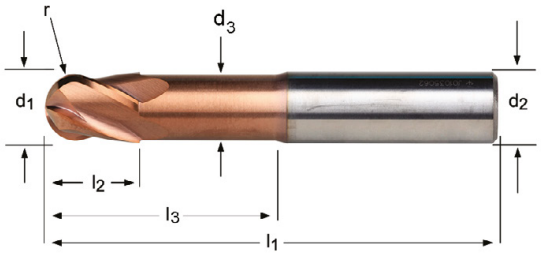
d_1 Ø mm	r ±0.01 mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S501
1.00	0.50	3	3	38	2	S5011.0
1.50	0.75	3	3	38	2	S5011.5
2.00	1.00	3	6	38	2	S5012.0
2.50	1.25	3	7	38	2	S5012.5
3.00	1.50	3	7	38	2	S5013.0
4.00	2.00	6	8	57	2	S5014.0
5.00	2.50	6	10	57	2	S5015.0
6.00	3.00	6	10	57	2	S5016.0
7.00	3.50	8	13	63	2	S5017.0
8.00	4.00	8	16	63	2	S5018.0
9.00	4.50	10	16	72	2	S5019.0
10.00	5.00	10	19	72	2	S50110.0
12.00	6.00	12	22	83	2	S50112.0
16.00	8.00	16	26	92	2	S50116.0

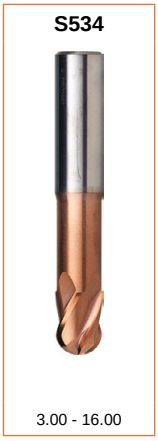
S534

- Radiepinnfräsar
- Sädejyrsimet
- Radiepinnefresere
- Radiesporfræsere

S534 ▪ **1.7** **1.8**







d_1 Ø mm	r +0/-0.02 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S534
3.00	1.50	6	5	50	4	14.0	2.8	S5343.0
4.00	2.00	6	8	50	4	20.0	3.7	S5344.0
5.00	2.50	6	9	50	4	20.0	4.6	S5345.0
6.00	3.00	6	10	50	4	20.0	5.5	S5346.0
8.00	4.00	8	12	64	4	30.0	7.4	S5348.0
10.00	5.00	10	14	70	4	32.0	9.2	S53410.0
12.00	6.00	12	16	75	4	38.0	11.0	S53412.0
14.00	7.00	14	32	90	4	44.0	13.0	S53414.0
16.00	8.00	16	32	90	4	46.0	15.0	S53416.0

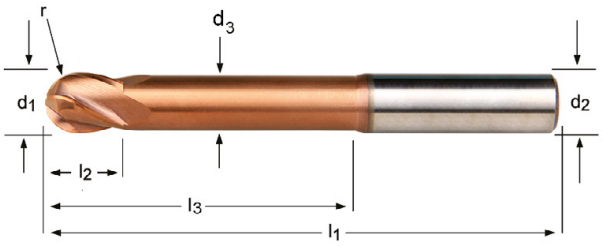
DORMER

S535

- Radiepinnfräsar
- Sädejyrsimet
- Radiepinnefresere
- Radiesporfræsere

S535 ▪ **1.7** **1.8**

S535 | HM | N | Z 4 | λ30° γ-10° | DIN 6535HA | TiSiN | h9 | DORMER





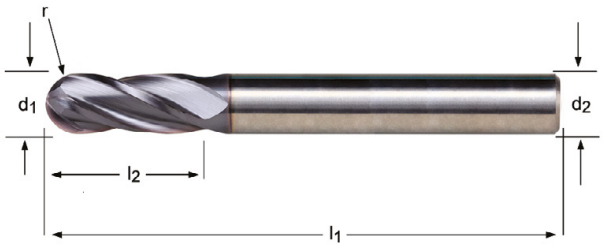
d_1 Ø mm	r +0/-0.02 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S535
3.00	1.50	6	5	75	4	21.0	2.8	S5353.0
4.00	2.00	6	8	75	4	28.0	3.7	S5354.0
5.00	2.50	6	9	75	4	32.0	4.6	S5355.0
6.00	3.00	6	10	75	4	40.0	5.5	S5356.0
8.00	4.00	8	12	75	4	40.0	7.4	S5358.0
10.00	5.00	10	14	75	4	40.0	9.2	S53510.0
12.00	6.00	12	16	100	4	60.0	11.0	S53512.0
14.00	7.00	14	32	125	4	80.0	13.0	S53514.0
16.00	8.00	16	32	125	4	80.0	15.0	S53516.0

S511

- Radiepinnfräsar
- Sädejyrsimet
- Radiepinnefresere
- Radiesporfræsere

S511	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	7.3
		7.4	8.2	8.3	9.1																
	•	1.7	6.1	6.2	6.3	6.4	7.1	7.2	8.1												

S511	HM		N	Z 4		λ 30° γ 10°	DIN 6535HA	X-CEED	h9		DORMER



S511



3.00 - 16.00

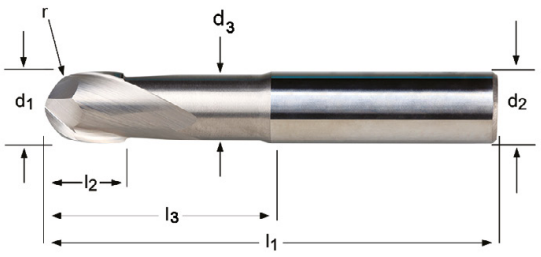
d_1 Ø mm	r ±0.01 mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S511
3.00	1.50	6	8	80	4	S5113.0
4.00	2.00	6	11	80	4	S5114.0
5.00	2.50	6	13	80	4	S5115.0
6.00	3.00	6	13	80	4	S5116.0
7.00	3.50	8	16	100	4	S5117.0
8.00	4.00	8	19	100	4	S5118.0
9.00	4.50	10	19	100	4	S5119.0
10.00	5.00	10	22	100	4	S51110.0
12.00	6.00	12	26	100	4	S51112.0
16.00	8.00	16	32	100	4	S51116.0

S629

- Radiepinnfräsar
- Sädejyrsimet
- Radiepinnefresere
- Radiesporfræsere

S629 ▪ 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2

S629 | HM | W | Z 2 | λ 30° γ 15° | DIN 6535HA | Hi | h9 | DORMER



S629



3.00 - 20.00

d_1 Ø mm	r +0/-0.02 mm	d_2 Ø mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S629
3.00	1.50	6	5	57	2	20.0	2.8	S6293.0
4.00	2.00	6	6	57	2	20.0	3.7	S6294.0
5.00	2.50	6	7	57	2	20.0	4.6	S6295.0
6.00	3.00	6	8	57	2	20.0	5.5	S6296.0
8.00	4.00	8	10	64	2	25.0	7.4	S6298.0
10.00	5.00	10	12	75	2	35.0	9.2	S62910.0
12.00	6.00	12	14	75	2	35.0	11.0	S62912.0
16.00	8.00	16	18	90	2	45.0	15.0	S62916.0
20.00	10.00	20	22	100	2	50.0	19.0	S62920.0

S739

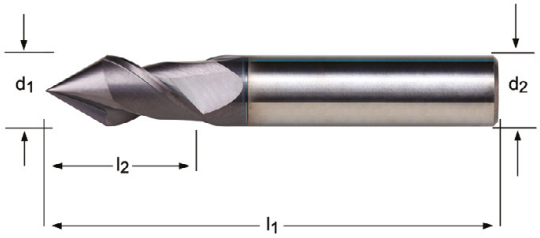
- Fasfräs - 60°
- Varsijyrsimet, viisteiden jyrsintään - 60°
- Vinkel pinnefres - 60°
- Fræser til Rejfning - 60°

S740

- Fasfräs - 90°
- Varsijyrsimet, viisteiden jyrsintään - 90°
- Vinkel pinnefres - 90°
- Fræser til Rejfning - 90°

S739; S740	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	3.1	3.2	3.3	3.4	4.2	5.2	6.1	6.2	6.3	6.4
		7.1	7.2	7.3	7.4													

S739	HM		N	Z 2		λ40° γ10°	DIN 6535HA	 AlTiN	h9		DORMER
S740	HM		N	Z 2		λ40° γ10°	DIN 6535HA	 AlTiN	h9		DORMER



S739	S740
	
3.00 - 20.00	3.00 - 20.00

▷	d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	S739	S740
60°	3.00	3	9	40	2	S7393.0	
90°	3.00	3	9	40	2		S7403.0
60°	4.00	4	12	50	2	S7394.0	
90°	4.00	4	12	50	2		S7404.0
60°	5.00	5	15	50	2	S7395.0	
90°	5.00	5	15	50	2		S7405.0
60°	6.00	6	16	50	2	S7396.0	
90°	6.00	6	16	50	2		S7406.0
60°	8.00	8	20	64	2	S7398.0	
90°	8.00	8	20	64	2		S7408.0
60°	10.00	10	22	70	2	S73910.0	
90°	10.00	10	22	70	2		S74010.0
60°	12.00	12	25	75	2	S73912.0	
90°	12.00	12	25	75	2		S74012.0
60°	16.00	16	32	90	2	S73916.0	
90°	16.00	16	32	90	2		S74016.0
60°	20.00	20	38	100	2	S73920.0	
90°	20.00	20	38	100	2		S74020.0

S991

- Fräsar i Solid Hårdmetall Sats
- Kovametalli jyrsinsarja
- Sett med Freser i Hardmetall
- Fræsere i HM, sæt

A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
A=Työkalujen malli, B=lkm ja C=halkaisijat
A=Typer i sett. B=Antall i sett. C=Diameter i sett
A=Typer i sæt. B=Antal i sæt. C=Diameterne





Set

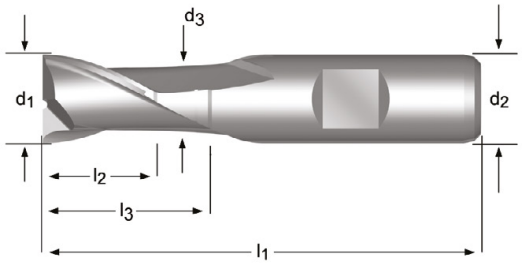
Nr.	A	B	C	S991
922	S922	6	Ø 3.00 mm, 4.00 mm, 5.00 mm, 6.00 mm, 8.00 mm, 10.00 mm	S991SET922
933	S933	6	Ø 3.00 mm, 4.00 mm, 5.00 mm, 6.00 mm, 8.00 mm, 10.00 mm	S991SET933
944	S944	6	Ø 3.00 mm, 4.00 mm, 5.00 mm, 6.00 mm, 8.00 mm, 10.00 mm	S991SET944

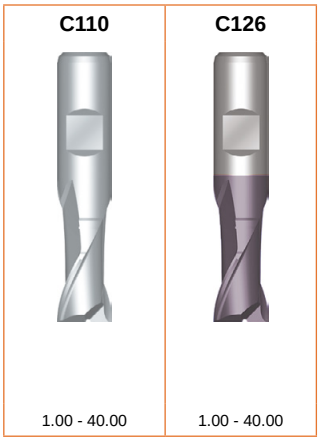
C110
C126

- Spårfräsar
- Kiilaurajyrsimet
- Sporfres
- Sporfræsere

C110	▪	1.1	1.2	4.1	5.1	6.1	6.2	6.3							
	•	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	7.3	8.1	
C126	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3
	•	1.5	1.6	2.1	2.3	4.3	5.3	6.4	7.1	7.2	7.3	7.4	8.1			

C110	HSS-E PM	P9	N	Z 2		λ30° γ12°	DIN 1835B		e8		DIN 327D
C126	HSS-E PM	P9	N	Z 2		λ30° γ12°	DIN 1835B	TiCN	e8		DIN 327D





d_1 Ø Inch	d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C110	C126
	1.00	6	2.5	47	2	-	-	C1101.0	C1261.0
	1.50	6	3	47	2	-	-	C1101.5	C1261.5
1/16	1.59	6	3	47	2	-	-	C1101/16	
	1.80	6	4	48	2	-	-	C1101.8	
	2.00	6	4	48	2	-	-	C1102.0	C1262.0
3/32	2.38	6	5	49	2	-	-	C1103/32	
	2.50	6	5	49	2	-	-	C1102.5	C1262.5
	2.80	6	5	49	2	-	-	C1102.8	
	3.00	6	5	49	2	-	-	C1103.0	C1263.0
1/8	3.18	6	6	50	2	-	-	C1101/8	
	3.50	6	6	50	2	-	-	C1103.5	C1263.5
	3.80	6	7	51	2	-	-	C1103.8	
	4.00	6	7	51	2	-	-	C1104.0	C1264.0
	4.50	6	7	51	2	-	-	C1104.5	C1264.5
3/16	4.76	6	8	52	2	-	-	C1103/16	
	4.80	6	8	52	2	-	-	C1104.8 [1)2)]	
	5.00	6	8	52	2	-	-	C1105.0	C1265.0
	5.50	6	8	52	2	-	-	C1105.5	C1265.5
	5.75	6	8	52	2	-	-	C1105.75 [1)2)]	
	6.00	6	8	52	2	-	-	C1106.0	C1266.0
1/4	6.35	10	10	60	2	-	-	C1101/4	
	6.50	10	10	60	2	-	-	C1106.5	C1266.5
	7.00	10	10	60	2	-	-	C1107.0	C1267.0
	7.50	10	10	60	2	-	-	C1107.5	C1267.5
	7.75	10	11	61	2	-	-	C1107.75 [1)2)]	
5/16	7.94	10	11	61	2	-	-	C1105/16	
	8.00	10	11	61	2	-	-	C1108.0	C1268.0

[1)] diametertolerans h10 / halk.toleranssi: h10 / diametertoleranse h10 / diameter tolerance h10
[2)] ≠ P9 tolerans / ≠ P9 toleranssi / ≠ P9 toleranse / ≠ P9 tolerance

d_1 Ø Inch	d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C110	C126
	8.50	10	11	61	2	-	-	C1108.5	C1268.5
	9.00	10	11	61	2	-	-	C1109.0	C1269.0
	9.50	10	11	61	2	-	-	C1109.5	C1269.5
3/8	9.52	10	13	63	2	22.5	9.5	C1103/8	
	10.00	10	13	63	2	22.5	9.5	C11010.0	C12610.0
13/32	10.32	12	13	70	2	-	-	C11013/32	
	10.50	12	13	70	2	-	-	C11010.5	C12610.5
	11.00	12	13	70	2	-	-	C11011.0	C12611.0
7/16	11.11	12	13	70	2	-	-	C1107/16	
	11.50	12	13	70	2	-	-	C11011.5	C12611.5
	12.00	12	16	73	2	27.5	11.5	C11012.0	C12612.0
	12.50	12	16	73	2	27.5	11.5	C11012.5	C12612.5
1/2	12.70	12	16	73	2	27.5	11.5	C1101/2	
	13.00	12	16	73	2	27.5	11.5	C11013.0	C12613.0
17/32	13.49	12	16	73	2	27.5	11.5	C11017/32	
	14.00	12	16	73	2	27.5	11.5	C11014.0	C12614.0
9/16	14.29	12	16	73	2	27.5	11.5	C1109/16	
	15.00	12	16	73	2	27.5	11.5	C11015.0	C12615.0
5/8	15.88	16	19	79	2	30.5	15.5	C1105/8	
	16.00	16	19	79	2	30.5	15.5	C11016.0	C12616.0
	17.00	16	19	79	2	30.5	15.5	C11017.0	
11/16	17.46	16	19	79	2	30.5	15.5	C11011/16	
	18.00	16	19	79	2	30.5	15.5	C11018.0	C12618.0
	19.00	16	19	79	2	30.5	15.5	C11019.0	
3/4	19.05	20	22	88	2	37.5	18.5	C1103/4	
	20.00	20	22	88	2	37.5	19.5	C11020.0	C12620.0
	22.00	20	22	88	2	37.5	19.5	C11022.0	C12622.0
7/8	22.22	20	22	88	2	37.5	19.5	C1107/8	
	24.00	25	26	102	2	45.5	23.5	C11024.0	C12624.0
	25.00	25	26	102	2	45.5	24.5	C11025.0	C12625.0
1“	25.40	25	26	102	2	45.5	24.5	C1101	
	26.00	25	26	102	2	45.5	24.5	C11026.0	
	28.00	25	26	102	2	45.5	24.5	C11028.0	
	30.00	25	26	102	2	45.5	24.5	C11030.0	C12630.0
	32.00	32	32	112	2	51.5	31.5	C11032.0	
	35.00	32	32	112	2	51.5	31.5	C11035.0 [1)3)]	
	36.00	32	32	112	2	51.5	31.5	C11036.0 [1)3)]	
	40.00	40	38	130	2	59.5	39.0	C11040.0 [1)3)]	

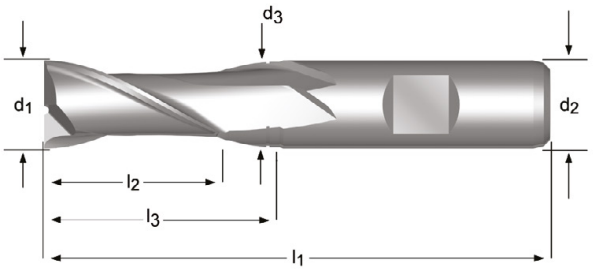
[1)] diametertolerans h10 / halk.toleranssi: h10 / diametertoleranse h10 / diameter tolerance h10
[2)] ≠ P9 tolerans / ≠ P9 toleranssi / ≠ P9 toleranse / ≠ P9 tolerance
[3)] Endast tillgänglig i HSCo / Saatavana vain HSCo / Bare tilgjengelig i HSCo / Kun tilgængelig i HSCO

C123
- Spårfräsar
- Kiilaurajyrsimet

C139
- Sporfres
- Sporfræsere

C123	▪	1.1	1.2	1.3	1.4	4.1	5.1	6.1	6.2	6.3					
	•	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	7.3	8.1			
C139	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3
	•	1.5	1.6	2.1	2.3	4.3	5.3	6.4	7.1	7.2	7.3	7.4	8.1			

C123	HSS-E PM	P9	N	Z 2		λ 30° γ 12°	DIN 1835B		e8		DIN 844K
C139	HSS-E PM	P9	N	Z 2		λ 30° γ 12°	DIN 1835B	TiCN	e8		DIN 844K




C123

1/16 - 30.00


C139

2.00 - 25.00

d_1 Ø Inch	d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C123	C139
1/16	1.59	6	7	51	2	-	-	C1231/16 [1]	
	2.00	6	7	51	2	-	-	C1232.0	C1392.0
	2.50	6	8	52	2	-	-	C1232.5	
	3.00	6	8	52	2	-	-	C1233.0	C1393.0
1/8	3.18	6	10	54	2	-	-	C1231/8 [1]	
	3.50	6	10	54	2	-	-	C1233.5	
5/32	3.97	6	11	55	2	-	-	C1235/32 [1]	
	4.00	6	11	55	2	-	-	C1234.0	C1394.0
	4.50	6	11	55	2	-	-	C1234.5	
3/16	4.76	6	13	57	2	-	-	C1233/16 [1]	
	5.00	6	13	57	2	-	-	C1235.0	C1395.0
	5.50	6	13	57	2	-	-	C1235.5	C1395.5
	6.00	6	13	57	2	-	-	C1236.0	C1396.0
1/4	6.35	10	16	66	2	-	-	C1231/4 [1]	
	6.50	10	16	66	2	-	-	C1236.5	C1396.5
	7.00	10	16	66	2	-	-	C1237.0	C1397.0
	7.50	10	16	66	2	-	-	C1237.5	C1397.5
5/16	7.94	10	19	69	2	-	-	C1235/16 [1]	
	8.00	10	19	69	2	-	-	C1238.0	C1398.0
	8.50	10	19	69	2	-	-	C1238.5	C1398.5
	9.00	10	19	69	2	-	-	C1239.0	C1399.0
	9.50	10	19	69	2	-	-	C1239.5	C1399.5
3/8	9.52	10	22	72	2	31.5	9.5	C1233/8 [1]	
	10.00	10	22	72	2	31.5	9.5	C12310.0	C13910.0
	11.00	12	22	79	2	-	-	C12311.0	C13911.0
	12.00	12	26	83	2	37.5	11.5	C12312.0	C13912.0
1/2	12.70	12	26	83	2	37.5	11.5	C1231/2 [1]	
	13.00	12	26	83	2	37.5	11.5	C12313.0	C13913.0

d_1 Ø Inch	d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C123	C139
	14.00	12	26	83	2	37.5	11.5	C12314.0	C13914.0
	15.00	12	26	83	2	37.5	11.5	C12315.0	C13915.0
	16.00	16	32	92	2	43.5	15.5	C12316.0	C13916.0
	18.00	16	32	92	2	43.5	15.5	C12318.0	C13918.0
	20.00	20	38	104	2	53.5	19.5	C12320.0	C13920.0
	22.00	20	38	104	2	53.5	19.5	C12322.0	C13922.0
	25.00	25	45	121	2	64.5	24.5	C12325.0	C13925.0
	30.00	25	45	121	2	64.5	24.5	C12330.0	

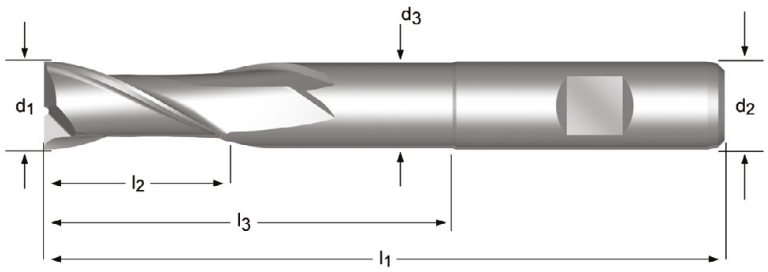
[1] diametertolerans -.0005” / -.0013” / halk.toleranssi: - 0,0005” / -0,0013” / diametertoleranse -.0005” / -.0013” / diameter tolerance -.0005” / -.0013”
[2] diametertolerans -.0005” / -.0015” / halk.toleranssi: - 0,0005” / -0,0015” / diametertoleranse -.0005” / -.0015” / diameter tolerance -.0005” / -.0015”
[3] Endast tillgänglig i HSCo / Saatavana vain HSCo / Bare tilgjengelig i HSCo / Kun tilgængelig i HSCO

C135

- Spårfräsar
- Kiilaurajyrsimet
- Sporfres
- Sporfræsere

C135														
	▪	1.1	1.2	5.1	6.1	6.2	6.3							
	•	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.1	4.2	5.2	7.1	7.2	7.3	8.1

C135	HSS-E	P9	N	Z 2		λ 30° γ 12°	DIN 1835B		e8		DORMER



C135



2.00 - 20.00

d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C135
2.00	6	7	54	2	18.0	1.8	C1352.0
3.00	6	8	56	2	20.0	2.8	C1353.0
4.00	6	11	63	2	27.0	3.7	C1354.0
5.00	6	13	68	2	32.0	4.7	C1355.0
6.00	6	13	68	2	32.0	5.7	C1356.0
8.00	10	19	88	2	48.0	7.5	C1358.0
10.00	10	22	95	2	54.5	9.5	C13510.0
12.00	12	26	110	2	64.5	11.5	C13512.0
14.00	12	26	110	2	64.5	11.5	C13514.0
16.00	16	32	123	2	74.5	15.5	C13516.0
18.00	16	32	123	2	74.5	15.5	C13518.0
20.00	20	38	141	2	90.5	19.5	C13520.0

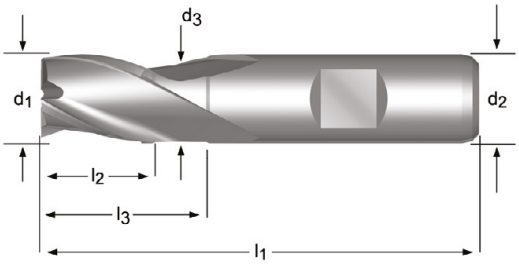
DORMER

C306
C353

- Spårfräsar
- Kiilaurajyrsimet
- Sporfres
- Sporfræsere

C306	■	1.2	1.3	4.1	5.1	6.1	6.2	6.3							
	•	1.1	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.2	7.3	8.1		
C353	■	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3
	•	1.1	1.6	2.1	2.2	2.3	4.3	5.3	6.4	7.2	7.3	7.4	8.1			

C306	HSS-E PM	P9	N	Z 3		λ30° γ12°	DIN 1835B		e8 h10		DIN 327D
C353	HSS-E PM	P9	N	Z 3		λ30° γ12°	DIN 1835B	Alcrona	e8 h10		DIN 327D





C306: 3.00 - 30.00



C353: 3.00 - 30.00

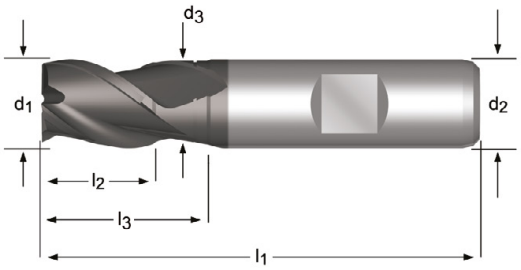
d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C306	C353
3.00	6	5	49	3	-	-	C3063.0	C3533.0
3.50	6	6	50	3	-	-		C3533.5
4.00	6	7	51	3	-	-	C3064.0	C3534.0
4.50	6	7	51	3	-	-		C3534.5
4.80	6	8	52	3	-	-		C3534.8
5.00	6	8	52	3	-	-	C3065.0	C3535.0
5.50	6	8	52	3	-	-		C3535.5
6.00	6	8	52	3	-	-	C3066.0	C3536.0
6.50	10	10	60	3	-	-		C3536.5
7.00	10	10	60	3	-	-	C3067.0	C3537.0
7.50	10	10	60	3	-	-		C3537.5
7.75	10	11	61	3	-	-		C3537.75
8.00	10	11	61	3	-	-	C3068.0	C3538.0
8.50	10	11	61	3	-	-		C3538.5
9.00	10	11	61	3	-	-	C3069.0	C3539.0
9.50	10	11	61	3	-	-	C3069.5	C3539.5
10.00	10	13	63	3	22.5	9.5	C30610.0	C35310.0
11.00	12	13	70	3	-	-	C30611.0	C35311.0
12.00	12	16	73	3	27.5	11.5	C30612.0	C35312.0
13.00	12	16	73	3	27.5	11.5		C35313.0
14.00	12	16	73	3	27.5	11.5	C30614.0	C35314.0
15.00	12	16	73	3	27.5	11.5	C30615.0	C35315.0
16.00	16	19	79	3	30.5	15.5	C30616.0	C35316.0
18.00	16	19	79	3	30.5	15.5	C30618.0	C35318.0
20.00	20	22	88	3	37.5	19.5	C30620.0	C35320.0
22.00	20	22	88	3	37.5	19.5	C30622.0	C35322.0
25.00	25	26	102	3	45.5	24.5	C30625.0	C35325.0
28.00	25	26	102	3	45.5	24.5		C35328.0
30.00	25	26	102	3	45.5	24.5	C30630.0	C35330.0

C367

- Spårfräsar
- Kiilaurajyrsimet
- Sporfres
- Sporfræsere

C367									
	▪	1.1	1.2	2.1	2.2	2.3	2.4	6.1	7.1
	•	1.3	1.4	4.1	5.1	6.2	6.3	7.2	7.3	8.1

C367 | HSS-E PM | P9 | N | Z 3 | λ40° γ15° | DIN 1835B | Alcrona | e8 | DIN 327D



C367



2.00 - 20.00

d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C367
2.00	6	4	48	3	-	-	C3672.0
3.00	6	5	49	3	-	-	C3673.0
4.00	6	7	51	3	-	-	C3674.0
5.00	6	8	52	3	-	-	C3675.0
6.00	6	8	52	3	-	-	C3676.0
7.00	10	10	60	3	-	-	C3677.0
8.00	10	11	61	3	-	-	C3678.0
10.00	10	13	63	3	22.5	9.5	C36710.0
11.00	12	13	70	3	-	-	C36711.0
12.00	12	16	73	3	27.5	11.5	C36712.0
14.00	12	16	73	3	27.5	11.5	C36714.0
16.00	16	19	79	3	30.5	15.5	C36716.0
18.00	16	19	79	3	30.5	15.5	C36718.0
20.00	20	22	88	3	37.5	19.5	C36720.0

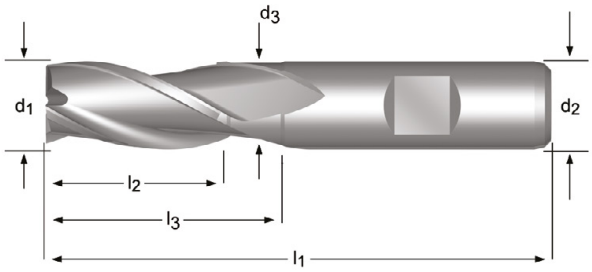
DORMER

C305
C352

- Spårfräsar
- Kiilaurajyrsimet
- Sporfres
- Sporfræsere

C305	▪	1.2	1.3	4.1	5.1	5.2	6.1	6.2	6.3						
	•	1.1	1.4	2.1	3.1	3.2	3.3	3.4	4.2	7.2	7.3	8.1			
C352	▪	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3
	•	1.1	1.6	2.1	2.2	2.3	4.3	5.3	6.4	7.2	7.3	7.4	8.1			

C305	HSS-E PM	P9	N	Z 3		λ30° γ12°	DIN 1835B		e8		DIN 844K
C352	HSS-E PM	P9	N	Z 3		λ30° γ12°	DIN 1835B	Alcrona	e8		DIN 844K




C305

2.00 - 32.00


C352

3.00 - 20.00

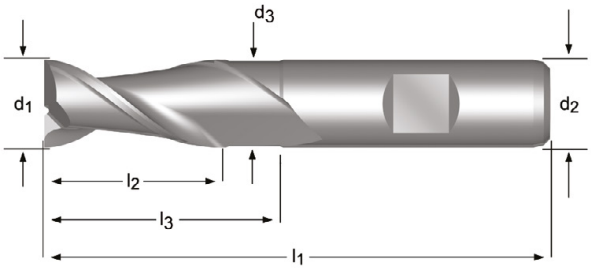
d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C305	C352
2.00	6	7	51	3	-	-	C3052.0	
2.50	6	8	52	3	-	-	C3052.5	
3.00	6	8	52	3	-	-	C3053.0	C3523.0
3.50	6	10	54	3	-	-	C3053.5	
4.00	6	11	55	3	-	-	C3054.0	C3524.0
4.50	6	11	55	3	-	-	C3054.5	
5.00	6	13	57	3	-	-	C3055.0	C3525.0
5.50	6	13	57	3	-	-	C3055.5	
6.00	6	13	57	3	-	-	C3056.0	C3526.0
6.50	10	16	66	3	-	-	C3056.5	
7.00	10	16	66	3	-	-	C3057.0	
7.50	10	16	66	3	-	-	C3057.5	
8.00	10	19	69	3	-	-	C3058.0	C3528.0
8.50	10	19	69	3	-	-	C3058.5	
9.00	10	19	69	3	-	-	C3059.0	
10.00	10	22	72	3	31.5	9.5	C30510.0	C35210.0
11.00	12	22	79	3	-	-	C30511.0	
12.00	12	26	83	3	37.5	11.5	C30512.0	C35212.0
13.00	12	26	83	3	37.5	11.5	C30513.0	
14.00	12	26	83	3	37.5	11.5	C30514.0	C35214.0
15.00	12	26	83	3	37.5	11.5	C30515.0	
16.00	16	32	92	3	43.5	15.5	C30516.0	C35216.0
17.00	16	32	92	3	43.5	15.5	C30517.0	
18.00	16	32	92	3	43.5	15.5	C30518.0	C35218.0
19.00	16	32	92	3	43.5	15.5	C30519.0	
20.00	20	38	104	3	53.5	19.5	C30520.0	C35220.0
22.00	20	38	104	3	53.5	19.5	C30522.0	
25.00	25	45	121	3	-	-	C30525.0	
28.00	25	45	121	3	-	-	C30528.0	
30.00	25	45	121	3	-	-	C30530.0	
32.00	32	53	133	3	-	-	C30532.0	

C159

- Spårfräsar
- Kiilaurajyrsimet
- Sporfres
- Sporfræsere

C159									
	▪	1.1	6.1	6.2	6.3	7.1	7.2	7.3	8.1	8.2
	•	1.2	1.3	2.1	2.2	4.1	5.1			

C159	HSS-E	P9	W	Z 2		λ 40° γ 20°	DIN 1835B		e8		DIN 844K



C159



2.00 - 20.00

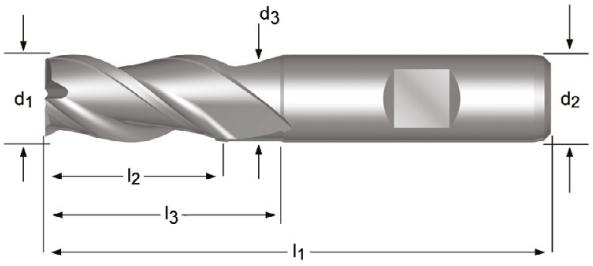
d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C159
2.00	6	7	51	2	-	-	C1592.0
3.00	6	8	52	2	-	-	C1593.0
4.00	6	11	55	2	-	-	C1594.0
5.00	6	13	57	2	-	-	C1595.0
6.00	6	13	57	2	-	-	C1596.0
8.00	10	19	69	2	-	-	C1598.0
10.00	10	22	72	2	-	-	C15910.0
12.00	12	26	83	2	-	-	C15912.0
14.00	12	26	83	2	37.5	11.5	C15914.0
16.00	16	32	92	2	43.5	15.5	C15916.0
18.00	16	32	92	2	43.5	15.5	C15918.0
20.00	20	38	104	2	53.5	19.5	C15920.0

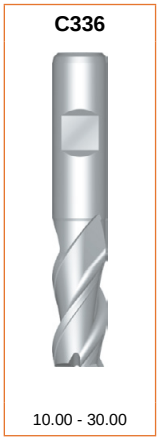
C336

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Sporfræsere

C336									
	▪	6.1	6.2	6.3	7.1	7.2	7.3	8.1	8.2
	•	1.1	1.2	1.3	2.1	2.2	4.1	5.1	

C336	HSS-E PM		W	Z 3		λ40° γ25°	DIN 1835B		k10		DIN 844K





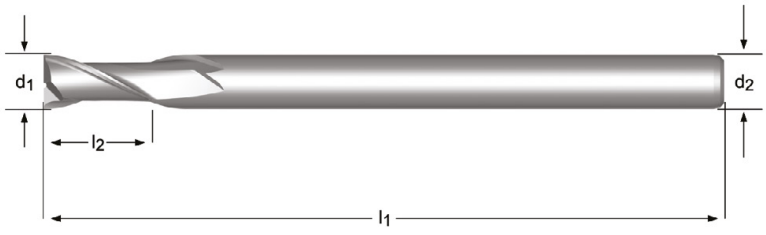
d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C336
10.00	10	22	72	3	31.5	9.5	C33610.0
12.00	12	26	83	3	37.5	11.5	C33612.0
14.00	12	26	83	3	37.5	11.5	C33614.0
16.00	16	32	92	3	43.5	15.5	C33616.0
18.00	16	32	92	3	43.5	15.5	C33618.0
20.00	20	38	104	3	53.5	19.5	C33620.0
22.00	20	38	104	3	53.5	19.5	C33622.0
25.00	25	45	121	3	64.5	24.5	C33625.0
30.00	25	45	121	3	64.5	24.5	C33630.0

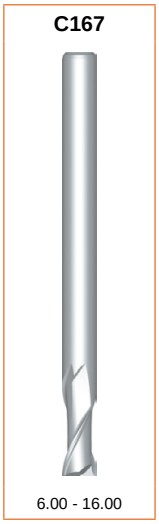
C167

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Pindfræser

C167														
	▪	1.1	1.2	5.1	6.1	6.2	6.3							
	•	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.1	4.2	5.2	7.1	7.2	7.3	8.1

C167 | HSS-E | N | Z 2 | λ 30° γ 12° | DIN 1835A | js14 | DORMER





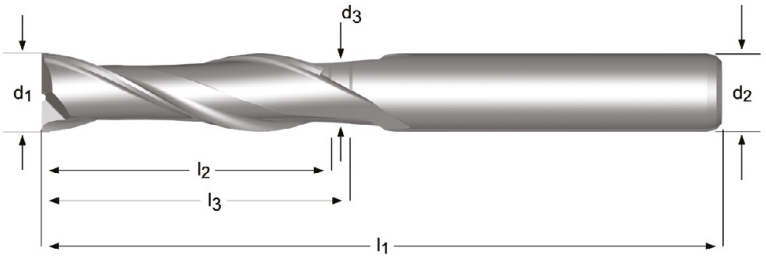
d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	C167
6.00	6	13	180	2	C1676.0
8.00	8	19	180	2	C1678.0
10.00	10	22	200	2	C16710.0
12.00	12	26	200	2	C16712.0
16.00	16	32	200	2	C16716.0

C122

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Pindfræser

C122 ▪ 1.1 1.2 5.1 6.1 6.2 6.3
C122 • 1.3 1.4 2.1 3.1 3.2 3.3 3.4 4.1 4.2 5.2 7.1 7.2 7.3 8.1

C122 | HSS-E | N | Z 2 | λ 30° γ 12° | DIN 1835A | e8 | DORMER



C122



5.00 - 22.00

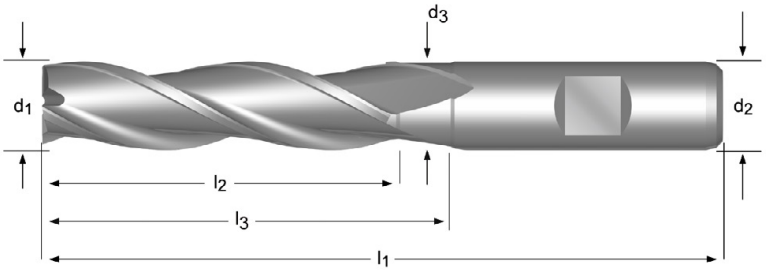
d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C122
5.00	5	22	65	2	-	-	C1225.0
6.00	6	27	75	2	-	-	C1226.0
7.00	8	33	85	2	-	-	C1227.0
8.00	8	33	85	2	-	-	C1228.0
10.00	10	40	95	2	-	-	C12210.0
12.00	12	45	110	2	-	-	C12212.0
14.00	12	52	125	2	-	-	C12214.0
16.00	16	58	140	2	69.5	15.5	C12216.0
18.00	16	65	150	2	76.5	15.5	C12218.0
20.00	20	70	160	2	85.5	19.5	C12220.0
22.00	20	75	170	2	90.5	19.5	C12222.0

C346

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Pindfræser

C346														
	▪	1.2	4.1	5.1	6.1	6.2	6.3							
	•	1.1	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	8.1

C346	HSS-E		N	Z 3		λ 30° γ 12°	DIN 1835B		e8		DIN 844L



C346



3.00 - 20.00

d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C346
3.00	6	12	56	3	-	-	C3463.0
4.00	6	19	63	3	-	-	C3464.0
5.00	6	24	68	3	-	-	C3465.0
6.00	6	24	68	3	-	-	C3466.0
7.00	10	30	80	3	-	-	C3467.0
8.00	10	38	88	3	-	-	C3468.0
9.00	10	38	88	3	-	-	C3469.0
10.00	10	45	95	3	-	-	C34610.0
11.00	12	45	102	3	-	-	C34611.0
12.00	12	53	110	3	-	-	C34612.0
13.00	12	53	110	3	64.5	11.5	C34613.0
15.00	12	53	110	3	64.5	11.5	C34615.0
16.00	16	63	123	3	74.5	15.5	C34616.0
20.00	20	75	141	3	90.5	19.5	C34620.0

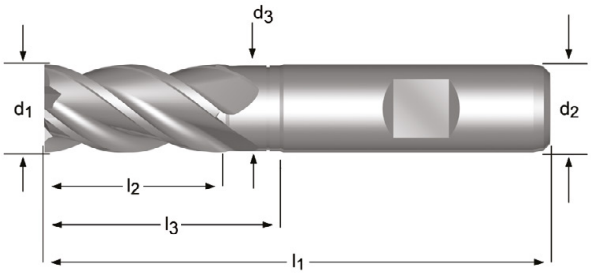
DORMER

C299
C907

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Pindfræser

C299	▪	1.3	1.4	1.5	2.1	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.1	5.2	5.3	6.2	7.4	
	•	1.6	2.2	4.1														
C907	▪	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.1	5.2	5.3	6.2	7.4
	•	4.1																

C299	HSS-E PM		N	Z 3-5		λ45° γ12°	DIN 1835B		k10		DIN 844K
C907	HSS-E PM		N	Z 3-6		λ45° γ12°	DIN 1835B	Alcrona	k10		DIN 844K



C299	C907
	
3.00 - 20.00	3.00 - 32.00

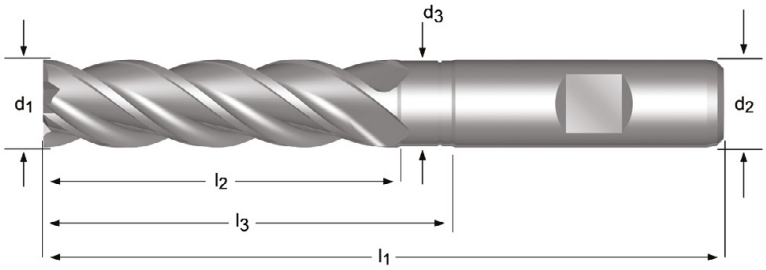
d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C299	C907
3.00	6	8	52	3	-	-	C2993.0	C9073.0
4.00	6	11	55	3	-	-	C2994.0	C9074.0
5.00	6	13	57	3	-	-	C2995.0	C9075.0
6.00	6	13	57	3	-	-	C2996.0	C9076.0
8.00	10	19	69	4	-	-	C2998.0	C9078.0
10.00	10	22	72	4	31.5	9.5	C29910.0	C90710.0
12.00	12	26	83	4	37.5	11.5	C29912.0	C90712.0
14.00	12	26	83	4	37.5	11.5	C29914.0	C90714.0
16.00	16	32	92	4	43.5	15.5	C29916.0	C90716.0
18.00	16	32	92	4	43.5	15.5	C29918.0	C90718.0
20.00	20	38	104	4	53.5	19.5	C29920.0	C90720.0
22.00	20	38	104	5	53.5	19.5		C90722.0
28.00	25	45	121	6	64.5	24.5		C90728.0
30.00	25	45	121	6	64.5	24.5		C90730.0
32.00	32	53	133	6	72.5	31.5		C90732.0

C920

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Pindfræser

C920																		
	▪	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.1	5.2	5.3	6.2	7.4
	•	4.1																	

C920	HSS-E PM		N	Z 3-5		λ45° γ12°	DIN 1835B	Alcrona	k10		DIN 844L



C920



6.00 - 25.00

d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C920
6.00	6	24	68	3	-	-	C9206.0
8.00	10	38	88	4	-	-	C9208.0
10.00	10	45	95	4	54.5	9.5	C92010.0
12.00	12	53	110	4	64.5	11.5	C92012.0
14.00	12	53	110	4	64.5	11.5	C92014.0
16.00	16	63	123	4	74.5	15.5	C92016.0
18.00	16	63	123	4	74.5	15.5	C92018.0
20.00	20	75	141	4	90.5	19.5	C92020.0
22.00	20	75	141	5	90.5	19.5	C92022.0
25.00	25	90	166	5	109.5	24.5	C92025.0

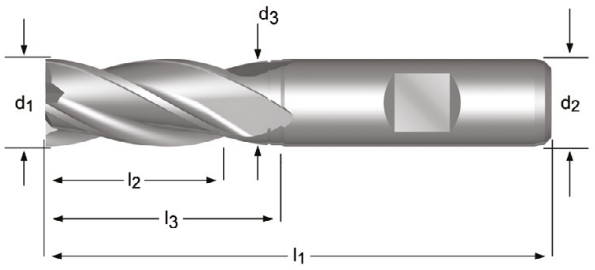
DORMER

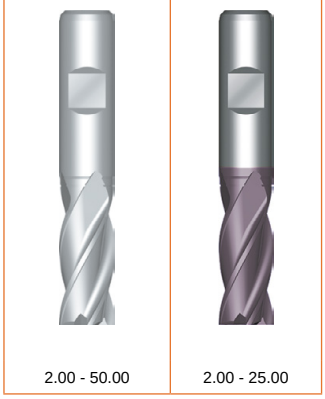
C247
C246

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Pindfræser

C247	■	1.1	1.2	1.3	4.1	5.1	6.1	6.2	6.3						
	•	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	7.3	8.1		
C246	■	1.1	1.2	1.3	1.4	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3
	•	1.5	1.6	2.1	2.3	4.3	5.3	6.4	7.1	7.2	7.3	7.4	8.1			

C247	HSS-E PM	N	Z 4-8		λ30° γ12°	DIN 1835B		k10		DIN 844K
C246	HSS-E PM	N	Z 4-6		λ30° γ12°	DIN 1835B	TiCN	k10		DIN 844K





d_1 Ø Inch	d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C247	C246
	2.00	6	7	51	4	-	-	C2472.0	C2462.0
	2.50	6	8	52	4	-	-	C2472.5	
	3.00	6	8	52	4	-	-	C2473.0	C2463.0
1/8	3.18	6	10	54	4	-	-	C2471/8 [1)]	
	3.50	6	10	54	4	-	-	C2473.5	
	4.00	6	11	55	4	-	-	C2474.0	C2464.0
	4.50	6	11	55	4	-	-	C2474.5	
3/16	4.76	6	13	57	4	-	-	C2473/16 [1)]	
	5.00	6	13	57	4	-	-	C2475.0	C2465.0
	5.50	6	13	57	4	-	-	C2475.5	
	6.00	6	13	57	4	-	-	C2476.0	C2466.0
1/4	6.35	10	16	66	4	-	-	C2471/4 [1)]	
	6.50	10	16	66	4	-	-	C2476.5	
	7.00	10	16	66	4	-	-	C2477.0	C2467.0
	7.50	10	16	66	4	-	-	C2477.5	
5/16	7.94	10	19	69	4	-	-	C2475/16 [1)]	
	8.00	10	19	69	4	-	-	C2478.0	C2468.0
	8.50	10	19	69	4	-	-	C2478.5	
	9.00	10	19	69	4	-	-	C2479.0	
	9.50	10	19	69	4	-	-	C2479.5	
3/8	9.52	10	22	72	4	31.5	9.5	C2473/8 [1)]	
	10.00	10	22	72	4	31.5	9.5	C24710.0	C24610.0
	11.00	12	22	79	4	-	-	C24711.0	C24611.0
	12.00	12	26	83	4	37.5	11.5	C24712.0	C24612.0
1/2	12.70	12	26	83	4	37.5	11.5	C2471/2 [1)]	
	13.00	12	26	83	4	37.5	11.5	C24713.0	C24613.0
	14.00	12	26	83	4	37.5	11.5	C24714.0	C24614.0
9/16	14.29	12	26	83	4	37.5	11.5	C2479/16 [1)]	
	15.00	12	26	83	4	37.5	11.5	C24715.0	C24615.0
5/8	15.88	16	32	92	4	43.5	15.5	C2475/8 [1)]	

[1)] diametertolerans +.0025" / -.0005" / halk.toleranssi: + 0,0025" / -0,0005" / diametertoleranse +.0025" / -.0005" / diameter tolerance +.0025" / -.0005"

d_1 Ø Inch	d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C247	C246
	16.00	16	32	92	4	43.5	15.5	C24716.0	C24616.0
	17.00	16	32	92	4	43.5	15.5	C24717.0	
	18.00	16	32	92	4	43.5	15.5	C24718.0	C24618.0
	19.00	16	32	92	4	43.5	15.5	C24719.0	
3/4	19.05	20	38	104	4	53.5	18.5	C2473/4 [1)]	
	20.00	20	38	104	4	53.5	19.5	C24720.0	C24620.0
	21.00	20	38	104	4	53.5	19.5	C24721.0	
	22.00	20	38	104	5	53.5	19.5	C24722.0	C24622.0
7/8	22.22	20	38	104	5	53.5	19.5	C2477/8 [1)]	
	23.00	20	38	104	5	53.5	19.5	C24723.0	
	24.00	25	45	121	5	64.5	23.5	C24724.0	
	25.00	25	45	121	5	64.5	24.5	C24725.0	C24625.0
1“	25.40	25	45	121	5	64.5	24.5	C2471 [1)]	
	26.00	25	45	121	6	64.5	24.5	C24726.0	
	28.00	25	45	121	6	64.5	24.5	C24728.0	
	30.00	25	45	121	6	64.5	24.5	C24730.0	
	32.00	32	53	133	6	72.5	31.5	C24732.0	
	36.00	32	53	133	6	72.5	31.5	C24736.0 [2)3)]	
	40.00	40	63	155	6	84.5	39.0	C24740.0 [2)3)]	
	50.00	50	75	177	8	96.5	48.0	C24750.0 [2)3)]	

[1)] diametertolerans +.0025” / -.0005” / halk.toleranssi: + 0,0025” / -0,0005” / diametertoleranse +.0025” / -.0005” / diameter tolerance +.0025” / -.0005”

[2)] ej centerskärande / Ei ole poraava / Ikke senterskjærende / Ikke centerskær

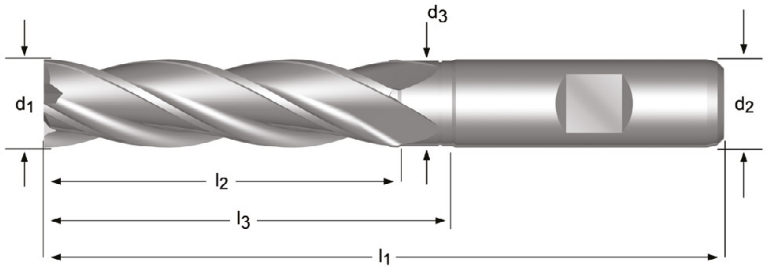
[3)] Endast tillgänglig i HSCo / Saatavana vain HSCo / Bare tilgjengelig i HSCo / Kun tilgængelig i HSCO

C273
C295

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Pindfræser

C273	■	1.1	1.2	1.3	4.1	5.1	6.1	6.2	6.3						
	•	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	7.3	8.1		
C295	■	1.1	1.2	1.3	1.4	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3
	•	1.5	1.6	2.1	2.3	4.3	5.3	6.4	7.1	7.2	7.3	7.4	8.1			

C273	HSS-E PM		N	Z 4-6		λ30° γ12°	DIN 1835B		k10		DIN 844L
C295	HSS-E PM		N	Z 4-6		λ30° γ12°	DIN 1835B	 TiCN	k10		DIN 844L



C273	C295
	
2.00 - 40.00	2.00 - 40.00

d_1 Ø Inch	d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C273	C295
	2.00	6	10	54	4	-	-	C2732.0	C2952.0
	2.50	6	12	56	4	-	-	C2732.5	
	3.00	6	12	56	4	-	-	C2733.0	C2953.0
1/8	3.18	6	15	59	4	-	-	C2731/8 [1)]	
	3.50	6	15	59	4	-	-	C2733.5	
	4.00	6	19	63	4	-	-	C2734.0	C2954.0
	4.50	6	19	63	4	-	-	C2734.5	
3/16	4.76	6	24	68	4	-	-	C2733/16 [1)]	
	5.00	6	24	68	4	-	-	C2735.0	C2955.0
	5.50	6	24	68	4	-	-	C2735.5	
	6.00	6	24	68	4	-	-	C2736.0	C2956.0
1/4	6.35	10	30	80	4	-	-	C2731/4 [1)]	
	7.00	10	30	80	4	-	-	C2737.0	C2957.0
	8.00	10	38	88	4	-	-	C2738.0	C2958.0
	9.00	10	38	88	4	-	-	C2739.0	C2959.0
3/8	9.52	10	45	95	4	54.5	9.5	C2733/8 [1)]	
	10.00	10	45	95	4	54.5	9.5	C27310.0	C29510.0
	11.00	12	45	102	4	-	-	C27311.0	C29511.0
	12.00	12	53	110	4	64.5	11.5	C27312.0	C29512.0
1/2	12.70	12	53	110	4	64.5	11.5	C2731/2 [1)]	
	13.00	12	53	110	4	64.5	11.5	C27313.0	
	14.00	12	53	110	4	64.5	11.5	C27314.0	
	15.00	12	53	110	4	64.5	11.5	C27315.0	C29515.0
5/8	15.88	16	63	123	4	74.5	15.5	C2735/8 [1)]	
	16.00	16	63	123	4	74.5	15.5	C27316.0	C29516.0
	18.00	16	63	123	4	74.5	15.5	C27318.0	C29518.0

[1)] diametertolerans +.0025" / -.0005" / halk.toleranssi: + 0,0025" / -0,0005" / diametertoleranse +.0025" / -.0005" / diameter tolerance +.0025" / -.0005"

d_1 Ø Inch	d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C273	C295
3/4	19.05	20	75	141	4	90.5	18.5	C2733/4 [1)]	
	20.00	20	75	141	4	90.5	19.5	C27320.0	C29520.0
	22.00	20	75	141	5	90.5	19.5	C27322.0	
	25.00	25	90	166	5	109.5	24.5	C27325.0	C29525.0
1“	25.40	25	90	166	5	109.5	24.5	C2731 [1)]	
	28.00	25	90	166	6	109.5	24.5	C27328.0	
	30.00	25	90	166	6	109.5	24.5	C27330.0	C29530.0
	32.00	32	106	186	6	125.5	31.5	C27332.0	C29532.0
	40.00	40	125	217	6	146.5	39.0	C27340.0 [2)3)]	C29540.0

[1)] diametertolerans +.0025” / -.0005” / halk.toleranssi: + 0,0025” / -0,0005” / diametertoleranse +.0025” / -.0005” / diameter tolerance +.0025” / -.0005”

[2)] Endast tillgänglig i HSCo / Saatavana vain HSCo / Bare tilgjengelig i HSCo / Kun tilgængelig i HSCO

[3)] ej centerskärande / Ei ole poraava / Ikke senterskjærende / Ikke centerskær

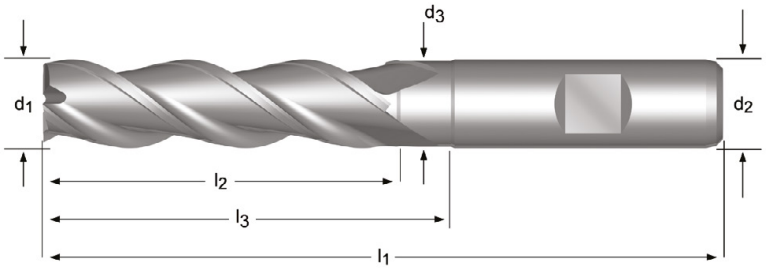
DORMER

C333

- Pinnfräsar
- Varsijyrsimet
- Pinnefresere
- Pindfræser

C333 ▪ 6.1 6.2 6.3 7.1 7.2 7.3 8.1 8.2

C333 | HSS-E PM | W | Z 3 | λ40° γ25° | DIN 1835B | k10 | DIN 844L



C333



10.00 - 30.00

d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C333
10.00	10	45	95	3	54.5	9.5	C33310.0
12.00	12	53	110	3	64.5	11.5	C33312.0
14.00	12	53	110	3	64.5	11.5	C33314.0
16.00	16	63	123	3	74.5	15.5	C33316.0
18.00	16	63	123	3	74.5	15.5	C33318.0
20.00	20	75	141	3	90.5	19.5	C33320.0
25.00	25	90	166	3	109.5	24.5	C33325.0
30.00	25	90	166	3	109.5	24.5	C33330.0

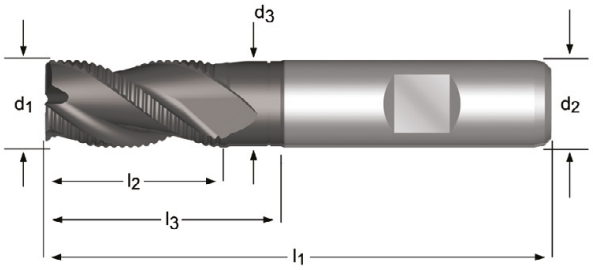
C922

- Spåndelande Pinnfräsar
- Rouhintajyrsimet
- Spondelende Pinnefresere
- Spåndelende Pindfræser

C922 ▪ 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.2 4.3 5.2 5.3 6.2 7.4

• 1.3 4.1 5.1 6.4

C922 HSS-E PM | HRA | Z 3-4 | λ 35° γ 12° | DIN 1835B | Alcrona | k12 | DIN 844K





d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C922
6.00	6	13	57	3	-	-	C9226.0
7.00	10	16	66	3	-	-	C9227.0
8.00	10	19	69	3	-	-	C9228.0
9.00	10	19	69	3	-	-	C9229.0
10.00	10	22	72	3	31.5	9.5	C92210.0
11.00	12	22	79	3	-	-	C92211.0
12.00	12	26	83	3	37.5	11.5	C92212.0
13.00	12	26	83	3	37.5	11.5	C92213.0
14.00	12	26	83	3	37.5	11.5	C92214.0
15.00	12	26	83	3	37.5	11.5	C92215.0
16.00	16	32	92	3	43.5	15.5	C92216.0
18.00	16	32	92	3	43.5	15.5	C92218.0
20.00	20	38	104	3	53.5	19.5	C92220.0
22.00	20	38	104	3	53.5	19.5	C92222.0
24.00	25	45	121	4	64.5	23.5	C92224.0
25.00	25	45	121	4	64.5	24.5	C92225.0
28.00	25	45	121	4	64.5	24.5	C92228.0
32.00	32	53	133	4	72.5	31.5	C92232.0

DORMER

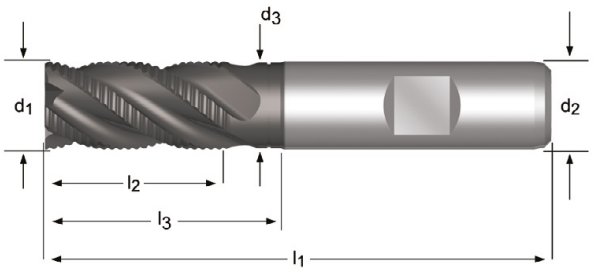
C428

- Spåndelande Pinnfräsar
- Rouhintajyrsimet
- Spondelende Pinnefresere
- Spåndelende Pindfræser

C428 ▪ 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.2 4.3 5.2 5.3 6.2 7.4

• 1.3 4.1 5.1 6.4

C428 | HSS-E PM | HRA | Z 4-6 | λ35° γ12° | DIN 1835B | Alcrona | k12 | DIN 844K



C428



6.00 - 40.00

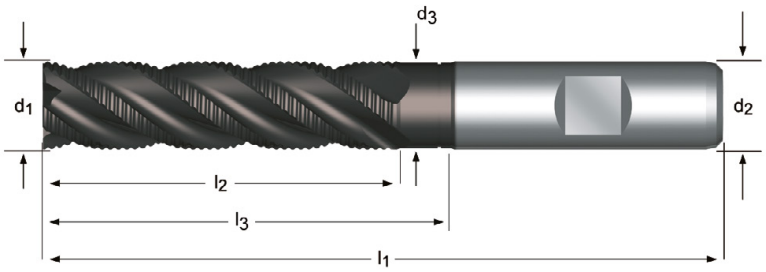
d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C428
6.00	6	13	57	4	-	-	C4286.0
7.00	10	16	66	4	-	-	C4287.0
8.00	10	19	69	4	-	-	C4288.0
9.00	10	19	69	4	-	-	C4289.0
10.00	10	22	72	4	31.5	9.5	C42810.0
11.00	12	22	79	4	-	-	C42811.0
12.00	12	26	83	4	37.5	11.5	C42812.0
13.00	12	26	83	4	37.5	11.5	C42813.0
14.00	12	26	83	4	37.5	11.5	C42814.0
15.00	12	26	83	4	37.5	11.5	C42815.0
16.00	16	32	92	4	43.5	15.5	C42816.0
18.00	16	32	92	4	43.5	15.5	C42818.0
20.00	20	38	104	4	53.5	19.5	C42820.0
22.00	20	38	104	4	53.5	19.5	C42822.0
25.00	25	45	121	6	64.5	24.5	C42825.0
28.00	25	45	121	6	64.5	24.5	C42828.0
30.00	25	45	121	6	64.5	24.5	C42830.0
32.00	32	53	133	6	72.5	31.5	C42832.0
36.00	32	53	133	6	72.5	31.0	C42836.0
40.00	40	63	155	6	84.5	39.0	C42840.0

C492

- Spåndelande Pinnfräsar
- Rouhintajyrsimet
- Spondelende Pinnefresere
- Spåndelende Pindfræser

C492																	
	▪	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.2	5.3	6.2	7.4
	•	4.1	5.1	6.4														

C492	HSS-E PM		HRA	Z 3-6		λ 35° γ 12°	DIN 1835B	Alcrona	k12		DIN 844L



C492



6.00 - 30.00

d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C492
6.00	6	24	68	3	-	-	C4926.0
8.00	10	38	88	3	-	-	C4928.0
10.00	10	45	95	4	54.5	9.5	C49210.0
12.00	12	53	110	4	64.5	11.5	C49212.0
14.00	12	53	110	4	64.5	11.5	C49214.0
16.00	16	63	123	4	74.5	15.5	C49216.0
18.00	16	63	123	4	74.5	15.5	C49218.0
20.00	20	75	141	4	90.5	19.5	C49220.0
22.00	20	75	141	4	90.5	19.5	C49222.0
25.00	25	90	166	6	109.5	24.5	C49225.0
30.00	25	90	166	6	109.5	24.5	C49230.0

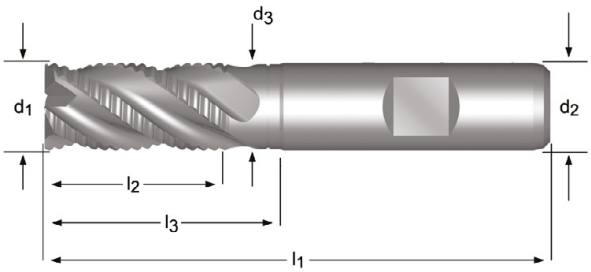
DORMER

C407
C908

- Spåndelande Pinnfräsar
- Rouhintajyrsimet
- Spondelende Pinnefresere
- Spåndelende Pindfræser

C407	▪	1.2	1.3	1.4	1.5	2.1	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.2	5.3	6.2
	•	1.1	1.6	2.2	4.1	5.1	6.4	7.4								
C908	▪	1.3	1.4	1.5	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.2	5.3	6.2
	•	1.6	4.1	5.1	6.4	7.4										

C407	HSS-E PM		NRA	Z 4-6		λ35° γ12°	DIN 1835B		k12		DIN 844K
C908	HSS-E PM		NRA	Z 4-6		λ35° γ12°	DIN 1835B	Alcrona	k12		DIN 844K





C407: 6.00 - 20.00



C908: 6.00 - 32.00

d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C407	C908
6.00	6	13	57	4	-	-	C4076.0	C9086.0
7.00	10	16	66	4	-	-	C4077.0	C9087.0
8.00	10	19	69	4	-	-	C4078.0	C9088.0
9.00	10	19	69	4	-	-	C4079.0	C9089.0
10.00	10	22	72	4	31.5	9.5	C40710.0	C90810.0
11.00	12	22	79	4	-	-	C40711.0	C90811.0
12.00	12	26	83	4	37.5	11.5	C40712.0	C90812.0
13.00	12	26	83	4	37.5	11.5	C40713.0	C90813.0
14.00	12	26	83	4	37.5	11.5	C40714.0	C90814.0
15.00	12	26	83	4	37.5	11.5	C40715.0	C90815.0
16.00	16	32	92	4	43.5	15.5	C40716.0	C90816.0
18.00	16	32	92	4	43.5	15.5	C40718.0	C90818.0
20.00	20	38	104	4	53.5	19.5	C40720.0	C90820.0
22.00	20	38	104	4	53.5	19.5		C90822.0
25.00	25	45	121	6	64.5	24.5		C90825.0
30.00	25	45	121	6	64.5	24.5		C90830.0
32.00	32	53	133	6	72.5	31.5		C90832.0

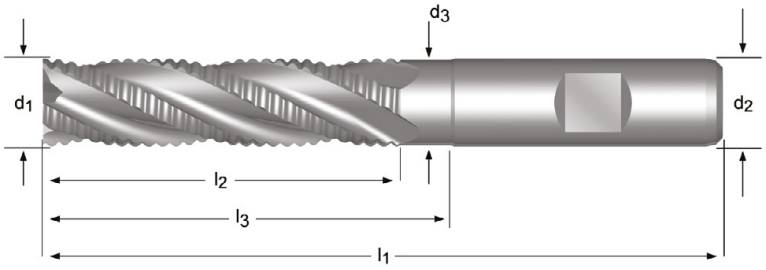
C948

- Spåndelande Pinnfräsar
- Rouhintajyrsimet
- Spondelende Pinnefresere
- Spåndelende Pindfræser

C948 ▪ 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.2 4.3 5.2 5.3 6.2 7.4

C948 • 4.1 5.1 6.4

C948 | HSS-E PM | NRA | Z 4-6 | λ35° γ12° | DIN 1835B | Alcrona | k12 | DIN 844L



C948



6.00 - 32.00

d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C948
6.00	6	24	68	4	-	-	C9486.0
8.00	10	38	88	4	-	-	C9488.0
10.00	10	45	95	4	54.5	9.5	C94810.0
12.00	12	53	110	4	64.5	11.5	C94812.0
14.00	12	53	110	4	64.5	11.5	C94814.0
16.00	16	63	123	4	74.5	15.5	C94816.0
18.00	16	63	123	4	74.5	15.5	C94818.0
20.00	20	75	141	4	90.5	19.5	C94820.0
25.00	25	90	166	6	109.5	24.5	C94825.0
30.00	25	90	166	6	109.5	24.5	C94830.0
32.00	32	106	186	6	125.5	31.5	C94832.0

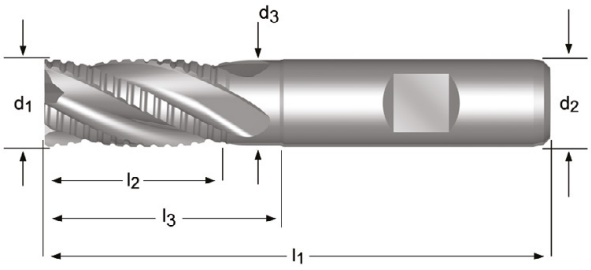
DORMER

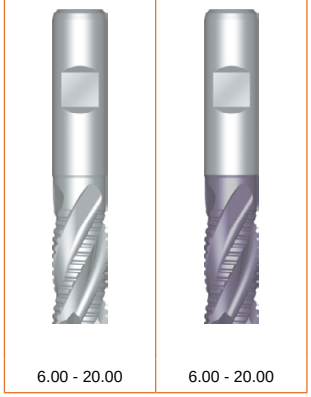
C400
C413

- Spåndelande Pinnfräsar
- Rouhintajyrsimet
- Spondelende Pinnefresere
- Spåndelende Pindfræser

C400	▪	1.2	1.3	6.2	6.3										
	•	1.1	1.4	2.1	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	7.2	7.3	8.1
C413	▪	1.2	1.3	1.4	3.1	3.2	3.3	3.4	4.2	5.2	6.2	6.3				
	•	1.1	1.5	1.6	2.1	2.3	4.1	4.3	5.1	5.3	6.1	6.4	7.2	7.3	7.4	8.1

C400	HSS-E		NF	Z 4-6		λ30° γ12°	DIN 1835B		k12		DIN 844K
C413	HSS-E		NF	Z 4-6		λ30° γ12°	DIN 1835B	 TiCN	k12		DIN 844K





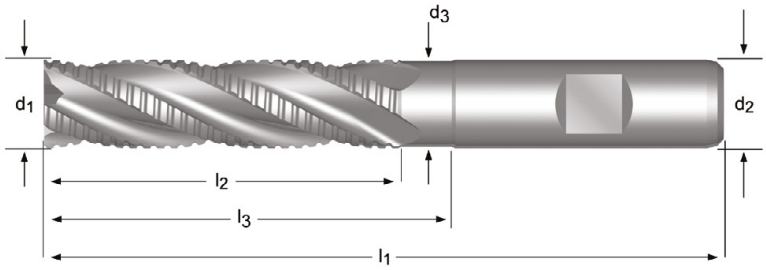
d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C400	C413
6.00	6	13	57	4	-	-	C4006.0	C4136.0
8.00	10	19	69	4	-	-	C4008.0	C4138.0
10.00	10	22	72	4	-	-	C40010.0	C41310.0
12.00	12	26	83	4	-	-	C40012.0	C41312.0
14.00	12	26	83	4	37.5	11.5	C40014.0	C41314.0
16.00	16	32	92	4	43.5	15.5	C40016.0	C41316.0
18.00	16	32	92	4	43.5	15.5	C40018.0	C41318.0
20.00	20	38	104	4	53.5	19.5	C40020.0	C41320.0

C403

- Spåndelande Pinnfräsar
- Rouhintajyrsimet
- Spondelende Pinnefresere
- Spåndelende Pindfræser

C403															
	▪	1.2	1.3	6.2	6.3										
	•	1.1	1.4	2.1	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	7.2	7.3	8.1

C403 | HSS-E | NF | Z 4-6 | λ30° γ12° | DIN 1835B | k12 | DIN 844L



C403



10.00 - 50.00

d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C403
10.00	10	45	95	4	-	-	C40310.0
12.00	12	53	110	4	-	-	C40312.0
14.00	12	53	110	4	64.5	11.5	C40314.0
16.00	16	63	123	4	74.5	15.5	C40316.0
18.00	16	63	123	4	74.5	15.5	C40318.0
20.00	20	75	141	4	90.5	19.5	C40320.0
30.00	25	90	166	5	109.5	24.5	C40330.0
32.00	32	106	186	6	125.5	31.0	C40332.0
36.00	32	106	186	6	125.5	31.5	C40336.0
40.00	40	125	217	6	146.5	39.0	C40340.0
45.00	40	125	217	6	146.5	39.5	C40345.0
50.00	50	150	252	6	171.5	48.0	C40350.0

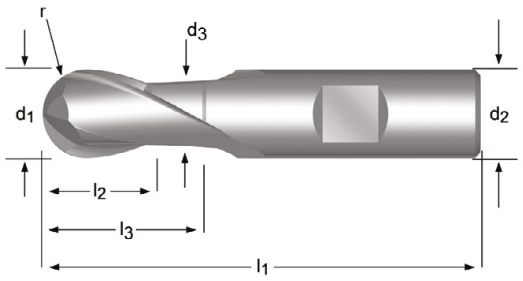
DORMER

C500

- Radiepinnfräsar
- Sädejyrsimet
- Radiepinnefresere
- Radiesporfræsere

C500														
	■	1.1	1.2	4.1	5.1	6.1	6.2	6.3						
	•	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	7.3	8.1

C500	HSS-E		N	Z 2		λ30° γ12°	DIN 1835B		e8		DIN 327D



C500



2.00 - 25.00

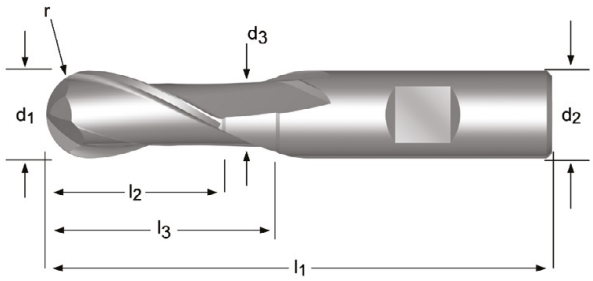
d_1 Ø mm	r ±0.05 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C500
2.00	1.00	6	4	48	2	-	-	C5002.0
3.00	1.50	6	5	49	2	-	-	C5003.0
4.00	2.00	6	7	51	2	-	-	C5004.0
5.00	2.50	6	8	52	2	-	-	C5005.0
6.00	3.00	6	8	52	2	-	-	C5006.0
7.00	3.50	10	10	60	2	-	-	C5007.0
8.00	4.00	10	11	61	2	-	-	C5008.0
9.00	4.50	10	11	61	2	-	-	C5009.0
10.00	5.00	10	13	63	2	-	-	C50010.0
12.00	6.00	12	16	73	2	-	-	C50012.0
14.00	7.00	12	16	73	2	27.5	11.5	C50014.0
15.00	7.50	12	16	73	2	27.5	11.5	C50015.0
16.00	8.00	16	19	79	2	30.5	15.5	C50016.0
18.00	9.00	16	19	79	2	30.5	15.5	C50018.0
20.00	10.00	20	22	88	2	37.5	19.5	C50020.0
25.00	12.50	25	26	102	2	45.5	24.5	C50025.0

C505

- Radiepinnfräsar
- Sädejyrsimet
- Radiepinnefresere
- Radiesporfræsere

C505													
	▪	1.1	1.2	4.1	5.1	6.1	6.2	6.3					
	•	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	7.3	8.1

C505	HSS-E		N	Z 2		λ 30° γ 12°	DIN 1835B		e8		DIN 844K



C505



3.00 - 30.00

d_1 Ø mm	r ±0.05 mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C505
3.00	1.50	6	8	52	2	-	-	C5053.0
4.00	2.00	6	11	55	2	-	-	C5054.0
5.00	2.50	6	13	57	2	-	-	C5055.0
6.00	3.00	6	13	57	2	-	-	C5056.0
8.00	4.00	10	19	69	2	-	-	C5058.0
10.00	5.00	10	22	72	2	-	-	C50510.0
12.00	6.00	12	26	83	2	-	-	C50512.0
14.00	7.00	12	26	83	2	37.5	11.5	C50514.0
16.00	8.00	16	32	92	2	43.5	15.5	C50516.0
20.00	10.00	20	38	104	2	53.5	19.5	C50520.0
22.00	11.00	20	38	104	2	53.5	19.5	C50522.0
25.00	12.50	25	45	121	2	64.5	24.5	C50525.0
28.00	14.00	25	45	121	2	64.5	24.5	C50528.0
30.00	15.00	25	45	121	2	64.5	24.5	C50530.0

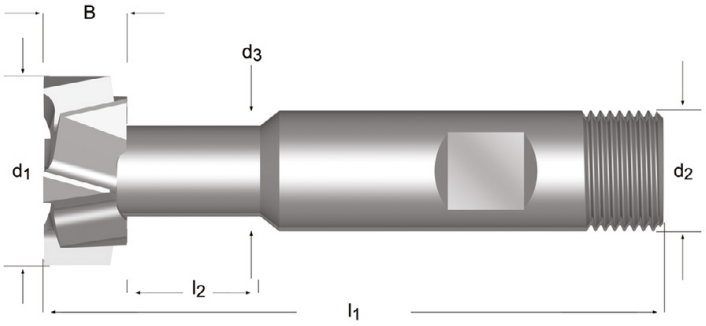
DORMER

C800

- T - Spårfräsar
- T - urajyrsimet
- T - Sporfresere
- T - Sporsfræsere

C800 ▪ 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 10.1

C800 | HSS-E | N | Z 6-8 | λ15° γ10° | DIN1835 D B | d11 | DIN 851





11.00 - 50.00

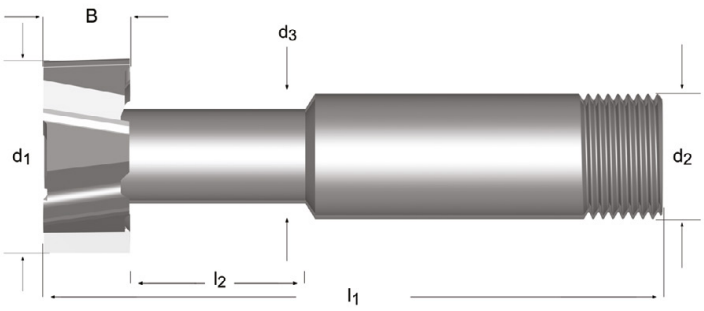
B mm	d_1 Ø mm	T DIN650	d_3 Ø mm	l_2 mm	l_1 mm	d_2 Øh$_6$ mm	z	C800
4.0	11.00	5	4	6.5	53.5	10	6	C80011.0X5.0
6.0	12.50	6	5	9	57.0	10	6	C80012.5X6.0
8.0	16.00	8	7	12	62.0	10	6	C80016.0X8.0
8.0	18.00	10	8	15	70.0	12	6	C80018.0X10.0
9.0	21.00	12	10	18	74.0	12	8	C80021.0X12.0
11.0	25.00	14	12	20	82.0	16	8	C80025.0X14.0
14.0	32.00	18	15	26	90.0	16	8	C80032.0X18.0
18.0	40.00	22	19	27	108.0	25	8	C80040.0X22.0
22.0	50.00	28	25	34	124.0	32	8	C80050.0X28.0

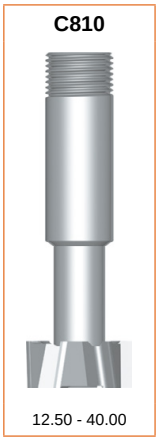
C810

- T - Spårfräsar
- T - urajyrsimet
- T - Sporfresere
- T - Sporsfræsere

C810																			
	▪	1.1	1.2	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3	6.4	7.1	7.2	7.3
	•	1.5	1.6	2.2	2.3	4.2	4.3	5.2	5.3	7.4	8.1	10.1							

C810	HSS		N	Z 6-8		λ 12° γ 10°	DIN 1835D		d11		DORMER





B mm	d_1 Ø mm	T DIN650	d_3 Ø mm	l_2 mm	l_1 mm	d_2 Ø0,-0.025 mm	z	C810
6.00	12.50	6.0	5.00	11	57.0	10.0	6	C8106.0
8.00	16.00	8.0	7.00	13	61.0	10.0	6	C8108.0
8.00	18.00	10.0	8.00	17	65.0	12.0	6	C81010.0
9.00	21.00	12.0	10.00	20	69.0	12.0	6	C81012.0
11.00	25.00	14.0	12.00	23	79.0	16.0	6	C81014.0
12.00	28.00	16.0	13.00	23	76.0	16.0	6	C81016.0
14.00	32.00	18.0	15.00	27	98.0	25.0	8	C81018.0
16.00	36.00	20.0	17.00	30	100.0	25.0	8	C81020.0
18.00	40.00	22.0	19.00	33	108.0	25.0	8	C81022.0

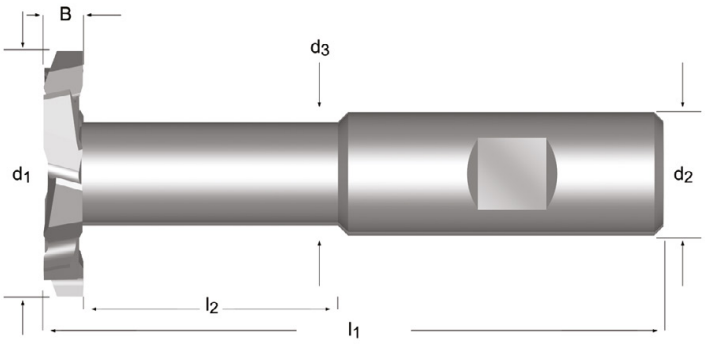
[9] Standard - BS 122/4 / Standardi - BS 122/4 / Standard - BS 122/4 / Standard - BS 122/4

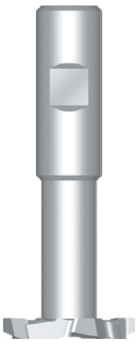
C825

- T - Spårfräsar
- T - urajyrsimet
- T - Sporfresere
- T - Sporsfræsere

C825 ▪																				
	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1
	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	10.1											

C825	HSS-E		N	Z 8-12		λ15° γ15°	DIN 1835B		js16		DORMER





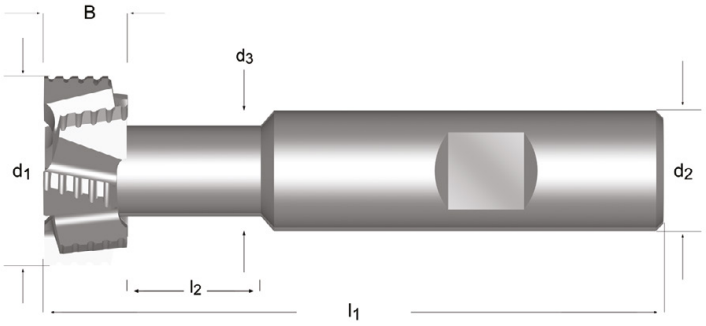
B mm	d_1 Ø mm	Ch mm	d_3 Ø mm	l_2 mm	l_1 mm	d_2 Øh_6 mm	z	C825
3	40	0.15	19.2	46	100	20	8	C8253.0X40.0
4	40	0.15	19.2	45	100	20	8	C8254.0X40.0
5	40	0.15	19.2	44	100	20	8	C8255.0X40.0
6	40	0.15	19.2	43	100	20	8	C8256.0X40.0
8	40	0.15	19.2	41	100	20	8	C8258.0X40.0
10	40	0.15	19.2	39	100	20	8	C82510.0X40.0
6	63	0.15	24.2	67	130	25	12	C8256.0X63.0
8	63	0.15	24.2	65	130	25	12	C8258.0X63.0
10	63	0.15	24.2	63	130	25	12	C82510.0X63.0
12	63	0.15	24.2	61	130	25	12	C82512.0X63.0
14	63	0.15	24.2	59	130	25	12	C82514.0X63.0
16	63	0.15	24.2	57	130	25	12	C82516.0X63.0

C801

- T - Spårfräsar
- T - urajyrsimet
- T - Sporfresere
- T - Sporsfræsere

C801 ▪ 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 10.1

C801 | HSS-E | NF | Z 6-8 | λ12° γ10° | DIN 1835B | d11 | DIN 851





16.00 - 32.00

B mm	d_1 Ø mm	T DIN650	d_3 Ø mm	l_2 mm	l_1 mm	d_2 Øh_6 mm	z	C801
8.0	16.0	8	7	10	62	10	6	C80116.0X8.0
8.0	18.0	10	8	13	70	12	6	C80118.0X10.0
9.0	21.0	12	10	16	74	12	6	C80121.0X12.0
11.0	25.0	14	12	17	82	16	8	C80125.0X14.0
14.0	32.0	18	15	22	90	16	8	C80132.0X18.0

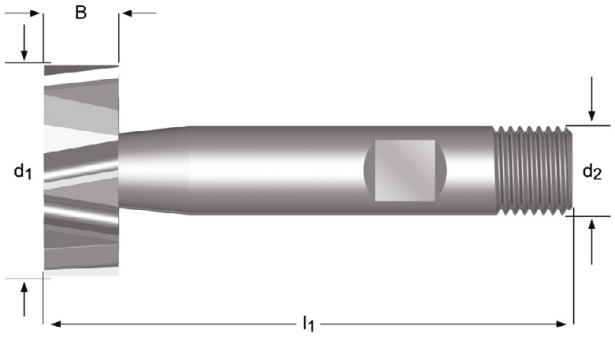
DORMER

C822

- Woodruff Fräsar
- Woodruff-urajyrsimet
- Woodruff Fresere
- Woodruff Fræsere

C822 ▪ 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 10.1

C822 | HSS-E | N | Z 6-12 | λ10° γ10° | DIN1835 D B | h11 | DIN 850



C822



4.50 - 45.50

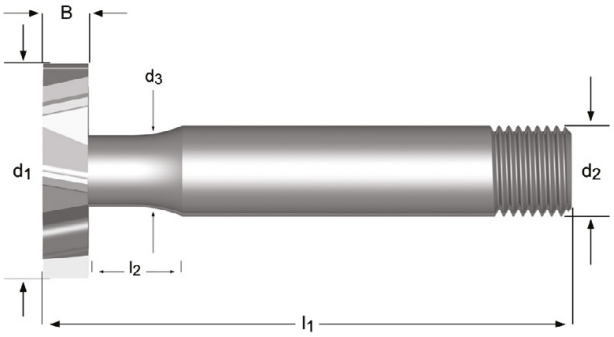
B mm	d_1 Ø mm	l_1 mm	d_2 Øh$_6$ mm	z	C822
1.0	4.50	50	6	6	C8224.5X1.0
1.5	7.50	50	6	6	C8227.5X1.5
2.0	7.50	50	6	6	C8227.5X2.0
2.0	10.50	50	6	8	C82210.5X2.0
2.5	10.50	50	6	8	C82210.5X2.5
3.0	10.50	50	6	8	C82210.5X3.0
3.0	13.50	56	10	8	C82213.5X3.0
4.0	13.50	56	10	8	C82213.5X4.0
3.0	16.50	56	10	8	C82216.5X3.0
4.0	16.50	56	10	8	C82216.5X4.0
5.0	16.50	56	10	8	C82216.5X5.0
3.0	19.50	63	10	10	C82219.5X3.0
4.0	19.50	63	10	10	C82219.5X4.0
5.0	19.50	63	10	10	C82219.5X5.0
5.0	22.50	63	10	10	C82222.5X5.0
6.0	22.50	63	10	10	C82222.5X6.0
8.0	22.50	63	10	10	C82222.5X8.0
6.0	25.50	63	10	12	C82225.5X6.0
6.0	28.50	63	10	12	C82228.5X6.0
8.0	28.50	63	10	12	C82228.5X8.0
10.0	28.50	71	12	12	C82228.5X10.0
8.0	32.50	71	12	12	C82232.5X8.0
10.0	32.50	71	12	12	C82232.5X10.0
10.0	45.50	71	12	12	C82245.5X10.0

C820

- Woodruff Fräsar
- Woodruff-urajyrsimet
- Woodruff Fresere
- Woodruff Fræsere

C820																		
	■	1.1	1.2	1.3	1.4	2.1	2.2	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3	7.1	7.2	7.3
	•	1.5	1.6	2.3	4.2	4.3	5.2	5.3	6.4	7.4	8.1	10.1							

C820	HSS		N	Z 6-12		λ 12° γ 10°	DIN 1835D				DORMER





10.50 - 45.50

Nr.	B Inch	B mm	d_1 Ø Inch	d_1 Ø mm	d_3 Ø mm	l_2 mm	l_1 mm	d_2 Ø0,-0.025 Inch	d_2 Ø0,-0.025 mm	z	C820
		2.00		10.50	3.90	10	57.0		12.0	6	C82010.5X2.0
		2.50		10.50	3.90	10	57.0		12.0	6	C82010.5X2.5
		3.00		10.50	4.20	10	57.0		12.0	6	C82010.5X3.0
204	1/16	1.59	1/2	12.70	3.30	10	57.0	1/2	12.7	6	C820204 [9]
404	1/8	3.18	1/2	12.70	4.85	10	57.0	1/2	12.7	6	C820404 [9]
		2.00		13.50	4.00	10	57.0		12.0	6	C82013.5X2.0
		2.50		13.50	4.00	10	57.0		12.0	6	C82013.5X2.5
		3.00		13.50	5.00	10	57.0		12.0	6	C82013.5X3.0
		4.00		13.50	5.00	10	57.0		12.0	6	C82013.5X4.0
405	1/8	3.18	5/8	15.88	5.65	10	57.0	1/2	12.7	6	C820405 [9]
505	5/32	3.97	5/8	15.88	6.35	10	57.0	1/2	12.7	6	C820505 [9]
		2.50		16.50	4.00	10	57.0		12.0	6	C82016.5X2.5
		3.00		16.50	5.00	10	57.0		12.0	6	C82016.5X3.0
		4.00		16.50	5.00	10	57.0		12.0	6	C82016.5X4.0
		5.00		16.50	5.60	10	57.0		12.0	6	C82016.5X5.0
406	1/8	3.18	3/4	19.05	5.50	10	57.0	1/2	12.7	6	C820406 [9]
506	5/32	3.97	3/4	19.05	6.35	10	57.0	1/2	12.7	6	C820506 [9]
606	3/16	4.76	3/4	19.05	7.15	10	57.0	1/2	12.7	6	C820606 [9]
		3.00		19.50	5.60	10	57.0		12.0	6	C82019.5X3.0
		4.00		19.50	5.60	10	57.0		12.0	6	C82019.5X4.0
		5.00		19.50	6.00	10	57.0		12.0	6	C82019.5X5.0
507	5/32	3.97	7/8	22.23	6.35	10	63.5	1/2	12.7	8	C820507 [9]
607	3/16	4.76	7/8	22.23	7.15	10	63.5	1/2	12.7	8	C820607 [9]
807	1/4	6.35	7/8	22.23	8.75	10	63.5	1/2	12.0	8	C820807 [9]
		4.00		22.50	5.60	10	63.5		12.0	8	C82022.5X4.0
		5.00		22.50	6.00	10	63.5		12.0	8	C82022.5X5.0
		6.00		22.50	6.50	10	63.5		12.0	8	C82022.5X6.0
608	3/16	4.76	1“	25.40	7.15	10	70.0	1/2	12.7	8	C820608 [9]
808	1/4	6.35	1“	25.40	8.75	10	70.0	1/2	12.7	8	C820808 [9]
		5.00		25.50	7.50	10	70.0		12.0	8	C82025.5X5.0
		6.00		25.50	7.50	10	70.0		12.0	8	C82025.5X6.0
		8.00		25.50	8.00	10	70.0		12.0	8	C82025.5X8.0
		5.00		28.50	8.00	12	70.0		12.0	8	C82028.5X5.0
		6.00		28.50	8.50	12	70.0		12.0	8	C82028.5X6.0
		8.00		28.50	9.00	12	70.0		12.0	8	C82028.5X8.0
610	3/16	4.76	1.1/4	31.75	7.95	12	70.0	1/2	12.7	10	C820610 [9]
810	1/4	6.35	1.1/4	31.75	9.50	12	70.0	1/2	12.7	10	C820810 [9]

[9] Standard - BS 122/4 / Standardi - BS 122/4 / Standard - BS 122/4 / Standard - BS 122/4

Nr.	B Inch	B mm	d_1 Ø Inch	d_1 Ø mm	d_3 Ø mm	l_2 mm	l_1 mm	d_2 Ø0,-0.025 Inch	d_2 Ø0,-0.025 mm	z	C820
1210	3/8	9.53	1.1/4	31.75	11.95	12	70.0	1/2	12.7	10	C8201210 [9)]
		5.00		32.50	8.00	12	70.0		12.0	10	C82032.5X5.0 [9)]
		6.00		32.50	8.50	12	70.0		12.0	10	C82032.5X6.0
		8.00		32.50	9.00	12	70.0		12.0	10	C82032.5X8.0
811	1/4	6.35	1.3/8	34.93	11.10	20	76.0	1/2	12.7	10	C820811 [9)]
1211	3/8	9.53	1.3/8	34.93	11.95	20	76.0	1/2	12.7	10	C8201211 [9)]
		6.00		35.50	9.50	20	76.0		12.0	10	C82035.5X6.0
		8.00		35.50	11.50	20	76.0		12.0	10	C82035.5X8.0
812	1/4	6.35	1.1/2	38.10	11.10	20	76.0	1/2	12.7	10	C820812 [9)]
1212	3/8	9.53	1.1/2	38.10	11.95	20	76.0	1/2	12.7	10	C8201212 [9)]
		8.00		38.50	11.50	20	76.0		12.0	10	C82038.5X8.0
		10.00		38.50	11.50	20	76.0		12.0	10	C82038.5X10.0
		10.00		45.50	11.50	20	76.0		12.0	12	C82045.5X10.0

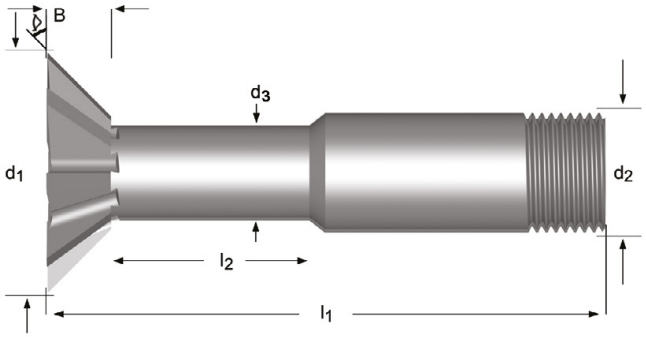
[9)] Standard - BS 122/4 / Standardi - BS 122/4 / Standard - BS 122/4 / Standard - BS 122/4

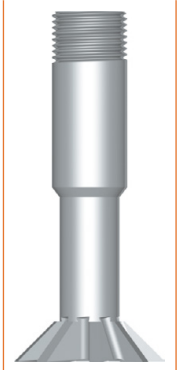
C837

- Vinkeländfräsar
- Kulmaotsajyrsimet
- Vinkelendefres
- Vinkelendefræsere

C837																		
	▪	1.1	1.2	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3	7.1	7.2	7.3
	•	1.5	1.6	2.2	2.3	4.2	4.3	5.2	5.3	6.4	7.4	8.1						

C837	HSS		N	Z 6-8		λ 0° γ 0°	DIN 1835D				DORMER





▷	B mm	d1 Ø Inch	d1 Ø mm	d3 Ø mm	l2 mm	l1 mm	d2 Ø0,-0.025 Inch	d2 Ø0,-0.025 mm	z	C837
45°	3.0		13.00	4.75	16.5	63.5		12.00	6	C83713.0
45°	4.0	5/8	15.88	6.35	17.5	66.5	1/2	12.70	6	C8375/8 [9]
45°	4.0		16.00	6.35	17.5	66.5		12.00	6	C83716.0
45°	5.5		19.00	6.35	16.0	66.5		12.00	6	C83719.0
45°	5.5	3/4	19.05	6.35	16.0	66.5	1/2	12.70	6	C8373/4 [9]
45°	6.5		22.00	7.15	16.0	68.5		12.00	6	C83722.0
45°	6.5	7/8	22.23	7.15	16.0	68.5	1/2	12.70	6	C8377/8 [9]
45°	7.5		25.00	7.95	16.5	70.0		12.00	6	C83725.0
45°	8.0	1“	25.40	7.95	16.0	70.0	1/2	12.70	6	C8371
45°	8.5		28.00	9.55	17.0	71.5		16.00	6	C83728.0
45°	10.5		38.00	12.70	16.0	78.5		25.00	8	C83738.0

[9] Standard - BS 122/4 / Standardi - BS 122/4 / Standard - BS 122/4 / Standard - BS 122/4

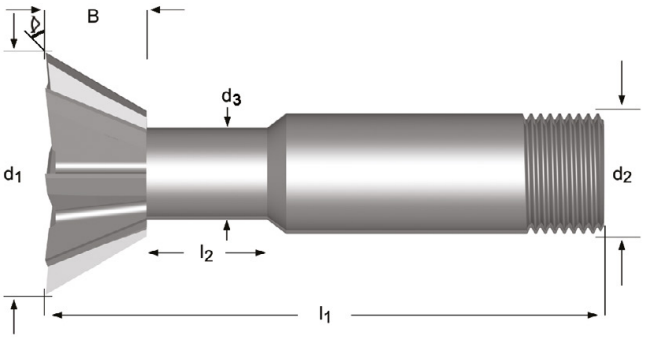
DORMER

C835

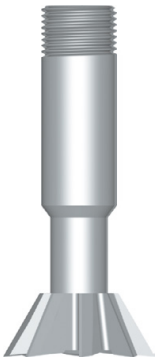
- Vinkeländfräsar
- Kulmaotsajyrsimet
- Vinkelendefres
- Vinkelendefræsere

C835																		
	■	1.1	1.2	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3	7.1	7.2	7.3
	•	1.5	1.6	2.2	2.3	4.2	4.3	5.2	5.3	6.4	7.4	8.1						

C835	HSS		N	Z 6-8		λ 0° γ 0°	DIN 1835D				DORMER



C835



1/2 - 1.1/2

▷	B mm	d_1 Ø Inch	d_1 Ø mm	d_3 Ø mm	l_2 mm	l_1 mm	d_2 Ø0,-0.025 Inch	d_2 Ø0,-0.025 mm	z	C835
60°	4.0	1/2	12.70	7.15	16.5	63.5	1/2	12.70	6	C8351/2 [9]
60°	4.0		13.00	7.15	16.5	63.5		12.00	6	C83513.0
60°	5.5	5/8	15.88	7.55	18.0	66.5	1/2	12.70	6	C8355/8 [9]
60°	5.5		16.00	7.55	18.0	66.5		12.00	6	C83516.0
60°	7.0		19.00	8.35	17.5	67.5		12.00	6	C83519.0
60°	7.0	3/4	19.05	8.35	17.5	67.5	1/2	12.70	6	C8353/4 [9]
60°	9.5		22.00	8.75	15.0	67.5		12.00	6	C83522.0
60°	9.5	7/8	22.23	8.75	15.0	67.5	1/2	12.70	6	C8357/8 [9]
60°	12.0		25.00	8.75	15.0	70.0		12.00	6	C83525.0
60°	12.0	1“	25.40	8.75	15.0	70.0	1/2	12.70	6	C8351 [9]
60°	12.5		28.00	11.10	15.5	73.0		16.00	6	C83528.0
60°	12.5	1.1/8	28.58	11.10	15.5	73.0	5/8	15.88	6	C8351.1/8 [9]
60°	13.5		32.00	12.70	16.0	74.5		16.00	8	C83532.0
60°	13.5	1.1/4	31.75	12.70	16.0	74.5	5/8	15.88	8	C8351.1/4 [9]
60°	14.5	1.3/8	34.93	12.70	16.0	82.5	1“	25.40	8	C8351.3/8 [9]
60°	14.5		35.00	12.70	16.0	82.5		25.00	8	C83535.0
60°	16.0		38.00	17.45	16.0	84.0		25.00	8	C83538.0
60°	16.0	1.1/2	38.10	17.45	16.0	84.0	1“	25.40	8	C8351.1/2 [9]

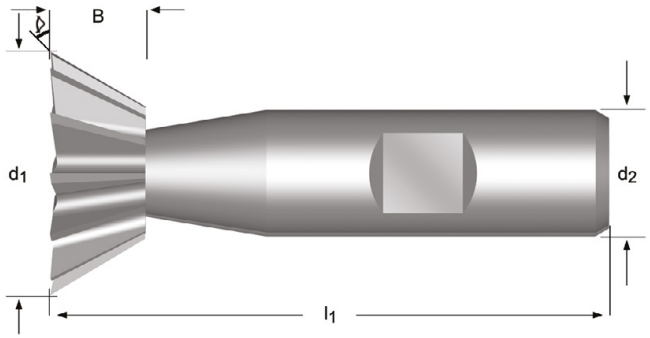
[9] Standard - BS 122/4 / Standardi - BS 122/4 / Standard - BS 122/4 / Standard - BS 122/4

C830

- Vinkeländfräsar
- Kulmaotsajyrsimet
- Vinkelendefres
- Vinkelendefræsere

C830	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1
	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	10.1											

C830	HSS-E		N	Z 10-12		λ 0° γ 0°	DIN 1835B		js16		DIN 1833C



C830



12.00 - 32.00

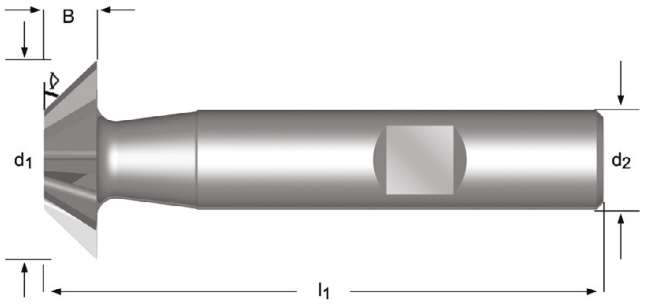
▷	B mm	d_1 Ø mm	l_1 mm	d_2 Øh_6 mm	z	C830
45°	3.5	12.0	54	10	10	C83012.0X45
45°	4.0	16.0	60	12	10	C83016.0X45
45°	5.0	20.0	63	12	10	C83020.0X45
45°	6.3	25.0	67	12	10	C83025.0X45
45°	8.0	32.0	71	16	12	C83032.0X45
60°	5.0	12.0	54	10	10	C83012.0X60
60°	6.3	16.0	60	12	10	C83016.0X60
60°	8.0	20.0	63	12	10	C83020.0X60
60°	10.0	25.0	67	12	10	C83025.0X60
60°	12.5	32.0	71	16	12	C83032.0X60

C831

- Vinkeländfräs inverterad
- Kulmaotsajyrsimet
- Vinkelendefres
- Vinkelendefræsere

C831 ▪ 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 10.1

C831 | HSS-E | N | Z 10-12 | λ0° γ0° | DIN 1835B | js16 | DIN 1833D





12.00 - 32.00

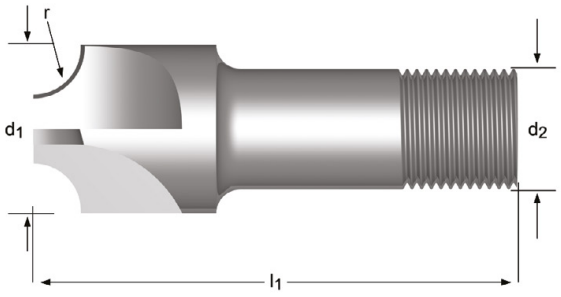
▷	B mm	d_1 Ø mm	l_1 mm	d_2 Øh_6 mm	z	C831
45°	3.5	12.0	54	10	10	C83112.0X45
45°	4.0	16.0	60	12	10	C83116.0X45
45°	5.0	20.0	63	12	10	C83120.0X45
45°	6.3	25.0	67	12	10	C83125.0X45
45°	8.0	32.0	71	16	12	C83132.0X45
60°	5.0	12.0	54	10	10	C83112.0X60
60°	6.3	16.0	60	12	10	C83116.0X60
60°	8.0	20.0	63	12	10	C83120.0X60
60°	10.0	25.0	67	12	10	C83125.0X60
60°	12.5	32.0	71	16	12	C83132.0X60

C710

- Hörnradiefräsar
- Kulmanpyöristysjyrsimet
- Hjørneradiefresere
- Hjørneradiefræsere

C710																				
	▪	1.1	1.2	1.3	1.4	2.1	2.2	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3	7.1	7.2	7.3
	•	1.5	1.6	2.3	4.3	5.3	6.4	7.4	10.1												

C710	HSS		N	Z 4		λ 0° γ 0°					BS 122/4



C710



1/16 - 1/2

r Inch	d_1 Ø Inch	d_2 Øh_8 Inch	d_2 Ø mm	l_1 mm	z	C710
1/16	3/8	3/8	9.53	60.5	4	C7101/16
1/8	1/2	1/2	12.70	60.5	4	C7101/8
5/32	9/16	1/2	12.70	60.5	4	C7105/32
3/16	5/8	5/8	15.88	60.5	4	C7103/16
1/4	7/8	5/8	15.88	63.5	4	C7101/4
3/8	1.1/16	1“	25.40	76.0	4	C7103/8
1/2	1.3/8	1“	25.40	82.5	4	C7101/2

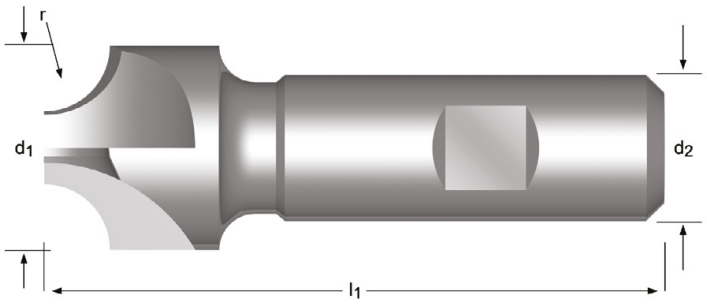
DORMER

C700

- Hörnradiefräsar
- Kulmanpyöristysjyrsimet
- Hjørneradiefresere
- Hjørneradiefræsere

C700 ▪ 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 10.1

C700 HSS-E N Z 4-6 λ0° γ0° DIN 1835B DORMER





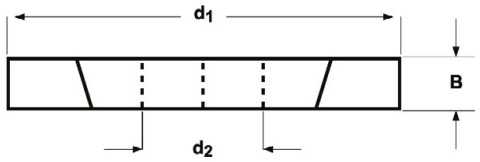
r mm	d_1 Ø mm	d_2 Øh$_6$ mm	l_1 mm	z	C700
1.00	10	10	60	4	C7001.0
1.50	10	10	60	4	C7001.5
2.00	10	10	60	4	C7002.0
2.50	10	10	60	4	C7002.5
3.00	12	12	60	4	C7003.0
3.50	12	12	60	4	C7003.5
4.00	15	12	60	4	C7004.0
5.00	18	16	70	4	C7005.0
6.00	21	16	70	4	C7006.0
7.00	24	16	70	4	C7007.0
8.00	24	16	70	4	C7008.0
9.00	28	20	85	4	C7009.0
10.00	28	20	85	4	C70010.0
12.00	35	20	100	4	C70012.0
12.50	35	20	100	4	C70012.5
14.00	42	25	100	4	C70014.0
15.00	48	25	105	5	C70015.0
16.00	48	25	105	5	C70016.0
20.00	60	32	115	6	C70020.0

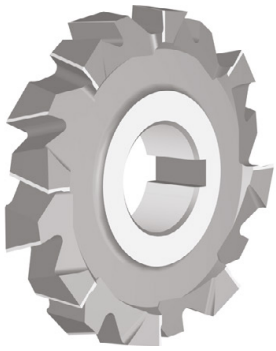
D200
D763

- Skivfräsar
- Kiekkojyrsimet, 3-sivuiset
- Skivefresere
- Skivefræsere

D200; D763 ▪ 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1

D200	HSS-E			Z 16-30		λ15° γ10°			js16		DIN 885A
D763	HSS-E			Z 28-44		λ15° γ10°			js16		DIN 885A





D200	D763
	
50.00 - 125.00	63.00 - 125.00

d_1 Ø mm	B mm	d_2 Ø mm	z	D200	D763
50.00	4.0	16	16	D20050.0X4.0	
50.00	5.0	16	16	D20050.0X5.0	
63.00	1.6	22	32		D76363.0X1.6
63.00	2.0	22	32		D76363.0X2.0
63.00	2.5	22	32		D76363.0X2.5
63.00	3.0	22	28		D76363.0X3.0
63.00	3.5	22	28		D76363.0X3.5
63.00	6.0	22	18	D20063.0X6.0	
63.00	8.0	22	18	D20063.0X8.0	
80.00	10.0	27	18	D20080.0X10.0	
80.00	2.0	27	36		D76380.0X2.0
80.00	2.5	27	36		D76380.0X2.5
80.00	3.0	27	32		D76380.0X3.0
80.00	3.5	27	32		D76380.0X3.5
80.00	6.0	27	20	D20080.0X6.0	
80.00	8.0	27	20	D20080.0X8.0	
100.00	10.0	32	22	D200100.0X10.0	
100.00	12.0	32	20	D200100.0X12.0	
100.00	14.0	32	20	D200100.0X14.0	
100.00	16.0	32	20	D200100.0X16.0	
100.00	2.0	32	44		D763100.0X2.0
100.00	3.0	32	40		D763100.0X3.0
100.00	8.0	32	22	D200100.0X8.0	
125.00	10.0	32	24	D200125.0X10.0	
125.00	12.0	32	22	D200125.0X12.0	
125.00	2.0	32	44		D763125.0X2.0
125.00	3.0	32	44		D763125.0X3.0

DORMER

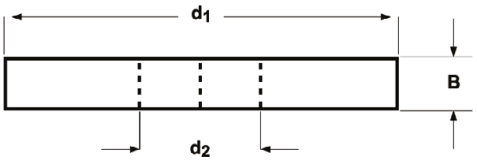
D745

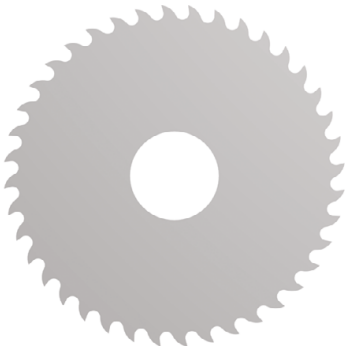
- Metallsågklingor Grov
- Sahajyrsimet, karkea
- Freseblad
- Savfræsere

D745 ▪ 1.1 1.2 1.3 1.4 3.1 3.2 3.3 6.1 6.2 6.3 7.1 7.2 7.3 8.1

D745 • 2.1 2.2

D745 | HSS | Z 28-100 | γ15° | DIN 1838





D745



50.00 - 250.00

d_1 Ø mm	B mm	d_2 Ø mm	z	D745
50.00	0.5	13	48	D74550.0X.5
50.00	0.6	13	48	D74550.0X.6
50.00	0.8	13	40	D74550.0X.8
50.00	1.0	13	40	D74550.0X1.0
50.00	1.2	13	40	D74550.0X1.2
50.00	1.5	13	32	D74550.0X1.5
50.00	1.6	13	32	D74550.0X1.6
50.00	2.0	13	32	D74550.0X2.0
63.00	0.5	16	64	D74563.0X.5
63.00	0.6	16	48	D74563.0X.6
63.00	0.8	16	48	D74563.0X.8
63.00	1.0	16	48	D74563.0X1.0
63.00	1.2	16	40	D74563.0X1.2
63.00	1.5	16	40	D74563.0X1.5
63.00	1.6	16	40	D74563.0X1.6
63.00	2.0	16	40	D74563.0X2.0
80.00	1.0	22	48	D74580.0X1.0
80.00	1.2	22	48	D74580.0X1.2
80.00	1.5	22	48	D74580.0X1.5
80.00	1.6	22	48	D74580.0X1.6
80.00	2.0	22	40	D74580.0X2.0
80.00	2.5	22	40	D74580.0X2.5
80.00	3.0	22	40	D74580.0X3.0
100.00	1.0	22	64	D745100.0X1.0
100.00	1.2	22	64	D745100.0X1.2
100.00	1.5	22	48	D745100.0X1.5
100.00	1.6	22	48	D745100.0X1.6
100.00	2.0	22	48	D745100.0X2.0
100.00	2.5	22	48	D745100.0X2.5
100.00	3.0	22	40	D745100.0X3.0
100.00	4.0	22	40	D745100.0X4.0
125.00	1.0	22	80	D745125.0X1.0
125.00	1.2	22	64	D745125.0X1.2
125.00	1.5	22	64	D745125.0X1.5
125.00	1.6	22	64	D745125.0X1.6
125.00	2.0	22	64	D745125.0X2.0
125.00	2.5	22	48	D745125.0X2.5
125.00	3.0	22	48	D745125.0X3.0
125.00	4.0	22	48	D745125.0X4.0

d_1 Ø mm	B mm	d_2 Ø mm	z	D745
160.00	1.6	32	80	D745160.0X1.6
160.00	2.0	32	64	D745160.0X2.0
160.00	2.5	32	64	D745160.0X2.5
160.00	3.0	32	64	D745160.0X3.0
160.00	4.0	32	48	D745160.0X4.0
200.00	1.6	32	80	D745200.0X1.6
200.00	2.0	32	80	D745200.0X2.0
200.00	2.5	32	80	D745200.0X2.5
200.00	3.0	32	64	D745200.0X3.0
200.00	4.0	32	64	D745200.0X4.0
250.00	2.0	32	100	D745250.0X2.0
250.00	2.5	32	80	D745250.0X2.5
250.00	3.0	32	80	D745250.0X3.0

DORMER

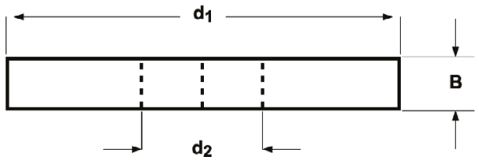
D747

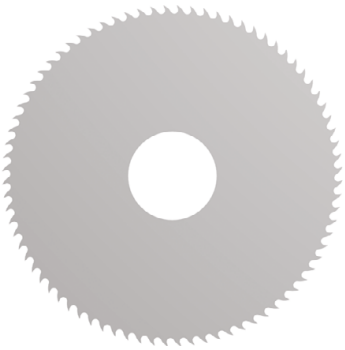
- Metallsågklingor Fin
- Sahajyrsimet, hieno
- Freseblad
- Savfræsere

D747 ▪ 1.1 1.2 1.3 1.4 3.1 3.2 3.3 6.1 6.2 6.3 7.1 7.2 7.3 8.1

D747 • 2.1 2.2

D747 | HSS | Z 40-200 | γ 5° | DIN 1837





D747



32.00 - 200.00

d_1 Ø mm	B mm	d_2 Ø mm	z	D747
32.00	0.3	8	80	D74732.0X.3
32.00	0.4	8	80	D74732.0X.4
32.00	0.5	8	80	D74732.0X.5
32.00	0.6	8	64	D74732.0X.6
32.00	0.8	8	64	D74732.0X.8
32.00	1.0	8	64	D74732.0X1.0
32.00	1.2	8	48	D74732.0X1.2
32.00	1.5	8	48	D74732.0X1.5
32.00	1.6	8	48	D74732.0X1.6
32.00	2.0	8	48	D74732.0X2.0
40.00	0.3	10	100	D74740.0X.3
40.00	0.4	10	100	D74740.0X.4
40.00	0.5	10	80	D74740.0X.5
40.00	0.6	10	80	D74740.0X.6
40.00	0.8	10	80	D74740.0X.8
40.00	1.0	10	64	D74740.0X1.0
40.00	1.2	10	64	D74740.0X1.2
40.00	1.5	10	64	D74740.0X1.5
40.00	1.6	10	64	D74740.0X1.6
40.00	2.0	10	48	D74740.0X2.0
50.00	0.3	13	128	D74750.0X.3
50.00	0.4	13	100	D74750.0X.4
50.00	0.5	13	100	D74750.0X.5
50.00	0.6	13	100	D74750.0X.6
50.00	0.8	13	80	D74750.0X.8
50.00	1.0	13	80	D74750.0X1.0
50.00	1.2	13	80	D74750.0X1.2
50.00	1.5	13	64	D74750.0X1.5
50.00	1.6	13	64	D74750.0X1.6
50.00	2.0	13	64	D74750.0X2.0
50.00	2.5	13	64	D74750.0X2.5
50.00	3.0	13	48	D74750.0X3.0
63.00	0.5	16	128	D74763.0X.5
63.00	0.6	16	100	D74763.0X.6
63.00	0.8	16	100	D74763.0X.8
63.00	1.0	16	100	D74763.0X1.0
63.00	1.2	16	80	D74763.0X1.2

d_1 Ø mm	B mm	d_2 Ø mm	z	D747
63.00	1.5	16	80	D74763.0X1.5
63.00	1.6	16	80	D74763.0X1.6
63.00	2.0	16	80	D74763.0X2.0
63.00	2.5	16	64	D74763.0X2.5
63.00	3.0	16	64	D74763.0X3.0
63.00	4.0	16	64	D74763.0X4.0
80.00	0.5	22	128	D74780.0X.5
80.00	0.6	22	128	D74780.0X.6
80.00	0.8	22	128	D74780.0X.8
80.00	1.0	22	100	D74780.0X1.0
80.00	1.2	22	100	D74780.0X1.2
80.00	1.5	22	100	D74780.0X1.5
80.00	1.6	22	100	D74780.0X1.6
80.00	2.0	22	80	D74780.0X2.0
80.00	2.5	22	80	D74780.0X2.5
80.00	3.0	22	80	D74780.0X3.0
80.00	4.0	22	64	D74780.0X4.0
100.00	0.5	22	160	D747100.0X.5
100.00	0.6	22	160	D747100.0X.6
100.00	0.8	22	128	D747100.0X.8
100.00	1.0	22	128	D747100.0X1.0
100.00	1.2	22	128	D747100.0X1.2
100.00	1.5	22	100	D747100.0X1.5
100.00	1.6	22	100	D747100.0X1.6
100.00	2.0	22	100	D747100.0X2.0
100.00	2.5	22	100	D747100.0X2.5
100.00	3.0	22	80	D747100.0X3.0
100.00	4.0	22	80	D747100.0X4.0
125.00	1.0	22	160	D747125.0X1.0
125.00	1.2	22	128	D747125.0X1.2
125.00	1.5	22	128	D747125.0X1.5
125.00	1.6	22	128	D747125.0X1.6
125.00	2.0	22	128	D747125.0X2.0
125.00	2.5	22	100	D747125.0X2.5
125.00	3.0	22	100	D747125.0X3.0
125.00	4.0	22	100	D747125.0X4.0
160.00	1.0	32	160	D747160.0X1.0
160.00	1.2	32	160	D747160.0X1.2
160.00	1.5	32	160	D747160.0X1.5
160.00	1.6	32	160	D747160.0X1.6
160.00	2.0	32	128	D747160.0X2.0
160.00	2.5	32	128	D747160.0X2.5
160.00	3.0	32	128	D747160.0X3.0
160.00	4.0	32	100	D747160.0X4.0
160.00	5.0	32	100	D747160.0X5.0
200.00	1.0	32	200	D747200.0X1.0
200.00	1.2	32	200	D747200.0X1.2
200.00	2.0	32	160	D747200.0X2.0
200.00	3.0	32	128	D747200.0X3.0

D752
D753

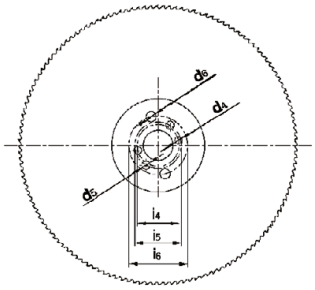
- Metallsågklingor Grov
- Sahajyrsimet
- Freseblad
- Savfræsere

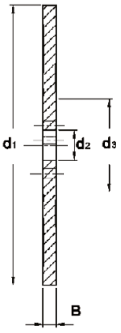
D752; D753

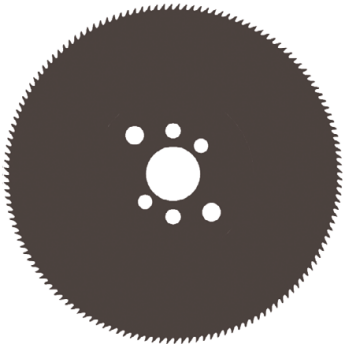
▪ 1.1 1.2 1.3 1.4 3.1 3.2 3.3 6.1 6.2 6.3 7.1 7.2 7.3 8.1

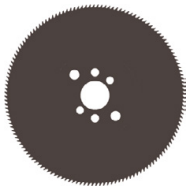
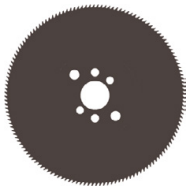
• 2.1 2.2

D752	HSS			Z 80-180		γ18°		ST			DORMER
D753	HSS			Z 100-140		γ18°		ST			DORMER







D752	D753
	
200.00 - 350.00	250.00 - 350.00

d_1 Ø mm	B mm	d_2 Ø mm	z	P mm	d_3 Ø mm	d_4 Ø mm	i_4 mm	d_5 Ø mm	i_5 mm	d_6 Ø mm	i_6 mm	D752	D753
250	2.0	32	100	8	100	8	45	9	50	11	63		D753250.0X2.0
250	2.0	32	128	6	100	8	45	9	50	11	63	D752250.0X2.0X128	
275	2.5	32	110	8	100	8	45	9	50	11	63	D752275.0X2.5X110	
300	2.5	32	120	8	100	8	45	9	50	11	63		D753300.0X2.5
300	2.5	32	160	6	100	8	45	9	50	11	63	D752300.0X2.5X160	
315	2.5	32	120	8	100	8	45	9	50	11	63		D753315.0X2.5
315	2.5	32	160	6	100	8	45	9	50	11	63	D752315.0X2.5X160	
350	2.5	32	140	8	120	8	45	9	50	11	63		D753350.0X2.5
350	2.5	32	180	6	120	8	45	9	50	11	63	D752350.0X2.5X180	

D750
D751

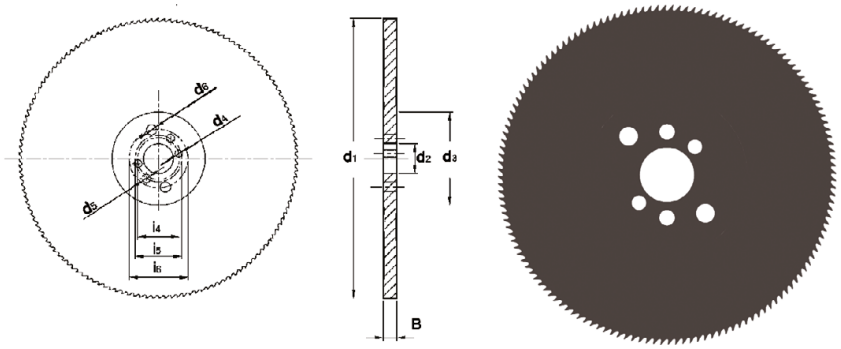
- Metallsågklingor Grov
- Sahajyrsimet
- Freseblad
- Savfræsere

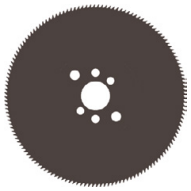
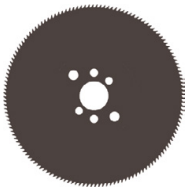
D750; D751

▪ 1.1 1.2 1.3 1.4 3.1 3.2 3.3 6.1 6.2 6.3 7.1 7.2 7.3 8.1

• 2.1 2.2

D750	HSS			Z 128-220		γ18°		ST				DORMER
D751	HSS			Z 160-350		γ18°		ST				DORMER



D750	D751
	
200.00 - 350.00	200.00 - 350.00

d_1 Ø mm	B mm	d_2 Ø mm	z	P mm	d_3 Ø mm	d_4 Ø mm	i_4 mm	d_5 Ø mm	i_5 mm	d_6 Ø mm	i_6 mm	D750	D751
200	1.8	32	130	5	100	8	45	9	50	11	63	D750200.0X1.8	
200	1.8	32	160	4	100	8	45	9	50	11	63		D751200.0X1.8X160
200	1.8	32	200	3	100	8	45	9	50	11	63		D751200.0X1.8X200
225	2.0	32	140	5	100	8	45	9	50	11	63	D750225.0X2.0	
225	2.0	32	180	4	100	8	45	9	50	11	63		D751225.0X2.0X180
225	2.0	32	220	3	100	8	45	9	50	11	63		D751225.0X2.0X220
250	2.0	32	160	5	100	8	45	9	50	11	63	D750250.0X2.0	
250	2.0	32	200	4	100	8	45	9	50	11	63		D751250.0X2.0X200
250	2.0	32	250	3	100	8	45	9	50	11	63		D751250.0X2.0X250
275	2.5	32	180	5	100	8	45	9	50	11	63	D750275.0X2.5	
275	2.5	32	220	4	100	8	45	9	50	11	63		D751275.0X2.5X220
275	2.5	32	280	3	100	8	45	9	50	11	63		D751275.0X2.5X280
300	2.5	32	180	5	100	8	45	9	50	11	63	D750300.0X2.5	
300	2.5	32	220	4	100	8	45	9	50	11	63		D751300.0X2.5X220
300	2.5	32	300	3	100	8	45	9	50	11	63		D751300.0X2.5X300
315	2.5	32	200	5	100	8	45	9	50	11	63	D750315.0X2.5	
315	2.5	32	240	4	100	8	45	9	50	11	63		D751315.0X2.5X240
315	2.5	32	320	3	100	8	45	9	50	11	63		D751315.0X2.5X320
350	2.5	32	220	5	120	8	45	9	59	11	63	D750350.0X2.5	
350	2.5	32	280	4	120	8	45	9	50	11	63		D751350.0X2.5X280
350	2.5	32	350	3	120	8	45	9	50	11	63		D751350.0X2.5X350

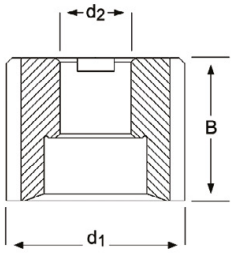
DORMER

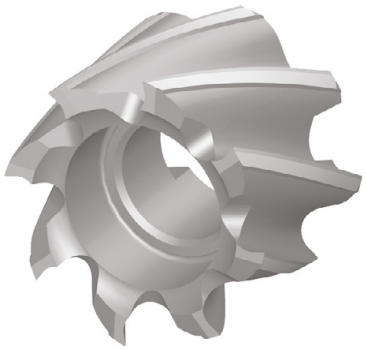
D400
D420

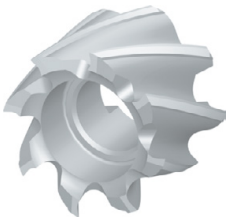
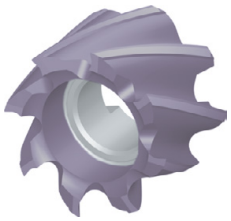
- Ändplanfräsar
- Otsatasojyrsimet
- Endeplanfresere
- Endeplansfræsere

D400	▪	1.1	1.2	1.3	1.4	2.1	2.3	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3	7.2	7.3				
	•	1.5	1.6	2.2	4.2	4.3	5.2	5.3	6.4	7.1	7.4	8.1	8.2	8.3	10.1							
D420	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	
		6.2	6.3	6.4	7.2	7.3	7.4	8.1	10.1													
	•	7.1	8.2	8.3																		

D400	HSS-E		N	Z 8-12		λ30° γ12°			js16		DIN 1880
D420	HSS-E		N	Z 8-12		λ30° γ12°		TiCN	js16		DIN 1880





D400	D420
	
40.00 - 63.00	40.00 - 63.00

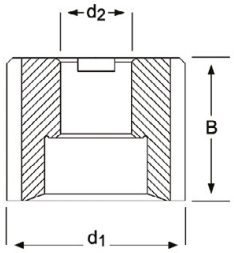
d_1 Ø mm	B mm	d_2 Ø mm	z	D400	D420
40.00	32	16	8	D40040.0	D42040.0
50.00	36	22	8	D40050.0	D42050.0
63.00	40	27	8	D40063.0	D42063.0

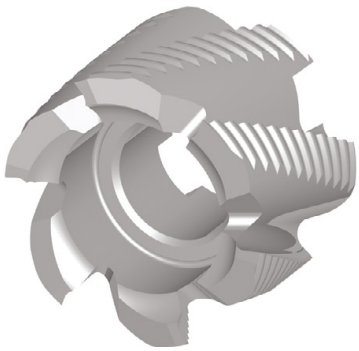
D402
D422

- Ändplanfräsar
- Otsatasojyrsimet
- Endeplanfresere
- Endeplansfræsere

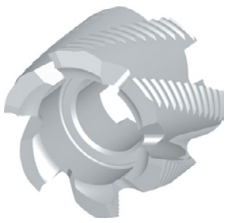
D402	▪	1.1	1.2	1.3	1.4	2.1	2.3	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3	7.2	7.3	
	•	1.5	1.6	2.2	4.2	4.3	5.2	5.3	6.4	7.1	7.4	8.1	8.2	8.3	10.1				
D422	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1
		6.2	6.3	6.4	7.2	7.3	7.4	8.1	10.1												
	•	7.1	8.2	8.3																	

D402	HSS-E		NR	Z 6-10		λ 30° γ 12°			js16		DIN 1880
D422	HSS-E		NR	Z 6-10		λ 30° γ 12°		TiCN	js16		DIN 1880



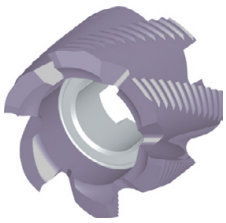


D402



40.00 - 63.00

D422

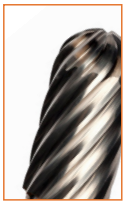


40.00 - 63.00

d_1 Ø mm	B mm	d_2 Ø mm	z	D402	D422
40.00	32	16	6	D40240.0	D42240.0
50.00	36	22	6	D40250.0	D42250.0
63.00	40	27	8	D40263.0	D42263.0

P601	502	**P721**	520	**P817**	517
P605	506	**P801**	501	**P819**	518
P607	508	**P801C**	501	**P821**	519
P609	510	**P803**	503	**P821C**	519
P611	512	**P803C**	503	**P823**	521
P613	514	**P805**	505	**P825**	522
P615	516	**P805C**	505	**P831**	502
P621	520	**P807**	507	**P833**	504
P701	502	**P807C**	507	**P835**	506
P703	504	**P809**	509	**P837**	508
P705	506	**P811**	511	**P841**	512
P707	508	**P811C**	511	**P842**	520
P709	510	**P813**	513	**P843**	523
P711	512	**P813C**	513	**P844**	524
P713	514	**P815**	515	**P880**	525
P715	516	**P815C**	515	**P890**	526





DORMER

	Material	Raaka-aine	Materiale	Materiale
	Användningsområde	Käyttöalue	Bruksområde	Anvendelsesområde
	Ändskär	Päätyleikkuu	endeskjær	endeskær
	Ytbehandling	Pinnoitteet	Overflatebehandling	Overfladebehandling
	Spetsvinkel	Kärkikulma	Spissvinkel	Spids vinkel
	Utförande	Malli	Type	Type
	Standard	Standardi	Standard	Standard
■	Förstahandsval	Paras valinta	Førstevalg	Perfekt
●	Andrahandsval	Hyvä valinta	Andrevalg	God
	Exempel 10 = Skärhastighet i meter/minut +/- 10%	Esimerkki 10 = Lastuamisnopeus, m/min +/- 10%	Eksempel 10 = skjærehastighet i meter/minutt +/- 10%	Eksempel 10 = Skærehastighed i meter/min. +/- 10%
	Artikelnummer	Tuotteen koodi	Artikkel kode	Kode
	Dim. område	Halkaisija-alue	Dim. område	Dimension

AMG	Svensk	Suomi	Norsk	Dansk
1.1	Rena järn, mjuka stål	Puhdas rauta, pehmeät teräkset	Rent jern, myke stål	Rent jern, blødt stål
1.2	Konstruktionsstål	Rakenneteräkset, hiilletysteräkset	Konstruksjonsstål	Konstruktionsstål
1.3	Kolstål, låglegerade stål	Hiilli- ja niukkaesosteiset teräset	Kullstål, låglegert stål	Kulstofstål, lavt leg.stål
1.4	Legerade stål	Seostetut teräkset	Legert stål	Legeret stål
1.5	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.6	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.7	Legerade härdade stål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
1.8	Legerade härdade stål, slitstål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
2.1	Rostfria automatstål och verktygsstål	Aut. laadut, työkaluteräkset Cr>10%	Rustfritt automatstål	Rustfrit automatstål
2.2	Austenitiska	Austenittiset	Austenistisk (Syrefast)	Austenitisk
2.3	Ferritaustenitiska (duplex), Martensitiska	Ferriiti + Austeniitti (Duplex), Ferriitismarten-siittiset	Ferritaustenitiske (duplex), Ferritiske, Martensitiske	Ferritisk+Austenitisk, Martensitisk
2.4	Utskiljningshärdade / Austenitiska	Erkautumiskarkenevat	Utskillingsherdet	Udskilningshærdet
3.1	Gråjärn	Harmaa valurauta	Gråjern	Gråt støbejern
3.2	Gråjärn	Harmaa valurauta	Gråjern	Hærdet støbejern
3.3	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
3.4	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
4.1	Titan, ren	Titaani, seostamaton	Titan, ren	Titan, ren
4.2	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
4.3	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
5.1	Nickel, ren	Nikkeli, seostamaton	Nikkel, ren	Nikkel, ren
5.2	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
5.3	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
6.1	Koppar	Kupari	Kopper	Kobber
6.2	Mässing / Brons	ß-Messinki, pronssi	Messing/Bronse	Messing, Bronze
6.3	Mjuk mässing	α-Messinki, pehmeä	Myk messing	Blød messing
6.4	Cu-Al-Fe-Legeringar	Cu-Al-Fe seokset, lujat pronssit	Cu-Al-Fe-Legeringer	Cu-Al-Fe-legeringer
7.1	Ren aluminium, magnesium	Al, Mg, seostamaton	Ren aluminium, magnesium	Ren aluminium, magnesium
7.2	Al Legeringar, Si<0.5%	Al seostettu, Si<0.5%	Al legeringer, Si<0.5%	Al-legeringer, Si<0.5%
7.3	Al Legeringar, Si>0.5%<10%	Al seostettu, Si>0.5% <10%	Al legeringer, Si>0.5%<10%	Al-legeringer, Si>0.5%<10%
7.4	Al Legeringar, Si>10% Whisker förstärkta Al-och Mg- Legeringar	Al seostettu, Si>10% Whisker lujitetut, Al-seokset, Mg-seokset	Al legeringer, Si>10% Whisker forsterket Al-leg., Mg leg.	Al-legeringer, Si>10% Whisker-forstærket, Al-legeringer, Mg-legeringer
8.1	Mjuka plaster	Pehmeät muovit (Thermoplast)	Myk plast	Blød plast
8.2	Hårda plaster	Kovat muovit, Bakeliitti	Hard plast	Hårde plast
8.3	Armerade plaster	Lujitetut muovit	Armert plast	Armerede plastmaterialer
9.1	Cermets (metall-keramik)	Cermetit (metalli-keraamiset)	Cermets (metal-keramikk)	Cermets (metal-keramik)
10.1	Grafit	Standardi Grafiitti	Standard Grafitt	Standard grafit

DORMER

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
	A	A	A	A	A	B	B	B	B	C	C	C	C	C	D	D
		TiAlN					TiAlN				TiAlN					TiAlN
	DC	DC	ST	VA	AL	DC	DC	ST	AL	DC	DC	ST	VA	AL	DC	DC
	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER
																
	P801	P801C	P701	P601	P831	P803	P803C	P703	P833	P805	P805C	P705	P605	P835	P807	P807C
	3.00 - 16.00	3.00 - 12.70	6.00 - 12.70	3.00 - 12.70	6.00 - 12.70	3.00 - 16.00	3.00 - 12.70	6.00 - 12.70	6.00 - 12.70	3.00 - 16.00	3.00 - 12.70	6.00 - 12.70	3.00 - 12.70	6.00 - 12.70	3.00 - 16.00	3.00 - 12.70
AMG	501	501	502	502	502	503	503	504	504	505	505	506	506	506	507	507	ISO
1.1	■	■	■			■	■	■		■	■	■			■	■	P 1
1.2	■	■	■			■	■	■		■	■	■			■	■	P 1
1.3	■	■	■			■	■	■		■	■	■			■	■	P 2
1.4	■	■	■			■	■	■		■	■	■			■	■	P 3
1.5	■	■	■			■	■	■		■	■	■			■	■	P 4
1.6	■	■	■			■	■	■		■	■	■			■	■	H 1
1.7	■	■				■	■			■	■				■	■	H 3
1.8	■	■				■	■			■	■				■	■	H 4
2.1	■	■		■	●	■	■		●	■	■		■	●	■	■	M 1
2.2	■	■		■		■	■			■	■		■		■	■	M 3
2.3	■	■		■		■	■			■	■		■		■	■	M 2
2.4	■	■		■		■	■			■	■		■		■	■	S 2
3.1	■	■				■	■			■	■				■	■	K 1
3.2	■	■				■	■			■	■				■	■	K 2
3.3	■	■				■	■			■	■				■	■	K 3
3.4	■	■				■	■			■	■				■	■	K 4
4.1	■	■			●	■	■		●	■	■			●	■	■	S 1
4.2	■	■				■	■			■	■				■	■	S 2
4.3	■	■				■	■			■	■				■	■	S 3
5.1	■	■			●	■	■		●	■	■			●	■	■	S 1
5.2	■	■				■	■			■	■				■	■	S 2
5.3	■	■				■	■			■	■				■	■	S 3
6.1	●	●				●	●			●	●				●	●	N 3
6.2	■	■			●	■	■		●	■	■			●	■	■	N 4
6.3	■	■				■	■			■	■				■	■	N 3
6.4	■	■				■	■			■	■				■	■	N 4
7.1					■				■					■			N 1
7.2					■				■					■			N 1
7.3					■				■					■			N 1
7.4					■				■					■			N 2
8.1					■				■					■			O
8.2					■				■					■			O
8.3					■				■					■			O
9.1	■	■				■	■			■	■				■	■	H
10.1																	O

DORMER

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
	D	D	D	E	E	E	F	F	F	F	F	G	G	G	G	H
								TiAlN					TiAlN			
	ST	VA	AL	DC	ST	VA	DC	DC	ST	VA	AL	DC	DC	ST	VA	DC
	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER
																
	P707	P607	P837	P809	P709	P609	P811	P811C	P711	P611	P841	P813	P813C	P713	P613	P815
	6.00 - 12.70	3.00 - 12.70	6.00 - 12.70	3.00 - 16.00	12.70	8.00 - 12.70	3.00 - 16.00	3.00 - 12.70	6.00 - 12.70	3.00 - 12.70	6.00 - 12.70	3.00 - 16.00	3.00 - 12.70	6.00 - 12.70	6.00 - 12.70	3.00 - 16.00
AMG	508	508	508	509	510	510	511	511	512	512	512	513	513	514	514	515	ISO
1.1	■			■	■		■	■	■			■	■	■		■	P 1
1.2	■			■	■		■	■	■			■	■	■		■	P 1
1.3	■			■	■		■	■	■			■	■	■		■	P 2
1.4	■			■	■		■	■	■			■	■	■		■	P 3
1.5	■			■	■		■	■	■			■	■	■		■	P 4
1.6	■			■	■		■	■	■			■	■	■		■	H 1
1.7				■			■	■				■	■			■	H 3
1.8				■			■	■				■	■			■	H 4
2.1		■	●	■		■	■	■		■	●	■	■		■	■	M 1
2.2		■		■		■	■	■		■		■	■		■	■	M 3
2.3		■		■		■	■	■		■		■	■		■	■	M 2
2.4		■		■		■	■	■		■		■	■		■	■	S 2
3.1				■			■	■				■	■			■	K 1
3.2				■			■	■				■	■			■	K 2
3.3				■			■	■				■	■			■	K 3
3.4				■			■	■				■	■			■	K 4
4.1			●	■			■	■			●	■	■			■	S 1
4.2				■			■	■				■	■			■	S 2
4.3				■			■	■				■	■			■	S 3
5.1			●	■			■	■			●	■	■			■	S 1
5.2				■			■	■				■	■			■	S 2
5.3				■			■	■				■	■			■	S 3
6.1				●			●	●				●	●			●	N 3
6.2			●	■			■	■			●	■	■			■	N 4
6.3				■			■	■				■	■			■	N 3
6.4				■			■	■				■	■			■	N 4
7.1			■								■						N 1
7.2			■								■						N 1
7.3			■								■						N 1
7.4			■								■						N 2
8.1			■								■						O
8.2			■								■						O
8.3			■								■						O
9.1				■			■	■				■	■			■	H
10.1																	O

DORMER

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
	H	H	H	J	K	L	L	L	L	L	M	N			
	TiAlN			60°	90°		TiAlN							135°	180°
	DC	ST	VA	DC	DC	DC	DC	ST	VA	AL	DC	DC	GRP	GRP	
	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER
															
	P815C	P715	P615	P817	P819	P821	P821C	P721	P621	P842	P823	P825	P843	P844	
	8.00 - 12.70	8.00 - 12.70	8.00 - 12.70	3.00 - 16.00	3.00 - 16.00	3.00 - 16.00	3.00 - 12.70	10.00 - 12.70	8.00 - 12.70	6.00 - 12.70	3.00 - 16.00	3.00 - 16.00	3.00 - 8.00	3.00 - 8.00	
AMG	515	516	516	517	518	519	519	520	520	520	521	522	523	524	ISO
1.1	■	■		■	■	■	■	■			■	■			P 1
1.2	■	■		■	■	■	■	■			■	■			P 1
1.3	■	■		■	■	■	■	■			■	■			P 2
1.4	■	■		■	■	■	■	■			■	■			P 3
1.5	■	■		■	■	■	■	■			■	■			P 4
1.6	■	■		■	■	■	■	■			■	■			H 1
1.7	■			■	■	■	■				■	■			H 3
1.8	■			■	■	■	■				■	■			H 4
2.1	■		■	■	■	■	■		■	●	■	■			M 1
2.2	■		■	■	■	■	■		■		■	■			M 3
2.3	■		■	■	■	■	■		■		■	■			M 2
2.4	■		■	■	■	■	■		■		■	■			S 2
3.1	■			■	■	■	■				■	■			K 1
3.2	■			■	■	■	■				■	■			K 2
3.3	■			■	■	■	■				■	■			K 3
3.4	■			■	■	■	■				■	■			K 4
4.1	■			■	■	■	■			●	■	■			S 1
4.2	■			■	■	■	■				■	■			S 2
4.3	■			■	■	■	■				■	■			S 3
5.1	■			■	■	■	■			●	■	■			S 1
5.2	■			■	■	■	■				■	■			S 2
5.3	■			■	■	■	■				■	■			S 3
6.1	●			●	●	●	●				●	●			N 3
6.2	■			■	■	■	■			●	■	■			N 4
6.3	■			■	■	■	■				■	■			N 3
6.4	■			■	■	■	■				■	■			N 4
7.1										■					N 1
7.2										■					N 1
7.3										■					N 1
7.4										■					N 2
8.1										■			■	■	O
8.2										■			■	■	O
8.3										■			■	■	O
9.1	■			■	■	■	■				■	■			H
10.1															O

DORMER





	P880	P890	
	Set	Set	
AMG	525	526	ISO
1.1			P 1
1.2			P 1
1.3			P 2
1.4			P 3
1.5			P 4
1.6			H 1
1.7			H 3
1.8			H 4
2.1			M 1
2.2			M 3
2.3			M 2
2.4			S 2
3.1			K 1
3.2			K 2
3.3			K 3
3.4			K 4
4.1			S 1
4.2			S 2
4.3			S 3
5.1			S 1
5.2			S 2
5.3			S 3
6.1			N 3
6.2			N 4
6.3			N 3
6.4			N 4
7.1			N 1
7.2			N 1
7.3			N 1
7.4			N 2
8.1			O
8.2			O
8.3			O
9.1			H
10.1			O

AL DC

RPM / min

AMG	ISO	d_1 Ø mm							
		3	6	8	10	12	16	20	
1.1 - 1.5	P	64 000	32 000	24 000	20 000	16 000	12 000	10 000	min
		83 000	42 000	32 000	25 000	21 000	16 000	13 000	max
1.6 - 1.8	H	51 000	26 000	20 000	16 000	13 000	10 000	8 000	min
		71 000	36 000	27 000	22 000	18 000	14 000	11 000	max
2	M	45 000	23 000	17 000	14 000	12 000	9 000	7 000	min
		64 000	32 000	24 000	20 000	16 000	12 000	10 000	max
3	K	58 000	29 000	22 000	19 000	15 000	11 000	9 000	min
		77 000	39 000	29 000	23 000	20 000	15 000	12 000	max
4	S 1	45 000	23 000	17 000	14 000	12 000	9 000	7 000	min
		58 000	29 000	22 000	18 000	15 000	11 000	9 000	max
5	S 1	45 000	23 000	17 000	14 000	12 000	9 000	7 000	min
		58 000	29 000	22 000	18 000	15 000	11 000	9 000	max
6	N	64 000	32 000	24 000	20 000	16 000	12 000	10 000	min
		71 000	36 000	27 000	22 000	18 000	14 000	11 000	max
7	N	71 000	36 000	27 000	22 000	18 000	14 000	11 000	min
		96 000	48 000	36 000	29 000	24 000	18 000	15 000	max
8	O	77 000	39 000	29 000	23 000	20 000	15 000	12 000	min
		96 000	48 000	36 000	29 000	24 000	18 000	15 000	max

ST

AMG	ISO		d_1 Ø mm			
			3	6	10	12
1	P	Max	100 000	65 000	55 000	35 000
		Low	60 000	45 000	30 000	20 000
		High	80 000	60 000	40 000	30 000

VA

AMG	ISO		d_1 Ø mm			
			3	6	10	12
2	M	Max	100 000	65 000	55 000	35 000
		Low	60 000	30 000	20 000	15 000
		High	80 000	45 000	30 000	22 000

GRP

AMG	ISO		d_1 Ø mm					
			2	3	4	6	10	12
8	O	Low	40 000	25 000	20 000	20 000	15 000	10 000
		High	45 000	30 000	25 000	25 000	20 000	22 000

P801
P801C

- Roterande filar - Cylindriska utan ändskär
- Pyörivät viilat - Lieriömäiset, ei päätyleikkuuta
- Roterende fil - Sylindriske uten endeskjær
- Roterende fil - Cylindriske uden endeskær

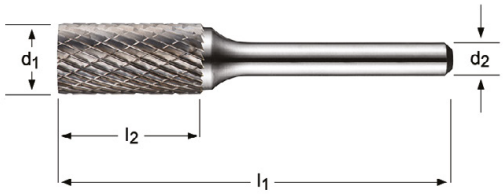
Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P801; P801C

▪ 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 2.1 2.2 2.3 2.4 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.2 6.3 6.4 9.1

• 6.1

P801	HM	A					DC	DORMER	
P801C	HM	A			TiAlN		DC	DORMER	



P801	P801C
	
3.00 - 16.00	3.00 - 12.70

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P801	P801C
3.00	3	14	38	P8013.0X3.0 [1]	P801C3.0X3.0 [1]
6.30	3	12.7	45	P8016.3X3.0	
6.00	6	18	50	P8016.0X6.0 [1]	P801C6.0X6.0 [1]
8.00	6	19	64	P8018.0X6.0	P801C8.0X6.0
9.60	6	19	64	P8019.6X6.0	P801C9.6X6.0
12.70	6	25	70	P80112.7X6.0	P801C12.7X6.0
16.00	6	25	70	P80116.0X6.0	

[1] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

DORMER

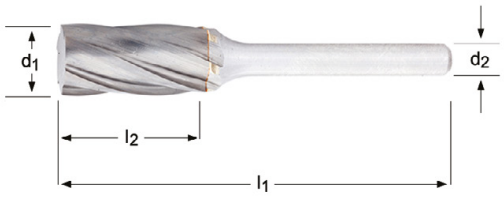
P701
P601
P831

- Roterande filar - Cylindriska utan ändskär
- Pyörivät viilat - Lieriömäiset, ei päätyleikkuuta
- Roterende fil - Sylindriske uten endeskjær
- Roterende fil - Cylindriske uden endeskær

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P701	▪	1.1	1.2	1.3	1.4	1.5	1.6	
P601	▪	2.1	2.2	2.3	2.4			
P831	▪	7.1	7.2	7.3	7.4	8.1	8.2	8.3
	•	2.1	4.1	5.1	6.2			

P701	HM	A					ST	DORMER	
P601	HM	A					VA	DORMER	
P831	HM	A					AL	DORMER	



P701	P601	P831
		
6.00 - 12.70	3.00 - 12.70	6.00 - 12.70

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P701	P601	P831
3.00	3	14	38		P6013.0X3.0 [1)]	
6.30	3	12.7	45		P6016.3X3.0	
6.00	6	18	50	P7016.0X6.0 [1)]	P6016.0X6.0 [1)]	P8316.0X6.0 [1)]
8.00	6	19	64	P7018.0X6.0	P6018.0X6.0	
9.60	6	19	64	P7019.6X6.0	P6019.6X6.0	P8319.6X6.0
12.70	6	25	70	P70112.7X6.0	P60112.7X6.0	P83112.7X6.0

[1)] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

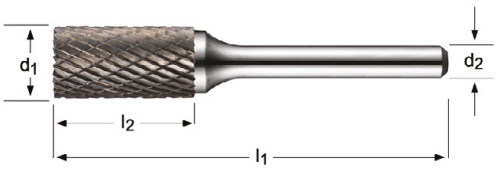
P803
P803C

- Roterande filar - Cylindriska med ändskär
- Pyörivät viilat - Lieriömäinen, päätyleikkuinen
- Roterende fil - Sylindriske med endeskjær
- Roterende fil - Cylindriske med endeskær

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P803; P803C		
	▪	1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 2.1 2.2 2.3 2.4 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.2 6.3 6.4 9.1
	•	6.1

P803	HM	B					DC	DORMER	P880 525	P890 526
P803C	HM	B			TiAlN		DC	DORMER	P880 525	



P803	P803C
	
3.00 - 16.00	3.00 - 12.70

d_1 Ø mm	d_2 Øh_7 mm	l_2 mm	l_1 mm	P803	P803C
3.00	3	14	38	P8033.0X3.0 [1]	P803C3.0X3.0 [1]
6.30	3	12.7	45	P8036.3X3.0	
6.00	6	18	50	P8036.0X6.0 [1]	P803C6.0X6.0 [1]
8.00	6	19	64	P8038.0X6.0	P803C8.0X6.0
9.60	6	19	64	P8039.6X6.0	P803C9.6X6.0
12.70	6	25	70	P80312.7X6.0	P803C12.7X6.0
16.00	6	25	70	P80316.0X6.0	

[1] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

DORMER

P703
- Roterande filar - Cylindriska med ändskär
- Pyörivät viilat - Lieriömäinen, päätyleikkuinen
- Roterende fil - Sylindriske med endeskjær
- Roterende fil - Cylindriske med endeskær

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P833

P703	▪	1.1	1.2	1.3	1.4	1.5	1.6			
P833	▪	7.1	7.2	7.3	7.4	8.1	8.2	8.3		
	•	2.1	4.1	5.1	6.2					

P703	HM	B					ST	DORMER	
P833	HM	B					AL	DORMER	





d1 Ø mm	d2 Øh7 mm	l2 mm	l1 mm	P703	P833
6.00	6	18	50	P7036.0X6.0 [1)]	P8336.0X6.0 [1)]
8.00	6	19	64	P7038.0X6.0	
9.60	6	19	64	P7039.6X6.0	P8339.6X6.0
12.70	6	25	70	P70312.7X6.0	P83312.7X6.0

[1)] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

P805
P805C

- Roterande filar - Cylindrisk-radieformad
- Pyörivät viilat - Lieriömäinen, säteellinen pää
- Roterende fil - Sylindriske med radius
- Roterende fil - Cylindriske med radius

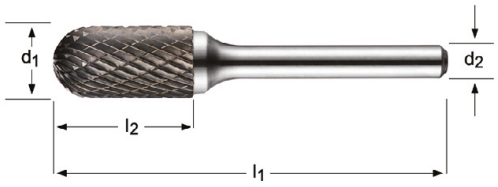
Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P805; P805C

▪ 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 2.1 2.2 2.3 2.4 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.2 6.3 6.4 9.1

• 6.1

P805	HM	C					DC	DORMER		
P805C	HM	C			TiAlN		DC	DORMER		



P805	P805C
	
3.00 - 16.00	3.00 - 12.70

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P805	P805C
3.00	3	14	38	P8053.0X3.0 [1]	P805C3.0X3.0 [1]
6.30	3	12.7	45	P8056.3X3.0	
6.00	6	18	50	P8056.0X6.0 [1]	P805C6.0X6.0 [1]
8.00	6	19	64	P8058.0X6.0	P805C8.0X6.0
9.60	6	19	64	P8059.6X6.0	P805C9.6X6.0
12.70	6	25	70	P80512.7X6.0	P805C12.7X6.0
16.00	6	25	70	P80516.0X6.0	

[1] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

DORMER

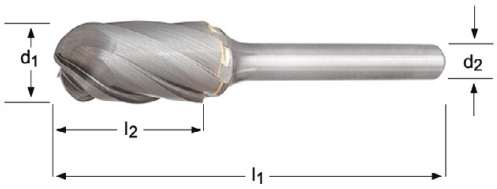
P705
P605
P835

- Roterande filar - Cylindrisk-radieformad
- Pyörivät viilat - Lieriömäinen, säteellinen pää
- Roterende fil - Sylindriske med radius
- Roterende fil - Cylindriske med radius

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P705	▪	1.1	1.2	1.3	1.4	1.5	1.6				
P605	▪	2.1	2.2	2.3	2.4						
P835	▪	7.1	7.2	7.3	7.4	8.1	8.2	8.3			
	•	2.1	4.1	5.1	6.2						

P705	HM	C						ST	DORMER	P880 525
P605	HM	C						VA	DORMER	P880 525
P835	HM	C						AL	DORMER	



P705	P605	P835
		
6.00 - 12.70	3.00 - 12.70	6.00 - 12.70

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P705	P605	P835
3.00	3	14	38		P6053.0X3.0 [1)]	
6.30	3	12.7	45		P6056.3X3.0	
6.00	6	18	50	P7056.0X6.0 [1)]	P6056.0X6.0 [1)]	P8356.0X6.0 [1)]
8.00	6	19	64	P7058.0X6.0	P6058.0X6.0	
9.60	6	19	64	P7059.6X6.0	P6059.6X6.0	P8359.6X6.0
12.70	6	25	70	P70512.7X6.0	P60512.7X6.0	P83512.7X6.0

[1)] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

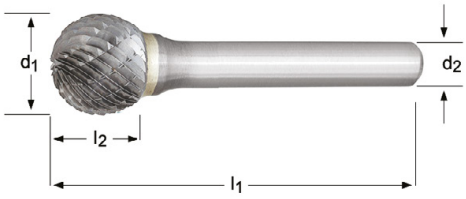
P807
P807C

- Roterande filar - Kulformade
- Pyörivät viilat - Pallomainen
- Roterende fil - Kuleformede
- Roterende fil - Kugleformede

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P807; P807C	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2
		4.3	5.1	5.2	5.3	6.2	6.3	6.4	9.1										
	•	6.1																	

P807	HM	D					DC	DORMER	
P807C	HM	D			TiAlN		DC	DORMER	





d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P807	P807C
3.00	3	2.5	38	P8073.0X3.0 [1]	P807C3.0X3.0 [1]
4.00	3	3.4	38	P8074.0X3.0 [1]	
6.30	3	5	38	P8076.3X3.0	
6.00	6	4.7	50	P8076.0X6.0 [1]	P807C6.0X6.0 [1]
8.00	6	6	52	P8078.0X6.0	P807C8.0X6.0
9.60	6	8	54	P8079.6X6.0	P807C9.6X6.0
12.70	6	11	56	P80712.7X6.0	P807C12.7X6.0
16.00	6	14	59	P80716.0X6.0	

[1] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

DORMER

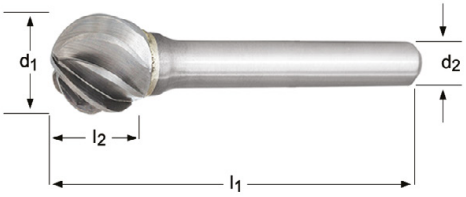
P707
P607
P837

- Roterande filar - Kulformade
- Pyörivät viilat - Pallomainen
- Roterende fil - Kuleformede
- Roterende fil - Kugleformede

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P707	▪	1.1	1.2	1.3	1.4	1.5	1.6			
P607	▪	2.1	2.2	2.3	2.4					
P837	▪	7.1	7.2	7.3	7.4	8.1	8.2	8.3		
	•	2.1	4.1	5.1	6.2					

P707	HM	D					ST	DORMER	
P607	HM	D					VA	DORMER	
P837	HM	D					AL	DORMER	



P707	P607	P837
		
6.00 - 12.70	3.00 - 12.70	6.00 - 12.70

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P707	P607	P837
3.00	3	2.5	38		P6073.0X3.0 [1)]	
6.30	3	5	38		P6076.3X3.0	
6.00	6	4.7	50	P7076.0X6.0 [1)]	P6076.0X6.0 [1)]	P8376.0X6.0 [1)]
8.00	6	6	52	P7078.0X6.0	P6078.0X6.0	
9.60	6	8	54	P7079.6X6.0	P6079.6X6.0	P8379.6X6.0
12.70	6	11	56	P70712.7X6.0	P60712.7X6.0	P83712.7X6.0

[1)] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

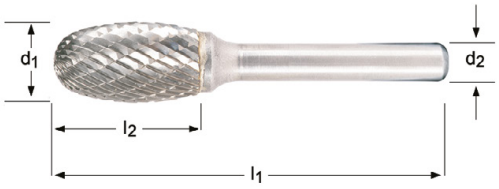
P809

- Roterande filar - Äggformade
- Pyörivät viilat - Ovaali
- Roterende fil - Oval
- Roterende fil - Oval

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P809																					
	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1
		5.2	5.3	6.2	6.3	6.4	9.1														
	•	6.1																			

P809	HM	E					DC	DORMER	P880 525



P809



3.00 - 16.00

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P809
3.00	3	6	38	P8093.0X3.0 [1]
6.30	3	9.5	42	P8096.3X3.0
6.00	6	10	50	P8096.0X6.0 [1]
8.00	6	15	60	P8098.0X6.0
9.60	6	16	60	P8099.6X6.0
12.70	6	22	67	P80912.7X6.0
16.00	6	25	70	P80916.0X6.0

[1] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

DORMER

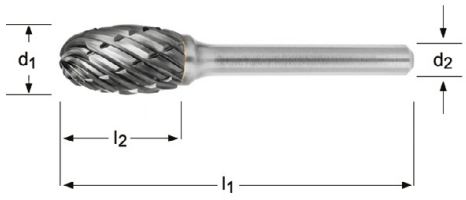
P709
- Roterande filar - Äggformade
- Pyörivät viilat - Ovaali
- Roterende fil - Oval
- Roterende fil - Oval

Lödda
Juotetut
Loddet
Loddet

P609

P709	▪	1.1	1.2	1.3	1.4	1.5	1.6	
P609	▪	2.1	2.2	2.3	2.4			

P709	HM	E					ST	DORMER
P609	HM	E					VA	DORMER



P709	P609
	
12.70	8.00 - 12.70

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P709	P609
8.00	6	15	60		P6098.0X6.0
9.60	6	16	60		P6099.6X6.0
12.70	6	22	67	P70912.7X6.0	P60912.7X6.0

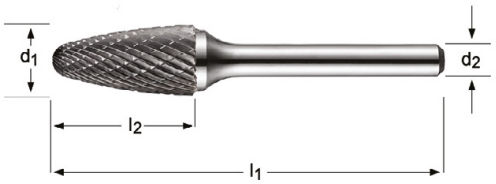
P811
P811C

- Roterande filar - Spetsform med ändradie
- Pyörivät viilat - Puumainen, säteellinen pää
- Roterende fil - Spisform med radius
- Roterende fil - Spidsform med radius

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P811; P811C	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2
		4.3	5.1	5.2	5.3	6.2	6.3	6.4	9.1										
	•	6.1																	

P811	HM	F					DC	DORMER	
P811C	HM	F					DC	DORMER	



P811	P811C
	
3.00 - 16.00	3.00 - 12.70

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P811	P811C
3.00	3	14	38	P8113.0X3.0 [1)]	P811C3.0X3.0 [1)]
6.30	3	12.7	45	P8116.3X3.0	
6.00	6	18	50	P8116.0X6.0 [1)]	P811C6.0X6.0 [1)]
8.00	6	20	65	P8118.0X6.0	
9.60	6	19	64	P8119.6X6.0	P811C9.6X6.0
12.70	6	25	70	P81112.7X6.0	P811C12.7X6.0
16.00	6	25	70	P81116.0X6.0	

[1)] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

DORMER

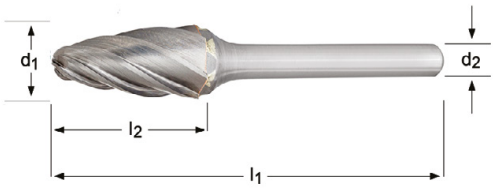
P711
P611
P841

- Roterande filar - Spetsform med ändradie
- Pyörivät viilat - Puumainen, säteellinen pää
- Roterende fil - Spisform med radius
- Roterende fil - Spidsform med radius

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P711	▪	1.1	1.2	1.3	1.4	1.5	1.6			
P611	▪	2.1	2.2	2.3	2.4					
P841	▪	7.1	7.2	7.3	7.4	8.1	8.2	8.3		
	•	2.1	4.1	5.1	6.2					

P711	HM	F					ST	DORMER	
P611	HM	F					VA	DORMER	
P841	HM	F					AL	DORMER	



P711	P611	P841
		
6.00 - 12.70	3.00 - 12.70	6.00 - 12.70

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P711	P611	P841
3.00	3	14	38		P6113.0X3.0 [1]	
6.30	3	12.7	45		P6116.3X3.0	
6.00	6	18	50	P7116.0X6.0 [1]	P6116.0X6.0 [1]	P8416.0X6.0 [1]
8.00	6	20	65	P7118.0X6.0	P6118.0X6.0	
9.60	6	19	64	P7119.6X6.0	P6119.6X6.0	P8419.6X6.0
12.70	6	25	70	P71112.7X6.0	P61112.7X6.0	P84112.7X6.0

[1] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

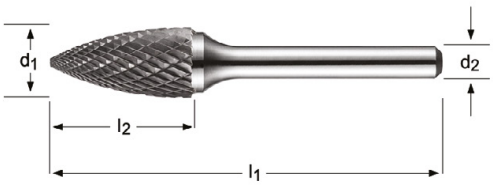
P813
P813C

- Roterande filar - Spetsformade
- Pyörivät viilat - Puumainen, terävä pää
- Roterende fil - Spisform
- Roterende fil - Spidsform

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P813; P813C	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2
		4.3	5.1	5.2	5.3	6.2	6.3	6.4	9.1										
	•	6.1																	

P813	HM	G					DC	DORMER	 P880 525	 P890 526
P813C	HM	G			 TiAlN		DC	DORMER	 P880 525	



P813	P813C
 3.00 - 16.00	 3.00 - 12.70

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P813	P813C
3.00	3	14	38	P8133.0X3.0 [1]	P813C3.0X3.0 [1]
6.30	3	12.7	45	P8136.3X3.0	
6.00	6	18	50	P8136.0X6.0 [1]	P813C6.0X6.0 [1]
8.00	6	19	64	P8138.0X6.0	
9.60	6	19	64	P8139.6X6.0	P813C9.6X6.0
12.70	6	25	70	P81312.7X6.0	P813C12.7X6.0
16.00	6	25	70	P81316.0X6.0	

[1] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

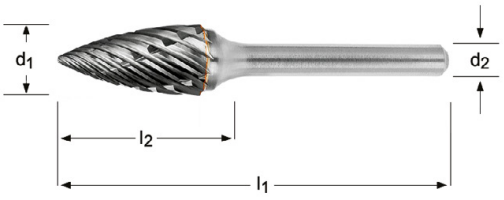
P713
- Roterande filar - Spetsformade
- Pyörivät viilat - Puumainen, terävä pää

P613
- Roterende fil - Spisform
- Roterende fil - Spidsform

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P713	▪	1.1	1.2	1.3	1.4	1.5	1.6	
P613	▪	2.1	2.2	2.3	2.4			

P713	HM	G					ST	DORMER
P613	HM	G					VA	DORMER



P713	P613
	
6.00 - 12.70	6.00 - 12.70

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P713	P613
6.00	6	18	50	P7136.0X6.0 [1)]	P6136.0X6.0 [1)]
8.00	6	19	64	P7138.0X6.0	P6138.0X6.0
9.60	6	19	64	P7139.6X6.0	P6139.6X6.0
12.70	6	25	70	P71312.7X6.0	P61312.7X6.0

[1)] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

P815

- Roterande filar - Flamform — Lödda över 6,0 mm
- Pyörivät viilat - Liekkimäinen — Juotetut yli 6.00 mm
- Roterende fil - Flammeform — Loddet hvis d1>6mm
- Roterende fil - Flammeform — Loddet over d1>6mm

P815C

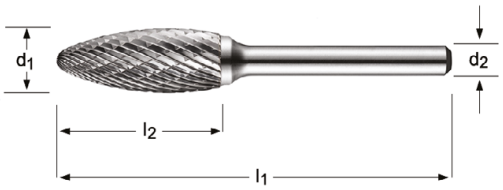
- Roterande filar - Flamform — Lödda
- Pyörivät viilat - Liekkimäinen — Juotetut
- Roterende fil - Flammeform — Loddet
- Roterende fil - Flammeform — Loddet

P815; P815C

▪ 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 2.1 2.2 2.3 2.4 3.1 3.2 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.2 6.3 6.4 9.1

• 6.1

P815	HM	H					DC	DORMER
P815C	HM	H					DC	DORMER



P815	P815C
	
3.00 - 16.00	8.00 - 12.70

d_1 Ø mm	d_2 Øh_7 mm	l_2 mm	l_1 mm	P815	P815C
3.00	3	6	38	P8153.0X3.0 [1]	
6.00	6	14	50	P8156.0X6.0 [1]	
8.00	6	19	64	P8158.0X6.0	P815C8.0X6.0
9.60	6	19	65	P8159.6X6.0	
12.70	6	32	77	P81512.7X6.0	P815C12.7X6.0
16.00	6	36	81	P81516.0X6.0	

[1] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

DORMER

P715
- Roterande filar - Flamform
- Pyörivät viilat - Liekkimäinen

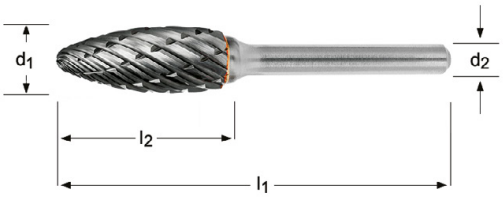
Lödda
Juotetut

P615
- Roterende fil - Flammeform
- Roterende fil - Flammeform

Loddet
Loddet

P715	▪	1.1	1.2	1.3	1.4	1.5	1.6	
P615	▪	2.1	2.2	2.3	2.4			

P715	HM	H					ST	DORMER
P615	HM	H					VA	DORMER



P715	P615
	
8.00 - 12.70	8.00 - 12.70

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P715	P615
8.00	6	19	64	P7158.0X6.0	P6158.0X6.0
9.60	6	19	65		P6159.6X6.0
12.70	6	32	77	P71512.7X6.0	P61512.7X6.0

P817

- Roterande filar - Koniska 60°
- Pyörivät viilat - Kartiomainen, 60°
- Roterende fil - Konisk 60°
- Roterende fil - Konisk 60°

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P817	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1
		5.2	5.3	6.2	6.3	6.4	9.1														
	•	6.1																			

P817 HM J 60° DC DORMER





d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P817
3.00	3	2.5	38	P8173.0X3.0 [1]
6.00	6	4	50	P8176.0X6.0 [1]
9.60	6	8	56	P8179.6X6.0
12.70	6	11	59	P81712.7X6.0
16.00	6	14.5	63	P81716.0X6.0

[1] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

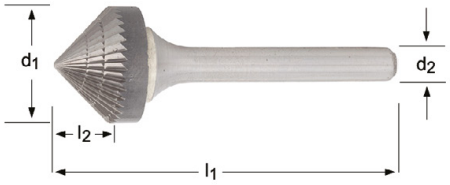
P819

- Roterande filar - Koniska 90°
- Pyörivät viilat - Kartiomainen, 90°
- Roterende fil - Konisk 90°
- Roterende fil - Konisk 90°

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P819	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1
		5.2	5.3	6.2	6.3	6.4	9.1														
	•	6.1																			

P819 HM K 90° DC DORMER



P819



3.00 - 16.00

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	P819
3.00	3	1.5	38	P8193.0X3.0 [1)]
6.00	6	3	50	P8196.0X6.0 [1)]
9.60	6	4.7	53	P8199.6X6.0
12.70	6	6.3	55	P81912.7X6.0
16.00	6	8	57	P81916.0X6.0

[1)] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

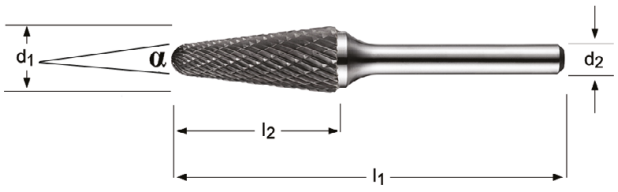
P821
P821C

- Roterande filar - Koniska med ändradie
- Pyörivät viilat - Kartiomainen, säteellinen pää
- Roterende fil - Konisk med enderadius
- Roterende fil - Konisk med enderadius

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P821; P821C	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2
		4.3	5.1	5.2	5.3	6.2	6.3	6.4	9.1										
	•	6.1																	

P821	HM	L					DC	DORMER	
P821C	HM	L			TiAlN		DC	DORMER	



P821	P821C
	
3.00 - 16.00	3.00 - 12.70

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	△	P821	P821C
3.00	3	14	38	8°	P8213.0X3.0 [1]	P821C3.0X3.0 [1]
6.00	6	18	50	14°	P8216.0X6.0 [1]	
8.00	6	25.4	70	14°	P8218.0X6.0	
9.60	6	30	76	14°	P8219.6X6.0	
12.70	6	32	77	14°	P82112.7X6.0	P821C12.7X6.0
16.00	6	33	78	14°	P82116.0X6.0	

[1] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

DORMER

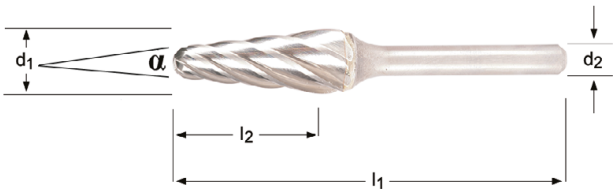
P721
- Roterande filar - Koniska med ändradie — Lödda
- Pyörivät viilat - Kartiomainen, säteellinen pää — Juotetut

P621
- Roterende fil - Konisk med enderadius — Loddet
- Roterende fil - Konisk med enderadius — Loddet

P842
- Roterande filar - Koniska med ändradie — Lödda över 6,0 mm
- Pyörivät viilat - Kartiomainen, säteellinen pää — Juotetut yli 6.00 mm
- Roterende fil - Konisk med enderadius — Loddet hvis d1>6mm
- Roterende fil - Konisk med enderadius — Loddet over d1>6mm

P721	▪	1.1 1.2 1.3 1.4 1.5 1.6
P621	▪	2.1 2.2 2.3 2.4
P842	▪	7.1 7.2 7.3 7.4 8.1 8.2 8.3
	•	2.1 4.1 5.1 6.2

P721	HM	L					ST	DORMER	
P621	HM	L					VA	DORMER	
P842	HM	L					AL	DORMER	



P721	P621	P842
		
10.00 - 12.70	8.00 - 12.70	6.00 - 12.70

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	▷	P721	P621	P842
6.00	6	18	50	14°			P8426.0X6.0 [1)]
8.00	6	25.4	70	14°		P6218.0X6.0	
10.00	6	20	65	14°	P72110.0X6.0	P62110.0X6.0	
9.60	6	30	76	14°	P7219.6X6.0		P8429.6X6.0
12.70	6	32	77	14°	P72112.7X6.0	P62112.7X6.0	P84212.7X6.0

[1)] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

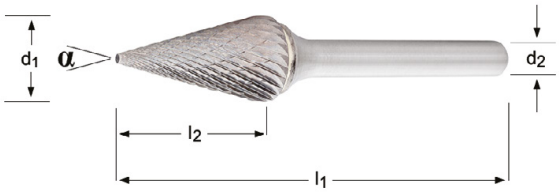
P823

- Roterande filar - Koniska
- Pyörivät viilat - Kartomainen, terävä pää
- Roterende fil - Konisk
- Roterende fil - Konisk

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P823																				
	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1
		5.2	5.3	6.2	6.3	6.4	9.1														
	•	6.1																			

P823 HM M DC DORMER



P823



3.00 - 16.00

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	▷	P823
3.00	3	11	38	14°	P8233.0X3.0 [1)]
6.30	3	12.7	49	22°	P8236.3X3.0
6.00	6	20	50	14°	P8236.0X6.0 [1)]
9.60	6	16	64	28°	P8239.6X6.0
12.70	6	22	71	28°	P82312.7X6.0
16.00	6	25	71	31°	P82316.0X6.0

[1)] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

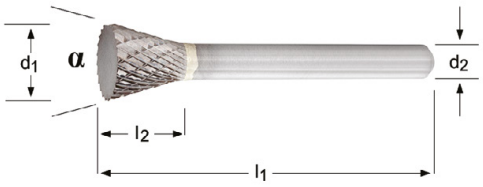
P825

- Roterande filar - Omvänt koniska
- Pyörivät viilat - Käänteinen kartiokkuus
- Roterende fil - Omvendt konisk
- Roterende fil - Omvendt konisk

Lödda över 6,0 mm
Juotetut yli 6.00 mm
Loddet hvis d1>6mm
Loddet over d1>6mm

P825	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1
		5.2	5.3	6.2	6.3	6.4	9.1														
	•	6.1																			

P825	HM	N					DC	DORMER



P825



3.00 - 16.00

d_1 Ø mm	d_2 Øh$_7$ mm	l_2 mm	l_1 mm	▷	P825
3.00	3	4	38	10°	P8253.0X3.0 [1]
6.30	3	6	39	12°	P8256.3X3.0
6.00	6	8	50	10°	P8256.0X6.0 [1]
9.60	6	9.5	55	16°	P8259.6X6.0
12.70	6	12.7	58	28°	P82512.7X6.0
16.00	6	19	64	18°	P82516.0X6.0

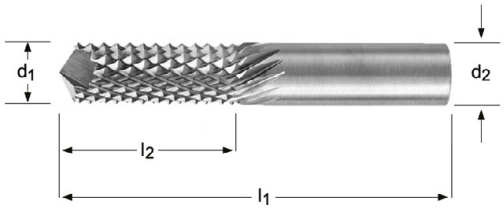
[1] d2 tolerans h6 / d2 Toleranssit h6 / d2 Toleranse h6 / d2 Toleranse h6

P843

- Diamond Cut borr – 135° borrspets
- Timanttileikkuinen – 135° porakärki
- Diamant roterende fil - 135° borspiss
- Diamant Cut Router - 135° Borespids

P843 ▪ **8.1** **8.2** **8.3**

P843 HM 135° GRP DORMER



P843



3.00 - 8.00

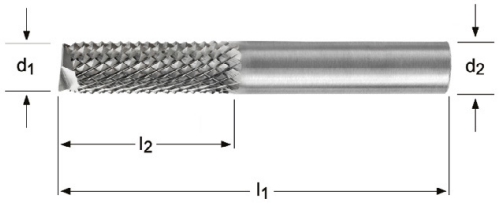
d_1 Ø mm	d_2 Øh$_6$ mm	l_2 mm	l_1 mm	P843
3.00	3	13	45	P8433.0X3.0
6.00	6	19	63	P8436.0X6.0
8.00	8	25	63	P8438.0X8.0

P844

- Diamond Cut fräs – frässpets
- Timanttileikkuinen – jyrsinkärki
- Diamant roterende fil - Endeskjær
- Diamant Cut Router - Endefræser

P844 ▪ **8.1** **8.2** **8.3**

P844 HM 180° GRP DORMER



P844



3.00 - 8.00

d_1 Ø mm	d_2 Øh_6 mm	l_2 mm	l_1 mm	P844
3.00	3	13	45	P8443.0X3.0
6.00	6	19	63	P8446.0X6.0
8.00	8	25	63	P8448.0X8.0

P880

- Roterande filar i satser
- Pyörivät viilat, sarja
- Roterende fil i sett
- Roterende fil i sæt

A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
A=Työkalujen malli, B=lkm ja C=halkaisijat
A=Typer i sett. B=Antall i sett. C=Diameter i sett
A=Typer i sæt. Antal file i sæt. C=Diameterne





Set

Nr.	A	B	C	P880
Nr01	P803 + P805 + P807 + P809 + P813	5	P8039.6X6.0, P8059.6X6.0, P8079.6X6.0, P8099.6X6.0, P8139.6X6.0	P88001
Nr02	P803C + P805C + P807C + P811C + P813C	5	P803C9.6X6.0, P805C9.6X6.0, P807C9.6X6.0, P811C9.6X6.0, P813C9.6X6.0	P88002
Nr03	P601 + P605 + P607 + P611 + P621	5	P6019.6X6.0, P6059.6X6.0, P6079.6X6.0, P6119.6X6.0, P62110.0X6.0	P88003
Nr04	P703 + P705 + P707 + P711 + P721	5	P7039.6X6.0, P7059.6X6.0, P7079.6X6.0, P7119.6X6.0, P72110.0X6.0	P88004

P890

- Roterande filar i dispenser
- Pyörivät viilat telineessä
- Roterende fil i dispenser
- Roterende fil dispenser

A=ingående produkter. B=Antal i satsen. C=Diametrar satsen.
A=Työkalujen malli, B=lkm ja C=halkaisijat
A=Typer i sett. B=Antall i sett. C=Diameter i sett
A=Typer i sæt. Antal file i sæt. C=Diameterne



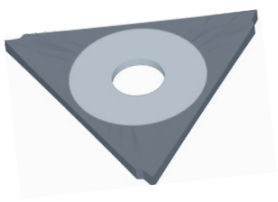


Set

Nr.	A	B	C	P890
Nr01	P803 + P805 + P811 + P813 + P821	40	P803(6.0X6.0, 8.0X6.0, 9.6X6.0, 12.7X6.0) X 2, P805(6.0X6.0, 8.0X6.0, 9.6X6.0, 12.7X6.0) X 2, P811(6.0X6.0, 8.0X6.0, 9.6X6.0, 12.7X6.0) X 2, P813(6.0X6.0, 8.0X6.0, 9.6X6.0, 12.7X6.0) X 2, P821(6.0X6.0, 8.0X6.0, 9.6X6.0, 12.7X6.0) X 2	P89001

K100	536	**K305**	533
K101	536	**K310**	534
K102	536	**K311**	534
K103	537	**K312**	534
K104	537	**K313**	534
K200	538	**K314**	534
K201	538	**K330**	535
K202	538	**K520**	539
K203	538	**K521**	540
K204	538	**K522**	541
K300	533	**M150**	542
K301	533	**M151**	543
K302	533	**M152**	544
K303	533	**M200**	545
K304	533		

527 - 546

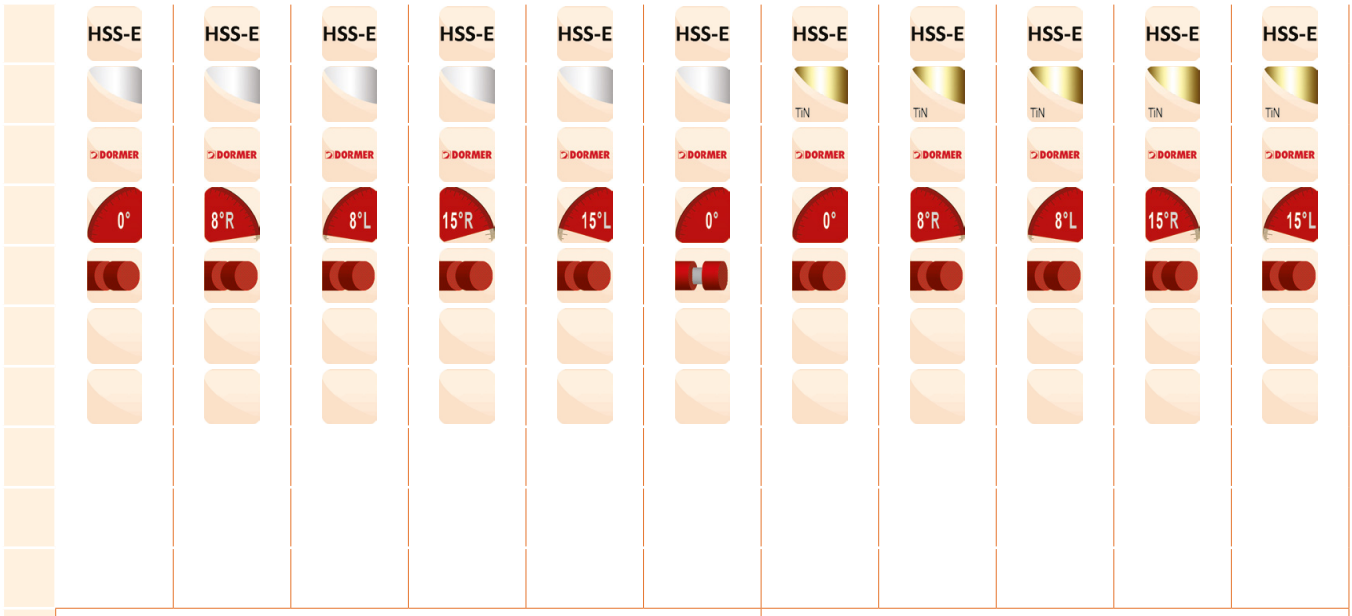




DORMER

	Material	Raaka-aine	Materiale	Materiale
	Ytbehandling	Pinnoitteet	Overflatebehandling	Overfladebehandling
	Standard	Standardi	Standard	Standard
	Ställvinkel	Asetuskulmat	Stillvinkel	Stil vinkel
	Användningsområde	Käyttöalue	Andvendelsesområde	Andvendelsesområde
	Skärriktning	Kätisyys	Skjære-retning	Skære retning
	Skärstorlek	Terän koko	Str. Stikkstål	Platte størrelse
■	Förstahandsval	Paras valinta	Førstevalg	Perfekt
●	Andrahandsval	Hyvä valinta	Andrevalg	God
	Exempel 10 = Skärhastighet i meter/minut +/- 10%	Esimerkki 10 = Lastuamisnopeus, m/min +/- 10%	Eksempel 10 = skjærehastighet i meter/minutt +/- 10%	Eksempel 10 = Skærehastighed i meter/min. +/- 10%
	Artikelnummer	Tuotteen koodi	Artikkel kode	Kode
	Dim. område	Halkaisija-alue	Dim. område	Dimension

AMG	Svensk	Suomi	Norsk	Dansk
1.1	Rena järn, mjuka stål	Puhdas rauta, pehmeät teräkset	Rent jern, myke stål	Rent jern, blødt stål
1.2	Konstruktionsstål	Rakenneteräkset, hiilletysteräkset	Konstruksjonsstål	Konstruktionsstål
1.3	Kolstål, låglegerade stål	Hiilli- ja niukkaesosteiset teräset	Kullstål, låglegert stål	Kulstofstål, lavt leg.stål
1.4	Legerade stål	Seostetut teräkset	Legert stål	Legeret stål
1.5	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.6	Legerade stål, verktygsstål / Seghärdningsstål	Seostetut teräkset työkalu- ja nuorrutusteräkset	Legert stål, verktøystål/Seigherdingsstål	Legeret stål/ Værktøjsstål, seghærdningsstål
1.7	Legerade härdade stål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
1.8	Legerade härdade stål, slitstål	Seostetut teräkset, karkaistut teräkset	Legert herdet stål	Legeret stål, Hærdet
2.1	Rostfria automatstål och verktygsstål	Aut. laadut, työkaluteräkset Cr>10%	Rustfritt automatstål	Rustfrit automatstål
2.2	Austenitiska	Austenittiset	Austenistisk (Syrefast)	Austenitisk
2.3	Ferritaustenitiska (duplex), Martensitiska	Ferriiti + Austeniitti (Duplex), Ferriitismarten-siittiset	Ferritaustenitiske (duplex), Ferritiske, Martensitiske	Ferritisk+Austenitisk, Martensitisk
2.4	Utskiljningshärdade / Austenitiska	Erkautumiskarkenevat	Utskillingsherdet	Udskilningshærdet
3.1	Gråjärn	Harmaa valurauta	Gråjern	Gråt støbejern
3.2	Gråjärn	Harmaa valurauta	Gråjern	Hærdet støbejern
3.3	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
3.4	Segjärn / Aducergods	Pallografiitti valurauta / Adusoitu valurauta	Seigjern Aducergods	Stræktbart støbejern
4.1	Titan, ren	Titaani, seostamaton	Titan, ren	Titan, ren
4.2	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
4.3	Titanlegeringar	Titaani, seostattu	Titanlegeringer	Titanlegeringer
5.1	Nickel, ren	Nikkeli, seostamaton	Nikkel, ren	Nikkel, ren
5.2	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
5.3	Nickellegeringar	Nikkeli, seostettu	Nikkel, legeringer	Nikkellegeringer
6.1	Koppar	Kupari	Kopper	Kobber
6.2	Mässing / Brons	ß-Messinki, pronssi	Messing/Bronse	Messing, Bronze
6.3	Mjuk mässing	α-Messinki, pehmeä	Myk messing	Blød messing
6.4	Cu-Al-Fe-Legeringar	Cu-Al-Fe seokset, lujat pronssit	Cu-Al-Fe-Legeringer	Cu-Al-Fe-legeringer
7.1	Ren aluminium, magnesium	Al, Mg, seostamaton	Ren aluminium, magnesium	Ren aluminium, magnesium
7.2	Al Legeringar, Si<0.5%	Al seostettu, Si<0.5%	Al legeringer, Si<0.5%	Al-legeringer, Si<0.5%
7.3	Al Legeringar, Si>0.5%<10%	Al seostettu, Si>0.5% <10%	Al legeringer, Si>0.5%<10%	Al-legeringer, Si>0.5%<10%
7.4	Al Legeringar, Si>10% Whisker förstärkta Al-och Mg- Legeringar	Al seostettu, Si>10% Whisker lujitetut, Al-seokset, Mg-seokset	Al legeringer, Si>10% Whisker forsterket Al-leg., Mg leg.	Al-legeringer, Si>10% Whisker-forstærket, Al-legeringer, Mg-legeringer
8.1	Mjuka plaster	Pehmeät muovit (Thermoplast)	Myk plast	Blød plast
8.2	Hårda plaster	Kovat muovit, Bakeliitti	Hard plast	Hårde plast
8.3	Armerade plaster	Lujitetut muovit	Armert plast	Armerede plastmaterialer
9.1	Cermets (metall-keramik)	Cermetit (metalli-keraamiset)	Cermets (metal-keramikk)	Cermets (metal-keramik)
10.1	Grafit	Standardi Grafiitti	Standard Grafitt	Standard grafit







	K300	K301	K302	K303	K304	K305	K310	K311	K312	K313	K314
	1.50 - 2.50	1.50 - 2.50	1.50 - 2.50	1.50 - 2.50	1.50 - 2.50	1.10 - 2.15	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00
AMG	533	533	533	533	533	533	534	534	534	534	534
1.1	■50A	■50A	■50A	■50A	■50A	■50A	■120A	■120A	■120A	■120A	■120A
1.2	■40B	■40B	■40B	■40B	■40B	■40B	■100B	■100B	■100B	■100B	■100B
1.3	●30C	●30C	●30C	●30C	●30C	●30C	■60C	■60C	■60C	■60C	■60C
1.4	●20D	●20D	●20D	●20D	●20D	●20D	●50D	●50D	●50D	●50D	●50D
1.5							●20E	●20E	●20E	●20E	●20E
1.6											
1.7											
1.8											
2.1	●15C	●15C	●15C	●15C	●15C	●15C	■20C	■20C	■20C	■20C	■20C
2.2							■20C	■20C	■20C	■20C	■20C
2.3							●10B	●10B	●10B	●10B	●10B
2.4											
3.1											
3.2											
3.3											
3.4											
4.1											
4.2											
4.3											
5.1											
5.2											
5.3											
6.1	●100B	●100B	●100B	●100B	●100B	●100B	■250B	■250B	■250B	■250B	■250B
6.2	■65C	■65C	■65C	■65C	■65C	■65C	■160C	■160C	■160C	■160C	■160C
6.3	■100B	■100B	■100B	■100B	■100B	■100B	■250B	■250B	■250B	■250B	■250B
6.4											
7.1	●150A	●150A	●150A	●150A	●150A	●150A	■370A	■370A	■370A	■370A	■370A
7.2	●150B	●150B	●150B	●150B	●150B	●150B	■370B	■370B	■370B	■370B	■370B
7.3							■110C	■110C	■110C	■110C	■110C
7.4							●45D	●45D	●45D	●45D	●45D
8.1											
8.2											
8.3											
9.1											
10.1											

	23mm	40mm
A	0.20	0.25
B	0.15	0.20
C	0.10	0.15
D	0.05	0.10
E	0.03	0.05

	23mm	40mm
A	0.20	0.25
B	0.15	0.20
C	0.10	0.15
D	0.05	0.10
E	0.03	0.05

ISO
P 1
P 1
P 2
P 3
P 4
H 1
H 3
H 4
M 1
M 3
M 2
S 2
K 1
K 2
K 3
K 4
S 1
S 2
S 3
S 1
S 2
S 3
N 3
N 4
N 3
N 4
N 1
N 1
N 1
N 2
O
O
O
H
O

DORMER

HSS-E

TiAlN

0°













	K330	K100	K101	K102	K103	K104	
	23.00 - 40.00	10.00 - 20.00	12.00 - 20.00	10.00 - 14.00	16.00 - 32.00	16.00 - 32.00	
AMG	535	536	536	536	537	537	ISO
1.1	■120A						P 1
1.2	■100B						P 1
1.3	■60C						P 2
1.4	●50D						P 3
1.5	●20E						P 4
1.6							H 1
1.7							H 3
1.8							H 4
2.1	■20C						M 1
2.2	■20C						M 3
2.3	●10B						M 2
2.4							S 2
3.1							K 1
3.2							K 2
3.3							K 3
3.4							K 4
4.1							S 1
4.2							S 2
4.3							S 3
5.1							S 1
5.2							S 2
5.3							S 3
6.1	■250B						N 3
6.2	■160C						N 4
6.3	■250B						N 3
6.4							N 4
7.1	■370A						N 1
7.2	■370B						N 1
7.3	■110C						N 1
7.4	●45D						N 2
8.1							O
8.2							O
8.3							O
9.1							H
10.1							O

	23mm	40mm
A	0.20	0.25
B	0.15	0.20
C	0.10	0.15
D	0.05	0.10
E	0.03	0.05

						HSS-E	HSS-E	HSS-E	
						DIN 4964B	DIN 4964A	DIN 4964D	
						h13	h9	h13	
									
	K200	K201	K202	K203	K204	K520	K521	K522	
	1.50	1.50	1.50	2.50	2.50	4.00 - 5/8“	3.00 - 20	10.00 - 25	
AMG	538	538	538	538	538	539	540	541	ISO
1.1						■80A	■80A	■80A	P 1
1.2						■80A	■80A	■80A	P 1
1.3						■65A	■65A	■65A	P 2
1.4						■55A	■55A	■55A	P 3
1.5						●35A	●35A	●35A	P 4
1.6									H 1
1.7									H 3
1.8									H 4
2.1						●37A	●37A	●37A	M 1
2.2						●30A	●30A	●30A	M 3
2.3									M 2
2.4									S 2
3.1						■60A	■60A	■60A	K 1
3.2						■50A	■50A	■50A	K 2
3.3						■40A	■40A	■40A	K 3
3.4						■25A	■25A	■25A	K 4
4.1									S 1
4.2									S 2
4.3									S 3
5.1									S 1
5.2									S 2
5.3									S 3
6.1						■100A	■100A	■100A	N 3
6.2						■65A	■65A	■65A	N 4
6.3						■100A	■100A	■100A	N 3
6.4						●50A	●50A	●50A	N 4
7.1						●120A	●120A	●120A	N 1
7.2						●150A	●150A	●150A	N 1
7.3									N 1
7.4									N 2
8.1									O
8.2									O
8.3									O
9.1									H
10.1									O

DORMER

							
	M150	**M151**	**M152**	**M200**	**M200**	**M200**	
	-	-	-	1	2	3	
	542	**543**	**544**	**545**	**545**	**545**	**ISO**
1.1				■			P 1
1.2				■		●	P 1
1.3				■		●	P 2
1.4				■		●	P 3
1.5				■		■	P 4
1.6				■		■	H 1
1.7				●		■	H 3
1.8				●		■	H 4
2.1				■		■	M 1
2.2				■		■	M 3
2.3				■		■	M 2
2.4				●		■	S 2
3.1				■		●	K 1
3.2				■		●	K 2
3.3				■		●	K 3
3.4				■		●	K 4
4.1				■		■	S 1
4.2				■		■	S 2
4.3				■		■	S 3
5.1				■		■	S 1
5.2				■		■	S 2
5.3				■		■	S 3
6.1					●		N 3
6.2					●		N 4
6.3					●		N 3
6.4					●		N 4
7.1					■		N 1
7.2					■		N 1
7.3					■		N 1
7.4					■		N 2
8.1							O
8.2							O
8.3							O
9.1							H
10.1							O

K300
- Stickstål
- Kääntöterät
- Stikkstål
- Stikstål



K301
- Stickstål
- Kääntöterät
- Stikkstål
- Stikstål



K302
- Stickstål
- Kääntöterät
- Stikkstål
- Stikstål



K303
- Stickstål
- Kääntöterät
- Stikkstål
- Stikstål



K304
- Stickstål
- Kääntöterät
- Stikkstål
- Stikstål



K305
- Stickstål
- Kääntöterät
- Stikkstål
- Stikstål

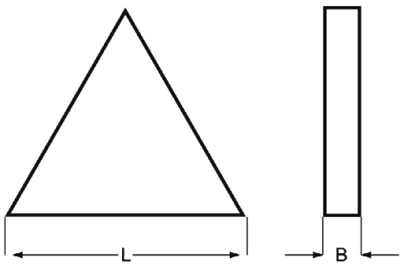


K300; K301; K302; K303; K304; K305

▪ 1.1 1.2 6.2 6.3

• 1.3 1.4 2.1 6.1 7.1 7.2

K300	HSS-E		DORMER	0°			
K301	HSS-E		DORMER	8°R			
K302	HSS-E		DORMER	8°L			
K303	HSS-E		DORMER	15°R			
K304	HSS-E		DORMER	15°L			
K305	HSS-E		DORMER	0°			



K300	K301	K302	K303	K304	K305
					
1.50 - 2.50	1.50 - 2.50	1.50 - 2.50	1.50 - 2.50	1.50 - 2.50	1.10 - 2.15

L	B	d min-max mm	K300	K301	K302	K303	K304	K305
23	1.10	9 - 17						K30523.0X1.1
23	1.30	18 - 26						K30523.0X1.3
23	1.50		K30023.0X1.5	K30123.0X1.5	K30223.0X1.5	K30323.0X1.5	K30423.0X1.5	
23	1.60	28 - 35						K30523.0X1.6
40	1.85	36 - 48						K30540.0X1.85
40	2.15	50 - 63						K30540.0X2.15
40	2.50		K30040.0X2.5	K30140.0X2.5	K30240.0X2.5	K30340.0X2.5	K30440.0X2.5	

DORMER

K310
- Stickstål
- Kääntöterät
- Stikkstål
- Stikstål



K311
- Stickstål
- Kääntöterät
- Stikkstål
- Stikstål



K312
- Stickstål
- Kääntöterät
- Stikkstål
- Stikstål



K313
- Stickstål
- Kääntöterät
- Stikkstål
- Stikstål



K314
- Stickstål
- Kääntöterät
- Stikkstål
- Stikstål

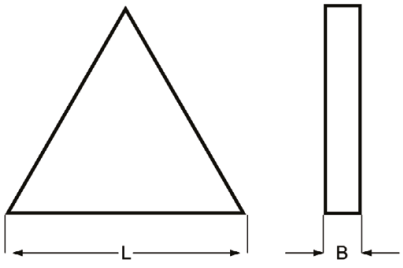


K310; K311; K312; K313; K314

▪ 1.1 1.2 1.3 2.1 2.2 6.1 6.2 6.3 7.1 7.2 7.3

• 1.4 1.5 2.3 7.4

K310	HSS-E	TiN	DORMER	0°							
K311	HSS-E	TiN	DORMER	8°R							
K312	HSS-E	TiN	DORMER	8°L							
K313	HSS-E	TiN	DORMER	15°R							
K314	HSS-E	TiN	DORMER	15°L							



K310	K311	K312	K313	K314
				
23.00 - 40.00	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00

L	B	K310	K311	K312	K313	K314
23	1.50	K31023.0X1.5	K31123.0X1.5	K31223.0X1.5	K31323.0X1.5	K31423.0X1.5
40	2.50	K31040.0X2.5	K31140.0X2.5	K31240.0X2.5	K31340.0X2.5	K31440.0X2.5

K330

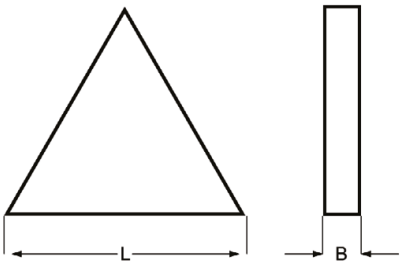
- Stickstål
- Kääntöterät
- Stikkstål
- Stikstål



K330											
	▪	1.1	1.2	1.3	2.1	2.2	6.1	6.2	6.3	7.1	7.2	7.3
	•	1.4	1.5	2.3	7.4							

K330





K330



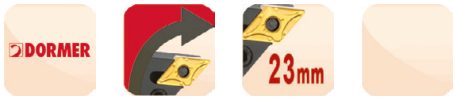
23.00 - 40.00

L	B	K330
23	1.50	K33023.0X1.5

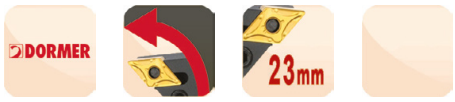
K100
K101
K102

- Stickstålshållare
- Pistoterän pitimet
- Stikkstålholder
- Stikstålsholdere

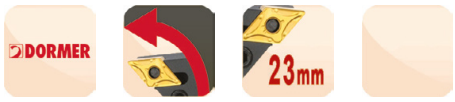
K100

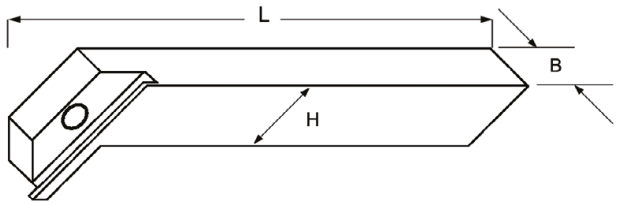


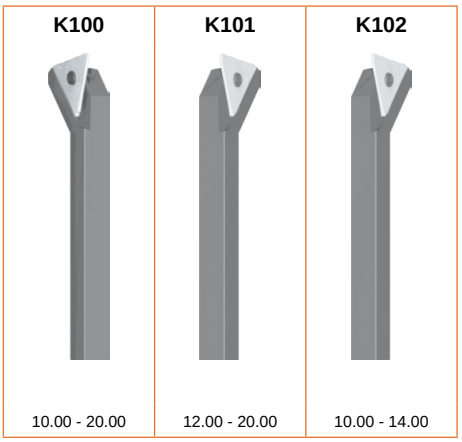
K101



K102







H	B	L	K100	K101	K102
10	10	125	K10010.0		K10210.0
12	12	125	K10012.0	K10112.0	
20	12	125	K10020.0	K10120.0	

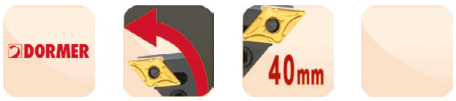
K103
- Stickstålshållare
- Pistoterän pitimet

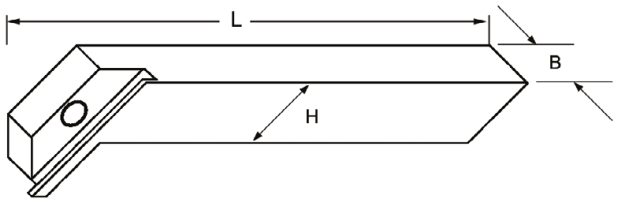
K104
- Stikkstålholder
- Stikstålsholdere

K103



K104





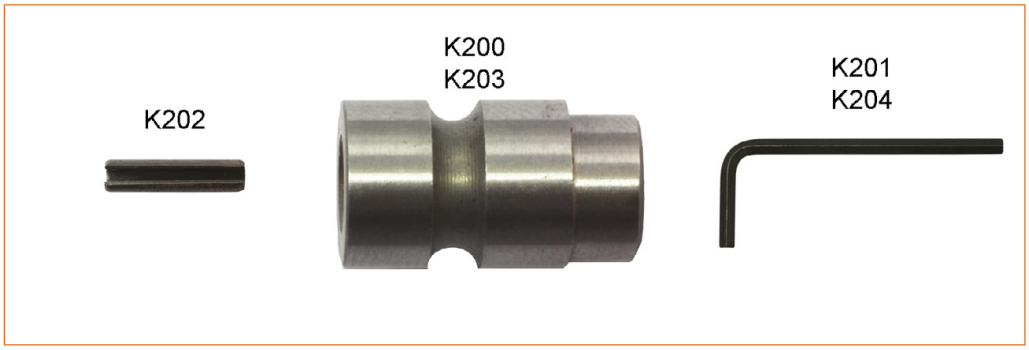
K103	K104
	
16.00 - 32.00	16.00 - 32.00

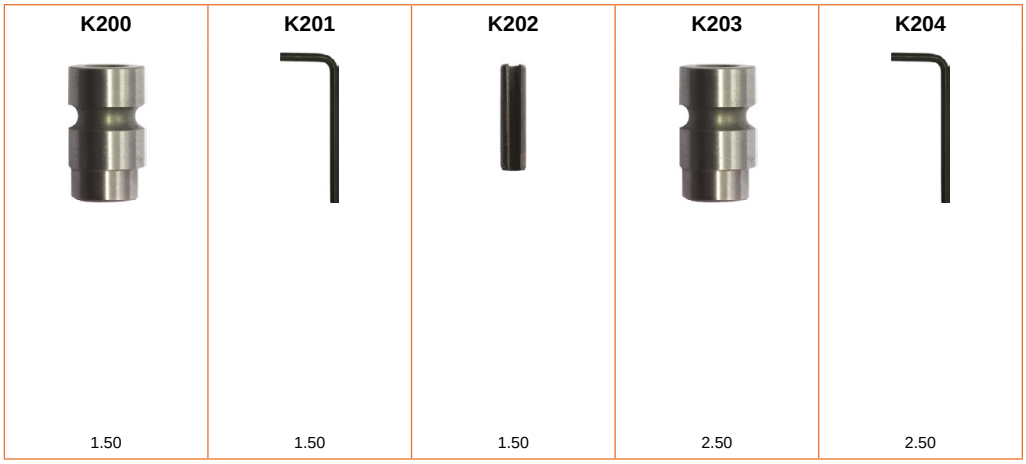
H	B	L	K103	K104
16	16	140	K10316.0	K10416.0
25	16	140	K10325.0	K10425.0

DORMER

K200
K201
K202
K203
K204

- Reservdelar för stickstålshållare.
- Varaosat pistoterän pitimeen
- Reservedler stikkstålholder
- Reservedele for stikstålsholdere





size	tool code	K200	K201	K202	K203	K204
1.5	Excentric	K200ECC1.5				
1.5	Spanner		K201SPAN1.5			
1.5-2.5	Pin			K2022.5X12.0		
2.5	Excentric				K203ECC2.5	
2.5	Spanner					K204SPAN2.5

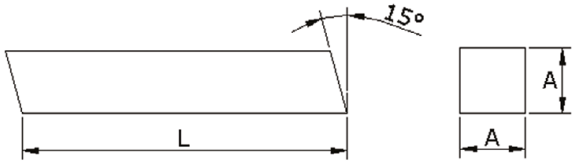
K520

- Sparskär, kvadratiska h13
- Säästöterät, nelikulmainen, h13
- Toolbits 4-kant h13
- Toolbits Kvadratisk h13

K520 ▪ 1.1 1.2 1.3 1.4 3.1 3.2 3.3 3.4 6.1 6.2 6.3

• 1.5 2.1 2.2 6.4 7.1 7.2

K520 HSS-E DIN 4964B h13





A	L	K520
4	100	K5204.0X100.0
5	160	K5205.0X160.0
6	100	K5206.0X100.0
6	160	K5206.0X160.0
6	200	K5206.0X200.0
8	100	K5208.0X100.0
8	160	K5208.0X160.0
8	200	K5208.0X200.0
10	100	K52010.0X100.0
10	160	K52010.0X160.0
10	200	K52010.0X200.0
12	100	K52012.0X100.0
12	160	K52012.0X160.0
12	200	K52012.0X200.0
14	160	K52014.0X160.0
14	200	K52014.0X200.0
16	100	K52016.0X100.0
16	160	K52016.0X160.0
16	200	K52016.0X200.0
20	160	K52020.0X160.0
20	200	K52020.0X200.0
25	200	K52025.0X200.0
3/16	2.1/2	K5203/16X2.1/2
1/4	2.1/2	K5201/4X2.1/2
1/4	4“	K5201/4X4
5/16	2.1/2	K5205/16X2.1/2
5/16	3“	K5205/16X3
5/16	4“	K5205/16X4
3/8	3“	K5203/8X3
3/8	4“	K5203/8X4
3/8	6“	K5203/8X6
7/16	3.1/2	K5207/16X3.1/2
1/2	4“	K5201/2X4
1/2	6“	K5201/2X6
5/8	4.1/2	K5205/8X4.1/2
5/8	6“	K5205/8X6

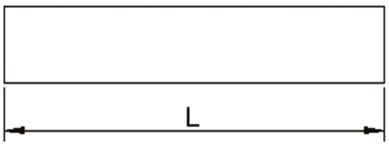
DORMER

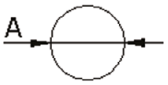
K521

- Sparskär, runda h9
- Säästöterät, pyöreä, h9
- Toolbits Rund h9
- Toolbits Rund h9

K521												
	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	3.4	6.1	6.2	6.3
	•	1.5	2.1	2.2	6.4	7.1	7.2					

K521 HSS-E DIN 4964A h9





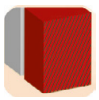


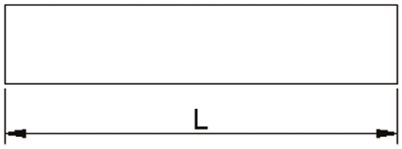
A	L	K521
3	100	K5213.0X100.0
4	100	K5214.0X100.0
5	160	K5215.0X160.0
6	100	K5216.0X100.0
6	160	K5216.0X160.0
8	100	K5218.0X100.0
8	160	K5218.0X160.0
8	200	K5218.0X200.0
10	100	K52110.0X100.0
10	200	K52110.0X200.0
12	100	K52112.0X100.0
12	200	K52112.0X200.0
14	200	K52114.0X200.0
16	200	K52116.0X200.0
20	200	K52120.0X200.0

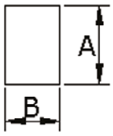
K522

- Sparskär, rektangulära h13
- Säästöterät, suorakulmainen, h13
- Toolbits Rektangulær h13
- Toolbits Rektangel h13

K522 ▪ 1.1 1.2 1.3 1.4 3.1 3.2 3.3 3.4 6.1 6.2 6.3
• 1.5 2.1 2.2 6.4 7.1 7.2

K522 HSS-E  DIN 4964D  h13





K522



10.00 - 25.0

A	B	L	K522
10	3	200	K52210.0X3.0X200.0
12	3	200	K52212.0X3.0X200.0
10	4	200	K52210.0X4.0X200.0
16	4	200	K52216.0X4.0X200.0
20	4	200	K52220.0X4.0X200.0
18	5	200	K52218.0X5.0X200.0
20	5	200	K52220.0X5.0X200.0
10	6	200	K52210.0X6.0X200.0
12	6	200	K52212.0X6.0X200.0
16	6	200	K52216.0X6.0X200.0
20	6	200	K52220.0X6.0X200.0
25	6	200	K52225.0X6.0X200.0
12	8	200	K52212.0X8.0X200.0
16	8	200	K52216.0X8.0X200.0
20	8	200	K52220.0X8.0X200.0
12	10	200	K52212.0X10.0X200.0
16	10	200	K52216.0X10.0X200.0
20	10	200	K52220.0X10.0X200.0
25	12	200	K52225.0X12.0X200.0
25	16	200	K52225.0X16.0X200.0

M150

- Insatshylsor Seghärdade
- Vähennysholkit, öljykarkaistut
- Innsatshylser Seigherdede
- Indsatspatroner Seghærdede

K=Utvändig K1=Invändig
K=Ulkop.MK ja K1=Sisäp.MK
K=Utvendig K1=Innvendig
K=Udvendig K1=Indvendig





M150

-

Nr.	K = Nr.	K1 = Nr.	M150
10	1	0	M1501-0
21	2	1	M1502-1
31	3	1	M1503-1
41	4	1	M1504-1
32	3	2	M1503-2
42	4	2	M1504-2
52	5	2	M1505-2
43	4	3	M1504-3
53	5	3	M1505-3
54	5	4	M1505-4
65	6	5	M1506-5

M151

- Insatshylsor Härdade och Slipade
- Vähennysholkit, karkaistut ja hiotut
- Innsattshylser Herdet og Slipt
- Indstaspatroner Hærdede og Slebne

K=Utvändig K1=Invändig
K=Ulkop.MK ja K1=Sisäp.MK
K=Utvendig K1=Innvendig
K=Udvendig K1=Indvendig





Nr.	K = Nr.	K1 = Nr.	M151
10	1	0	M1511-0
21	2	1	M1512-1
31	3	1	M1513-1
41	4	1	M1514-1
32	3	2	M1513-2
42	4	2	M1514-2
52	5	2	M1515-2
43	4	3	M1514-3
53	5	3	M1515-3
54	5	4	M1515-4
65	6	5	M1516-5

M152

- Kiljagare
- Irrotuskiilat
- Utdriverkile
- Uddrivningskiler





Nr.	M152
0	M1520
1 + 2	M15212
3 + 4	M15234
4 + 5	M15245
6	M1526

M200

- Skäroljor
- Lastuamisöljyt
- Skjæreolje
- Skæreolier





A		M200
1/4 Ltr. 12x	1BLUE	M2000.25NR.1BLUE
1/4 Ltr. 12x	2RED	M2000.25NR.2RED
1/4 Ltr. 12x	3GREEN	M2000.25NR.3GREEN
1 Ltr.	1BLUE	M2001.0NR.1BLUE
1 Ltr.	2RED	M2001.0NR.2RED
1 Ltr.	3GREEN	M2001.0NR.3GREEN
5 Ltr.	1BLUE	M2005.0NR.1BLUE
5 Ltr.	2RED	M2005.0NR.2RED
5 Ltr.	3GREEN	M2005.0NR.3GREEN
20 Ltr.	1BLUE	M20020.0NR.1BLUE



548 - 558

Allmänna råd - Svensk 559 - 578

Yleistietoa - Suomi 579 - 598

Generell informasjon - Norsk 599 - 618

Generel information - Dansk 619 - 638

547 - 640

Gemensamma ikoner / Yleiset symbolit
Felles ikoner / Fælles ikoner

Material
Raaka-aine
Materiale
Materiale



Hårdmetall
Kovametalli
Hardmetall
Hårdmetal



Snabbstål
Pikateräs
Hurtigstål
HSS



Koboltlegerade snabbstål
Kobolttiseosteinen pikateräs
Koboltlegert
HSS med kobolt



Koboltlegerade pulversnabbstål
Kobolttiseosteinen pulveripikateräs
Koboltlegert hurtigstål
Koboltlegert pulverstål



Snabbstål/ Hårdmetall
Pikateräs/ Kovametalli
Hurtigstål/ Hardmetall
HSS/ Hårdmetal

Ytbehandling
Pinnoitteet
Overflate-behandling
Overflade-behandling



Aluminiumkromnitrid
Alumiinikrominitridi
Aluminiumkromnitrid
Aluminiumkromnitrid



Polerad
Kiillotettu
Polert
Poleret



Titankiselnitrid
Titaanipiinitridi
Titanium Silicon Nitrid
Titanium siliciumnitrid



Blank/Ånganlöpt
Kirkas/Höyrypäästö
Blank/dampanløpt
Blank/dampanløbet



Blank
Kirkas
Blank
Blank



Gulanlöpt
Pronssi
Gulanløpt
Gulanløbet



Diamond
Timantti
Diamond
Diamond



Hårdförkromning
Kovakromi
Hårdforkromming
Hårdforkromning



Super B



Titanaluminiumnitrid
Titaanialumiininitridi
Titanaluminiumnitrid
Titanaluminiumnitrid



Titankarbonitrid
Titaanicarbonitridi
Titancarbonitrid
Titancarbonitrid



Titannitrid
Titaaninitridi
Titannitrid
Titannitrid



Blank/Ånganlöpt
Kirkas/Höyrypäästö
Blank/dampanløpt
Blank/dampanløbet



Blank/Titannitrid
Kirkas/Titaaninitridi
Blank/Titannitrid
Blank/Titannitrid



Ånganlöpt / Gulanlöpt
Höyrypäästö / Pronssi
Dampanløpt / Gulanløpt
Dampanløbet / Gulanløbet



Titanaluminiumnitrid - Top
Titaanialumiininitridi - Top
Titanaluminiumnitrid - Top
Titanaluminiumnitrid - Top



X-CEED



Ti-phon



Aluminiumkarbonitrid
Alumiinititaanicarbonitridi
Aluminiumtitancarbonitrid
Aluminiumtitancarbonitrid



Aluminiumtitannitrid
Alumiinititaaninitridi
Aluminiumtitannitrid
Aluminiumtitannitrid



Alcrona



Alcrona Top



Alcrona Pro

Ikonbeskrivning / Symbolien kuvaus
Ikonbeskrivelse / Ikon beskrivelse

Gemensamma ikoner / Yleiset symbolit
Felles ikoner / Fælles ikoner

Rotationsriktning
Työstösuunta
Rotasjonsretning
Rotations retning



Höger
Oikeakätinen
Høyre
Højre



Vänster
Vasenkätinen
Venstre
Venstre

Lämplighet
Luokitus
Passende
Anvendelig

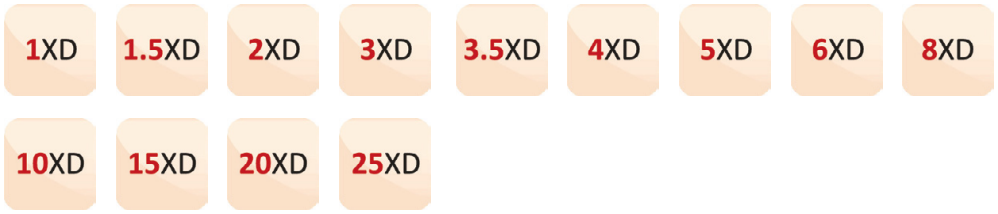
■

Förstahandsval
Erittäin hyvä valinta
Førstehåndsvalg
Perfekt

●

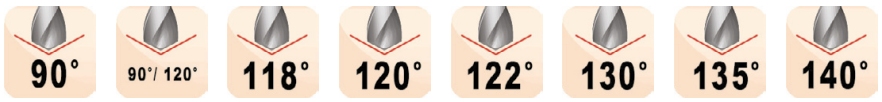
Andrahandsval
Hyvä valinta
Andrehåndsvalg
God

Djup
Syvyys
Dybde
Dybde



Borrar, ikoner / Symbolit poraukseen
Bor, ikoner / Bore ikoner

Spetsvinkel
Kärkikulma
Spissvinkel
Spids vinkel



Försänknings°
Upotuskulma
Forsenkings°
Forsænknings°



60° försänkning
Keskiöpora, 60°
60° forsenking
60° Forsænkning



60° försänkning
Keskiöpora, 60°, suojaupotus
60°, beskyttet forsenking
60° Forsænkning



Stegborrar 90°
Porraspora, 90°
Trinnbor 90°
Trinbor 90°



Stegborrar 180°
Porraspora, 180°
Trinnbor 180°
Trinbor 180°



Tappborrar 90°
Tappipora, 90°
Tappbor 90°
Trinbor 90°



Tappborrar 180°
Tappipora, 180°
Tappbor 180°
Trinbor 180°

Form
Muoto
Form
Form









Kontinuerligt urtunnad kärna
Jatkuvasti ohut sydän
Kontinuerlig utspisset kjerne
Kontinuerlig udspidset kærne

Kylning
Jäähdytys
Kjøling
Kølemiddel



Invändig kylning
Jäähdytyskanavat
Innvendig kjøling
Indvendig køling

Borrar, ikoner / Symbolit poraukseen
Bor, ikoner / Bore ikoner

Skaft
Varsi
Skaft
Skaft



Cylindriskt skaft
Lieriövarsi
Sylindrisk skaft
Cylindriskt skaft



MK-skaft
MK-varsi
MK-skaft
MK-skaft



DIN 6535 HA



DIN 6535 HE



Skaft med tunga
Lieriövarsi, lehti
Skaft med tange
Skaft med tunge



Skaft med fyrkant
Lieriövarsi, nelikulma
Skaft med firkant
Skaft med firkant



Reducerat skaft
Lieriövarsi, ohut
Redusert skaft
Reduceret skaft



DIN 6535 HB / HE

Standard
Standardi
Standard
Standard















































Ikonbeskrivning / Symbolien kuvaus
Ikonbeskrivelse / Ikon beskrivelse

Brotschning - Försänkningsvinkel / Symbolit Kalvintaan - upotukseen
Brotsjing - Forsenkere, ikoner / Rivning - Forsænkere ikoner

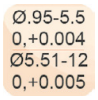
Konicitet
Kartiokkuus
Konicitet
Konicitet





Toleranser
Toleranssit
Toleranse
Tolerance







Användnings-
område
Käyttöalue
Andvendelses-
område



Försänkare
Kärkiupotus
Forsenkere
Forsænkere



Tappförsänkare
Tasoupotus
Tappforsenkere
Tapforsænkere



G314



M138

Försänknings°
Upotuskulma °
Försänknings
vinkel
Forsænknings°











G314



M138

Skaft
Varsi
Skaft
Skaft

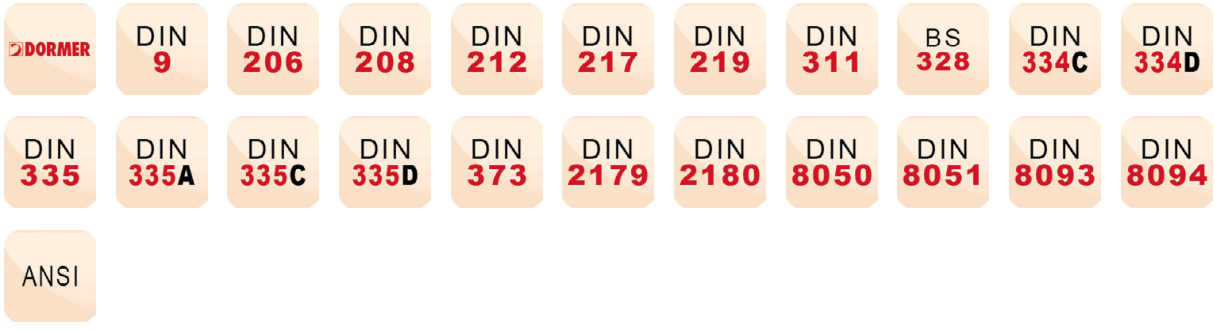


Cylindriskt skaft
Lieriövarsi
Sylindrisk skaft
Cylindriskt skaft



MK-skaft
MK-varsi
MK-skaft
MK-skaft

Standard
Standardi
Standard
Standard



Gängverktyg, ikoner / Symbolit kierteitykseen
Gjengeverktøy, ikoner / Gevindværktøjs ikoner

Gängform
Kierteen malli
Gjengeform
Gevind form



Metrisk grovgänga
M, vakio
Metrisk grovgjenge
Metrisk Grov



Metrisk fingänga
M, hieno
Metrisk fingjenge
Metrisk Fin

























Insatsgänga, metrisk





Spårutförande
Lastu-uran muoto
Sporutførelse
Spor geometri



Raka spår
Suorat lastu-urat
Rette spor
Lige spor



Spåndrivande skär
Lastua työntävä kärki
Spondrivende skjær
Spåndrivende skær



pressgängtappar
manglaavat
pressgjengtapper
Rulletap



pressgängtappar, oljespår
manglaavat, voitelu-urat
pressgjengtapper
Rulletap



10º högerspiral
10º nousevat urat
10º høyrespiral
10º højre spiral



15º



27º



30º



35º



40º



45º



48º

Håltyp
Reikä
Hulltype
Hul type



Genomgående hål
Läpimenevä reikä
Gjennomgående hull
Gennemgående hul



Bottenhål
Pohjareikä
Bunnhull
Bundhul



Genomgående hål/bottenhål
Läpimenevä tai pohjareikä
Gjennomgående/Bunnhull
Gennemgående / Bundhul

Ikonbeskrivning / Symbolien kuvaus
Ikonbeskrivelse / Ikon beskrivelse

Gängverktyg, ikoner / Symbolit kierteitykseen
Gjengeverktøy, ikoner / Gevindværktøjs ikoner

Skärfas
Etuviisteen pituus
Skjærfas
Skærfase









Skärfas form B
Etuviisteen pituus, B
Skjærfas form B
Skærfase form B









Toleranser
Toleranssit
Toleranse
Tolerance



















Medel
Keski
Medium
Middel



Normal
Normaali
Normal
Normal

Skaft
Varsi
Skaft
Skaft





Standard
Standardi
Standard
Standard









































Fräsar, ikoner / Symbolit jyrsintään
Fresere, ikoner / Fræser ikoner

Utförande
Malli
Type
Type



Gles spåndelare med plan topp
Harva, tasaharjainen lastunmurto
Fin spondeler med plan topp
Fin fræsere med spånbrydere



Asymmetrisk spåndelare med fin rund topp
Tiheä, epäsymmetrisesti pyöreäharjainen lastunmurto
Asymmetrisk spondeler med fin rund topp
Asymmetrisk spånbrydere med fin rund top



Fräsar för låghållfasta till höghållfasta stål
Jyrsimet pehmeisiin ja lujiin teräksiin
Fresere, for lav til høy strekkstyrke stål
Fræsere for lavt legeret og seghærdningsstål



Spåndelare med plan topp
Karkea, tasaharjainen lastunmurto
Spondelere med plan topp
Spånbrydere med plan top



Asymmetrisk spåndelare med rund topp
Kerkea, epäsymmetrisesti pyöreäharjainen lastunmurto
Asymmetrisk spondeler med rund topp
Asymmetrisk spånbrydere med rund top



Fräsar för mjuka och smidbara material
Jyrsimet pehmeisiin ja taottaviin aineisiin
Asymmetrisk spondeler med rund topp
Asymmetrisk spånbrydere med rund top



Spåndelare med rund topp
Karkea, pyöreäharjainen lastunmurto
Spondelere med rund topp
Spånbrydere med rund top



Grovtandad (Coarse)



Fintandad (Fine)

Användnings-
område
Käyttöalue
Andvendelses-
område
Anvendelses-
område



Kilspårsfräsning P9
Kiilaurat, tol. P9
Sporfresing P9
Notfræsning P9



Kilspårsfräsning
Kiilaurat
Sporfresing
Notfræsning



För finfräsning
Viimeistelyyn
Slettfres
Sletfræser



Finbearbetning
Viimeistely
Finbearbeiding
Finbearbejdning



Grovbearbetning
Rouhinta
Grovbearbeid
Grovbearbeiding



Radiepinnfräsning
Säteet
Radiepinnefresing
Radius pindfræsere



Hörnradier
Säteelliset nurkat
Hjørneradie
Hjørneradie



Högmatningsfräs
Suuret syötöt
Høy mating fres
Høj tilsp. fræser



Fasfräs
Viisteiden jyrsintään

til Rejfning



T-spårfräsning
T-urat
T-sporfresing
T-sporsfræsere



Woodruff-kilspårsfräsning
Woodruff urat
Woodruff-kilesporfresing
Sporfræsere for Woodruff-kilespor



Vinkeländfräsning
Lohenpyrstö
Vinkelendefresing
Vinkelendefræsere



Vinkeländfräsning, fasning
Viisteet
Vinkelendefresing, fasing
Vinkelendefræsere, fasning



Hörnradiefräsning
Kulmanpyöristys
Hjørneradiefresing
Hjørneradius fræsere



Skivfräsning/slitsfräsning
Kiekkojyrsimet/sahajyrsimet
Endeplanfresing
Endeplanfræsere



Multi



Ändplanfräsning, finbearbetning
Otsatasojyrsimet. Viimeistely
Skivefresing. Finbearbeiding
Skivefræsere/savfræsere.
Finbearbejdning



Ändplanfräsning, grovbearbetning
Otsatasojyrsimet. Rouhinta
Skivefresing. Grovbearbeid
Skivefræsere/savfræsere.
Grovbearbeiding

Ikonbeskrivning / Symbolien kuvaus
Ikonbeskrivelse / Ikon beskrivelse

Fräsar, ikoner / Symbolit jyrsintään
Fresere, ikoner / Fræser ikoner

Rotationsriktning
Työstösuunta
Rotasjonsretning
Rotations retning



Spårfräsning, rampning, dykfräsning
Urien jyrsintä, kaivuu, poraus
Sporfresing, ramping, dykkfresing
Notfræsning, rampning, dykfræsning



Spårfräsning, rampning
Urien jyrsintä, kaivuu
Sporfresing, ramping
Notfræsning, rampning

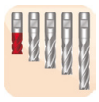


Finbearbetning
Viimeistely
Finbearbeiding
Finbearbejdning

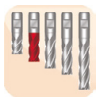


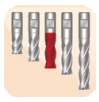
Ändplanfräsning
Jyrsintä
Fresing
Fræsning

Skärlängd
Lastuamis-pituus
Skjærelengde
Skære længde

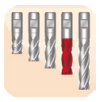


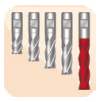
Extra korta
Erittäin lyhyt
Ekstra kort
Ekstra kort





Medellånga
Keskipitkä
Medium
Mellem





Extra långa
Erittäin pitkä
Middel
Ekstra lange

Diam. tolerans
Terän toleranssi
Diam. toleranse
Diam. tolerance

d11 | e8 | h9 | h10 | h11 | h12 | k10 | k12 | js14 | js16



e8 hel och halv diameter, h10 övriga
e8 täysi- ja puoli- mm koot, h10 muut

Spiralvinkel/
Spånvinkel
Kierukka-/rintakulma
Spiralvinkel/
Spånvinkel
Spiralvinkel/

γ 5°	γ15°	γ18°	λ0° γ0°	λ≠ γ10°	λ10° γ10°	λ12° γ10°	λ15° γ10°	λ15° γ15°	λ25° γ0°	λ25° γ20°
λ30° γ-10°	λ30° γ3°	λ30° γ9°	λ30° γ10°	λ30° γ12°	λ30° γ15°	λ30° γ20°	λ35° γ9°	λ35° γ12°	λ40° γ-6°	λ40° γ3°
λ40° γ4°	λ40° γ10°	λ40° γ15°	λ40° γ20°	λ40° γ25°	λ45° γ-10°	λ45° γ12°	λ50° γ-26°	λ50° γ3°		

tänder (z)
hammasluku
tenner
tænder

z 1	z 2	z 3	z 3-4	z 3-5	z 3-6	z 4	z 4-6	z 4-8	z 6-8	z 6-10
z 6-12	z 8-12	z 10-12	z 16-30	z 28-44	z 28-100	z 40-200	z 80-180	z 100-140	z 128-220	z 160-350



4 tänder - differentialdelning
4 hammasluku - Differentialijako
4 tenner - differentialdeling
4 tænder - differentialdeling

Fräsar, ikoner / Symbolit jyrsintään
Fresere, ikoner / Fræser ikoner

Skaft
Varsi
Skaft
Skaft













Standard
Standardi
Standard
Standard



























Roterande filar, ikoner / Symbolit Pyörivät viilat
Roterende fil, ikoner / Roterende fil ikoner

Användnings-område Käyttöalue Andvendelses-område Anvendelses-område	 A Cylindriska utan ändskär Lieriömäiset, ei päätyleikkuuta Sylindriske uten endeskjær Cylindriske uden endeskær	 B Cylindriska med ändskär Lieriömäinen, päätyleikkuinen Sylindriske med endeskjær Cylindriske med endeskær	 C Cylindrisk-radieformad Lieriömäinen, säteellinen pää Sylindriske med radius Cylindriske med radius	 D Kulformade Pallomainen Kuleformede Kugleformede
	 E Äggformade Ovaali Oval Oval	 F Spetsform med ändradie Puumainen, säteellinen pää Spisform med radius Spidsform med radius	 G Spetsformade Puumainen, terävä pää Spisform Spidsform	 H Flamform Liekkimäinen Flammeform Flammeform
	 J Koniska 60° Kartiomainen, 60° Konisk 60° Konisk 60°	 K Koniska 90° Kartiomainen, 90° Konisk 90° Konisk 90°	 L Koniska med ändradie Kartiomainen, säteellinen pää Konisk med enderadius Konisk med enderadius	 M Koniska Kartomainen, terävä pää Konisk Konisk
	 N Omvänt koniska Käänteinen kartiokkuus Omvendt konisk Omvendt konisk	 Glasfiberfräsning		
Utförande Malli Type Type	ST Grovavverkning i stål Teräksiin Høj metal fjernelse i stål	VA Grovavverkning i rostfritt stål Ruostumattomiin teräksiin Høj metal fjernelse i rustfrit stål	AL Geometri för icke-järnmetaller och plaster Raudattomiin metalleihin ja muoveihin Aluminiumskær for ikke-jernmaterial og plast	GRP Glasfiber och kompositmaterial Lasikuituihin ja komposiitteihin Glasfiber og kompositter
	DC Dubbelskurna, för allmänt bruk Kaksoisleikkuu yleiskäyttöön Dobbeltskær til generelt brug			
ändskär Päätyleikkuu endeskjær endeskær	 Standard Vakio Standard Standard	 Borrspets Porakärki Borspids	 Frässpets Jyrsinkärki Fræser	

Vändskär, ikoner / Symbolit pistoon
Vendeskjær, ikoner / Vendeskær, ikoner

Ställvinkel
Asetuskulmat
Stillvinkel
Stil vinkel



0º





8º Vänster / Höger
8º vasenkätinen / oikeakätinen
8º venstre / høyre
8º venstre / højre





15º Vänster / Höger
15º vasenkätinen / oikeakätinen
15º venstre / høyre
15º venstre / højre

Skärstorlek
Terän koko
Str. Stikkstål
Platte størrelse





Skärriktning
Kätisyys
Skjære-retning
Skære retning



Höger
Oikeakätinen
Høyre
Højre



Vänster
Vasenkätinen
Venstre
Venstre

Användnings-område
Käyttöalue
Andvendelses-område



Avstickning
Katkaisu
Avstikking
Afstikning

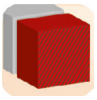


Spårstickning
Urien pisto
Sporstikking
Sporstikning

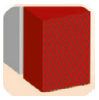
Form
Muoto
Form
Form



Runda
Pyöreä
Runde
Rund



Kvadratiska
Neliön muotoinen
Kvadratisk
Kvadratisk



Rektangulära
Suorakaiteen muotoinen
Rektangulære
Rektangulær-

Toleranser
Toleranssit
Toleranse
Tolerance





Standard
Standardi
Standard
Standard







Svensk			Hårdhet	Brotthållfasthet	
Applikationstabell (AMG)			**HB**	**N/mm²**	**ISO**
1. Stål	1.1	Rena järn, mjuka stål	< 120	< 400	P 1
	1.2	Konstruktionsstål	< 200	< 700	P 1
	1.3	Kolstål, låglegerade stål	< 250	< 850	P 2
	1.4	Legerade stål	< 250	< 850	P 3
	1.5	Legerade stål, verktygsstål / Seghärdningsstål	> 250 < 350	> 850 < 1200	P 4
	1.6	Legerade stål, verktygsstål / Seghärdningsstål	> 350	> 1200 < 1620	H 1
	1.7	Legerade härdade stål	49-55HRC	> 1620	H 3
	1.8	Legerade härdade stål, slitstål	55-63HRC	> 1980	H 4
2. Rostfria Stål	2.1	Rostfria automatstål och verktygsstål	< 250	< 850	M 1
	2.2.	Austenitiska	< 320	< 1100	M 3
	2.3	Ferritaustenitiska (duplex), Martensitiska	< 300	< 1000	M 2
	2.4	Utskiljningshärdade / Austenitiska	>320 <410	>1100 <1400	S 2
3. Gjutjärn	3.1	Gråjärn	< 150	> 500	K 1
	3.2	Gråjärn	> 150 <300	> 500 < 1000	K 2
	3.3	Segjärn / Aducergods	< 200	< 700	K 3
	3.4	Segjärn / Aducergods	> 200 < 300	> 700 < 1000	K 4
4. Titan	4.1	Titan, ren	< 200	< 700	S 1
	4.2	Titanlegeringar	< 270	< 900	S 2
	4.3	Titanlegeringar	> 270 < 350	> 900 ≤ 1250	S 3
5. Nickel	5.1	Nickel, ren	< 150	< 500	S 1
	5.2	Nickellegeringar	< 270	> 900	S 2
	5.3	Nickellegeringar	> 270 < 350	> 900 < 1200	S 3
6. Koppar	6.1	Koppar	< 100	< 350	N 3
	6.2	Mässing / Brons	< 200	< 700	N 4
	6.3	Mjuk mässing	< 200	< 700	N 3
	6.4	Cu-Al-Fe-Legeringar	< 470	< 1500	N 4
7. Aluminium Magnesium	7.1	Ren aluminium, magnesium	< 100	< 350	N 1
	7.2	Al Legeringar, Si<0.5%	< 150	< 500	N 1
	7.3	Al Legeringar, Si>0.5%<10%	< 120	< 400	N 1
	7.4	Al Legeringar, Si>10% Whisker förstärkta Al-och Mg- Legeringar	< 120	< 400	N 2
8. Syntetiska Material	8.1	Mjuka plaster	---	---	O
	8.2	Hårda plaster	---	---	O
	8.3	Armerade plaster	---	---	O
9. Keramer	9,1	Cermets (metall-keramik)	< 550	< 1700	H
10. Grafit	10.1	Grafit	---	< 1100	O

DORMER

EXEMPEL PÅ ARBETSMATERIAL FRÅN OLIKA STANDARDER

AMG	EN	W Nr.	DIN	BS	SS	USA	UNS	ISO
1.1		1.1015, 1.1013	Rfe60, Rfe100	230Mo7, 050A12	1160	Leaded Steels	G12120	P 1
1.2	EN 10 025 – S235JRG2	1.1012, 1.1053, 1.7131	St37-2, 16MnCr5, St50-2	060A35, 080M40, 4360-50B	1312, 1412, 1914	135, 30	G10100	P 1
1.3	EN 10 025 – E295	1.1191, 1.0601	CK45, C60	080M46, 080A62	1550, 2142, 2172	1024, 1060, 1061	G10600	P 2
1.4	EN 10 083-1 – 42 CrMo 4 - EN 10 270-2	1.7225, 1.3505, 1.6582, 1.3247	42CrMo4, 100Cr6, 34CrNiMo6, S2-10-1-8	708M40/42, 817M40, 534A99, BM2, BT42	1672-04, 2090, 2244-02, 2541-02	4140, A2, 4340, M42, M2	G41270, G41470, T30102, T11342	P 3
1.5	EN ISO 4957 – HS6-5-2 - EN-ISO 4957 – HS6-5-2-5	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, 55NiCrMoV6, X210Cr12, S2-10-1-8	B01, BM2, BT42, 826 M40, 830M31	2244-04, 2541-03, 2550, 2722, 2723	01, L6, M42, D3, A2, M2, 4140, 8630	G86300, T30102' T11302, T30403, T11342	P 4
1.6	EN-ISO 4957 – HS2-9-1-8	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, X210Cr12, S2-10-1-8	801, 826 M40, 830M31	2244-05, 2541-05, , HARDOX 400	01, L6, M42, D3, 4140, 8130	T30403, G41400, J14047	H 1
1.7	EN-ISO 4957 – HS2-9-1-8	1.2510	100MnCrW4	BO1, BD3, BH13	HARDOX 500			H 3
1.8	EN-ISO 4957 – X40CrMoV5-1	1.3343, 1.2344	S6-5-2, GX40CrMoV5-1	BM2, BH13	2242 HARDOX 600			H 4
2.1	EN 10 088-3 – X14CrMoS17	1.4305, 1.4104	X10CrNiS189, X12CrMoS17	303 S21 , 416 S37	2301, 2312, 2314, 2346, 2380	303, 416, 430F	S30300, S41600, S43020	M 1
2.2.	EN 10 088-2,0 -3 – 1.4301+AT	1.4301, 1.4541, 1.4571	X5CrNi189 X10CrNiMoTi1810	304 S15, 321 S17, 316 S, 320 S12	2310, 2333, 2337, 2343, 2353, 2377	304, 321, 316	S30400, S32100, S31600	M 3
2.3	EN 10 088-3 – 1.4460	1.4460, 1.4512, 1.4582	XBCrNiMo275, X4CrNiMoN6257	317 S16, 316 S16	2324, 2387, 2570	409, 430, 436	S40900, S4300, S43600	M 2
2.4	EN 1.4547	1.4547	X2CrNiMo20-18-6	HR41	2378	17-4PH	S31254	S 2
3.1	EN 1561 – EN-JL1030	0.6010, 0.6040	GG10, GG40	Grade150, Grade 400	0120, 0212, 0814	ASTM A48 class 20	F11401, F12801	K 1
3.2	EN 1561 – EN-JL1050	0.6025, 0.6040	GG25, GG40	Grade200, Grade 400	0125, 0130, 0140, 0217	ASTM A48 class 40, STM A48 class 60	F12801, F14101	K 2
3.3	EN 1561 – EN-JL2040	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	420/12, P440/7, 700/2, 30g/72	0219, 0717, 0727, 0732, 0852	ASTM A220 grade 40010, ASTM A602 grade M4504	F22830, F20001	K 3
3.4	EN 1561 – EN-JL2050	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	420/12, P440/7, 700/2, 30g/72	0221, 0223, 0737, 0854	ASTM A220 grade 90001, ASTM A602 grade M8501	F26230, 20005	K 4
4.1		3.7024LN	Ti99,8	TA1 to 9	Ti99,8	ASTM B265 grade 1	R50250	S 1
4.2		3.7164LN, 3.7119LN	TiAl6V4, TiAl55n2	TA10 to 14, TA17	TiAl6V4, TiAl5Sn2	AMS4928	R54790	S 2
4.3		3.7164LN, 3.7174LN, 3.7184LN	TiAl6V4, TiAl6V5Sn2, TiAl4MoSn2	TA10 to 13, TA28	TiAl6V5Sn2	AMS4928, AMS4971	R56400, R54790	S 3
5.1		2.4060, 2.4066	Nickel 200, 270, Ni99,6	NA 11, NA12	Ni200, Ni270	Nickel 200, Nickel 230	N02200, N02230	S 1
5.2		2.4630LN, 2.4602, 2.4650LN	Nimonic 75, Monel 400, Hastelloy C, Inconel 600	HR203, 3027-76		Nimonic 75,Monel400, Hastelloy, Inconel600	N06075, N10002, N04400, N06600	S 2
5.3		2.4668LN, 2.4631LN, 2.6554LN	Inconel 718, Nimonic 80A, Waspaloy	HR8, HR401, 601		Inconel 718, 625, Nimonic 80	N07718, N07080, N06625	S 3
6.1	EN 1652 – CW004A	2.0060, 2.0070	E-Cu57, SE-Cu	C101	5010	101	C10100, C1020	N 3
6.2	EN 1652 – CW612N	2.0380, 2.0360, 2.1030, 2.1080	CuZn39Pb2, CuZn40, CuSn8, CuSn6Zn	CZ120, CZ109,PB104	5168		C28000, C37710	N 4
6.3	EN 1652 – CW508L	2.0321, 2.0260	CuZn37, CuZn28	CZ108,CZ106	5150		C2600, C27200	N 3
6.4			Ampco 18, Ampco 25	AB1 type	5238, JM7-20			N 4
7.1	EN 485-2 – EN AW-1070A	3.0255	Al99,5	LMO, 1 B (1050A)	4005	EC, 1060, 1100	A91060, A91100	N 1
7.2	EN 755-2 – EN AW-5005	3.1355, 3.3525	AlCuMg2, AlMg2Mn0,8	LM5, 10, 12, N4 (5251)	4106, 4212	380, 520.0, 520.2, 2024, 6061	A03800, A05200, A92024	N 1
7.3	EN 1706 – EN AC-42000	3.2162.05, 3.2341.01	GD-AlSi8Cu, G-AlSi5Mg	LM2,4,16,18,21,22,, 24,25,26,27,L109	4244	319.0, 333.0, 319.1, 356.0	A03190, A03330, C35600	N 1
7.4	SS-EN 1706 – EN AC-47000	3.2581.01	G-AlSi18, G-AlSi12	LM6, 12,13, 20, 28, 29, 30	4260, 4261, 4262	4032, 222.1, A332.0	A94032, A02220, A13320	N 2
8.1				Polystyrene, Nylon, PVC Cellulose, Acetate & Nitrate		Polystyrene, Nylon, PVC		O
8.2				Ebonite, Tufnol, Bakelite		Bakelite		O
8.3				Kevlar, Printed Circuit boards		Kevlar		O
9,1				Ferrotic, Ferrotitanit				H
10.1				Graphite				O

Omvandlingstabell
Skärhastighet - Varvtal

Vc																	
m/Min		5	8	10	15	20	25	30	40	50	60	70	80	90	100	110	150
Feet/Min		16	26	32	50	66	82	98	130	165	197	230	262	296	330	362	495
Ø		RPM															
mm	inch																
1,00		1592	2546	3183	4775	6366	7958	9549	12732	15916	19099	22282	25465	28648	31831	35014	47747
1,50		1061	1698	2122	3183	4244	5305	6366	8488	10610	12732	14854	16977	19099	21221	23343	31831
2,00		796	1273	1592	2387	3183	3979	4775	6366	7958	9549	11141	12732	14324	15916	17507	23873
2,50		637	1019	1273	1910	2546	3183	3820	5093	6366	7639	8913	10186	11459	12732	14006	19099
3,00		531	849	1061	1592	2122	2653	3183	4244	5305	6366	7427	8488	9549	10610	11671	15916
3,18	1/8	500	801	1001	1501	2002	2502	3003	4004	5005	6006	7007	8008	9009	10010	11011	15015
3,50		455	728	909	1364	1819	2274	2728	3638	4547	5457	6366	7276	8185	9095	10004	13642
4,00		398	637	796	1194	1592	1989	2387	3183	3979	4775	5570	6366	7162	7958	8754	11937
4,50		354	566	707	1061	1415	1768	2122	2829	3537	4244	4951	5659	6366	7074	7781	10610
4,76	3/16	334	535	669	1003	1337	1672	2006	2675	3344	4012	4681	5350	6018	6687	7356	10031
5,00		318	509	637	955	1273	1592	1910	2546	3183	3820	4456	5093	5730	6366	7003	9549
6,00		265	424	531	796	1061	1326	1592	2122	2653	3183	3714	4244	4775	5305	5836	7958
6,35	1/4	251	401	501	752	1003	1253	1504	2005	2506	3008	3509	4010	4511	5013	5514	7519
7,00		227	364	455	682	909	1137	1364	1819	2274	2728	3183	3638	4093	4547	5002	6821
7,94	5/16	200	321	401	601	802	1002	1203	1604	2004	2405	2806	3207	3608	4009	4410	6013
8,00		199	318	398	597	796	995	1194	1592	1989	2387	2785	3183	3581	3979	4377	5968
9,00		177	283	354	531	707	884	1061	1415	1768	2122	2476	2829	3183	3537	3890	5305
9,53	3/8	167	267	334	501	668	835	1002	1336	1670	2004	2338	2672	3006	3340	3674	5010
10,00		159	255	318	477	637	796	955	1273	1592	1910	2228	2546	2865	3183	3501	4775
11,11	7/16	143	229	287	430	573	716	860	1146	1433	1719	2006	2292	2579	2865	3152	4298
12,00		133	212	265	398	531	663	796	1061	1326	1592	1857	2122	2387	2653	2918	3979
12,70	1/2	125	201	251	376	501	627	752	1003	1253	1504	1754	2005	2256	2506	2757	3760
14,00		114	182	227	341	455	568	682	909	1137	1364	1592	1819	2046	2274	2501	3410
14,29	9/16	111	178	223	334	446	557	668	891	1114	1337	1559	1782	2005	2228	2450	3341
15,00		106	170	212	318	424	531	637	849	1061	1273	1485	1698	1910	2122	2334	3183
15,88	5/8	100	160	200	301	401	501	601	802	1002	1203	1403	1604	1804	2004	2205	3007
16,00		99	159	199	298	398	497	597	796	995	1194	1393	1592	1790	1989	2188	2984
17,46	11/16	91	146	182	273	365	456	547	729	912	1094	1276	1458	1641	1823	2005	2735
18,00		88	141	177	265	354	442	531	707	884	1061	1238	1415	1592	1768	1945	2653
19,05	3/4	84	134	167	251	334	418	501	668	835	1003	1170	1337	1504	1671	1838	2506
20,00		80	127	159	239	318	398	477	637	796	955	1114	1273	1432	1592	1751	2387
24,00		66	106	133	199	265	332	398	531	663	796	928	1061	1194	1326	1459	1989
25,00		64	102	127	191	255	318	382	509	637	764	891	1019	1146	1273	1401	1910
27,00		59	94	118	177	236	295	354	472	589	707	825	943	1061	1179	1297	1768
30,00		53	85	106	159	212	265	318	424	531	637	743	849	955	1061	1167	1592
32,00		50	80	99	149	199	249	298	398	497	597	696	796	895	995	1094	1492
36,00		44	71	88	133	177	221	265	354	442	531	619	707	796	884	973	1326
40,00		40	64	80	119	159	199	239	318	398	477	557	637	716	796	875	1194
50,00		32	51	64	95	127	159	191	255	318	382	446	509	573	637	700	955

Hårdhet / Brotthållfasthet

HV Vickers	HRC Rockwell	HB Brinell	N/ mm^2	Tons/ sq. in.
940	68			
900	67			
864	66			
829	65			
800	64			
773	63			
745	62			
720	61			
698	60			
675	59			
655	58		2200	142
650		618	2180	141
640		608	2145	139
639	57	607	2140	138
630		599	2105	136
620		589	2070	134
615	56	584	2050	133
610		580	2030	131
600		570	1995	129
596	55	567	1980	128
590		561	1955	126
580		551	1920	124
578	54	549	1910	124
570		542	1880	122
560	53	532	1845	119
550		523	1810	117
544	52	517	1790	116
540		513	1775	115
530		504	1740	113
527	51	501	1730	112
520		494	1700	110
514	50	488	1680	109
510		485	1665	108
500		475	1630	105
497	49	472	1620	105
490		466	1595	103
484	48	460	1570	102
480		456	1555	101
473	47	449	1530	99
470		447	1520	98
460		437	1485	96
458	46	435	1480	96
450		428	1455	94
446	45	424	1440	93
440		418	1420	92

HV Vickers	HRC Rockwell	HB Brinell	N/ mm^2	Tons/ sq. in.
434	44	413	1400	91
423	43	402	1360	88
413	42	393	1330	86
403	41	383	1300	84
392	40	372	1260	82
382	39	363	1230	80
373	38	354	1200	78
364	37	346	1170	76
355	36	337	1140	74
350		333	1125	73
345	35	328	1110	72
340		323	1095	71
336	34	319	1080	70
330		314	1060	69
327	33	311	1050	68
320		304	1030	67
317	32	301	1020	66
310	31	295	995	64
302	30	287	970	63
300		285	965	62
295		280	950	61
293	29	278	940	61
290		276	930	60
287	28	273	920	60
285		271	915	59
280	27	266	900	58
275		261	880	57
272	26	258	870	56
270		257	865	56
268	25	255	860	56
265		252	850	55
260	24	247	835	54
255	23	242	820	53
250	22	238	800	52
245		233	785	51
243	21	231	780	50
240		228	770	50
235		223	755	49
230		219	740	48
225		214	720	47
220		209	705	46
215		204	690	45
210		199	675	44
205		195	660	43
200		190	640	41

Toleranser

	Ø mm							
	> 1 ≤ 3	> 3 ≤ 6	> 6 ≤ 10	> 10 ≤ 18	> 18 ≤ 30	> 30 ≤ 50	> 50 ≤ 80	> 80 ≤ 120
Tol	µm							
e8	-14 / -28	-20 / -38	-25 / -47	-32 / -59	-40 / -73	-50 / -89	-60 / -106	-72 / -126
f6	-6 / -12	-10 / -18	-13 / -22	-16 / -27	-20 / -33	-25 / -41	-30 / -49	- 36 / -58
f7	-6 / -16	-10 / -22	-13 / -28	-16 / -34	-20 / -41	-25 / -50	-30 / -60	-36 / -71
h6	0 / -6	0 / -8	0 / -9	0 / -11	0 / -13	0 / -16	0 / -19	0 / -22
h7	0 / -10	0 / -12	0 / -15	0 / -18	0 / -21	0 / -25	0 / -30	0 / -35
h8	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33	0 / -39	0 / -46	0 / -54
h9	0 / -25	0 / -30	0 / -36	0 / -43	0 / -52	0 / -62	0 / -74	0 / -87
h10	0 / -40	0 / -48	0 / -58	0 / -70	0 / -84	0 / -100	0 / -120	0 / -140
h11	0 / -60	0 / -75	0 / -90	0 / -110	0 / -130	0 / -160	0 / -190	0 / -220
h12	0 / -100	0 / -120	0 / -150	0 / -180	0 / -210	0 / -250	0 / -300	0 / -350
k10	+40 / 0	+48 / 0	+58 / 0	+70 / 0	+84 / 0	+100 / 0	+120 / 0	+140 / 0
k12	+100 / 0	+120 / 0	+150 / 0	+180 / 0	+210 / 0	+250 / 0	+300 / 0	+350 / 0
m7	+2 / +12	+4 / +16	+6 / +21	+7 / +25	+8 / +29	+9 / +34	+11 / +41	+13 / +48
js14	+/- 125	+/- 150	+/- 180	+/- 215	+/- 260	+/- 310	+/- 370	+/- 435
js16	+/- 300	+/- 375	+/- 450	+/- 550	+/- 650	+/- 800	+/- 950	+/- 1100
H7	+10 / 0	+12 / 0	+15 / 0	+18 / 0	+21 / 0	+25 / 0	+30 / 0	+35 / 0
H8	+14 / 0	+18 / 0	+22 / 0	+27 / 0	+ 33 / 0	+39 / 0	+46 / 0	+54 / 0

1µm = 0.001mm

BORRNING

Allmänna råd för borrning

1. Välj det lämpligaste borret för applikationen med hänsyn till arbetsmaterialet, maskintyp och maskinkondition samt typ av kylning.
2. Instabilitet i komponentinspänning eller maskinspindeln kan skada såväl borr som komponent eller maskin. Säkerställ alltid bästa möjliga stabilitet. Välj t ex så kort verktygslängd som möjligt.
3. Verktygshållaren är en viktig faktor som kan påverka borresultatet. Borret får under inga omständigheter slira i hållaren.
4. Ett bra kylmedel bör användas vid alla borroperationer. Se till att kylmedlet tillförs flödigt och att det når borrspetsen under borrningen.
5. Spånevakueringen är mycket viktig för ett bra borrresultat. Kontrollera att inte spånstockning uppstår.
6. Då borrspetsen omslipas ska det ske utifrån rekommenderade anvisningar. Slipa bort tillräckligt så de slitna ytorna försvinner. Se till att kyla så inte borret blir överhettat.

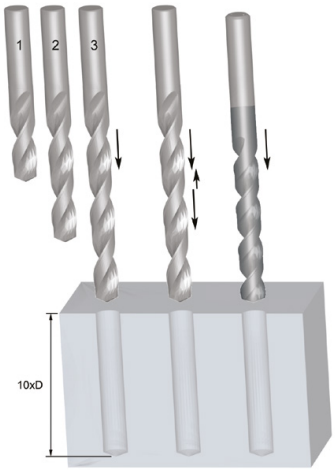
HÅLSTORLEK

Allteftersom geometrier, verktygssubstrat och beläggningar utvecklas klarar man att borra mer exakta hålstorlekar. Ett standardborr kan klara att borra H12-tolerans medan ett mer utvecklat borr klarar att uppnå minst H8-tolerans med rätt förutsättningar. För att ge en klarare bild över vad olika borrtyper kan uppnå kan nedanstående förklaring vara till hjälp.

- HSS Standardborr - H12
- HSS /HSS-E Djuphålsprofilborr - H10
- Solida, belagda hårdmetallborr - H8/H9

STRATEGI VID DJUPHÅLSBORRNING

För djuphålsborrning finns flera tillvägagångssätt att ta till. Exemplet nedan beskriver fyra av dem för borrning av ett hål till 10 x D.



	Flera borrar	Flera borrar
Antal borr	3 (2,5xD, 6xD,10xD)	2 (2,5xD,10xD)
Borrtyp	Standardgeometri, standardborrar	Standardgeometri, standardborrar
+ / -	Dyrt Tidkrävande	Mer kostnadseffektivt Snabb

	Borrning med urspåning	Borrning utan urspåning
Antal borr	1 (10xD)	1 (10xD)
Borrtyp	Standardgeometri, standardborrar	Applikations specifika verktyg
+ / -	Tidkrävande	Kostnadseffektiv Snabb

FELSÖKNING VID BORRNING

PROBLEM	ORSAK	ÅTGÄRD
Bruten eller vriden tunga	Dålig passning mellan skaft och kona	Se till att skaft och kona är rengjorda och skadefria
Sliten tväregg eller sprickor i kärnan	För hög matning	Minska matningen till optimalt värde
	För liten släppning	Slipa om till korrekt släppning
	Kärnan för mycket urtunnad	Slipa om till korrekt släppning
	Skadad tväregg	Undvik att skada borrspetsen vid montering. Iakttag försiktighet också vid montering / demontering av Mk-borrar så inte konan skadas.
Slitna huvudeggshörn	För hög skärhastighet	Minska skärhastigheten till rekommenderad - öka ev. matningen
Urflisade huvudeggshörn	Instabil uppspänning	Förbättra inspänningen av arbetsstycket
Urflisade skäreggar	För stor släppning	Slipa om till korrekt släppning
Brott vid spårslutet	Spånstockning	Använd urspåning eller stegvisa borrlängder
	Borret slirar	Tillse att borret är säkert fastspännt i chucken
Spiralspår i borrhålet	För låg matning	Öka matningen
	Dålig positionering	Använd centrerborr före borrning
Hålet blir för stort	Fel spetsgeometri	Kontrollera spetsgeometrin
	Otillräcklig spånevakuering	Justera hastighet, matning och urspåningsdjup för bästa spånbild

BROTSCHNING

ALLMÄNNA RÅD OM BROTSCHNING

För att uppnå bästa resultat vid brotschning är det viktigt att brotschen kan skära. Ett vanligt fel är att för liten arbetsmån har lämnats till brotschningen. I dessa fall skär inte brotschen utan skaver bort materialet med högt slitage som följd. Det är lika viktigt att inte lämna för mycket material till brotschen. (Se tabell Arbetsmån).

1. Välj bästa brotschtyp för applikationen. Välj skärdata utifrån materialtyp. Säkerställ att de förborrade hålen har rätt diameter.

2. Kontrollera att arbetsstycket sitter fast ordentligt och att maskinspindeln är spelfri.

3. Använd en lämplig chuck av bra kvalitet. Om brotschen slirar i chucken kan det orsaka brott.

4. Håll verktyget så kort som möjligt.

5. Använd en skärvätska av lämplig typ, riktad mot brotschen för att få bästa livslängd. Eftersom brotschning är en ganska lätt operation räcker det oftast med en vattenlöslig skärvätska utspädd 40:1. Tryckluft är användbar vid gjutjärn om man vill köra torrt.

6. Se till att inte spånstockning uppstår i spåren.

7. Kontrollera rundgången mellan dubbar före omslipning. Oftast räcker det att slipa om skärfasen.

8. Håll brotschen skarp. Regelbunden omslipning lönar sig, men det är viktigt att förstå att brotschen skär enbart med fasen eller ingångskonan och inte med resten av skärlängden. Således behöver endast den fasade eller koniska delen slipas. Noggrannhet vid omslipning är viktig för att bibehålla kvalitet och livslängd.

ARBETSMÅN

Arbetsmånen vid brotschning beror på material och ytfinhet i det förborrade hålet. Allmänna rekommendationer finns i tabellen nedan:

Diameter på brotschat hål (mm)	Förborrat hål	Förborrat + upprymt hål
Under 4	0.1	0.1
4 tom 11	0.2	0.15
11 tom 39	0.3	0.2
39 tom 50	0.4	0.3

Diameter på brotschat hål (tum)	Förborrat hål	Förborrat + upprymt hål
Under 3/16	0.004	0.004
3/16 tom 1/2	0.008	0.006
1/2 tom 1.1/2	0.010	0.008
1.1/2 tom 2	0.016	0.010

TOLERANSGRÄNSER



1. FÖR SKÄRDIAMETERN PÅ STANDARDBROTSCHAR
   Diametern (d1) mäts över styrkanterna omedelbart bakom skärfasen eller ingångskonan. Brotschens tolerans överensstämmer med DIN1420 och är avsedd att ge ett hål med H7-tolerans.

BROTSCHTOLERANS			
Diameter (mm)		Toleransgräns (mm)	
Över	Till och med	Övre +	Undre +
	3	0.008	0.004
3	6	0.010	0.005
6	10	0.012	0.006
10	18	0.015	0.008

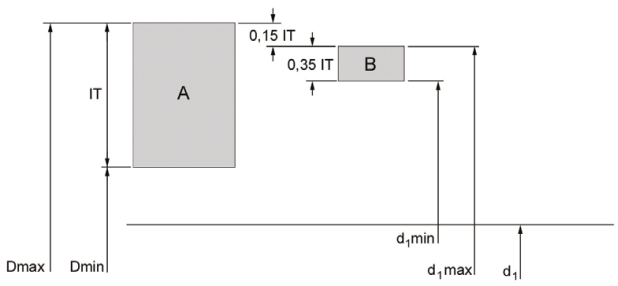
BROTSCHTOLERANS			
Diameter (mm)		Toleransgräns (mm)	
Över	Till och med	Övre +	Undre +
18	30	0.017	0.009
30	50	0.021	0.012
50	80	0.025	0.014

2. FÖR ETT H7-HÅL
   Den vanligaste håltoleransen är H7 (se tabell nedan). För andra toleranser kan figur och tabell under punkt 3 användas för att beräkna brotschens mått och tolerans.

HÅLTOLERANS			
Diameter (mm)		Toleransgräns (mm)	
Över	Till och med	Övre +	Undre +
	3	0.010	0
3	6	0.012	0
6	10	0.015	0
10	18	0.018	0

HÅLTOLERANS			
Diameter (mm)		Toleransgräns (mm)	
Över	Till och med	Övre +	Undre +
18	30	0.021	0
30	50	0.025	0
50	80	0.030	0

3. När man behöver en specialbrotsch, avsedd för en specifik håltolerans, t ex D8, kan den här guiden användas.



A = Håltolerans
B = Brotschtolerans
IT = Toleransvidd
Dmax = Max. håldiameter
Dmin = Min. håldiameter
d_1 = Nominell diameter
$d_1$max = Max. brotschdiameter
$d_1$min = Min. brotschdiameter

	Diametertoleransvidd							
Toleransvidd (µ)	över 1 tom 3	över 3 tom 6	över 6 tom 10	över 10 tom 18	över 18 tom 30	över 30 tom 50	över 50 tom 80	över 80 tom 120
IT5	4	5	6	8	9	11	13	15
IT6	6	8	9	11	13	16	19	22
IT7	10	12	15	18	21	25	30	35
IT8	14	18	22	27	33	39	46	54
IT9	25	30	36	43	52	62	74	87
IT10	40	48	58	70	84	100	120	140
IT11	60	75	90	110	130	160	190	220
IT12	100	120	150	180	210	250	300	350

t ex 10 mm hål med D8-tolerans, Max. diam. = 10,062, Min. diam.10,040, Håltol. (IT8) = 0,022

Max.gräns: 0,15 x håltolerans (IT8) = 0,0033, avrundas uppåt till 0,004
Min.gräns: 0,35 x håltolerans (IT8) = 0,0077, avrundas uppåt till 0,008

Max. diameter för brotschen = 10,062 - 0,004 = 10,058
Min.diameter för brotschen = 10,058 - 0,008 = 10,050

PROBLEMLÖSNING VID BROTSCHNING

PROBLEM	ORSAK	ÅTGÄRD
Avbruten eller vriden tunga	Dålig passning mellan skaft och kona	Se till att skaft och kona är rena och skadefria
Snabbt verktygsslitage	För liten arbetsmån	Öka arbetsmånen
Övermått i hålet	Olika skärhöjd, radialkast	Slipa om enligt specifikation
	Kast i maskinspindeln	Reparera spindeln och kontrollera kastet
	Skadad hållare	Byt ut hållaren
	Verktygsskaftet är skadat	Byt ut, eller slipa skaftet
	Ovalt verktyg	Byt ur eller slipa om vertyget
	Asymmetrisk skärfasvinkel	Slipa om enligt specifikation
	För hög matning eller skärhastighet	Justera skärdata enligt katalogen
Undermått i hålet	För liten arbetsmån	Öka arbetsmånen
	För hög värmeutveckling under skärarbetet. Hålet krymper efter bearbetning.	Öka kylvätskeflödet
	Vertyget är slitet till undermått	Slipa om enligt specifikation
	För låg matning eller skärhastighet	Justera skärdata enligt katalogen
	Arbetsmånen är för stor	Minska arbetsmånen
Ovala och koniska hål	Kast i maskinspindeln	Reparera spindeln och kontrollera kastet
	Avvikelse mellan verktyg och hål	Använd en nithålsbrotsch
	Asymmetrisk skärfasvinkel	Slipa om enligt specifikation
Dålig yta i hålet	För stor arbetsmån	Minska arbetsmånen
	Utslitet verktyg	Slipa om enligt specifikation
	För liten spånvinkel	Slipa om enligt specifikation
	Skäroljan är för mager	Öka koncentrationen
	Matning och/eller skärhastighet för låg	Justera skärdata enligt katalogen
	Skärhastighet för hög	Justera skärdata enligt katalogen
Verktyget fastnar och går av	Utslitet verktyg	Slipa om enligt specifikation
	För liten bakåtkonicitet	Kontrollera och byt ut/modifiera verktyget
	Skärkantsbredden för stor	Kontrollera och byt ut/modifiera verktyget
	Arbetsmaterialet tenderar att knipa	Använd en justerbar brotsch för att kompensera krympningen
	Arbetsmånen är för stor	Minska arbetsmånen
	Inhomogent material med inneslutningar	Använd hårdmetallbrotsch

GÄNGFRÄSNING

Allmänna råd om gängfräsnng

Gängfräsning är en process som innebär att gängan skapas genom spiralinterpolering med en fräs som har gängprofilen inslipad i fräskroppen

För att kunna gängfräsa krävs en CNC-maskin som har maskincykel för spiralinterpolering.

De flesta moderna styrda maskiner har maskincykler för gängfräsning.

Studera maskinmanualen eller kontakta maskinleverantören för information

EGENSKAPER OCH FÖRDELAR

Gängfräsning ger högre pålitlighet och gängfräsar har lång livslängd

Gängfräsar producerar små spånor som inte inverkar på gängförloppet

Toleransjusteringar kan göras exakt genom programmering

Gängfräsning ger full gängform ända ner i botten på hålet

Gängfräsar kan användas i en stor mängd material

Samma fräs kan användas till många dimensioner så länge stigningen är densamma

Både höger och vänstergängor kan skäras med samma fräs

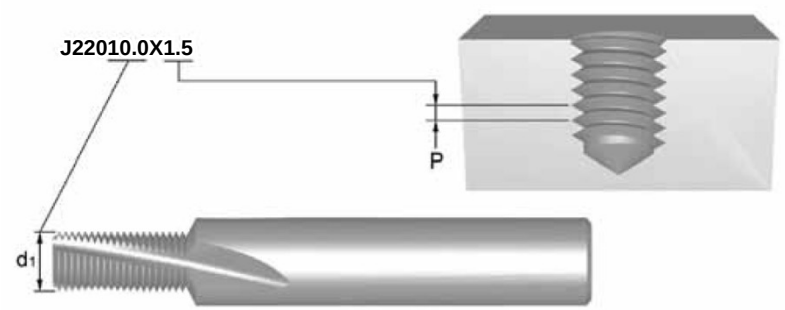
Vissa av gängfräsarna kan fasa ingången på hålet (J200, J205, J260)

VÄLJA VERKTYG

Gängfräsarna har en artikelkod som består av typ, diameter (d1) och stigning (P)

Artikelkoden används vid beställning av ditt verktyg

Använd alltid katalogen för att vara säker på att beställa rätt verktyg



Den här gängfräsen kan användas till gängor ≥ M12x1,5 (M14x1,5, M18x1,5 o.s.v.)

PROGRAMMERING MED Rprg

- Använd alltid radiekompensering för att förenkla toleransjusteringar
- Rprg-värdet är startvärdet för en ny fräs och står skrivet på frässkaftet. Det ska skrivas in i verktygsminnet
- Rprg baseras på gängans teoretiska noll-linje vilket betyder att om du använder Rprg så riskerar du aldrig övermått utan gängan får normal tolerans
- Det betyder att du kan ändra gängans mått genom små justeringar av programkoordinaterna

REKOMMENDATIONER

- Använd alltid rekommenderade skärdata
- Använd rekommenderad borrdiameter för gängan, samma som för en skärande gängtapp
- Starta alltid med Rprg-värdet på fräsen och justera toleransen vid behov
- Kontrollera alltid första gängan med en gängtolk och justera radien vid behov. Radien kan justeras 2 till 3 gånger innan fräsen är utsliten
- Kör du torrt rekommenderar vi att du använder tryckluft för att avlägsna spånorna
- Vid gängfräsning i tuffa material bör du använda två eller tre passeringar

GÄNGNING

ALLMÄNNA RÅD VID GÄNGNING

En lyckad gängoperation beror på flera faktorer, som alla påverkar kvaliteten på den färdiga produkten.

1. Välj en gängtapp som är anpassad för materialet som ska gängas och håltypen, dvs bottenhål resp. genomgående hål.
2. Se till att arbetsstycket sitter säkert. Förskjutning i sidled kan orsaka tappbrott eller dåliga gängor.
3. Välj rätt borrdiameter enligt katalogrekommendationen. Se alltid till att undvika arbetshärdning i materialet vid borrningen.
4. Välj rätt skärhastighet från katalogens skärdatasida.
5. Använd en bra skärolja eller något fetare emulsion.
6. Vid gängning i styrda maskiner, se till att programmera rätt stigning. Om en flytande gängapparat används, programmeras stigningen 95 -97% av nominell för att motverka att tappen självmatar. Gäller fram för allt spiraltappar.
7. Använd helst en tapphållare med slirkoppling och en gängchuck med flytrörelse i axiell led, vilket minskar risken för tappbrott om tappen skulle bottna och ger en mjukare ingång i materialet.
8. Säkerställ en mjuk ingång i materialet. En ojämn eller för långsam inmatning gör att tappen inte får tag i materialet och orsakar en konisk ingång.

TABELL ÖVER GÄNGTAPPENS TOLERANSKLASS TILL DEN GÄNGADE MUTTERNS TOLERANSOMRÅDE

Tolerans klass, Gängtapp			**Tolerans invändig gänga (muttergänga)**					**Applikation**
ISO	DIN	ANSI BS						
ISO 1	4 H	3 B	4 H	5 H				Greppassning
ISO 2	6 H	2 B	4 G	5 G	6 H			Mellanpassning
ISO 3	6 G	1 B			6 G	7 H	8 H	Spelpassning
-	7 G	-				7 G	8 G	Spelpassning för ev. beläggning

PROBLEMLÖSNING VID GÄNGNING

PROBLEM	ORSAK	ÅTGÄRD
Övermått	Fel tolerans	Välj tapp med lägre tolerans
	Fel axiell matning	Reducera matningen med 5-10% el. öka motståndet i den flytande tapphållaren
	Fel typ av tapp för applikationen	Använd spåndrivande gängtapp för genomgående och spiraltapp för bottenhål. Se Dormer katalog eller Product Selector för rätt rekommendation
	Tapp ej centrerad över hål	Kontrollera tapphållare och positionera gängtappen över hålets centrum
	Bristande smörjning	Använd rekommenderad skärolja för att förebygga påkletning. Se separat avsnitt om smörjning
	För låg skärhastighet	Se rekommendationer i Dormer katalog och Product Selector
Undermått	Fel typ av tapp för applikationen	Använd spåndrivande gängtapp för genom-gående och spiraltapp för bottenhål. Använd belagda verktyg för att undvika påkletning. Använd tapp med högre spånvinkel. Se rekommendation i Dormer katalog och Product Selector.
	Fel tolerans	Välj en tapp med större tolerans, speciellt i material som inte har tendens till övermått, exempelvis gjutjärn och rostfritt stål
	Felaktig eller brist på smörjning	Använd rekommenderade skäroljor för att förebygga påkletning. Se separat avsnitt om smörjning
	För liten håldiameter	Öka håldiametern till maxvärde enligt separat tabell
	Materialet krymper efter gängning	Välj rätt verktyg anpassat för materialet, se Dormer katalog eller Product Selector
Urflisning	Fel typ av gängtapp för applikationen	Välj en tapp med lägre spånvinkel och längre fas. Använd spiraltapp för bottenhål och spåndrivande tapp för genomgående hål. Se Katalog och Product Selector för lämpligt val
	Felaktig eller brist på smörjning	Använd rekommenderade skäroljor för att förebygga påkletning. Se separat avsnitt om smörjning
	Tappen bottnar I hålet	Öka borrdjupet eller minska gängdjupet
	Ythärdning i hålet	Minska skärhastigheten, använd belagda verktyg och bra smörjning. Se avsnitt om bearbetning i rostfritt stål i Teknisk Handbok.
	Spånklämning vid reversering	Vid genomgående hål, tillse att hela skärfasen passerar hålet utgång
	Fasen träffar ingång på hålet	Kontrollera tappens centrering över hål
	För liten håldiameter	Öka håldiametern till max värde enligt separat tabell

PROBLEMLÖSNING VID GÄNGNING

PROBLEM	ORSAK	ÅTGÄRD
Tappbrott	Gängtappen är utsliten	Använd en ny gängtapp eller slipa om enligt specifikation
	Bristande smörjning	Använd rekommenderade skäroljor för att förebygga påkletning och spånklämning. Se separat avsnitt om Kyl och smörjning.
	Tappen bottnar i hålet	Öka borrdjupet eller minska gängdjupet.
	För hög skärhastighet	Minska skärhastighet. Se rekommendationer i Dormer katalog och Product Selector.
	Ythärdning i hålet	Minska skärhastigheten, använd belagda verktyg och bra smörjning. Se avsnitt om bearbetning i rostfritt stål i Teknisk Handbok
	För liten håldiameter	Öka håldiametern till maxvärde enligt separat tabell
	För högt vridmoment	Använd tapphållare med momentinställningsmöjligheter.
	Materialet krymper efter gängning	Välj rätt verktyg anpassat för materialet, se Dormer katalog eller Product Selector
För snabb utslitningstid	Fel typ av gängtapp för applikationen	Använd tapp med lägre spånvinkel och/eller högre efterskärning och/eller längre fas. Använd belagda verktyg. Se rekommendationer i Katalog eller Product Selector.
	Bristande smörjning	Använd bra smörjning för att förebygga påkletningar och värmesprickor på skäreggarna. Se separat avsnitt om kyl och smörjning.
	För hög skärhastighet	Minska skärhastighet. Följ rekommendationer i Dormer katalog och Product Selector.
Påkletade skäreggar	Fel typ av gängtapp för applikationen	Använd tapp med lägre spånvinkel och/eller högre efterskärning. Se Dormer katalog eller Product Selector för rätt verktyg
	Bristande smörjning	Använd bra smörjning för att förebygga påkletning. Se separat avsnitt om smörjning.
	Ej lämplig beläggning	Se separat avsnitt för ytbehandling
	För låg skärhastighet	Öka skärhastigheten. Se rekommendationer i Dormer katalog eller Product Selector.

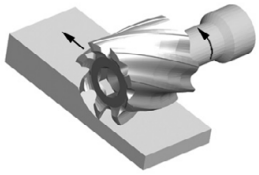
FRÄSNING

ATT TÄNKA PÅ VID FRÄSNING

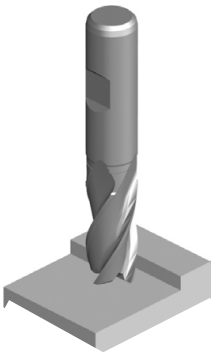
Fräsning är en process där man skapar en bearbetad yta genom att fräsa bort ett förutbestämt stort ingrepp från arbetsstycket genom att ett fräsverktyg roterar med en bestämd hastighet och rör sig fram med en relativt låg hastighet.
En karakteristisk egenskap med fräsning är att varje skäregg skär bort en liten del material och genererar en spåna.

TYP AV FRÄSVERKTYG

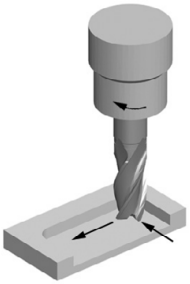
De tre grundläggande fräsoperationerna visas nedan: (A) valsfräsning, (B) planfräsning och (C) pinnfräsning.



A



B

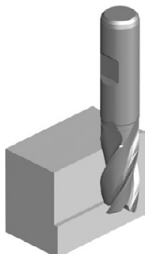
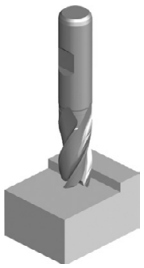
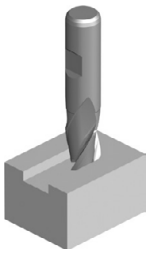
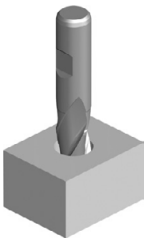
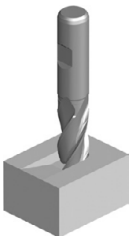


C

Vid valsfräsning är verktygets rotationsaxel parallell med den bearbetade ytan. Fräsen har ett antal skärkanter längs periferin.
Valsfräsar kan ha raka eller spiralslipade skäreggar som genererar ett plant eller snedställt skärförlopp.
Vid planfräsning är fräsen monterad på en spindel vars roterande axel är vinkelrät mot den bearbetade ytan. Den frästa ytan skapas av skäreggar placerade på fräsens periferi och ändytan.
Vid pinnfräsning är fräsens roterande axel vinkelrät positionerad mot arbetsstycket. Fräsen kan lutas för att bearbeta lutande plan. Pinnfräsen har vanligtvis skäreggar både på ändytan och periferin.

APPLIKATIONER

Avverkningshastigheten *Q* kan beräknas som mängden bearbetat material delat med bearbetningstiden. Mängden bearbetat material är arbetsstyckets ursprungliga mängd minus den mängd som återstår efter bearbetning. Bearbetningstiden är den tid det tar för verktyget att röra sig över hela arbetsstyckets längd. Denna parameter påverkar starkt ytans utseende efter bearbetning.

Sidbearbetning	Planfräsning	Spårfräsning	Borrning	Rampning
				
Radiella ingreppet bör vara mindre än 0,25 gånger frästdiametern.	Radiella ingreppet får ej överstiga 0,9 gånger diametern. Axiella ingreppet mindre än 0,1 gånger diametern.	Bearbetning av spår för kilspår. Radiella ingreppet lika som fräsens diameter.	Det är möjligt att borra med en pinnfräs om verktyget har har ändskär till centrum. Reducera matningen motsvarande antal skär, 2skär 1/2 mat-ning, 3skär 1/3 osv.	Kombinerad axiell och radiell rörelse in i arbetsstycket.

PROBLEMLÖSNING

PROBLEM	ORSAK	ÅTGÄRD
Brott	För stort ingrepp	Dela upp i flera passeringar
	För hög matning	Minska matning per tand
Förslitning	För lång spårlängd eller totallängd	Minska överhäng alternativt använd kortare fräs
	Arbetsmaterial för hårt	Se Dormer katalog eller Product Selector för att finna en fräs med rätt material och beläggning
	Olämplig skärhastighet och/eller matning	Se Dormer katalog eller Product Selector för korrekta skärdata
	Dålig spånavgång	Rikta om kylningen
	Motfräsning	Medfräsning
	Felaktig spiralvinkel på fräsen	Se Dormer katalog eller Product Selector för att finna rätt fräs
Urflisning	För hög matning	Reducera matning
	Vibrationer	Sänk varvtalet
	För låg skärhastighet	Höj varvtalet
	Motfräsning	Medfräsning
	Verktygsstabilitet	Minska överhäng alternativt använd kortare fräs
	Arbetsstyckets stabilitet	Förbättra uppspänningen
Kort livslängd	Tufft arbetsmaterial	Se Dormer katalog eller Product Selector för att finna rätt fräs
	Felaktig spånvinkel och/eller släppningsvinkel	Ändra till korrekt design
	Friktion mellan verktyg och arbets-material	Använd belagt verktyg
Dålig ytfinhet	För hög matning	Reducera matning per tand
	För låg skärhastighet	Öka varvtalet
	Spånstockning	Minska ingreppet
	Verktygs förslitning	Byt eller slipa om verktyg
	Lösegg	Använd verktyg med högre spiralvinkel
	Påsvetsningar	Öka flödet av kylmedel

PROBLEM	ORSAK	ÅTGÄRD
Felaktigheter på arbetsstyckets yta	Utböjning	Minska överhäng alternativt använd kortare fräs
	För få skäregger på verktyget	Använd verktyg med fler skäregger
	Osymmetrisk / sliten verktygshållare	Reparera eller byt verktygshållare
	Dålig verktygshållar-stabilitet	Byt ut mot kortare / stabilare verktygshållare
	Dålig stabilitet i spindel	Använd maskin med stabilare spindel eller reparera spindeln
Vibrationer	För hög matning och skärhastighet	Se Dormer katalog eller Product Selector för korrekta skärdata
	För lång spårlängd eller totallängd	Korta utstick alternativt använd kortare fräs
	För stort ingrepp	Minska skärdjup
	För dålig stabilitet i hållare och maskin	Byt till stabilare hållare

ROTERANDE HÅRDMETALLFILAR

Allmänna råd om hårdmetallfilar

Hårdmetallfilar har ett brett användningsområde för gradning i många olika material

De används i regel i handhållna, tryckluftdriva verktyg

EGENSKAPER OCH FÖRDELAR

Härdade och anlöpta stålskaft ger hög styvhet och förhindrar utböjning och vibrationer

Noggrant slipade skaft för säker inspänning

Speciell lödmetod som motstår höga temperaturer och tryck

Den universella Double Cut-geometrin fungerar i en rad olika material och applikationer

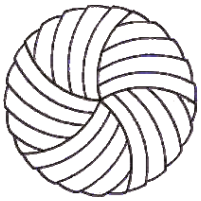
Det finns även materialanpassade geometrier för stål (ST), aluminium (AL) och glasfiber (GRP)

TiAlN-belagda filar finns som klarar slitande material bättre

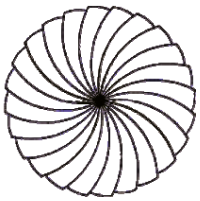
De kulfomade filarna har överlappande spårform

Den gör att filen skär ända in till filens rotationscentrum med förbättrad verkan och minskad risk för igensättning som följd





Över-
lappande



Normala

SÄKERHETEN FÖRST

Högvarviga verktyg är riskabla och kan orsaka skador om de används fel

Koppla alltid ur tryckluften innan du byter filen

Kontrollera filens skick och använd helst filtyper som ger mindre vibrationer

Använd alltid lämplig skyddsutrustning och håll avstånd från andra som arbetar intill dig





Skyddsutrustning ska alltid användas

REKOMMENDATIONER

Använd alltid en maskin som har varvtal inom de rekommenderade gränserna

Det är viktigt att kontrollera maskinens lager och smörjning regelbundet

Rengör alltid spännmutter, hylsa och hylsläget vid byte av fil

Undvik slag och högt tryck mot filen

Undvik att överhetta filen

Kör inte in filen för djupt i materialet eller så att den kniper fast i ett hörn eller spår

Felsökning - Roterande filar

PROBLEM	ORSAK
Tänderna flisar ur	För lågt varvtal kan orsaka att filen studsar
	Exentricitet pga sliten spindel, hylsa eller lager
	För djupt ingrepp eller att filen kniper fast
Tänderna sätter igen	För lång spårlängd eller totallängd
	Fel val av geometri för arbetsmaterialet
För snabb utslitning	Arbetar med för högt varvtal
	Exentricitet pga sliten spindel, hylsa eller lager
Filhuvudet lossnar	För högt varvtal som orsakar överhettning
	För lång ingreppstid orsakar överhettning

Suomi			Kovuus	Murtolujuus	
Raaka-aineryhmät (AMG)			HB	N/mm²	ISO
1. Teräs	1.1	Puhdas rauta, pehmeät teräkset	< 120	< 400	P 1
	1.2	Rakenneteräkset, hiilletysteräkset	< 200	< 700	P 1
	1.3	Hiilli- ja niukkaesosteiset teräset	< 250	< 850	P 2
	1.4	Seostetut teräkset	< 250	< 850	P 3
	1.5	Seostetut teräkset työkalu- ja nuorrutusteräkset	> 250 < 350	> 850 < 1200	P 4
	1.6	Seostetut teräkset työkalu- ja nuorrutusteräkset	> 350	> 1200 < 1620	H 1
	1.7	Seostetut teräkset, karkaistut teräkset	49-55HRC	> 1620	H 3
	1.8	Seostetut teräkset, karkaistut teräkset	55-63HRC	> 1980	H 4
2. Ruostum. teräs	2.1	RST, aut.laadut, työkaluteräkset Cr>10%	< 250	< 850	M 1
	2.2.	Austenittiset	< 320	< 1100	M 3
	2.3	Ferriiti + Austeniitti (Duplex), Ferriitismartensiittiset	< 300	< 1000	M 2
	2.4	Erkautumiskarkenevat	>320 <410	>1100 <1400	S 2
3. Valurauta	3.1	Harmaa valurauta	< 150	> 500	K 1
	3.2	Harmaa valurauta	> 150 <300	> 500 < 1000	K 2
	3.3	Pallografiitti valurauta / Adusoitu valurauta	< 200	< 700	K 3
	3.4	Pallografiitti valurauta / Adusoitu valurauta	> 200 < 300	> 700 < 1000	K 4
4. Titaani	4.1	Titaani, seostamaton	< 200	< 700	S 1
	4.2	Titaani, seostattu	< 270	< 900	S 2
	4.3	Titaani, seostattu	> 270 < 350	> 900 ≤ 1250	S 3
5. Nikkeli	5.1	Nikkeli, seostamaton	< 150	< 500	S 1
	5.2	Nikkeli, seostettu	< 270	> 900	S 2
	5.3	Nikkeli, seostettu	> 270 < 350	> 900 < 1200	S 3
6. Kupari	6.1	Kupari	< 100	< 350	N 3
	6.2	ß-Messinki, pronssi	< 200	< 700	N 4
	6.3	α-Messinki, pehmeä	< 200	< 700	N 3
	6.4	Cu-Al-Fe seokset, lujat pronssit	< 470	< 1500	N 4
7. Alumiini Magnesium	7.1	Al, Mg, seostamaton	< 100	< 350	N 1
	7.2	Al seostettu, Si<0.5%	< 150	< 500	N 1
	7.3	Al seostettu, Si>0.5% <10%	< 120	< 400	N 1
	7.4	Al seostettu, Si>10% Whisker lujitetut, Al-seokset, Mg-seokset	< 120	< 400	N 2
8. Synteettiset aineet	8.1	Pehmeät muovit (Thermoplast)	---	---	O
	8.2	Kovat muovit, Bakeliitti	---	---	O
	8.3	Lujitetut muovit	---	---	O
9. Kovat aineet	9,1	Cermetit (metalli-keraamiset)	< 550	< 1700	H
10. Grafiitti	10.1	Standardi Grafiitti	---	< 100	O

DORMER

ESIMERKKEJÄ ERI STANDARDIEN MUKAISTEN RAAKA-AINEIDEN LUOKITTELUSTA

AMG	EN	W Nr.	DIN	BS	SS	USA	UNS	ISO
1.1		1.1015, 1.1013	Rfe60, Rfe100	230Mo7, 050A12	1160	Leaded Steels	G12120	P 1
1.2	EN 10 025 – S235JRG2	1.1012, 1.1053, 1.7131	St37-2, 16MnCr5, St50-2	060A35, 080M40, 4360-50B	1312, 1412, 1914	135, 30	G10100	P 1
1.3	EN 10 025 – E295	1.1191, 1.0601	CK45, C60	080M46, 080A62	1550, 2142, 2172	1024, 1060, 1061	G10600	P 2
1.4	EN 10 083-1 – 42 CrMo 4 - EN 10 270-2	1.7225, 1.3505, 1.6582, 1.3247	42CrMo4, 100Cr6, 34CrNiMo6, S2-10-1-8	708M40/42, 817M40, 534A99, BM2, BT42	1672-04, 2090, 2244-02, 2541-02	4140, A2, 4340, M42, M2	G41270, G41470, T30102, T11342	P 3
1.5	EN ISO 4957 – HS6-5-2 - EN-ISO 4957 – HS6-5-2-5	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, 55NiCrMoV6, X210Cr12, S2-10-1-8	B01, BM2, BT42, 826 M40, 830M31	2244-04, 2541-03, 2550, 2722, 2723	01, L6, M42, D3, A2, M2, 4140, 8630	G86300, T30102' T11302, T30403, T11342	P 4
1.6	EN-ISO 4957 – HS2-9-1-8	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, X210Cr12, S2-10-1-8	801, 826 M40, 830M31	2244-05, 2541-05, , HARDOX 400	01, L6, M42, D3, 4140, 8130	T30403, G41400, J14047	H 1
1.7	EN-ISO 4957 – HS2-9-1-8	1.2510	100MnCrW4	BO1, BD3, BH13	HARDOX 500			H 3
1.8	EN-ISO 4957 – X40CrMoV5-1	1.3343, 1.2344	S6-5-2, GX40CrMoV5-1	BM2, BH13	2242 HARDOX 600			H 4
2.1	EN 10 088-3 – X14CrMoS17	1.4305, 1.4104	X10CrNiS189, X12CrMoS17	303 S21 , 416 S37	2301, 2312, 2314, 2346, 2380	303, 416, 430F	S30300, S41600, S43020	M 1
2.2.	EN 10 088-2,0 -3 – 1.4301+AT	1.4301, 1.4541, 1.4571	X5CrNi189 X10CrNiMoTi1810	304 S15, 321 S17, 316 S, 320 S12	2310, 2333, 2337, 2343, 2353, 2377	304, 321, 316	S30400, S32100, S31600	M 3
2.3	EN 10 088-3 – 1.4460	1.4460, 1.4512, 1.4582	XBCrNiMo275, X4CrNiMoN6257	317 S16, 316 S16	2324, 2387, 2570	409, 430, 436	S40900, S4300, S43600	M 2
2.4	EN 1.4547	1.4547	X2CrNiMo20-18-6	HR41	2378	17-4PH	S31254	S 2
3.1	EN 1561 – EN-JL1030	0.6010, 0.6040	GG10, GG40	Grade150, Grade 400	0120, 0212, 0814	ASTM A48 class 20	F11401, F12801	K 1
3.2	EN 1561 – EN-JL1050	0.6025, 0.6040	GG25, GG40	Grade200, Grade 400	0125, 0130, 0140, 0217	ASTM A48 class 40, STM A48 class 60	F12801, F14101	K 2
3.3	EN 1561 – EN-JL2040	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	420/12, P440/7, 700/2, 30g/72	0219, 0717, 0727, 0732, 0852	ASTM A220 grade 40010, ASTM A602 grade M4504	F22830, F20001	K 3
3.4	EN 1561 – EN-JL2050	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	420/12, P440/7, 700/2, 30g/72	0221, 0223, 0737, 0854	ASTM A220 grade 90001, ASTM A602 grade M8501	F26230, 20005	K 4
4.1		3.7024LN	Ti99,8	TA1 to 9	Ti99,8	ASTM B265 grade 1	R50250	S 1
4.2		3.7164LN, 3.7119LN	TiAl6V4, TiAl55n2	TA10 to 14, TA17	TiAl6V4, TiAl5Sn2	AMS4928	R54790	S 2
4.3		3.7164LN, 3.7174LN, 3.7184LN	TiAl6V4, TiAl6V5Sn2, TiAl4MoSn2	TA10 to 13, TA28	TiAl6V5Sn2	AMS4928, AMS4971	R56400, R54790	S 3
5.1		2.4060, 2.4066	Nickel 200, 270, Ni99,6	NA 11, NA12	Ni200, Ni270	Nickel 200, Nickel 230	N02200, N02230	S 1
5.2		2.4630LN, 2.4602, 2.4650LN	Nimonic 75, Monel 400, Hastelloy C, Inconel 600	HR203, 3027-76		Nimonic 75,Monel400, Hastelloy, Inconel600	N06075, N10002, N04400, N06600	S 2
5.3		2.4668LN, 2.4631LN, 2.6554LN	Inconel 718, Nimonic 80A, Waspaloy	HR8, HR401, 601		Inconel 718, 625, Nimonic 80	N07718, N07080, N06625	S 3
6.1	EN 1652 – CW004A	2.0060, 2.0070	E-Cu57, SE-Cu	C101	5010	101	C10100, C1020	N 3
6.2	EN 1652 – CW612N	2.0380, 2.0360, 2.1030, 2.1080	CuZn39Pb2, CuZn40, CuSn8, CuSn6Zn	CZ120, CZ109,PB104	5168		C28000, C37710	N 4
6.3	EN 1652 – CW508L	2.0321, 2.0260	CuZn37, CuZn28	CZ108,CZ106	5150		C2600, C27200	N 3
6.4			Ampco 18, Ampco 25	AB1 type	5238, JM7-20			N 4
7.1	EN 485-2 – EN AW-1070A	3.0255	Al99,5	LMO, 1 B (1050A)	4005	EC, 1060, 1100	A91060, A91100	N 1
7.2	EN 755-2 – EN AW-5005	3.1355, 3.3525	AlCuMg2, AlMg2Mn0,8	LM5, 10, 12, N4 (5251)	4106, 4212	380, 520.0, 520.2, 2024, 6061	A03800, A05200, A92024	N 1
7.3	EN 1706 – EN AC-42000	3.2162.05, 3.2341.01	GD-AlSi8Cu, G-AlSi5Mg	LM2,4,16,18,21,22,, 24,25,26,27,L109	4244	319.0, 333.0, 319.1, 356.0	A03190, A03330, C35600	N 1
7.4	SS-EN 1706 – EN AC-47000	3.2581.01	G-AlSi18, G-AlSi12	LM6, 12,13, 20, 28, 29, 30	4260, 4261, 4262	4032, 222.1, A332.0	A94032, A02220, A13320	N 2
8.1				Polystyrene, Nylon, PVC Cellulose, Acetate & Nitrate		Polystyrene, Nylon, PVC		O
8.2				Ebonite, Tufnol, Bakelite		Bakelite		O
8.3				Kevlar, Printed Circuit boards		Kevlar		O
9,1				Ferrotic, Ferrotitanit				H
10.1				Graphite				O

Lastuamis-/pyörimisnopeudet

DORMER

Vc																	
m/Min		5	8	10	15	20	25	30	40	50	60	70	80	90	100	110	150
Feet/Min		16	26	32	50	66	82	98	130	165	197	230	262	296	330	362	495
Ø		RPM															
mm	inch																
1,00		1592	2546	3183	4775	6366	7958	9549	12732	15916	19099	22282	25465	28648	31831	35014	47747
1,50		1061	1698	2122	3183	4244	5305	6366	8488	10610	12732	14854	16977	19099	21221	23343	31831
2,00		796	1273	1592	2387	3183	3979	4775	6366	7958	9549	11141	12732	14324	15916	17507	23873
2,50		637	1019	1273	1910	2546	3183	3820	5093	6366	7639	8913	10186	11459	12732	14006	19099
3,00		531	849	1061	1592	2122	2653	3183	4244	5305	6366	7427	8488	9549	10610	11671	15916
3,18	1/8	500	801	1001	1501	2002	2502	3003	4004	5005	6006	7007	8008	9009	10010	11011	15015
3,50		455	728	909	1364	1819	2274	2728	3638	4547	5457	6366	7276	8185	9095	10004	13642
4,00		398	637	796	1194	1592	1989	2387	3183	3979	4775	5570	6366	7162	7958	8754	11937
4,50		354	566	707	1061	1415	1768	2122	2829	3537	4244	4951	5659	6366	7074	7781	10610
4,76	3/16	334	535	669	1003	1337	1672	2006	2675	3344	4012	4681	5350	6018	6687	7356	10031
5,00		318	509	637	955	1273	1592	1910	2546	3183	3820	4456	5093	5730	6366	7003	9549
6,00		265	424	531	796	1061	1326	1592	2122	2653	3183	3714	4244	4775	5305	5836	7958
6,35	1/4	251	401	501	752	1003	1253	1504	2005	2506	3008	3509	4010	4511	5013	5514	7519
7,00		227	364	455	682	909	1137	1364	1819	2274	2728	3183	3638	4093	4547	5002	6821
7,94	5/16	200	321	401	601	802	1002	1203	1604	2004	2405	2806	3207	3608	4009	4410	6013
8,00		199	318	398	597	796	995	1194	1592	1989	2387	2785	3183	3581	3979	4377	5968
9,00		177	283	354	531	707	884	1061	1415	1768	2122	2476	2829	3183	3537	3890	5305
9,53	3/8	167	267	334	501	668	835	1002	1336	1670	2004	2338	2672	3006	3340	3674	5010
10,00		159	255	318	477	637	796	955	1273	1592	1910	2228	2546	2865	3183	3501	4775
11,11	7/16	143	229	287	430	573	716	860	1146	1433	1719	2006	2292	2579	2865	3152	4298
12,00		133	212	265	398	531	663	796	1061	1326	1592	1857	2122	2387	2653	2918	3979
12,70	1/2	125	201	251	376	501	627	752	1003	1253	1504	1754	2005	2256	2506	2757	3760
14,00		114	182	227	341	455	568	682	909	1137	1364	1592	1819	2046	2274	2501	3410
14,29	9/16	111	178	223	334	446	557	668	891	1114	1337	1559	1782	2005	2228	2450	3341
15,00		106	170	212	318	424	531	637	849	1061	1273	1485	1698	1910	2122	2334	3183
15,88	5/8	100	160	200	301	401	501	601	802	1002	1203	1403	1604	1804	2004	2205	3007
16,00		99	159	199	298	398	497	597	796	995	1194	1393	1592	1790	1989	2188	2984
17,46	11/16	91	146	182	273	365	456	547	729	912	1094	1276	1458	1641	1823	2005	2735
18,00		88	141	177	265	354	442	531	707	884	1061	1238	1415	1592	1768	1945	2653
19,05	3/4	84	134	167	251	334	418	501	668	835	1003	1170	1337	1504	1671	1838	2506
20,00		80	127	159	239	318	398	477	637	796	955	1114	1273	1432	1592	1751	2387
24,00		66	106	133	199	265	332	398	531	663	796	928	1061	1194	1326	1459	1989
25,00		64	102	127	191	255	318	382	509	637	764	891	1019	1146	1273	1401	1910
27,00		59	94	118	177	236	295	354	472	589	707	825	943	1061	1179	1297	1768
30,00		53	85	106	159	212	265	318	424	531	637	743	849	955	1061	1167	1592
32,00		50	80	99	149	199	249	298	398	497	597	696	796	895	995	1094	1492
36,00		44	71	88	133	177	221	265	354	442	531	619	707	796	884	973	1326
40,00		40	64	80	119	159	199	239	318	398	477	557	637	716	796	875	1194
50,00		32	51	64	95	127	159	191	255	318	382	446	509	573	637	700	955

Kovuus / Murtolujuus

HV	HRC	HB		
Vickers	Rockwell	Brinell	N/ mm^2	Tons/ sq. in.
940	68			
900	67			
864	66			
829	65			
800	64			
773	63			
745	62			
720	61			
698	60			
675	59			
655	58		2200	142
650		618	2180	141
640		608	2145	139
639	57	607	2140	138
630		599	2105	136
620		589	2070	134
615	56	584	2050	133
610		580	2030	131
600		570	1995	129
596	55	567	1980	128
590		561	1955	126
580		551	1920	124
578	54	549	1910	124
570		542	1880	122
560	53	532	1845	119
550		523	1810	117
544	52	517	1790	116
540		513	1775	115
530		504	1740	113
527	51	501	1730	112
520		494	1700	110
514	50	488	1680	109
510		485	1665	108
500		475	1630	105
497	49	472	1620	105
490		466	1595	103
484	48	460	1570	102
480		456	1555	101
473	47	449	1530	99
470		447	1520	98
460		437	1485	96
458	46	435	1480	96
450		428	1455	94
446	45	424	1440	93
440		418	1420	92

HV	HRC	HB		
Vickers	Rockwell	Brinell	N/ mm^2	Tons/ sq. in.
434	44	413	1400	91
423	43	402	1360	88
413	42	393	1330	86
403	41	383	1300	84
392	40	372	1260	82
382	39	363	1230	80
373	38	354	1200	78
364	37	346	1170	76
355	36	337	1140	74
350		333	1125	73
345	35	328	1110	72
340		323	1095	71
336	34	319	1080	70
330		314	1060	69
327	33	311	1050	68
320		304	1030	67
317	32	301	1020	66
310	31	295	995	64
302	30	287	970	63
300		285	965	62
295		280	950	61
293	29	278	940	61
290		276	930	60
287	28	273	920	60
285		271	915	59
280	27	266	900	58
275		261	880	57
272	26	258	870	56
270		257	865	56
268	25	255	860	56
265		252	850	55
260	24	247	835	54
255	23	242	820	53
250	22	238	800	52
245		233	785	51
243	21	231	780	50
240		228	770	50
235		223	755	49
230		219	740	48
225		214	720	47
220		209	705	46
215		204	690	45
210		199	675	44
205		195	660	43
200		190	640	41

	Ø mm							
	> 1 ≤ 3	> 3 ≤ 6	> 6 ≤ 10	> 10 ≤ 18	> 18 ≤ 30	> 30 ≤ 50	> 50 ≤ 80	> 80 ≤ 120
Tol	µm							
e8	-14 / -28	-20 / -38	-25 / -47	-32 / -59	-40 / -73	-50 / -89	-60 / -106	-72 / -126
f6	-6 / -12	-10 / -18	-13 / -22	-16 / -27	-20 / -33	-25 / -41	-30 / -49	- 36 / -58
f7	-6 / -16	-10 / -22	-13 / -28	-16 / -34	-20 / -41	-25 / -50	-30 / -60	-36 / -71
h6	0 / -6	0 / -8	0 / -9	0 / -11	0 / -13	0 / -16	0 / -19	0 / -22
h7	0 / -10	0 / -12	0 / -15	0 / -18	0 / -21	0 / -25	0 / -30	0 / -35
h8	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33	0 / -39	0 / -46	0 / -54
h9	0 / -25	0 / -30	0 / -36	0 / -43	0 / -52	0 / -62	0 / -74	0 / -87
h10	0 / -40	0 / -48	0 / -58	0 / -70	0 / -84	0 / -100	0 / -120	0 / -140
h11	0 / -60	0 / -75	0 / -90	0 / -110	0 / -130	0 / -160	0 / -190	0 / -220
h12	0 / -100	0 / -120	0 / -150	0 / -180	0 / -210	0 / -250	0 / -300	0 / -350
k10	+40 / 0	+48 / 0	+58 / 0	+70 / 0	+84 / 0	+100 / 0	+120 / 0	+140 / 0
k12	+100 / 0	+120 / 0	+150 / 0	+180 / 0	+210 / 0	+250 / 0	+300 / 0	+350 / 0
m7	+2 / +12	+4 / +16	+6 / +21	+7 / +25	+8 / +29	+9 / +34	+11 / +41	+13 / +48
js14	+/- 125	+/- 150	+/- 180	+/- 215	+/- 260	+/- 310	+/- 370	+/- 435
js16	+/- 300	+/- 375	+/- 450	+/- 550	+/- 650	+/- 800	+/- 950	+/- 1100
H7	+10 / 0	+12 / 0	+15 / 0	+18 / 0	+21 / 0	+25 / 0	+30 / 0	+35 / 0
H8	+14 / 0	+18 / 0	+22 / 0	+27 / 0	+ 33 / 0	+39 / 0	+46 / 0	+54 / 0
H9	+25 / 0	+30 / 0	+36 / 0	+43 / 0	+52 / 0	+62 / 0	+74 / 0	+87 / 0
H12	+100 / 0	+120 / 0	+150 / 0	+180 / 0	+210 / 0	+250 / 0	+300 / 0	+ 350/ 0
P9	-6 / -31	-12 / -42	-15 / -51	-18 / -61	-22 / -74	-26 / -86	-32 / -106	-37 / -124

1µm = 0.001 mm

PORAUS

YLEISIÄ OHJEITA PORAUKSEEN

1. Valitse parhaiten käyttötarkoitukseen sopiva pora. Valinnassa on otettava huomioon työstettävä raaka-aine, työstökoneen ominaisuudet ja lastuamisneste.
2. Kiinnitä työstettävä kappale tukevasti. Työstökoneen karan tulee olla tukeva ja välyksetön. Varmista kokonaisuuden tukevuus valitsemalla käyttökohteeseen mahdollisimman lyhyt pora.
3. Poraistukan pitää olla hyvälaatuinen. Mikäli poran varsi “liukuu” istukassa työstön aikana, seurauksena on yleensä poran murtuminen.
4. Valitse oikea lastuamisneste ja varmista, että nestesuihku on suunnattu poran kärkeen. Siten pidennät poran elinikää.
5. Varmista, että lastut tulevat hyvin ulos reiästä porauksen aikana. Mitä syvempi reikä, sitä tärkeämpää on jatkuva lastuvirta.
6. Käytä aina terävää poraa. Teroituksen jälkeen on kärjen geometrian oltava oikea ja kaikkien kulumisjälkien oltava poissa.

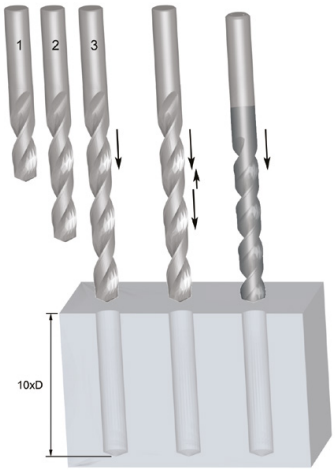
REIÄN KOKO

Uusien muotojen, raaka-aineiden ja pinnoitteiden ansiosta voidaan valmistaa poria, joilla voidaan tehdä entistä tarkempia reikiä. Yleisporalla, jossa on vakio muotoilu, voidaan saavuttaa reiän toleranssi H12. Nykyisillä tarkimmilla täyskovametalliporilla voidaan hyvissä olosuhteissa saavutta jopa reiän toleranssi H8. Paremman kuvan erilaisista poramalleista ja niillä saavutettavista toleransseista, antaa alla oleva lista:

- HSS yleispora – H12
- HSS / HSS-E Parabolinen syvän reiän lastu-ura – H10
- Pinnoitetut suurteho kovametalliporat – H8/H9

SYVIEN REIKIEN PORAUSMENETELMÄT

Porattaessa syviä reikiä, voidaan vaaditun syvyyden saavuttamiseksi käyttää useita menetelmiä. Allaoleva esimerkki näyttää neljä tapaa porata 10xd syvyistä reikää.



	Porausten sarja	Porausten sarja
Porien lukumäärä	3 (2,5xD, 6xD,10xD)	2 (2,5xD,10xD)
Poran malli	Vakio lastu-ura, yleiskäyttö	Vakio lastu-ura, yleiskäyttö
+ / -	Kallis Nopeus	Taloudellisempi Nopea

	Katkoporaus	Yhdellä syötöllä
Porien lukumäärä	1 (10xD)	1 (10xD)
Poran malli	Vakio lastu-ura, yleiskäyttö	Syvänreiänpora
+ / -	Nopeus	Taloudellinen Nopea

VIANETSINTÄ PORATTAESSA

ONGELMA	SYY	KORJAUS
Murtunut tai vääntynyt lehti	Huono sovitus varren ja istukan välillä	Varmista, että varsi ja istukka ovat puhtaita ja vahingoittumattomia
Halkeama sydänosassa	Liian suuri syöttö	Alenna syöttö oikeaksi
	Sopimaton päästö	Teroita ohjeiden mukaiseksi
	Liian suuri sydämen kevennys	Teroita ohjeiden mukaiseksi
	Kova isku poran kärkeen	Vältä iskua poran kärkeen. Ole huolellinen kartiovartisen poran asennuksessa ja irroituksessa.
Nirkot ovat kuluneet	Liian suuri nopeus	Alenna nopeus oikeaksi - syöttöä voi ehkä nostaa
Nirkot ovat murtuneet	Työstettävän kappaleen kiinnitys on huono	Varmista kappaleen kiinnitys, se ei saa liikkua työstön aikana
Murtuneet pääsärmät	Liian suuri päästö	Teroita ohjeiden mukaiseksi
Murtuma lastu-urassa	Lastu-urat tukkeutuvat	Lisää lastun katkaisu / sarja porauksia
	Pora liukuu	Varmista, että pora on tukevasti kiinni istukassa ja karassa
Reiän pinnassa on spiraali	Sopimaton syöttö	Lisää syöttöä
	Epätarkka paikoitus	Käytä keskiöintiä ennen porausta
Reikä on liian suuri	Kärjen muoto on huono	Tarkista syntyvä kärjen muoto
	Tehoton lastunpoisto	Säädä nopeus, söttö ja lastun katkaisu toiminto, saadaksesi sopivan mittaiset lastut

KALVINTA

YLEISIÄ OHJEITA KALVINTAAN

Kalvimella saavutetaan paras työstötulos, kun se pistetään “töihin”. Yleinen virhe on, että kalvimelle jätetään liian vähän työstettävää. Tällöin kalvin kuluu nopeasti hioutumalla ja tuloksena on nopeasti alamittainen kalvin. On kuitenkin yhtä tärkeätä, että työstövaraa ei jätetä liikaa. (Katso työstövarat oheisesta taulukosta).

1. Valitse kuhunkin käyttötarkoitukseen parhaiten sopiva kalvin ja oikeat työstöarvot. Varmista, että esiporattu reikä on oikean mittainen.

2. Kiinnitä työstettävä kappale tukevasti ja työstökoneen karan tulisi olla välyksetön.

3. Istukan, johon lieriövartinen kalvin kiinnitetään, pitää olla hyvälaatuinen. Mikäli kalvimen varsi liukuu istukassa, on hyvin todennäköistä, että kalvin rikkoutuu.

4. Etäisyys karasta kappaleeseen pitää olla mahdollisimman lyhyt.

5. Valitse oikea lastuamisneste ja varmista, että nestesuihku on kohdistettu kalvimen lastuaviin särmiin. Koska kalvinta on kevyttä työstöä, on emulsion pitoisuus 40:1 yleensä riittävä. Harmaan valuraudan työstössä voidaan käyttää paineilmaa, jos halutaan työstää kuivana.

6. Varmista, että lastut eivät tuki kalvinta.

7. Ennen kalvimen teroittamista, tarkista sen suoruus ja pyöreys keskiöiden välissä. Useimmissa tapauksissa riittää kun teroitetaan kalvimen lastuamiskartio.

8. Käytä aina terävää kalvinta. Säännöllinen teroittaminen parantaa työstötaloutta. On tärkeätä muistaa, että kalvimessa työn tekevät lastuamis- ja syöttökartio ja niiltä osin kalvin tarvitsee myös teroitusta. Tarkkuus teroituksessa on tärkeätä sekä työstettävän reiän laadun, että kalvimen eliniän kannalta.

TYÖSTÖVARAT

Työstövaran suuruus riippuu työstettävästä aineesta ja esiporatun reiän pinnanlaadusta. Yleiset suositukset työstövarasta ovat alla olevissa taulukoissa:

Valmiin reiän halkaisija (mm)	Esiporaus	Esiporaus ja väljennys
Alle 4	0.1	0.1
4 - 11	0.2	0.15
11 - 39	0.3	0.2
39 - 50	0.4	0.3

Valmiin reiän halkaisija (tuumaa)	Esiporaus	Esiporaus ja väljennys
Alle 3/16	0.004	0.004
3/16 - 1/2	0.008	0.006
1/2 - 1.1/2	0.010	0.008
1.1/2 - 2	0.016	0.010

TOLERANSSIT



1. VAKIOKALVIMEN TERÄN HALKAISIJAN TOLERANSSI
   Halkaisija (d1) mitataan lieriövaippapinnasta heti lastuamis- tai syöttökartion yläpuolelta. Toleranssit ovat DIN 1420 mukaiset ja reiän toleranssiksi tulee H7.

KALVIMEN TOLERANSSI			
Halkaisija (mm)		Toleranssin raja-arvot (mm)	
Yli	Saakka ja sisältää	Yläraja +	Alaraja +
	3	0.008	0.004
3	6	0.010	0.005
6	10	0.012	0.006
10	18	0.015	0.008

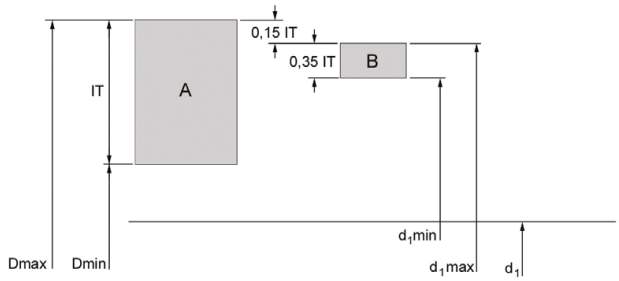
KALVIMEN TOLERANSSI			
Halkaisija (mm)		Toleranssin raja-arvot (mm)	
Yli	Saakka ja sisältää	Yläraja +	Alaraja +
18	30	0.017	0.009
30	50	0.021	0.012
50	80	0.025	0.014

2. REIÄN H7 TOLERANSSIT
   Yleisin viimeistellyn reiän toleranssi on H7 (katso taulukko). Kohdan 3 piirrosta ja taulukkoa voidaan käyttää kalvimien mitoituksessa muille toleransseille.

REIÄN TOLERANSSI			
Halkaisija (mm)		Toleranssin raja-arvot (mm)	
Yli	Saakka ja sisältää	Yläraja +	Alaraja +
	3	0.010	0
3	6	0.012	0
6	10	0.015	0
10	18	0.018	0

REIÄN TOLERANSSI			
Halkaisija (mm)		Toleranssin raja-arvot (mm)	
Yli	Saakka ja sisältää	Yläraja +	Alaraja +
18	30	0.021	0
30	50	0.025	0
50	80	0.030	0

3. Kun reikä viimeistellään erikoistoleranssiin, esim. D8, tarvitaan erikoiskalvin, jonka mitat saadaan oheisella laskentamallilla.



A = Reiän Toleranssi
B = Kalvimen Toleranssi
IT = Toleranssin alue
Dmax = Reiän suurin halkaisija
Dmin = Reiän pienin halkaisija
d_1 = Nimellishalkaisija
$d_1$max = Kalvimen suurin halkaisija
$d_1$min = Kalvimen pienin halkaisija

Toleranssin alue (mikronia)	Halkaisijan toleranssin alue (mm)							
	Yli 1 - 3	3 - 6	6 - 10	10 - 18	18 - 30	30 - 50	50 - 80	80 - 120
IT5	4	5	6	8	9	11	13	15
IT6	6	8	9	11	13	16	19	22
IT7	10	12	15	18	21	25	30	35
IT8	14	18	22	27	33	39	46	54
IT9	25	30	36	43	52	62	74	87
IT10	40	48	58	70	84	100	120	140
IT11	60	75	90	110	130	160	190	220
IT12	100	120	150	180	210	250	300	350

esim. reiän halk.10mm, tol. D8, suurin halk. = 10.062, pienin halk. = 10.040, reiän tol. (IT8) = 0.022

Suurin halkaisija: 0.15 x reiän tol. (IT8) = 0.0033, pyöristettynä ylöspäin = 0.004
Pienin halkaisija: 0.35 x reiän tol. (IT8) = 0.0077, pyöristettynä ylöspäin = 0.008

Kalvimen suurin halkaisija = 10.062 - 0.004 = 10.058
Kalvimen pienin halkaisija = 10.058 - 0.008 = 10.050

VIANETSINTÄ KALVINNASSA

ONGELMA	SYY	KORJAUS
Murtunut tai vääntynyt lehti	Huono sovitus varren ja holkin välillä	Varmista, että varsi ja holkki ovat puhtaita ja vahingoittumattomia
Kalvin kuluu nopeasti	Sopimaton työstövara	Suurenna työstövaraa
Reiästä tulee ylisuuri	Suuri särmien korkeusero	Teroita ohjeiden mukaiseksi
	Siirtymä työstökoneen karassa	Korjaa ja oikaise karan siirtymä
	Viallinen työkalun pidin	Vaihda pidin
	Kalvimen varsi on vaurioitunut	Vaihda tai korjaa varsi
	Kalvin on ovaalin muotoinen	Vaihda tai teroita kalvin
	Epäsymmetrinen lastuamiskartion kulma	Teroita ohjeiden mukaiseksi
	Liian suuri syöttö tai lastuamisnopeus	Säädä työstöarvot
Reiästä tulee alimittainen	Sopimaton työstövara	Suurenna työstövaraa
	Työstössä muodostuu liikaa lämpöä. Reikä laajenee ja kutistuu	Lisää lastumisnesteen määrää
	Kalvimen halkaisija on kulunut alamittaiseksi	Teroita ohjeiden mukaiseksi
	Liian pieni syöttö tai lastuamisnopeus	Säädä työstöarvot
	Esireikä on liian pieni	Pienennä työstövaraa.
Ovaali tai kartiomainen reikä	Siirtymä työstökoneen karassa	Korjaa ja oikaise karan siirtymä
	Kalvimen ja reiän kohdistus on huono	Käytä niitinreikäkalvinta
	Epäsymmetrinen lastuamiskartion kulma	Teroita ohjeiden mukaiseksi
Reiän pinnanlaatu on huono	Työstövara on liian suuri	Pienennä työstövaraa.
	Kalvin on kulunut	Teroita ohjeiden mukaiseksi
	Liian pieni rintakulma	Teroita ohjeiden mukaiseksi
	Emulsio tai öljy on liian laimeata	Nosta % pitoisuutta
	Syöttö ja/tai lastuamisnopeus ovat liian pieniä	Säädä työstöarvot
	Lastuamisnopeus on liian suuri	Säädä työstöarvot
Kalvin takertuu ja murtuu	Kalvin on kulunut	Teroita ohjeiden mukaiseksi
	Kalvimen päästö on liian pieni	Tarkista ja korjaa / muotoile kalvin
	Lieriövaippapinta on liian leveä	Tarkista ja korjaa / muotoile kalvin
	Työstettävä raaka-aine on puristuvaa	Käytä säädettävää kalvinta kompensoimaan muutos
	Esireikä on liian pieni	Pienennä työstövaraa.
	Epäpuhdas raaka-aine, jossa on kovia kohtia	Käytä kovametallikalvinta

KIERTEIDEN JYRSINTÄ

YLEISIÄ OHJEITA KIERTEIDEN JYRSINTÄÄN

Kierteen jyrsintä on menetelmä, jossa kierre tehdään jyrsimellä, jonka kehälle on hiottu kierteen profiili

Kierteen jyrsintä vaatii ohjelmoitavan CNC koneen, joka on varustettu nuosuinterpolaatio toiminnolla

Useimmat nykyaikaiset CNC koneet täyttävät kierteen jyrsinnän edellyttämät vaatimukset

Tarkista asia koneen ohjekirjasta, tai pyydä lisätietoja koneen toimittajalta

OMINAISUUDET JA EDUT

Kierteiden jyrsintä parantaa kierteityksen luotettavuutta ja työkalun elinikää

Jyrsinnässä syntyvät lastut ovat pieniä ja siksi kierteitys on ongelmattomampaa

Kierteen toleranssi voidaan säätää tarkasti muuttamalla ohjelman koordinaatteja

Täysimuotoinen kierre voidaan työstää lähelle reiän pohjaa

Samalla jyrsimellä voidaan kierteittää laajalla raaka-ainealueella

Samalla jyrsimellä voidaan kierteittää useita halkaisijoita, kunhan kierteen nousu on sama

Samalla jyrsimellä voidaan kierteittää sekä oikea-, että vasenkätiset sisäpuoliset kierteet

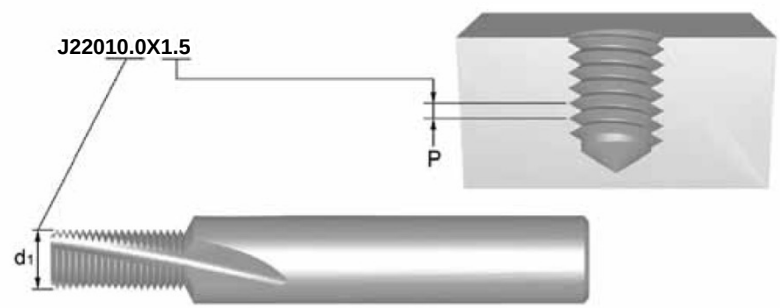
M ja MF kierteiden jyrsimillä (J200, J205, J260) voidaan tehdä myös reiän suun viiste

KIERREJYRSIMEN VALINTA

Kierrejyrsimen tuotekoodi kertoo jyrsimen mallin, halkaisijan (d1) ja kierteen nousun (P)

Työkalu tilataan käyttäen täydellistä tuotekoodia

Tarkista aina esim. luettelosta, että valitset oikean jyrsimen tehtävälle kierteelle



Tätä jyrsintä voidaan käyttää seuraavien kierteiden tekemiseen ≥ M12x1.5 (M14x1.5, M18x1.5 etc)

OHJELMOINTI KÄYTTÄEN Rprg ARVOA

- Kierteen toleranssi on helppoa säätää, kun ohjelmointi tehdään säteen korjauksella
- Rprg on uuden jyrsimen todellinen mitta ja lähtöarvo, joka on painettu jyrsimen varteen. Tämä arvo on hyvä tallentaa muistiin.
- Rprg arvo perustuu kierteen teoreettiseen nollalinjaan. Kun ohjelmointi tehdään Rprg arvolla, tehdystä kierteestä ei tule ylisuurta, vaan yleensä tiukka.
- Tämä tarkoittaa, että oikea kierteen toleranssi saavutetaan tekemällä ohjelmaan pieni koordinaattien korjaus.

OHJEITA KIERTEIDEN JYRSINTÄÄN

- Käytä aina oikeita työstöarvoja (katso työstöarvotaulukoita sivulla 198)
- Käytä suositeltua alkureiän kokoa, sama kuin perinteiselle lastuavalle tapille
- Kierteen toleranssi on helppo säätää kun ohjelma tehdään kierteen korjauksella ja jyrsimen varteen merkityllä Rprg lähtöarvolla
- Tarkista aina tulkilla ensimmäisen kierteen koko ja tee tarvittavat säädöt. Säätöjä voidaan tehdä 2 tai 3 ennen kuin jyrsin on kulunut loppuun
- Työstettäessä kuivana, suosittelemme käyttämään paineilmaa tehostamaan lastujen poistumista
- Kun kierteitetään vaikeita aineita, suosittelemme kierteen työstämistä 2 tai 3 lastuamiskerralla

KIERTEITYS

YLEISIÄ OHJEITA KIERTEITYKSEEN

Kierteen menestykselliseen valmistamiseen ja sen lopputuloksen laatuun vaikuttavat lukuisat tekijät.

1. Valitse oikea kierretappi työstettävän raaka-aineen ja kierteitettävän reiän mukaan. Käytä valinnan apuna MC raaka-ainetaulukkoa.
2. Varmista, että kappale on kiinnitetty hyvin - säteen suuntaiset liikkeet aiheuttavat helposti tapin murtumisen ja huonolaatuisen kierteen.
3. Valitse oikean kokoinen pora. Se on ilmoitettu ko. kierretapin tuotesivulla. Käytä aina terävää poraa, siten työstökarkeneminen pysyy mahdollisimman pienenä.
4. Valitse oikea lastuamisnopeus. Se löytyy kierretappien valintataulukoista.
5. Käytä hyvälaatuista, käyttötarkoitukseen sopivaa, lastuamisöljyä.
6. Tarkista, että koneen syöttö on oikea, erityisesti synkronoidussa työstössä. Käytettäessä uivaa istukkaa, suosittelemme syötöksi 95% - 97% tapin noususta, tällöin kierretappi muodostaa itse oikean nousun.
7. Käytä aina, kun on mahdollista, hyvälaatuista momentilla varustettua kierteitysistukkaa. Siten estetään tapin murtuminen, jos se kierteitettäessä osuu reiän pohjaan. Varmista myös tapin ja reiän yhdensuuntaisuus.
8. Varmista kierretapin pehmeä sisäänmeno. Epätasainen syöttö aiheuttaa helposti kellomaisen kierteen.

TAULUKKO KIERRETAPPIEN JA SYNTYVIEN KIERTEIDEN TOLERANSSEISTA

Toleranssiluokka, Tapit			**Toleranssi, sisäpuolinen kierre (mutteri)**					**Käyttöalue**
ISO	DIN	ANSI BS						
ISO 1	4 H	3 B	4 H	5 H				Välyksetön sovitus
ISO 2	6 H	2 B	4 G	5 G	6 H			Normaali sovitus
ISO 3	6 G	1 B			6 G	7 H	8 H	Väljä sovitus
-	7 G	-				7 G	8 G	Ylikoko lämpökäsittelyä tai pintakäsittelyä varten

VIANETSINTÄ KIERTEITYKSESSÄ TAPEILLA

ONGELMA	SYY	KORJAUS
Ylimitta	Väärä tapin toleranssi	Valitse tappi, jossa on pienempi toleranssi
	Virheellinen aksiaalinen syöttö	Pienennä syöttöä 5-10% tai kiristä pitimen puristusvoimaa
	Käyttötarkoitukseen sopimaton tappi	Käytä suositusten mukaista lastu-uran muotoa. Käytä pinnoitettua tappia estämään irtosärmän muodostusta. Käytä Luetteloa ja Product Selectoria oikean tapin löytymiseksi
	Tappi ei kulje reiän keskellä	Tarkista kiinnitin ja tapin keskeisyys reikään
	Puutteellinen voitelu	Hyvällä voitelulla voi estää irtosärmän muodostumisen. Katso voiteluosa Työstötekniikan käsikirjassa
	Liian pieni lastuamisnopeus	Noudata Luettelon ja Product Selectorin suosituksia
Alimitta	Käyttötarkoitukseen sopimaton tappi	Käytä suositusten mukaista lastu-uran muotoa. Käytä pinnoitettua tappia estämään irtosärmän muodostusta. Valitse suurempi rintakulma. Käytä Luetteloa ja Product Selectoria oikean tapin löytymiseksi
	Väärä tapin toleranssi	Valitse tappi, jossa on suurempi toleranssi, erityisesti kierteitettäessä valurautaa tai ruostumatonta terästä, joilla ei ole ylikokoriskiä
	Puuttellinen tai väärä voitelu	Hyvällä voitelulla voi estää lastun jumittumisen reikään. Katso voiteluosaa Työstötekniikan käsikirjassa
	Alkureikä on liian pieni	Käytä suurempaa poraa. Tarkista alkureiän koko suositustaulukosta
	Reikä kutistuu kierteityksen jälkeen	Katso suosituksia, Luettelosta tai Product Selectorista, sopivan vaihtoehdon löytymiseksi
Murtumat	Käyttötarkoitukseen sopimaton tappi	Valitse pienempi rintakulma. Valitse pidempi etuviiste. Estä lastujen jumittuminen valitsemalla oikean muotoinen lastu-ura. Käytä Luetteloa ja Product Selectoria oikean tapin löytymiseksi.
	Puuttellinen tai väärä voitelu	Hyvällä voitelulla voi estää irtosärmän muodostumisen. Katso voiteluosa Työstötekniikan käsikirjassa
	Tappi osuu reiän pohjaan	Syvennä alkureikää tai lyhennä kierteitystä
	Reiän pinta on työstökarkentunut	Alenna lastuamisnopeutta, käytä pinnoitettua tappia ja hyvää voitelua. Katso osaa ruostumattoman teräksen työstö Työstötekniikan käsikirjassa
	Lastu takertuu paluuliikkeessä	Vältä nopeata suunnan muutosta paluuliikkeeseen
	Etuviiste iskee reiän suuhun	Tarkista aksiaalinen paikoitus ja pienennä akselien eroa.
	Alkureikä on liian pieni	Käytä suurempaa poraa. Tarkista alkureiän koko suositustaulukosta

VIANETSINTÄ KIERTEITYKSESSÄ TAPEILLA

ONGELMA	SYY	KORJAUS
Katkeaminen	Kierretappi on loppuun kulunut	Vaihda uusi tappi tai teroita vanha
	Puutteellinen voitelu	Hyvällä voitelulla voi estää irtosärmän muodostumisen ja lastujen jumittumisen. Katso voiteluosaa
	Tappi osuu reiän pohjaan	Syvennä alkureikää tai lyhennä kierteitystä
	Lastuamisnopeus on liian suuri	Alenna lastuamisnopeutta. Noudata Luettelon ja Product Selectorin suosituksia Työstötekniikan käsikirjassa
	Reiän pinta on työstökarkentunut	Alenna lastuamisnopeutta, käytä pinnoitettua tappia ja hyvää voitelua. Katso osaa ruostumattoman teräksen työstö
	Alkureikä on liian pieni	Käytä suurempaa poraa. Katso alkureiän suositustaulukkoa
	Liian suuri vääntömomentti	Käytä kierteitysistukkaa, jossa on säädettävä momentti
	Reikä kutistuu kierteityksen jälkeen	Katso suosituksia, Luettelosta tai Product Selectorista, sopivan vaihtoehdon löytymiseksi
Kuluu nopeasti	Käyttötarkoitukseen sopimaton tappi	Käytä pienempää rintakulmaa tai/ja suurempaa päästöä ja/tai pidempää etuviistettä. Käytä pinnoitettua tappia. Katso Luetteloa ja Product Selectoria sopivan vaihtoehdon löytymiseksi
	Puutteellinen voitelu	Hyvällä voitelulla voi vähentää irtosärmän muodostumista ja lämpörasitusta lastuavassa särmässä. Katso voiteluosa Työstötekniikan käsikirjassa
	Lastuamisnopeus on liian suuri	Alenna lastuamisnopeutta. Noudata Luettelon ja Product Selectorin suosituksia
Muodostuu irtosärmä	Käyttötarkoitukseen sopimaton tappi	Käytä pienempää rintakulmaa tai/ja suurempaa päästöä. Katso Luetteloa ja Product Selectoria sopivan vaihtoehdon löytymiseksi
	Puutteellinen voitelu	Hyvällä voitelulla voi vähentää irtosärmän muodostumista. Katso voiteluosaa Työstötekniikan käsikirjassa
	Sopimaton pintakäsittely	Tarkista oikea pintakäsittely suosituksista.
	Lastuamisnopeus on liian pieni	Noudata Luettelon ja Product Selectorin suosituksia.

Jyrsintä

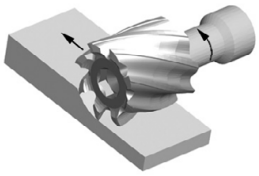
YLEISIÄ OHJEITA JYRSINTÄÄN

Jyrsintä on menetelmä tuottaa koneistettuja pintoja. Siinä jyrsimellä poistetaan ennaltapäätetty määrä raaka-ainetta työstettävästä kappaleesta käyttäen suhteellisen pientä syöttöliikettä ja verrattain suurta pyörimisnopeutta.

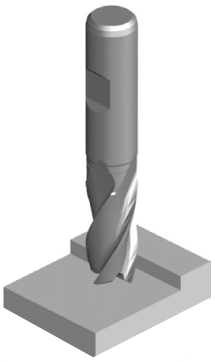
Luonteenomainen piirre jyrsinnässä on, että jyrsimen jokainen hammas poistaa oman osuutensa työstettävästä kappaleesta pienien lastujen muodossa.

JYRSINMALLIT

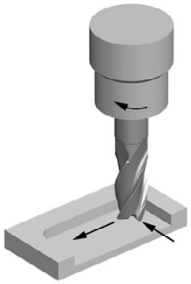
Alla esitetään kolme jyrsinnän perustyöstötapaa: (A) lieriöjyrsintä, (B) otsajyrsintä ja (C) varsijyrsintä.



A



B



C

Lieriöjyrsinnässä jyrsimen akseli on yhdensuuntainen työstettävän kappaleen pinnan kanssa. Jyrsimessä on lukuisia hampaita pitkin kehää ja jokainen hammas käyttäytyy kuten yksihampainen lastuava työkalu.

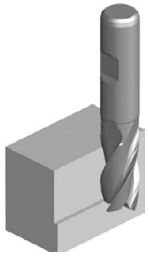
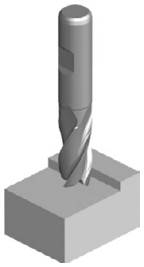
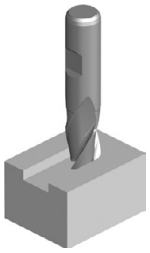
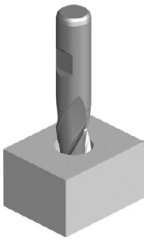
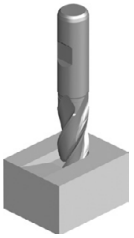
Lieriöjyrsinnässä käytetyissä jyrsimissä voi olla suorat tai kierukanmuotoiset hampaat muodostaen suoran tai vinon työstöliikkeen.

Otsajyrsinnässä jyrsin on asennettu karaan siten, että pyörivä akseli on kohtisuorassa työstettävää pintaa vasten. Työstettävä pinta syntyy sekä jyrsimen kehällä, että päädyssä olevien hampaiden liikkeestä.

Varsijyrsinnässä jyrsimen akseli pyörii yleensä kohtisuorassa työstettävää kappaletta vasten. Se voi olla myös kallellaan työstäen kartiomaisia pintoja. Lastuavat hampaat sijaitsevat sekä jyrsimen päädyssä, että kehällä.

KÄYTTÖALUEET

MRR (raaka-aineen poistokyky) ja käyttöalueet vaikuttavat toisiinsa. Kullakin käyttöalueella on erisuuruinen MRR, joka kasvaa samassa suhteessa kun jyrsin on kiinni työstettävässä kappaleessa. Käyttöalueet ilmaistaan, Dormerin uudessa luettelossa, yksinkertaisilla symboleilla.

Lieriöjyrsintä	Otsajyrsintä	Uran jyrsintä	Upottaminen	Kaivautuminen
				
Lastun paksuus säteen suuntaan tulisi olla alle 0.25 kertaa jyrsimen halkaisija.	Lastun paksuus säteen suuntaan tulisi olla alle 0.9 kertaa halkaisija ja akselin suuntaan alle 0.1 kertaa halkaisija.	Kiilaurien jyrsintä. Lastun paksuus säteen suuntaan on sama kuin halkaisija.	Työstettävää kappaletta voi porata vain jyrsimellä, jossa on lastuava keskiö. Porattaessa syöttö puolitetaan.	Jyrsin kaivautuu kappaleeseen sekä akselin, että säteen suuntaan.

VIANETSINTÄ JYRSINTÄÄN

ONGELMA	SYY	KORJAUS
Katkeaminen	Liian suuri lastunpoisto	Pienennä hammassyöttöä
	Syöttö on liian suuri	Alenna syöttöä
Kuluu nopeasti	Jyrsin tai lastu-ura on liian pitkä	Kiinnitä jyrsin syvemmälle tai käytä lyhyempää jyrsintä
	Työstettävä raaka-aine on kovaa	Valitse Luettelosta tai Selectorista jyrsin, jossa on parempi raaka-aine ja oikea pinnoite
	Sopimaton lastuamisnopeus ja syöttö	Tarkista Luettelosta tai Selectorista oikeat työstöarvot.
	Lastujen poistuminen on huono	Suuntaa nestesuuttimet uudelleen
	Vastajyrsintä	Myötöjyrsintä
	Sopimaton jyrsimen kierukkakulma	Valitse Luettelosta tai Selectorista sopivampi vaihtoehto
Murtuu	Syöttö on liian suuri	Alenna syöttöä
	Tärisee	Pienennä lastuamisnopeutta
	Alhainen lastuamisnopeus	Suurenna lastuamisnopeutta
	Vastajyrsintä	Myötöjyrsintä
	Jyrsin ei ole riittävän tukeva	Valitse lyhyempi jyrsin tai asenna jyrsin syvemmälle istukkaan
	Työstettävä kappale ei ole tukeva	Kiinnitä kappale kunnolla
Jyrsimen elinikä on lyhyt	Työstettävä raaka-aine on lujaa	Valitse Luettelosta tai Selectorista sopivampi vaihtoehto
	Sopimaton lastuamiskulma ja ensiöpäästö	Vaihda oikeaan lastuamiskulmaan
	Jyrsimen ja kappaleen välinen kitka	Käytä pinnoitettua jyrsintä
Pinnan laatu on huono	Syöttö on liian suuri	Alenna syöttö oikeaksi
	Lastuamisnopeus on liian pieni	Nosta lastuamisnopeutta
	Lastu pureutuu	Pienennä lastun pinta-alaa
	Jyrsin on kulunut	Vaihda tai teroita jyrsin
	Syntyy irtosärmää	Vaihda jyrsimeen, jossa on suurempi kierukkakulma
	Lastu hitsautuu	Lisää lastuamisnesteen määrää

ONGELMA	SYY	KORJAUS
Työstötulos on epätarkka	Jyrsin taipuu	Valitse lyhyempi jyrsin tai asenna jyrsin syvemmälle istukkaan
	Hampaita on liian vähän	Käytä useampihampaista jyrsintä
	Löysä/kulunut jyrsinistukka	Korjaa tai vaihda istukka
	Istukan huono tukevuus	Vaihda lyhyempään/tukevampaan istukkaan
	Huono karan tukevuus	Käytä tukevampaa karaa
Värisee	Työstöarvot ovat liian suuret	Tarkista Luettelosta tai Selectorista oikeat työstöarvot
	Jyrsin tai lastu-ura on liian pitkä	Valitse lyhyempi jyrsin tai asenna jyrsin syvemmälle istukkaan
	Lastuamissyvyys on liian suuri	Pienennä lastuamissyvyyttä
	Tukevuus on huono (työstökone ja istukka)	Tarkista istukan kunto ja vaihda tarvittaessa

PYÖRIVÄT KOVAMETALLIVIILAT

YLEISIÄ OHJEITA PYÖRIVILLE KOVAMETALLIVIILOILLE

Pyöriviä viiloja käytetään yleensä komponenttien viimeistelyyn laajalla raaka-ainealueella

Yleensä niitä käytetään käsin asennettuna paineilmakoneisiin

OMINAISUUDET JA EDUT

Karkaistu ja päästetty teräsvarsi varmistaa työkalun tukevuuden ja lujuuden, sekä pienentää taipumis- ja värähtelyriskiä

Tarkasti hiottu varsi varmistaa kiinnityksen ja pienentää liukumisriskiä

Erityinen kovajuottotekniikka varmistaa juotoksen lujuuden korkeissakin lämpötiloissa ja parantaa iskunkestävyyttä

Yleiskäyttöön tarkoitettu Kaksoisleikkuu soveltuu laajalle raaka-aine- ja käyttöalueelle

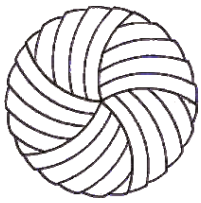
Raaka-ainekohtaisia geometrioita on saatavana teräksiin (ST), ruostumattomiin teräksiin (VA), Alumiineihin (AL) ja komposiitteihin (GRP)

TiAlN pinnoitettu vaihtoehto pidentää työkalun elinikää hiovissa raaka-aineissa ja vaativissa olosuhteissa

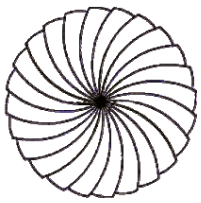
Pallopäisissä malleissa on keskiön yli hiottu “Skip Flute” lastu-uran muoto

Tämä muoto vahvistaa särmiä ja tehostaa työstöominaisuuksia keskiössä. Se myös pienentää lastu-urien tukkeutumisriskiä ja pidentää työkalun elinikää





Skip



Normaali

TURVALLISUUS ENSIN

Suurella nopeudella pyörivät työkalut voivat olla vaarallisia, mikäli niitä käytetään virheellisesti

Kytke hiomakone aina irti paineilmaverkosta ennen kuin aloitat työkalun vaihtamisen

Tarkista hiomakonneen kunto ja käytä mahdollisimman vähän väriseviä koneita

Käytä aina kunnollisia suojavälineitä ja varmista, että kaikki lähelläsi työskentelevät ovat myös suojautuneet sääntöjen mukaan





Henkilökohtaisia suojaimia on käytettävä koko työskentelyn ajan.

SUOSITUKSIA

- Käytä aina sopivalla nopeudella pyrivää hiomakonetta
- Hiomakoneen säännöllinen huolto on tärkeätä. Varmista, että kara on öljytty ja laakerit ovat kunnossa
- Puhdista aina kiristysmutteri ja -holkki sekä hiomakoneen sisäpuolinen kiinnityskartio, kun vaihdat työkalua
- Vältä työkaluun kohdistuvia mekaanisia tärähdyksiä ja raskaita iskuja
- Vältä lämpöshokkeja estämällä työkalun ylikuumenemisen
- Älä upota työkalua liian syvälle kappaleeseen ja varo sen juuttumista kulmiin, tai kanaviin

VIANETSINTÄ TYÖSTETTÄESSÄ PYÖRIVILLÄ VIILOILLA

ONGELMA	SYY
Pyörivän viilan hampaat murtuvat	Pyörimisnopeus on liian pieni, terä alkaa hyppiä
	Epäkeskeisyys (kulunut kara, holkki, tai laakeri)
	Työkalu on uponnut liian syvälle, tai se on juuttunut työkappaleeseen
Pyörivän viilan hampaat tukkeutuvat	Lastu-ura, tai kokonaispituus on liian suuri
	Työkalun lastuamisgeometria on sopimaton työstettävään raaka-aineeseen
Voimakas kuluminen	Pyörimisnopeus on liian suuri ko. terän halkaisijaan ja työstettävään raaka-aineeseen
	Epäkeskeisyys (kulunut kara, holkki, tai laakeri)
Teräpää irtoaa varresta	Pyörimisnopeus on liian suuri aiheuttaen ylikuumenemisen
	Työstöjaksot ovat liian pitkäkestoiset aiheuttaen ylikuumenemisen

Norsk			Hardhet	Strekkstyrke	
Materialgrupper (AMG)			HB	N/mm²	ISO
1. Stål	1.1	Rent jern, myke stål	< 120	< 400	P 1
	1.2	Konstruksjonsstål	< 200	< 700	P 1
	1.3	Kullstål, låglegert stål	< 250	< 850	P 2
	1.4	Legert stål	< 250	< 850	P 3
	1.5	Legert stål, verktøystål/Seigherdingsstål	> 250 < 350	> 850 < 1200	P 4
	1.6	Legert stål, verktøystål/Seigherdingsstål	> 350	> 1200 < 1620	H 1
	1.7	Legert herdet stål	49-55HRC	> 1620	H 3
	1.8	Legert herdet stål	55-63HRC	> 1980	H 4
2. Rustfritt stål	2.1	Rustfritt automatstål	< 250	< 850	M 1
	2.2.	Austenitiske	< 320	< 1100	M 3
	2.3	Ferritaustenitiske (duplex), Ferritiske, Martensitiske	< 300	< 1000	M 2
	2.4	Utskillingsherdet	>320 <410	>1100 <1400	S 2
3. Støpejern	3.1	Gråjern	< 150	> 500	K 1
	3.2	Gråjern	> 150 <300	> 500 < 1000	K 2
	3.3	Seigjern Aducergods	< 200	< 700	K 3
	3.4	Seigjern Aducergods	> 200 < 300	> 700 < 1000	K 4
4. Titan	4.1	Titan, ren	< 200	< 700	S 1
	4.2	Titanlegeringer	< 270	< 900	S 2
	4.3	Titanlegeringer	> 270 < 350	> 900 ≤ 1250	S 3
5. Nikkel	5.1	Nikkel, ren	< 150	< 500	S 1
	5.2	Nikkel, legeringer	< 270	> 900	S 2
	5.3	Nikkel, legeringer	> 270 < 350	> 900 < 1200	S 3
6. Kopper	6.1	Kopper	< 100	< 350	N 3
	6.2	Messing/Bronse	< 200	< 700	N 4
	6.3	Myk messing	< 200	< 700	N 3
	6.4	Cu-Al-Fe-Legeringer	< 470	< 1500	N 4
7. Aluminium Magnesium	7.1	Ren aluminium, magnesium	< 100	< 350	N 1
	7.2	Al legeringer, Si<0.5%	< 150	< 500	N 1
	7.3	Al legeringer, Si>0.5%<10%	< 120	< 400	N 1
	7.4	Al legeringer, Si>10% Whisker forsterket Al-leg., Mg leg.	< 120	< 400	N 2
8. Syntetiske materialer	8.1	Myk plast	---	---	O
	8.2	Hard plast	---	---	O
	8.3	Armert plast	---	---	O
9. Harde materialer	9,1	Cermets (metal-keramikk)	< 550	< 1700	H
10. Grafitt	10.1	Standard Grafitt	---	< 100	O

DORMER

EKSEMPEL PÅ ARBEIDSMATERIAL FRA ULIKE STANDARER

AMG	EN	W Nr.	DIN	BS	SS	USA	UNS	ISO
1.1		1.1015, 1.1013	Rfe60, Rfe100	230Mo7, 050A12	1160	Leaded Steels	G12120	P 1
1.2	EN 10 025 – S235JRG2	1.1012, 1.1053, 1.7131	St37-2, 16MnCr5, St50-2	060A35, 080M40, 4360-50B	1312, 1412, 1914	135, 30	G10100	P 1
1.3	EN 10 025 – E295	1.1191, 1.0601	CK45, C60	080M46, 080A62	1550, 2142, 2172	1024, 1060, 1061	G10600	P 2
1.4	EN 10 083-1 – 42 CrMo 4 - EN 10 270-2	1.7225, 1.3505, 1.6582, 1.3247	42CrMo4, 100Cr6, 34CrNiMo6, S2-10-1-8	708M40/42, 817M40, 534A99, BM2, BT42	1672-04, 2090, 2244-02, 2541-02	4140, A2, 4340, M42, M2	G41270, G41470, T30102, T11342	P 3
1.5	EN ISO 4957 – HS6-5-2 - EN-ISO 4957 – HS6-5-2-5	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, 55NiCrMoV6, X210Cr12, S2-10-1-8	B01, BM2, BT42, 826 M40, 830M31	2244-04, 2541-03, 2550, 2722, 2723	01, L6, M42, D3, A2, M2, 4140, 8630	G86300, T30102' T11302, T30403, T11342	P 4
1.6	EN-ISO 4957 – HS2-9-1-8	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, X210Cr12, S2-10-1-8	801, 826 M40, 830M31	2244-05, 2541-05, , HARDOX 400	01, L6, M42, D3, 4140, 8130	T30403, G41400, J14047	H 1
1.7	EN-ISO 4957 – HS2-9-1-8	1.2510	100MnCrW4	BO1, BD3, BH13	HARDOX 500			H 3
1.8	EN-ISO 4957 – X40CrMoV5-1	1.3343, 1.2344	S6-5-2, GX40CrMoV5-1	BM2, BH13	2242 HARDOX 600			H 4
2.1	EN 10 088-3 – X14CrMoS17	1.4305, 1.4104	X10CrNiS189, X12CrMoS17	303 S21 , 416 S37	2301, 2312, 2314, 2346, 2380	303, 416, 430F	S30300, S41600, S43020	M 1
2.2.	EN 10 088-2,0 -3 – 1.4301+AT	1.4301, 1.4541, 1.4571	X5CrNi189 X10CrNiMoTi1810	304 S15, 321 S17, 316 S, 320 S12	2310, 2333, 2337, 2343, 2353, 2377	304, 321, 316	S30400, S32100, S31600	M 3
2.3	EN 10 088-3 – 1.4460	1.4460, 1.4512, 1.4582	XBCrNiMo275, X4CrNiMoN6257	317 S16, 316 S16	2324, 2387, 2570	409, 430, 436	S40900, S4300, S43600	M 2
2.4	EN 1.4547	1.4547	X2CrNiMo20-18-6	HR41	2378	17-4PH	S31254	S 2
3.1	EN 1561 – EN-JL1030	0.6010, 0.6040	GG10, GG40	Grade150, Grade 400	0120, 0212, 0814	ASTM A48 class 20	F11401, F12801	K 1
3.2	EN 1561 – EN-JL1050	0.6025, 0.6040	GG25, GG40	Grade200, Grade 400	0125, 0130, 0140, 0217	ASTM A48 class 40, STM A48 class 60	F12801, F14101	K 2
3.3	EN 1561 – EN-JL2040	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	420/12, P440/7, 700/2, 30g/72	0219, 0717, 0727, 0732, 0852	ASTM A220 grade 40010, ASTM A602 grade M4504	F22830, F20001	K 3
3.4	EN 1561 – EN-JL2050	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	420/12, P440/7, 700/2, 30g/72	0221, 0223, 0737, 0854	ASTM A220 grade 90001, ASTM A602 grade M8501	F26230, 20005	K 4
4.1		3.7024LN	Ti99,8	TA1 to 9	Ti99,8	ASTM B265 grade 1	R50250	S 1
4.2		3.7164LN, 3.7119LN	TiAl6V4, TiAl55n2	TA10 to 14, TA17	TiAl6V4, TiAl5Sn2	AMS4928	R54790	S 2
4.3		3.7164LN, 3.7174LN, 3.7184LN	TiAl6V4, TiAl6V5Sn2, TiAl4MoSn2	TA10 to 13, TA28	TiAl6V5Sn2	AMS4928, AMS4971	R56400, R54790	S 3
5.1		2.4060, 2.4066	Nickel 200, 270, Ni99,6	NA 11, NA12	Ni200, Ni270	Nickel 200, Nickel 230	N02200, N02230	S 1
5.2		2.4630LN, 2.4602, 2.4650LN	Nimonic 75, Monel 400, Hastelloy C, Inconel 600	HR203, 3027-76		Nimonic 75,Monel400, Hastelloy, Inconel600	N06075, N10002, N04400, N06600	S 2
5.3		2.4668LN, 2.4631LN, 2.6554LN	Inconel 718, Nimonic 80A, Waspaloy	HR8, HR401, 601		Inconel 718, 625, Nimonic 80	N07718, N07080, N06625	S 3
6.1	EN 1652 – CW004A	2.0060, 2.0070	E-Cu57, SE-Cu	C101	5010	101	C10100, C1020	N 3
6.2	EN 1652 – CW612N	2.0380, 2.0360, 2.1030, 2.1080	CuZn39Pb2, CuZn40, CuSn8, CuSn6Zn	CZ120, CZ109,PB104	5168		C28000, C37710	N 4
6.3	EN 1652 – CW508L	2.0321, 2.0260	CuZn37, CuZn28	CZ108,CZ106	5150		C2600, C27200	N 3
6.4			Ampco 18, Ampco 25	AB1 type	5238, JM7-20			N 4
7.1	EN 485-2 – EN AW-1070A	3.0255	Al99,5	LMO, 1 B (1050A)	4005	EC, 1060, 1100	A91060, A91100	N 1
7.2	EN 755-2 – EN AW-5005	3.1355, 3.3525	AlCuMg2, AlMg2Mn0,8	LM5, 10, 12, N4 (5251)	4106, 4212	380, 520.0, 520.2, 2024, 6061	A03800, A05200, A92024	N 1
7.3	EN 1706 – EN AC-42000	3.2162.05, 3.2341.01	GD-AlSi8Cu, G-AlSi5Mg	LM2,4,16,18,21,22,, 24,25,26,27,L109	4244	319.0, 333.0, 319.1, 356.0	A03190, A03330, C35600	N 1
7.4	SS-EN 1706 – EN AC-47000	3.2581.01	G-AlSi18, G-AlSi12	LM6, 12,13, 20, 28, 29, 30	4260, 4261, 4262	4032, 222.1, A332.0	A94032, A02220, A13320	N 2
8.1				Polystyrene, Nylon, PVC Cellulose, Acetate & Nitrate		Polystyrene, Nylon, PVC		O
8.2				Ebonite, Tufnol, Bakelite		Bakelite		O
8.3				Kevlar, Printed Circuit boards		Kevlar		O
9,1				Ferrotic, Ferrotitanit				H
10.1				Graphite				O

Omdreinings tabell

DORMER

Vc																	
m/Min		5	8	10	15	20	25	30	40	50	60	70	80	90	100	110	150
Feet/Min		16	26	32	50	66	82	98	130	165	197	230	262	296	330	362	495
Ø		RPM															
mm	inch																
1,00		1592	2546	3183	4775	6366	7958	9549	12732	15916	19099	22282	25465	28648	31831	35014	47747
1,50		1061	1698	2122	3183	4244	5305	6366	8488	10610	12732	14854	16977	19099	21221	23343	31831
2,00		796	1273	1592	2387	3183	3979	4775	6366	7958	9549	11141	12732	14324	15916	17507	23873
2,50		637	1019	1273	1910	2546	3183	3820	5093	6366	7639	8913	10186	11459	12732	14006	19099
3,00		531	849	1061	1592	2122	2653	3183	4244	5305	6366	7427	8488	9549	10610	11671	15916
3,18	1/8	500	801	1001	1501	2002	2502	3003	4004	5005	6006	7007	8008	9009	10010	11011	15015
3,50		455	728	909	1364	1819	2274	2728	3638	4547	5457	6366	7276	8185	9095	10004	13642
4,00		398	637	796	1194	1592	1989	2387	3183	3979	4775	5570	6366	7162	7958	8754	11937
4,50		354	566	707	1061	1415	1768	2122	2829	3537	4244	4951	5659	6366	7074	7781	10610
4,76	3/16	334	535	669	1003	1337	1672	2006	2675	3344	4012	4681	5350	6018	6687	7356	10031
5,00		318	509	637	955	1273	1592	1910	2546	3183	3820	4456	5093	5730	6366	7003	9549
6,00		265	424	531	796	1061	1326	1592	2122	2653	3183	3714	4244	4775	5305	5836	7958
6,35	1/4	251	401	501	752	1003	1253	1504	2005	2506	3008	3509	4010	4511	5013	5514	7519
7,00		227	364	455	682	909	1137	1364	1819	2274	2728	3183	3638	4093	4547	5002	6821
7,94	5/16	200	321	401	601	802	1002	1203	1604	2004	2405	2806	3207	3608	4009	4410	6013
8,00		199	318	398	597	796	995	1194	1592	1989	2387	2785	3183	3581	3979	4377	5968
9,00		177	283	354	531	707	884	1061	1415	1768	2122	2476	2829	3183	3537	3890	5305
9,53	3/8	167	267	334	501	668	835	1002	1336	1670	2004	2338	2672	3006	3340	3674	5010
10,00		159	255	318	477	637	796	955	1273	1592	1910	2228	2546	2865	3183	3501	4775
11,11	7/16	143	229	287	430	573	716	860	1146	1433	1719	2006	2292	2579	2865	3152	4298
12,00		133	212	265	398	531	663	796	1061	1326	1592	1857	2122	2387	2653	2918	3979
12,70	1/2	125	201	251	376	501	627	752	1003	1253	1504	1754	2005	2256	2506	2757	3760
14,00		114	182	227	341	455	568	682	909	1137	1364	1592	1819	2046	2274	2501	3410
14,29	9/16	111	178	223	334	446	557	668	891	1114	1337	1559	1782	2005	2228	2450	3341
15,00		106	170	212	318	424	531	637	849	1061	1273	1485	1698	1910	2122	2334	3183
15,88	5/8	100	160	200	301	401	501	601	802	1002	1203	1403	1604	1804	2004	2205	3007
16,00		99	159	199	298	398	497	597	796	995	1194	1393	1592	1790	1989	2188	2984
17,46	11/16	91	146	182	273	365	456	547	729	912	1094	1276	1458	1641	1823	2005	2735
18,00		88	141	177	265	354	442	531	707	884	1061	1238	1415	1592	1768	1945	2653
19,05	3/4	84	134	167	251	334	418	501	668	835	1003	1170	1337	1504	1671	1838	2506
20,00		80	127	159	239	318	398	477	637	796	955	1114	1273	1432	1592	1751	2387
24,00		66	106	133	199	265	332	398	531	663	796	928	1061	1194	1326	1459	1989
25,00		64	102	127	191	255	318	382	509	637	764	891	1019	1146	1273	1401	1910
27,00		59	94	118	177	236	295	354	472	589	707	825	943	1061	1179	1297	1768
30,00		53	85	106	159	212	265	318	424	531	637	743	849	955	1061	1167	1592
32,00		50	80	99	149	199	249	298	398	497	597	696	796	895	995	1094	1492
36,00		44	71	88	133	177	221	265	354	442	531	619	707	796	884	973	1326
40,00		40	64	80	119	159	199	239	318	398	477	557	637	716	796	875	1194
50,00		32	51	64	95	127	159	191	255	318	382	446	509	573	637	700	955

Hardhet / Strekkstyrke

HV Vickers	HRC Rockwell	HB Brinell	N/ mm^2	Tons/ sq. in.
940	68			
900	67			
864	66			
829	65			
800	64			
773	63			
745	62			
720	61			
698	60			
675	59			
655	58		2200	142
650		618	2180	141
640		608	2145	139
639	57	607	2140	138
630		599	2105	136
620		589	2070	134
615	56	584	2050	133
610		580	2030	131
600		570	1995	129
596	55	567	1980	128
590		561	1955	126
580		551	1920	124
578	54	549	1910	124
570		542	1880	122
560	53	532	1845	119
550		523	1810	117
544	52	517	1790	116
540		513	1775	115
530		504	1740	113
527	51	501	1730	112
520		494	1700	110
514	50	488	1680	109
510		485	1665	108
500		475	1630	105
497	49	472	1620	105
490		466	1595	103
484	48	460	1570	102
480		456	1555	101
473	47	449	1530	99
470		447	1520	98
460		437	1485	96
458	46	435	1480	96
450		428	1455	94
446	45	424	1440	93
440		418	1420	92

HV Vickers	HRC Rockwell	HB Brinell	N/ mm^2	Tons/ sq. in.
434	44	413	1400	91
423	43	402	1360	88
413	42	393	1330	86
403	41	383	1300	84
392	40	372	1260	82
382	39	363	1230	80
373	38	354	1200	78
364	37	346	1170	76
355	36	337	1140	74
350		333	1125	73
345	35	328	1110	72
340		323	1095	71
336	34	319	1080	70
330		314	1060	69
327	33	311	1050	68
320		304	1030	67
317	32	301	1020	66
310	31	295	995	64
302	30	287	970	63
300		285	965	62
295		280	950	61
293	29	278	940	61
290		276	930	60
287	28	273	920	60
285		271	915	59
280	27	266	900	58
275		261	880	57
272	26	258	870	56
270		257	865	56
268	25	255	860	56
265		252	850	55
260	24	247	835	54
255	23	242	820	53
250	22	238	800	52
245		233	785	51
243	21	231	780	50
240		228	770	50
235		223	755	49
230		219	740	48
225		214	720	47
220		209	705	46
215		204	690	45
210		199	675	44
205		195	660	43
200		190	640	41

Tolerans

	Ø mm							
	> 1 ≤ 3	> 3 ≤ 6	> 6 ≤ 10	> 10 ≤ 18	> 18 ≤ 30	> 30 ≤ 50	> 50 ≤ 80	> 80 ≤ 120
Tol	µm							
e8	-14 / -28	-20 / -38	-25 / -47	-32 / -59	-40 / -73	-50 / -89	-60 / -106	-72 / -126
f6	-6 / -12	-10 / -18	-13 / -22	-16 / -27	-20 / -33	-25 / -41	-30 / -49	- 36 / -58
f7	-6 / -16	-10 / -22	-13 / -28	-16 / -34	-20 / -41	-25 / -50	-30 / -60	-36 / -71
h6	0 / -6	0 / -8	0 / -9	0 / -11	0 / -13	0 / -16	0 / -19	0 / -22
h7	0 / -10	0 / -12	0 / -15	0 / -18	0 / -21	0 / -25	0 / -30	0 / -35
h8	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33	0 / -39	0 / -46	0 / -54
h9	0 / -25	0 / -30	0 / -36	0 / -43	0 / -52	0 / -62	0 / -74	0 / -87
h10	0 / -40	0 / -48	0 / -58	0 / -70	0 / -84	0 / -100	0 / -120	0 / -140
h11	0 / -60	0 / -75	0 / -90	0 / -110	0 / -130	0 / -160	0 / -190	0 / -220
h12	0 / -100	0 / -120	0 / -150	0 / -180	0 / -210	0 / -250	0 / -300	0 / -350
k10	+40 / 0	+48 / 0	+58 / 0	+70 / 0	+84 / 0	+100 / 0	+120 / 0	+140 / 0
k12	+100 / 0	+120 / 0	+150 / 0	+180 / 0	+210 / 0	+250 / 0	+300 / 0	+350 / 0
m7	+2 / +12	+4 / +16	+6 / +21	+7 / +25	+8 / +29	+9 / +34	+11 / +41	+13 / +48
js14	+/- 125	+/- 150	+/- 180	+/- 215	+/- 260	+/- 310	+/- 370	+/- 435
js16	+/- 300	+/- 375	+/- 450	+/- 550	+/- 650	+/- 800	+/- 950	+/- 1100
H7	+10 / 0	+12 / 0	+15 / 0	+18 / 0	+21 / 0	+25 / 0	+30 / 0	+35 / 0
H8	+14 / 0	+18 / 0	+22 / 0	+27 / 0	+ 33 / 0	+39 / 0	+46 / 0	+54 / 0

1µm = 0.001mm

BORING

GENERELLE TIPS OM BORING

1. Velg det boret som passer best til bruksområdet. Ta hensyn til materialet som skal bearbeides, kapasiteten til boremaskinen og kjølemiddelet som skal brukes.
2. Kast i arbeidsstykket og spindelen på boremaskinen kan forårsake skader på boret samt på arbeidsstykket og maskinen. Sørg for at stabiliteten er så god som mulig til enhver tid. For å oppnå dette er det lurt å velge kortest mulig bor for bruksområdet.
3. Det er viktig å feste boret på riktig måte når du skal bore. Boret må ikke glippe eller bevege seg i kjoksen.
4. Bruk av egnede kjøle- og smøremidler anbefales der den aktuelle typen boring krever dette. Hvis du bruker kjøle- og smøremidler, må du sørge for at dette påføres i rikelige mengder, spesielt på borepunktet.
5. Fjerning av spon under boring er svært viktig for å sikre at boringen blir utført på riktig måte. Du må aldri la spon sette seg fast i rillene på boret.
6. Når du skal etterslipe bor, må du alltid sørge for at spissgeometrien blir riktig, og at eventuell slitasje har blitt fjernet.

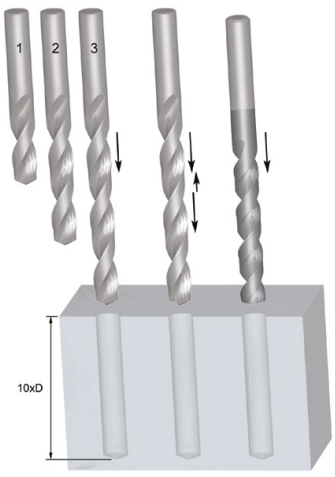
HULLSTØRRELSE

Siden borenes geometriske, underlags- og beleggsmessige egenskaper er i ferd med å bli mer avanserte, blir det stadig enklere å lage mer nøyaktig størrelse på hullene. Generelt vil et verktøy med standard geometri kunne oppnå en hullstørrelse på H12. Men bor med avanserte egenskaper kan under gode forhold oppnå en hullstørrelse på H8. For å gi deg mer informasjon har vi ført opp noen produkttyper og de mulige hulltoleransene deres:

- HSS-universalbor – H12
- HSS / HSS-E dyphullsbor, med parabolske riller – H10
- Kraftig karbidbelegg – H8/H9

STRATEGI FOR DYPHULLSBORING

Når du skal bore dype hull, kan du bruke flere metoder for å oppnå riktig dybde. Eksempelet nedenfor viser fire metoder du kan bruke for å bore et hull med 10 ganger diameteren til boret.



	Serieboring	Serieboring
Antall bor	3 (2,5 x D, 6 x D, 10 x D)	2 (2,5 x D, 10 x D)
Type bor	Standard geometri, universal	Standard geometri, universal
+ / -	Dyrt Tidkrevende	Mer kostnadseffektivt Raskt

	Trinnvis boring	Kontinuerlig boring
Antall bor	1 (10 x D)	1 (10 x D)
Type bor	Standard geometri, universal	Formål spesifikke verktøy
+ / -	Tidkrevende	Kostnadseffektivt Raskt

FEILSØKING VED BORING

PROBLEM	ÅRSAK	LØSNING
Ødelagte eller vridde skaft	Dårlig tilpasning mellom skaft og holder	Kontroller at skaftet og holderen er rene og fri for skader
Tverreggen splitter seg	For kraftig mating	Reduser matingen til optimal hastighet
	For liten utgangsklaring	Etterslip til spesifikasjonene stemmer
	For kraftig tynning av tverreggen	Etterslip til spesifikasjonene stemmer
	Kraftig belastning på borepunktet	Unngå belastning på borepunktet. Vær forsiktig når du setter inn eller tar ut bor med koniske skaft i spindelen
Slitte ytre kanter	For høy hastighet	Reduser hastigheten til optimalt nivå – kan kunne øke matingen
Ødelagte ytre kanter	Ustabilt oppsett av arbeidsstykket	Reduser bevegelsene i arbeidsstykket
Hakkete skjær	For stor utgangsklaring	Etterslip til spesifikasjonene stemmer
Brudd der rillene slutter	Blokkering av rillene	Trekk ut boret med jevne mellomrom (trinnvis boring) for å fjerne spon
	Boret glipper	Sørg for at boret sitter godt festet i kjoksen og spindelen
Spiralformet hull	Utilstrekkelig mating	Øk matingen
	Lite nøyaktig posisjonering	Bruk senterbor før du borer
Hullet er for stort	Feilaktig spissgeometri	Kontroller spissgeometrien
	Ineffektiv sponfjerning	Juster hastigheten, matingen og lengden på uttrekkingen for å få mer håndterbar spon

BROTSJING

GENERELLE TIPS OM BROTSJING

For å oppnå best mulig resultat ved bruk av brotsj er det viktig å sette brotsjen "i arbeid". Mange gjør den feilen at de borer vekk for mye materiale før de begynner med brotsjingen. Hvis det er for lite materiale igjen i hullet før brotsjingen begynner, vil brotsjen begynne å skrape og raskt vise tegn til slitasje. Dette vil redusere brotsjens diameter. Det er like viktig ikke å la det være igjen for mye materiale i hullet. (Se Fjerning av materiale nedenfor).

1. Velg optimal type brotsj og optimal hastighet og mating basert på bruksområdet. Sørg for at de forhåndsborede hullene har riktig diameter.

2. Arbeidsstykket må holdes fast, og spindelen på maskinen må være uten kast.

3. Kjokser som brukes til å holde brotsjer med rett skaft, må være av god kvalitet. Hvis brotsjen glipper i kjoksen og det brukes automatisk mating, kan brotsjen knekke.

4. Hold verktøyoverhenget fra maskinspindelen på et minimum.

5. Bruk anbefalte smøremidler for å forlenge brotsjens levetid, og sørg for at væsken når skjærekantene. Siden brotsjing ikke er noen tung skjæreoperasjon, holder det vanligvis med en oljeblanding på 40:1. Luftblåsing kan brukes på grått støpejern ved tørr maskinbearbeiding.

6. Du må ikke la rillene på brotsjen bli blokkert av spon.

7. Før du ettersliper brotsjen, må du kontrollere rundgangsnøyaktigheten. I de fleste tilfeller er det bare nødvendig å etterslipe skjærfasen.

8. Brotsjer må holdes skarpe. Regelmessig ettersliping er økonomisk fornuftig, men det er viktig å forstå at brotsjer bare skjærer på skjærfasen, ikke på den sylindriske delen. Derfor er det bare skjærfasen som trenger ettersliping. Nøyaktigheten på etterslipingen er viktig for kvaliteten på hullet og levetiden til verktøyet.

FJERNING AV MATERIALE

Anbefalt metode for fjerning av materiale ved brotsjing avhenger av materialet og overflatebehandlingen i det forhåndsborede hullet. De følgende tabellene inneholder generelle retningslinjer for fjerning av materiale:

Størrelse på brotsjet hull (mm)	I forhåndsboret tilstand	I forhåndskjerneboret tilstand
Under 4	0.1	0.1
Over 4 til 11	0.2	0.15
Over 11 til 39	0.3	0.2
Over 39 til 50	0.4	0.3

Størrelse på brotsjet hull (tommer)	I forhåndsboret tilstand	I forhåndskjerneboret tilstand
Under 3/16	0.004	0.004
3/16 til ½	0.008	0.006
½ til 1 ½	0.010	0.008
1 ½ til 2	0.016	0.010

TOLERANSEGRENSER



1. FOR SKJÆREDIAMETEREN TIL STANDARDBROTSJER
   Diameteren (d1) måles på tvers av den sylindriske delen av brotsjens skjær umiddelbart bak skjærfasen. Toleransen samsvarer med DIN 1420, og er beregnet å gi hull med H7-toleranse.

BROTSJTOLERANSE			
Diameter (mm)		Toleransegrense (mm)	
Over	Til og med	Øvre +	Nedre +
	3	0.008	0.004
3	6	0.010	0.005
6	10	0.012	0.006
10	18	0.015	0.008

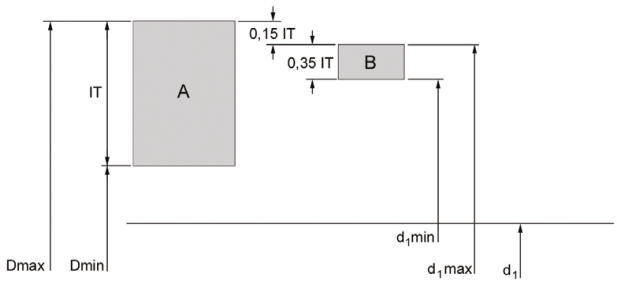
BROTSJTOLERANSE			
Diameter (mm)		Toleransegrense (mm)	
Over	Til og med	Øvre +	Nedre +
18	30	0.017	0.009
30	50	0.021	0.012
50	80	0.025	0.014

2. FOR ET H7-HULL
   Den vanligste toleransen for et ferdig hull er H7 (se tabellen nedenfor). For andre toleranser kan du bruke figuren og tabellen under punkt 3 til å beregne brotsjens toleranse for plassering og bredde.

HULLTOLERANSE			
Diameter (mm)		Toleransegrense (mm)	
Over	Til og med	Øvre +	Nedre +
	3	0.010	0
3	6	0.012	0
6	10	0.015	0
10	18	0.018	0

HULLTOLERANSE			
Diameter (mm)		Toleransegrense (mm)	
Over	Til og med	Øvre +	Nedre +
18	30	0.021	0
30	50	0.025	0
50	80	0.030	0

3. Hvis du må definere dimensjonene til en spesialbrotsj som skal skjære til en bestemt toleranse, f.eks. D8, kan du benytte deg av denne godt utprøvde oversikten.



A = Hulltoleranse
B = Brotsjtoleranse
IT = Toleransebredde
Dmax = Hullets maksdiameter
Dmin = Hullets minimumsdiameter
d_1 = Nominell diameter
$d_1$max = Brotsjens maksdiameter
$d_1$min = Brotsjens minimumsdiameter

	Toleransebredde for diameteren (mm)							
Toleransebredde (mikrometer)	over 1 inkl. 3	over 3 inkl. 6	over 6 inkl. 10	over 10 inkl. 18	over 18 inkl. 30	over 30 inkl. 50	over 50 inkl. 80	over 80 inkl. 120
IT5	4	5	6	8	9	11	13	15
IT6	6	8	9	11	13	16	19	22
IT7	10	12	15	18	21	25	30	35
IT8	14	18	22	27	33	39	46	54
IT9	25	30	36	43	52	62	74	87
IT10	40	48	58	70	84	100	120	140
IT11	60	75	90	110	130	160	190	220
IT12	100	120	150	180	210	250	300	350

f.eks. 10 mm hull med toleransen D8, maksdia. = 10,062, mindia. = 10,040, hulltol. (IT8) = 0,022

Maksgrense: 0,15 x hulltoleranse (IT8) = 0,0033, rundet opp = 0,004
Minimumsgrense: 0,35 x hulltoleranse (IT8) = 0,0077, rundet opp = 0,008

Maksgrense for brotsj = 10,062 - 0,004 = 10,058
Minimumsgrense for brotsj = 10,058 - 0,008 = 10,050

FEILSØKING VED BROTSJING

PROBLEM	ÅRSAK	LØSNING
Ødelagte eller vridde skaft	Feil tilpasning mellom skaft og holder	Kontroller at skaftet og holderen er rene og fri for skader
Hurtig slitasje av verktøyet	For lite materiale å fjerne	Øk mengden materiale som skal fjernes
For stort hull	For stor variasjon i høyden på skjær	Etterslip til spesifikasjonene stemmer
	Maskinspindelens slaglengde	Reparer og korriger slaglenden til spindelen
	Bøyes i kjoksen	Skift ut kjoksen
	Verktøyskaftet er skadet	Skift ut eller etterslip skaftet
	Ovaliteten til verktøyet	Skift ut eller etterslip verktøyet
	Asymmetrisk vinkel på skjærfasen	Etterslip til spesifikasjonene stemmer
	For høy mating eller skjærehastighet	Juster skjæreforholdene i samsvar med katalogen
For lite hull	For lite materiale å fjerne	Øk mengden materiale som skal fjernes
	For kraftig varmeutvikling under brotsjing. Hullet utvider seg og krymper	Øk strømmen av kjølemiddel
	Verktøydiameteren er slitt, og er for liten	Etterslip til spesifikasjonene stemmer
	For lav mating eller skjærehastighet	Juster skjæreforholdene i samsvar med katalogen
	Det forhåndsborede hullet er for lite	Reduser mengden materiale som skal fjernes
Ovale og koniske hull	Maskinspindelens slaglengde	Reparer og korriger slaglenden til spindelen
	Feiltilpasning mellom verktøyet og hullet	Bruk en maskinbrotsj for nithull
	Asymmetrisk vinkel på skjærfasen	Etterslip til spesifikasjonene stemmer
Dårlig pussing av hull	For mye materiale å fjerne	Reduser mengden materiale som skal fjernes
	Utslitt verktøy	Etterslip til spesifikasjonene stemmer
	For liten sponvinkel	Etterslip til spesifikasjonene stemmer
	For utvannet emulsjon eller skjæreolje	Øk oljeprosenten
	For lav mating og/eller hastighet	Juster skjæreforholdene i samsvar med katalogen
	For høy skjærehastighet	Juster skjæreforholdene i samsvar med katalogen
Verktøyet setter seg fast og brekker	Utslitt verktøy	Etterslip til spesifikasjonene stemmer
	Den koniske enden på verktøyet er for liten	Kontroller og skift ut / modifiser verktøyet
	Den sylindriske delen er for bred	Kontroller og skift ut / modifiser verktøyet
	Arbeidsstykket blir klemt	Bruk en justerbar brotsj for å kompensere for feilmargin
	Det forhåndsborede hullet er for lite	Reduser mengden materiale som skal fjernes
	Uensartet materiale med harde inklusjoner	Bruk en solid hardmetallbrotsj

GJENGEFRESING

GENERELLE RÅD OM GJENGEFRESING

Gjengefresing er en prosess som innebærer å gjengen som innebærer sirkelinterpolering med en fres som har en slipt gjengeprofil for oppgaven

For å kunne bruke en gjengefres kreves det en CNC-maskin som har en sirkelinterpolering eller gjengefres syklus

De fleste nyere CNC-maskiner er utstyrt med syklus for sirkelinterpolering eller gjengefres syklus.

Studer maskinmanualen eller kontakt maskinleverandøren for informasjon.

FUNKSJONER OG FORDELER

Gjengefresing gir sikker maskinopperasjon og øket verktøylivslengde

Gjengefresing lager små sponer som gir en problemfri gjengeprosess

Tolleransejustering kan gjøres gjennom programmering

Gjengefresing gir muligheter å gjenge helt til bunn av hullet

En gjengefres med bruksområde i de fleste materialer

En gjengefres kan brukes på flere dimensjoner med samme stigning

Både høyre og venstre gjenger kan bruke samme fres

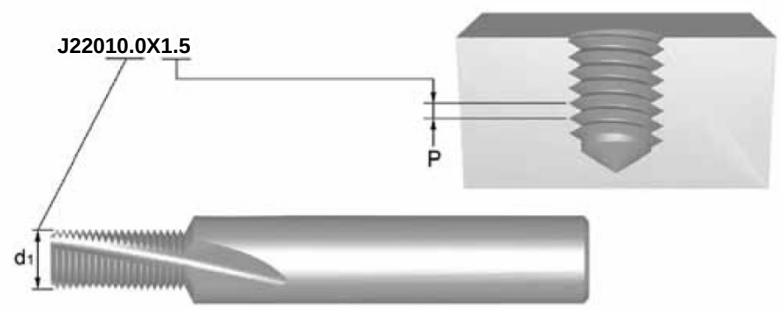
Noen av gjengefresene kan også frese fasen på hullet (J200, J205, J260)

Velg verktøy

Gjengefresen har en artikkelkode som består av type, diameter (d1) og stigning (P)

Bruk artikkelkoden ved bestilling av gjengefresen

Bruk alltid katalogen for å være sikker på at du bestiller rett verktøy



Denne gjengefresen kan brukes for gjenger ≥ M12x1.5 (M14x1.5, M18x1.5 osv)

PROGRAMERING MED Rprg

- For enkelt å justere toleransen bruk alltid radiuskompensering
- Rprg verdien er en startverdi for nye gjengefreser. Denne er verdien står på skaftet på gjengefresen. Sett inn verdien i verktøyoffsettet i maskinen
- Rprg er basert på den teoretiske verdien. Denne verdien vil normalt være i minus. Kontroller alltid det første hullet for å justere til ønsket verdi
- Det betyr at du kan endre gjengenes mål med små justeringer i verktøyoffsettet til ønsket mål

ANBEFALINGER

- Bruk alltid anbefalt skjæredata
- Bruk samme gjengebor som for en skjærende tapp.
- Start alltid med Rprg-verdien som står på skaftet og juster etter behov.
- Bruk en gjengetolk for å sjekke første gjenge for å justere radien etter behov. Radien kan justeres 2 til 3 ganger før fresen er slitt
- Kjører du uten kjøling bruk luft for å fjerne spon.
- Ved gjenging i vanskelige materialer, bør du bruke 2 eller 3 passeringer.

GJENGING

GENERELLE TIPS OM GJENGING

Vellykket gjenging avhenger av flere faktorer som alle påvirker kvaliteten på det ferdige produktet.

1. Velg riktig utformet gjengetapp basert på materialet og typen hull, dvs. gjennomgående hull eller blindhull, ved hjelp av tabellen for materialklassifisering.
2. Sørg for at arbeidsstykket er godt festet, da tverrgående bevegelser kan føre til at gjengetappen knekker, eller at gjengene blir av dårlig kvalitet.
3. Velg riktig størrelse på boret via den aktuelle siden i katalogen. Du må alltid sørge for at deformasjonsherding av arbeidsstykket holdes på et minimum.
4. Velg riktig skjærehastighet som vist på produktsiden i katalogen.
5. Bruk riktig skjærevæske for bruksområdet.
6. For NC-gjenger må du sørge for at det velges riktig matingsverdi for programmet. Hvis du bruker ekstra gjengeutstyr, anbefales 95–97 % gjengestigning slik at gjengetappen kan lage egen gjengestigning.
7. Der det er mulig, bør du holde gjengetappen ved hjelp av kvalitetsgjengeutstyr med momentbegrensning, da dette sikrer fri aksialbevegelse for gjengetappen og plasserer den vinkelrett i hullet. I tillegg beskytter det gjengetappen mot å brekke hvis den skulle kjøres til bunns i et blindhull.
8. Sørg for at gjengetappen føres jevnt inn i hullet, da ujevn mating kan forårsake hull med skjev åpning.

TABELL FOR GJENGETAPP TOLERANSE OPP MOT TOLERANSE FOR INNVENDIG GJENGER (MUTTER)

Toleranse klasse, Tapp			Toleranse, innvendig gjenger (mutter)					Applikasjon
ISO	DIN	ANSI BS						
ISO 1	4 H	3 B	4 H	5 H				Press passning
ISO 2	6 H	2 B	4 G	5 G	6 H			Normal passning
ISO 3	6 G	1 B			6 G	7 H	8 H	Løs passning
-	7 G	-				7 G	8 G	Ekstra løs passning for eks. beleggning

PROBLEMER VED GJENGING MED TAPP

PROBLEM	ÅRSAK	LØSNING
Overmål	Feil toleranse	Velg en tapp med mindre gjengetoleranse
	Feil aksial mating	Reduser matingen med 5-10%, eller øk motstanden i den flytende tappholderen
	Feil type tapp for applikasjonen	Bruk spondrivende tapp for gjennomgående hull og spiral tapp for bunn hull. Se i Dormer hoved katalog eller Product Selector for rett anbefaling
	Tapp ikke i senter av hull	Kontroler tappholder og posisjoner gjengetappen i hullets senter
	Manglende smøring	Bruk anbefalt skjæreolje for å forbygge slitasje. Se seperta avsnitt for smøring.
	Manglende smøring	Se anbefalinger i Dormer katalog eller Product Selector
Undermål	Feil type tapp for applikasjonen	Bruk spondrivende tapp for gjennomgående hull og spiral tapp for bunn hull. Se Dormer katalog eller Product Selector for rett anbefaling
	Feil toleranse	Velg tapp med større toleranse, spesialt i material som ikke har en tendens til overmål. Eksempel støpejern og rustfritt.
	Feil eller manglende smøring	Bruk rett smøring for å hindre eggdannelse. Se smøremiddel seksjon i teknisk håndbok
	For liten hulldiameter	Øk til maks diameter. Se egen tabell for hulltoleranse.
	Material krymper etter gjenging	Velg rett verktøy for materialet, se Dormer katalog eller Product Selector.
Slitasje	Feil type tapp for applikasjonen	Velg en tapp med lenger sponvinkel og lengre fas. Bruk spiral for bunnhull og spondrinemde for gjennomgående hull. Se Dormer katalog eller Product Selector for rett anbefaling.
	Feil eller manglende smøring	Bruk rett smøring for å hindre slitasje. Se smøremiddel seksjon i teknisk håndbok
	Tapp går i bunn på hullet	Øk bordybde på forboret hull eller reduser gjengedybde
	Deformasjonsherding i hullet	Reduser omdreining, bruk belagd verktøy, bruk god smørning. Se seksjonen for bearbeiding av rustfritt stål i teknisk handbok
	Sponklemm ved reversering	Ungå plutslig retur ved reversering av gjengetapp
	Fasen treffer inngangen på hullet	Kontroler tappens posisjon i forhold til hullet senter
	For liten hulldiameter	Øk til maks diameter. Se egen tabell for hulltoleranse.

PROBLEMER VED GJENGING MED TAPP

PROBLEM	ÅRSAK	LØSNING
Tapp brudd	Utslitt gjengetapp	Bytt til ny gjengetapp eller omslip i henhold til spesifikasjoner
	Manglende smøring	Bruk anbefalt skjæreolje for å forbygge eggdannelse. Se seperta avsnitt for smøring.
	Tapp går i bunn på hullet	Øk bordybde på forboret hull eller reduser gjengedybde
	For høy skjærehastighet	Reduser skjærehastighet. Se anbefalinger i Dormer katalog eller Product Selector
	Deformasjonsherding i hullet	Reduser omdreining, bruk belagd verktøy, bruk god smørning. Se seksjonen for bearbeiding av rustfritt stål i teknisk handbok
	For liten hulldiameter	Øk til maks diameter. Se egen tabell for hulltoleranse.
	For høyt vridmoment	Bruk tappholder med mulighet for justering av moment
	Material krymper etter gjenging	Velg rett verktøy for materialet, se Dormer katalog eller Product Selector.
For tidlig slitasje	Feil type tapp for applikasjonen	Velg en tapp med lenger sponvinkel og lengre fas. Bruk spiral for bunnhull og spondrinemde for gjennomgående hull. Se Dormer katalog eller Product Selector for rett anbefaling.
	Manglende smøring	Bruk anbefalt skjæreolje for å forbygge eggdannelse. Se seperta avsnitt for smøring.
	For høy skjærehastighet	Reduser skjærehastighet. Se anbefalinger i Dormer katalog eller Product Selector
Eggdannelse	Feil type tapp for applikasjonen	Velg en tapp med lenger sponvinkel og/eller høyere etterskjæring. Se Dormer katalog eller Product Selector for rett anbefaling.
	Manglende smøring	Bruk anbefalt skjæreolje for å forbygge eggdannelse. Se seperta avsnitt for smøring.
	Ikke anbefalt belegg	Velg gjengetapp med anbefalt belegg
	For lav skjærhastighet	Øke skjærehastighet. Se anbefalinger i Dormer katalog eller Product Selector

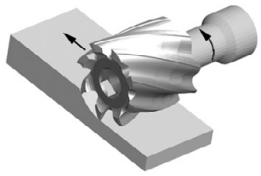
FRESING

GENERELL ANBEFALINGER VED FRESING

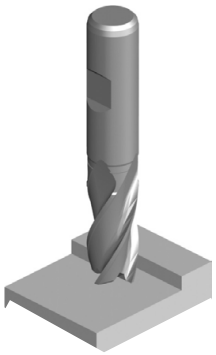
Fresing er en prosess der man skaper en bearbeidet overflate ved å frese bort et bestemt inngrepp fra arbeidsstykket ved att et freseverktøy roterer med en bestemt hastighet og beveger seg fram med en relativt lav hastighet
En karakteristisk egenskap med fresing er at hvert skjæreegg skjærer bort en liten del av materialet og genererer spon.

ULIKE TYPER FRESEVERKTØY

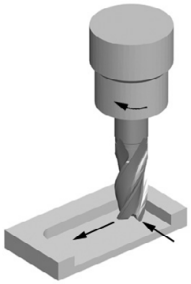
De tre grundleggende freseoperasjonene vises nedenfor: (A) valsefresing, (B) planfresing og (C) pinnfresing.



A



B



C

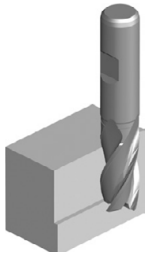
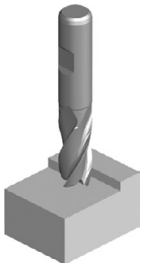
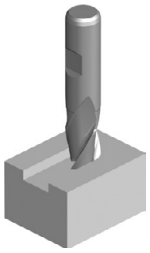
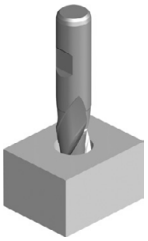
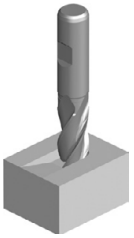
Ved valsfresing er verktøyets rotatsjonsaksel parallell med den bearbeidende flate. Fresen har et antall skjær langs pereferien. Valsfreser kan ha rette eller spiralslipede skjær som genererer en plan eller skrå handling.

Ved planfresing er fresen sett i en spindel med en roterende aksel vinkelrett på arbeidsstykkets overflate. Den freste overflaten dannes av skjær plasert på pereferien og enden av fresen.

Ved pinnfresing er fresens roterende aksel vinkelrett på arbeidsstykkets overflate. Fresen kan vinkles for å bearbeide vinklet plan. Pinnfresen har vanligvis skjæregg på pereferien og enden av fresen.

FORSKJELLIGE APPLIKASJONER

Avvirkningshastigheten Q kan beregnes som mengden bearbeidet material delt på bearbeidnings tiden. Mengden bearbeidet material er arbetsstykkets opprinnelige mengde minus den mengde som står igjen etter bearbeidning. Bearbeidningstiden er den tiden det tar for verktøyet å bevege seg over hele lengden av arbeidsstykket. Dette parameteret har stor påvirkning på overflatens utseende efter bearbeidning.

Side Fresing	Plan Fresing	Spor Fresing	Boring	Rampning
				
Det radielle inngrepet bør være mindre en 0,25 ganger diameter på fresen.	Det radielle inngrepet må ikke overstige 0,9 ganger diameter på fresen. Det aksielle ingrepet må ikke være mindre en 0,1 ganger diameter på fresen.	Maskinering av kilspor. Det radielle kuttet er lik diameter på fresen.	Det er mulig å bore med freser som har skjær over senter på fresen. Ved boring reduser matingen med antall skjær. 2-skjær 1/2 mating, 3-skjær 1/3 mating osv.	Både aksial og radial bevegelse av verktøy inn i arbeidsstykket.

PROBLEMER VED FRESING

PROBLEM	ÅRSAK	LØSNING
Brudd	Fors stort inngrep	Reduser inngrep pr. skjær
	For høg mating	Reduser mating
Høg slitasje	For lang sporlengde eller totallengde	Reduser overheng eller bruk kortere fres
	Arbeidsstykket materiale for hardt	Se i Dormer katalog eller Product Selector for rett anbefaling av fres med rett material og belegging.
	Feil mating og omdreining	Sjekk Dormer katalog eller Produkt Selector for rette anbefalinger
	Dårlig spon evakuering	Endre rettning på kjøling
	Motfresing	Medfresing
	Feil spiralvinkel på fres	Se Dormer katalog eller Product Selector for rett anbelaing av fres
Slitasje	Mating for høy	Reduser mating
	Vibrasjoner	Reduser omdreining
	For lav omdreining	Øk omdreining
	Motfresing	Medfresing
	Verktøystabilitet	Velg en kortere fres og/eller minske overheng.
	Arbeidstykkets stabilitet	Forbedre oppspenning av arbeidsstykke
Kort vertøylivslengde	Tøff arbeidsmateriell	Se Dormer katalog eller Produkt Selector for riktig anbefaling av verktøy
	Feil sponvinkel eller sleppvinkel	Endre til rett utførelse
	Vibrasjoner mellom verktøy og arbeidsstykke	Bruk belagd verktøy
Dårlig overflate	For høy mating	Reduser til riktig mating
	Omdreining for lav	Juster opp omdreining
	Sponklem	Reduser inngrep
	Verktøy slitasje	Bytt eller slip om verktøy
	Løsegg	Bytt eller slip om verktøy
	Kaldsveising	Kontroler kjølevæske innhold og trykk

PROBLEM	ÅRSAK	LØSNING
Feil på arbeidstykkets overflate	Verktøy avbøying	Velg et kortere verktøy og/eller reduser overheng
	For få antall skjær	Endre til fres med flere skjær
	Slitt verktøyholder	Reparer eller bytt verktøyholder
	Dårlig stabilitet i verktøyholder	Bytt til kortere/ mer stabil verktøyholder
	Dårlig stabilitet i spindel	Bytt til maskin med mer stabil spindel
Vibrasjoner	Mating og omdreining for høy	Se Dormer katalog eller Product Selector for rett anbefalinger av mating og omdreining
	For lang sporlengde eller total lengde	Bytt til kortere fres eller kortere overheng
	For stort inngrep	Reduser ingrep
	Arbeidsstykkets stabilitet	Forbedre oppspenning

ROTERENDE HARTMETALLFILER

GENERELLE RÅD OM ROTERENDE HARTMETALLFILER

Bruksområdet for roterende hartmetallfiler er grading og enkel sliping i ulike materialer.

Be brukes som regel i håndholdte luftmaskiner.

EGENSKAPER OG FORDELER

Herdet og anløpte stålskaft gir høy stivhet og forhindrer vibrasjoner og svikt i verktøyet

Nøyaktige slipte skaft for sikker innspenning

Spesiell loddemetode som motstår høye temperaturer og trykk.

Den universale Double Cut-geometrien fungerer i en rekke materialer og applikasjoner

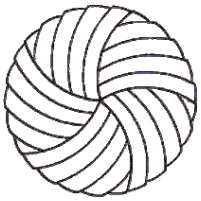
Det finnes også materialtilpasset geometrier for stål (ST), Rustfritt (VA), aluminium (AL) og glassfiber (GRP)

TiAlN belegg for å forlenge levetiden i slitende materialer

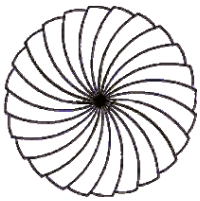
De kuleformede filene har overlappende sporform geometri

Det gjør at filen skjærer helt inn til senter av filen noe som reduserer mulighet for at noe står igjen





Hopp over



Normal

Sikkerheten først

Verktøy med høye hastigheter er farlige og kan årsake skader om det brukes feil

Koble alltid fra trykkluften før bytte av filen.

Sjekk filens tilstand og bruk filer med lavere vibrasjon

Bruk alltid riktig verneutstyr og hold avstand til de andre rundt deg





Bruk alltid personlig verneutstyr

Anbefalinger

- Bruke alltid en maskin som har omdreining innenfor de anbefalte grensene
- Det er viktig og kontrollere maskinens lager og smøring regelmessig.
- Rengjør alltid mutter, hylse og innvendig kon for hylsen ved bytte av fil
- Unngå slag og høyt trykk på filen
- Unngå å overopphete filen
- Ikke kjør filen for dypt i materialet å påse at den ikke kniper fast i en kant eller spor

Feilsøking ROTERENDE FILER

PROBLEM	Årsak
Skjærene knekker	For lav omdreining kan være årsak at filen hogger
	Kast pga sliten spindel, hylse eller lager
	For dypt inngrep eller at filer kniper
Skjærene sitter igjen	For lang sporlengde og totallengde
	Feil valg av geometri for arbeidsmaterialet
For har rask slitasje	For høy omdreining for denne størrelse av fil og materialet
	Kast pga sliten spindel, hylse eller lager
Fil hode løsner	For høy omdreining som forårsaker høy temperatur
	For lang inngreps tid som forårsaker høy temperatur

Dansk			Hårdhed	Styrke	
Applikationsmaterialegrupper (AMG)			HB	N/mm²	ISO
1. Stål	1.1	Rent jern, blødt stål	< 120	< 400	P 1
	1.2	Konstruktionsstål	< 200	< 700	P 1
	1.3	Kulstofstål, lavt leg.stål	< 250	< 850	P 2
	1.4	Legeret stål	< 250	< 850	P 3
	1.5	Legeret stål/ Værktøjsstål, seghærdningsstål	> 250 < 350	> 850 < 1200	P 4
	1.6	Legeret stål/ Værktøjsstål, seghærdningsstål	> 350	> 1200 < 1620	H 1
	1.7	Legeret stål, Hærdet	49-55HRC	> 1620	H 3
	1.8	Legeret stål, Hærdet	55-63HRC	> 1980	H 4
2. Rustfrit stål	2.1	Rustfrit automatstål	< 250	< 850	M 1
	2.2.	Austenitisk	< 320	< 1100	M 3
	2.3	Ferritisk+Austenitisk, Martensitisk	< 300	< 1000	M 2
	2.4	Udskilningshærdet	>320 <410	>1100 <1400	S 2
3. Støbejern	3.1	Gråjern	< 150	> 500	K 1
	3.2	Gråjern	> 150 <300	> 500 < 1000	K 2
	3.3	Segjern/ Aducergods	< 200	< 700	K 3
	3.4	Segjern/ Aducergods	> 200 < 300	> 700 < 1000	K 4
4. Titan	4.1	Titan, ren	< 200	< 700	S 1
	4.2	Titanlegeringer	< 270	< 900	S 2
	4.3	Titanlegeringer	> 270 < 350	> 900 ≤ 1250	S 3
5. Nikkel	5.1	Nikkel, ren	< 150	< 500	S 1
	5.2	Nikkellegeringer	< 270	> 900	S 2
	5.3	Nikkellegeringer	> 270 < 350	> 900 < 1200	S 3
6. Kobber	6.1	Kobber	< 100	< 350	N 3
	6.2	Messing, Bronze	< 200	< 700	N 4
	6.3	Blød messing	< 200	< 700	N 3
	6.4	Cu-Al-Fe-legeringer	< 470	< 1500	N 4
7. Aluminium Magnesium	7.1	Ren aluminium, magnesium	< 100	< 350	N 1
	7.2	Al-legeringer, Si<0.5%	< 150	< 500	N 1
	7.3	Al-legeringer, Si>0.5%<10%	< 120	< 400	N 1
	7.4	Al-legeringer, Si>10% Whisker-forstærket, Al-legeringer, Mg-legeringer	< 120	< 400	N 2
8. Syntetiske materialer	8.1	Blød plast	---	---	O
	8.2	Hårde plast	---	---	O
	8.3	Armerede plastmaterialer	---	---	O
9. Hård materialer	9,1	Cermets (metal-keramik)	< 550	< 1700	H
10. Grafit	10.1	Standard grafit	---	< 100	O

DORMER

DORMER

EKSEMPEL PÅ ARBEJDSMATERIALEI
FORSKELLIGE STANDARDER

AMG	EN	W Nr.	DIN	BS	SS	USA	UNS	ISO
1.1		1.1015, 1.1013	Rfe60, Rfe100	230Mo7, 050A12	1160	Leaded Steels	G12120	P 1
1.2	EN 10 025 – S235JRG2	1.1012, 1.1053, 1.7131	St37-2, 16MnCr5, St50-2	060A35, 080M40, 4360-50B	1312, 1412, 1914	135, 30	G10100	P 1
1.3	EN 10 025 – E295	1.1191, 1.0601	CK45, C60	080M46, 080A62	1550, 2142, 2172	1024, 1060, 1061	G10600	P 2
1.4	EN 10 083-1 – 42 CrMo 4 - EN 10 270-2	1.7225, 1.3505, 1.6582, 1.3247	42CrMo4, 100Cr6, 34CrNiMo6, S2-10-1-8	708M40/42, 817M40, 534A99, BM2, BT42	1672-04, 2090, 2244-02, 2541-02	4140, A2, 4340, M42, M2	G41270, G41470, T30102, T11342	P 3
1.5	EN ISO 4957 – HS6-5-2 - EN-ISO 4957 – HS6-5-2-5	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, 55NiCrMoV6, X210Cr12, S2-10-1-8	B01, BM2, BT42, 826 M40, 830M31	2244-04, 2541-03, 2550, 2722, 2723	01, L6, M42, D3, A2, M2, 4140, 8630	G86300, T30102' T11302, T30403, T11342	P 4
1.6	EN-ISO 4957 – HS2-9-1-8	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, X210Cr12, S2-10-1-8	801, 826 M40, 830M31	2244-05, 2541-05, , HARDOX 400	01, L6, M42, D3, 4140, 8130	T30403, G41400, J14047	H 1
1.7	EN-ISO 4957 – HS2-9-1-8	1.2510	100MnCrW4	BO1, BD3, BH13	HARDOX 500			H 3
1.8	EN-ISO 4957 – X40CrMoV5-1	1.3343, 1.2344	S6-5-2, GX40CrMoV5-1	BM2, BH13	2242 HARDOX 600			H 4
2.1	EN 10 088-3 – X14CrMoS17	1.4305, 1.4104	X10CrNiS189, X12CrMoS17	303 S21 , 416 S37	2301, 2312, 2314, 2346, 2380	303, 416, 430F	S30300, S41600, S43020	M 1
2.2.	EN 10 088-2,0 -3 – 1.4301+AT	1.4301, 1.4541, 1.4571	X5CrNi189 X10CrNiMoTi1810	304 S15, 321 S17, 316 S, 320 S12	2310, 2333, 2337, 2343, 2353, 2377	304, 321, 316	S30400, S32100, S31600	M 3
2.3	EN 10 088-3 – 1.4460	1.4460, 1.4512, 1.4582	XBCrNiMo275, X4CrNiMoN6257	317 S16, 316 S16	2324, 2387, 2570	409, 430, 436	S40900, S4300, S43600	M 2
2.4	EN 1.4547	1.4547	X2CrNiMo20-18-6	HR41	2378	17-4PH	S31254	S 2
3.1	EN 1561 – EN-JL1030	0.6010, 0.6040	GG10, GG40	Grade150, Grade 400	0120, 0212, 0814	ASTM A48 class 20	F11401, F12801	K 1
3.2	EN 1561 – EN-JL1050	0.6025, 0.6040	GG25, GG40	Grade200, Grade 400	0125, 0130, 0140, 0217	ASTM A48 class 40, STM A48 class 60	F12801, F14101	K 2
3.3	EN 1561 – EN-JL2040	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	420/12, P440/7, 700/2, 30g/72	0219, 0717, 0727, 0732, 0852	ASTM A220 grade 40010, ASTM A602 grade M4504	F22830, F20001	K 3
3.4	EN 1561 – EN-JL2050	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	420/12, P440/7, 700/2, 30g/72	0221, 0223, 0737, 0854	ASTM A220 grade 90001, ASTM A602 grade M8501	F26230, 20005	K 4
4.1		3.7024LN	Ti99,8	TA1 to 9	Ti99,8	ASTM B265 grade 1	R50250	S 1
4.2		3.7164LN, 3.7119LN	TiAl6V4, TiAl55n2	TA10 to 14, TA17	TiAl6V4, TiAl5Sn2	AMS4928	R54790	S 2
4.3		3.7164LN, 3.7174LN, 3.7184LN	TiAl6V4, TiAl6V5Sn2, TiAl4MoSn2	TA10 to 13, TA28	TiAl6V5Sn2	AMS4928, AMS4971	R56400, R54790	S 3
5.1		2.4060, 2.4066	Nickel 200, 270, Ni99,6	NA 11, NA12	Ni200, Ni270	Nickel 200, Nickel 230	N02200, N02230	S 1
5.2		2.4630LN, 2.4602, 2.4650LN	Nimonic 75, Monel 400, Hastelloy C, Inconel 600	HR203, 3027-76		Nimonic 75,Monel400, Hastelloy, Inconel600	N06075, N10002, N04400, N06600	S 2
5.3		2.4668LN, 2.4631LN, 2.6554LN	Inconel 718, Nimonic 80A, Waspaloy	HR8, HR401, 601		Inconel 718, 625, Nimonic 80	N07718, N07080, N06625	S 3
6.1	EN 1652 – CW004A	2.0060, 2.0070	E-Cu57, SE-Cu	C101	5010	101	C10100, C1020	N 3
6.2	EN 1652 – CW612N	2.0380, 2.0360, 2.1030, 2.1080	CuZn39Pb2, CuZn40, CuSn8, CuSn6Zn	CZ120, CZ109,PB104	5168		C28000, C37710	N 4
6.3	EN 1652 – CW508L	2.0321, 2.0260	CuZn37, CuZn28	CZ108,CZ106	5150		C2600, C27200	N 3
6.4			Ampco 18, Ampco 25	AB1 type	5238, JM7-20			N 4
7.1	EN 485-2 – EN AW-1070A	3.0255	Al99,5	LMO, 1 B (1050A)	4005	EC, 1060, 1100	A91060, A91100	N 1
7.2	EN 755-2 – EN AW-5005	3.1355, 3.3525	AlCuMg2, AlMg2Mn0,8	LM5, 10, 12, N4 (5251)	4106, 4212	380, 520.0, 520.2, 2024, 6061	A03800, A05200, A92024	N 1
7.3	EN 1706 – EN AC-42000	3.2162.05, 3.2341.01	GD-AlSi8Cu, G-AlSi5Mg	LM2,4,16,18,21,22,, 24,25,26,27,L109	4244	319.0, 333.0, 319.1, 356.0	A03190, A03330, C35600	N 1
7.4	SS-EN 1706 – EN AC-47000	3.2581.01	G-AlSi18, G-AlSi12	LM6, 12,13, 20, 28, 29, 30	4260, 4261, 4262	4032, 222.1, A332.0	A94032, A02220, A13320	N 2
8.1				Polystyrene, Nylon, PVC Cellulose, Acetate & Nitrate		Polystyrene, Nylon, PVC		O
8.2				Ebonite, Tufnol, Bakelite		Bakelite		O
8.3				Kevlar, Printed Circuit boards		Kevlar		O
9,1				Ferrotic, Ferrotitanit				H
10.1				Graphite				O

Omregningstabel Skærehastighed - omdrejninger

DORMER

Vc																	
m/Min		5	8	10	15	20	25	30	40	50	60	70	80	90	100	110	150
Feet/Min		16	26	32	50	66	82	98	130	165	197	230	262	296	330	362	495
Ø		RPM															
mm	inch																
1,00		1592	2546	3183	4775	6366	7958	9549	12732	15916	19099	22282	25465	28648	31831	35014	47747
1,50		1061	1698	2122	3183	4244	5305	6366	8488	10610	12732	14854	16977	19099	21221	23343	31831
2,00		796	1273	1592	2387	3183	3979	4775	6366	7958	9549	11141	12732	14324	15916	17507	23873
2,50		637	1019	1273	1910	2546	3183	3820	5093	6366	7639	8913	10186	11459	12732	14006	19099
3,00		531	849	1061	1592	2122	2653	3183	4244	5305	6366	7427	8488	9549	10610	11671	15916
3,18	1/8	500	801	1001	1501	2002	2502	3003	4004	5005	6006	7007	8008	9009	10010	11011	15015
3,50		455	728	909	1364	1819	2274	2728	3638	4547	5457	6366	7276	8185	9095	10004	13642
4,00		398	637	796	1194	1592	1989	2387	3183	3979	4775	5570	6366	7162	7958	8754	11937
4,50		354	566	707	1061	1415	1768	2122	2829	3537	4244	4951	5659	6366	7074	7781	10610
4,76	3/16	334	535	669	1003	1337	1672	2006	2675	3344	4012	4681	5350	6018	6687	7356	10031
5,00		318	509	637	955	1273	1592	1910	2546	3183	3820	4456	5093	5730	6366	7003	9549
6,00		265	424	531	796	1061	1326	1592	2122	2653	3183	3714	4244	4775	5305	5836	7958
6,35	1/4	251	401	501	752	1003	1253	1504	2005	2506	3008	3509	4010	4511	5013	5514	7519
7,00		227	364	455	682	909	1137	1364	1819	2274	2728	3183	3638	4093	4547	5002	6821
7,94	5/16	200	321	401	601	802	1002	1203	1604	2004	2405	2806	3207	3608	4009	4410	6013
8,00		199	318	398	597	796	995	1194	1592	1989	2387	2785	3183	3581	3979	4377	5968
9,00		177	283	354	531	707	884	1061	1415	1768	2122	2476	2829	3183	3537	3890	5305
9,53	3/8	167	267	334	501	668	835	1002	1336	1670	2004	2338	2672	3006	3340	3674	5010
10,00		159	255	318	477	637	796	955	1273	1592	1910	2228	2546	2865	3183	3501	4775
11,11	7/16	143	229	287	430	573	716	860	1146	1433	1719	2006	2292	2579	2865	3152	4298
12,00		133	212	265	398	531	663	796	1061	1326	1592	1857	2122	2387	2653	2918	3979
12,70	1/2	125	201	251	376	501	627	752	1003	1253	1504	1754	2005	2256	2506	2757	3760
14,00		114	182	227	341	455	568	682	909	1137	1364	1592	1819	2046	2274	2501	3410
14,29	9/16	111	178	223	334	446	557	668	891	1114	1337	1559	1782	2005	2228	2450	3341
15,00		106	170	212	318	424	531	637	849	1061	1273	1485	1698	1910	2122	2334	3183
15,88	5/8	100	160	200	301	401	501	601	802	1002	1203	1403	1604	1804	2004	2205	3007
16,00		99	159	199	298	398	497	597	796	995	1194	1393	1592	1790	1989	2188	2984
17,46	11/16	91	146	182	273	365	456	547	729	912	1094	1276	1458	1641	1823	2005	2735
18,00		88	141	177	265	354	442	531	707	884	1061	1238	1415	1592	1768	1945	2653
19,05	3/4	84	134	167	251	334	418	501	668	835	1003	1170	1337	1504	1671	1838	2506
20,00		80	127	159	239	318	398	477	637	796	955	1114	1273	1432	1592	1751	2387
24,00		66	106	133	199	265	332	398	531	663	796	928	1061	1194	1326	1459	1989
25,00		64	102	127	191	255	318	382	509	637	764	891	1019	1146	1273	1401	1910
27,00		59	94	118	177	236	295	354	472	589	707	825	943	1061	1179	1297	1768
30,00		53	85	106	159	212	265	318	424	531	637	743	849	955	1061	1167	1592
32,00		50	80	99	149	199	249	298	398	497	597	696	796	895	995	1094	1492
36,00		44	71	88	133	177	221	265	354	442	531	619	707	796	884	973	1326
40,00		40	64	80	119	159	199	239	318	398	477	557	637	716	796	875	1194
50,00		32	51	64	95	127	159	191	255	318	382	446	509	573	637	700	955

Hårdhed / Styrke

HV Vickers	HRC Rockwell	HB Brinell	N/ mm^2	Tons/ sq. in.
940	68			
900	67			
864	66			
829	65			
800	64			
773	63			
745	62			
720	61			
698	60			
675	59			
655	58		2200	142
650		618	2180	141
640		608	2145	139
639	57	607	2140	138
630		599	2105	136
620		589	2070	134
615	56	584	2050	133
610		580	2030	131
600		570	1995	129
596	55	567	1980	128
590		561	1955	126
580		551	1920	124
578	54	549	1910	124
570		542	1880	122
560	53	532	1845	119
550		523	1810	117
544	52	517	1790	116
540		513	1775	115
530		504	1740	113
527	51	501	1730	112
520		494	1700	110
514	50	488	1680	109
510		485	1665	108
500		475	1630	105
497	49	472	1620	105
490		466	1595	103
484	48	460	1570	102
480		456	1555	101
473	47	449	1530	99
470		447	1520	98
460		437	1485	96
458	46	435	1480	96
450		428	1455	94
446	45	424	1440	93
440		418	1420	92

HV Vickers	HRC Rockwell	HB Brinell	N/ mm^2	Tons/ sq. in.
434	44	413	1400	91
423	43	402	1360	88
413	42	393	1330	86
403	41	383	1300	84
392	40	372	1260	82
382	39	363	1230	80
373	38	354	1200	78
364	37	346	1170	76
355	36	337	1140	74
350		333	1125	73
345	35	328	1110	72
340		323	1095	71
336	34	319	1080	70
330		314	1060	69
327	33	311	1050	68
320		304	1030	67
317	32	301	1020	66
310	31	295	995	64
302	30	287	970	63
300		285	965	62
295		280	950	61
293	29	278	940	61
290		276	930	60
287	28	273	920	60
285		271	915	59
280	27	266	900	58
275		261	880	57
272	26	258	870	56
270		257	865	56
268	25	255	860	56
265		252	850	55
260	24	247	835	54
255	23	242	820	53
250	22	238	800	52
245		233	785	51
243	21	231	780	50
240		228	770	50
235		223	755	49
230		219	740	48
225		214	720	47
220		209	705	46
215		204	690	45
210		199	675	44
205		195	660	43
200		190	640	41

	Ø mm							
	> 1 ≤ 3	> 3 ≤ 6	> 6 ≤ 10	> 10 ≤ 18	> 18 ≤ 30	> 30 ≤ 50	> 50 ≤ 80	> 80 ≤ 120
Tol	µm							
e8	-14 / -28	-20 / -38	-25 / -47	-32 / -59	-40 / -73	-50 / -89	-60 / -106	-72 / -126
f6	-6 / -12	-10 / -18	-13 / -22	-16 / -27	-20 / -33	-25 / -41	-30 / -49	- 36 / -58
f7	-6 / -16	-10 / -22	-13 / -28	-16 / -34	-20 / -41	-25 / -50	-30 / -60	-36 / -71
h6	0 / -6	0 / -8	0 / -9	0 / -11	0 / -13	0 / -16	0 / -19	0 / -22
h7	0 / -10	0 / -12	0 / -15	0 / -18	0 / -21	0 / -25	0 / -30	0 / -35
h8	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33	0 / -39	0 / -46	0 / -54
h9	0 / -25	0 / -30	0 / -36	0 / -43	0 / -52	0 / -62	0 / -74	0 / -87
h10	0 / -40	0 / -48	0 / -58	0 / -70	0 / -84	0 / -100	0 / -120	0 / -140
h11	0 / -60	0 / -75	0 / -90	0 / -110	0 / -130	0 / -160	0 / -190	0 / -220
h12	0 / -100	0 / -120	0 / -150	0 / -180	0 / -210	0 / -250	0 / -300	0 / -350
k10	+40 / 0	+48 / 0	+58 / 0	+70 / 0	+84 / 0	+100 / 0	+120 / 0	+140 / 0
k12	+100 / 0	+120 / 0	+150 / 0	+180 / 0	+210 / 0	+250 / 0	+300 / 0	+350 / 0
m7	+2 / +12	+4 / +16	+6 / +21	+7 / +25	+8 / +29	+9 / +34	+11 / +41	+13 / +48
js14	+/- 125	+/- 150	+/- 180	+/- 215	+/- 260	+/- 310	+/- 370	+/- 435
js16	+/- 300	+/- 375	+/- 450	+/- 550	+/- 650	+/- 800	+/- 950	+/- 1100
H7	+10 / 0	+12 / 0	+15 / 0	+18 / 0	+21 / 0	+25 / 0	+30 / 0	+35 / 0
H8	+14 / 0	+18 / 0	+22 / 0	+27 / 0	+ 33 / 0	+39 / 0	+46 / 0	+54 / 0

1µm = 0.001mm

BORING

GENERELLE RÅD OM BORING

1. Vælg det mest egnede bor til bearbejdningen. Med hensyn for materialet, der skal bearbejdes, maskinværktøjets kapacitet og kølemidlet, der skal anvendes.
2. Spil i komponenten og i redskabsspindelen kan beskadige boret, ligesom komponenten og maskinen kan tage skade, sørg altid for maksimal stabilitet. Stabiliteten kan øges ved at vælge det kortest mulige bor til anvendelsen.
3. Fastholdelse af værktøjet er en vigtig del af borearbejdet, og boret må ikke glide eller bevæge sig i værktøjsholderen.
4. Det anbefales at anvende egnede kølemidler og smøreolier iht. det specifikke borearbejde, der udføres. Sørg for rigelig forsyning af køle- og smøremiddel under arbejdet, især på borepunktet.
5. Det er vigtigt at fjerne spåner for at sikre et godt boreresultat. Sørg for, at spåner ikke sætter sig fast i sporet.
6. Ved genslibning sørg altid for at den korrekte punktgeometri fremstilles, og at al slitage er blevet fjernet.

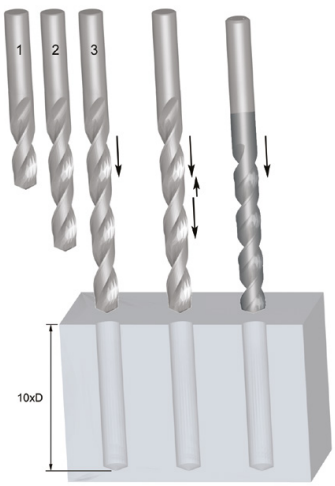
HULSTØRRELSE

Da geometrier, materiale- og belægninger bliver mere avanceret, øges evnen til at bore en mere præcis hulstørrelse. Almindeligvis opnår et standardgeometrisk værktøj hulstørrelse H12. I takt med at boret bliver stadig mere kompleks, kan hulstørrelsen, der kan opnås, imidlertid være så god som H8 under gunstige betingelser. Med henblik på flere informationer er der nedenfor angivet produkttyper og deres mulige hultolerancer:

- HSS Bor til almindelige formål – H12
- HSS / HSS-E dybdehulsbor – H10
- Solid HM-belagt, High Performance – H8/H9

STRATEGI VED DYBHULSBORING

Når der bores dybe huller, kan der anvendes mange forskellige metoder for at nå den krævede dybde. Eksemplet nedenfor viser fire forskellige måder at bore et hul, der er 10 x borets diameter.



	Serieboring	Serieboring
Antal bor	3 (2,5xD, 6xD,10xD)	2 (2,5xD,10xD)
Bortype	Standardgeometri, almindeligt formål	Standardgeometri, almindeligt formål
+ / -	Høj omkostning Stort tidsforbrug	Mere omkostningseffektiv Hurtig

	Intervalboring	Enkeltboring
Antal bor	1 (10xD)	1 (10xD)
Bortype	Standardgeometri, almindeligt formål	Formål konkrete værktøjer
+ / -	Stort tidsforbrug	Omkostningseffektive Hurtige

FEJLFINDING VED BORING

Problem	Årsag	Løsning
Brækkede eller vredet skaft	Dårlig pasform mellem skaft og bøsning	Vær sikker på, at skaftet og bøsningen er rene og uden skader
Ødelæggelse af borstangen	Tilspænding for høj	Reducer tilspænding til den optimale værdi
	Ustabil komponent	Efterslib til korrekt specifikation
	For tynd borstang	Efterslib til korrekt specifikation
	Tungt anslag på borespids	Undgå anslag på borespids. Vær forsigtig, når bor sættes i eller tages ud af spindelen
Slidte styrekanter	For høj skærehastighed	Reduce skærehastighed - kan bevirke, at tilspændingen kan øges
Brækkede styrekanter	Ustabil komponentopstilling	Reducer bevægelsen i komponenten
Hovedskær med skår	Efterslib til korrekt specifikation	Efterslib til korrekt specifikation
Brud ved sporudløb	Tilstopning af sporudløbet	Find den rigtige fremgangsmåde ved udspånning
	Boret løsner sig i holder	Sørg for, at boret fastholdes sikkert i borepatron og spindel
Spiral-finish i hul	For lav tilspænding	Øg tilspænding
	Dårlig positioneringspræcision	Brug et centerbor før boring
Hulstørrelse for stor	Ukorrekt spidsgeometri	Kontroller spidsgeometrien
	Dårlig fjernelse af spåner	Reguler hastighed, tilspænding og evt. udspånning for at opnå mere håndterlige spåner

RIVNING

GENERELLE RÅD OM RIVNING (RØMNING)

For at opnå det bedste resultat, når der anvendes rival (rømmere), er det vigtigt at de “har noget at arbejde med”.. Det er en almindelig fejl at forberede hullerne til rivning så der er for lidt materiale at arbejde med. Hvis der er for lidt materiale i hullet før der rives (rømmes), vil sænkeren skrabe på, hurtigt vise tegn på slitage. Men det er lige så vigtigt for et godt resultat, at der ikke er for meget arbejdsmateriale i hullet. (Se fjernelse af materiale nedenfor).

1. Vælg den optimale rival og de optimale skærehastigheder og tilspændinger til anvendelsen. Sørg for, at de forborede huller har den rigtige diameter.

2. Arbejdsemnet skal holdes helt fast, og maskinens spindel må ikke have spil.

3. Borepatronen, som en lige skaftrival opspændes i, skal være af en god kvalitet. Hvis rivalen glider i patronen og tilspændingen udføres automatisk, kan rivalen evt. knække.

4. Sørg for, at værktøjet har så lille en afstand som mulig mellem maskine og spindel.

5. Brug anbefalede smøremidler for at øge rivalens levetid, og sørg for, at væsken når ud til skærekanterne. Da rivning ikke medfører svært spåntagende arbejde, er en opløselig olie i forholdet 40:1 normalt tilfredsstillende. Luftblæsning kan bruges i forbindelse med gråt støbejern, hvis bearbejdningen er tør.

6. Sørg for, at rivalens spor ikke tilstoppes af spåner.

7. Før rivalen slibes igen, skal koncentriciteten mellem centrene kontrolleres. I de fleste tilfælde er det kun skråkantens styrekant, der skal efterslibes.

8. Hold rivalen skarp. Der er god økonomi i at efterslibe ofte, men det er vigtigt at forstå, at sænkerne kun skærer med skråkantens- og spidsens styrekant og ikke med frigangen. Derfor er det kun disse styreskær, der skal efterslibes. En nøjagtig efterslibning er vigtig med henblik på hulkvalitet og værktøjets levetid.

FJERNELSE AF GRUNDMATERIALE

Hvor meget grundmateriale der skal fjernes ved rivning, afhænger af emnets materiale og det forborede huls overfladefinsh. Der vises generelle retningslinjer for fjernelse af grundmateriale i de følgende tabeller:

Størrelse af sænkningshul (mm)	Såfremt forboret	Såfremt forkerneboret
Under 4	0.1	0.1
Over 4 til 11	0.2	0.15
Over 11 til 39	0.3	0.2
Over 39 til 50	0.4	0.3

Størrelse af rivningshul (inches)	Såfremt forboret	Såfremt forkerneboret
Under 3/16	0.004	0.004
3/16 til ½	0.008	0.006
½ til 1.½	0.010	0.008
1.½ til 2	0.016	0.010

TOLERANCEGRÆNSER



1. PÅ STANDARDRIVALENS SKÆREDIAMETER
   Diameteren (d1) måles over den cirkulære frigang umiddelbart bag ved skråkantens eller spidsens styrekant. Tolerance iht. DIN 1420 er udlagt til at producere H7-huller.

RIVALTOLERANCE			
Diameter (mm)		Tolerancegrænse (mm)	
Over	Op til og med	Høj +	Lav +
	3	0.008	0.004
3	6	0.010	0.005
6	10	0.012	0.006
10	18	0.015	0.008

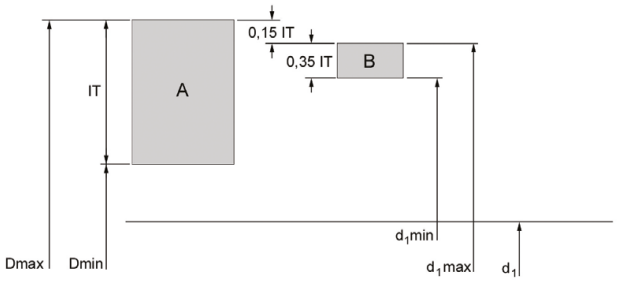
RIVALTOLERANCE			
Diameter (mm)		Tolerancegrænse (mm)	
Over	Op til og med	Høj +	Lav +
18	30	0.017	0.009
30	50	0.021	0.012
50	80	0.025	0.014

2. PÅ ET H7-HUL
   Den mest almindelige tolerance på et færdigt hul er H7 (se tabel nedenfor). Ved andre tolerancer kan illustrationen og skemaet ved siden af punkt 3 bruges til at beregne rivalens tolerance.

HULTOLERANCE			
Diameter (mm)		Tolerancegrænse (mm)	
Over	Op til og med	Høj +	Lav +
	3	0.010	0
3	6	0.012	0
6	10	0.015	0
10	18	0.018	0

HULTOLERANCE			
Diameter (mm)		Tolerancegrænse (mm)	
Over	Op til og med	Høj +	Lav +
18	30	0.021	0
30	50	0.025	0
50	80	0.030	0

3. Hvis det er nødvendigt at definere målene på en specialrival, der skal skære med en specifik tolerance, f.eks. D8, kan følgende velafprøvede retningslinjer anvendes.



A = Hultolerance
B = Rivaltolerance
IT = Tolerance, bredde
Dmax = Maks. huldiameter
Dmin = Min. huldiameter
d_1 = Nominel diameter
$d_1$max = Maks. rivaldiameter
$d_1$min = Min. rivaldiameter

	Diametertolerance, bredde (mm)							
Tolerance, bredde (my)	Over 1 inkl. 3	Over 3 inkl. 6	Over 6 inkl. 10	Over 10 inkl. 18	Over 18 inkl. 30	Over 30 inkl. 50	Over 50 inkl. 80	Over 80 inkl. 120
IT5	4	5	6	8	9	11	13	15
IT6	6	8	9	11	13	16	19	22
IT7	10	12	15	18	21	25	30	35
IT8	14	18	22	27	33	39	46	54
IT9	25	30	36	43	52	62	74	87
IT10	40	48	58	70	84	100	120	140
IT11	60	75	90	110	130	160	190	220
IT12	100	120	150	180	210	250	300	350

Dvs. et 10 mm-hul med tolerancen D8, maks dia = 10.062, min dia = 10.040, hultolerance (IT8) = 0.022

Maks. grænse: 0,15 x hultolerance (IT8) = 0.0033, oprundet = 0.004
Min. grænse: 0,35 x hultolerance (IT8) = 0.0077, oprundet = 0.008

Maks. grænse for sænker = 10.062 - 0.004 = 10.058
Min. grænse for sænker = 10.058 - 0.008 = 10.050

FEJLFINDING VED RIVNING

Problem	Årsag	Løsning
Knækkede eller snoede tunger	Dårlig pasform mellem skaft og bøsning	Vær sikker på, at skaftet og bøsningen er rene og uden skader
Hurtig slitage af værktøjet	Ikke nok materiale at fjerne	Øg mængden af materiale, der skal fjernes
Hul i overstørrelse	For stor variation i kanthøjde	Efterslib til korrekt specifikation
	Maskinspindlen forskudt	Reparer, og korriger spindelforskydning
	Bøjer af på værktøjsholder	Udskift værktøjsholder
	Værktøjets skaft er beskadiget	Udskift eller efterslib skaftet
	Værktøjet udviser ovalitet	Udskift eller efterslib værktøjet
	Asymmetrisk vinkel på skråkantens styrekant	Efterslib til korrekt specifikation
	For stor tilspænding- eller skærehastighed	Juster skærebetingelserne iht. katalog
Hul i understørrelse	Ikke nok materiale at fjerne	Øg mængden af materiale, der skal fjernes
	Der frembringes for megen varme under rivningen. Hullet udvider sig og krymper	Øg kølevæskeflowet
	Værktøjets diameter er slidt og i understørrelse	Efterslib til korrekt specifikation
	For lav tilspænding- eller skærehastighed	Juster skærebetingelserne iht. katalog
	Forboret hul for lille	Mindsk mængden af materiale, der skal fjernes
Ovale og koniske huller	Maskinspindlen forskudt	Reparer, og korriger spindelforskydning
	Værktøj og hul flugter ikke	Brug en konusrival
	Asymmetrisk vinkel på skråkantens styrekant	Efterslib til korrekt specifikation
Dårlig hulfinish	For meget materiale at fjerne	Mindsk mængden af materiale, der skal fjernes
	Værktøj slidt	Efterslib til korrekt specifikation
	For lille skærehældningsvinkel	Efterslib til korrekt specifikation
	For tynd emulsion elle skæreolie	Øg %-koncentrationen
	For lav tilspænding- eller skærehastighed	Juster skærebetingelserne iht. katalog
	Skærehastigheden for høj	Juster skærebetingelserne iht. katalog
Værktøjet klemmer og går i stykker	Værktøj slidt	Efterslib til korrekt specifikation
	Bagenden af værktøjets spids er for lille	Kontrollér, og udskift/foretag ændring af værktøjet
	Frigangen for bred	Kontrollér, og udskift/foretag ændring af værktøjet
	Arbejdsemnematerialet har en tendens til at klemme	Brug en justerbar rival til at kompensere forskydningen
	Forboret hul for lille	Mindsk mængden af materiale, der skal fjernes
	Heterogent materiale med hårde inklusioner	Brug en massiv HM rival

Gevindfræsning

Generelle informationer om gevindfræsning

Gevindfræsning er en proces med at fremstille et gevind ved den cirkulære interpolering af en fræser med en specifik gevindgeometribund omkring sin periferi.

For at kunne bruge en gevindfræser er det nødvendigt at have en CNC-maskine, der kan køre cirkulære program.

De fleste moderne styrede maskiner har maskincyklus til gevindfræsning.

Læs maskinens manual eller kontakt maskinfabrikanten for at få oplysninger

Egenskaber og fordele

Gevindfræsning giver højere pålidelighed, og gevindfræseren har længere levetid

Gevindfræseren producerer små spåner, der ikke påvirker gevindprocessen

Toleransjusteringer kan foretages netop gennem programmering

Gevindfræsning giver fuld gevindform helt ned til bunden af hullet

Gevindfræsning kan bruges i mange forskellige materialer.

Den samme fræser kan bruges til mange dimensioner, så længe stigningen er den samme

Både højre og venstre gevind kan skæres med samme fræser

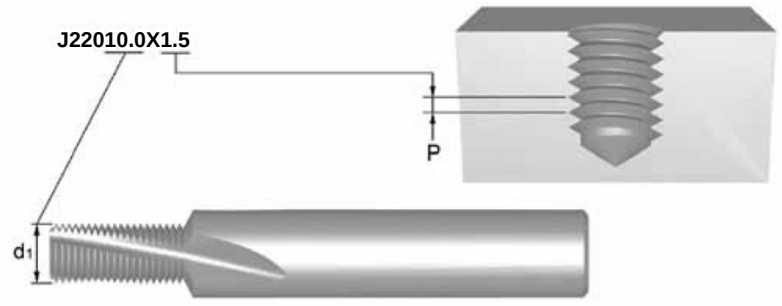
Nogle af gevindfræserne kan fase hullets indgang (J200, J205, J260)

Valg af værktøj

Gevindfræseren har en varekode bestående af type, diameter (d1) og stigning (P)

Varekoden bruges ved bestilling af dit værktøj

Brug altid kataloget til at være sikker på at bestille det rigtige værktøj



Denne gevingfræser kan bruges til gevind ≥ M12x1,5 (M14x1,5, M18x1,5 o.s.v.)

PROGRAMMERING MED Rprg

- Brug altid radiuskompensation for at forenkle tolerancejusteringer
- Rprg-værdien er startværdien af en ny fræser og er skrevet på fræseskaftet. Det skal indtastes i værktøjsprogrammet
- Rprg er baseret på trådens teoretiske nullinje, hvilket betyder, at hvis du bruger Rprg, risikerer du aldrig overmål uden at gevindet får normal tolerance
- Dette betyder, at du kan ændre gevindets dimensioner gennem små justeringer af programkoordinaterne

ANBEFALINGER

- Brug altid anbefalede skæredata
- Brug altid den anbefalede borediameter for gevindet, samme som for en gevindtap
- Start altid med gevindfræserens Rprg-værdi og juster tolerancen om nødvendigt
- Kontroller altid det første gevind med en gevindprøvedorn og juster om nødvendigt radiusen. Radien kan justeres 2 til 3 gange, før fræseren er slidt
- Hvis du kører tørt, anbefaler vi at du bruger trykluft til at fjerne spåner
- Ved fræsning i hårde materialer skal du bruge to eller tre overløb

GEVINDSKÆRING

GENERELLE RÅD OM GEVINDSKÆRING MED SNITTAP

Et godt resultat i forbindelse med gevindskæring med snittap afhænger af et antal faktorer, der alle påvirker kvaliteten i det færdige produkt.

1. Vælg den korrekt udformede snittap til emnemateriale og hultype, dvs. gennemboret eller blindt, fra skemaet Materialeklassifikation.
2. Sørg for at fastholde emnet sikkert - sideværts bevægelser kan ødelægge tappen eller forårsage, at gevindkvaliteten er lav.
3. Vælg den korrekte borstørrelse fra den relevante katalogside. Sørg altid for, at emnematerialets arbejdshærdning er så lav som mulig.
4. Vælg den rigtige skærehastighed som vist på katalogets produktside.
5. Brug en passende skæreolie med henblik på korrekt anvendelse.
6. I NC-anvendelser skal det sikres, at tilspændingsværdien, der vælges til programmet, er korrekt. Når der bruges gevindskæreapparat, anbefales 95% til 97% af gevindstigningen, så tappen kan skære sin egen stigning.
7. Hvis det er muligt, skal tappen fastholdes af et momentbegrænset gevindskæreapparat i god kvalitet, hvilket sikrer, at snittappen kan bevæges frit i aksial retning og stiller den lige på hullet. Det beskytter også tappen mod at knække, hvis den ved et uheld rammer bunden i et blindhul.
8. Sørg for, at tappen ansættes jævnt i hullet, da en ujævn vandring kan forårsage, at hullet bliver for bredt foroven.

TABEL OVER GEVINDTAP TOLERANCE, TOLERANCE PÅ INDVENDIG GEVIND (MØTRIK)

Tolerance klasse, Gevindtap			Tolerance, indvendig gevind (mørtik)					Gevindtype.
ISO	DIN	ANSI BS						
ISO 1	4 H	3 B	4 H	5 H				Strampasning
ISO 2	6 H	2 B	4 G	5 G	6 H			Mellempasning
ISO 3	6 G	1 B			6 G	7 H	8 H	Overmålpasning
-	7 G	-				7 G	8 G	Overmålpasning for evt. belægning

FEJLFINDING VED GEVIND (PROBLEMLØSNING)

Problem	Årsag	Løsning
Overmål	Forkert tolerance	Vælg en tap med mindre tolerance
	Forkert aksial tilspænding	Reducer tilspænding med 5-10% eller øge modstandenden i den flydende holde.
	Forkert gevindtap til opgaven	Anvend spåndrivende tap for gennemgående hul eller spiraltap for bundhul. Brug belagt værktøj til at forhindre påklæbning. Tjek katalog eller produkt Selector for korrekt værktøj.
	Gevindtap ikke i center	Kontroller tapholder og position er i center på hullet
	Manglende smørring	Brug en god smøring for at forhindre påklæbning. Se smøremiddel afsnittet i Teknisk håndbog
	Gevindtap skærehastighed for langsom	Følg anbefaling i katalog / produkt Selector
Undermål	Forkert gevindtap til opgaven	Brug spåndrivende tap for gennemgående hul eller spiraltap for bundhul. Brug belagt værktøj til at forhindre påklæbning. Brug gevindtap med højere spånvinkel. Tjek katalog eller produkt Selector for korrekt værktøj.
	Forkert tolerance	Vælg en gevindtap med større tolerance, især ved materiale som ikke har tendens til overmål, såsom støbejern, rustfrit stål.
	Forkert smørring eller ingen smørring	Brug en god smøring for at forhindre spån blokering inde i hullet. Se smøremiddel afsnittet i Teknisk håndbog
	For lille huldiameter	Øg bordiameter til den maksimale værdi. Tjek huldiameter til gevind i tabel.
	Materiale krymper efter gevind fremstilling	Se anbefaling i katalog / produkt Selector for korrekt værktøj.
Udflisning	Forkert gevindtap til opgaven.	Vælg en gevindtap med mindre spånvinkel. Vælg en tap med længere indløb. For at undgå spån blokering, brug spåndrivende tap til gennem gående hul og spiraltap for bund huller. Tjek katalog eller produkt Selector for korrekt værktøj.
	Forkert smørring	Brug en god smøring for at forhindre spån blokering inde i hullet. Se smøremiddel afsnittet i Teknisk håndbog
	Gevindtappen sidder fast i bundhul	Øg boredybden eller lav mindre længde på gevind
	Ydre hærdning af hul.	Reducer skærehastigheden, brug belagt værktøj, bruge en god smøring. Se afsnit til bearbejdning af rustfrit stål i Teknisk håndbog
	Spån problemer.	Undgå ryk ved tilbagegang af gevindtap.
	Affasning ved hul indgang	Kontroller tapholder og position er i center på hullet
	For lille huldiameter	Øg bordiameter til den maksimale værdi. Tjek huldiameter til gevind i tabel.

FEJLFINDING VED GEVIND (PROBLEMLØSNING)

Problem	Årsag	Løsning
Brud på gevindtap	Gevindtappen er slidt	Brug en ny gevindtap.
	Forkert smørring eller ingen smørring	Brug en god smøring for at forhindre spån blokering inde i hullet. Se smøremiddel afsnittet i Teknisk håndbog
	Gevindtappen sidder fast i bundhul	Øg boredybden eller lav mindre længde på gevind
	Gevindtap skærehastighed for høj.	Reducere skærehastigheden. Se Dormer katalog / Selector.
	Ydre hærdning af hul.	Reducer skærehastigheden, brug belagt værktøj, bruge en god smøring. Se afsnit til bearbejdning af rustfrit stål i Teknisk håndbog
	For lille huldiameter	Øg bordiameter til den maksimale værdi. Tjek huldiameter til gevind i tabel.
	For højt vridningsmoment	Brug tapholder med justerbar moment.
	Materiale krymper efter gevind fremstilling	Se anbefaling i katalog / produkt Selector for korrekt værktøj.
For hurtid slid.	Forkert gevindtap til opgaven.	Anvend gevindtap med mindre eller større spånvinkel eller længere fas. Anvend belagte værktøjer. Se anbefaling i Dormer katalog eller produkt Selector.
	Forkert smørring eller ingen smørring	Anvend god smøring for at forbygge varmerevner på skæret. Se afsnit om køling / smøring.
	Skærehastighed for høj	Mindsk skærehastigheden. Følg anbefaling i Dormer katalog eller produkt Selctor.
Påklæbning på skær.	Forkert gevindtap til opgaven.	Vælg en gevindtap med mindre spånvinkel. Vælg en tap med længere indløb. For at undgå spån blokering, brug spåndrivende tap til gennem gående hul og spiraltap for bund huller. Tjek katalog eller produkt Selector for korrekt værktøj.
	Forkert smørring eller ingen smørring	Brug en god smøring for at forhindre spån blokering inde i hullet. Se smøremiddel afsnittet i Teknisk håndbog
	Forkert belægning	Brug en tap med anbefalet belægning
	Skærehastighed for lav.	Følg anbefaling i katalog / produkt Selector

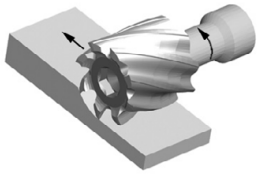
FRÆSNING

GENERELLE TIPS OM FRÆSNING

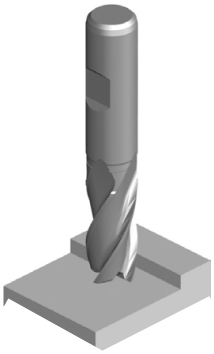
Fræsning er en fremgangsmåde til generering af bearbejdede overflader ved gradvis fjernelse af en forudbestemt mængde af materiale eller materiel fra emnet ved en relativt langsom bevægelse af en fræser, som roterer ved en forholdsvis høj hastighed.
Det karakteristiske træk ved fræseprocessen er, at hver fræser tand fjerner sin andel af emnet i form af små individuelle spåner.

TYPE AF FRÆSERE.

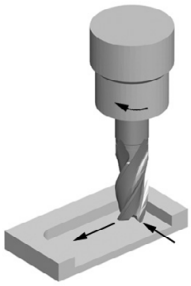
De tre grundlæggende fræseoperationer er vist nedenfor: (A) valsefræsning; (B) planfræsning; (C) pindfræsning



A



B



C

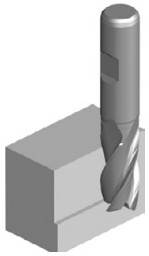
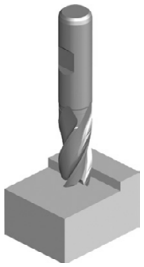
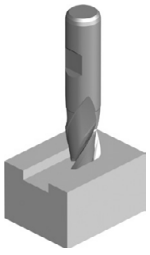
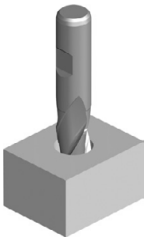
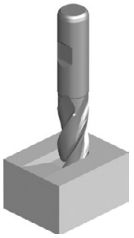
Ved valsefræsning er værktøj rotationsakse parallelt med den bearbejdede overflade. Fræseren har en række skær langs periferien.

Valsefræsere kan have lige eller spiralformede tænder, der genererer en plant eller skrå snit.
Planfræsere er monteret på en aksel, hvis rotationsakse er vinkelret på den bearbejdede overflade. det riflede overflade skabt af skærene er placeret på periferien af fræseren.

I fræsemaskinen rotationsakse lodret til emnet. Den kan vippes til maskinen i skrå plan. Pindfræseren har normalt skærekanter på både endefladen og periferien.

FORSKELLIGE BEARBEJDNING MED ENDEFRÆSERE.

MRR anbefalingen er stærkt relateret. For hver anbefaling har vi valgt en anden MRR der stiger med indgrebet af skæret på emnet. Den seneste Dormer katalog blev produceret med enkle ikoner, der viser de forskellige anbefalinger

Sidefræsning	Planfræsning	Sporfræsning	Boring	Ramping
				
Den radiale indgreb skal være mindre end 0,25 af diameteren af endefræseren.	Radial spåndybde kan ikke overstiger 0,9 gange diameter. Axial indgreb skal være mindre end 0,1 gange diameter.	Beabejdningen af spor og not. Svare til fræserens diameter.	Det er kun muligt at bore med en endefræser med skær i centrum. Ved boring skal tilspænning -50%.	Både aksial og radial fræsning ind i emnet.

FEJLFINDING VED FRÆSNING

Problem	Årsag	Løsning
Brud	Kort livslængde	Mindre tilspænding pr.skær
	For hurtig tilspænding	Sæt tilspænding ned
Slid	For lang fræser total længde	Mindsk udhæng eller kortere fræser.
	Arbejdsmateriale for hårdt	Tjek katalog eller Selector for korrekt værktøj med højere grad af materiale og / eller korrekt belægning
	For høj skærehastighed / Tilspænding	Tjek katalog eller Selector for korrekt skæreparametre
	For dårlig spånafgang	Flyt tilførelse at kølemiddel
	Modfræsning	Medløb fræsning
	Forkert spiralvinkel på fræser	Se anbefaling i katalog / Selector for korrekt værktøj valg.
Udflisning	For høj tilspænding	Reducere tilspænding.
	Vibrationer	Reducere omdrejninger
	For lav skærehastighed	Øge omdrejninger
	Modfræsning	Medløb fræsning
	Værktøjs stabilitet	Mindsk udhæng eller kortere fræser.
	Emne stabilitet	Hold arbejdsemnet fast.
Kort standtid	Hårdt arbejdsmateriale	Tjek katalog eller Selector for korrekt værktøj
	Forkert skærevinkel	Skift til rette skærevinkel
	Friktion mellem værktøj og emne.	Brug belagt værktøj
Dårlig overflade kvalitet	For høj tilspænding	Sæt farten ned til rette skærehastighed
	For lidt i skærehastighed	Øge skærehastigheden
	Spån problem	Formindsk spåntagning
	Værktøjslid	Udskift eller slib værktøj
	Løsæg	Skift til værktøj med højere spiralvinkel
	Påklæbning	Mere kølevand

Problem	Årsag	Løsning
Arbejdsemne unøjagtighed	Værktøj afbøjning	Mindsk udhæng eller kortere fræser
	Mindre antal skær	Brug værktøj med flere skær
	Løs / slidt værktøjsholder	Reparer eller udskift værktøj
	Dårlig værktøjsholder stivhed	Udskift med kortere / mere stiv værktøjsholder
	Dårlig spindel stivhed	Brug større spindel
Vibrationer	Skærehastighed og tilspænding for høj	Korrekt tilspænding og skærehastighed med hjælp af kataloget / Selector
	For lang fræser total længde	Mindsk udhæng eller kortere fræser.
	Skæredybde for stor	Formindsk skæredybde
	Ikke nok stivhed (maskine og værktøjsholder)	Kontrollér værktøjsholderen og skift den hvis det er nødvendigt

ROTERENDE HM FILE

Gode råd til brug af HM File

HM file har en bred vifte af applikationer til klassificering i mange forskellige materialer

De bruges normalt i håndholdt, trykluftværktøj

Egenskaber og fordele

Hærdede og hård stålskaft giver høj stivhed og forhindrer bøjning og vibration

Nøjagtig slebet skaft for sikker opspænding

Speciel loddemetode, der modstår høje temperaturer og tryk

Den universelle Double Cut geometri virker i en række forskellige materialer og applikationer

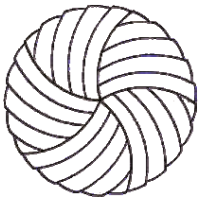
Der findes materialeanpassede geometrier til stål (ST), aluminium (AL) og glasfiber (GRP)

TiAlN belagte file er tilgængelige til slidende materialer

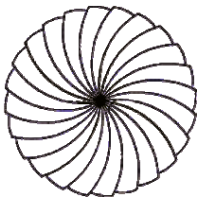
De kugleformede file har en overlappende sporform

Det gør det muligt for filen at skære hele vejen ind i midten af kroppen med en forbedret effekt og reduceret tilstopningsrisiko som følge heraf





Springe



Normal

Sikkerhed først

Højhastighedsværktøjer er farlige og kan forårsage skade, hvis de anvendes forkert

Tag altid stikket ud af trykluften, når du skifter filen

Kontroller filtilstanden og anvend helst filtyper, der giver mindre vibrationer

Brug altid passende beskyttelsesudstyr og hold dig væk fra andre, der arbejder ved siden af dig





Beskyttelsesudstyr skal altid anvendes

ANBEFALINGER

- Det er vigtigt at kontrollere maskinens lejer og smøring regelmæssigt
- Rengør altid klemmemøtrikken, hylster og holder, når du skifter fil
- Undgå slag og højt tryk på filen
- Undgå at overophede filen
- Kør ikke filen for dybt ind i materialet eller klem det ind i et hjørne eller spor

Fejlsøgning HM File

Problemer	Årsag
Tænderne fliser ud	For langsom hastighed kan få filen til at hoppe
	Ekscentricitet på grund af slidt spindel, muffe eller leje
	For dyb indgreb eller filen sætter sig fast
Tænderne tilstopper	For lang sporlængde eller total længde
	Forkert valg af geometri til arbejdsmaterialet
For hurtig slitage	Arbejder med for høj hastighed
	Ekscentricitet på grund af slidt spindel, muffe eller leje
Fræsehovedet løsner sig	Overdreven hastighed, kan forårsager overophedning
	For lang indgrebstid kan forårsage overophedning

SIMPLY RELIABLE

Som yrkesman kan du bedöma kvaliteten på ett arbete enbart genom att studera spånan. Spånan har en ren och okomplicerad form som berättar en historia. Det är därför vi använder denna symbol för att illustrera vår pålitlighet, **“Simply reliable”.**

Ammatti-ihmisenä voit päätellä työn laadun tutkimalla lastun ominaisuuksia. Selkeä ja konstailematon lastun muoto kertoo tarinan lastun syntymisestä. Viesti on selkeä ja siksi käytämme lastua symbolina **kuvastamaan luotettavuuttamme**.

Som fagarbeider kan du bedømme kvalitete på arbeidet gjennom bare å se på sponet. Sponet har en ukomplisert form noe som forteller en historie. Det er derfor vi bruker dette symbolet for å illustrere vår politlighet, **«Simply Reliable».**

Som en professionel kan du vurdere kvaliteten af dit arbejdet kun ved at studere metalspånen. Metalspånen har en ren og ukompliceret form, der fortæller en historie. Det er derfor, vi bruger dette symbol til at illustrere vores pålidelighed, **«Simply Reliable».**

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