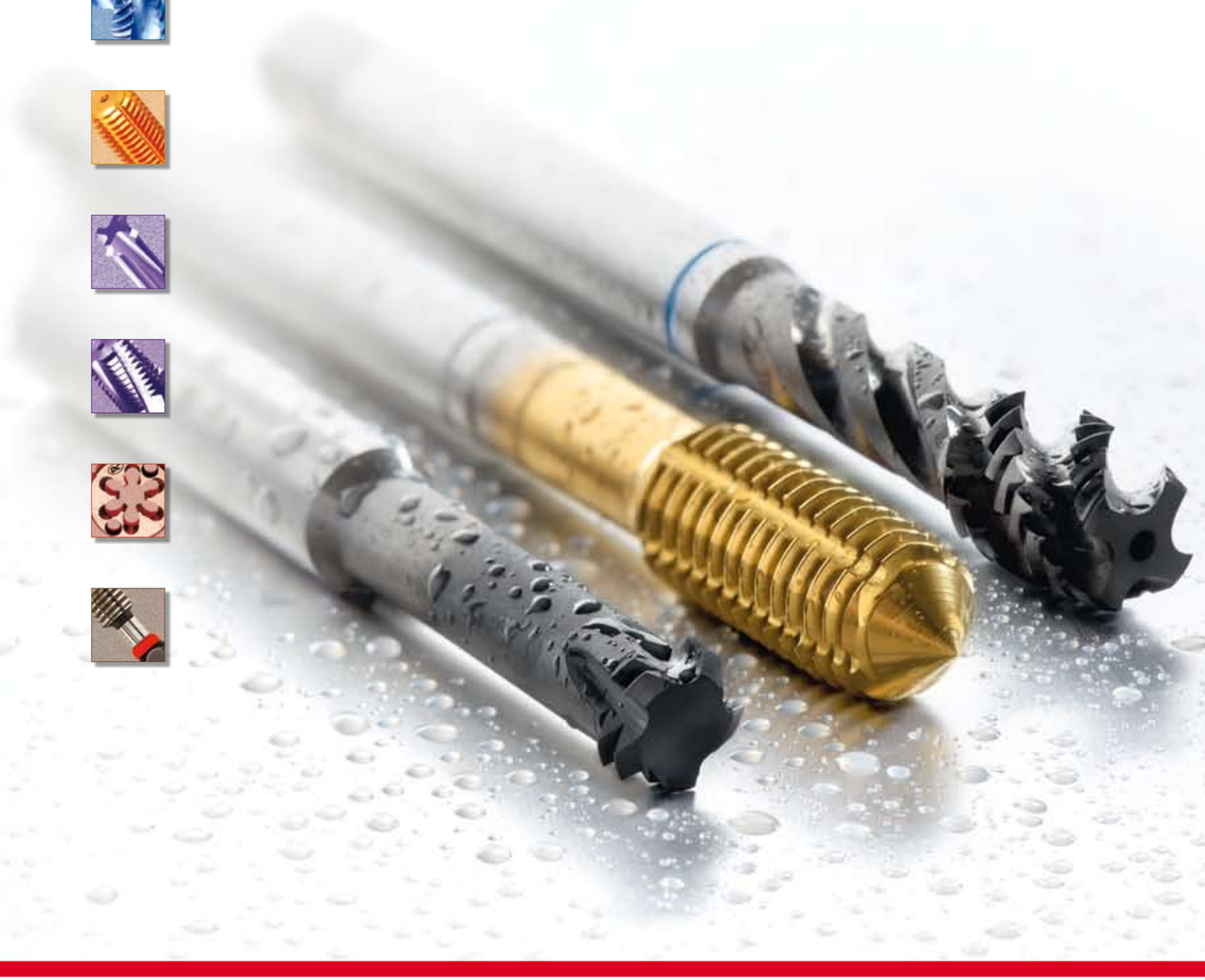
DO-01-04-04/3.ID.DE.EN





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DC THREADING TECHNOLOGY

www.dcswiss.com

DC SWISS SA
DE-EN-ID-2014

DC THREADING TECHNOLOGY

www.dcswiss.com

Gesamtkatalog
Main catalogue
DE-EN-ID-2014

DC THREADING TECHNOLOGY



Verfügbarkeit der Artikel

ID *Identifikationsnummer, ab Lager lieferbar*

*** ID** *Identifikationsnummer, ab Lager lieferbar solange Vorrat*

Availability of the articles

ID Identification number, available from stock

*** ID** Identification number, available from stock, while stock lasts

Certificate CH07/0649

The management system of

DC Swiss SA

Grand rue 19 CP 363
2735 Malleray, Switzerland

has been assessed and certified as meeting the requirements of

ISO 9001:2008

For the following activities

**Cutting tool designer and manufacturer,
expert in Threading Technology.**

This certificate is valid from 7 September 2013 until 6 September 2016
and remains valid subject to satisfactory surveillance audits
Recertification audit due before 25 August 2016
Issue 4. Certified since September 2007

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K



VS EL

K613VS-3 **M**

TiCN

K313TC-3
K413TC-3 **MF**

W



DL

W320DL-4
W420DL-4 **M**

R40 DL

W360DL-3
W460DL-3 **M**
W460DL-5 **G**

GW



l_3 2.5 x D_1 VS

GW3016
GW3016VS ≤ **M12 MF**

l_3 4 x D_1 VS

GW3019 ≤ **½ UNC**
GW3019VS ≤ **⅜ UNF**

N Schaublin



N1110-3
N1210-3 **SV**
N5120

FPS-FAS



VS EL

FPS581VS-3
FPS681VS-3 **M**

VS EL

FPS584VS-3
FPS684VS-3 **M**

VS EL

FAS581VS-3
FAS681VS-3 **M**

VS EL

FAS584VS-3
FAS684VS-3 **M**

FS



DL E 1.5 x P

FS380DL-5 **M**

DL C 2.5 x P

FS380DL-3 **M**

AERO



SA320-4 **UNJF 3B**

NEW

KODIERUNG - CODIFICATION

DC Gewindebohrer DC Taps

Beispiel - Example



Normale Werkstoffe	Normal materials	N						
Weiche Werkstoffe	Soft materials	W						
Zähe Werkstoffe	Tough materials	Z						
Hochfeste Werkstoffe	High tensile materials	H						
Sonderlegierte Werkstoffe	Special alloys	S						
Sonderlegierte Werkstoffe (Aero)	Special alloys (Aero)	SA						
Titanlegierungen (Aero)	Titanium alloys (Aero)	TL						
Grauguss und Alu-Guss	Cast iron and aluminium casting	GG						
Synchron-Gewindeschneiden	Rigid Tapping	RTS						
Spanbrecher	Swarf breaker	K						
MEGA-Gewindegrössen	MEGA tap sizes	MA						
Spezialausführung	Special execution		3					
Kurzer DIN-Schaft verstärkt	DIN short - reinforced shank			1				
Kurzer DIN-Schaft durchfallend	DIN short - reduced shank			2				
Langer DIN-Schaft verstärkt	DIN long - reinforced shank			3				
Langer DIN-Schaft durchfallend	DIN long - reduced shank			4				
Extra-langer DIN-Schaft verstärkt	DIN extra-long - reinforced shank			5				
Extra-langer DIN-Schaft durchfallend	DIN extra-long - reduced shank			6				
DC-Werksnorm	DC standards			9				
Kurzer ISO-Schaft verstärkt	ISO short - reinforced shank			11				
Kurzer ISO-Schaft durchfallend	ISO short - reduced shank			12				
Gerade Nuten	Straight flutes				1			
Gerade Nuten und Schälanschnitt	Straight flutes with spiral point				2			
Schälanschnitt	Spiral point				3			
Spiralnuten mit Linksdrall < 27°	< 27° left hand slow spiral flutes				4			
Spiralnuten mit Rechtsdrall < 27°	< 27° right hand slow spiral flutes				5			
Spiralnuten mit Rechtsdrall > 27°	> 27° right hand fast spiral flutes				6			
Spiralnuten mit Rechtsdrall > 40°	> 40° right hand fast spiral flutes				7			
Spiralnuten mit Rechtsdrall 10°, Schälan.	10° right hand fast spiral flutes, spiral point				9			
Standardausführung	Standard					0		
Ausgesetzte Zähne	Interrupted thread					1		
Verjüngtes Führungsgewinde	Truncated thread					2		
Innenkühlung	Internal coolant					3		
Ausgesetzte Zähne, Innenkühlung	Interrupted thread, internal coolant					4		
Verjüngtes Führungsgewinde, Innenkühlung	Truncated thread, internal coolant					5		
"V"-Oberflächenbehandlung	"V" surface treatment						V	
Verschleissschutzschicht	Wear-protective coating						VS	
Titannitrid-Beschichtung (TiN)	Titanium-nitride coating (TiN)						TN	
Titancarbonitrid-Beschichtung (TiCN)	Titanium carbonitride coating (TiCN)						TC	
Plasmanitrierung +"V"-Oberflächenbehandlung	Plasma nitriding + "V" surface treatment						NV	
DLC-Beschichtung	DLC-coating						DL	
Hardlube-Beschichtung	Hardlube-coating						HL	
Vorschneider	Taper tap							-1
Mittelschneider	Second tap							-2
Fertigschneider / 2 - 3 Gewindegänge	Bottoming tap / 2 - 3 chamfered threads							-3
3.5 - 5 Gewindegänge, Schälanschnitt	3.5 - 5 chamfered threads, spiral point							-4
1.5 - 2 Gewindegänge	1.5 - 2 chamfered threads							-5
6 - 8 Gewindegänge	6 - 8 chamfered threads							-8
Gewindebohrer-Satz	Thread taps set							-S

KODIERUNG - CODIFICATION

Gewindeformer — Thread formers

Beispiel - Example



Standard Polygonform < Ø 3 mm	Standard polygon form < Ø 3 mm	FS					
Passive Polygonform ≥ Ø 3 mm	Passive polygon form ≥ Ø 3 mm	FPS					
Aktive Polygonform ≥ Ø 3 mm	Active polygon form ≥ Ø 3 mm	FAS					
Spezialausführung	Special execution		3				
Langer DIN-Schaft verstärkt	DIN long - reinforced shank			3			
Langer DIN-Schaft durchfallend	DIN long - reduced shank			4			
Extra-langer DIN-Schaft verstärkt	DIN extra-long - reinforced shank			5			
Extra-langer DIN-Schaft durchfallend	DIN extra-long - reduced shank			6			
Gewindeformer	Thread former				8		
Ohne Schmiernuten	Without lubrication grooves					0	
Mit Schmiernuten	With lubrication grooves					1	
Innenkühlung mit seitlichem Austritt	Internal coolant with radial outflow					4	
Verschleissschutzschicht	Wear-protective coating						VS
Chromnitrid-Beschichtung (CrN)	Chromenitride coating (CrN)						CN
DLC-Beschichtung	DLC-coating						DL
2 - 3 Gewindegänge	2 - 3 chamfered threads						-3
1.5 - 2 Gewindegänge	1.5 - 2 chamfered threads						-5

PIKTOGRAMME - PICTOGRAPHS



Verstärkter Schaft gemäss DIN 371
Reinforced shank as per DIN 371



Durchfallender Schaft gemäss DIN 376
Reduced shank as per DIN 376



HSSE
HSSE



HSSE-PM
HSSE-PM



Anzahl Spannuten (Z)
Number of flutes (Z)



Gerade Nuten
Straight flutes



Gerade Nuten und Schälanschnitt
Straight flutes with spiral point



Schälanschnitt
Spiral point only



Spiralnuten mit 40° Rechtsdrall
40° right hand spiral flutes



Verjüngtes Führungsgewinde
Truncated thread



Ausgesetzte Zähne
Interrupted thread



Gewindeformer
Thread former



Gewindeformer mit Schmiernuten
Thread former with lubrication grooves



Vorschneider
Taper tap



Mittelschneider
Second tap



Fertigschneider
Bottoming tap



Handgewindebohrer, Satz zu 2 Stück
Hand taps, set of 2 pieces



Handgewindebohrer, Satz zu 3 Stück
Hand taps, set of 3 pieces



Führungszapfen
Parallel pilot



Innenkühlung mit stirnseitigem Schmiermittelaustritt
Internal coolant with frontal outflow

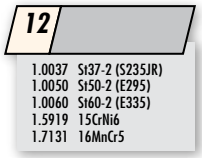


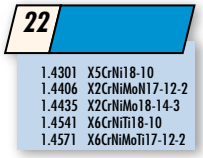
Innenkühlung mit seitlichem Schmiermittelaustritt
Internal coolant with radial outflow

PIKTOGRAMME - PICTOGRAPHS



Für Werkstoffgruppen gemäss (DC) *-Anwendungstabelle*
For material groups as per (DC) application chart









Extra-lang
Extra-long



Durchgangsloch, langspanende Werkstoffe
Through hole, long chipping materials



Durchgangsloch < 1.5 x D, kurzspanende Werkstoffe
Through hole < 1.5 x D, short chipping materials



Sackloch < 1.5 x D, langspanende Werkstoffe
Blind hole < 1.5 x D, long chipping materials



Sackloch < 2.5 x D, kurzspanende Werkstoffe
Blind hole < 2.5 x D, short chipping materials



Durchgangs- und Sackloch < 2.5 x D
Through / blind hole < 2.5 x D



Sackloch < 3 x D
Blind hole < 3 x D



MEGA-Gewindeschneidkopf
MEGA thread tapping head



Kronengewindebohrer
Crown tap



Kombi-Gewindebohrer
Combination drill/tap



Kernlochdurchmesser
Core hole diameter



Radius auf Aussendurchmesser
Radius on external diameter



Konisches Gewinde 1:16 (NPT - NPTF - Rc)
Tapered thread 1:16 (NPT - NPTF - Rc)



EG-Gewinde
Thread EG



Linksgewinde
Left hand thread



3.5 - 5 Gewindegänge, Form B
3.5 - 5 chamfered threads, form B



2 - 3 Gewindegänge, Form C
2 - 3 chamfered threads, form C



1.5 - 2 Gewindegänge, Form E
1.5 - 2 chamfered threads, form E



Toleranzklasse ISO 2 6H
Tolerance class ISO 2 6H



Toleranzklasse ISO 2 6H + 0.1 mm
Tolerance class ISO 2 6H + 0.1 mm



Toleranzklasse ISO 3 6G
Tolerance class ISO 3 6G



(DC) *-"V"-Oberflächenbehandlung*
(DC) "V" surface treatment



(DC) *-Verschleissschutzschicht*
(DC) wear-protective coating



Titannitrid-Beschichtung
Titanium-nitride coating



Titancarbonitrid-Beschichtung
Titanium-carbonitride coating



Plasmanitrierung + "V"-Oberflächenbehandlung
Plasma nitriding + "V" surface treatment



Chromnitrid-Beschichtung
Chromenitride coating



DLC-Beschichtung
DLC-coating



Hardlube-Beschichtung
Hardlube-coating



Spanfragmente / regelmässige Spanaufteilung
Swarf fragments / consistant chips



Für klassisches Gewindeschneiden
For Classic Tapping



Für synchrones Gewindeschneiden
For Rigid Tapping

ANWENDUNGSGRUPPEN

Beispiele für Anwendungsgruppen

11 Automatenstahl
1.0711 9S20
1.0715 9SMn28
1.0718 9SMnPb28
1.0726 35S20
1.0737 9SMnPb36

12 Baustahl, Einsatzstahl
1.0037 St37-2 (S235JR)
1.0050 St50-2 (E295)
1.0060 St60-2 (E335)
1.5919 15CrNi6
1.7131 16MnCr5

13 Kohlenstoffstahl
1.0503 C45
1.0535 C55
1.0601 C60
1.1545 C105W1
1.2067 102Cr6 (100Cr6)

14 Stahl legiert < 850 N/mm²
1.2363 X100CrMoV5-1
1.3551 80MoCrV42-16
1.7218 25CrMo4
1.7220 34CrMo4
1.7225 42CrMo4

15 Stahl legiert / vergütet > 850 - < 1150 N/mm²
1.3553 X82WMoCrV6-5-4
1.6580 30CrNiMo8
1.7220 34CrMo4
1.7225 42CrMo4
1.8507 34CrAlMo5

16 Hochfester Stahl
EN-GJS-1200-2
1.6582 34CrNiMo6v
1.7225 42CrMo4v
1.7228 50CrMo4v
1.8515 31CrMo12v

21 Rostfreier Stahl, geschwefelt
1.4005 X12CrS13
1.4104 X14CrMoS17
1.4305 X10CrNiS18-9

22 Austenitisch
1.4301 X5CrNi18-10
1.4406 X2CrNiMoN17-12-2
1.4435 X2CrNiMo18-14-3
1.4541 X6CrNiTi18-10
1.4571 X6CrNiMoTi17-12-2

23 Ferritisch, martensitisch < 850 N/mm²
1.4112 X90CrMoV18
1.4540 X4CrNiCuNb16-4
1.4582 X4CrNiMoNb25-7
1.4762 X10CrAl24
1.4922 X20CrMo11-1

24 Ferritisch, martensitisch > 850 - < 1150 N/mm²
1.4057 X17CrNi17-2
1.4125 X105CrMo17
1.4542 X5CrNiCuNb16-4
1.4548 X5CrNiCuNb17-4-4
1.4748 X85CrMoV18-2

31 Grauguss
0.6015 GG15
0.6020 GG20
0.6025 GG25
0.6030 GG30

32 Kugelgraphitguss, Temperguss
0.7040 GGG40
0.7043 GGG40.3
0.7050 GGG50
0.7060 GGG60
0.7080 GGG80

41 Reintitan
3.7024 Grad1
3.7034 Grad2
3.7055 Grad3
3.7065 Grad4

42 Titanlegierung
3.7124 TiCu2.5
Ti6Al7Nb
3.7164 TiAl6V4 (Grad5)
3.7174 TiAl6V6Sn2

51 Nickellegierung 1 < 850 N/mm²
1.3912 Ni36 (Invar)
2.4360 NiCu30Fe (Monel 400)
2.4816 NiCr15Fe (Inconel 600)
1.4876 X10NiCrAlTi32-20

52 Nickellegierung 2 > 850 - < 1150 N/mm²
2.4375 NiCu30Al (MonelK500)
2.4631 NiCr20TiAl
(Nimonic 80)
2.4668 NiCr19NbMo
(Inconel718)

53 Nickellegierung 3 > 1150 - ≤ 1600 N/mm²
2.4631 NiCr20TiAl
(Nimonic80)
2.4668 NiCr19NbMo
(Inconel718)

61 Reinkupfer (Elektrolytkupfer)
2.0060 E-Cu57 (E-Cu)

62 Messing, Bronze, Rotguss (kurzspanend)
2.0401 CuZn39Pb3 (Ms58)
2.0402 CuZn40Pb2 (Ms58)
2.1030 CuSn8 (Bz)
2.1096 G-CuSn5ZnPb

63 Messing (langspanend)
2.0240 CuZn15 (Ms85)
2.0265 CuZn30 (Ms70)
2.0321 CuZn37 (Ms63)

71 Al unlegiert
3.0205 Al99
3.0255 Al99.5

72 Al legiert Si < 1.5%
3.1255 AlCuSiMn
3.1355 AlCuMg2
3.2315 AlMgSi1
3.3206 AlMgSi0.5
3.4345 AlZnMgCu0.5

73 Al legiert Si > 1.5% - < 10%
3.2161 G-AlSi8Cu3
3.2162 GD-AlSi8Cu3
3.2341 G-AlSi5Mg
3.2371 G-AlSi7Mg

74 Al legiert Si > 10% Mg-Legierung
3.2381 G-AlSi10Mg
3.2382 GD-AlSi10Mg
3.2581 G-AlSi12
3.2583 G-ALSi12 (Cu)

81 Thermoplaste
Delrin (POM)
Teflon
Nylon

82 Duroplaste
Bakelit
Novopan

83 Faserverstärkte Kunststoffe
Glasfaserverstärkte
Thermo- und Duroplaste

Referenz: DIN

APPLICATION GROUPS

Examples for application groups

11 Free-cutting steels
1.0711 1212
1.0715 1213
1.0718 12L13
1.0726 1140
1.0737 12L14

12 Structural, cementation steels
1.0037 1015
1.0050 A570 Gr.50
1.0060 A572 Gr.65
1.5919 3115
1.7131 5115

13 Carbon steels
1.0503 1045
1.0535 1055
1.0601 1060
1.1545 W110
1.2067 L 3

14 Alloy steels < 850 N/mm²
1.2363 A2
1.3551 M50
1.7218 4130
1.7220 4135
1.7225 4140

15 Alloy steels hard./temp. > 850 - < 1150 N/mm²
1.3553 -
1.6580 4340
1.7220 4135
1.7225 4140
1.8507 A355CLD (K23510)

16 High tensile alloy steels
EN-GJS-1200-2
1.6582 4340
1.7225 4140
1.7228 4150
1.8515 -

21 Free machining stainless steels
1.4005 416
1.4104 430F
1.4305 303

22 Austenitic stainless steels
1.4301 304
1.4406 316LN
1.4435 316L
1.4541 321
1.4571 316Ti

23 Ferritic and martensitic < 850 N/mm²
1.4112 440B
1.4540 XM12 (15-5PH)
1.4582 -
1.4762 446
1.4821 4922

24 Ferritic and martensitic > 850 - < 1150 N/mm²
1.4057 431
1.4125 440C
1.4542 630 (17-4PH)
1.4748 -

31 Cast iron
0.6015 A48-25B
0.6020 A48-30B
0.6025 A48-40B
0.6030 A48-45B

32 Spheroidal graphite + malleable cast iron
0.7040 60-40-18
0.7043 -
0.7050 65-45-12
0.7060 80-55-06
0.7080 120-90-02

41 Pure titanium
3.7024 Gr.1
3.7034 Gr.2
3.7055 Gr.3
3.7065 Gr.4

42 Titanium alloys
3.7124 Alloy 230
F-1295
3.7164 Gr.5
3.7174 -

51 Nickel alloys 1 < 850 N/mm²
1.3912 K93600
2.4360 N04400
1.4816 N08800

52 Nickel alloys 2 > 850 - < 1150 N/mm²
2.4375 N05500 (B865)
2.4631 N07080 (B637)
2.4668 N07718 (B637)

53 Nickel alloys 3 > 1150 - ≤ 1600 N/mm²
2.4631 N07080 (B637)
2.4668 N07718 (B637)

61 Pure copper (electrolitic copper)
2.0060 C11000

62 Short chip brass + phosphor bronze + gun metal
2.0401 C38500
2.0402 C37800
2.1030 C52100
2.1096 -

63 Long chip brass
2.0240 C23000
2.0265 C26000
2.0321 C27200

71 Al unalloyed
3.0205 1200
3.0255 1050A

72 Al alloyed Si < 1.5%
3.1255 2014
3.1355 2024
3.2315 6082
3.3206 6060
3.4345 7020

73 Al alloyed Si > 1.5% - < 10%
3.2161 380.1
3.2162 -
3.2341 -
3.2371 A 356.2

74 Al alloyed Si > 10% Mg-alloys
3.2381 A360
3.2382 -
3.2581 A413
3.2583 413.1

81 Thermoplastics
Delrin (POM)
Teflon
Nylon

82 Duroplastics
Bakelit
Novopan

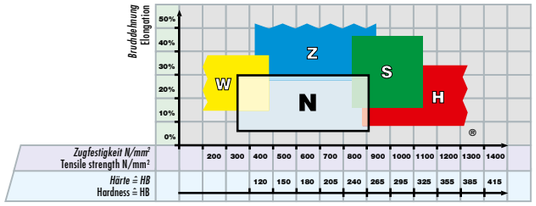
83 Glass fibre reinforced plastics
Glass fibre reinforced,
Thermo and
Duroplastics

Reference: AISI/ASTM/UNS

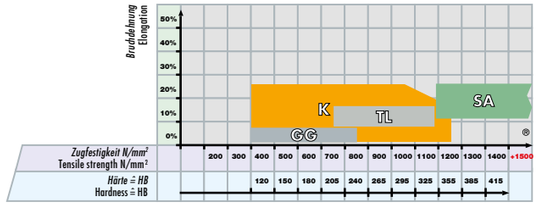
ANWENDUNGSTABELLE - APPLICATION CHART

GEWINDESCHNEIDEN - THREAD CUTTING

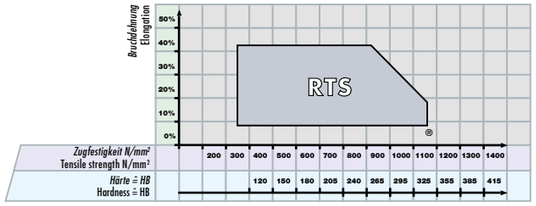
Gewindeschneiden
Thread cutting



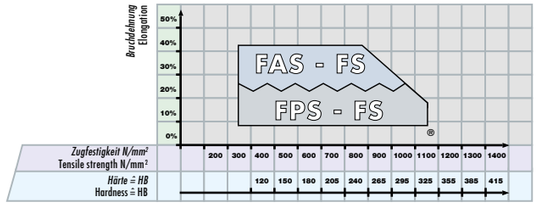
Gewindeschneiden
Thread cutting



Synchron-Gewindeschneiden
Rigid Tapping



Gewindeformen
Thread forming



Anwendungsgruppen
Material classification

Werkstoff-Gruppen / Material groups		Werkstoffbezeichnung	Material designation	Härte / Hardness (HB)	Festigkeit / Tensile strength Rm (N/mm²)	Dehnung / Elongation A (%)
10 Stahl / Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700	< 10
	12	Baustahl, Einsatzstahl	Structural / cementation steels	< 200	< 700	< 30
	13	Kohlenstoffstahl	Carbon steels	< 300	<1000	< 20
	14	Stahl legiert <850 N/mm²	Alloy steels <850 N/mm²	< 250	< 850	< 30
	15	Stahl legiert / vergütet >850 - <1150 N/mm²	Alloy steels hard. / temp. >850 - <1150 N/mm²	> 250	> 850	< 30
	16	Hochfester Stahl	High tensile alloy steels	> 250	> 850	< 12
20 Rostfreier Stahl / Stainless Steels	21	Rostfreier Stahl / geschwefelt	Free machining stainless steels	< 250	< 850	< 25
	22	Austenitisch	Austenitic stainless steels	< 250	< 850	> 20
	23	Ferritisch, martensitisch <850 N/mm²	Ferritic and martensitic <850 N/mm²	< 250	< 850	> 20
	24	Ferritisch, martensitisch >850 - <1150 N/mm²	Ferritic and martens. >850 - <1150 N/mm²	> 250	> 850	> 15
30 Guss / Cast iron	31	Grauguss	Cast iron	< 250	< 850	< 10
	32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850	> 10
40 Titan / Titanium	41	Reintitan	Pure titanium	< 250	< 850	> 20
	42	Titanlegierung	Titanium alloys	> 250	> 850	< 20
50 Nickel / Nickel	51	Nickellegierung 1 <850 N/mm²	Nickel alloys 1 <850 N/mm²	< 250	< 850	> 25
	52	Nickellegierung 2 >850 - <1150 N/mm²	Nickel alloys 2 >850 - <1150 N/mm²	> 250	> 850	< 25
	53	Nickellegierung 3 >1150 - ≤1600 N/mm²	Nickel alloys 3 >1150 - ≤1600 N/mm²	> 340	> 1150	< 20
60 Kupfer / Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolitic copper)	< 120	< 400	> 12
	62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700	< 12
	63	Messing (langspanend)	Long chip brass	< 200	< 700	> 12
70 Aluminium Magnesium / Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350	> 15
	72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500	> 15
	73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400	< 15
	74	Al legiert Si > 10 %, Mg-Legierung	Al alloyed Si > 10 %, Mg-Alloys	< 120	< 400	< 10
80 Kunststoff / Plastic compounds	81	Thermoplaste	Thermoplastics	-	-	-
	82	Duroplaste	Duroplastics	-	-	-
	83	Faserverstärkte Kunststoffe	Glass fibre reinforced plastics	-	-	-

Ab Seite : / From page :	N Normale Werkstoffe / Normal materials											W Weiche Werkstoffe / Soft materials			
M	22	22	24	24	24	32	32	34	34	34	34	46	46	47	47
MF	85	84	85	85		84		91	91	91					
UNC/UNC(J)	114	114	114					116	116						
UNF/UNJF/UNF(J)	134	134	134					136	136						
UNEF/UN/UNS	150	150						151	151						
G/Rp/Rc	156	157	157	157				158	158	158				159	159
W / SV	166	166													
NPT/NPTF	170														
PG/TR	172	172													
EG M/EG UNC/EG UNF		176	176					177	177						



Vc (m/min) < Ø 20 mm Guide line		N. 10	N. 20	N. 20V	N. 20TN	N. 20TC	N. 50	N. 50V	N. 60	N. 60V	N. 60TN	N. 60TC	W. 20	W. 20DL	W. 60	W. 60DL	
Standard +V / +NV	Beschichtet Coated TN / TC / DL / VS																
10 – 15	20 – 30			SE	SE	SE		SE		SE	SE	SE					11
10 – 15	20 – 30			SE	SE	SE		SE		SE	SE	SE					12
8 – 12	16 – 24			SE	SE	SE		SE		SE	SE	SE					13
8 – 12	16 – 24			SE	SE	SE		SE		SE	SE	SE					14
3 – 5	6 – 12																15
3 – 5	3 – 5																16
10 – 15	20 – 30			SE	E	SB		SE		SE	E	SB					21
2 – 6	6 – 12																22
2 – 6	6 – 12																23
	4 – 8																24
10 – 15	20 – 30	E			E	E					E	E					31
10 – 15	20 – 30			SE	SE	SE		SE		SE	SE	SB					32
4 – 8	4 – 8																41
3 – 5	3 – 5																42
3 – 5	6 – 12																51
	4 – 8																52
2 – 3																	53
8 – 12	12 – 16		S					S									61
20 – 30		SB					SB										62
16 – 24			SE				SE		SE								63
10 – 15	20 – 30		S				S		S				S	SE	S	SE	71
20 – 30	20 – 30		SE				SE		SE				SE	SB	SE	SB	72
10 – 15	20 – 30		E		E	B	E		E		E	B					73
10 – 15	20 – 30	E			E	B					E	B					74
20 – 30			E				E		E				E		B		81
8 – 16	16 – 24					E						E					82
4 – 8	8 – 16					E						E					83

S *Optimal mit Schneidöl* / S *Geeignet mit Schneidöl* — S Optimal with cutting oil / S Suitable with cutting oil

E *Optimal mit Emulsion* / E *Geeignet mit Emulsion* — E Optimal with emulsion / E Suitable with emulsion

GEWINDESCHNEIDEN - THREAD CUTTING

Z Zähe Werkstoffe Tough materials					H Hochfeste Werkstoffe High tensile materials				S Sonderlegierte Werkstoffe Special alloys		SA AERO Sonderlegierte Werkstoffe Special alloys			TL Titanlegierungen Titanium alloys	GG Grauguss und Alu-Guss Cast iron and Al casting		K	
48	48	49	50	50	52	52	54	54	56	57	58	58	57	58	60	60	66	
94	94	94	94		96		97		98	98	100	100	99	100			103	
118	118	119	120		121		121		122	123	124	124	125	124				
138		138	139		140		141		142	142	143	143	145	143				
160	160	160	161				159								159			
			181						184	184	178	178	179	178				



Z. 20V	Z. 20VS	Z. 60V	Z. 62V	Z. 70VS	Z. 73VS	H. 20	H. 20TC	H. 50	H. 50TC	S. 20VS	S. 60VS	SA. 20	SA. 50	SA. 90	TL. 20VS	TL. 51VS	GG. 50NV	GG. 50TC	GG. 53TC	K. 13TC	K. 13VS	
																				E E		11
																				E E		12
										S	S									E E		13
																				E E		14
			S E	S E		S	S E	S	S E	S E	S E									E E		15
						S	S	S	S	S		S	S									16
S E	S E	S E																				21
S	S E	S	S E	S E						S E												22
S	S E	S	S E	S E						S E												23
	S		S E	S E			S		S	S E	S E											24
							E		E								E	E		E E		31
																				E E		32
S															S							41
S															S E							42
S	S E	S	S E	S E																		51
			S	S						S	S	S E	S E									52
												S	S	S E								53
	S E		S E	S E																		61
						S E		S E												E E		62
																				E E		63
																						71
																						72
																						73
																	E	E		E E		74
																						81
						L	L	L	L													82
							L		L													83

L *Optimal mit Luft*
L *Geeignet mit Luft*
L Optimal with air
L Suitable with air
Bedingt geeignet
Limited

SYNCHRON-GEWINDESCHNEIDEN - RIGID TAPPING

Ab Seite : From page :	K		RTS				Z	
M	66	67	62	62	63	63	50	50
MF	103		102		102		94	
UNC			126		126		120	
UNF			146		146		139	
UNEF/UN/UNS								
G/Rp/Rc					161		161	
NPT/NPTF								
W								
PG/TR/SV								
EG M/EG UNC/EG UNF							181	



Vc (m/min) Ø M6-M10	Ø M12-M16	Ø M20-M30	Ø M33-M42	K. 13TC	K. 13VS		Vc (m/min) < Ø 20 mm (Guide line) Beschichtet VS Coated VS	RTS. 20VS	RTS. 23VS	RTS. 62VS	RTS. 65VS	Z. 70VS	Z. 73VS	
32	28	22	18	E	E	11	20 – 40	E	E	E	E			11
30	25	20	15	E	E	12	20 – 40	E	E	E	E			12
24	20	16	12	E	E	13	16 – 24	E	E	E	E			13
24	20	16	12	E	E	14	16 – 24	E	E	E	E	E	E	14
15	12	8	6	E	E	15	6 – 12	E	E	E	E	E	E	15
						16								16
						21	20 – 40	E	E	E	E			21
						22	6 – 12	E	E	E	E	E	E	22
						23	6 – 12					E	E	23
						24	4 – 8					E	E	24
30	25	20	15	E	E	31	20 – 40	E	E	E	E			31
30	25	20	15	E	E	32	20 – 40	E	E	E	E			32
						41								41
						42								42
						51	6 – 12					E	E	51
						52								52
						53								53
						61	10 – 20	E	E	E	E	E	E	61
35	30	25	20	E	E	62								62
32	28	22	18	E	E	63	20 – 40	E	E	E	E			63
						71								71
						72	30 – 50	E	E	E	E			72
						73	20 – 40	E	E	E	E			73
30	25	20	15	E	E	74	20 – 40	E	E	E	E			74
						81								81
						82								82
						83								83

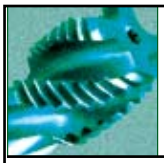
S *Optimal mit Schneidöl*
S *Geeignet mit Schneidöl*
S Optimal with cutting oil
S Suitable with cutting oil
E *Optimal mit Emulsion*
E *Geeignet mit Emulsion*
E Optimal with emulsion
E Suitable with emulsion

GEWINDEFORMEN - THREAD FORMING

	FS Standard < Ø 3 mm		FPS *Passive Polygonform* Passive polygon form					FAS *Aktive Polygonform* Active polygon form			
	68	69	70	70	70	70	72	73	73	74	
				104		104			105		
	127					127			127		
	147					147			147		
						162			162		
											
Vc (m/min) < Ø 20 mm (Guide line) *Beschichtet VS + CN* Coated VS + CN	FS. 80VS	FS. 80DL	FPS. 80CN	FPS. 81CN	FPS. 80VS	FPS. 81VS	FPS. 84VS	FAS. 80VS	FAS. 81VS	FAS . 84VS	
											
20 – 40	S	S			SE	SE	SE				11
20 – 40	SE	S			SE	SE	SE	SE	SE	SE	12
20 – 30	SE	S			SE	SE	SE	SE	SE	SE	13
20 – 30	S	S			SE	SE	SE	SE	SE	SE	14
10 – 15	S				S	S	SE	S	S	SE	15
											16
10 – 20	S	SE			S	S	SE	S	S	SE	21
10 – 15		SE						SE	SE	SE	22
6 – 12		SE						S	S	SE	23
6 – 12		S			S	S	S	SE	SE	SE	24
											31
											32
10 – 20		S						S	S	S	41
											42
10 – 15		S						SE	SE	SE	51
											52
											53
10 – 20	S	S						SE	SE	SE	61
											62
20 – 30	SE	SE	SE	SE	S	S	S	S	S	S	63
20 – 40		SE	SE	SE							71
20 – 40		SE	SE	SE							72
20 – 40		SE	SE	SE							73
											74
											81
											82
											83

S *Optimal mit Schneidöl*
S *Geeignet mit Schneidöl*
S Optimal with cutting oil
S Suitable with cutting oil
E *Optimal mit Emulsion*
E *Geeignet mit Emulsion*
E Optimal with emulsion
E Suitable with emulsion

REGISTER - REGISTER



Gewindeschneiden
Thread Cutting

M

N 22-45/76-78/285 **W** 46-47 **Z** 48-51 **H** 52-55

S 56-57 **SA** 57-59 **TL** 58-59 **GG** 60-61

K 66-67

MF

N 84-93/106-108 **Z** 94-95 **H** 96-97 **S** 98

SA 99-101 **TL** 100-101 **K** 103

UNC, UNC(J)

N 114-117/128-129 **Z** 118-120 **H** 121 **S** 122-123

SA 124-125 **TL** 124

UNF, UNF(J), UNJF, UNEF, UN, UNS

N 134-137/148-151 **Z** 138-139 **H** 140-141 **S** 142

SA 143-145 **TL** 143-144

G (BSP), **Rp, Rc, W, SV Schaublin**

N 156-158/163-167 **W** 159 **Z** 160-161 **H** 159

GG 159

NPT, NPTF, PG, TR

N 170-173

EG M, EG UNC, EG UNF

N 176-177/180/183 **Z** 181/184 **S** 184 **SA** 178-179/182/184-185

TL 178/182/185



Synchron-Gewindeschneiden
Rigid Tapping

M

RTS 62-65 **Z.70/Z.73** 50-51 **K** 66-67

MF

RTS 102 **Z.70** 94-95 **K** 103

UNC

RTS 126 **Z.70** 120

UNF

RTS 146 **Z.70** 139

G (BSP)

RTS 161 **Z.70** 161

EG UNC, EG UNF

Z.70 181/184



Gewindeformen
Thread Forming

M

FS 68-69 **FPS** 70-72 **FAS** 73-75

MF

FPS 104 **FAS** 105

UNC

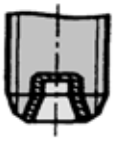
FS 127 **FPS** 127 **FAS** 127

UNF

FS 147 **FPS** 147 **FAS** 147

G (BSP)

FPS 162 **FAS** 162



Kronengewindebohrer
Crown taps

M, MF

N 187-188

UN, G (BSP)

N 189



Kombi-Gewindebohrer
Combination drill/taps

M, MF

N 192

UNC, G (BSP), **PG**

N 193

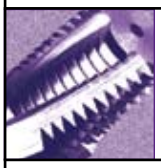
REGISTER - REGISTER



Gewindewirbeln
Thread Whirling

S, M, MF, UNC, UNF

GW 206-213



Gewindefräsen
Thread Milling

M

GF 214-216 **GFH** 214 **GFS** 225-227 **GFM** 236

BGF 240-242

MF

GF 217-218 **GFS** 228-229 **GFM** 236 **BGF** 243

UNC, UNF, UNEF, UN, UNS

GF 219-222 **GFS** 230-233 **GFM** 237

G (BSP), **PG**

GF 223 **GFS** 234 **GFM** 238

NPT, NPTF

GF 224 **GFS** 235 **GFM** 239



Schneideisen
Dies

M

N 246/260/262/263 **Z** 247/260

MF

N 248-250/261/262 **Z** 248-249

UNC, UNF, UNEF, UN, UNS

N 251-253

G (BSP), **R**

N 254/256/263 **Z** 255 **MS** 255

NPT, NPTF, PG, TR, W / W Schaublin

N 257-259/263 **N** 167



Gewindelehren
Thread gauges

M

D 266-267

MF

D 268-271

UNC, UNF, UNEF

D 272-273

G (BSP), **PG**

D 274

NPT, NPTF

D 275

EG M, EG UNC, EG UNF

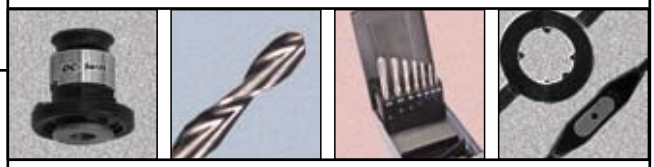
D 276



Gewindeschneidfutter SRT
Tapping chucks SRT

HSK 278 **BT40** 278 **SK40/SK50** 279

DIN1835 B 280-281

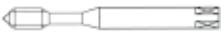


D 282/283 **F** 284 **D** 285 **D** 286-287

Schnittgeschwindigkeiten,
Vergleichstabelle, Kernlochbohrungen,
Bolzendrehdurchmesser
Technischer Fragebogen
Liefer- und Zahlungsbedingungen

Cutting speeds, conversion tables, core hole diameters, turned diameters
Technical questionnaire
Delivery and payment conditions

M *Inhaltsverzeichnis - Maschinengewindebohrer DIN 13*
Directory - Machine taps DIN 13

		N						
Merkmale **Characteristics**				V	TiN TiCN			V
								
Lochart **Hole type**								
		**N310-3**	**N320-3 N320-4**	**N320V-3 N320V-4**	**N320TN-3/4 N320TC-3/4**	**N321-3 N321-4**	**N330-3 N330-4**	**N330V-3 N330V-4**
DIN lang DIN long	DIN 371	22	22/24	24	24	30	30	30
Extra-lang Extra-long	DC							
ISO kurz ISO short	ISO 529							
DIN kurz DIN short	DIN 352							
DIN lang DIN long	~DIN 2174							
Toleranz Tolerance	ISO 2 6H	22	22/24	24	24	30	30	30
Übermass Oversize	ISO 3 6G		28	28				
Übermass Oversize	7G		28					
Übermass Oversize	+ 0.10 mm + 0.20 mm		28					
Feintoleranz Fine tolerance	ISO 1 4H		26					
LH Linksgewinde LH Left hand thread	ISO 2 6H	22	26	26				
		**N410-3**	**N420-4**	**N420V-4**	**N420TN-4 N420TC-4**	**N421-4**	**N430-4**	**N430V-4**
DIN lang DIN long	DIN 376	23	25	25	25	31	31	31
Extra-lang Extra-long	DC							
ISO kurz ISO short	ISO 529							
DIN kurz DIN short	DIN 352							
DIN lang DIN long	~DIN 2174							
Toleranz Tolerance	ISO 2 6H	23	25	25	25	31	31	31
Übermass Oversize	ISO 3 6G		29	29				
Übermass Oversize	7G		29					
Übermass Oversize	+ 0.10 mm + 0.20 mm		29/31					
Feintoleranz Fine tolerance	ISO 1 4H		27					
LH Linksgewinde LH Left hand thread	ISO 2 6H	23	27	27				

M *Inhaltsverzeichnis - Maschinengewindebohrer DIN 13*
Directory - Machine taps DIN 13

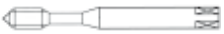
N

R15 V	R40	R40 V	R40 TiN TiCN	R40 V E 1.5 x P	R40	R40 V		R40 V
								
								

N350-3 N350V-3	N360-3	N360V-3	N360TN-3 N360TC-3	N360-5 N360V-5	N361-3	N362V-3	N520-4	N520V-4
32	34	34	34	40	40	40		
							42	42
32	34	34	34	40	40	40	42	42
	36	36						
	38	38						
	38							
	38							
	36	36						

N450-3 N450V-3	N460-3	N460V-3	N460TN-3 N460TC-3	N460-5 N460V-5	N461-3	N462V-3	N620-4	N620V-4
33	35	35	35	41	41	41		
							43	43
33	35	35	35	41	41	41	43	43
	37	37						
	39	39						
	39							
	39							
	37	37						

M *Inhaltsverzeichnis - Maschinen- und Handgewindebohrer DIN 13*
Directory - Machine and hand taps DIN 13

		N						
Merkmale **Characteristics**		TiN	R40	R40 V	R40 TiN		R40	
							 NEW	
Lochart **Hole type**								
		**N520TN-4**	**N560-3**	**N560V-3**	**N560TN-3**	**N1120-4**	**N1160-3**	**N1110 -1-2-3-S**
DIN lang DIN long	DIN 371							
Extra-lang Extra-long	DC	42	44	44	44			
ISO kurz ISO short	ISO 529					78	78	76
DIN kurz DIN short	DIN 352							
DIN lang DIN long	~DIN 2174							
Toleranz Tolerance	ISO 2 6H	42	44	44	44	78	78	76
Übermass Oversize	ISO 3 6G							
Übermass Oversize	7G							
Übermass Oversize	+ 0.10 mm + 0.20 mm							
Feintoleranz Fine tolerance	ISO 1 4H							
LH Linksgewinde LH Left hand thread	ISO 2 6H							
		**N620TN-4**	**N660-3**	**N660V-3**	**N660TN-3**	**N1220-4**	**N1260-3**	**N1210 -1-2-3-S**
DIN lang DIN long	DIN 376							
Extra-lang Extra-long	DC	43	45	45	45			
ISO kurz ISO short	ISO 529					78	78	77
DIN kurz DIN short	DIN 352							
DIN lang DIN long	~DIN 2174							
Toleranz Tolerance	ISO 2 6H	43	45	45	45	78	78	77
Übermass Oversize	ISO 3 6G							
Übermass Oversize	7G							
Übermass Oversize	+ 0.10 mm + 0.20 mm							
Feintoleranz Fine tolerance	ISO 1 4H							
LH Linksgewinde LH Left hand thread	ISO 2 6H							

M *Inhaltsverzeichnis - Maschinengewindebohrer DIN 13*
Directory - Machine taps DIN 13

	W				Z			
		DL	R40	R40 DL	V	VS	R40 V	R40 VS
		NEW		NEW				
	W320-3 W320-4	W320DL-3 W320DL-4	W360-3	W360DL-3	Z320V-3 Z320V-4	Z320VS-4	Z360V-3 Z362V-3	Z360VS-3 Z362VS-3
	46	46	47	47	48	48	49	50
	46	46	47	47	48	48	49	50
	W420-4	W420DL-4	W460-3	W460DL-3	Z420V-4	Z420VS-4	Z462V-3	Z462VS-3
	46	46	47	47	48	48	49	51
	46	46	47	47	48	48	49	51

M *Inhaltsverzeichnis - Maschinengewindebohrer DIN 13*
Directory - Machine taps DIN 13

	Z		H		S		SA
Merkmale **Characteristics**	R45 VS	R45 VS	TiCN	R25 TiCN	VS	R35 VS	
							
Lochart **Hole type**							
	Z370VS-3	**Z373VS-3**	**H320-4 H320TC-4**	**H350-3 H350TC-3**	**S320VS-4**	**S360VS-3**	**SA320-4**
DIN lang **DIN long**	**DIN 371**	50	50	52	54	56	57	58
Extra-lang **Extra-long**	**DC**							
ISO kurz **ISO short**	**ISO 529**							
DIN kurz **DIN short**	**DIN 352**							
DIN lang **DIN long**	**~DIN 2174**							
Toleranz **Tolerance**	**ISO 2 6H**	50	50	52	54	56	57	58
Übermass **Oversize**	**ISO 3 6G**				54			
Übermass **Oversize**	**7G**							
Übermass **Oversize**	**+ 0.10 mm + 0.20 mm**							
Feintoleranz **Fine tolerance**	**ISO 1 4H**	50				56		58
LH Linksgewinde **LH Left hand thread**	**ISO 2 6H**							
	Z470VS-3	**Z473VS-3**	**H420-4 H420TC-4**	**H450-3 H450TC-3**	**S420VS-4**	**S460VS-3**	**SA420-4**
DIN lang **DIN long**	**DIN 376**	51	51	53	55	56	57	59
Extra-lang **Extra-long**	**DC**							
ISO kurz **ISO short**	**ISO 529**							
DIN kurz **DIN short**	**DIN 352**							
DIN lang **DIN long**	**~DIN 2174**							
Toleranz **Tolerance**	**ISO 2 6H**	51	51	53	55	56	57	59
Übermass **Oversize**	**ISO 3 6G**				55			
Übermass **Oversize**	**7G**							
Übermass **Oversize**	**+ 0.10 mm + 0.20 mm**							
Feintoleranz **Fine tolerance**	**ISO 1 4H**							59
LH Linksgewinde **LH Left hand thread**	**ISO 2 6H**							

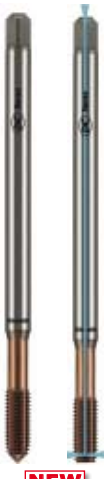
M *Inhaltsverzeichnis - Maschinengewindebohrer DIN 13*
Directory - Machine taps DIN 13

SA		TL		GG			K	
R15	R10	VS	R15 VS	R15 NV	R15 TiCN	R15 TiCN	TiCN	VS
								 NEW
								
SA350-3	**SA390-3**	**TL320VS-4**	**TL351VS-3**	**GG350NV-3 GG550NV-3**	**GG350TC-3**	**GG353TC-3**	**K313TC-3**	
58	57	58	58	60	60	60	66	
				60				
58	57	58	58	60	60	60	66	
58	57	58	58					
SA450-3		**TL420VS-4**	**TL451VS-3**	**GG450NV-3 GG650NV-3**	**GG450TC-3**	**GG453TC-3**	**K413TC-3 K613TC-3**	**K613VS-3**
59		59	59	61	61	61	66	
				61			67	67
59		59	59	61	61	61	66/67	67
59		59	59					

M *Inhaltsverzeichnis - Maschinengewindebohrer DIN 13*
Directory - Machine taps DIN 13

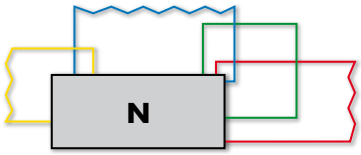
		RTS						
Merkmale **Characteristics**		VS	VS	R40 VS	R40 VS	R40 E 1.5 x P VS	VS	R40 VS
								
Lochart **Hole type**								
		RTS320VS-4	RTS323VS-4	RTS360VS-3 RTS362VS-3	RTS365VS-3	RTS362VS-5 RTS365VS-5	RTS523VS-4	RTS565VS-3
DIN lang DIN long	DIN 371	62	62	63	63	64		
Extra-lang Extra-long	DC						65	65
ISO kurz ISO short	ISO 529							
DIN kurz DIN short	DIN 352							
DIN lang DIN long	~DIN 2174							
Toleranz Tolerance	ISO 2 6H	62	62	63	63	64	65	65
Übermass Oversize	ISO 3 6G			64				
Übermass Oversize	7G							
Übermass Oversize	+ 0.10 mm + 0.20 mm							
Feintoleranz Fine tolerance	ISO 1 4H							
LH Linksgewinde LH Left hand thread	ISO 2 6H							
		RTS420VS-4	RTS423VS-4	RTS462VS-3	RTS465VS-3		RTS623VS-4	RTS665VS-3
DIN lang DIN long	DIN 376	62	62	63	63			
Extra-lang Extra-long	DC						65	65
ISO kurz ISO short	ISO 529							
DIN kurz DIN short	DIN 352							
DIN lang DIN long	~DIN 2174							
Toleranz Tolerance	ISO 2 6H	62	62	63	63		65	65
Übermass Oversize	ISO 3 6G							
Übermass Oversize	7G							
Übermass Oversize	+ 0.10 mm + 0.20 mm							
Feintoleranz Fine tolerance	ISO 1 4H							
LH Linksgewinde LH Left hand thread	ISO 2 6H							

M *Inhaltsverzeichnis - Maschinengewindeformer DIN 13*
Directory - Machine thread formers DIN 13

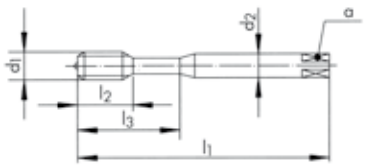
FS				FPS						FAS			
VS		DL						VS					VS
E 1.5 x P	C 2.5 x P	E 1.5 x P	C 2.5 x P	CrN		VS		VS		VS		VS	
													
	NEW								NEW				NEW
FS380VS-5 FS380VS-3		FS380DL-5 FS380DL-3		FPS380CN-3 FPS381CN-3		FPS380VS-3 FPS381VS-3		FPS384VS-3		FPS581VS-3 FPS584VS-3		FAS380VS-3 FAS381VS-3	FAS384VS-3	FAS581VS-3 FAS584VS-3
										71/72			75
68		69		70		70		72				73	74	
68		69		70		70		72		71/72		73	74	75
68		69				70								
						FPS481VS-3		FPS484VS-3		FPS681VS-3 FPS684VS-3		FAS481VS-3	FAS484VS-3	FAS681VS-3 FAS684VS-3
										71/72				75
						71		72				73	74	
						71		72		71/72		73	74	75

M ISO DIN 13

≤ Ø 2.8 PM | > Ø 2.8 HSSE | DIN 371



	N310-3	N310-3 LH	N320-3
		 LH	
	31 62 74	31 62 74	61 63 71 72 73 81
			
	 < 1.5 x D	 < 1.5 x D	
	C 2.5 x P	C 2.5 x P	2.5 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H





∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
1	0.25	40	5.5		2.5	2.1	3	0.75	150167		
1.1	0.25	40	5.5		2.5	2.1	3	0.85	174745		
1.2	0.25	40	5.5		2.5	2.1	3	0.95	150168		
1.4	0.30	40	7.0		2.5	2.1	3	1.10	150169		
1.5	0.30	40	7.0		2.5	2.1	3	1.20	174752		
1.6	0.35	40	8.0		2.5	2.1	3	1.25	174753		
1.7	0.35	40	8.0		2.5	2.1	3	1.35	174754		
1.8	0.35	40	8.0		2.5	2.1	3	1.45	174755		
2	0.40	45	8.0		2.8	2.1	3	1.60	101439	111460	
2.2	0.45	45	9.0		2.8	2.1	3	1.75	174756		
2.3	0.40	45	9.0		2.8	2.1	3	1.90	174757		
2.5	0.45	50	10.0		2.8	2.1	*3	2.05	101440	111461	* 101461
2.6	0.45	50	10.0		2.8	2.1	3	2.15	101441		
3	0.50	56	12.0	18	3.5	2.7	*3	2.50	101442	111462	* 101462
3.5	0.60	56	13.0	20	4.0	3.0	*3	2.90	101443		* 101463
4	0.70	63	14.0	21	4.5	3.4	*3	3.30	101444	111464	* 101464
5	0.80	70	15.0	25	6.0	4.9	*3	4.20	101445	111465	* 101465
6	1.00	80	17.0	30	6.0	4.9	*3	5.00	101446	111466	* 101466
8	1.25	90	20.0	35	8.0	6.2	3	6.80	101447		
10	1.50	100	22.0	39	10.0	8.0	3	8.50	101438		

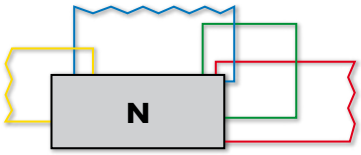
* N320-3 = 2

≤ M1.5 ISO 1 4H

M ISO DIN 13

HSSE

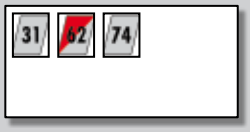




	N410-3	N410-3 LH
		
		
		
	ISO 2 6H	ISO 2 6H
∅ d_1 M	ID	ID

N410-3

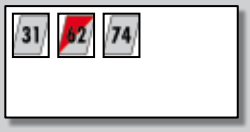


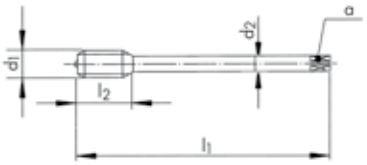


N410-3 LH



LH



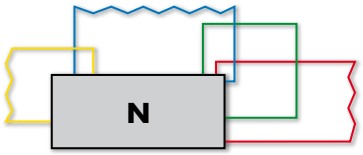




∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
3	0.50	56	12.0	2.2	1.8	3	2.50	101897	
4	0.70	63	14.0	2.8	2.1	3	3.30	101924	
5	0.80	70	15.0	3.5	2.7	3	4.20	101942	
6	1.00	80	17.0	4.5	3.4	3	5.00	101953	
7	1.00	80	17.0	5.5	4.3	3	6.00	142645	111491
8	1.25	90	20.0	6.0	4.9	3	6.80	101958	111492
10	1.50	100	22.0	7.0	5.5	3	8.50	101866	111478
12	1.75	110	24.0	9.0	7.0	3	10.20	101870	111479
14	2.00	110	28.0	11.0	9.0	3	12.00	101874	111480
16	2.00	110	30.0	12.0	9.0	3	14.00	101880	111481
18	2.50	125	33.0	14.0	11.0	3	15.50	101883	111482
20	2.50	140	36.0	16.0	12.0	3	17.50	101885	125530
22	2.50	140	36.0	18.0	14.5	3	19.50	101888	
24	3.00	160	39.0	18.0	14.5	4	21.00	101891	111485
27	3.00	160	42.0	20.0	16.0	4	24.00	101895	111486
30	3.50	180	45.0	22.0	18.0	4	26.50	101901	111487
33	3.50	180	48.0	25.0	20.0	4	29.50	101907	
36	4.00	200	51.0	28.0	22.0	4	32.00	101915	111488
39	4.00	200	55.0	32.0	24.0	4	35.00	101922	
42	4.50	200	55.0	32.0	24.0	4	37.50	101932	
48	5.00	250	63.0	36.0	29.0	4	43.00	111489	
56	5.50	280	71.0	45.0	35.0	5	50.50	111447	

M ISO DIN 13

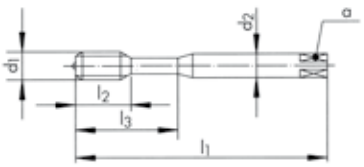
≤ Ø 2.8 PM | > Ø 2.8 HSSE | DIN 371



	N320-4	N320V-4	N320TN-4	N320TC-4
	N	V	TiN	TiCN
	61 63 71 72 73 81	11 12 13 14 21 32	11 12 13 14 21 31 32 73 74	11 12 13 14 21 31 32 73 74 82 83









	B 4 x P	B 4 x P	B 4 x P	B 4 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

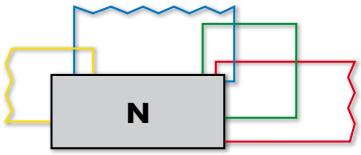
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
*1	0.25	40	5.5		2.5	2.1	2	0.75	111467			
*1.1	0.25	40	5.5		2.5	2.1	2	0.85	111468			
*1.2	0.25	40	5.5		2.5	2.1	2	0.95	111469			
*1.4	0.30	40	7.0		2.5	2.1	2	1.10	111470			
*1.5	0.30	40	7.0		2.5	2.1	2	1.20	111471			
*1.6	0.35	40	8.0		2.5	2.1	2	1.25	101454			
*1.7	0.35	40	8.0		2.5	2.1	2	1.35	101455			
*1.8	0.35	40	8.0		2.5	2.1	2	1.45	101456			
*2	0.40	45	8.0		2.8	2.1	2	1.60	101458	101536	101528	152900
*2.2	0.45	45	9.0		2.8	2.1	2	1.75	101459			
*2.3	0.40	45	9.0		2.8	2.1	2	1.90	101460			
2.5	0.45	50	10.0		2.8	2.1	3	2.05	101483	101545	101530	101522
2.6	0.45	50	10.0		2.8	2.1	3	2.15	101484			
3	0.50	56	12.0	18	3.5	2.7	3	2.50	101485	101546	101531	101523
3.5	0.60	56	13.0	20	4.0	3.0	3	2.90	101491	101547		
4	0.70	63	14.0	21	4.5	3.4	3	3.30	101495	101548	101532	101524
5	0.80	70	15.0	25	6.0	4.9	3	4.20	101499	101549	101533	101525
6	1.00	80	17.0	30	6.0	4.9	3	5.00	101503	101550	101534	101526
8	1.25	90	20.0	35	8.0	6.2	3	6.80	101506	101551	101535	101527
10	1.50	100	22.0	39	10.0	8.0	3	8.50	101481	101544	101529	101521

* N320-3 / N320V-3
N320TN-3 / N320TC-3 — 2.5 x P

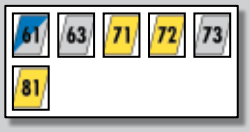
≤ M1.5 — ISO 1 4H

M ISO DIN 13

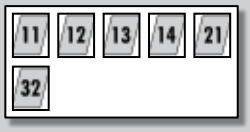
HSSE — DIN 376



	N420-4	N420V-4	N420TN-4	N420TC-4
				
				
	B 4 x P	B 4 x P	B 4 x P	B 4 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

N420-4  

N420V-4 

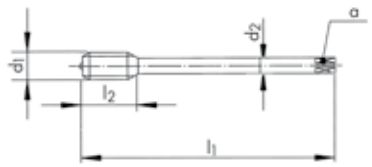


N420TN-4 



N420TC-4 



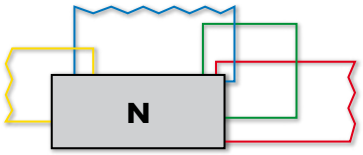




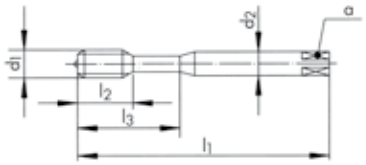
∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
3	0.50	56	12.0	2.2	1.8	3	2.50	102119	143418		
4	0.70	63	14.0	2.8	2.1	3	3.30	102146	102279		
5	0.80	70	15.0	3.5	2.7	3	4.20	102171	102280	146297	
6	1.00	80	17.0	4.5	3.4	3	5.00	102182	102282	147439	
7	1.00	80	17.0	5.5	4.3	3	6.00	102189	144713		
8	1.25	90	20.0	6.0	4.9	3	6.80	102195	102285	102251	102233
9	1.25	90	20.0	7.0	5.5	3	7.80	102202			
10	1.50	100	22.0	7.0	5.5	3	8.50	102061	102263	102240	102228
11	1.50	100	19.0	8.0	6.2	3	9.50	162770			
12	1.75	110	24.0	9.0	7.0	3	10.20	102072	102265	102243	102229
14	2.00	110	28.0	11.0	9.0	3	12.00	102081	102267	102245	
16	2.00	110	30.0	12.0	9.0	3	14.00	102090	102269	102247	102231
18	2.50	125	33.0	14.0	11.0	3	15.50	102097	102271		
20	2.50	140	36.0	16.0	12.0	3	17.50	102101	102273	102248	102232
22	2.50	140	36.0	18.0	14.5	3	19.50	102106	102275		
24	3.00	160	39.0	18.0	14.5	4	21.00	102110	102278	144220	163736
27	3.00	160	42.0	20.0	16.0	4	24.00	102117	143856		
30	3.50	180	45.0	22.0	18.0	4	26.50	102124	105124		
33	3.50	180	48.0	25.0	20.0	4	29.50	102130	146968		
36	4.00	200	51.0	28.0	22.0	4	32.00	102137	143430		
39	4.00	200	55.0	32.0	24.0	4	35.00	102144	158724		
42	4.50	200	55.0	32.0	24.0	4	37.50	102158	143107		
45	4.50	220	59.0	36.0	29.0	4	40.50	* 110225			
48	5.00	250	63.0	36.0	29.0	4	43.00	110226	157517		
56	5.50	280	71.0	45.0	35.0	5	50.50	110229	158178		

M ISO DIN 13

≤ Ø 2.8 PM | > Ø 2.8 HSSE | DIN 371



		N320-4	N320-4 LH	N320V-4 LH
				
N320-4	61 63 71 72 73 81			
N320-4 LH	LH			
N320V-4 LH	V LH			
	11 12 13 14 21 32			
		B 4 x P	B 4 x P	B 4 x P
		ISO 1 4H	ISO 2 6H	ISO 2 6H



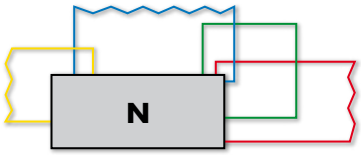


∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
*2	0.40	45	8.0		2.8	2.1	2	1.60	162503	111472	162771
2.5	0.45	50	10.0		2.8	2.1	3	2.05	159345		
3	0.50	56	12.0	18	3.5	2.7	3	2.50	101487	111473	162772
4	0.70	63	14.0	21	4.5	3.4	3	3.30	101493	111474	162773
5	0.80	70	15.0	25	6.0	4.9	3	4.20	101497	111475	162774
6	1.00	80	17.0	30	6.0	4.9	3	5.00	101501	111476	162775
8	1.25	90	20.0	35	8.0	6.2	3	Δ 6.80	* 146482		
10	1.50	100	22.0	39	10.0	8.0	3	8.50	* 146484		

* N320-3 — 2.5 x P — Δ ISO 1 4H = 6.70

M ISO DIN 13

HSSE — DIN 376

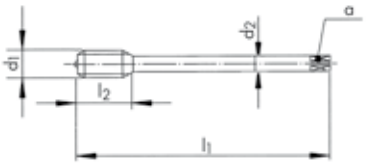


	N420-4	N420-4 LH	N420V-4 LH
			
			
	B 4 x P	B 4 x P	B 4 x P
	ISO 1 4H	ISO 2 6H	ISO 2 6H

N420-4 — 61 63 71 72 73 81

N420-4 LH — LH — 61 63 71 72 73 81

N420V-4 LH — V LH — 11 12 13 14 21 32





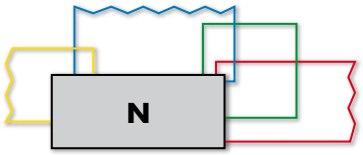
∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
8	1.25	90	20.0	6.0	4.9	3	Δ 6.80	102193	102198	142621
10	1.50	100	22.0	7.0	5.5	3	8.50	102059	102064	143287
12	1.75	110	24.0	9.0	7.0	3	10.20	102070	102040	146583
14	2.00	110	28.0	11.0	9.0	3	12.00		102084	146563
16	2.00	110	30.0	12.0	9.0	3	14.00		102093	143108
20	2.50	140	36.0	16.0	12.0	3	17.50		102103	145579
24	3.00	160	39.0	18.0	14.5	4	21.00		111493	145578
30	3.50	180	45.0	22.0	18.0	4	26.50		* 111494	

Δ ISO 1 4H = 6.70

DC THREADING TECHNOLOGY

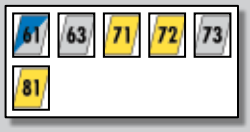
M ISO DIN 13

≤ Ø 2.8 PM | > Ø 2.8 HSSE | DIN 371

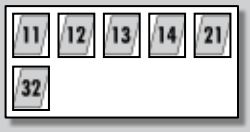


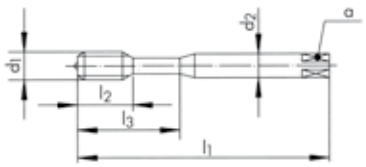
	N320-4	N320V-4	N320-4	N320-4
				
				
	B 4 x P	B 4 x P	B 4 x P	B 4 x P
	ISO 3 6G	ISO 3 6G	7G	6H +0.1mm

N320-4 



N320V-4  V





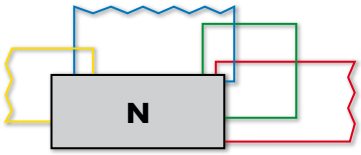


∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	ID	6H + mm	ID	6H + mm	ID	ID
*2	0.40	45	8.0		2.8	2.1	2	1.60	101457	0.019	143584	0.019		
2.5	0.45	50	10.0		2.8	2.1	3	2.05	101482	0.020	150522	0.020		
3	0.50	56	12.0	18	3.5	2.7	3	2.50	101486	0.020	143116	0.020	101489	0.036	101488
3.5	0.60	56	13.0	20	4.0	3.0	3	2.95	101490	0.021					
4	0.70	63	14.0	21	4.5	3.4	3	3.35	101494	0.022	143087	0.022	101496	0.041	111522
5	0.80	70	15.0	25	6.0	4.9	3	4.25	101498	0.024	143088	0.024	101500	0.044	111523
6	1.00	80	17.0	30	6.0	4.9	3	5.00	101502	0.026	143089	0.026	101504	0.050	111524
8	1.25	90	20.0	35	8.0	6.2	3	6.80	101505	0.028	143604	0.028		

* N320-3 / N320V-3 

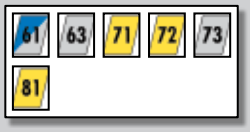
M ISO DIN 13

HSSE — DIN 376

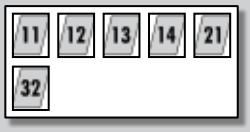


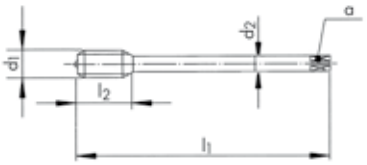
	N420-4	N420V-4	N420-4	N420-4
				
				
	B 4 x P	B 4 x P	B 4 x P	B 4 x P
	ISO 3 6G	ISO 3 6G	7G	6H +0.1mm

N420-4 



N420V-4  V



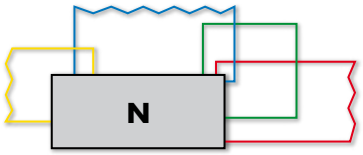




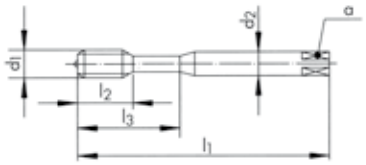
∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	6H + mm	ID	6H + mm	ID	6H + mm	ID
8	1.25	90	20.0	6.0	4.9	3	6.80	102194	0.028	145246	0.028	102199	0.052	102196
10	1.50	100	22.0	7.0	5.5	3	8.50	102060	0.032	143726	0.032	102065	0.060	102062
12	1.75	110	24.0	9.0	7.0	3	10.30	102071	0.034	145655	0.034	102076	0.066	102073
16	2.00	110	30.0	12.0	9.0	3	14.00	135531	0.038	162795	0.038	102094	0.072	102091

M ISO DIN 13

≤ Ø 2.8 PM | > Ø 2.8 HSSE | DIN 371



	N321-4	N330-4	N330V-4
			
			
	B 4 x P	B 4 x P	B 4 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H





∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	ID	ID	ID
*1	0.25	40	5.5		2.5	2.1	2	0.75		101558	
*1.1	0.25	40	5.5		2.5	2.1	2	0.85		* 101559	
*1.2	0.25	40	5.5		2.5	2.1	2	0.95		101560	
*1.4	0.30	40	7.0		2.5	2.1	2	1.10		101561	
*1.6	0.35	40	8.0		2.5	2.1	2	1.25		101562	151246
*1.7	0.35	40	8.0		2.5	2.1	2	1.35		* 101563	
*2	0.40	45	8.0		2.8	2.1	2	1.60	101552	105125	101572
*2.2	0.45	45	9.0		2.8	2.1	2	1.75		* 105126	
*2.3	0.40	45	9.0		2.8	2.1	2	1.90		* 105127	
2.5	0.45	50	10.0		2.8	2.1	*3	2.05	101553	101565	101573
2.6	0.45	50	10.0		2.8	2.1	2	2.15		* 101566	
3	0.50	56	12.0	18	3.5	2.7	*3	2.50	101555	101567	101574
3.5	0.60	56	13.0	20	4.0	3.0	2	2.90		101568	
4	0.70	63	14.0	21	4.5	3.4	3	3.30	101557	101569	101576
5	0.80	70	15.0	25	6.0	4.9	3	4.20		101570	101577
6	1.00	80	17.0	30	6.0	4.9	3	5.00		101571	101578

* N321-3 / N330-3 / N330V-3 — 2.5 x P

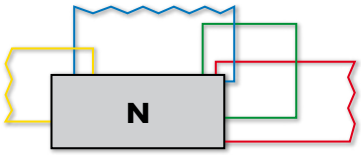
* N330-4 = 2

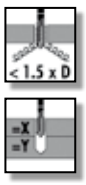
* N330V-4 = 2

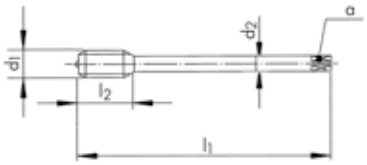
≤ M1.5 — ISO 1 4H

M ISO DIN 13

HSSE — DIN 376



	N420-4	N421-4	N430-4	N430V-4
				
				
				
	6H +0.2mm	ISO 2 6H	ISO 2 6H	ISO 2 6H
ID	102197	102293 102294 102295 102296 102286 102287 * 102288 102289	102301 102297 102298	102306 102302 102303

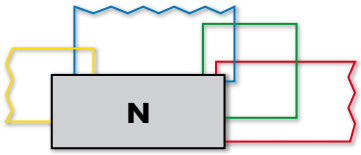


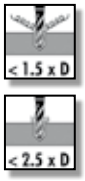
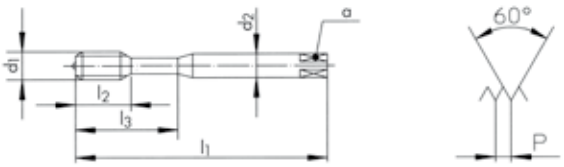


∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H
4	0.70	63	14.0	2.8	2.1	3	3.30
5	0.80	70	15.0	3.5	2.7	3	4.20
6	1.00	80	17.0	4.5	3.4	3	5.00
8	1.25	90	20.0	6.0	4.9	3	6.80
10	1.50	100	22.0	7.0	5.5	3	8.50
12	1.75	110	24.0	9.0	7.0	3	10.20
14	2.00	110	28.0	11.0	9.0	3	12.00
16	2.00	110	30.0	12.0	9.0	3	14.00

M ISO DIN 13

≤ Ø 2.8 PM | > Ø 2.8 HSSE | DIN 371



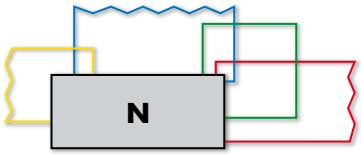
	N350-3	N350V-3		
				
				
				
	ISO 2 6H	ISO 2 6H		
Ø d_1 M	ID	ID		

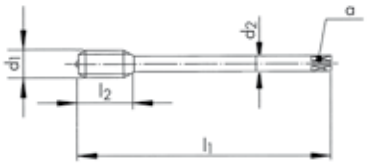
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
2	0.40	45	8.0		2.8	2.1	2	1.60	101580	101593
2.3	0.40	45	9.0		2.8	2.1	2	1.90	101581	
2.5	0.45	50	10.0		2.8	2.1	2	2.05	101582	101594
2.6	0.45	50	10.0		2.8	2.1	2	2.15	101583	
3	0.50	56	12.0	18	3.5	2.7	2	2.50	101584	101595
3.5	0.60	56	13.0	20	4.0	3.0	2	2.90	101585	
4	0.70	63	14.0	21	4.5	3.4	2	3.30	101587	101596
5	0.80	70	15.0	25	6.0	4.9	3	4.20	101589	101597
6	1.00	80	17.0	30	6.0	4.9	3	5.00	101591	101598
8	1.25	90	20.0	35	8.0	6.2	3	6.80	101592	146810
10	1.50	100	22.0	39	10.0	8.0	3	8.50	101579	147217

M ISO DIN 13

HSSE

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	N450-3	N450V-3		
				
				
				
				

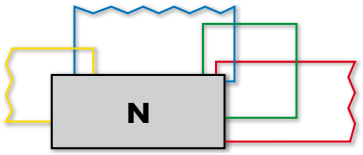
N450-3: R15; 62, 63

N450V-3: R15, V; 11, 12, 13, 14, 21, 32

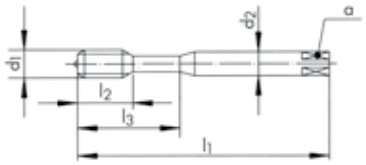
∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
8	1.25	90	20.0	6.0	4.9	3	6.80	102327	102334
10	1.50	100	22.0	7.0	5.5	3	8.50	102314	102329
12	1.75	110	24.0	9.0	7.0	3	10.20	102317	102330
14	2.00	110	28.0	11.0	9.0	3	12.00	102319	145487
16	2.00	110	30.0	12.0	9.0	3	14.00	102321	102331
20	2.50	140	36.0	16.0	12.0	4	17.50	102324	102332
24	3.00	160	39.0	18.0	14.5	4	21.00	102325	102333

M ISO DIN 13

≤ Ø 2.8 PM | > Ø 2.8 HSSE | DIN 371



	N360-3	N360V-3	N360TN-3	N360TC-3
				
	< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
R40	61 63 71 72 73 81	11 12 13 14 21 32	11 12 13 14 21 31 32 73 74	11 12 13 14 21 31 32 73 74 82 83
R40 V				
R40 TiN				
R40 TiCN				

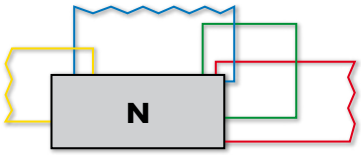




∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
2	0.40	45	7.0		2.8	2.1	2	1.60	101618	101708	101697	146842
2.2	0.45	45	8.0		2.8	2.1	2	1.75	101619			
2.3	0.40	45	8.0		2.8	2.1	2	1.90	101620			
2.5	0.45	50	9.0		2.8	2.1	2	2.05	101622	101709	101698	101689
2.6	0.45	50	9.0		2.8	2.1	2	2.15	101623	101710		
3	0.50	56	5.5	18	3.5	2.7	3	2.50	101626	101711	101699	101690
3.5	0.60	56	6.5	20	4.0	3.0	3	2.90	101630	142625		
4	0.70	63	7.5	21	4.5	3.4	3	3.30	101635	101713	101700	101691
4.5	0.75	70	9.0	25	6.0	4.9	3	3.75	101639			
5	0.80	70	9.0	25	6.0	4.9	3	4.20	101644	101715	101701	101692
6	1.00	80	11.0	30	6.0	4.9	3	5.00	101652	101717	101703	101693
7	1.00	80	11.0	30	7.0	5.5	3	6.00	101656	101718		
8	1.25	90	12.5	35	8.0	6.2	3	6.80	101663	101721	101705	101694
9	1.25	90	12.5	35	9.0	7.0	3	7.80	101668			
10	1.50	100	14.0	39	10.0	8.0	3	8.50	101612	101707	101696	101688

M ISO DIN 13

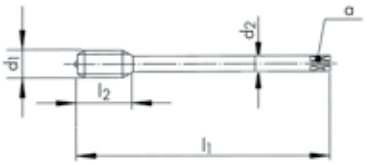
HSSE — DIN 376



	N460-3	N460V-3	N460TN-3	N460TC-3
	R40	R40 V	R40 TiN	R40 TiCN
	61 63 71 72 73 81	11 12 13 14 21 32	11 12 13 14 21 31 32 73 74	11 12 13 14 21 31 32 73 74 82 83



	< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

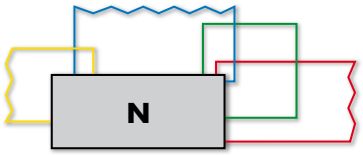




∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
5	0.80	70	9.0	3.5	2.7	3	4.20	102410	102489	160682	
6	1.00	80	11.0	4.5	3.4	3	5.00	102411	102491	152850	
8	1.25	90	12.5	6.0	4.9	3	6.80	102412	102492	152849	
10	1.50	100	14.0	7.0	5.5	3	8.50	102351	102461	150242	158687
12	1.75	110	14.0	9.0	7.0	3	10.20	102359	102465	102449	102438
14	2.00	110	14.0	11.0	9.0	3	12.00	102369	102468	102451	111615
16	2.00	110	18.0	12.0	9.0	3	14.00	102376	102471	102453	102440
18	2.50	125	21.0	14.0	11.0	3	15.50	102383	102473		
20	2.50	140	24.0	16.0	12.0	4	17.50	102389	102475	102454	143280
22	2.50	140	24.0	18.0	14.5	4	19.50	102394	102477		
24	3.00	160	27.0	18.0	14.5	4	21.00	102398	102480	143119	150018
27	3.00	160	27.0	20.0	16.0	4	24.00	175423	102481		
30	3.50	180	30.0	22.0	18.0	4	26.50	150246	102482		
33	3.50	180	33.0	25.0	20.0	4	29.50	167621	102483		
36	4.00	200	36.0	28.0	22.0	5	32.00	143914	102484		
39	4.00	200	40.0	32.0	24.0	5	35.00	175424	102485		
42	4.50	200	40.0	32.0	24.0	5	37.50	169122	102486		
45	4.50	220	44.0	36.0	29.0	5	40.50		102487		
48	5.00	250	48.0	36.0	29.0	5	43.00		102488		
52	5.00	250	52.0	40.0	32.0	5	47.00		110228		
56	5.50	280	56.0	45.0	35.0	6	50.50		102490		
64	6.00	315	64.0	50.0	39.0	6	58.00		143805		

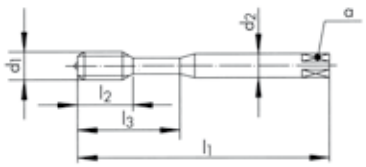
M ISO DIN 13

≤ Ø 2.8 PM | > Ø 2.8 HSSE | DIN 371



N360-3 LH	L40 LH	61 63 71 72 73 81	
N360V-3 LH	L40 V LH	11 12 13 14 21 32	
N360-3	R40	61 63 71 72 73 81	
N360V-3	R40 V	11 12 13 14 21 32	

N360-3 LH	N360V-3 LH	N360-3	N360V-3
			
< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
ISO 2 6H	ISO 2 6H	ISO 3 6G	ISO 3 6G

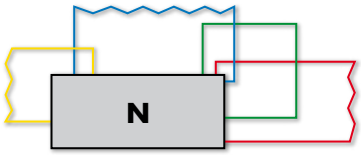




Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	ID	ID	ID	6H + mm	ID	6H + mm
2	0.40	45	7.0		2.8	2.1	2	1.60			101617	0.019	146000	0.019
2.5	0.45	50	9.0		2.8	2.1	2	2.05			101621	0.020	143294	0.020
3	0.50	56	5.5	18	3.5	2.7	3	2.50	101627	146811	101625	0.020	104816	0.020
3.5	0.60	56	6.5	20	4.0	3.0	3	2.95			101629	0.021	125829	0.021
4	0.70	63	7.5	21	4.5	3.4	3	3.30	101637	162540	101634	0.022	104817	0.022
5	0.80	70	9.0	25	6.0	4.9	3	4.20	101646	144003	101643	0.024	104818	0.024
6	1.00	80	11.0	30	6.0	4.9	3	5.00	101654	144004	101669	0.026	104819	0.026
8	1.25	90	12.5	35	8.0	6.2	3	6.80	101666	143925	101662	0.028	104820	0.028
10	1.50	100	14.0	39	10.0	8.0	3	8.50	101615	143587	101611	0.032	104821	0.032

M ISO DIN 13

HSSE — DIN 376



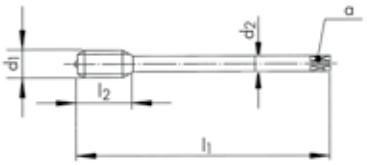
	N460-3 LH	N460V-3 LH	N460-3	N460V-3
	LH	V LH		V
	L40	L40	R40	R40
	61 63 71 72 73 81	11 12 13 14 21 32	61 63 71 72 73 81	11 12 13 14 21 32



< 2.5 x D

C 2.5 x P

ISO 2 6H | ISO 2 6H | ISO 3 6G | ISO 3 6G

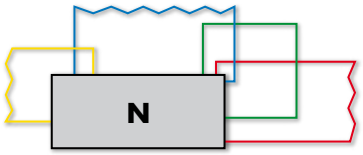




∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	ID	ID	6H + mm	ID	6H + mm
12	**1.75**	110	14.0	9.0	7.0	3	10.20	**102362**	**146354**	**102358**	0.034	**143602**	0.034
14	**2.00**	110	14.0	11.0	9.0	3	12.00			**102368**	0.038	**144712**	0.038
16	**2.00**	110	18.0	12.0	9.0	3	14.00	**102378**	**143439**	**102375**	0.038	**150197**	0.038
20	**2.50**	140	24.0	16.0	12.0	4	17.50	**102390**	**146564**	**102388**	0.042	**145420**	0.042

M ISO DIN 13

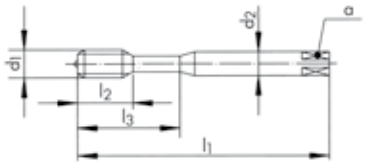
≤ Ø 2.8 **PM** > Ø 2.8 **HSSE** — DIN 371



	N360-3	N360-3	N360V-3	N360-3
				
	< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	ISO 1 4H	7G	7G	6H +0.1mm

N360-3 R40 — 61 63 71 72 73 81

N360V-3 R40 V — 11 12 13 14 21 32



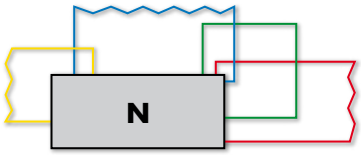


∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm		6H	ID	ID	6H + mm	ID	6H + mm	ID
3	0.50	56	5.5	18	3.5	2.7	3	2.50	101624	101628	0.036	144311	0.036	160847
4	0.70	63	7.5	21	4.5	3.4	3	3.30	101633	101638	0.041	144192	0.041	101636
5	0.80	70	9.0	25	6.0	4.9	3	4.20	101642	101647	0.044	143208	0.044	101645
6	1.00	80	11.0	30	6.0	4.9	3	5.00	101651	101655	0.050	146709	0.050	101653
8	1.25	90	12.5	35	8.0	6.2	3	Δ 6.80	101661	101667	0.052	146267	0.052	101664
10	1.50	100	14.0	39	10.0	8.0	3	8.50	101610	101616	0.060	142547	0.060	101613

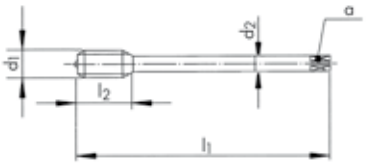
Δ ISO 1 4H = 6.70

M ISO DIN 13

HSSE — DIN 376



	N460-3	N460-3	N460V-3	N460-3
				
N460-3	R40	61 63 71 72 73 81		
N460V-3	R40 V	11 12 13 14 21 32		
	< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	ISO 1 4H	7G	7G	6H +0.1mm

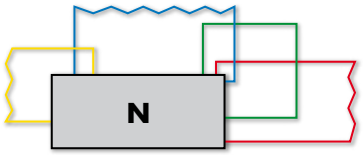




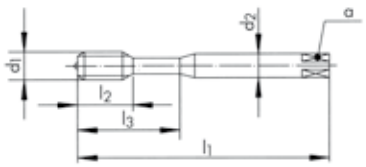
∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	ID	6H + mm	ID	6H + mm	ID
12	**1.75**	110	14.0	9.0	7.0	3	10.20	* 124987	**102363**	0.066	**142532**	0.066	**102360**
16	**2.00**	110	18.0	12.0	9.0	3	14.00		**102379**	0.072	**144956**	0.072	**102377**

M ISO DIN 13

≤ Ø 2.8 PM | > Ø 2.8 HSSE | DIN 371



	N360-5	N360V-5	N361-3	N362V-3
	R40	R40 V	R40	R40 V
	61 63 71 72 73 81	11 12 13 14 21 32	61 63 71 72 73 81	11 12 13 14 21 32
				
	< 2.5 x D	< 2.5 x D	< 2.5 x D	≤ 2.5 x D
	E 1.5 x P	E 1.5 x P	C 2.5 x P	C 2.5 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

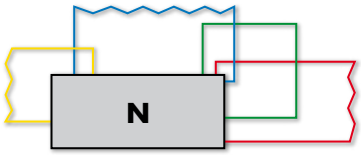




∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
2	0.40	45	7.0		2.8	2.1	2	1.60	158079	150058		
3	0.50	56	5.5	18	3.5	2.7	3	2.50	104809	142646	101735	
4	0.70	63	7.5	21	4.5	3.4	3	3.30	104810	142647	101736	101741
5	0.80	70	9.0	25	6.0	4.9	3	4.20	104811	142648	101737	101742
6	1.00	80	11.0	30	6.0	4.9	3	5.00	104812	142649	101738	101743
8	1.25	90	12.5	35	8.0	6.2	3	6.80	104813	142650	101739	101744
10	1.50	100	14.0	39	10.0	8.0	3	8.50	104814	124899	101734	101740

M ISO DIN 13

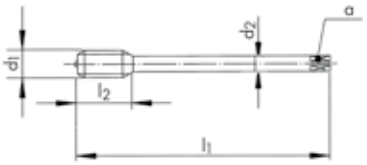
HSSE — DIN 376



	N460-5	N460V-5	N461-3	N462V-3
	R40	R40 V	R40	R40 V
	61 63 71 72 73 81	11 12 13 14 21 32	61 63 71 72 73 81	11 12 13 14 21 32



	N460-5	N460V-5	N461-3	N462V-3
	< 2.5 x D	< 2.5 x D	< 2.5 x D	≤ 2.5 x D
	E 1.5 x P	E 1.5 x P	C 2.5 x P	C 2.5 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H



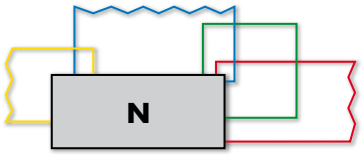


∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
12	1.75	110	14.0	9.0	7.0	3	10.20	104815	142651	102506	102512
14	2.00	110	14.0	11.0	9.0	3	12.00			* 102507	102513
16	2.00	110	18.0	12.0	9.0	3	14.00			* 102508	102514
18	2.50	125	21.0	14.0	11.0	3	15.50			* 111614	102515
20	2.50	140	24.0	16.0	12.0	4	17.50				102516
24	3.00	160	27.0	18.0	14.5	4	21.00				102517
27	3.00	160	27.0	20.0	16.0	4	24.00				159244
30	3.50	180	30.0	22.0	18.0	4	26.50				143090

M ISO DIN 13

≤ Ø 2.8 PM | > Ø 2.8 HSSE

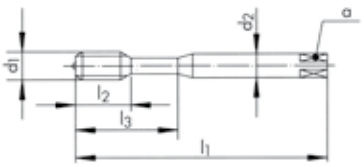




	N520-4	N520V-4	N520TN-4
	N	N + V	N + TiN
	61 63 71 72 73 81	11 12 13 14 21 32	11 12 13 14 21 31 32 73 74







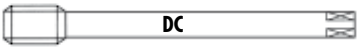


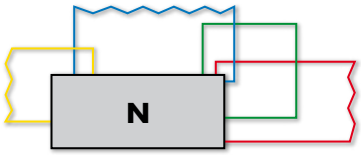
	B 4 x P	B 4 x P	B 4 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H

Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
2.5	**0.45**	100	10.0		2.8	2.1	3	2.05	**102594**	**142623**	
3	**0.50**	112	12.0	18	3.5	2.7	3	2.50	**102595**	**143399**	**162790**
4	**0.70**	112	14.0	21	4.5	3.4	3	3.30	**102596**	**143400**	**146837**
5	**0.80**	125	15.0	25	6.0	4.9	3	4.20	**102597**	**142654**	**150113**
6	**1.00**	125	17.0	30	6.0	4.9	3	5.00	**102598**	**143137**	**148821**

M ISO DIN 13

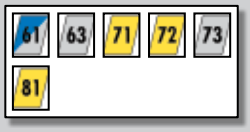
HSSE



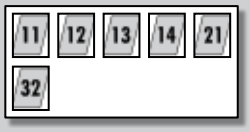


	N620-4	N620V-4	N620TN-4
			
			
	B 4 x P	B 4 x P	B 4 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H

N620-4 

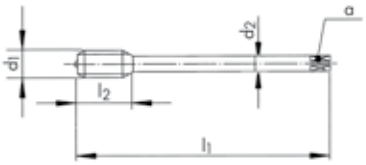


N620V-4  V



N620TN-4  TiN





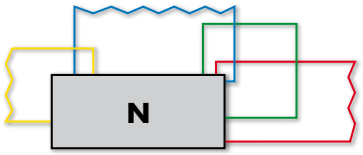


∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			N620-4 ID	N620V-4 ID	N620TN-4 ID
4	0.70	112	14.0	2.8	2.1	3	3.30	102619	142582	146442
5	0.80	125	15.0	3.5	2.7	3	4.20	102620	142657	146443
6	1.00	125	17.0	4.5	3.4	3	5.00	102621	142658	144591
8	1.25	140	20.0	6.0	4.9	3	6.80	102622	143401	146262
10	1.50	160	22.0	7.0	5.5	3	8.50	102614	142660	146849
12	1.75	180	24.0	9.0	7.0	3	10.20	102615	143127	146295
14	2.00	180	28.0	11.0	9.0	3	12.00	102616	151905	
16	2.00	200	30.0	12.0	9.0	3	14.00	102617	143106	143574
20	2.50	224	36.0	16.0	12.0	3	17.50	102618	143596	

M ISO DIN 13

≤ Ø 2.8 PM > Ø 2.8 HSSE

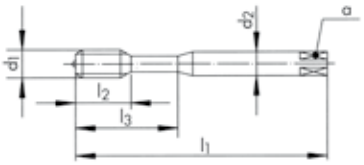




	N560-3	N560V-3	N560TN-3
	R40	R40 V	R40 TiN
	61 63 71 72 73 81	11 12 13 14 21 32	11 12 13 14 21 31 32 73 74







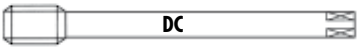


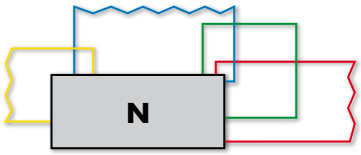


									N560-3	N560V-3	N560TN-3
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ISO 2 6H ID	ISO 2 6H ID	ISO 2 6H ID
2.5	0.45	100	9.0		2.8	2.1	2	2.05	102600	102607	
3	0.50	112	5.5	18	3.5	2.7	3	2.50	102601	102608	142663
4	0.70	112	7.5	21	4.5	3.4	3	3.30	102602	102609	142664
5	0.80	125	9.0	25	6.0	4.9	3	4.20	102603	102610	142665
6	1.00	125	11.0	30	6.0	4.9	3	5.00	102604	102611	142666
8	1.25	140	12.5	35	8.0	6.2	3	6.80	102605	102612	142667
10	1.50	160	14.0	39	10.0	8.0	3	8.50	102599	102606	142668

M ISO DIN 13

HSSE

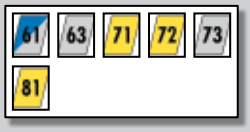




	N660-3	N660V-3	N660TN-3
			
			
			
			
	ISO 2 6H	ISO 2 6H	ISO 2 6H

N660-3

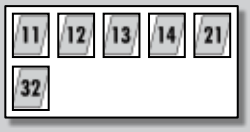




N660V-3





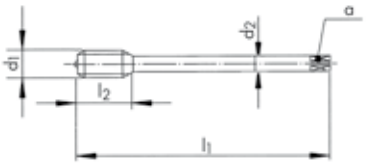


N660TN-3







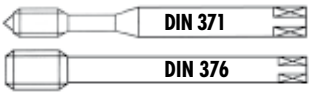


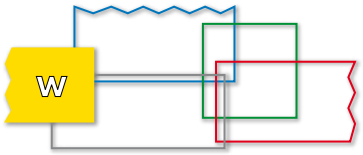


∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			N660-3 ID	N660V-3 ID	N660TN-3 ID
6	1.00	125	11.0	4.5	3.4	3	5.00	162792	115657	
8	1.25	140	12.5	6.0	4.9	3	6.80	162793	115544	
10	1.50	160	14.0	7.0	5.5	3	8.50	162794	135539	173484
12	1.75	180	14.0	9.0	7.0	3	10.20	102623	102626	142669
14	2.00	180	14.0	11.0	9.0	3	12.00	162253	147500	
16	2.00	200	18.0	12.0	9.0	3	14.00	102624	102627	142670
20	2.50	224	24.0	16.0	12.0	4	17.50	102625	102628	

M ISO DIN 13

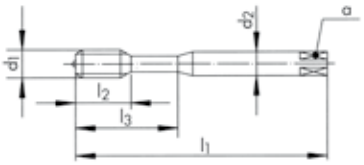
PM





W320-4		71 72 81			
W420-4		71 72 81			
W320DL-4	DL	71 72 81			
W420DL-4	DL	71 72 81			

W320-4	W420-4	W320DL-4	W420DL-4
		 NEW	 NEW
			
B 4 x P	B 4 x P	B 4 x P	B 4 x P
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H





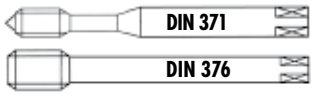
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
*2	0.40	45	8.0		2.8	2.1	2	1.60	104612		176688	
2.5	0.45	50	10.0		2.8	2.1	2	2.05	104613		176689	
2.6	0.45	50	10.0		2.8	2.1	2	2.15	* 104614			
3	0.50	56	12.0	18	3.5	2.7	2	2.50	104615		176690	
3.5	0.60	56	13.0	20	4.0	3.0	2	2.90	* 104616			
4	0.70	63	14.0	21	4.5	3.4	2	3.30	104617		176691	
5	0.80	70	15.0	25	6.0	4.9	2	4.20	104618		176354	
6	1.00	80	17.0	30	6.0	4.9	2	5.00	104619		175590	
8	1.25	90	20.0		6.0	4.9	2	6.80		104636		176692
10	1.50	100	22.0		7.0	5.5	2	8.50		104632		176693
12	1.75	110	24.0		9.0	7.0	3	10.20		104633		176694
16	2.00	110	30.0		12.0	9.0	3	14.00		104634		176695

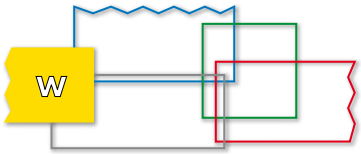
* W320-3
* W320DL-3



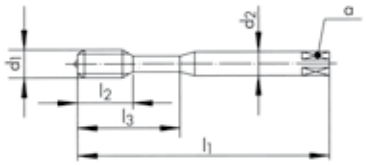
M ISO DIN 13

≤ Ø 2.8 PM | > Ø 2.8 HSSE





	W360-3	W460-3	W360DL-3	W460DL-3
				
			NEW	NEW
				
				
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
	ID	ID	ID	ID
W360-3	104625		176719	
	104626		176720	
	104627		176721	
	104628		176722	
	104629		176723	
	104630		176355	
	104631		176724	
	104624		176725	
W460-3		104640		176726
		104641		176727
W360DL-3				
W460DL-3				





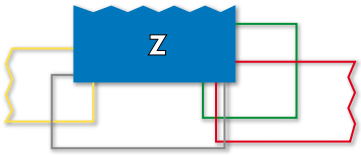
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		
2	0.40	45	7.0		2.8	2.1	2	1.60
2.5	0.45	50	9.0		2.8	2.1	2	2.05
3	0.50	56	5.5	18	3.5	2.7	2	2.50
4	0.70	63	7.5	21	4.5	3.4	2	3.30
5	0.80	70	9.0	25	6.0	4.9	2	4.20
6	1.00	80	11.0	30	6.0	4.9	2	5.00
8	1.25	90	12.5	35	8.0	6.2	2	6.80
10	1.50	100	14.0	39	10.0	8.0	2	8.50
12	1.75	110	14.0		9.0	7.0	3	10.20
16	2.00	110	18.0		12.0	9.0	3	14.00

M ISO DIN 13

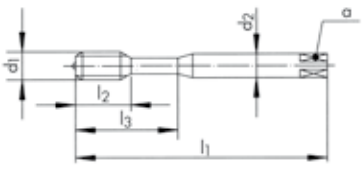
≤ Ø 25.4 PM | > Ø 25.4 HSSE

DIN 371

DIN 376



Z320V-4	V	21 22 23 41 42 51
Z420V-4	V	21 22 23 41 42 51
Z320VS-4	VS	21 22 23 24 51 61
Z420VS-4	VS	21 22 23 24 51 61





	Z320V-4	Z420V-4	Z320VS-4	Z420VS-4
				
				
	B 4 x P	B 4 x P	B 4 x P	B 4 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm			ID	ID	ID	ID
*1.6	0.35	40	8.0		2.5	2.1	2	1.25	142671			
*2	0.40	45	8.0		2.8	2.1	2	1.60	111613			
2.5	0.45	50	10.0		2.8	2.1	3	2.05	111455		143683	
2.6	0.45	50	10.0		2.8	2.1	3	2.15	142672			
3	0.50	56	12.0	18	3.5	2.7	3	2.50	104669		104830	
4	0.70	63	14.0	21	4.5	3.4	3	3.30	104670		104831	
5	0.80	70	15.0	25	6.0	4.9	3	4.20	104671		104832	
6	1.00	80	17.0	30	6.0	4.9	3	5.00	104672		104833	
8	1.25	90	20.0	35	8.0	6.2	3	6.80	104673		104834	
10	1.50	100	22.0	39	10.0	8.0	3	8.50	104668		104835	
12	1.75	110	24.0		9.0	7.0	3	10.20		104723		104836
14	2.00	110	28.0		11.0	9.0	3	12.00		142673		143684
16	2.00	110	30.0		12.0	9.0	3	14.00		105068		111569
18	2.50	125	33.0		14.0	11.0	4	15.50		142674		
20	2.50	140	36.0		16.0	12.0	4	17.50		105069		111570
22	2.50	140	36.0		18.0	14.5	4	19.50		146003		
24	3.00	160	39.0		18.0	14.5	4	21.00		142675		
30	3.50	180	45.0		22.0	18.0	4	26.50		142676		

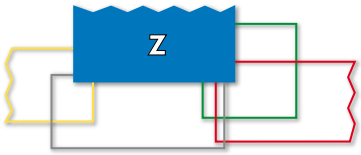
* Z320V-3 

M ISO DIN 13

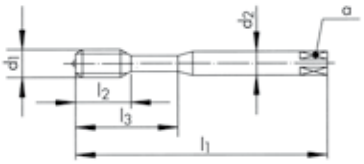
≤ Ø 2.8 PM | > Ø 2.8 HSSE

DIN 371

DIN 376



	Z360V-3	Z362V-3	Z462V-3
			
			
			
	ISO 2 6H	ISO 2 6H	ISO 2 6H





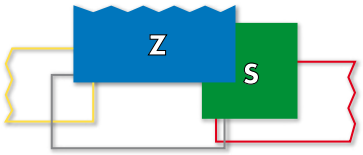
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
2	0.40	45	7.0		2.8	2.1	2	1.60	104684		
2.5	0.45	50	9.0		2.8	2.1	2	2.05	104685		
2.6	0.45	50	9.0		2.8	2.1	2	2.15	104686		
3	0.50	56	5.5	18	3.5	2.7	3	2.50	104687		
3.5	0.60	56	6.5	20	4.0	3.0	3	2.90		104688	
4	0.70	63	7.5	21	4.5	3.4	3	3.30		104689	
5	0.80	70	9.0	25	6.0	4.9	3	4.20		104690	
6	1.00	80	11.0	30	6.0	4.9	3	5.00		104691	
8	1.25	90	12.5	35	8.0	6.2	3	6.80		104692	
10	1.50	100	14.0	39	10.0	8.0	3	8.50		104683	
12	1.75	110	14.0		9.0	7.0	3	10.20			104742
14	2.00	110	14.0		11.0	9.0	3	12.00			104743
16	2.00	110	18.0		12.0	9.0	3	14.00			104744
18	2.50	125	21.0		14.0	11.0	3	15.50			104745
20	2.50	140	24.0		16.0	12.0	3	17.50			104746
22	2.50	140	24.0		18.0	14.5	3	19.50			104752
24	3.00	160	27.0		18.0	14.5	4	21.00			104747
27	3.00	160	27.0		20.0	16.0	4	24.00			104748
30	3.50	180	30.0		22.0	18.0	4	26.50			104749
36	4.00	200	36.0		28.0	22.0	4	32.00			104750
42	4.50	200	40.0		32.0	24.0	4	37.50			104751

M ISO DIN 13

HSSE

DIN 371

~DIN 371 (d_2 h6)

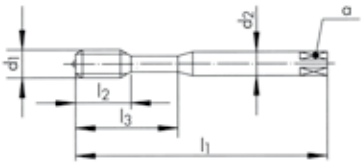


	Z362VS-3	Z370VS-3	Z370VS-3	Z373VS-3
				
	< 2.5 x D	< 3 x D	< 3 x D	< 3 x D
		PM	PM	PM
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	4HX	6HX

Z362VS-3 — R40 — VS — 22 23 24 51 61

Z370VS-3 — R45 — VS — CLASSIC — SYNCHRO — 15 22 23 24 51 52 61

Z373VS-3 — R45 — VS — CLASSIC — SYNCHRO — 15 22 23 24 51 52 61





∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
*3	0.50	56	5.5	18	3.5	2.7	3	2.50	111504
4	0.70	63	7.5	21	4.5	3.4	3	3.30	111505
5	0.80	70	9.0	25	6.0	4.9	3	4.20	111506
6	1.00	80	11.0	30	6.0	4.9	3	5.00	111507
8	1.25	90	12.5	35	8.0	6.2	3	6.80	111508
10	1.50	100	14.0	39	10.0	8.0	3	8.50	111509

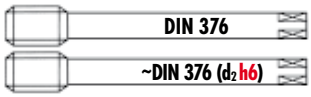
* Z360VS-3

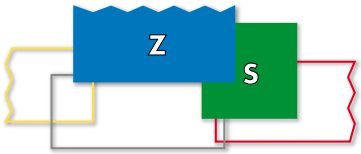
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID	ID
3	0.50	56	5.5	18	3.5(h9)	2.7	3	2.50	162776	165324	165236
4	0.70	63	7.5	21	4.5(h9)	3.4	3	3.30	162777	165325	165237
5	0.80	70	9.0	25	6.0	4.9	3	4.20	162778	165326	165238
6	1.00	80	11.0	30	6.0	4.9	3	5.00	162779	165327	165239
8	1.25	90	12.5	35	8.0	6.2	3	Δ 6.80	162780	165328	165240
10	1.50	100	14.0	39	10.0	8.0	3	8.50	162781	165438	165241

Δ 4HX = 6.70

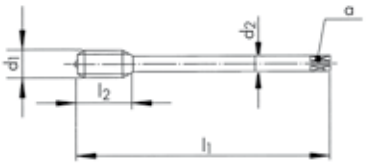
M ISO DIN 13

HSSE





	Z462VS-3	Z470VS-3	Z473VS-3
			
	R40	R45	R45
	VS	VS	VS
		CLASSIC	CLASSIC
		SYNCHRO	SYNCHRO
	22 23 24 51 61	15 22 23 24 51 52 61	15 22 23 24 51 52 61
	< 2.5 x D	< 3 x D	< 3 x D
		PM	PM
	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX

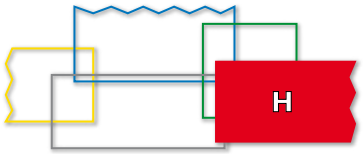




∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
12	1.75	110	14.0	9.0	7.0	4	10.20	111510
14	2.00	110	14.0	11.0	9.0	4	12.00	* 148169
16	2.00	110	18.0	12.0	9.0	4	14.00	111511
20	2.50	140	24.0	16.0	12.0	4	17.50	111512
24	3.00	160	27.0	18.0	14.5	4	21.00	* 111620

∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 h6 mm	a mm			ID	ID
12	1.75	110	14.0	*10.0	*8.0	4	10.20	162782	165242
14	2.00	110	14.0	*12.0	*9.0	4	12.00	162783	* 165243
16	2.00	110	18.0	12.0	9.0	4	14.00	162784	165244
18	2.50	125	21.0	14.0	11.0	4	15.50	170643	
20	2.50	140	24.0	16.0	12.0	4	17.50	162785	165234
22	2.50	140	24.0	16.0	12.0	4	19.50	175190	
24	3.00	160	27.0	16.0	12.0	4	21.00	162786	165235

* Norme DC / * DC Norm / * Norma DC



	H320-4	H320TC-4		
				
				
				
	ISO 2 6H	ISO 2 6H		
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
2	0.40	45	8.0		2.8	2.1	2	1.60	101206	151836
2.2	0.45	45	9.0		2.8	2.1	2	1.75	111801	
2.5	0.45	50	10.0		2.8	2.1	3	2.05	101207	148603
3	0.50	56	12.0	18	3.5	2.7	3	2.50	101209	111836
3.5	0.60	56	13.0	20	4.0	3.0	3	2.90	101210	
4	0.70	63	14.0	21	4.5	3.4	3	3.30	101211	111502
4.5	0.75	70	15.0	25	6.0	4.9	3	3.75	101212	
5	0.80	70	15.0	25	6.0	4.9	3	4.20	101213	111458
6	1.00	80	17.0	30	6.0	4.9	3	5.00	101215	111456
8	1.25	90	20.0	35	8.0	6.2	3	6.80	101218	111453
10	1.50	100	22.0	39	10.0	8.0	3	8.50	101205	110911

H320-4



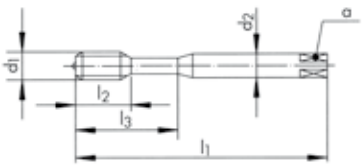


H320TC-4





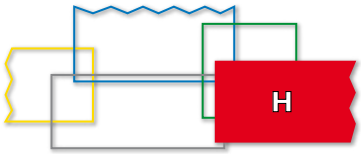






M ISO DIN 13

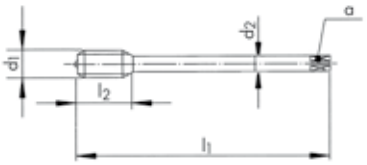
≤ Ø 25.4 PM | > Ø 25.4 HSSE | DIN 376



	H420-4	H420TC-4		
				
				
	B 4 x P	B 4 x P		
	ISO 2 6H	ISO 2 6H		

H420-4  

H420TC-4  TiCN 



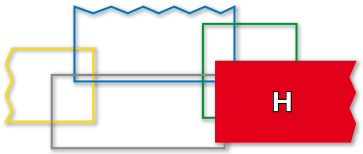


∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
12	1.75	110	24.0	9.0	7.0	4	10.20	101275	110912
14	2.00	110	28.0	11.0	9.0	4	12.00	101277	
16	2.00	110	30.0	12.0	9.0	4	14.00	101279	111612
18	2.50	125	33.0	14.0	11.0	4	15.50	101281	
20	2.50	140	36.0	16.0	12.0	4	17.50	101284	
24	3.00	160	39.0	18.0	14.5	4	21.00	101286	
27	3.00	160	42.0	20.0	16.0	4	24.00	101287	
30	3.50	180	45.0	22.0	18.0	4	26.50	101288	
36	4.00	200	51.0	28.0	22.0	4	32.00	101289	

M ISO DIN 13

PM

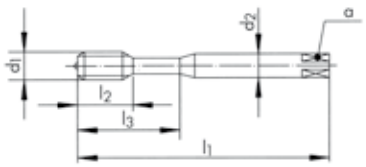
DIN 371



	H350-3	H350-3	H350TC-3	
				
	< 1.5 x D	< 1.5 x D	< 1.5 x D	
	C 2.5 x P	C 2.5 x P	C 2.5 x P	
	ISO 2 6H	ISO 3 6G	ISO 2 6H	

H350-3 — R25 — 15 16 62 82

H350TC-3 — R25 — TiCN — 15 16 31 82 83

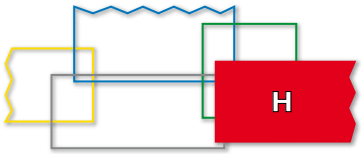




∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	ID	ID	6H + mm	ID
2	0.40	45	7.0		2.8	2.1	2	1.60	101238			146451
2.5	0.45	50	9.0		2.8	2.1	3	2.05	101239			144957
3	0.50	56	5.5	18	3.5	2.7	3	2.50	101242	101241	0.020	111835
3.5	0.60	56	6.5	20	4.0	3.0	3	2.90	101243			
4	0.70	63	7.5	21	4.5	3.4	3	3.30	101245	101244	0.022	111607
4.5	0.75	70	9.0	25	6.0	4.9	3	3.75	101246			
5	0.80	70	9.0	25	6.0	4.9	3	4.20	101248	101247	0.024	111610
6	1.00	80	11.0	30	6.0	4.9	3	5.00	101251	101250	0.026	111500
8	1.25	90	12.5	35	8.0	6.2	3	6.80	101255	101254	0.028	110963
10	1.50	100	14.0	39	10.0	8.0	3	8.50	101237	101236	0.032	111454

M ISO DIN 13

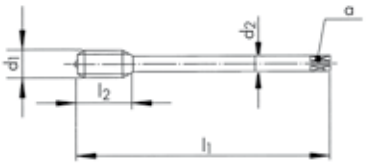
≤ Ø 25.4 PM | > Ø 25.4 HSSE | DIN 376



	H450-3	H450-3	H450TC-3
			
	< 1.5 x D	< 1.5 x D	< 1.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P
	ISO 2 6H	ISO 3 6G	ISO 2 6H

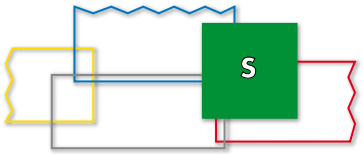
H450-3 — R25 — 15 16 62 82

H450TC-3 — R25 — TiCN — 15 16 31 82 83





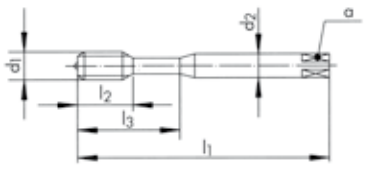
Ø d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	ID	6H + mm	ID
12	1.75	110	14.0	9.0	7.0	4	10.20	101305	101304	0.034	111501
14	2.00	110	14.0	11.0	9.0	4	12.00	101307			
16	2.00	110	18.0	12.0	9.0	4	14.00	101309			111605
18	2.50	125	21.0	14.0	11.0	4	15.50	101311			
20	2.50	140	24.0	16.0	12.0	4	17.50	101313			
22	2.50	140	24.0	18.0	14.5	4	19.50	101315			
24	3.00	160	27.0	18.0	14.5	4	21.00	101318			
27	3.00	160	27.0	20.0	16.0	4	24.00	101320			
30	3.50	180	30.0	22.0	18.0	4	26.50	101323			
36	4.00	200	36.0	28.0	22.0	4	32.00	101324			
42	4.50	200	40.0	32.0	24.0	4	37.50	101325			



S320VS-4 VS 13 15 24 52

S420VS-4 VS 13 15 24 52

	S320VS-4	S320VS-4	S420VS-4
			
			
	B 4 x P	B 4 x P	B 4 x P
	6HX	4HX	6HX



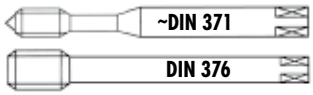


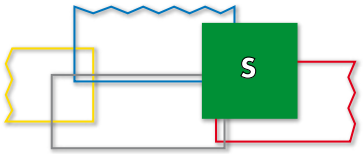
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
3	0.50	56	12.0	18	3.5	2.7	3	2.50	111596	* 165318	
4	0.70	63	14.0	21	4.5	3.4	3	3.30	111597	165319	
5	0.80	70	15.0	25	6.0	4.9	3	4.20	111598	165320	
6	1.00	80	17.0	30	6.0	4.9	3	5.00	111599	165321	
8	1.25	90	20.0	35	8.0	6.2	3	Δ 6.80	111600	165322	
10	1.50	100	22.0	39	10.0	8.0	3	8.50	111601	165323	
12	1.75	110	24.0		9.0	7.0	4	10.20			111602
14	2.00	110	30.0		11.0	9.0	4	12.50			* 162537
16	2.00	110	30.0		12.0	9.0	4	14.00			111603
20	2.50	140	36.0		16.0	12.0	4	17.50			111604

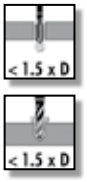
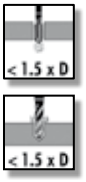
Δ 4HX = 6.70

M ISO DIN 13

PM





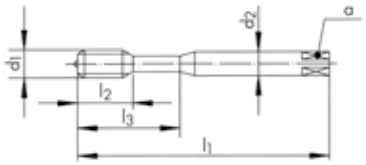
	S360VS-3	S460VS-3	SA390-3	SA390-3
				
				
				
				
	6HX	6HX	4HX	6HX

S360VS-3 — R35 — VS — 13 15 24 52

S460VS-3 — R35 — VS — 13 15 24 52

aero

SA390-3 — R10 — 53



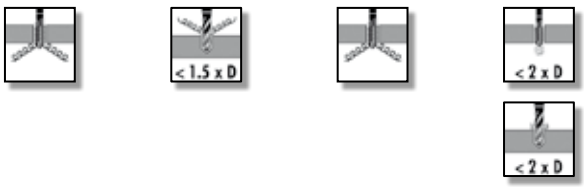


∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			S360VS-3 ID	S460VS-3 ID	SA390-3	SA390-3
3	0.50	56	5.5	18	3.5	2.7	3	2.50	111513			
4	0.70	63	7.5	21	4.5	3.4	3	3.30	111514			
5	0.80	70	9.0	25	6.0	4.9	3	4.20	111515			
6	1.00	80	11.0	30	6.0	4.9	3	5.00	111516			
8	1.25	90	12.5	35	8.0	6.2	3	6.80	111517			
10	1.50	100	14.0	39	10.0	8.0	3	8.50	111518			
12	1.75	110	14.0		9.0	7.0	4	10.20		111519		
14	2.00	110	14.0		11.0	9.0	4	12.00		148171		
16	2.00	110	18.0		12.0	9.0	4	14.00		111520		
20	2.50	140	24.0		16.0	12.0	4	17.50		111521		
24	3.00	160	27.0		18.0	14.5	4	21.00		111606		

∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			S360VS-3	S460VS-3 ID	SA390-3 ID	SA390-3 ID
4	0.70	63	14.0	4.5	3.4	3	3.30			149673	149674
5	0.80	70	15.0	6.0	4.9	3	4.20			149693	149694
6	1.00	80	20.0	6.0	4.9	3	5.00			149707	149708
8	1.25	90	25.0	8.0	6.2	3	Δ 6.80			149736	149737
10	1.50	100	30.0	10.0	8.0	3	8.50			149754	149755
12	1.75	110	35.0	12.0	9.0	4	10.20				149775
14	2.00	110	40.0	16.0	12.0	4	12.00				* 149792
16	2.00	110	40.0	16.0	12.0	4	14.00				* 149816

Δ 4HX = 6.70

aero

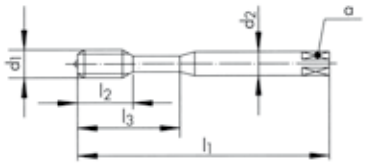
	SA320-4	SA350-3	TL320VS-4	TL351VS-3
				
				
				
	4HX	4HX	4HX	4HX
∅ d_1 M	ID	ID	ID	ID
3	147975	147987	152006	152012
4	147976	147988	152007	152013
5	147977	147989	152008	152014
6	147978	147990	152009	152015
8	147979	147991	152010	152016
10	147980	147992	152011	152017
	6HX	6HX	6HX	6HX
∅ d_1 M	ID	ID	ID	ID
3	147981	147993	148001	148000
4	147982	147994	148003	148002
5	147983	147995	148007	148006
6	147984	147996	148011	148010
8	147985	147997	148020	148018
10	147986	147998	148027	148025

SA320-4  52 53

SA350-3  52 53

TL320VS-4  VS 41 42

TL351VS-3  VS 41 42





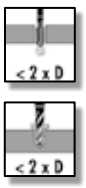
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		
3	0.50	56	12.0		3.5	2.7	3	2.50
4	0.70	63	14.0		4.5	3.4	3	3.30
5	0.80	70	15.0		6.0	4.9	3	4.20
6	1.00	80	15.0	23	6.0	4.9	3	5.00
8	1.25	90	18.0	29	8.0	6.2	3	6.70
10	1.50	100	20.0	33	10.0	8.0	3	8.50

∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		
3	0.50	56	12.0		3.5	2.7	3	2.50
4	0.70	63	14.0		4.5	3.4	3	3.30
5	0.80	70	15.0		6.0	4.9	3	4.20
6	1.00	80	15.0	23	6.0	4.9	3	5.00
8	1.25	90	18.0	29	8.0	6.2	3	6.80
10	1.50	100	20.0	33	10.0	8.0	3	8.50

M ISO DIN 13

PM ~DIN 376

aero

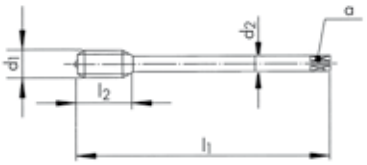
	SA420-4	SA450-3	TL420VS-4	TL451VS-3
				
				
				
	4HX	4HX	4HX	4HX
	ID	ID	ID	ID
∅ d_1 M				
12	148096	152189	152192	152195
14	* 152187			
16	* 152188	* 152191		152197
	6HX	6HX	6HX	6HX
	ID	ID	ID	ID
12	152198	152201	152204	148028
14	* 152199	* 152202	* 152205	152207
16	* 152200	152203	* 152206	148029

SA420-4  52 53

SA450-3  R15 52 53

TL420VS-4  VS 41 42

TL451VS-3  R15  VS 41 42

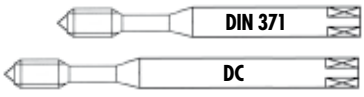


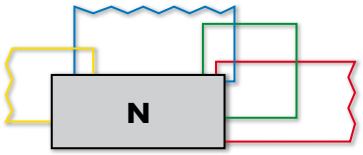


∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		
12	1.75	110	24.0	9.0	7.0	4	10.20
14	2.00	110	28.0	11.0	9.0	4	12.00
16	2.00	110	30.0	12.0	9.0	4	14.00

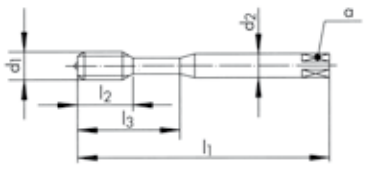
M ISO DIN 13

PM





	GG350NV-3	GG350TC-3	GG353TC-3	GG550NV-3
	R15 NV	R15 TiCN	R15 TiCN	R15 NV
	31 74	31 74	31 74	31 74
				
	< 2.5 x D	< 2.5 x D	< 3 x D	< 2.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX	6HX





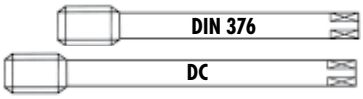
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
3	0.50	56	12.0	18	3.5	2.7	3	2.50	101172	101178
4	0.70	63	14.0	21	4.5	3.4	3	3.30	101173	101179
5	0.80	70	15.0	25	6.0	4.9	3	4.20	101174	101180
6	1.00	80	17.0	30	6.0	4.9	3	5.00	101175	101181
8	1.25	90	20.0	35	8.0	6.2	4	6.80	101076	101182
10	1.50	100	22.0	39	10.0	8.0	4	8.50	101171	101177

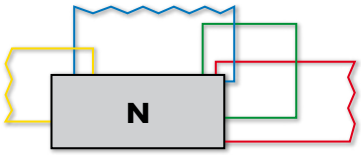
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID
5	0.80	70	15.0	25	6.0	4.9	3	4.20	144947
6	1.00	80	17.0	30	6.0	4.9	3	5.00	147710
8	1.25	90	20.0	35	8.0	6.2	4	6.80	147711
10	1.50	100	22.0	39	10.0	8.0	4	8.50	146708

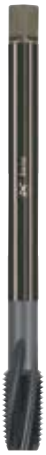
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
4	0.70	112	14.0	21	4.5	3.4	3	3.30	101196
5	0.80	125	15.0	25	6.0	4.9	3	4.20	101197
6	1.00	125	17.0	30	6.0	4.9	3	5.00	101198

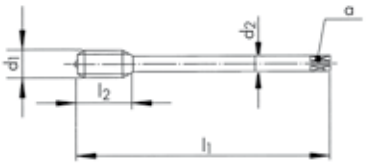
M ISO DIN 13

PM





	GG450NV-3	GG450TC-3	GG453TC-3	GG650NV-3
	R15 NV	R15 TiCN	R15 TiCN	R15 NV
	31 74	31 74	31 74	31 74
				
	< 2.5 x D	< 2.5 x D	< 3 x D	< 2.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX	6HX





∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
8	1.25	90	20.0	6.0	4.9	4	6.80	101189	101194
10	1.50	100	22.0	7.0	5.5	4	8.50	101183	101195
12	1.75	110	24.0	9.0	7.0	4	10.20	101184	101190
14	2.00	110	28.0	11.0	9.0	4	12.00	101185	101191
16	2.00	110	30.0	12.0	9.0	4	14.00	101186	101192
20	2.50	140	36.0	16.0	12.0	4	17.50	101187	101193
24	3.00	160	39.0	18.0	14.5	4	21.00	101188	

∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 h6 mm	a mm			ID
12	1.75	110	24.0	*10.0	*8.0	4	10.20	146707
16	2.00	110	30.0	12.0	9.0	4	14.00	162796

* Norme DC / * DC Norm / * Norma DC

∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
8	1.25	140	20.0	6.0	4.9	4	6.80	101203
10	1.50	160	22.0	7.0	5.5	4	8.50	101199
12	1.75	180	24.0	9.0	7.0	4	10.20	101200
16	2.00	200	30.0	12.0	9.0	4	14.00	101201
20	2.50	224	36.0	16.0	12.0	4	17.50	101202

M ISO DIN 13

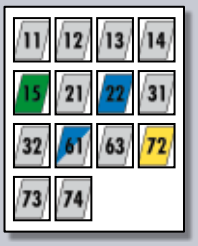
Uniquement pour taraudage synchrone
Nur für Synchronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado

PM

~DIN 371 (d_2 h6)
~DIN 376 (d_2 h6)

RTS
Rigid Tapping Synchro

RTS320VS-4
RTS420VS-4
RTS323VS-4
RTS423VS-4



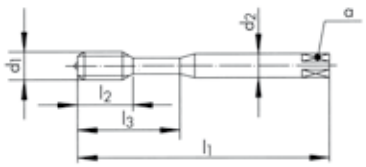














∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			RTS320VS-4 ID	RTS420VS-4 ID	RTS323VS-4 ID	RTS423VS-4 ID
*2	0.40	45	8.0		2.8(h9)	2.1	2	1.60	143532			
2.5	0.45	50	10.0		2.8(h9)	2.1	3	2.05	143534			
3	0.50	56	5.5	18	3.5(h9)	2.7	3	2.50	150601			
4	0.70	63	7.5	21	4.5(h9)	3.4	3	3.30	150603			
5	0.80	70	9.0	25	6.0	4.9	3	4.20	150605		150606	
6	1.00	80	11.0	30	6.0	4.9	3	5.00	150610		150611	
8	1.25	90	12.5	35	8.0	6.2	3	6.80	150620		150621	
10	1.50	100	14.0	39	10.0	8.0	3	8.50	150635		150636	
12	1.75	110	14.0		*10.0	*8.0	3	10.20		151863		151864
14	2.00	110	14.0		*12.0	*9.0	3	12.00		162535		
16	2.00	110	18.0		12.0	9.0	3	14.00		150670		150671
20	2.50	140	24.0		16.0	12.0	4	17.50		150679		
24	3.00	160	27.0		16.0	12.0	4	21.00		162787		

* Norme DC / * DC Norm / * Norma DC

* RTS320VS-3





sur demande
auf Anfrage
on request
su richiesta
sobre pedido

ISO DIN 13

SYNCHRO — Uniquement pour taraudage synchrone / Nur für Synchronbearbeitung / Only for rigid tapping / Solo per maschiatura sincrona / Solo para roscado sincronizado

PM — ~DIN 371 (d_2 h6) / ~DIN 376 (d_2 h6)

RTS
Rigid Tapping Synchro

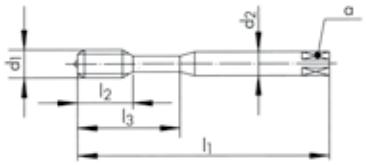
	RTS362VS-3	RTS462VS-3	RTS365VS-3	RTS465VS-3
				
	< 2.5 x D	< 2.5 x D	≤ 2.5 x D	≤ 2.5 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX	6HX

RTS362VS-3 — R40 — VS — 11 12 13 14 15 21 22 31 32 61 63 72 73 74

RTS462VS-3 — R40 — VS — 11 12 13 14 15 21 22 31 32 61 63 72 73 74

RTS365VS-3 — R40 — VS — 11 12 13 14 15 21 22 31 32 61 63 72 73 74

RTS465VS-3 — R40 — VS — 11 12 13 14 15 21 22 31 32 61 63 72 73 74





∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID	ID	ID
*2	0.40	45	7.0		2.8 (h9)	2.1	3	1.60	143536			
*2.5	0.45	50	9.0		2.8 (h9)	2.1	3	2.05	143538			
3	0.50	56	5.5	18	3.5 (h9)	2.7	3	2.50	150602		160477	
4	0.70	63	7.5	21	4.5 (h9)	3.4	3	3.30	150604		160478	
5	0.80	70	9.0	25	6.0	4.9	3	4.20	150607		150608	
6	1.00	80	11.0	30	6.0	4.9	3	5.00	150612		150613	
8	1.25	90	12.5	35	8.0	6.2	3	6.80	150622		150623	
10	1.50	100	14.0	39	10.0	8.0	3	8.50	150637		150638	
12	1.75	110	14.0		*10.0	*8.0	3	10.20		151865		151866
14	2.00	110	14.0		*12.0	*9.0	3	12.00		151870		150663
16	2.00	110	18.0		12.0	9.0	3	14.00		150672		150673
20	2.50	140	24.0		16.0	12.0	4	17.50		150681		150682
24	3.00	160	27.0		16.0	12.0	4	21.00		151873		150690

* Norme DC / * DC Norm / * Norma DC

≥ Ø 6 mm — sur demande / auf Anfrage / on request / su richiesta / sobre pedido

* RTS360VS-3

SYNCHRO
Uniquement pour taraudage synchrone
Nur für Synchronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado

PM

~DIN 371 (d_2 h6)

RTS
Rigid Tapping Synchro

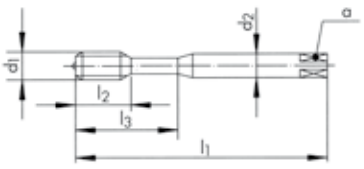
RTS362VS-5	RTS365VS-5	RTS362VS-3

RTS362VS-5 — R40 — VS

RTS365VS-5 — R40 — VS

RTS362VS-3 — R40 — VS

11 12 13 14 15 21 22 31 32 61 63 72 73 74







< 2.5 x D | ≤ 2.5 x D | < 2.5 x D

E 1.5 x P | E 1.5 x P | C 2.5 x P

6HX | 6HX | 6GX

∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
3	0.50	56	5.5	18	3.5(h9)	2.7	3	2.50	157648	
4	0.70	63	7.5	21	4.5(h9)	3.4	3	3.30	157650	
5	0.80	70	9.0	25	6.0	4.9	3	4.20	157652	162791
6	1.00	80	11.0	30	6.0	4.9	3	5.00	158074	151803
8	1.25	90	12.5	35	8.0	6.2	3	6.80	158076	157821
10	1.50	100	14.0	39	10.0	8.0	3	8.50	153286	157823

∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm		6H	ID	6H + mm
3	0.50	56	5.5	18	3.5(h9)	2.7	3	2.50	162797	0.020
4	0.70	63	7.5	21	4.5(h9)	3.4	3	3.35	162798	0.022
5	0.80	70	9.0	25	6.0	4.9	3	4.25	162799	0.024
6	1.00	80	11.0	30	6.0	4.9	3	5.00	162800	0.026
8	1.25	90	12.5	35	8.0	6.2	3	6.80	162801	0.028
10	1.50	100	14.0	39	10.0	8.0	3	8.50	162802	0.032

≥ Ø 6 mm
sur demande
auf Anfrage
on request
su richiesta
sobre pedido

ISO DIN 13

SYNCHRO
Uniquement pour taraudage synchrone
Nur für Synchronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado

PM

DC ~DIN 371 (d_2 h6)
DC ~DIN 376 (d_2 h6)

RTS
Rigid Tapping Synchro

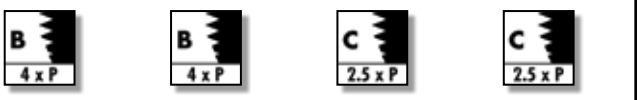
RTS523VS-4
RTS623VS-4
RTS565VS-3
RTS665VS-3

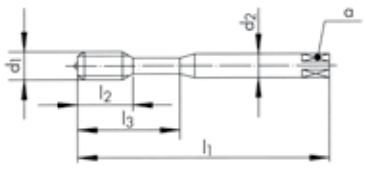
VS

11 12 13 14
15 21 22 31
32 61 63 72
73 74











6HX | 6HX | 6HX | 6HX

∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
5	0.80	125	9.0	25	6.0	4.9	3	4.20	161038	
6	1.00	125	11.0	30	6.0	4.9	3	5.00	161041	
8	1.25	140	12.5	35	8.0	6.2	3	6.80	161044	
10	1.50	160	14.0	39	10.0	8.0	3	8.50	161047	
12	1.75	180	14.0		*10.0	*8.0	3	10.20		161050
16	2.00	200	18.0		12.0	9.0	3	14.00		161053

* Norme DC / * DC Norm / * Norma DC

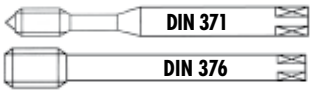
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
6	1.00	125	11.0	30	6.0	4.9	3	5.00	150614	
8	1.25	140	12.5	35	8.0	6.2	3	6.80	150624	
10	1.50	160	14.0	39	10.0	8.0	3	8.50	150639	
12	1.75	180	14.0		*10.0	*8.0	3	10.20		151867
16	2.00	200	18.0		12.0	9.0	3	14.00		150674

* Norme DC / * DC Norm / * Norma DC

≥ Ø 6 mm
sur demande
auf Anfrage
on request
su richiesta
sobre pedido

M ISO DIN 13

HSSE



K

	K313TC-3	K413TC-3		
				
	<3 x D	<3 x D		
	C 2.5 x P	C 2.5 x P		
	6HX	6HX		

K313TC-3

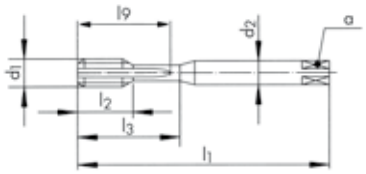
TiCN CLASSIC SYNCHRO >20 bar

11 12 13 14 15 31 32 62 63 74

K413TC-3

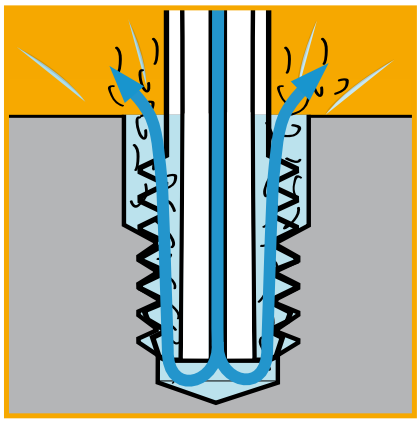
TiCN CLASSIC SYNCHRO >20 bar

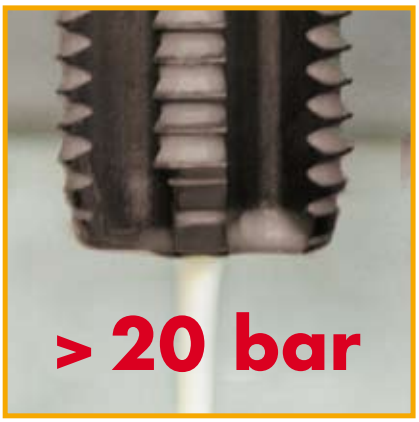
11 12 13 14 15 31 32 62 63 74





∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	l_9 mm	d_2 mm	a mm			ID	ID
6	1.00	80	17.0	30	28.0	6.0	4.9	3	5.00	170766	
8	1.25	90	20.0	35	33.0	8.0	6.2	3	6.80	170769	
10	1.50	100	22.0	39	37.0	10.0	8.0	3	8.50	170772	
12	1.75	110	24.0		42.0	9.0	7.0	3	10.20		165838
14	2.00	110	28.0		49.0	11.0	9.0	3	12.00		170778
16	2.00	110	30.0		56.0	12.0	9.0	4	14.00		170783
20	2.50	140	36.0		70.0	16.0	12.0	5	17.50		170786
24	3.00	160	39.0		84.0	18.0	14.5	5	21.00		170775







M ISO DIN 13

HSSE



K

	K613TC-3	K613VS-3		
				
		NEW		
	< 4 x D	< 4 x D		
	C 2.5 x P	C 2.5 x P		
	6HX	6HX		

K613TC-3

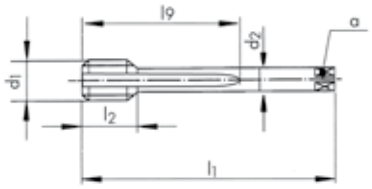
TiCN | CLASSIC | SYNCHRO | >20 bar

11 | 12 | 13 | 14 | 15 | 31 | 32 | 62 | 63 | 74

K613VS-3

VS | CLASSIC | SYNCHRO | >20 bar

11 | 12 | 13 | 14 | 15 | 31 | 32 | 62 | 63 | 74





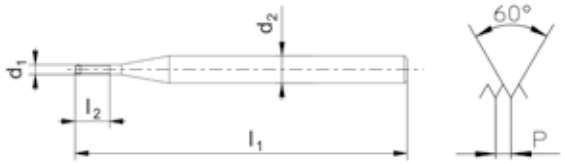
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_9 mm	d_2 mm	a mm			ID	ID
6	1.00	110	17.0	30	4.5	3.4	3	5.00	170646	172699
8	1.25	110	20.0	40	6.0	4.9	3	6.80	170649	172700
10	1.50	125	22.0	50	7.0	5.5	3	8.50	170652	172701
12	1.75	140	24.0	60	9.0	7.0	3	10.20	167982	172702
14	2.00	140	28.0	70	11.0	9.0	3	12.00	167983	
16	2.00	160	30.0	80	12.0	9.0	4	14.00	167984	170573
20	2.50	180	36.0	100	16.0	12.0	5	17.50	167985	170576
24	3.00	200	39.0	120	18.0	14.5	5	21.00	167986	172704
27	3.00	225	42.0	135	20.0	16.0	5	24.00	167987	
30	3.50	250	45.0	150	22.0	18.0	5	26.50	165542	
33	3.50	280	48.0	165	25.0	20.0	5	29.50	167988	
36	4.00	300	51.0	180	28.0	22.0	6	32.00	167989	
39	4.00	300	55.0	195	32.0	24.0	6	35.00	167990	
42	4.50	355	55.0	210	32.0	24.0	6	37.50	167999	

Vc (m/min)

	M6 - M10	M12 - M16	M20 - M30	M33 - M42
11 63	32	28	22	18
12 31 32 74	30	25	20	15
13 14	24	20	16	12
15	15	12	8	6
62	35	30	25	20

FS FORMING

	FS380VS-5	FS380VS-3	FS380VS-3	FS380VS-3
	VS	VS		
	11 12 13 14 15 21 61 63	11 12 13 14 15 21 61 63		
				
	< 2.5 x D	< 2.5 x D	< 2.5 x D	< 2.5 x D
	E 1.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX	6GX



∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm	4HX → ←6HX	Tol.	ID	ID	ID	ID	6H + mm
1	0.25	40	3.0	2.5		0.88	+ 0.02	157171	173452			
1.2	0.25	40	3.6	2.5		1.08	+ 0.02	157172	173455			
1.4	0.30	40	4.2	2.5		1.25	+ 0.02	157173	173458			
1.6	0.35	40	4.8	2.5		1.45	+ 0.02	157174	169779			
1.7	0.35	40	5.1	2.5		1.55	+ 0.02		169782			
1.8	0.35	40	5.4	2.5		1.65	+ 0.02	157175	169785			
2	0.40	45	8.0	2.8	2.1	1.80	+ 0.02			157176	157180	0.019
2.5	0.45	50	10.0	2.8	2.1	2.30	+ 0.02			157178	157181	0.020
2.6	0.45	50	10.0	2.8	2.1	2.40	+ 0.02			157179		

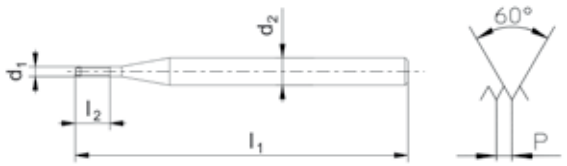
≤ M1.5 4HX

M ISO DIN 13

PM ~DIN 2174

FS FORMING

	FS380DL-5	FS380DL-3	FS380DL-3	FS380DL-3
				
	NEW	NEW	NEW	NEW
				
				
	6HX	6HX	6HX	6GX



∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm	4HX / 6HX	Tol.	ID	ID	ID	ID 6H + mm
1	0.25	40	3.0	2.5		0.88	+ 0.02	172839	173461		
1.2	0.25	40	3.6	2.5		1.08	+ 0.02	172840	173464		
1.4	0.30	40	4.2	2.5		1.25	+ 0.02	172841	173467		
1.6	0.35	40	4.8	2.5		1.45	+ 0.02	170585	170916		
1.7	0.35	40	5.1	2.5		1.55	+ 0.02		172843		
1.8	0.35	40	5.4	2.5		1.65	+ 0.02	172842	172844		
2	0.40	45	8.0	2.8	2.1	1.80	+ 0.02			158814	172849 0.019
2.5	0.45	50	10.0	2.8	2.1	2.30	+ 0.02			172845	173246 0.020
2.6	0.45	50	10.0	2.8	2.1	2.40	+ 0.02			172846	

≤ M1.5 4HX

PM ~DIN 2174

FPS FORMING

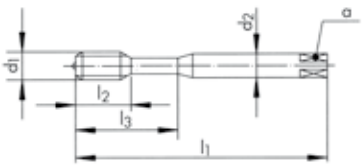
	FPS380CN-3	FPS381CN-3	FPS380VS-3	FPS381VS-3
	CrN	CrN	VS	VS
	63 71 72 73	63 71 72 73	11 12 13 14 15 21 24 63	11 12 13 14 15 21 24 63













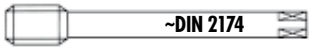
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX → ←	Tol.	ID	ID	ID	ID
3	0.50	56	12.0	18	3.5	2.7	2.80	+ 0.03	166613	166615	166614	166616
3.5	0.60	56	13.0	20	4.0	3.0	3.25	+ 0.03	166619	166621	166620	166622
4	0.70	63	14.0	21	4.5	3.4	3.70	+ 0.03	166626	166628	166627	166629
5	0.80	70	15.0	25	6.0	4.9	4.65	+ 0.03	166634	166636	166635	166637
6	1.00	80	17.0	30	6.0	4.9	5.55	+ 0.05	166643	166645	166644	166646
8	1.25	90	20.0	35	8.0	6.2	7.40	+ 0.05	166653	166655	166654	166656
10	1.50	100	22.0	39	10.0	8.0	9.30	+ 0.05	166663	166665	166664	166666

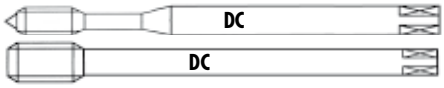


Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX → ←	Tol.	ID	6H + mm	ID	6H + mm
3	0.50	56	12.0	18	3.5	2.7	2.80	+ 0.03	166697	0.020	166617	0.020
3.5	0.60	56	13.0	20	4.0	3.0	3.25	+ 0.03	166687	0.021	166623	0.021
4	0.70	63	14.0	21	4.5	3.4	3.70	+ 0.03	166688	0.022	166630	0.022
5	0.80	70	15.0	25	6.0	4.9	4.65	+ 0.03	166689	0.024	166638	0.024
6	1.00	80	17.0	30	6.0	4.9	5.55	+ 0.05	166686	0.026	166647	0.026
8	1.25	90	20.0	35	8.0	6.2	7.40	+ 0.05	166740	0.028	166657	0.028
10	1.50	100	22.0	39	10.0	8.0	9.30	+ 0.05	166739	0.032	166667	0.032

M ISO DIN 13

PM





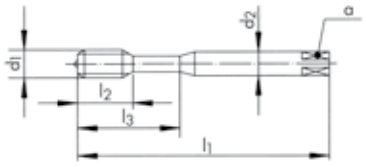
FPS FORMING

	FPS481VS-3		FPS581VS-3	FPS681VS-3
			NEW	NEW
			< 2.5 x D	< 2.5 x D
			C 2.5 x P	C 2.5 x P
			6HX	6HX

FPS481VS-3 — VS — 11 12 13 14 15 21 24 63

FPS581VS-3 — EL VS — 11 12 13 14 15 21 24 63

FPS681VS-3 — EL VS — 11 12 13 14 15 21 24 63

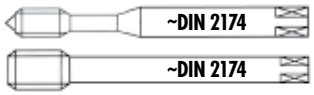


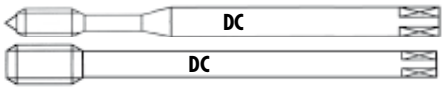


∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm	6HX	Tol.	ID
12	1.75	110	24.0	9.0	7.0	11.20	+ 0.05	166673
14	2.00	110	28.0	11.0	9.0	13.10	+ 0.05	166678
16	2.00	110	30.0	12.0	9.0	15.10	+ 0.05	166683
20	2.50	140	36.0	16.0	12.0	18.85	+ 0.05	168713

∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX	Tol.	ID	ID
3	0.50	100	12.0	18	3.5	2.7	2.80	+ 0.03	172824	
4	0.70	125	14.0	21	4.5	3.4	3.70	+ 0.03	172826	
5	0.80	140	15.0	25	6.0	4.9	4.65	+ 0.03	172828	
6	1.00	160	17.0	30	6.0	4.9	5.55	+ 0.05	172830	
8	1.25	180	20.0	35	8.0	6.2	7.40	+ 0.05	172832	
10	1.50	200	22.0	39	10.0	8.0	9.30	+ 0.05	172834	
12	1.75	224	24.0		9.0	7.0	11.20	+ 0.05		172836

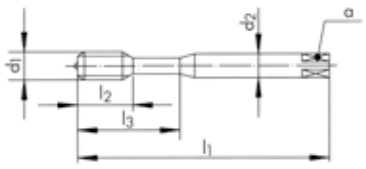
PM





FPS FORMING

	FPS384VS-3	FPS484VS-3	FPS584VS-3	FPS684VS-3
			 NEW	 NEW
	VS	VS	EL VS	EL VS
	11 12 13 14 15 21 24 63	11 12 13 14 15 21 24 63	11 12 13 14 15 21 24 63	11 12 13 14 15 21 24 63
	< 3 x D	< 3 x D	< 3 x D	< 3 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX	6HX

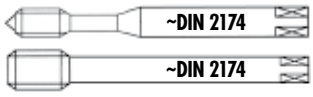




∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX → ←	Tol.	ID	ID
3	0.50	56	12.0	18	3.5	2.7	2.80	+ 0.03	166737	
4	0.70	63	14.0	21	4.5	3.4	3.70	+ 0.03	166738	
5	0.80	70	15.0	25	6.0	4.9	4.65	+ 0.03	166640	
6	1.00	80	17.0	30	6.0	4.9	5.55	+ 0.05	166650	
8	1.25	90	20.0	35	8.0	6.2	7.40	+ 0.05	166660	
10	1.50	100	22.0	39	10.0	8.0	9.30	+ 0.05	166670	
12	1.75	110	24.0		9.0	7.0	11.20	+ 0.05		166675
14	2.00	110	28.0		11.0	9.0	13.10	+ 0.05		166680
16	2.00	110	30.0		12.0	9.0	15.10	+ 0.05		166685

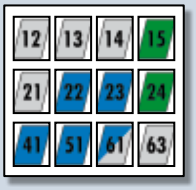
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX → ←	Tol.	ID	ID
3	0.50	100	12.0	18	3.5	2.7	2.80	+ 0.03	172763	
4	0.70	125	14.0	21	4.5	3.4	3.70	+ 0.03	172766	
5	0.80	140	15.0	25	6.0	4.9	4.65	+ 0.03	172769	
6	1.00	160	17.0	30	6.0	4.9	5.55	+ 0.05	172772	
8	1.25	180	20.0	35	8.0	6.2	7.40	+ 0.05	172775	
10	1.50	200	22.0	39	10.0	8.0	9.30	+ 0.05	172778	
12	1.75	224	24.0		9.0	7.0	11.20	+ 0.05		172781

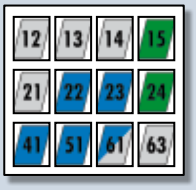
PM

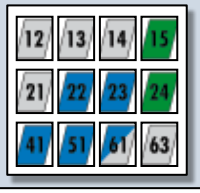


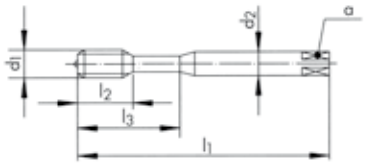
FAS FORMING

	FAS380VS-3		FAS381VS-3	FAS481VS-3
				
				
				
	6HX		6HX	6HX

FAS380VS-3  VS 

FAS381VS-3  VS 

FAS481VS-3  VS 





∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX → ←	Tol.	ID	ID	ID
3	0.50	56	12.0	18	3.5	2.7	2.80	+ 0.03	170603	166612	
3.5	0.60	56	13.0	20	4.0	3.0	3.25	+ 0.03	170605	166618	
4	0.70	63	14.0	21	4.5	3.4	3.70	+ 0.03	170607	166624	
5	0.80	70	15.0	25	6.0	4.9	4.65	+ 0.03	170609	166632	
6	1.00	80	17.0	30	6.0	4.9	5.55	+ 0.05	170611	166641	
8	1.25	90	20.0	35	8.0	6.2	7.40	+ 0.05	170616	166651	
10	1.50	100	22.0	39	10.0	8.0	9.30	+ 0.05	170618	166661	
12	1.75	110	24.0		9.0	7.0	11.20	+ 0.05			166671
14	2.00	110	28.0		11.0	9.0	13.10	+ 0.05			166676
16	2.00	110	30.0		12.0	9.0	15.10	+ 0.05			166681
20	2.50	140	36.0		16.0	12.0	18.85	+ 0.05			168711

										6GX		6GX	
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX → ←	Tol.		ID	6H + mm	ID	6H + mm
3	0.50	56	12.0	18	3.5	2.7	2.80	+ 0.03		166703	0.020		
3.5	0.60	56	13.0	20	4.0	3.0	3.25	+ 0.03		* 166704	0.021		
4	0.70	63	14.0	21	4.5	3.4	3.70	+ 0.03		166705	0.022		
5	0.80	70	15.0	25	6.0	4.9	4.65	+ 0.03		166706	0.024		
6	1.00	80	17.0	30	6.0	4.9	5.55	+ 0.05		166707	0.026		
8	1.25	90	20.0	35	8.0	6.2	7.40	+ 0.05		166708	0.028		
10	1.50	100	22.0	39	10.0	8.0	9.30	+ 0.05		166709	0.032		
12	1.75	110	24.0		9.0	7.0	11.20	+ 0.05				166710	0.034
14	2.00	110	28.0		11.0	9.0	13.10	+ 0.05				166711	0.038
16	2.00	110	30.0		12.0	9.0	15.10	+ 0.05				166712	0.038

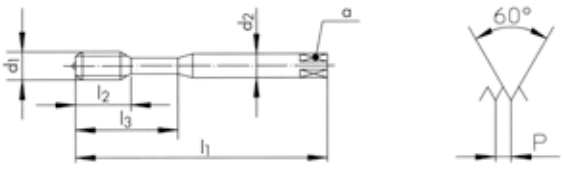
FAS FORMING

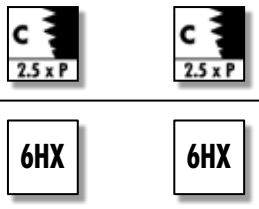
FAS384VS-3 VS

FAS484VS-3 VS



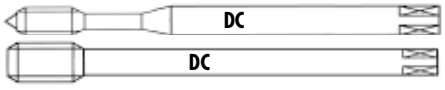






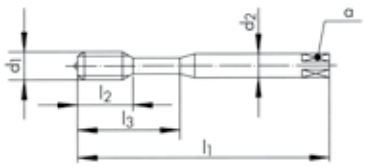
∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX	Tol.	FAS384VS-3 ID	FAS484VS-3 ID
3	0.50	56	12.0	18	3.5	2.7	2.80	+ 0.03	166741	
4	0.70	63	14.0	21	4.5	3.4	3.70	+ 0.03	166742	
5	0.80	70	15.0	25	6.0	4.9	4.65	+ 0.03	166690	
6	1.00	80	17.0	30	6.0	4.9	5.55	+ 0.05	166691	
8	1.25	90	20.0	35	8.0	6.2	7.40	+ 0.05	166692	
10	1.50	100	22.0	39	10.0	8.0	9.30	+ 0.05	166693	
12	1.75	110	24.0		9.0	7.0	11.20	+ 0.05		166694
14	2.00	110	28.0		11.0	9.0	13.10	+ 0.05		* 166695
16	2.00	110	30.0		12.0	9.0	15.10	+ 0.05		166696

PM



FAS FORMING

	FAS581VS-3	FAS681VS-3	FAS584VS-3	FAS684VS-3
	EL VS	EL VS	EL VS	EL VS
	12 13 14 15 / 21 22 23 24 / 41 51 61 63	12 13 14 15 / 21 22 23 24 / 41 51 61 63		
				
	NEW	NEW	NEW	NEW
	< 2.5 x D	< 2.5 x D	< 3 x D	< 3 x D
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6HX	6HX	6HX	6HX



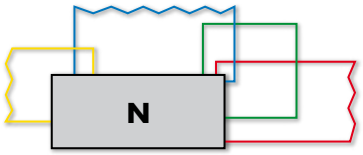


∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX → ←	Tol.	ID	ID	ID	ID
3	0.50	100	12.0	18	3.5	2.7	2.80	+ 0.03	172784		172805	
4	0.70	125	14.0	21	4.5	3.4	3.70	+ 0.03	172787		172808	
5	0.80	140	15.0	25	6.0	4.9	4.65	+ 0.03	172790		172811	
6	1.00	160	17.0	30	6.0	4.9	5.55	+ 0.05	172793		172814	
8	1.25	180	20.0	35	8.0	6.2	7.40	+ 0.05	172796		172817	
10	1.50	200	22.0	39	10.0	8.0	9.30	+ 0.05	172799		172820	
12	1.75	224	24.0		9.0	7.0	11.20	+ 0.05		172802		172822

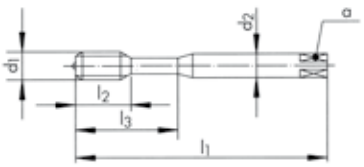
M ISO DIN 13

≤ Ø 2.8 PM | > Ø 2.8 HSS

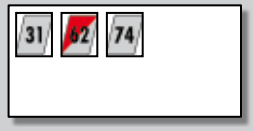
~ISO 529



	N1110-1	N1110-2	N1110-3	N1110-S
				
				
				
			ISO 2 6H	ISO 2 6H







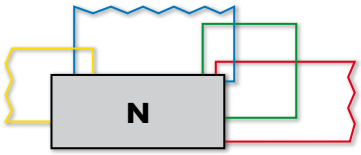
Ø d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
1	0.25	40	5.5		2.50	2.10	3	0.75	102744	102844	102917	111015
1.2	0.25	40	5.5		2.50	2.10	3	0.95	102746	102846	102919	111017
1.4	0.30	40	7.0		2.50	2.10	3	1.10	102747	102847	102920	111018
1.6	0.35	40	8.0		2.50	2.10	3	1.25	102749	102849	102922	111020
1.7	0.35	40	8.0		2.50	2.10	3	1.35	102750	102850	102923	111021
1.8	0.35	40	8.0		2.50	2.10	3	1.45	102751	102851	102924	111022
2	0.40	45	8.0		2.80	2.10	3	1.60	102759	102854	102934	111028
2.2	0.45	45	9.5		2.80	2.10	3	1.75	102761	102856	102937	111030
2.5	0.45	45	9.5		2.80	2.10	3	2.05	102763	102858	102941	111032
2.6	0.45	45	9.5		2.80	2.10	3	2.15	102765	102860	102944	111034
3	0.50	48	11.0	18	3.15	2.50	3	2.50	102766	102861	102947	111036
3.5	0.60	50	13.0	20	3.55	2.80	3	2.90	102769	102864	102950	111038
4	0.70	53	13.0	21	4.00	3.15	3	3.30	102771	102866	102956	111042
4.5	0.75	53	13.0	21	4.50	3.55	3	3.75	102775	102869	102959	111044
5	0.80	58	16.0	25	5.00	4.00	3	4.20	102776	102870	102965	111047
6	1.00	66	19.0	30	6.30	5.00	3	5.00	102781	102874	102973	111053
7	1.00	66	19.0	30	7.10	5.60	3	6.00	102786	102876	102978	111055
8	1.25	72	22.0	35	8.00	6.30	3	6.80	102788	102878	102986	111059
9	1.25	72	22.0	36	9.00	7.10	3	7.80	102792	102880	102991	111061
10	1.50	80	24.0	39	10.00	8.00	3	8.50	102752	102852	102931	111026

≤ M1.5 ISO 1 4H

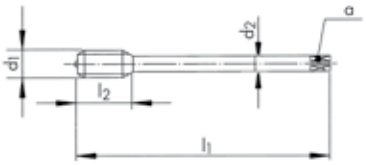
M ISO DIN 13

HSS





	N1210-1	N1210-2	N1210-3	N1210-S
				
				
				
			ISO 2 6H	ISO 2 6H
			ID	ID

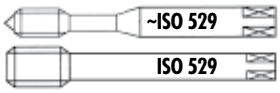


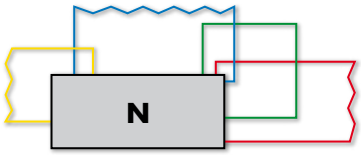


∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
11	1.50	85	22.0	8.0	6.3	3	9.50	103302	103427	103489	111168
12	1.75	89	24.0	9.0	7.1	3	10.20	103303	103428	103499	111173
14	2.00	95	24.0	11.2	9.0	3	12.00	103310	103430	103510	111179
16	2.00	102	32.0	12.5	10.0	3	14.00	103319	103432	103522	111185
18	2.50	112	30.0	14.0	11.2	3	15.50	103324	103434	103534	111191
20	2.50	112	37.0	14.0	11.2	3	17.50	103330	103436	103543	111196
22	2.50	115	32.0	16.0	12.5	3	19.50	103337	103438	103550	125567
24	3.00	130	45.0	18.0	14.0	4	21.00	103341	103440	103557	111204
27	3.00	135	45.0	20.0	16.0	4	24.00	103347	103442	103568	111211
30	3.50	138	48.0	20.0	16.0	4	26.50	103353	103444	103579	111216
33	3.50	151	51.0	22.4	18.0	4	29.50	103357	103446	103581	111218
36	4.00	162	57.0	25.0	20.0	4	32.00	103359	103448	103583	111220

M ISO DIN 13

HSS

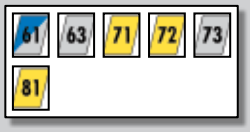




	N1120-4	N1220-4	N1160-3	N1260-3
				
			NEW	NEW
				
				
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

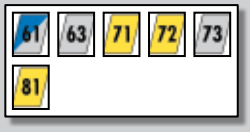
N1120-4





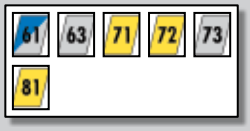
N1220-4





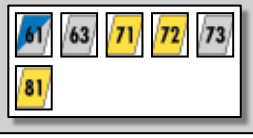
N1160-3

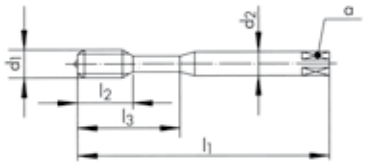




N1260-3









∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
3	0.50	48	11.0	18	3.15	2.50	3	2.50	103068	
4	0.70	53	13.0	21	4.00	3.15	3	3.30	103075	
4.5	0.75	53	13.0	21	4.50	3.55	3	3.75	* 103078	
5	0.80	58	16.0	25	5.00	4.00	3	4.20	103082	
6	1.00	66	19.0	30	6.30	5.00	3	5.00	103090	
8	1.25	72	22.0	35	8.00	6.30	3	6.80	103102	
10	1.50	80	24.0	39	10.00	8.00	3	8.50	103060	
11	1.50	85	22.0		8.00	6.30	3	9.50		* 103661
12	1.75	89	24.0		9.00	7.10	3	10.20		103670
14	2.00	95	24.0		11.20	9.00	3	12.00		103680
16	2.00	102	32.0		12.50	10.00	3	14.00		103690

∅ d_1 M	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
3	0.50	48	5.5	18	3.15	2.50	3	2.50	103177	
4	0.70	53	7.5	21	4.00	3.15	3	3.30	103178	
5	0.80	58	9.0	25	5.00	4.00	3	4.20	103179	
6	1.00	66	11.0	30	6.30	5.00	3	5.00	103180	
8	1.25	72	12.5	35	8.00	6.30	3	6.80	103181	
10	1.50	80	14.0	39	10.00	8.00	3	8.50	103174	
12	1.75	89	14.0		9.00	7.10	3	10.20		103781
16	2.00	102	18.0		12.50	10.00	3	14.00		103782


DC SWIS
M 8
M 6
M 5
M 4
M 3

MF *Inhaltsverzeichnis - Maschinengewindebohrer DIN 13*
Directory - Machine taps DIN 13

		N						
Merkmale **Characteristics**					V	TiN	R15	R40
								
Lochart **Hole type**								
			N320-3	N320-4			N350-3	N360-3
DIN lang **DIN long**	**DIN 371**		84	84			84	91
ISO kurz **ISO short**	**ISO 529**							
DIN lang **DIN long**	**~DIN 2174**							
Toleranz **Tolerance**	**ISO 2 6H**			84			84	91
Feintoleranz **Fine tolerance**	**ISO 1 4H**		84					
Übermass **Oversize**	**ISO 3 6G**							91
		N410-3	N420-3	N420-4	N420V-4	N420TN-4	N450-3	N460-3
DIN lang **DIN long**	**DIN 374**	85/90	88/89	85/90	85/88	85/86	84	92/93
ISO kurz **ISO short**	**ISO 529**							
DIN lang **DIN long**	**~DIN 2174**							
Toleranz **Tolerance**	**ISO 2 6H**	85/90		85/90	85/88	85/86	84	92/93
Feintoleranz **Fine tolerance**	**ISO 1 4H**							
Übermass **Oversize**	**ISO 3 6G**							92
Toleranz **Tolerance**	**7H** (EN 60423)		88/89					
LH Linksgewinde **LH Left hand thread**	**ISO 2 6H**	90		90				

MF *Inhaltsverzeichnis - Maschinen- und Handgewindebohrer DIN 13*
Directory - Machine and hand taps DIN 13

N					Z			
R40 V	R40 TiN				V	VS	R40 V	R45 VS
						 NEW		
								
N360V-3	**N360TN-3**	**N1110-1**	**N1110-3**	**N1110-S**	**Z320V-3 Z320V-4**	**Z320VS-4**	**Z360V-3**	**Z370VS-3**
91	91				94	94	94	94
		106	106	106				
91	91		106	106	94	94	94	94
					94			
N460V-3	**N460TN-3**	**N1210-1**	**N1210-3**	**N1210-S**	**Z420V-4**	**Z420VS-4**	**Z460V-3**	**Z470VS-3**
92/93	92				95	95	95	95
		107/108	107/108	107/108				
92/93	92		107/108	107/108	95	95	95	95

MF *Inhaltsverzeichnis - Maschinengewindebohrer DIN 13*
Directory - Machine taps DIN 13

	H		S		SA		
Merkmale **Characteristics**		R25	VS	R35 VS		R15	R10
							
Lochart **Hole type**							
	H320-4	**H350-3**	**S320VS-4**	**S360VS-3**	**SA320-4**	**SA350-3**	**SA390-3**
DIN lang **DIN long**	**DIN 371**	96	97	98	98	100	100	99
ISO kurz **ISO short**	**ISO 529**							
DIN lang **DIN long**	**~DIN 2174**							
Toleranz **Tolerance**	**ISO 2 6H**	96	97	98	98	100	100	99
Feintoleranz **Fine tolerance**	**ISO 1 4H**					100	100	
Übermass **Oversize**	**ISO 3 6G**							
	H420-4	**H450-3**	**S420VS-4**	**S460VS-3**	**SA420-4**	**SA450-3**	
DIN lang **DIN long**	**DIN 374**	96	97	98	98	101	101	
ISO kurz **ISO short**	**ISO 529**							
DIN lang **DIN long**	**~DIN 2174**							
Toleranz **Tolerance**	**ISO 2 6H**	96	97	98	98	101	101	
Feintoleranz **Fine tolerance**	**ISO 1 4H**					101	101	

MF *Inhaltsverzeichnis - Maschinengewindebohrer und Gewindeformer DIN 13*
Directory - Machine taps and thread formers DIN 13

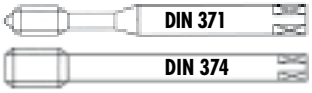
TL		K	RTS		FPS		FAS	
VS	R15 VS	TiCN	VS	R40 VS	CrN	VS	VS	
		 NEW						
								
TL320VS-4	**TL351VS-3**	**K313TC-3**	**RTS320VS-4**	**RTS362VS-3**	**FPS381CN-3**	**FPS381VS-3**	**FAS381VS-3**	
100	100	103	102	102				
					104	104	105	
100	100	103	102	102	104	104	105	
100	100							
TL420VS-4	**TL451VS-3**	**K413TC-3**	**RTS420VS-4**	**RTS462VS-3**	**FPS481CN-3**	**FPS481VS-3**	**FAS481VS-3**	
101	101	103	102	102				
						104	105	
101	101	103	102	102		104	105	
101	101							

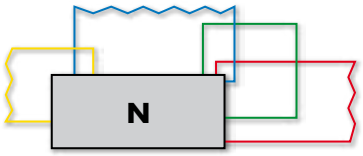
MF ISO DIN 13

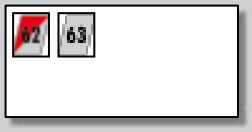
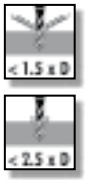
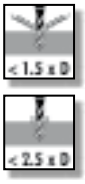
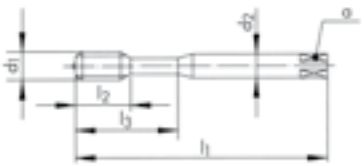
≤ Ø 2.8 **PM** | > Ø 2.8 **HSSE**



HSSE





	N320-4		N350-3	N450-3
				
N320-4				
N350-3				
N450-3				
				
			B 4 x P	C 2.5 x P	C 2.5 x P
			ISO 2 6H	ISO 2 6H	ISO 2 6H

∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm			ID	
*2	0.25	45	8.0		2.8	2.1	2	1.75	142689	
2.5	0.35	50	10.0		2.8	2.1	3	2.15	142691	
2.6	0.35	50	10.0		2.8	2.1	3	2.25	142692	
3	0.35	56	12.0	18	3.5	2.7	3	2.65	142693	
3.5	0.35	56	13.0	20	4.0	3.0	3	3.15	142694	

∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm			ID	ID
4	0.50	63	14.0	21	4.5	3.4	2	3.50	101586	
5	0.50	70	15.0	25	6.0	4.9	3	4.50	101588	
6	0.75	80	17.0	30	6.0	4.9	3	5.25	101590	
8	1.00	90	20.0		6.0	4.9	3	7.00		102326
9	0.75	90	20.0		7.0	5.5	3	8.25		102328
10	1.00	100	22.0		7.0	5.5	3	9.00		102313
12	1.00	100	24.0		9.0	7.0	3	11.00		* 102315
12	1.50	100	24.0		9.0	7.0	3	10.50		* 102316
14	1.50	100	24.0		11.0	9.0	3	12.50		* 102318
16	1.50	100	26.0		12.0	9.0	3	14.50		* 102320
18	1.50	110	26.0		14.0	11.0	4	16.50		* 102322
20	1.50	125	28.0		16.0	12.0	4	18.50		* 102323

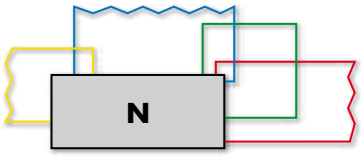
*** N320-3** 2.5 x P

P 0.25 ISO 1 4H

MF ISO DIN 13

HSSE

DIN 374



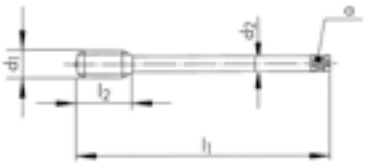
	N410-3	N420-4	N420V-4	N420TN-4
				
				
	C 2.5 x P	B 4 x P	B 4 x P	B 4 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

N410-3  31 62 74

N420-4  61 63 71 72 73 81

N420V-4  V 11 12 13 14 21 32

N420TN-4  TiN 11 12 13 14 21 31 32 73 74



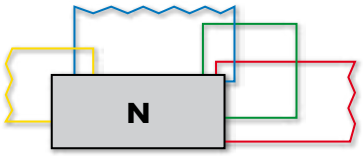


∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
4	0.35	63	14.0	2.8	2.1	3	3.65		142695		
4	0.50	63	14.0	2.8	2.1	3	3.50	101923	102145	142715	
4.5	0.50	70	15.0	3.5	2.7	3	4.00		102150		
5	0.50	70	15.0	3.5	2.7	3	4.50	101941	102167	142716	
5	0.75	70	15.0	3.5	2.7	3	4.25		102168		
5.5	0.50	80	17.0	4.0	3.0	3	5.00		142696		
6	0.50	80	17.0	4.5	3.4	3	5.50	101951	102178	142717	
6	0.75	80	17.0	4.5	3.4	3	5.25	101952	102179	102281	102249
7	0.50	80	17.0	5.5	4.3	3	6.50		102187		
7	0.75	80	17.0	5.5	4.3	3	6.25	101954	102188		
8	0.50	90	20.0	6.0	4.9	3	7.50	101955	102190	142718	
8	0.75	90	20.0	6.0	4.9	3	7.25	101956	102191	102283	
8	1.00	90	20.0	6.0	4.9	3	7.00	101957	102192	102284	102250
9	0.50	90	20.0	7.0	5.5	3	8.50		142697		
9	0.75	90	20.0	7.0	5.5	3	8.25		102200		
9	1.00	90	20.0	7.0	5.5	3	8.00		102201	143935	
10	0.50	100	22.0	7.0	5.5	3	9.50		142698		
10	0.75	100	22.0	7.0	5.5	3	9.25	101863	102056		
10	1.00	100	22.0	7.0	5.5	3	9.00	101864	102057	102262	102239
10	1.25	100	22.0	7.0	5.5	3	8.80	101865	102058	142719	

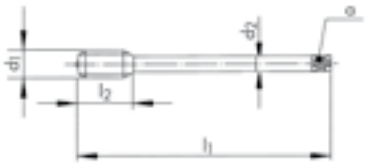
MF ISO DIN 13

HSSE

DIN 374



N410-3		31 62 74
N420-4		61 63 71 72 73 81
N420V-4	V	11 12 13 14 21 32
N420TN-4	TiN	11 12 13 14 21 31 32 73 74



	N410-3	N420-4	N420V-4	N420TN-4
				
				
	C 2.5 x P	B 4 x P	B 4 x P	B 4 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H

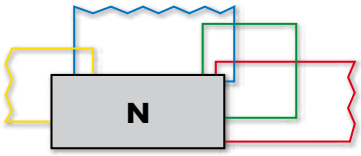
∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
11	0.50	100	19.0	8.0	6.2	3	10.50		142699		
11	0.75	100	19.0	8.0	6.2	3	10.25		142700		
11	1.00	100	19.0	8.0	6.2	3	10.00		142701		
11	1.25	100	19.0	8.0	6.2	3	9.80		142702		
12	0.50	100	14.0	9.0	7.0	3	11.50		102066		
12	0.75	100	24.0	9.0	7.0	3	11.25		142703		
12	1.00	100	24.0	9.0	7.0	3	11.00	101867	102067	142345	102241
12	1.25	100	24.0	9.0	7.0	3	10.80	101868	102068	142721	
12	1.50	100	24.0	9.0	7.0	3	10.50	101869	102069	102264	102242
13	1.00	100	21.0	11.0	9.0	3	12.00	158401	142704		
14	0.50	100	14.0	11.0	9.0	3	13.50		142705		
14	0.75	100	24.0	11.0	9.0	3	13.25		142706		
14	1.00	100	24.0	11.0	9.0	3	13.00	101871	102077		
14	1.25	100	24.0	11.0	9.0	3	12.80	101872	102078		
14	1.50	100	24.0	11.0	9.0	3	12.50	101873	102079	102266	102244
15	1.00	100	26.0	12.0	9.0	3	14.00	101875	102085		
15	1.50	100	26.0	12.0	9.0	3	13.50	101876	102086		
16	0.75	100	26.0	12.0	9.0	3	15.25		142708		
16	1.00	100	26.0	12.0	9.0	*3	15.00	101877	102087		
16	1.25	100	26.0	12.0	9.0	*3	14.80	101878	102088		
16	1.50	100	26.0	12.0	9.0	*3	14.50	101879	102089	102268	102246
17	1.00	100	26.0	12.0	9.0	3	16.00		142709		
17	1.50	100	26.0	12.0	9.0	3	15.50		142710		
18	0.75	110	26.0	14.0	11.0	4	17.25		142711		
18	1.00	110	26.0	14.0	11.0	4	17.00	101881	102095		
18	1.50	110	26.0	14.0	11.0	4	16.50	101882	102096	102270	
18	2.00	125	33.0	14.0	11.0	3	16.00		142712		
19	1.00	110	26.0	14.0	11.0	4	18.00		* 142713		

* N410-3 = 4

MF ISO DIN 13

HSSE

DIN 374

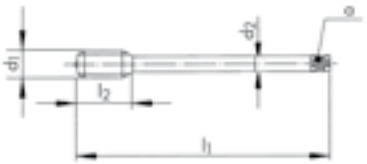


	N410-3	N420-4	N420V-4
			
			
	C 2.5 x P	B 4 x P	B 4 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H

N410-3 — 31, 62, 74

N420-4 — 61, 63, 71, 72, 73, 81

N420V-4 — V — 11, 12, 13, 14, 21, 32



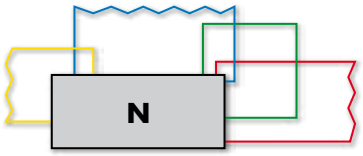


∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
20	1.00	125	28.0	16.0	12.0	4	19.00		102098	
20	1.50	125	28.0	16.0	12.0	4	18.50	101884	102099	102272
20	2.00	140	36.0	16.0	12.0	3	18.00	105130	102100	
22	1.00	125	28.0	18.0	14.5	4	21.00		102104	
22	1.50	125	28.0	18.0	14.5	4	20.50	101886	102105	102274
22	2.00	140	36.0	18.0	14.5	3	20.00	101887	142714	
24	1.00	140	30.0	18.0	14.5	4	23.00		102107	
24	1.50	140	30.0	18.0	14.5	4	22.50	101889	102108	102276
24	2.00	140	34.0	18.0	14.5	4	22.00	101890	102109	102277
25	1.00	140	30.0	18.0	14.5	4	24.00		142722	
25	1.50	140	30.0	18.0	14.5	4	23.50	101892	102112	
25	2.00	140	34.0	18.0	14.5	4	23.00		142723	
26	1.00	140	30.0	18.0	14.5	4	25.00		102113	
26	1.50	140	30.0	18.0	14.5	4	24.50	101893	102114	145896
27	1.50	140	34.0	20.0	16.0	4	25.50		102115	
27	2.00	140	34.0	20.0	16.0	4	25.00	101894	102116	
28	1.00	140	30.0	20.0	16.0	4	27.00		142725	
28	1.50	140	30.0	20.0	16.0	4	26.50	101896	102118	
28	2.00	140	30.0	20.0	16.0	4	26.00	122023		

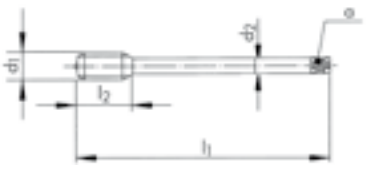
MF ISO DIN 13

HSSE

DIN 374



N410-3	N420-4	N420V-4	N420-3		
					
31 62 74	61 63 71 72 73 81	11 12 13 14 21 32	61 63 71 72 73 81		
					
					
C 2.5 x P	B 4 x P	B 4 x P	2.5 x P		
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 3 7H		



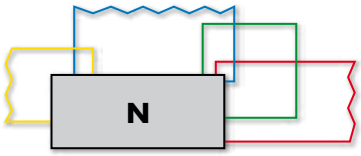


∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	α mm		6H	ID	ID	ID	ID
30	1.00	150	32.0	22.0	18.0	4	29.00	101898	102121		
30	1.50	150	32.0	22.0	18.0	4	28.50	101899	102122	143978	
30	2.00	150	32.0	22.0	18.0	4	28.00	101900	102123	143766	
32	1.00	150	32.0	22.0	18.0	4	31.00	101902			
32	1.50	150	32.0	22.0	18.0	4	30.50	101903	102126		143812
32	2.00	150	32.0	22.0	18.0	4	30.00	101904	102127		
33	1.50	160	32.0	25.0	20.0	4	31.50	101905	102128		
33	2.00	160	32.0	25.0	20.0	4	31.00	101906	102129		
34	1.00	170	32.0	28.0	22.0	4	33.00	* 101908			
34	1.50	170	32.0	28.0	22.0	4	32.50	101909	* 102131		
35	1.50	170	32.0	28.0	22.0	4	33.50	101910	102132		
35	2.00	170	32.0	28.0	22.0	4	33.00	101911			
36	1.00	170	34.0	28.0	22.0	4	35.00		* 102133		
36	1.50	170	34.0	28.0	22.0	4	34.50	101912	102134		
36	2.00	170	34.0	28.0	22.0	4	34.00	101913	102135		
36	3.00	200	45.0	28.0	22.0	4	33.00	101914	102136		
38	1.00	170	34.0	28.0	22.0	4	37.00	* 101916	* 102138		
38	1.50	170	34.0	28.0	22.0	4	36.50	101917	102139		
38	2.00	170	34.0	28.0	22.0	4	36.00	101918			
39	2.00	170	34.0	32.0	24.0	4	37.00	101920			
39	3.00	200	45.0	32.0	24.0	4	36.00	101921			

MF ISO DIN 13

HSSE

DIN 374

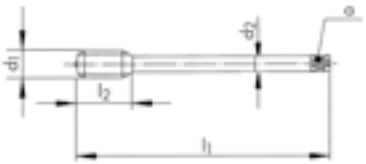


	N410-3	N420-4	N420-3
			
			
	C 2.5 x P	B 4 x P	2.5 x P
	ISO 2 6H	ISO 2 6H	ISO 3 7H

N410-3 — 31, 62, 74

N420-4 — 61, 63, 71, 72, 73, 81

N420-3 — 61, 63, 71, 72, 73, 81



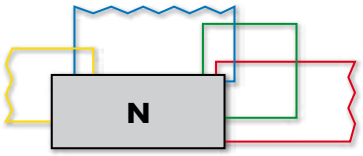


∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	ID	ID
40	1.00	170	34.0	32.0	24.0	5	39.00	101925		
40	1.50	170	34.0	32.0	24.0	5	38.50	101926	102152	143813
40	2.00	170	34.0	32.0	24.0	5	38.00	101927	102153	
40	3.00	200	45.0	32.0	24.0	4	37.00	* 101928	* 102154	
42	1.50	170	34.0	32.0	24.0	5	40.50	101929	102155	
42	2.00	170	34.0	32.0	24.0	5	40.00	101930	102156	
42	3.00	200	45.0	32.0	24.0	4	39.00	101931	102157	
45	1.50	180	34.0	36.0	29.0	5	43.50	101933	102159	
45	2.00	180	34.0	36.0	29.0	5	43.00	101934		
45	3.00	200	45.0	36.0	29.0	4	42.00	101935	* 102161	
48	1.50	190	36.0	36.0	29.0	5	46.50	101937	102163	
48	2.00	190	36.0	36.0	29.0	5	46.00	101938	102164	
48	3.00	220	48.0	36.0	29.0	5	45.00	101939	102165	
50	1.50	190	36.0	36.0	29.0	5	48.50	101943	102176	143814
50	2.00	190	36.0	36.0	29.0	5	48.00	* 101944	* 102177	
52	1.50	190	36.0	40.0	32.0	5	50.50	* 101946		
52	2.00	190	36.0	40.0	32.0	5	50.00	101947		
52	3.00	220	48.0	40.0	32.0	5	49.00	* 101948		
55	2.00	190	40.0	40.0	32.0	5	53.00	* 105131		
60	2.00	220	42.0	45.0	35.0	5	58.00	105132		
63	1.50	220	38.0	45.0	35.0	5	61.50			143815

MF ISO DIN 13

HSSE

DIN 374



N410-3 LH | N420-4 LH



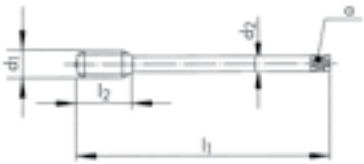
















ISO 2 6H | ISO 2 6H

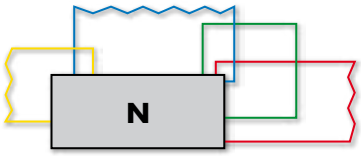
∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	α mm			ID	ID
4	0.50	63	14.0	2.8	2.1	3	3.50	104844	
5	0.50	70	15.0	3.5	2.7	3	4.50	104845	
6	0.50	80	17.0	4.5	3.4	3	5.50	104846	104870
6	0.75	80	17.0	4.5	3.4	3	5.25	104847	105133
7	0.75	80	17.0	5.5	4.3	3	6.25	104848	
8	0.50	90	20.0	6.0	4.9	3	7.50	104849	
8	0.75	90	20.0	6.0	4.9	3	7.25	104850	104871
8	1.00	90	20.0	6.0	4.9	3	7.00	104851	104872
10	0.75	100	22.0	7.0	5.5	3	9.25	104852	
10	1.00	100	22.0	7.0	5.5	3	9.00	104853	104873
10	1.25	100	22.0	7.0	5.5	3	8.80		104874
12	1.00	100	24.0	9.0	7.0	3	11.00	104854	104875
12	1.25	100	24.0	9.0	7.0	3	10.80	104855	104876
12	1.50	100	24.0	9.0	7.0	3	10.50	104856	104877
14	1.00	100	24.0	11.0	9.0	3	13.00	104857	104878
14	1.25	100	24.0	11.0	9.0	3	12.80	104858	
14	1.50	100	24.0	11.0	9.0	3	12.50	104859	104879
16	1.00	100	26.0	12.0	9.0	*3	15.00	104860	104880
16	1.50	100	26.0	12.0	9.0	*3	14.50	104861	104881
18	1.00	110	26.0	14.0	11.0	4	17.00	104862	
18	1.50	110	26.0	14.0	11.0	4	16.50	104863	104882
20	1.00	125	28.0	16.0	12.0	4	19.00	104864	
20	1.50	125	28.0	16.0	12.0	4	18.50	104865	104883
22	1.50	125	28.0	18.0	14.5	4	20.50	104866	104884
24	1.50	140	30.0	18.0	14.5	4	22.50	104867	104885
24	2.00	140	34.0	18.0	14.5	4	22.00	104868	104886
28	1.50	140	30.0	20.0	16.0	4	26.50	105166	
30	1.50	150	32.0	22.0	18.0	4	28.50	105167	105165
30	2.00	150	32.0	22.0	18.0	4	28.00	105168	

* N410-3 LH = 4

MF ISO DIN 13

HSSE





	N360-3	N360V-3	N360TN-3	N360-3
				
				
				
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 3 6G

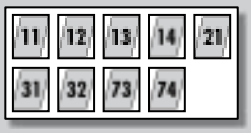
N360-3 

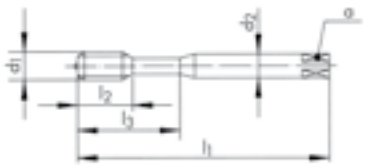


N360V-3 



N360TN-3 





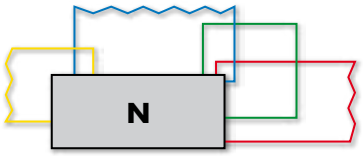


∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		6H	ID	ID	ID	ID	6H + mm
4	0.50	63	7.5	21	4.5	3.4	3	3.50	101632	101712	111618	101631	0.020
5	0.50	70	9.0	25	6.0	4.9	3	4.50	101641	101714	111617	101640	0.020
6	0.50	80	11.0	30	6.0	4.9	3	5.50	101648	143990			
6	0.75	80	11.0	30	6.0	4.9	3	5.25	101650	101716	101702	101649	0.022
8	0.75	90	12.5	35	8.0	6.2	3	7.25	101658	101719		101657	0.022
8	1.00	90	12.5	35	8.0	6.2	3	7.00	101660	101720	101704	101659	0.026
10	0.75	100	14.0	39	10.0	8.0	3	9.25	101606	144401			
10	1.00	100	14.0	39	10.0	8.0	3	9.00	101608	101706	101695	101607	0.026
10	1.25	100	14.0	39	10.0	8.0	3	8.80	101609	105134	110965		

MF ISO DIN 13

HSSE

DIN 374



	N460-3	N460V-3	N460TN-3	N460-3
				
				
				
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 3 6G

N460-3 



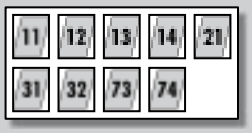
N460V-3 

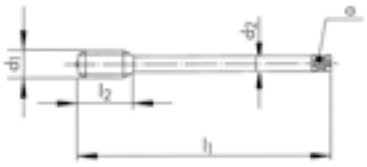




N460TN-3 







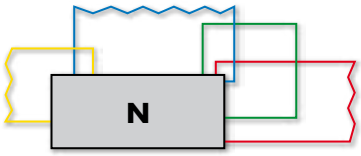


∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	α mm		6H	ID	ID	ID	ID 6H + mm
12	1.00	100	14.0	9.0	7.0	3	11.00	102353	102462	102447	102352 0.026
12	1.25	100	14.0	9.0	7.0	3	10.80	102354	102463	144202	
12	1.50	100	14.0	9.0	7.0	3	10.50	102356	102464	102448	102355 0.032
13	1.00	100	14.0	11.0	9.0	3	12.00	102364			
14	1.00	100	14.0	11.0	9.0	3	13.00	102365	102466		
14	1.50	100	14.0	11.0	9.0	3	12.50	102367	102467	102450	102366 0.032
15	1.00	100	14.0	12.0	9.0	3	14.00	102370			
15	1.50	100	18.0	12.0	9.0	3	13.50	102371			
16	1.00	100	14.0	12.0	9.0	4	15.00	102372	102469		
16	1.50	100	14.0	12.0	9.0	4	14.50	102374	102470	102452	102373 0.032
18	1.00	110	18.0	14.0	11.0	4	17.00	102380	143926		
18	1.50	110	18.0	14.0	11.0	4	16.50	102382	102472		102381 0.032
20	1.00	125	20.0	16.0	12.0	4	19.00	102384	146377		
20	1.50	125	20.0	16.0	12.0	4	18.50	102386	102474		
20	2.00	140	24.0	16.0	12.0	4	18.00	102387	143566		
22	1.00	125	20.0	18.0	14.5	4	21.00	102392	147702		
22	1.50	125	20.0	18.0	14.5	4	20.50	102393	102476		
24	1.50	140	22.0	18.0	14.5	4	22.50	102396	102478		
24	2.00	140	22.0	18.0	14.5	4	22.00	102397	102479		
25	1.50	140	22.0	18.0	14.5	4	23.50	102399	143810		
26	1.50	140	22.0	18.0	14.5	4	24.50	102400	143952		
27	1.50	140	22.0	20.0	16.0	4	25.50	102401	143965		
27	2.00	140	22.0	20.0	16.0	4	25.00	102402	144201		
28	1.50	140	22.0	20.0	16.0	4	26.50	102403	144997		

MF ISO DIN 13

HSSE

DIN 374



	N460-3	N460V-3		
				
				
				
	ISO 2 6H	ISO 2 6H		

N460-3



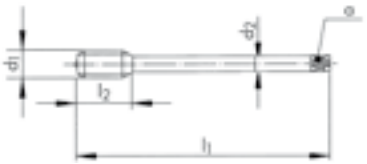


N460V-3











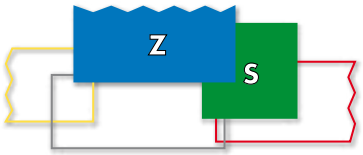
∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm		6H	ID	ID
30	1.50	150	24.0	22.0	18.0	4	28.50	102404	142524
30	2.00	150	24.0	22.0	18.0	4	28.00	102405	142581
32	1.50	150	24.0	22.0	18.0	4	30.50	102406	143605
33	2.00	160	26.0	25.0	20.0	4	31.00	102407	147604
33	3.00	180	33.0	25.0	20.0	4	30.00	175437	150448
35	1.50	170	24.0	28.0	22.0	5	33.50	102408	146846
36	1.50	170	24.0	28.0	22.0	5	34.50	102409	143824
36	2.00	170	28.0	28.0	22.0	5	34.00	175436	164870
36	3.00	200	36.0	28.0	22.0	4	33.00	115072	150453
39	3.00	200	40.0	32.0	24.0	5	36.00	174995	122669
42	3.00	200	40.0	32.0	24.0	5	39.00	174996	150436

MF ISO DIN 13

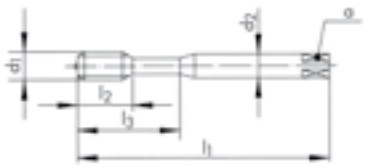
Z320 PM | Z360 HSSE

DIN 371

~DIN 371 (d_2 h6)



	Z320V-4	Z320VS-4	Z360V-3	Z370VS-3
				
		NEW		
				
				PM
	B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
	ISO 2 6H	ISO 2 6H	ISO 2 6H	6HX





∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
*2	0.20	45	8.0		2.8	2.1	2	1.80	146487	
*2	0.25	45	8.0		2.8	2.1	2	1.75	114715	
*2.2	0.25	45	9.0		2.8	2.1	2	1.95	115462	
2.5	0.20	50	10.0		2.8	2.1	3	2.30	115578	
2.5	0.25	50	10.0		2.8	2.1	3	2.25	115887	
3	0.35	56	12.0	18	3.5	2.7	3	2.65	115468	
6	0.75	80	17.0	30	6.0	4.9	3	5.25	142726	
8	1.00	90	20.0	35	8.0	6.2	3	7.00	142727	124289
10	1.00	100	22.0	39	10.0	8.0	3	9.00	142728	120060

∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
4	0.50	63	7.5	21	4.5	3.4	3	3.50	104675
5	0.50	70	9.0	25	6.0	4.9	3	4.50	104676
6	0.75	80	11.0	30	6.0	4.9	3	5.25	104677
8	1.00	90	12.5	35	8.0	6.2	3	7.00	104678
10	1.00	100	14.0	39	10.0	8.0	3	9.00	104674

∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID
6	0.75	80	11.0	30	6.0	4.9	3	5.25	166117
8	1.00	90	12.5	35	8.0	6.2	3	7.00	166118
10	1.00	100	14.0	39	10.0	8.0	3	9.00	166119

* Z320V-3 2.5 x P

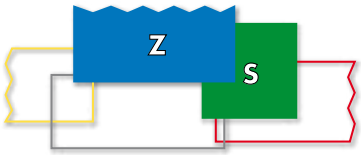
P ≤ 0.25 ISO 1 4H

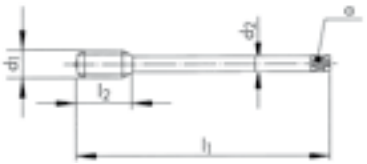
MF ISO DIN 13

Z420 PM | Z460 HSSE

DIN 374

~DIN 376 (d_2 h6)



	Z420V-4	Z420VS-4	Z460V-3	Z470VS-3
		 NEW		
	V	VS	V	VS
	R40	R40	R40	R45
				CLASSIC / SYNCHRO
	21 22 23 41 42 51	21 22 23 24 51 61	22 23 51	15 22 23 24 51 52 61
			 < 2.5 x D	 < 3 x D PM
			B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
			ISO 2 6H	ISO 2 6H	ISO 2 6H	6HX

∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
12	1.00	100	24.0	9.0	7.0	3	11.00	142729	
12	1.50	100	24.0	9.0	7.0	3	10.50	142730	120421
14	1.50	100	24.0	11.0	9.0	3	12.50	142731	120688
16	1.50	100	26.0	12.0	9.0	3	14.50	142732	120878

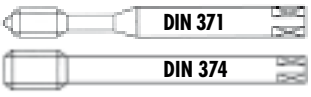
∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
12	1.00	100	14.0	9.0	7.0	3	11.00	104729
12	1.50	100	14.0	9.0	7.0	3	10.50	104730
14	1.50	100	14.0	11.0	9.0	3	12.50	104731
16	1.50	100	14.0	12.0	9.0	4	14.50	104732
18	1.50	110	18.0	14.0	11.0	4	16.50	104733
20	1.50	125	20.0	16.0	12.0	4	18.50	104734
22	1.50	125	20.0	18.0	14.5	4	20.50	104735
24	1.50	140	22.0	18.0	14.5	4	22.50	104736
24	2.00	140	22.0	18.0	14.5	4	22.00	104737

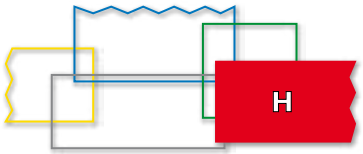
∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 h6 mm	a mm			ID
12	1.50	110	14.0	*10.0	*8.0	4	10.50	166120
14	1.50	110	14.0	*12.0	*9.0	4	12.50	166121
16	1.50	110	18.0	12.0	9.0	4	14.50	166122

* Norme DC / * DC Norm / * Norma DC

MF ISO DIN 13

PM





	H320-4	H420-4		
				
				
	B 4 x P	B 4 x P		
	ISO 2 6H	ISO 2 6H		

H320-4

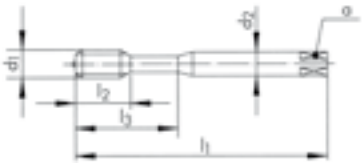




H420-4









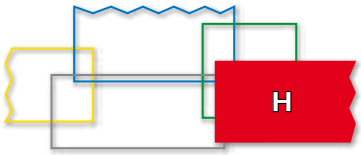
∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
6	0.75	80	17.0	30	6.0	4.9	3	5.25	101214	
8	0.75	90	20.0	35	8.0	6.2	3	7.25	101216	
8	1.00	90	20.0	35	8.0	6.2	3	7.00	101217	
10	1.00	100	22.0	39	10.0	8.0	3	9.00	101204	
12	1.25	100	24.0		9.0	7.0	4	10.80		101273
12	1.50	100	24.0		9.0	7.0	4	10.50		101274
14	1.50	100	24.0		11.0	9.0	4	12.50		101276
16	1.50	100	26.0		12.0	9.0	4	14.50		101278
20	1.50	125	28.0		16.0	12.0	4	18.50		101282
24	2.00	140	34.0		18.0	14.5	4	22.00		101285

MF ISO DIN 13

≤ Ø 25.4 PM | > Ø 25.4 HSSE

DIN 371

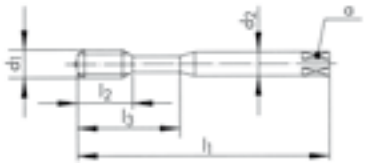
DIN 374



	H350-3	H450-3		
				
				
				
	ISO 2 6H	ISO 2 6H		

H350-3  

H450-3  

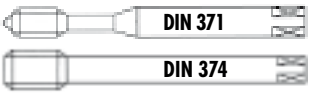


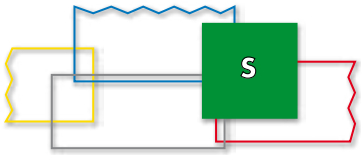


∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
6	0.75	80	11.0	30	6.0	4.9	3	5.25	101249	
8	0.75	90	12.5	35	8.0	6.2	3	7.25	101252	
8	1.00	90	12.5	35	8.0	6.2	3	7.00	101253	
10	1.00	100	14.0	39	10.0	8.0	3	9.00	101235	
12	1.00	100	14.0		9.0	7.0	4	11.00		101302
12	1.50	100	14.0		9.0	7.0	4	10.50		101303
14	1.50	100	14.0		11.0	9.0	4	12.50		101306
16	1.50	100	14.0		12.0	9.0	4	14.50		101308
18	1.50	110	18.0		14.0	11.0	4	16.50		101310
20	1.50	125	20.0		16.0	12.0	4	18.50		101312
22	1.50	125	20.0		18.0	14.5	4	20.50		101314
24	1.50	140	22.0		18.0	14.5	4	22.50		101316
24	2.00	140	22.0		18.0	14.5	4	22.00		101317
27	2.00	140	22.0		20.0	16.0	4	25.00		101319
30	1.50	150	24.0		22.0	18.0	4	28.50		101321
30	2.00	150	24.0		22.0	18.0	4	28.00		101322

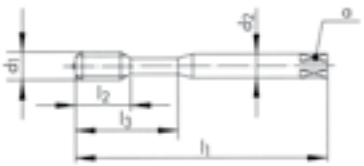
MF ISO DIN 13

PM





	S320VS-4	S420VS-4	S360VS-3	S460VS-3
				
				
				
	6HX	6HX	6HX	6HX





∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			S320VS-4 ID	S420VS-4 ID	S360VS-3	S460VS-3
6	0.75	80	17.0	30	6.0	4.9	3	5.25	* 123690			
8	1.00	90	20.0	35	8.0	6.2	3	7.00	124288			
10	1.00	100	22.0	39	10.0	8.0	3	9.00	120059			
12	1.50	100	24.0		9.0	7.0	4	10.50		120420		
14	1.50	100	24.0		11.0	9.0	4	12.50		120687		
16	1.50	100	26.0		12.0	9.0	4	14.50		120877		

∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			S320VS-4	S420VS-4	S360VS-3 ID	S460VS-3 ID
8	1.00	90	12.5	35	8.0	6.2	3	7.00			111528	
10	1.00	100	14.0	39	10.0	8.0	3	9.00			111529	
12	1.50	100	14.0		9.0	7.0	4	10.50				111540
14	1.50	100	14.0		11.0	9.0	4	12.50				111541
16	1.50	100	14.0		12.0	9.0	4	14.50				111542

aero

SA390-3





SA390-3







6HX





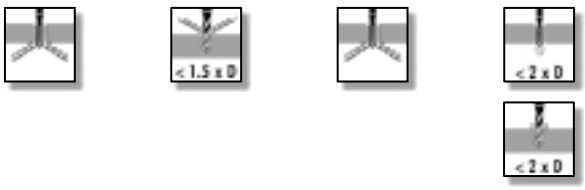
∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
8	1.00	90	25.0	8.0	6.2	3	7.00	* 149735
10	1.00	100	30.0	10.0	8.0	3	9.00	* 149751
10	1.25	100	30.0	10.0	8.0	3	8.80	* 149753
12	1.00	110	35.0	12.0	9.0	4	11.00	* 149769
12	1.50	110	35.0	12.0	9.0	4	10.50	* 149773
14	1.50	110	40.0	16.0	12.0	4	12.50	* 149790

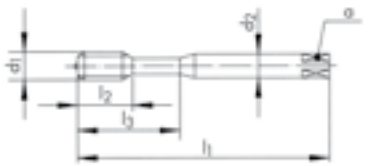
MF ISO DIN 13

PM

~DIN 371

aero

	SA320-4	SA350-3	TL320VS-4	TL351VS-3
				
				
	B 4 x P	C 2.5 x P	B 4 x P	C 2.5 x P
	4HX	4HX	4HX	4HX





∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm			SA320-4 ID	SA350-3 ID	TL320VS-4 ID	TL351VS-3 ID
4	0.50	63	14.0		4.5	3.4	3	3.50		* 149079	* 152032	152033
5	0.50	70	15.0		6.0	4.9	3	4.50	* 149142	149144	* 152048	152049
6	0.50	80	15.0	23	6.0	4.9	3	5.50	* 149193		* 152058	152059
8	1.00	90	18.0	29	8.0	6.2	3	7.00	149304	149306	* 152079	152080
10	1.00	100	20.0	33	10.0	8.0	3	9.00	149362	149364	* 152092	152093

	SA320-4	SA350-3	TL320VS-4	TL351VS-3
	6HX	6HX	6HX	6HX

∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm			SA320-4 ID	SA350-3 ID	TL320VS-4 ID	TL351VS-3 ID
4	0.50	63	14.0		4.5	3.4	3	3.50	149081	149083	* 152034	152035
5	0.50	70	15.0		6.0	4.9	3	4.50	149146	149148	* 152050	152051
6	0.50	80	15.0	23	6.0	4.9	3	5.50		* 149199	* 152060	152061
8	1.00	90	18.0	29	8.0	6.2	3	7.00	149308	149310		148019
10	1.00	100	20.0	33	10.0	8.0	3	9.00	149366	149368	* 152094	148026

MF ISO DIN 13

PM ~DIN 374

aero

	SA420-4	SA450-3	TL420VS-4	TL451VS-3
				
				
	B 4 x P	C 2.5 x P	B 4 x P	C 2.5 x P
	4HX	4HX	4HX	4HX

SA420-4 — 52 53

SA450-3 — R15 — 52 53

TL420VS-4 — VS — 41 42

TL451VS-3 — R15 — VS — 41 42





∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			SA420-4 ID	SA450-3 ID	TL420VS-4 ID	TL451VS-3 ID
12	1.00	100	19.0	9.0	7.0	4	11.00	* 152209		* 152218	
12	1.50	100	24.0	9.0	7.0	4	10.50	* 152208	* 152213		
14	1.50	100	24.0	11.0	9.0	4	12.50	* 152210	* 152214		* 152224
16	1.50	100	26.0	12.0	9.0	4	14.50	* 152212	* 152216		* 152226

								SA420-4	SA450-3	TL420VS-4	TL451VS-3
								6HX	6HX	6HX	6HX
∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
12	1.00	100	19.0	9.0	7.0	4	11.00	* 152228	* 148967	* 152237	* 152242
12	1.50	100	24.0	9.0	7.0	4	10.50	* 152227	* 152232		* 152241
14	1.50	100	24.0	11.0	9.0	4	12.50	* 152229	* 152233	* 152238	* 152243
16	1.00	100	23.0	12.0	9.0	4	15.00			* 152239	* 152244
16	1.50	100	26.0	12.0	9.0	4	14.50		* 152235	* 152240	* 152245

MF ISO DIN 13

Uniquement pour taraudage synchrone
Nur für Synchronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado

PM

~DIN 371 (d_2 h6)
~DIN 376 (d_2 h6)

RTS
Rigid Tapping Synchro

RTS320VS-4 — VS
RTS420VS-4 — VS
RTS362VS-3 — R40 — VS
RTS462VS-3 — R40 — VS

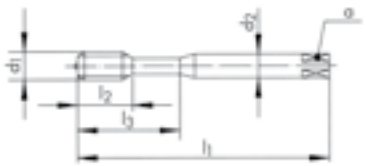
11 12 13 14 15 21 22 31 32 61 63 72 73 74













∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
8	1.00	90	12.5	35	8.0	6.2	3	7.00	150615	
10	1.00	100	14.0	39	10.0	8.0	3	9.00	150630	
12	1.50	110	14.0		*10.0	*8.0	3	10.50		150640
14	1.50	110	14.0		*12.0	*9.0	3	12.50		150655
16	1.50	110	18.0		12.0	9.0	3	14.50		150665

* Norme DC / * DC Norm / * Norma DC

∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
8	1.00	90	12.5	35	8.0	6.2	3	7.00	150617	
10	1.00	100	14.0	39	10.0	8.0	3	9.00	150632	
12	1.50	110	14.0		*10.0	*8.0	3	10.50		151862
14	1.50	110	14.0		*12.0	*9.0	3	12.50		151869
16	1.50	110	18.0		12.0	9.0	3	14.50		151871

* Norme DC / * DC Norm / * Norma DC

≥ Ø 6 mm — sur demande / auf Anfrage / on request / su richiesta / sobre pedido

MF ISO DIN 13

HSSE

DIN 371

DIN 376

K

K313TC-3

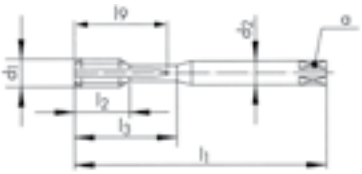
TiCN | CLASSIC | SYNCHRO | >20 bar

11 12 13 14 15 31 32 62 63 74

K413TC-3

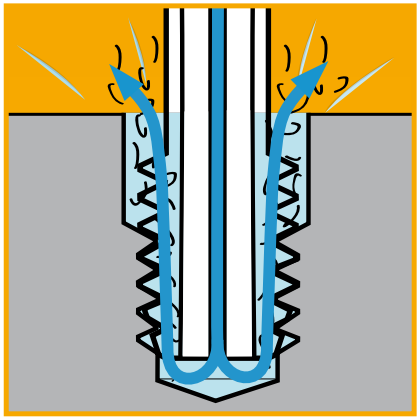
TiCN | CLASSIC | SYNCHRO | >20 bar

11 12 13 14 15 31 32 62 63 74





∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	l_9 mm	d_2 mm	a mm			K313TC-3 ID	K413TC-3 ID
10	1.00	100	22.0	39	37	10.0	8.0	3	9.00	175729	
12	1.00	110	24.0		42	9.0	7.0	3	11.00		175731
12	1.25	110	24.0		42	9.0	7.0	3	10.80		175733
12	1.50	110	24.0		42	9.0	7.0	3	10.50		175735
14	1.50	110	28.0		49	11.0	9.0	3	12.50		175737
16	1.50	110	30.0		56	12.0	9.0	3	14.50		175739
20	1.50	140	36.0		70	16.0	12.0	5	18.50		171205

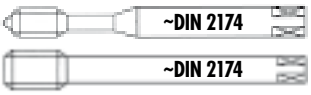






MF ISO DIN 13

PM



FPS FORMING

	FPS381CN-3	FPS381VS-3	FPS481VS-3
			
			
			
			

FPS381CN-3 

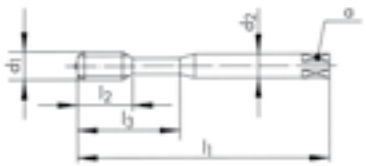


FPS381VS-3 



FPS481VS-3 







∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX → ←	Tol.	FPS381CN-3 ID	FPS381VS-3 ID	FPS481VS-3 ID
4	0.50	63	14.0	21	4.5	3.4	3.80	+ 0.03		166631	
5	0.50	70	15.0	25	6.0	4.9	4.80	+ 0.03		166639	
6	0.50	80	17.0	30	6.0	4.9	5.80	+ 0.03		166699	
6	0.75	80	17.0	30	6.0	4.9	5.65	+ 0.03	166648	166649	
8	0.75	90	20.0	35	8.0	6.2	7.65	+ 0.03	166701	166702	
8	1.00	90	20.0	35	8.0	6.2	7.55	+ 0.05	166658	166659	
10	1.00	100	22.0	39	10.0	8.0	9.55	+ 0.05	166668	166669	
12	1.00	100	19.0		9.0	7.0	11.55	+ 0.05			166674
14	1.50	100	24.0		11.0	9.0	13.30	+ 0.05			166679
16	1.50	100	26.0		12.0	9.0	15.30	+ 0.05			166684

MF ISO DIN 13

PM

~DIN 2174

~DIN 2174

FAS FORMING

FAS381VS-3	FAS481VS-3		

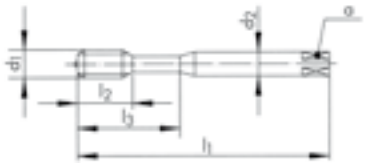
FAS381VS-3 VS

FAS481VS-3 VS















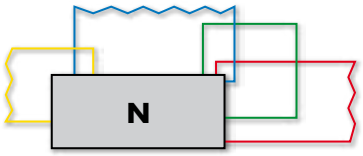




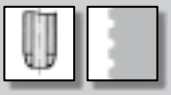
∅ d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm	6HX	Tol.	ID	ID
4	0.50	63	14.0	21	4.5	3.4	3.80	+ 0.03	166625	
5	0.50	70	15.0	25	6.0	4.9	4.80	+ 0.03	166633	
6	0.50	80	17.0	30	6.0	4.9	5.80	+ 0.03	166698	
6	0.75	80	17.0	30	6.0	4.9	5.65	+ 0.03	166642	
8	0.75	90	20.0	35	8.0	6.2	7.65	+ 0.03	166700	
8	1.00	90	20.0	35	8.0	6.2	7.55	+ 0.05	166652	
10	1.00	100	22.0	39	10.0	8.0	9.55	+ 0.05	166662	
12	1.00	100	19.0		9.0	7.0	11.55	+ 0.05		166672
14	1.50	100	24.0		11.0	9.0	13.30	+ 0.05		166677
16	1.50	100	26.0		12.0	9.0	15.30	+ 0.05		166682

MF ISO DIN 13

≤ Ø 2.8 PM | > Ø 2.8 HSS | ~ISO 529



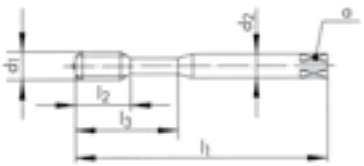
	N1110-1	N1110-3	N1110-S
			
			
		C 2 x P	
		ISO 2 6H	ISO 2 6H

N1110-1 

N1110-3 



N1110-S 



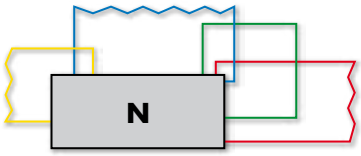


Ø d_1 MF	P mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
2	0.25	45	8.0		2.80	2.10	3	1.75		102933	
2.2	0.25	45	9.5		2.80	2.10	3	1.95		102936	
2.3	0.25	45	9.5		2.80	2.10	3	2.05		* 102938	
2.5	0.35	45	9.5		2.80	2.10	3	2.15		102940	
3	0.35	48	11.0	18	3.15	2.50	3	2.65		102945	
3.5	0.35	50	13.0	20	3.55	2.80	3	3.15		102949	
4	0.35	53	13.0	21	4.00	3.15	3	3.65		102952	
4	0.50	53	13.0	21	4.00	3.15	3	3.50	102773	102953	111040
4.5	0.50	53	13.0	21	4.50	3.55	3	4.00		102958	
5	0.35	58	16.0	25	5.00	4.00	3	4.65		102960	
5	0.50	58	16.0	25	5.00	4.00	3	4.50	102778	102961	111045
5	0.75	58	16.0	25	5.00	4.00	3	4.25		102963	
5.5	0.50	62	17.0	26	5.60	4.50	3	5.00		102967	
6	0.50	66	19.0	30	6.30	5.00	3	5.50	102783	102969	111050
6	0.75	66	19.0	30	6.30	5.00	3	5.25	102784	102971	111051
7	0.50	66	19.0	30	7.10	5.60	3	6.50		102975	
8	0.75	72	22.0	35	8.00	6.30	3	7.25	102790	102982	111057
8	1.00	72	22.0	35	8.00	6.30	3	7.00	102791	102984	111058
9	0.50	72	22.0	36	9.00	7.10	3	8.50		102988	
9	0.75	72	22.0	36	9.00	7.10	3	8.25		102989	
9	1.00	72	22.0	36	9.00	7.10	3	8.00		102990	
10	0.50	80	24.0	39	10.00	8.00	3	9.50		102925	
10	1.00	80	24.0	39	10.00	8.00	3	9.00	102756	102928	111024
10	1.25	80	24.0	39	10.00	8.00	3	8.80	102758	102930	111025

P 0.25 ISO 1 4H

MF ISO DIN 13

HSS ~ISO 529



N1210-1 N1210-3 N1210-S



N1210-1



N1210-3





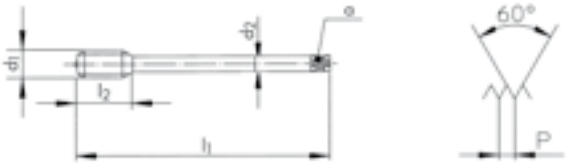
N1210-S







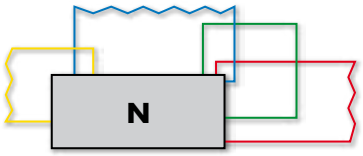
ISO 2 6H ISO 2 6H

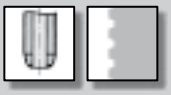


∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
11	0.50	85	22.0	8.0	6.3	3	10.50		103485	
11	0.75	85	22.0	8.0	6.3	3	10.25		103486	
11	1.00	85	22.0	8.0	6.3	3	10.00		103487	
11	1.25	85	22.0	8.0	6.3	3	9.80		103488	
12	0.50	89	24.0	9.0	7.1	3	11.50		103490	
12	0.75	89	24.0	9.0	7.1	3	11.25		103491	
12	1.00	89	24.0	9.0	7.1	3	11.00	103305	103493	111169
12	1.25	89	24.0	9.0	7.1	3	10.80	103307	103495	111171
12	1.50	89	24.0	9.0	7.1	3	10.50	103308	103497	111172
14	0.50	95	24.0	11.2	9.0	3	13.50		103502	
14	0.75	95	24.0	11.2	9.0	3	13.25		103503	
14	1.00	95	24.0	11.2	9.0	3	13.00	103312	103504	111175
14	1.25	95	24.0	11.2	9.0	3	12.80	103314	103506	111177
14	1.50	95	24.0	11.2	9.0	3	12.50	103315	103508	111178
15	0.75	90	23.0	11.2	9.0	3	14.25		103512	
15	1.00	90	23.0	11.2	9.0	3	14.00		103513	
16	0.50	102	32.0	12.5	10.0	4	15.50		103515	
16	0.75	102	32.0	12.5	10.0	4	15.25		103516	
16	1.00	102	32.0	12.5	10.0	4	15.00	103321	103517	111183
16	1.50	102	32.0	12.5	10.0	4	14.50	103322	103520	111184
17	1.00	95	23.0	12.5	10.0	4	16.00		103525	
18	0.75	112	30.0	14.0	11.2	4	17.25		103527	
18	1.00	112	30.0	14.0	11.2	4	17.00	103326	103528	111187
18	1.50	112	30.0	14.0	11.2	4	16.50	103327	103531	111188
18	2.00	112	30.0	14.0	11.2	3	16.00		103533	
19	1.00	112	33.0	14.0	11.2	4	18.00		103536	

MF ISO DIN 13

HSS ~ISO 529



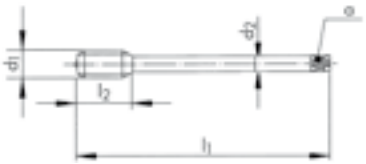
N1210-1 

N1210-3 



N1210-S 

N1210-1	N1210-3	N1210-S
		
		
		
	ISO 2 6H	ISO 2 6H

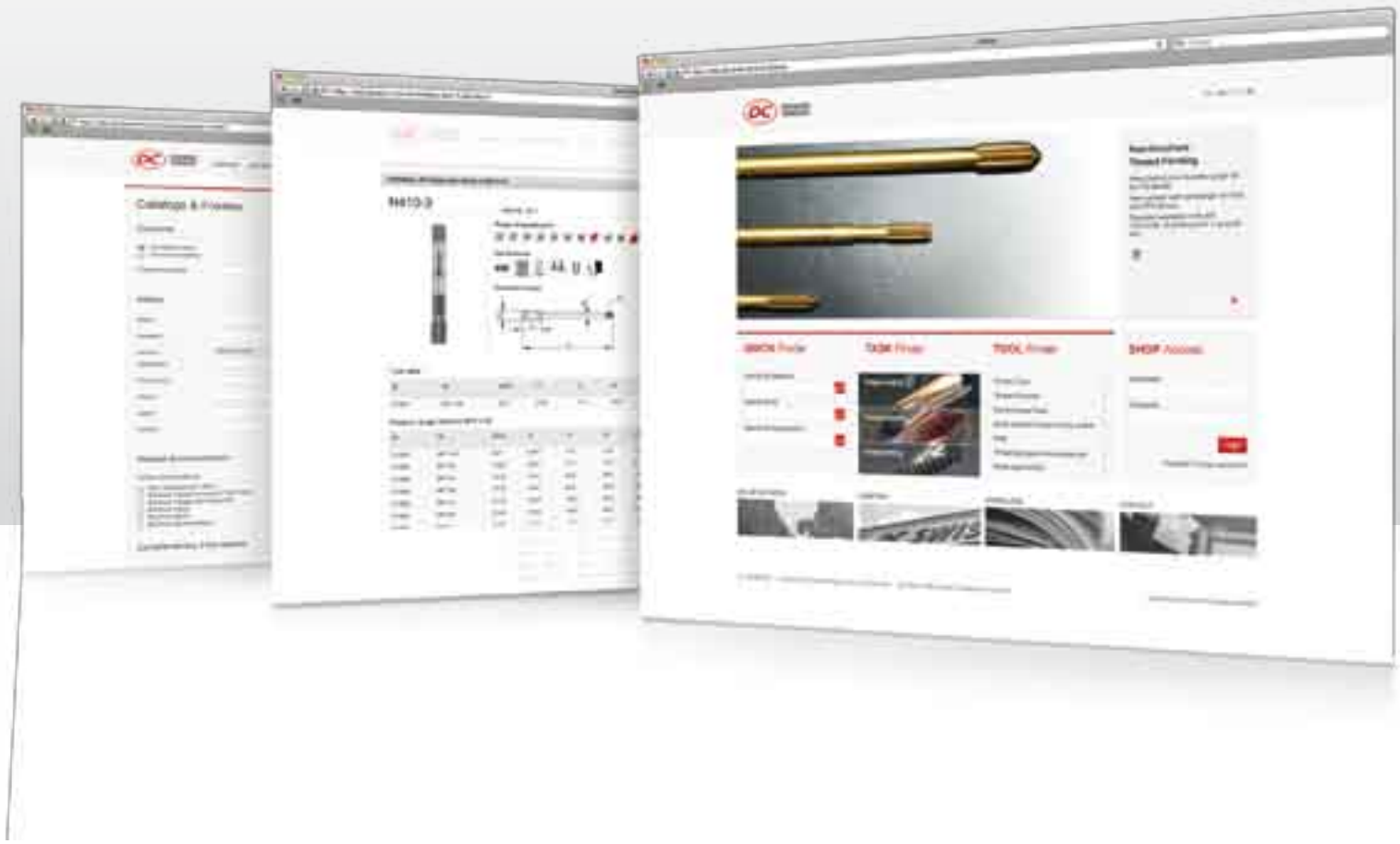




∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	α mm			ID	ID	ID
20	1.00	112	37.0	14.0	11.2	4	19.00	103332	103537	111198
20	1.25	112	37.0	14.0	11.2	4	18.80		103539	
20	1.50	112	37.0	14.0	11.2	4	18.50	103334	103540	111195
22	1.00	115	32.0	16.0	12.5	4	21.00		103545	
22	1.50	115	32.0	16.0	12.5	4	20.50	103340	103546	121669
22	2.00	115	32.0	16.0	12.5	3	20.00		103548	
24	1.00	120	30.0	18.0	14.0	4	23.00		103552	
24	1.50	120	30.0	18.0	14.0	4	22.50	103343	103553	111202
24	2.00	130	45.0	18.0	14.0	4	22.00	103344	103555	111203
25	1.00	120	30.0	18.0	14.0	4	24.00		103559	
25	1.50	120	30.0	18.0	14.0	4	23.50		103560	
25	2.00	120	30.0	18.0	14.0	4	23.00		103561	
26	1.00	120	30.0	18.0	14.0	4	25.00		103562	
26	1.50	120	30.0	18.0	14.0	4	24.50	103346	103563	111207
26	2.00	120	30.0	18.0	14.0	4	24.00		103564	
27	1.00	127	30.0	20.0	16.0	4	26.00		103565	
27	1.50	127	30.0	20.0	16.0	4	25.50		103566	
27	2.00	135	45.0	20.0	16.0	4	25.00	* 103351	* 103567	* 111210
28	1.00	127	30.0	20.0	16.0	4	27.00		103570	
28	1.50	127	30.0	20.0	16.0	4	26.50		103571	
30	1.50	127	32.0	20.0	16.0	4	28.50	103355	103575	111214
30	2.00	127	32.0	20.0	16.0	4	28.00	103356	103577	111215

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THREADING TECHNOLOGY



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UNC *Inhaltsverzeichnis - Maschinen- und Handgewindebohrer ANSI B1.1*
Directory - Machine and hand taps ANSI B1.1

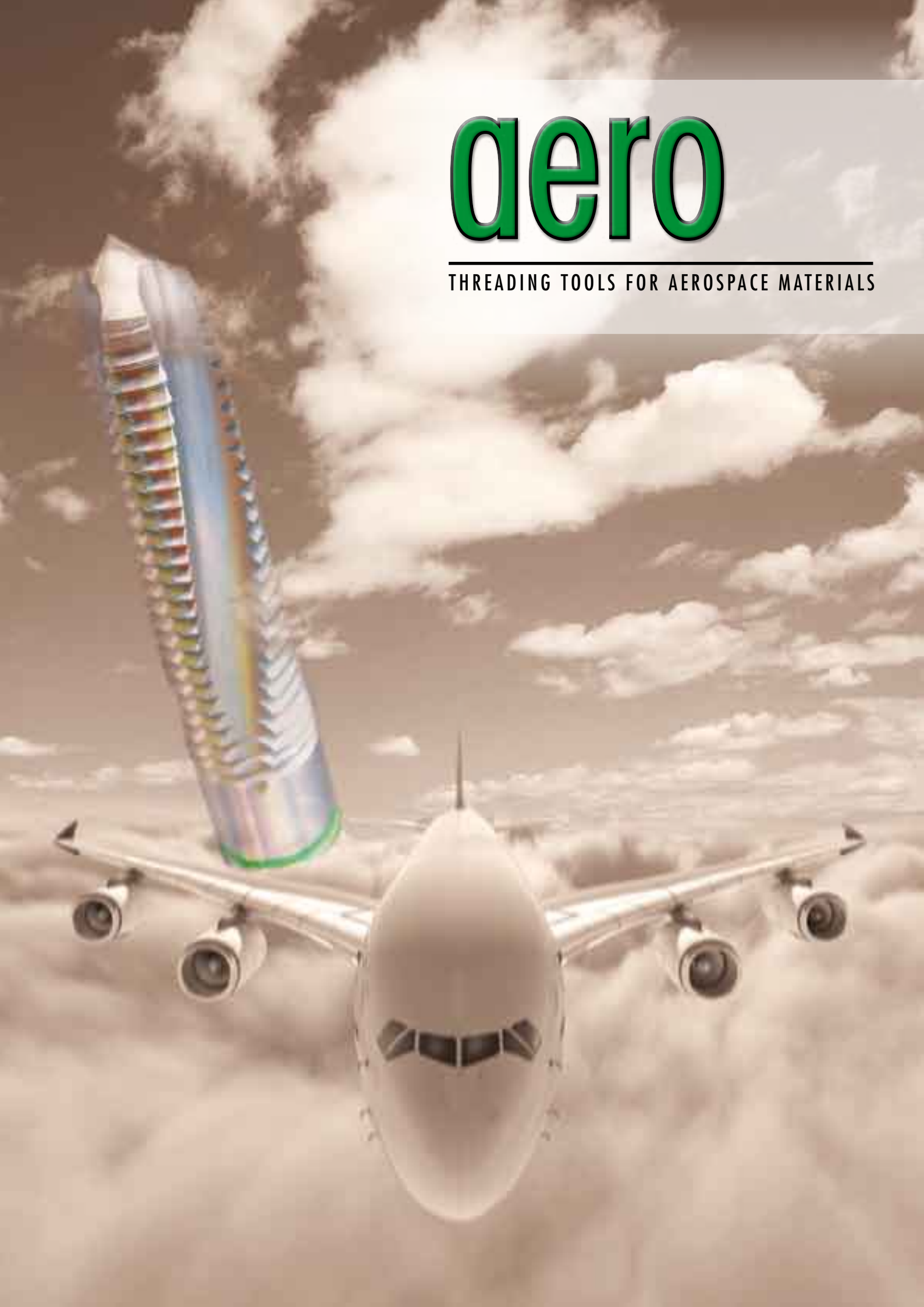
		N					Z	
Merkmale **Characteristics**				V	R40 V		V	VS
								
Lochart **Hole type**								
		**N310-3**	**N320-3 N320-4**	**N320V-4**	**N360-3 N360V-3**	**N1110 -1-2-3-S**	**Z320V-3 Z320V-4**	**Z320VS-4**
DIN lang **DIN long**	**DIN 371**	114	114	114	116		118	118
ISO kurz **ISO short**	**ISO 529**					128		
Toleranz **Tolerance**	**UNC 2B**	114	114	114	116	128	118	118
Toleranz **Tolerance**	**UNC 3B**							
Toleranz **Tolerance**	**UNC(J) 3B**		114		116			
		**N410-3**	**N420-4**	**N420V-4**	**N460-3 N460V-3**	**N1210 -1-2-3-S**	**Z420V-4**	**Z420VS-4**
DIN lang **DIN long**	**DIN 376**	115	115	115	117		118	118
ISO kurz **ISO short**	**ISO 529**					129		
Toleranz **Tolerance**	**UNC 2B**	115	115	115	117	129	118	118
Toleranz **Tolerance**	**UNC 3B**							
Toleranz **Tolerance**	**UNC(J) 3B**							

UNC *Inhaltsverzeichnis - Maschinengewindebohrer ANSI B1.1*
Directory - Machine taps ANSI B1.1

Z		H		S		SA		
R40 V	R45 VS		R25		R35 VS		R15	R10
								
								
Z360V-3 Z362V-3	**Z370VS-3**	**H320-4**	**H350-3**	**S320VS-4**	**S360VS-3**	**SA320-4**	**SA350-3**	**SA390-3**
119	120	121	121	122	123	124	124	125
119	120	121	121	122	123	124	124	
	120			122		124	124	125
Z462V-3	**Z470VS-3**	**H420-4**	**H450-3**	**S420VS-4**	**S460VS-3**	**SA420-4**	**SA450-3**	
119	120	121	121	122	123	125	125	
119	120	121	121	122	123	125	125	

UNC *Inhaltsverzeichnis - Maschinengewindebohrer und Gewindeformer ANSI B1.1*
Directory - Machine taps and thread formers ANSI B1.1

		TL		RTS		FS	FPS	FAS
Merkmale **Characteristics**		VS	R15 VS	VS	R40 VS	VS	VS	VS
								
Lochart **Hole type**								
		TL320VS-4	TL351VS-3	RTS320VS-4	RTS362VS-3	FS380VS-3	FPS381VS-3	FAS381VS-3
DIN lang **DIN long**	DIN 371	124	124	126	126			
DIN lang **DIN long**	~DIN 2184-1					127	127	127
Toleranz **Tolerance**	UNC 2B	124	124	126	126	127	127	127
Toleranz **Tolerance**	UNC 3B							
Toleranz **Tolerance**	UNC(J) 3B	124	124					
				RTS420VS-4	RTS462VS-3			
DIN lang **DIN long**	DIN 376			126	126			
DIN lang **DIN long**	~DIN 2184-1							
Toleranz **Tolerance**	UNC 2B			126	126			
Toleranz **Tolerance**	UNC 3B							
Toleranz **Tolerance**	UNC(J) 3B							



aero

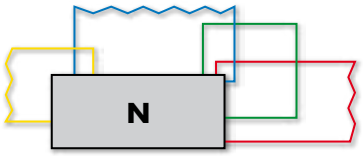
THREADING TOOLS FOR AEROSPACE MATERIALS

UNC ANSI B1.1

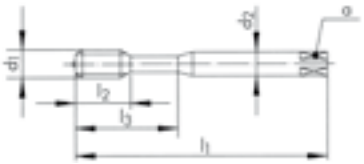
≤ Ø 2.8 | > Ø 2.8

PM | HSSE





	N310-3	N320-4	N320V-4
			
			
	C 2.5 x P	B 4 x P	B 4 x P
	2B	2B	2B
Ø" d_1 UNC	ID	ID	ID
*2		101469	143690
*3		101470	
4	101450	101511	142738
5		101512	
6	101451	101514	144402
8	101452	101515	142739
10	101449	101508	142740
12		101509	
1/4	101448	101507	142741





Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		
*2	56	2.18	45	9.0		2.8	2.1	2	1.75
*3	48	2.51	50	10.0		2.8	2.1	2	2.00
4	40	2.84	56	12.0	18	3.5	2.7	3	2.25
5	40	3.17	56	12.0	18	3.5	2.7	3	2.55
6	32	3.50	56	13.0	20	4.0	3.0	3	2.75
8	32	4.16	63	14.0	21	4.5	3.4	3	3.40
10	24	4.82	70	15.0	25	6.0	4.9	3	3.80
12	24	5.48	80	17.0	30	6.0	4.9	3	4.40
1/4	20	6.35	80	17.0	30	7.0	5.5	3	5.10

	3B UNC(J)
Ø" d_1 UNC	ID
4	145656
6	155317
8	155319

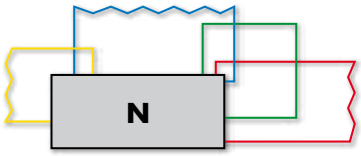
P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		UNJC
40	2.84	56	12.0	18	3.5	2.7	3	2.30
32	3.50	56	13.0	20	4.0	3.0	3	2.80
32	4.16	63	14.0	21	4.5	3.4	3	3.45

* N320-3 

UNC ANSI B1.1

HSSE

DIN 376

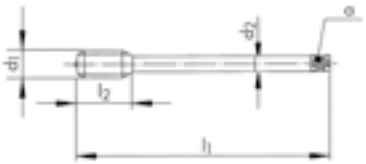


	N410-3	N420-4	N420V-4
			
			
	C 2.5 x P	B 4 x P	B 4 x P
	2B	2B	2B

N410-3 — 31 62 74

N420-4 — 61 63 71 72 73 81

N420V-4 — V — 11 12 13 14 21 32





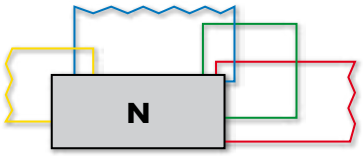
Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
5/16	18	7.93	90	20.0	6.0	4.9	3	6.50	101997	102213	142742
3/8	16	9.52	100	22.0	7.0	5.5	3	8.00	101996	102212	142743
7/16	14	11.11	100	19.0	8.0	6.2	3	9.30		102215	142744
1/2	13	12.70	110	24.0	9.0	7.0	3	10.80	101993	102208	142745
9/16	12	14.28	110	28.0	11.0	9.0	3	12.20		102217	
5/8	11	15.87	110	30.0	12.0	9.0	3	13.60	101998	102214	142746
3/4	10	19.05	125	33.0	14.0	11.0	3	16.60	101995	102211	142747
7/8	9	22.22	140	36.0	18.0	14.5	3	19.50		102216	142748
1	8	25.40	160	39.0	18.0	14.5	4	22.30	101994	102209	142749
1 1/8	7	28.57	180	45.0	22.0	18.0	4	25.00		102205	
1 1/4	7	31.75	180	45.0	22.0	18.0	4	28.20	* 101991	102204	
1 1/2	6	38.10	200	55.0	32.0	24.0	4	34.00	* 101990	102203	
1 3/4	5	44.45	220	59.0	36.0	29.0	4	39.50	* 101992	102206	
2	4.5	50.80	250	67.0	40.0	32.0	4	45.30		102210	

UNC ANSI B1.1

≤ Ø 2.8 | > Ø 2.8

PM | HSSE





	N360-3	N360V-3	N360-3
			
			
			
			
	2B	2B	3B UNC(J)

N360-3





N360V-3



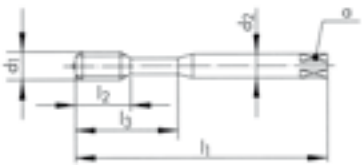




N360-3









Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
2	56	2.18	45	8.0		2.8	2.1	2	1.75	101673	148887	
3	48	2.51	50	9.0		2.8	2.1	2	2.00	101674		
4	40	2.84	56	5.5	18	3.5	2.7	3	[1]2.25	101676	101725	155316
5	40	3.17	56	5.5	18	3.5	2.7	3	2.55	101677		
6	32	3.50	56	6.5	20	4.0	3.0	3	[2]2.75	101679	101727	155318
8	32	4.16	63	7.5	21	4.5	3.4	3	[3]3.40	101680	101728	155320
10	24	4.82	70	9.0	25	6.0	4.9	3	3.80	101671	101723	
12	24	5.48	80	11.0	30	6.0	4.9	3	4.40	101672		
1/4	20	6.35	80	11.0	30	7.0	5.5	3	5.10	101670	101722	
5/16	18	7.93	90	12.5	35	8.0	6.2	3	6.50	101678	101726	
3/8	16	9.52	100	14.0	39	10.0	8.0	3	8.00	101675	101724	

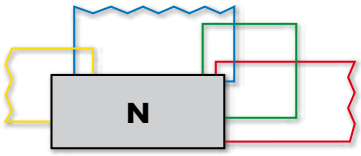
UNJC

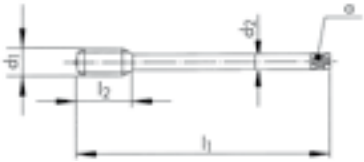
[1] 2.30
[2] 2.80
[3] 3.45

UNC ANSI B1.1

HSSE

DIN 376



	N460-3	N460V-3		
				
				
				
				
				

N460-3





N460V-3



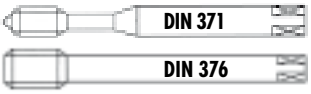


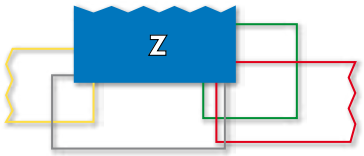


Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm			N460-3 ID	N460V-3 ID
7/16	14	11.11	100	14.0	8.0	6.2	3	9.30	102424	105135
1/2	13	12.70	110	14.0	9.0	7.0	3	10.80	102420	102497
9/16	12	14.28	110	14.0	11.0	9.0	3	12.20	102426	102502
5/8	11	15.87	110	18.0	12.0	9.0	3	13.60	102423	102500
3/4	10	19.05	125	21.0	14.0	11.0	3	16.60	102422	102499
7/8	9	22.22	140	24.0	18.0	14.5	4	19.50	102425	102501
1	8	25.40	160	27.0	18.0	14.5	4	22.30	102421	102498
1 1/8	7	28.57	180	30.0	22.0	18.0	4	25.00	102418	102495
1 1/4	7	31.75	180	30.0	22.0	18.0	4	28.20	102417	102494
1 1/2	6	38.10	200	40.0	32.0	24.0	5	34.00	102416	102493
1 3/4	5	44.45	220	44.0	36.0	29.0	5	39.50		128062
2	4.5	50.80	250	52.0	40.0	32.0	5	45.30		128084

UNC ANSI B1.1

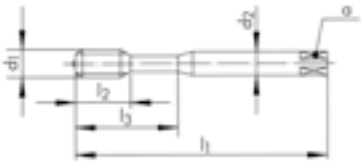
PM





Z320V-4	V	21 22 23 41 42 51		
Z320VS-4	VS	21 22 23 24 51 61		
Z420V-4	V	21 22 23 41 42 51		
Z420VS-4	VS	21 22 23 24 51 61		

Z320V-4	Z320VS-4	Z420V-4	Z420VS-4
			
			
B 4 x P	B 4 x P	B 4 x P	B 4 x P
2B	2B	2B	2B



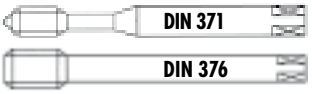


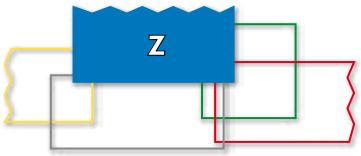
Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
*2	56	2.18	45	9.0		2.8	2.1	2	1.75	142750			
4	40	2.84	56	12.0	18	3.5	2.7	3	2.25	142751			
6	32	3.50	56	13.0	20	4.0	3.0	3	2.75	142752	111560		
8	32	4.16	63	14.0	21	4.5	3.4	3	3.40	142753	111561		
10	24	4.82	70	15.0	25	6.0	4.9	3	3.80	142754	111562		
1/4	20	6.35	80	17.0	30	7.0	5.5	3	5.10	142755	111563		
5/16	18	7.93	90	20.0	35	8.0	6.2	3	6.50	142756	111564		
3/8	16	9.52	100	22.0	39	10.0	8.0	3	8.00	142757	111565		
1/2	13	12.70	110	24.0		9.0	7.0	3	10.80			142758	111566
5/8	11	15.87	110	30.0		12.0	9.0	3	13.60			142759	111567
3/4	10	19.05	125	33.0		14.0	11.0	4	16.60			142760	111568
7/8	9	22.22	140	36.0		18.0	14.5	4	19.50			142761	
1	8	25.40	160	39.0		18.0	14.5	4	22.30			142762	

* Z320V-3 

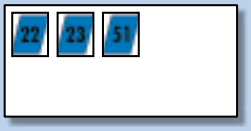
UNC ANSI B1.1

≤ Ø 2.8 PM | > Ø 2.8 HSSE



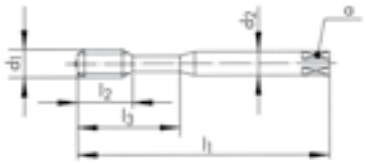


	Z362V-3	Z362VS-3	Z462V-3
			
			
			
	2B	2BX	2B

Z362V-3 —  

Z362VS-3 —  

Z462V-3 —  



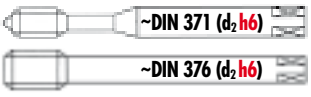


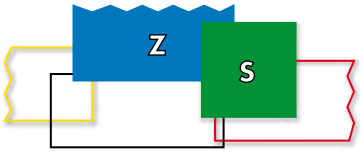
Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm			Z362V-3 ID	Z362VS-3 ID	Z462V-3 ID
*2	56	2.18	45	8.0		2.8	2.1	2	1.75	104695		
*4	40	2.84	56	5.5	18	3.5	2.7	3	2.25	104697		
6	32	3.50	56	6.5	20	4.0	3.0	3	2.75	104699	* 111543	
8	32	4.16	63	7.5	21	4.5	3.4	3	3.40	104700	* 111544	
10	24	4.82	70	9.0	25	6.0	4.9	3	3.80	104694		
1/4	20	6.35	80	11.0	30	7.0	5.5	3	5.10	104693		
5/16	18	7.93	90	12.5	35	8.0	6.2	3	6.50	104698		
3/8	16	9.52	100	14.0	39	10.0	8.0	3	8.00	104696	* 111548	
7/16	14	11.11	100	14.0		8.0	6.2	3	9.30			104757
1/2	13	12.70	110	14.0		9.0	7.0	3	10.80			104753
5/8	11	15.87	110	18.0		12.0	9.0	3	13.60			104756
3/4	10	19.05	125	21.0		14.0	11.0	3	16.60			104755
7/8	9	22.22	140	24.0		18.0	14.5	3	19.50			104758
1	8	25.40	160	27.0		18.0	14.5	4	22.30			104754

* Z360V-3

UNC ANSI B1.1

PM





	Z370VS-3	Z470VS-3		
				
				
				
	2BX	2BX		

Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID
6	32	3.50	56	6.5	20	4.0(h9)	3.0	3	2.75	166123	
8	32	4.16	63	7.5	21	4.5(h9)	3.4	3	3.40	166124	
10	24	4.82	70	9.0	25	6.0	4.9	3	3.80	166125	
1/4	20	6.35	80	11.0	30	*6.0	*4.9	3	5.10	166126	
5/16	18	7.93	90	12.5	35	8.0	6.2	3	6.50	166127	
3/8	16	9.52	100	14.0	39	10.0	8.0	3	8.00	166128	
7/16	14	11.11	100	14.0		8.0	6.2	3	9.30		166129
1/2	13	12.70	110	14.0		*10.0	*8.0	4	10.80		166130
5/8	11	15.87	110	18.0		12.0	9.0	4	13.60		166131
3/4	10	19.05	125	21.0		14.0	11.0	4	16.60		166132
1	8	25.40	160	27.0		16.0	12.0	4	22.30		175703

* Norme DC / * DC Norm / * Norma DC

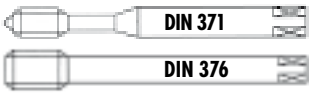
3B UNC(J)

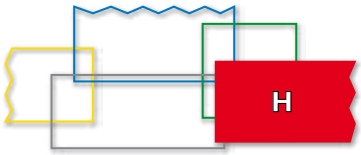
Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm		UNJC	ID
4	40	2.84	56	5.5	18	3.5(h9)	2.7	3	2.30	165114
6	32	3.50	56	6.5	20	4.0(h9)	3.0	3	2.80	165115
8	32	4.16	63	7.5	21	4.5(h9)	3.4	3	3.45	165116
1/4	20	6.35	80	11.0	30	*6.0	*4.9	3	5.20	165117
5/16	18	7.93	90	12.5	35	8.0	6.2	3	6.70	165118

* Norme DC / * DC Norm / * Norma DC

UNC ANSI B1.1

PM





	H320-4	H420-4	H350-3	H450-3
				
				
	B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
	2B	2B	2B	2B

H320-4



H420-4

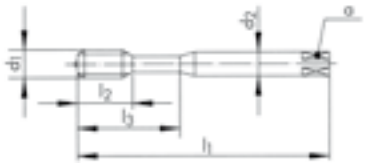


H350-3



H450-3





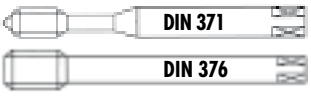


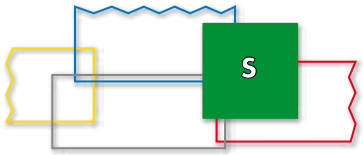
Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			H320-4 ID	H420-4 ID	H350-3 ID	H450-3 ID
2	56	2.18	45	8.0		2.8	2.1	2	1.75	101221			
4	40	2.84	56	10.0	18	3.5	2.7	3	2.25	101223			
6	32	3.50	56	13.0	20	4.0	3.0	3	2.75	101225			
8	32	4.16	63	14.0	21	4.5	3.4	3	3.40	101226			
10	24	4.82	70	15.0	25	6.0	4.9	3	3.80	101220			
1/4	20	6.35	80	17.0	30	7.0	5.5	3	5.10	101219			
5/16	18	7.93	90	20.0	35	8.0	6.2	3	6.50	101224			
3/8	16	9.52	100	22.0	39	10.0	8.0	3	8.00	101222			
1/2	13	12.70	110	24.0		9.0	7.0	4	10.80		101290		

Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			H320-4 ID	H420-4 ID	H350-3 ID	H450-3 ID
2	56	2.18	45	8.0		2.8	2.1	2	1.75			101258	
4	40	2.84	56	5.5	18	3.5	2.7	3	2.25			101260	
6	32	3.50	56	6.5	20	4.0	3.0	3	2.75			101262	
8	32	4.16	63	7.5	21	4.5	3.4	3	3.40			101263	
10	24	4.82	70	9.0	25	6.0	4.9	3	3.80			101257	
1/4	20	6.35	80	11.0	30	7.0	5.5	3	5.10			101256	
5/16	18	7.93	90	12.5	35	8.0	6.2	3	6.50			101261	
3/8	16	9.52	100	14.0	39	10.0	8.0	3	8.00			101259	
7/16	14	11.11	100	14.0		8.0	6.2	3	9.30				101330
1/2	13	12.70	110	14.0		9.0	7.0	4	10.80				101326
5/8	11	15.87	110	18.0		12.0	9.0	4	13.60				101329
3/4	10	19.05	125	21.0		14.0	11.0	4	16.60				101328
1	8	25.40	160	27.0		18.0	14.5	4	22.30				101327

UNC ANSI B1.1

PM

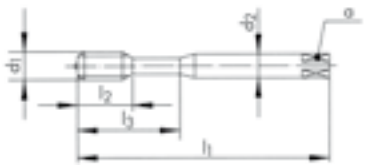




	S320VS-4	S420VS-4		
				
				
	B 4 x P	B 4 x P		
	2B	2B		

S320VS-4 VS — 13 15 24 52

S420VS-4 VS — 13 15 24 52





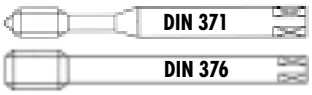
Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
6	32	3.50	56	13.0	20	4.0	3.0	3	2.75	111587	
8	32	4.16	63	14.0	21	4.5	3.4	3	3.40	111588	
10	24	4.82	70	15.0	25	6.0	4.9	3	3.80	* 111589	
1/4	20	6.35	80	17.0	30	7.0	5.5	3	5.10	111590	
5/16	18	7.93	90	20.0	35	8.0	6.2	3	6.50	111591	
3/8	16	9.52	100	22.0	39	10.0	8.0	3	8.00	111592	
1/2	13	12.70	110	24.0		9.0	7.0	4	10.80		111593
5/8	11	15.87	110	30.0		12.0	9.0	4	13.60		111594
3/4	10	19.05	125	33.0		14.0	11.0	4	16.60		111595

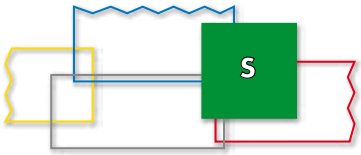
3B UNC(J)

Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		UNJC	ID
4	40	2.84	56	12.0	18	3.5	2.7	3	2.30	165314
6	32	3.50	56	13.0	20	4.0	3.0	3	2.80	165315
8	32	4.16	63	14.0	21	4.5	3.4	3	3.45	165316
1/4	20	6.35	80	17.0	30	7.0	5.5	3	5.20	165317
5/16	18	7.93	90	20.0	35	8.0	6.2	3	6.70	* 143761

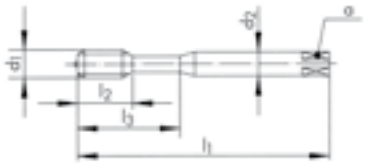
UNC ANSI B1.1

PM





	S360VS-3	S460VS-3		
				
				
				
	2B	2B		





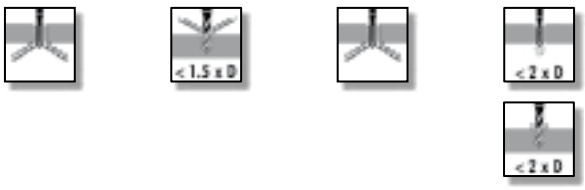
∅" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
6	32	3.50	56	6.5	20	4.0	3.0	3	2.75	111530	
8	32	4.16	63	7.5	21	4.5	3.4	3	3.40	111531	
10	24	4.82	70	9.0	25	6.0	4.9	3	3.80	* 111532	
1/4	20	6.35	80	11.0	30	7.0	5.5	3	5.10	111533	
5/16	18	7.93	90	12.5	35	8.0	6.2	3	6.50	111534	
3/8	16	9.52	100	14.0	39	10.0	8.0	3	8.00	111535	
1/2	13	12.70	110	14.0		9.0	7.0	4	10.80		111537
3/4	10	19.05	125	21.0		14.0	11.0	4	16.60		* 111539

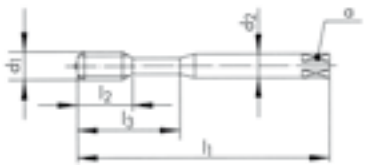
UNC ANSI B1.1

PM



aero

	SA320-4	SA350-3	TL320VS-4	TL351VS-3
				
				
	B 4 x P	C 2.5 x P	B 4 x P	C 2.5 x P
	2B	2B	2B	2B





Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm			SA320-4 ID	SA350-3 ID	TL320VS-4 ID	TL351VS-3 ID
4	40	2.84	56	12.0		3.5	2.7	3	2.25	147271	149003		152018
5	40	3.17	56	12.0		3.5	2.7	3	2.55	* 149031	* 149033	* 152023	* 152024
6	32	3.50	56	13.0		4.0	3.0	3	2.75	149055	149057	* 152027	152028
8	32	4.16	63	14.0		4.5	3.4	3	3.40	149093	149095	* 152036	152037
10	24	4.82	70	15.0		6.0	4.9	3	3.80	149125	* 149127	* 152042	* 152043
1/4	20	6.35	80	15.0	23	7.0	5.5	3	5.10	149222	149224	* 152062	127972
5/16	18	7.93	90	18.0	29	8.0	6.2	3	6.50	149269	149271		152068
3/8	16	9.52	100	20.0	33	10.0	8.0	3	8.00	149346	149348	* 152084	152085

	SA320-4	SA350-3	TL320VS-4	TL351VS-3
	3B UNC(J)	3B UNC(J)	3B UNC(J)	3B UNC(J)

Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm		UNJC	SA320-4 ID	SA350-3 ID	TL320VS-4 ID	TL351VS-3 ID
4	40	2.84	56	12.0		3.5	2.7	3	2.30	149005	149007	* 148804	150194
6	32	3.50	56	13.0		4.0	3.0	3	2.80	149059	149061	* 152029	150210
8	32	4.16	63	14.0		4.5	3.4	3	3.45	149097	149099	* 152038	152039
10	24	4.82	70	15.0		6.0	4.9	3	3.90	* 149129	* 149131		* 152045
1/4	20	6.35	80	15.0	23	7.0	5.5	3	5.20	149226	149228	* 152063	152064
5/16	18	7.93	90	18.0	29	8.0	6.2	3	6.70	149273	149275	* 152069	152070
3/8	16	9.52	100	20.0	33	10.0	8.0	3	8.10	149350	149352	* 152086	152087

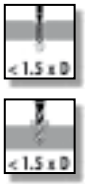
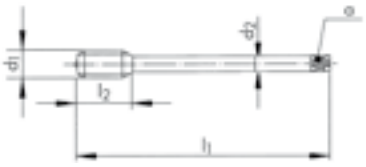
UNC ANSI B1.1

PM

~DIN 371

DIN 376

aero

	SA420-4	SA450-3		SA390-3
				
				
				
				

Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm			SA420-4 ID	SA450-3 ID	SA390-3 ID
7/16	14	11.11	100	22.0	8.0	6.2	3	9.30	* 152246		
1/2	13	12.70	110	24.0	9.0	7.0	4	10.80	152247	152252	
5/8	11	15.87	110	30.0	12.0	9.0	4	13.60	152249	152254	
3/4	10	19.05	125	33.0	14.0	11.0	4	16.60	* 152250		



Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm		UNJC	SA390-3 ID
4	40	2.84	56	12.0	3.5	2.7	3	2.30	149652
6	32	3.50	56	13.0	4.0	3.0	3	2.80	149666
8	32	4.16	63	14.0	4.5	3.4	3	3.45	149677
10	24	4.82	70	15.0	6.0	4.9	3	3.90	149685
1/4	20	6.35	80	20.0	7.0	5.5	3	5.20	149713
5/16	18	7.93	90	25.0	8.0	6.2	3	6.70	149726
3/8	16	9.52	100	30.0	10.0	8.0	3	8.10	149747

UNC ANSI B1.1

SYNCHRO

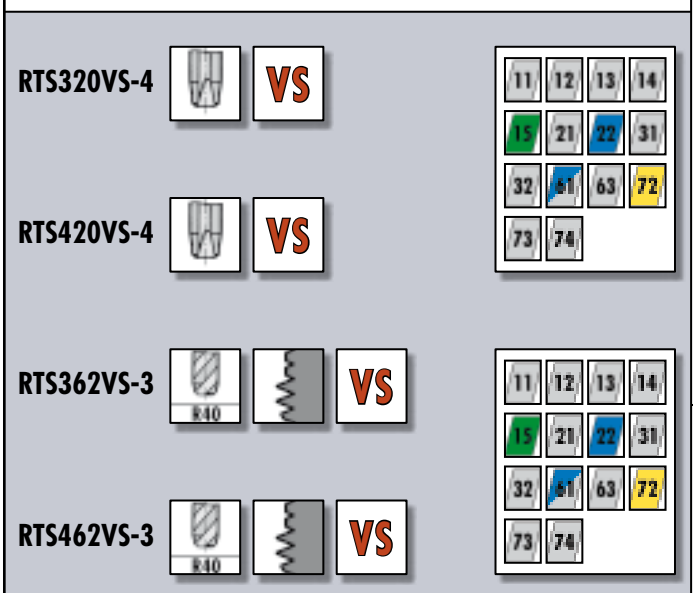
Uniquement pour taraudage synchrone
Nur für Synchronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado

PM

~DIN 371 (d_2 h6)
~DIN 376 (d_2 h6)

RTS
Rigid Tapping Synchro

RTS320VS-4 | RTS420VS-4 | RTS362VS-3 | RTS462VS-3

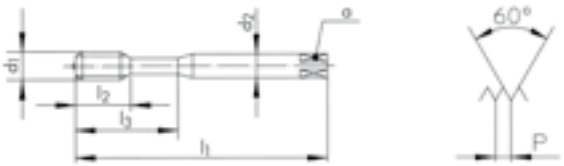












Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID	ID	ID	ID
6	32	3.50	56	6.5	20	4.0(h9)	3.0	3	2.75	157395		157402	
8	32	4.16	63	7.5	21	4.5(h9)	3.4	3	3.40	157396		157403	
10	24	4.82	70	9.0	25	6.0	4.9	3	3.80	157397		157404	
1/4	20	6.35	80	11.0	30	*6.0	*4.9	3	5.10	157398		157405	
5/16	18	7.93	90	12.5	35	8.0	6.2	3	6.50	157399		157406	
3/8	16	9.52	100	14.0	39	10.0	8.0	3	8.00	157400		157407	
1/2	13	12.70	110	14.0		*10.0	*8.0	3	10.80		157401		157408

* Norme DC / * DC Norm / * Norma DC

≥ Ø 6 mm
sur demande
auf Anfrage
on request
su richiesta
sobre pedido

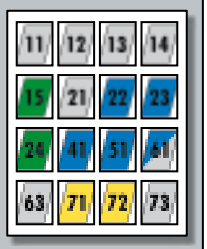
PM ~DIN 2184-1

FS FPS FAS

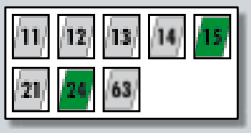
FORMING

FS380VS-3		FPS381VS-3	FAS381VS-3

FS380VS-3 VS



FPS381VS-3 VS



FAS381VS-3 VS

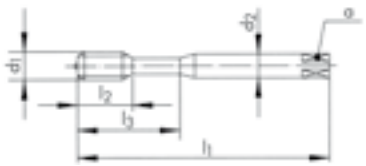












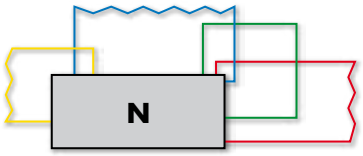


∅" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm	2BX Tol.		ID	ID	ID
2	56	2.18	45	9.0		2.8	2.1	1.95	+ 0.02	157285		
4	40	2.84	56	12.0	18	3.5	2.7	2.55	+ 0.03		170063	170065
6	32	3.50	56	13.0	20	4.0	3.0	3.15	+ 0.03		166713	166725
8	32	4.16	63	14.0	21	4.5	3.4	3.80	+ 0.03		166714	166726
10	24	4.82	70	15.0	25	6.0	4.9	4.35	+ 0.05		166715	166727
1/4	20	6.35	80	17.0	30	7.0	5.5	5.75	+ 0.05		166716	166728
5/16	18	7.93	90	20.0	35	8.0	6.2	7.30	+ 0.05		* 166717	* 166729

UNC ANSI B1.1

≤ Ø 2.8 PM > Ø 2.8 HSS





N1110-1	N1110-2	N1110-3	N1110-S

N1110-1

N1110-2

N1110-3

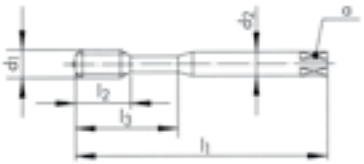
N1110-S









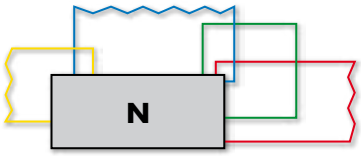




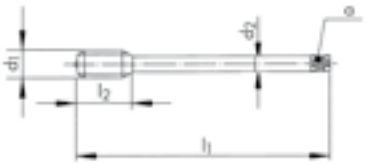
Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
2	56	2.18	45	9.5		2.80	2.10	3	1.75	102799	102885	102998	111067
3	48	2.51	45	9.5		2.80	2.10	3	2.00	* 102800	* 102886	* 102999	* 111068
4	40	2.84	48	11.0	18	3.15	2.50	3	2.25	102802	102888	103001	111070
5	40	3.17	48	11.0	18	3.15	2.50	3	2.55			103002	
6	32	3.50	50	13.0	20	3.55	2.80	3	2.75	102805	102891	103004	111073
8	32	4.16	53	13.0	21	4.50	3.55	3	3.40	102806	102892	103005	111074
10	24	4.82	58	16.0	25	5.00	4.00	3	3.80	102797	102883	102996	111065
1/4	20	6.35	66	19.0	30	6.30	5.00	3	5.10	102796	102882	102995	111064
5/16	18	7.93	72	22.0	35	8.00	6.30	3	6.50	102804	102890	103003	111072
3/8	16	9.52	80	24.0	39	10.00	8.00	3	8.00	102801	102887	103000	111069

UNC ANSI B1.1

HSS ~ISO 529



	N1210-1	N1210-2	N1210-3	N1210-S
				
				
				
			2B	2B





Ø" d_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm			ID	ID	ID	ID
7/16	14	11.11	85	22.0	8.0	6.3	3	9.30	103392	103466	103606	111236
1/2	13	12.70	89	24.0	9.0	7.1	3	10.80	103387	103461	103601	111229
5/8	11	15.87	102	32.0	12.5	10.0	3	13.60	103391	103465	103605	111235
3/4	10	19.05	112	33.0	14.0	11.2	3	16.60	103390	103464	103604	111234
1	8	25.40	130	45.0	18.0	14.0	4	22.30	103388	103462	103602	111230

UNF, UNEF, UNS, UN

Inhaltsverzeichnis - Maschinen- und Handgewindebohrer ANSI B1.1
Directory - Machine and hand taps ANSI B1.1

		N						
Merkmale **Characteristics**				V	R40	R40 V		
								
Lochart **Hole type**								
		N310-3	**N320-3 N320-4**	**N320V-4**	**N360-3**	**N360V-3**	**N1110 -1-3-S**	**N1120-4**
DIN lang **DIN long**	**DIN 371**	134	134	134	136	136		
ISO kurz **ISO short**	**ISO 529**						148	150
Toleranz **Tolerance**	**UNF 2B**	134	134	134	136	136	148	
Toleranz **Tolerance**	**UNJF 3B**							
Toleranz **Tolerance**	**UNF(J) 3B**		134		136			
Toleranz **Tolerance**	**UNEF 2B**						150	150
Toleranz **Tolerance**	**UNS 2B**							
Toleranz **Tolerance**	**UN 2B**							
		N410-3	**N420-4**	**N420V-4**	**N460-3**	**N460V-3**	**N1210 -1-3-S**	**N1220-4**
DIN lang **DIN long**	**DIN 374**	135/151	135	135	137	137		
ISO kurz **ISO short**	**ISO 529**						149	150
Toleranz **Tolerance**	**UNF 2B**	135	135	135	137	137	149	
Toleranz **Tolerance**	**UNJF 3B**							
Toleranz **Tolerance**	**UNF(J) 3B**		135		137			
Toleranz **Tolerance**	**UNEF 2B**						150	150
Toleranz **Tolerance**	**UNS 2B**	151			151	151		
Toleranz **Tolerance**	**UN 2B**				151	151		

UNF, UNJF

Inhaltsverzeichnis - Maschinengewindebohrer ANSI B1.1 / ASME B1.15
Directory - Machine taps ANSI B1.1 / ASME B1.15

Z			H		S		SA	
V	V	VS			VS	VS		
								 NEW
								
Z320V-4	**Z360V-3**	**Z370VS-3**	**H320-4**	**H350-3**	**S320VS-4**	**S360VS-3**	**SA320-4**	**SA320-4**
138	138	139	140	141	142	142	143	145
138	138	139	140	141		142	143	
								145
		139			142	142	143	
Z420V-4	**Z460V-3**	**Z470VS-3**	**H420-4**	**H450-3**	**S420VS-4**	**S460VS-3**	**SA420-4**	
138	138	139	140	141	142	142	144	
138	138	139	140	141		142	144	
					142	142	144	

UNF

Inhaltsverzeichnis - Maschinengewindebohrer ANSI B1.1
Directory - Machine taps ANSI B1.1

		SA		TL		RTS		
Merkmale **Characteristics**		R15	R10	VS	R15 VS	VS	R40 VS	
								
Lochart **Hole type**								
		SA350-3	**SA390-3**	**TL320VS-4**	**TL351VS-3**	**RTS320VS-4**	**RTS362VS-3**	
DIN lang **DIN long**	**DIN 371**	143	145	143	143	146	146	
DIN lang **DIN long**	**~DIN 2184-1**							
Toleranz **Tolerance**	**UNF 2B**	143		143	143	146	146	
Toleranz **Tolerance**	**UNF(J) 3B**	143	145	143	143			
Toleranz **Tolerance**	**UNEF 2B**							
Toleranz **Tolerance**	**UNS 2B**							
Toleranz **Tolerance**	**UN 2B**							
		SA450-3		**TL420VS-4**	**TL451VS-3**	**RTS420VS-4**	**RTS462VS-3**	
DIN lang **DIN long**	**DIN 374**	144		144	144	146	146	
DIN lang **DIN long**	**~DIN 2184-1**							
Toleranz **Tolerance**	**UNF 2B**	144			144	146	146	
Toleranz **Tolerance**	**UNF(J) 3B**	144		144	144			
Toleranz **Tolerance**	**UNEF 2B**							
Toleranz **Tolerance**	**UNS 2B**							
Toleranz **Tolerance**	**UN 2B**							

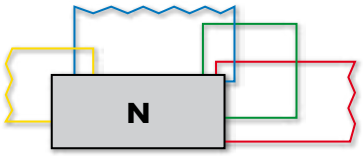
UNF

Inhaltsverzeichnis - Maschinengewindeformer ANSI B1.1
Directory - Machine thread formers ANSI B1.1

FS	FPS	FAS
VS	VS	VS
		
FS380VS-3	FPS381VS-3	FAS381VS-3
147	147	147
147	147	147

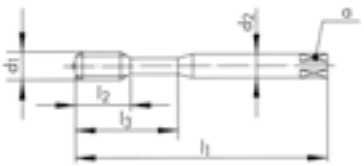
UNF ANSI B1.1

≤ Ø 2.8 PM | > Ø 2.8 HSSE | DIN 371



N310-3		31 62 74
N320-3		61 63 71 72 73 81
N320-4		61 63 71 72 73 81
N320V-4	V	11 12 13 14 21 32

N310-3	N320-3	N320-4	N320V-4
			
 < 1.5 x D			
C 2.5 x P	2.5 x P	B 4 x P	B 4 x P
2B	2B	2B	2B





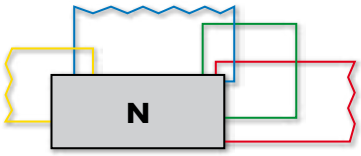
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
0	80	1.52	40	7.0		2.5	2.1	2	1.20		101475		
1	72	1.85	40	8.0		2.5	2.1	2	1.50		* 101476		
2	64	2.18	45	9.0		2.8	2.1	2	1.80		101477		
4	48	2.84	56	12.0	18	3.5	2.7	3	2.35			128847	
5	44	3.17	56	12.0	18	3.5	2.7	3	2.60			142764	
6	40	3.50	56	13.0	20	4.0	3.0	3	2.90			101519	142765
8	36	4.16	63	14.0	21	4.5	3.4	3	3.50			101520	
10	32	4.82	70	15.0	25	6.0	4.9	3	4.05			101517	142766
12	28	5.48	80	17.0	30	6.0	4.9	3	4.60			101518	
1/4	28	6.35	80	17.0	30	7.0	5.5	3	5.50	101453		101516	142767

												3B UNF(J)	
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		UNJF	ID	ID	ID	ID
10	32	4.82	70	15.0	25	6.0	4.9	3	4.15			135506	
1/4	28	6.35	80	17.0	30	7.0	5.5	3	5.55			155323	

UNF ANSI B1.1

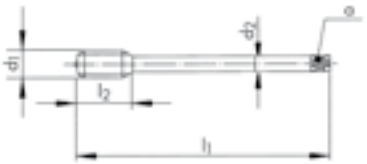
HSSE

DIN 374



N410-3	31 62 74	
N420-4	61 63 71 72 73 81	
N420V-4	V	11 12 13 14 21 32

N410-3	N420-4	N420V-4
		
		
C 2.5 x P	B 4 x P	B 4 x P
2B	2B	2B





Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
5/16	24	7.93	90	20.0	6.0	4.9	3	6.90	102004	102223	142774
3/8	24	9.52	100	22.0	7.0	5.5	3	8.50	102003	102222	142775
7/16	20	11.11	100	19.0	8.0	6.2	3	9.80	102006	102225	142776
1/2	20	12.70	100	24.0	9.0	7.0	3	11.40	102000	102219	142777
9/16	18	14.28	100	24.0	11.0	9.0	3	12.90		102227	
5/8	18	15.87	100	26.0	12.0	9.0	3	14.50	102005	102224	142778
3/4	16	19.05	125	33.0	14.0	11.0	4	17.50	102002	102221	142779
7/8	14	22.22	140	36.0	18.0	14.5	4	20.40	* 102007	102226	
1	12	25.40	160	39.0	18.0	14.5	4	23.30		102220	142780
1 1/8	12	28.57	180	39.0	22.0	18.0	4	26.50		142773	
1 1/4	12	31.75	180	39.0	22.0	18.0	4	29.70		102218	
1 3/8	12	34.92	200	36.0	28.0	22.0	4	32.80		105137	
1 1/2	12	38.10	200	41.0	32.0	24.0	4	36.00	* 110986	105138	

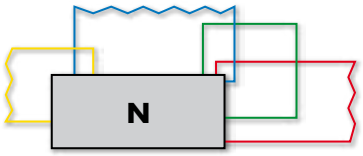
	3B UNF(J)	

Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		UNJF	ID
5/16	24	7.93	90	20.0	6.0	4.9	3	7.00	155328
3/8	24	9.52	100	22.0	7.0	5.5	3	8.60	155326
7/16	20	11.11	100	19.0	8.0	6.2	3	10.00	155330
1/2	20	12.70	100	24.0	9.0	7.0	3	11.55	155321

UNF ANSI B1.1

HSSE





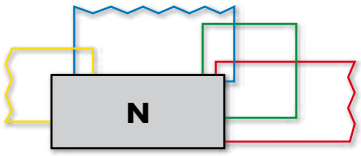
	N360-3	N360V-3		
				
				
				
				
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
6	40	3.50	56	6.5	20	4.0	3.0	3	2.90	101686	
8	36	4.16	63	7.5	21	4.5	3.4	3	3.50	* 101687	* 101733
10	32	4.82	70	9.0	25	6.0	4.9	3	4.05	101682	101730
12	28	5.48	80	11.0	30	6.0	4.9	3	4.60	101683	
1/4	28	6.35	80	11.0	30	7.0	5.5	3	5.50	101681	101729
5/16	24	7.93	90	12.5	35	8.0	6.2	3	6.90	101685	101732
3/8	24	9.52	100	14.0	39	10.0	8.0	3	8.50	101684	101731

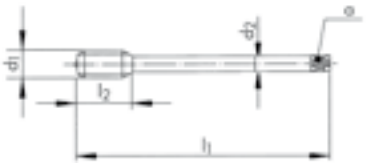
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm		UNJF	ID
10	32	4.82	70	9.0	25	6.0	4.9	3	4.15	155325
1/4	28	6.35	80	11.0	30	7.0	5.5	3	5.55	155324
5/16	24	7.93	90	12.5	35	8.0	6.2	3	7.00	155329
3/8	24	9.52	100	14.0	39	10.0	8.0	3	8.60	155327

UNF ANSI B1.1

HSSE

DIN 374



	N460-3	N460V-3		
				
				
				
				
				

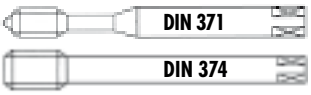
∅" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm			ID	ID
7/16	20	11.11	100	14.0	8.0	6.2	3	9.80	102434	142781
1/2	20	12.70	100	14.0	9.0	7.0	3	11.40	102430	102503
9/16	18	14.28	100	14.0	11.0	9.0	3	12.90	102436	143422
5/8	18	15.87	100	14.0	12.0	9.0	3	14.50	102433	143097
3/4	16	19.05	125	18.0	14.0	11.0	4	17.50	102432	102505
7/8	14	22.22	140	20.0	18.0	14.5	4	20.40	102435	144714
1	12	25.40	160	27.0	18.0	14.5	4	23.30	102431	102504
1 1/8	12	28.57	180	24.0	22.0	18.0	4	26.50	102429	144414
1 1/4	12	31.75	180	24.0	22.0	18.0	4	29.70	102428	151709
1 1/2	12	38.10	200	30.0	32.0	24.0	5	36.00	102427	148793

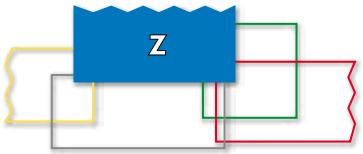
3B UNF(J)

∅" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm		UNJF	ID
7/16	20	11.11	100	14.0	8.0	6.2	3	10.00	155331
1/2	20	12.70	100	14.0	9.0	7.0	3	11.55	155322

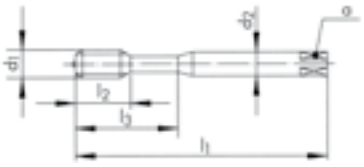
UNF ANSI B1.1

Z .20 PM | Z .60 HSSE





	Z320V-4	Z420V-4	Z360V-3	Z460V-3
				
				
	B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
	2B	2B	2B	2B



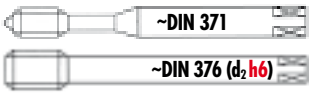


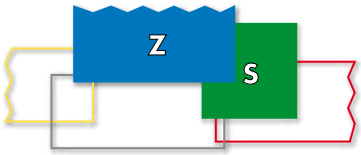
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			Z320V-4 ID	Z420V-4 ID	Z360V-3	Z460V-3
10	32	4.82	70	15.0	25	6.0	4.9	3	4.05	142783			
1/4	28	6.35	80	17.0	30	7.0	5.5	3	5.50	142784			
5/16	24	7.93	90	20.0	35	8.0	6.2	3	6.90	142785			
3/8	24	9.52	100	22.0	39	10.0	8.0	3	8.50	142786			
7/16	20	11.11	100	19.0		8.0	6.2	3	9.80		142787		
1/2	20	12.70	100	24.0		9.0	7.0	3	11.40		142788		

Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			Z360V-3 ID	Z460V-3 ID
10	32	4.82	70	9.0	25	6.0	4.9	3	4.05	104680	
1/4	28	6.35	80	11.0	30	7.0	5.5	3	5.50	104679	
5/16	24	7.93	90	12.5	35	8.0	6.2	3	6.90	104682	
3/8	24	9.52	100	14.0	39	10.0	8.0	3	8.50	104681	
7/16	20	11.11	100	14.0		8.0	6.2	3	9.80		104741
1/2	20	12.70	100	14.0		9.0	7.0	3	11.40		104738
5/8	18	15.87	100	14.0		12.0	9.0	3	14.50		104740
3/4	16	19.05	125	18.0		14.0	11.0	4	17.50		104739

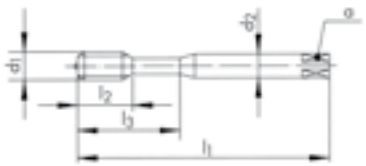
UNF ANSI B1.1

PM





	Z370VS-3	Z470VS-3		
				
				
				
	2BX	2BX		





∅" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			Z370VS-3 ID	Z470VS-3 ID
10	**32**	4.82	70	9.0	25	6.0	4.9	3	4.05	**166136**	
1/4	**28**	6.35	80	11.0	30	*6.0	*4.9	3	5.50	**166135**	
5/16	**24**	7.93	90	12.5	35	8.0	6.2	3	6.90	**166134**	
3/8	**24**	9.52	100	14.0	39	10.0	8.0	3	8.50	**166133**	
7/16	**20**	11.11	100	14.0		8.0	6.2	3	9.80		**166138**
1/2	**20**	12.70	110	14.0		*10.0	*8.0	4	11.40		**166137**

* Norme DC / * DC Norm / * Norma DC

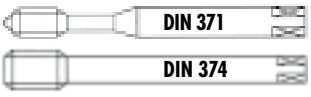
3B UNF(J)

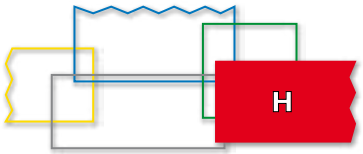
∅" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm		UNJF	ID
10	**32**	4.82	70	9.0	25	6.0	4.9	3	4.15	**165121**
1/4	**28**	6.35	80	11.0	30	*6.0	*4.9	3	5.55	**165122**
5/16	**24**	7.93	90	12.5	35	8.0	6.2	3	7.00	**165123**
3/8	**24**	9.52	100	14.0	39	10.0	8.0	3	8.60	**165124**

* Norme DC / * DC Norm / * Norma DC

UNF ANSI B1.1

PM





	H320-4	H420-4
		
		
	B 4 x P	B 4 x P
	2B	2B

H320-4

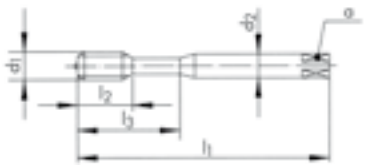




H420-4





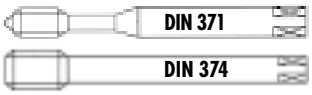


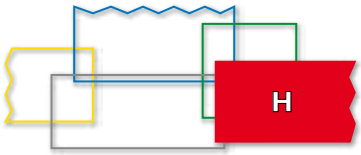


Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
10	**32**	4.82	70	15.0	25	6.0	4.9	3	4.05	**101228**	
1/4	**28**	6.35	80	17.0	30	7.0	5.5	3	5.50	**101227**	
5/16	**24**	7.93	90	20.0	35	8.0	6.2	3	6.90	**105139**	
3/8	**24**	9.52	100	22.0	39	10.0	8.0	3	8.50	**101229**	
1/2	**20**	12.70	100	24.0		9.0	7.0	4	11.40		**101291**

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PM





	H350-3	H450-3		
				
				
	C 2.5 x P	C 2.5 x P		
	2B	2B		

H350-3

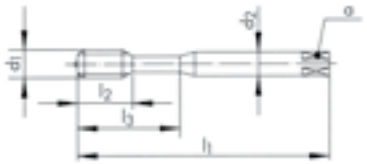




H450-3





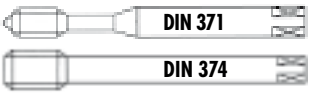


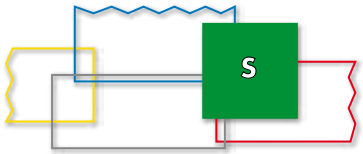


∅" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
10	**32**	4.82	70	9.0	25	6.0	4.9	3	4.05	**101265**	
1/4	**28**	6.35	80	11.0	30	7.0	5.5	3	5.50	**101264**	
5/16	**24**	7.93	90	12.5	35	8.0	6.2	3	6.90	**101267**	
3/8	**24**	9.52	100	14.0	39	10.0	8.0	3	8.50	**101266**	
7/16	**20**	11.11	100	14.0		8.0	6.2	3	9.80		**101334**
1/2	**20**	12.70	100	14.0		9.0	7.0	4	11.40		**101331**
5/8	**18**	15.87	100	14.0		12.0	9.0	4	14.50		**101333**
3/4	**16**	19.05	125	18.0		14.0	11.0	4	17.50		**101332**

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PM

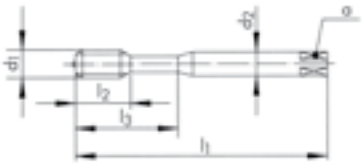




	S320VS-4	S420VS-4	S360VS-3	S460VS-3
	VS	VS	VS	VS
	13 15 24 52	13 15 24 52	13 15 24 52	13 15 24 52









	B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
	3B UNF(J)	3B UNF(J)	2B	2B

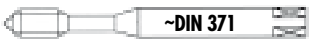
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm		UNJF	S320VS-4 ID	S420VS-4 ID	S360VS-3	S460VS-3
10	32	4.82	70	15.0	25	6.0	4.9	3	4.15	111814			
1/4	28	6.35	80	17.0	30	7.0	5.5	3	5.55	111813			
5/16	24	7.93	90	20.0	35	8.0	6.2	3	7.00	111816			
3/8	24	9.52	100	22.0	39	10.0	8.0	3	8.60	111818			
7/16	20	11.11	100	22.0		8.0	6.2	3	10.00		111837		

Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm			S320VS-4 ID	S420VS-4 ID	S360VS-3 ID	S460VS-3 ID
10	32	4.82	70	9.0	25	6.0	4.9	3	4.05			* 111581	
1/4	28	6.35	80	11.0	30	7.0	5.5	3	5.50			* 111582	
5/16	24	7.93	90	12.5	35	8.0	6.2	3	6.90			* 111583	
7/16	20	11.11	100	14.0		8.0	6.2	3	9.80				* 111585
1/2	20	12.70	100	14.0		9.0	7.0	4	11.40				* 111586

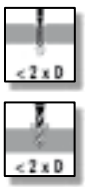
												3B UNF(J)	3B UNF(J)
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm		UNJF	S320VS-4 ID	S420VS-4 ID	S360VS-3 ID	S460VS-3 ID
10	32	4.82	70	9.0	25	6.0	4.9	3	4.15			111815	
1/4	28	6.35	80	11.0	30	7.0	5.5	3	5.55			111820	
5/16	24	7.93	90	12.5	35	8.0	6.2	3	7.00			111817	
3/8	24	9.52	100	14.0	39	10.0	8.0	3	8.60			111819	
7/16	20	11.11	100	14.0		8.0	6.2	3	10.00				111833

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PM



aero

	SA320-4	SA350-3	TL320VS-4	TL351VS-3
				
				
				
	2B	2B	2B	2B
∅" d_1 UNF	ID	ID	ID	ID
10	149133	149135	* 152046	152047
1/4	149230	149232	* 152065	152066
5/16	149277	149279	* 152071	152072
3/8	149339	149341	* 152082	152083
	3B UNF(J)	3B UNF(J)	3B UNF(J)	3B UNF(J)
∅" d_1 UNF	ID	ID	ID	ID
4		149015		
10	146098	149138	* 148005	148004
1/4	146404	149235	* 148013	148012
5/16	146393	149282	* 148017	148016
3/8	147165	149344	* 148024	148023

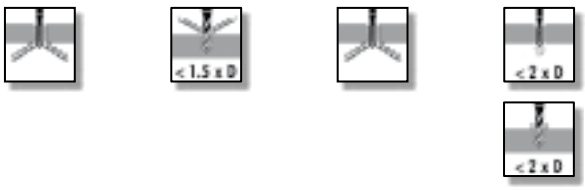
∅" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm		UNJF
10	32	4.82	70	15.0		6.0	4.9	3	4.05
1/4	28	6.35	80	15.0	23	7.0	5.5	3	5.50
5/16	24	7.93	90	18.0	29	8.0	6.2	3	6.90
3/8	24	9.52	100	20.0	33	10.0	8.0	3	8.50
4	48	2.84	56	12.0		3.5	2.7	3	2.35
10	32	4.82	70	15.0		6.0	4.9	3	4.15
1/4	28	6.35	80	15.0	23	7.0	5.5	3	5.55
5/16	24	7.93	90	18.0	29	8.0	6.2	3	7.00
3/8	24	9.52	100	20.0	33	10.0	8.0	3	8.60

UNF ANSI B1.1

PM

~DIN 374

aero

	SA420-4	SA450-3	TL420VS-4	TL451VS-3
				
				
	B 4 x P	C 2.5 x P	B 4 x P	C 2.5 x P
	2B	2B		2B

Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm			ID	ID		ID
7/16	20	11.11	100	22.0	8.0	6.2	*4	9.80	152286	152290		* 152298
1/2	20	12.70	100	24.0	9.0	7.0	4	11.40	152287	152291		* 152299
9/16	18	14.28	100	24.0	11.0	9.0	4	12.90	* 152288			
5/8	18	15.87	100	26.0	12.0	9.0	4	14.50	* 152289			

	SA420-4	SA450-3	TL420VS-4	TL451VS-3
	3B UNF(J)	3B UNF(J)	3B UNF(J)	3B UNF(J)

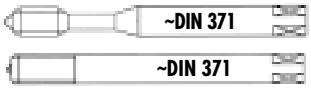
Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm		UNJF	ID	ID	ID	ID
7/16	20	11.11	100	22.0	8.0	6.2	*4	10.00	147187	152302	* 152306	148031
1/2	20	12.70	100	24.0	9.0	7.0	4	11.55	147189	152303	* 152307	152310
9/16	18	14.28	100	24.0	11.0	9.0	4	13.05	146395			
5/8	18	15.87	100	26.0	12.0	9.0	4	14.60	147169			

* SA420-4 = 3

* TL420VS-4 = 3

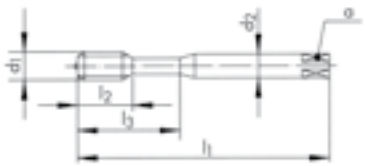
UNJF ASME B1.15 UNF ANSI B1.1

PM



aero

SA320-4			SA390-3
 NEW			
			
			
3B UNJF			3B UNF(J)



∅" d_1 UNJF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm		UNJF	ID
10	32	4.82	70	15.0		6.0	4.9	3	4.15	174976
1/4	28	6.35	80	15.0	23	7.0	5.5	3	5.55	175993
5/16	24	7.93	90	18.0	29	8.0	6.2	3	7.00	175995
3/8	24	9.52	100	20.0	33	10.0	8.0	3	8.60	175997



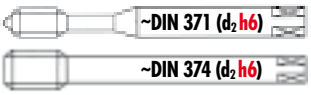
∅" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm		UNJF	ID
10	32	4.82	70	15.0	6.0	4.9	3	4.15	149687
1/4	28	6.35	80	20.0	7.0	5.5	3	5.55	149715
5/16	24	7.93	90	25.0	8.0	6.2	3	7.00	149728
3/8	24	9.52	100	30.0	10.0	8.0	3	8.60	149745

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SYNCHRO

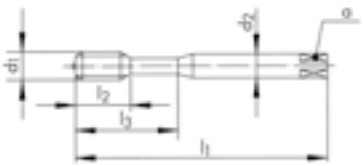
Uniquement pour taraudage synchrone
Nur für Synchronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado

PM

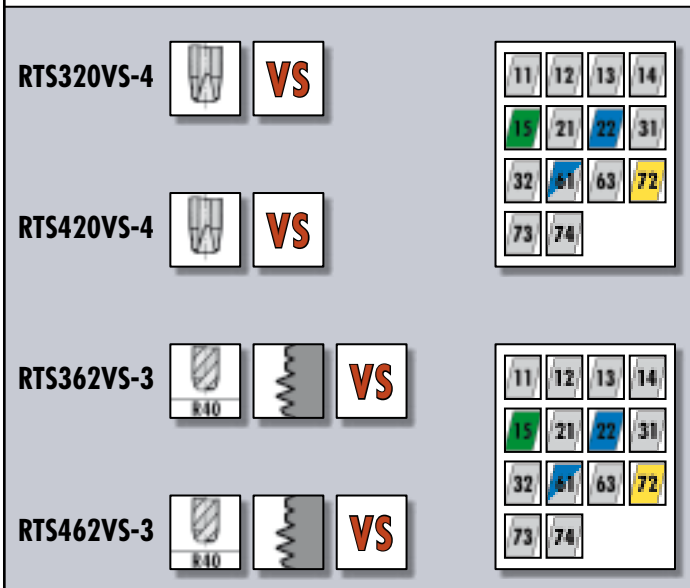


RTS
Rigid Tapping Synchro

	RTS320VS-4	RTS420VS-4	RTS362VS-3	RTS462VS-3
				
				
	B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
	2BX	2BX	2BX	2BX







Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	α mm			ID	ID	ID	ID
10	32	4.82	70	9.0	25	*6.0	*4.9	3	4.05	157409		157413	
1/4	28	6.35	80	11.0	30	*6.0	*4.9	3	5.50	157410		157414	
5/16	24	7.93	90	12.5	35	8.0	6.2	3	6.90	157411		157415	
3/8	24	9.52	100	14.0	39	10.0	8.0	3	8.50	157412		157416	
1/2	20	12.70	110	14.0		*10.0	*8.0	3	11.40		157417		157418

* Norme DC / * DC Norm / * Norma DC

≥ Ø 6 mm

sur demande
auf Anfrage
on request
su richiesta
sobre pedido

UNF ANSI B1.1

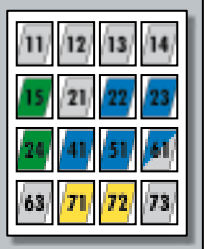
PM

~DIN 2184-1

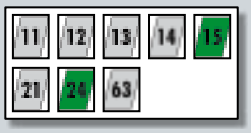
FS FPS FAS

FORMING

FS380VS-5 VS

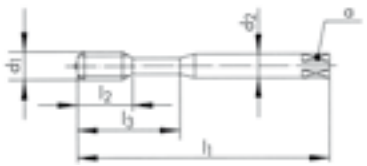


FPS381VS-3 VS



FAS381VS-3 VS





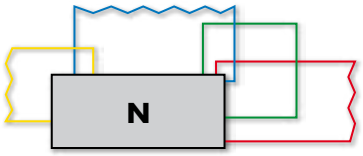


	FS380VS-5		FPS381VS-3	FAS381VS-3
				
				
				
	2BX		2BX	2BX

Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	α mm		Tol.	ID	ID	ID
0	**80**	1.52	40	4.6		2.5		1.37	+ 0.02	**161498**		
10	**32**	4.82	70	15.0	25	6.0	4.9	4.45	+ 0.03		**166718**	**166730**
1/4	**28**	6.35	80	17.0	30	7.0	5.5	5.95	+ 0.05		**166719**	**166731**
5/16	**24**	7.93	90	20.0	35	8.0	6.2	7.45	+ 0.05		**166720**	**166732**

UNF ANSI B1.1

≤ Ø 2.8 PM | > Ø 2.8 HSS | ~ISO 529



N1110-1

N1110-3

N1110-S



N1110-1	N1110-3	N1110-S
		
		
		
	2B	2B



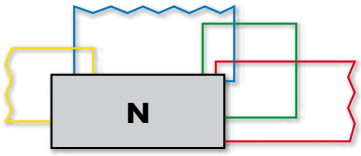


Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID
0	80	1.52	40	7.0		2.50	2.10	3	1.20	102811	103010	111079
1	72	1.85	40	8.0		2.50	2.10	3	1.50	102812	103011	111080
4	48	2.84	48	11.0	18	3.15	2.50	3	2.35		* 103018	
8	36	4.16	53	13.0	21	4.50	3.55	3	3.50		* 103022	
10	32	4.82	58	16.0	25	5.00	4.00	3	4.05	102814	103013	111082
12	28	5.48	62	17.0	26	5.60	4.50	3	4.60	* 102815	* 103014	* 111083
1/4	28	6.35	66	19.0	30	6.30	5.00	3	5.50	102813	103012	111081
5/16	24	7.93	72	22.0	35	8.00	6.30	3	6.90	102821	103020	111089
3/8	24	9.52	80	24.0	39	10.00	8.00	3	8.50	102818	103017	111086

UNF ANSI B1.1

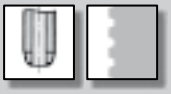
HSS

~ISO 529

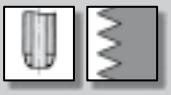


	N1210-1	N1210-3	N1210-S
			
			
			
		2B	2B

N1210-1



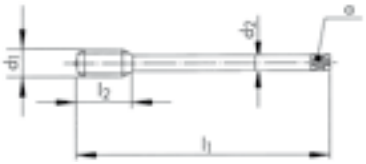
N1210-3





N1210-S



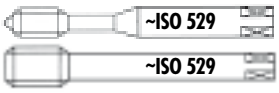


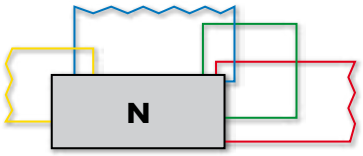


Ø" d_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm			ID	ID	ID
7/16	20	11.11	85	22.0	8.0	6.3	3	9.80	103411	103626	111255
1/2	20	12.70	89	24.0	9.0	7.1	3	11.40	103407	103622	111251
5/8	18	15.87	102	32.0	12.5	10.0	3	14.50	103410	103625	111254
3/4	16	19.05	112	33.0	14.0	11.2	4	17.50	103409	103624	111253
7/8	14	22.22	115	32.0	16.0	12.5	4	20.40	103412	103627	111256
1	12	25.40	130	45.0	18.0	14.0	4	23.30	103408	103623	111252

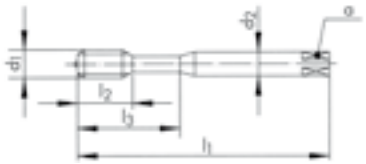
UNEF ANSI B1.1

HSS





	N1110-3	N1120-4	N1210-3	N1220-4
				
				
	C 2xP	B 4xP	C 2xP	B 4xP
	2B	2B	2B	2B



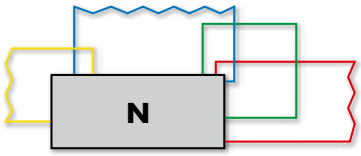


Ø" d_1 UNEF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
12	32	5.48	62	17.0	26	5.6	4.5	3	4.70	103007	103118		
1/4	32	6.35	66	19.0	30	6.3	5.0	3	5.60	103006	103117		
5/16	32	7.93	72	22.0	35	8.0	6.3	3	7.20	103009	103120		
3/8	32	9.52	80	24.0	39	10.0	8.0	3	8.75	103008	103119		
7/16	28	11.11	85	22.0		8.0	6.3	3	10.25			103615	103754
1/2	28	12.70	89	24.0		9.0	7.1	3	11.85			103609	103749
9/16	24	14.28	95	24.0		11.2	9.0	3	13.20			103617	103756
5/8	24	15.87	102	32.0		12.5	10.0	3	14.80			103614	103753
11/16	24	17.46	104	26.0		14.0	11.2	4	16.40			103611	
3/4	20	19.05	112	33.0		14.0	11.2	4	17.80			103613	* 103752
7/8	20	22.22	115	32.0		16.0	12.5	4	21.00			103616	* 103755
1	20	25.40	120	30.0		18.0	14.0	4	24.10			103610	* 103750

UNS, UN ANSI B1.1

HSSE



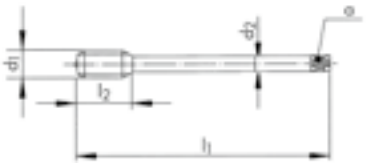


	N410-3	N460-3	N460V-3
			
			
			
	2B	2B	2B

N410-3 — 31 62 74

N460-3 — 61 63 71 72 73 81

N460V-3 — V — 11 12 13 14 21 32





Ø" d_1 UNS	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm			ID	ID	ID
1/4	36	6.35	80	17.0	4.5	3.4	3	5.65	104899		
1/2	24	12.70	100	24.0	9.0	7.0	3	11.60	104900		
1	14	25.40	140	34.0	18.0	14.5	4	23.60	104898		
1	14	25.40	140	22.0	18.0	14.5	4	23.60		102437	142789

Ø" d_1 UN	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm			ID	ID
1 1/8	8	28.57	180	30.0	22.0	18.0	4	25.50	102415	142790
1 1/4	8	31.75	180	30.0	22.0	18.0	4	28.70	102414	142520
1 3/8	8	34.92	200	36.0	28.0	22.0	5	31.80	104896	142792
1 1/2	8	38.10	200	40.0	32.0	24.0	5	35.00	102413	142793
1 3/4	8	44.45	220	44.0	36.0	29.0	5	41.40		115198
2	8	50.80	250	38.0	40.0	32.0	5	47.70		111622

G *Inhaltsverzeichnis - Maschinengewindebohrer G (Rohr) DIN ISO 228*
Directory - Machine taps G (BSP) DIN ISO 228

	N						
Merkmale **Characteristics**		V	TiN	R40	R40 V	R40 V	R40 TiN
							
Lochart **Hole type**							
	N410-3	**N420-4 N420V-4**	**N420TN-4**	**N460-3**	**N460V-3**	**N462V-3**	**N460TN-3**
DIN lang **DIN long**	**DIN 5156**	**156**	**157**	**157**	**158**	**158**	**158**	**158**
DIN kurz **DIN short**	**DIN 5157**						
LH Linksgewinde **LH Left hand thread**	**DIN 5156**	**156**					

G *Inhaltsverzeichnis - Maschinen- und Handgewindebohrer G (Rohr) DIN ISO 228*
Directory - Machine and hand taps G (BSP) DIN ISO 228

N			W		Z			
			R40 E 1.5 x P	R40 E 1.5 x P DL	V	VS	R40 V	R45 VS
				 NEW				
N210-1	**N210-3**	**N210-S**	**W460-5**	**W460DL-5**	**Z420V-4**	**Z420VS-4**	**Z460V-3**	**Z470VS-3**
			159	159	160	160	160	161
163	163	163						

G *Inhaltsverzeichnis - Maschinengewindebohrer und Gewindeformer G (Rohr) DIN ISO 228*
Directory - Machine taps and thread formers G (BSP) DIN ISO 228

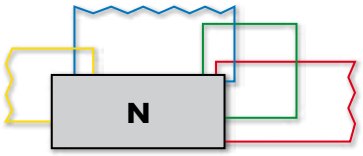
	H	GG	RTS	RTS	FPS	FAS	
Merkmale **Characteristics**	R25	R15 NV	R40 VS	R40 E 1.5xP VS	VS	VS	
							
Lochart **Hole type**							
							
	**H450-3**	**GG450NV-3**	**RTS462VS-3**	**RTS462VS-5**	**FPS481VS-3**	**FAS481VS-3**	
DIN lang **DIN long** **DIN 5156**	159	159					
DIN lang **DIN long** **~DIN 376**			161	161			
DIN lang **DIN long** **~DIN 2189**					162	162	

		N						
Merkmale **Characteristics**								
								
Lochart **Hole type**								
					N1110-3	N1120-4	N5120	
ISO kurz *ISO short*	ISO 529				166	166		
W	ISO 529				166/167	166		
SV	ISO 529				167			
		N420-3	N410-3	D5800	N1210-3	N1220-4		
DIN lang *DIN long*	DIN 5156	164						
DIN lang *DIN long*	DC		164	165				
ISO kurz *ISO short*	ISO 529				166	166		
Rp	DIN 5156	164						
Rc	DC		164	165				
W	ISO 529				166	166		
SV	ISO 529/DC				167		167	

G DIN ISO 228 (BSP)

HSSE

DIN 5156



N410-3	N410-3 LH		

N410-3





N410-3 LH

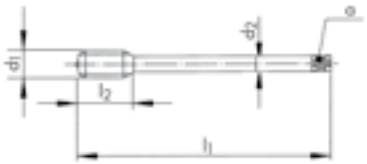












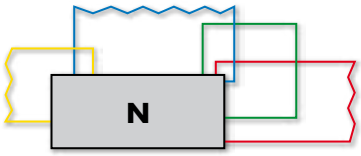


Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
1/8	28	9.72	90	22.0	7.0	5.5	3	8.75	101855	
1/4	19	13.15	100	20.0	11.0	9.0	3	11.60	101853	101854
3/8	19	16.66	100	20.0	12.0	9.0	4	15.20	101861	101862
1/2	14	20.95	125	22.0	16.0	12.0	4	18.90	101851	101852
3/4	14	26.44	140	28.0	20.0	16.0	4	24.40	101859	* 101860
1	11	33.24	160	32.0	25.0	20.0	4	30.70	101857	* 101858
1 1/4	11	41.91	170	32.0	32.0	24.0	5	39.30	101850	
1 1/2	11	47.80	190	32.0	36.0	29.0	5	45.20	101849	

G DIN ISO 228 (BSP)

HSSE

DIN 5156



	N420-4	N420V-4	N420TN-4
			
			
			

N420-4





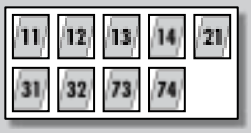
N420V-4

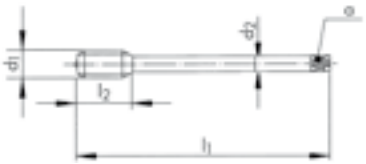




N420TN-4









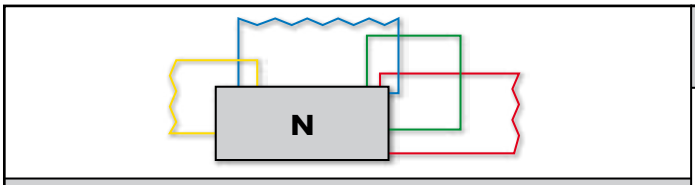
∅" G	d_1	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm			ID	ID	ID
1/16	28	7.72	90	18.0	6.0	4.9	3	6.75		102045		
1/8	28	9.72	90	22.0	7.0	5.5	3	8.75		102048	102258	102236
1/4	19	13.15	100	20.0	11.0	9.0	3	11.60		102047	102257	102235
3/8	19	16.66	100	20.0	12.0	9.0	3	15.20		102053	102261	102238
1/2	14	20.95	125	22.0	16.0	12.0	4	18.90		102046	102256	102234
5/8	14	22.91	125	25.0	18.0	14.5	4	20.90		102054	144722	
3/4	14	26.44	140	28.0	20.0	16.0	4	24.40		102052	102260	102237
1	11	33.24	160	32.0	25.0	20.0	4	30.70		102049	102259	
1 1/4	11	41.91	170	32.0	32.0	24.0	5	39.30		102043		
1 1/2	11	47.80	190	32.0	36.0	29.0	5	45.20		102042		
2	11	59.61	220	36.0	45.0	35.0	5	57.00		102051		
2 1/2	11	75.18	280	36.0	50.0	39.0	6	72.60		102050		

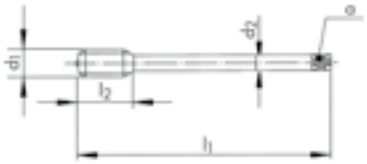
G DIN ISO 228 (BSP)

HSSE

DIN 5156

	N460-3	N460V-3	N460TN-3	N462V-3
				
				
				





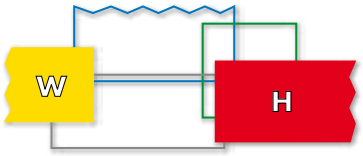


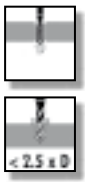
Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID	ID
1/16	28	7.72	90	12.5	6.0	4.9	3	6.75	102341			
1/8	28	9.72	90	14.0	7.0	5.5	3	8.75	102344	102457	102444	143687
1/4	19	13.15	100	14.0	11.0	9.0	3	11.60	102343	102456	102443	143600
3/8	19	16.66	100	14.0	12.0	9.0	4	15.20	102348	102460	102446	143431
1/2	14	20.95	125	20.0	16.0	12.0	4	18.90	102342	102455	102442	143921
5/8	14	22.91	125	20.0	18.0	14.5	4	20.90	102349	143711		
3/4	14	26.44	140	22.0	20.0	16.0	4	24.40	102347	102459	102445	143688
1	11	33.24	160	26.0	25.0	20.0	4	30.70	102345	102458		
1 1/4	11	41.91	170	30.0	32.0	24.0	5	39.30	102340	111608		
1 1/2	11	47.80	190	35.0	36.0	29.0	5	45.20	102339	111609		
2	11	59.61	220	41.0	45.0	35.0	6	57.00	102346	111503		

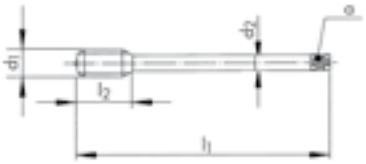
G DIN ISO 228 (BSP)

≤ Ø 25.4 | > Ø 25.4

PM H/GG | HSSE H/GG | HSSE W | DIN 5156



	W460-5	W460DL-5	H450-3	GG450NV-3
		 NEW		
				
				





Ø" d1 G	P TPI	d1 mm	l1 mm	l2 mm	d2 mm	α mm			ID	ID	ID
1/8	28	9.72	90	14.0	7.0	5.5	3	8.75	119350	176728	101298
1/4	19	13.15	100	14.0	11.0	9.0	*4	11.60	119300	176729	101297
3/8	19	16.66	100	14.0	12.0	9.0	4	15.20	119682	176730	101301
1/2	14	20.95	125	20.0	16.0	12.0	4	18.90	119199	176731	101296
3/4	14	26.44	140	22.0	20.0	16.0	4	24.40			101300
1	11	33.24	160	26.0	25.0	20.0	4	30.70			101299

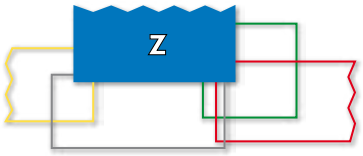
*W460-5 = 3

Ø" d1 G	P TPI	d1 mm	l1 mm	l2 mm	d2 mm	α mm			ID
1/8	28	9.72	90	22.0	7.0	5.5	4	8.75	102309
1/4	19	13.15	100	20.0	11.0	9.0	4	11.60	102308
3/8	19	16.66	100	20.0	12.0	9.0	4	15.20	102312
1/2	14	20.95	125	22.0	16.0	12.0	4	18.90	102307
3/4	14	26.44	140	28.0	20.0	16.0	4	24.40	102311
1	11	33.24	160	32.0	25.0	20.0	4	30.70	102310

G DIN ISO 228 (BSP)

< Ø 25.4 | > Ø 25.4

PM Z420 | HSSE Z420 | HSSE Z460 | DIN 5156

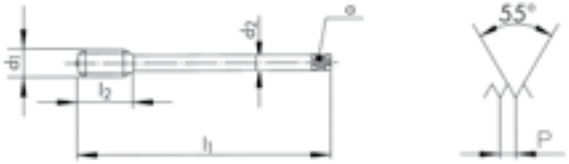


	Z420V-4	Z420VS-4	Z460V-3
	V	VS	V
	21 22 23 41 42 51	21 22 23 24 51 61	22 23 51









Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID
1/8	28	9.72	90	22.0	7.0	5.5	3	8.75	142794	142800
1/4	19	13.15	100	20.0	11.0	9.0	3	11.60	142795	119303
3/8	19	16.66	100	20.0	12.0	9.0	3	15.20	142796	142802
1/2	14	20.95	125	22.0	16.0	12.0	4	18.90	142797	142803
3/4	14	26.44	140	28.0	20.0	16.0	4	24.40	142798	
1	11	33.24	160	32.0	25.0	20.0	4	30.70	142799	

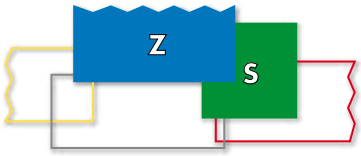
Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
1/8	28	9.72	90	14.0	7.0	5.5	3	8.75	104726
1/4	19	13.15	100	14.0	11.0	9.0	3	11.60	104725
3/8	19	16.66	100	14.0	12.0	9.0	4	15.20	104728
1/2	14	20.95	125	20.0	16.0	12.0	4	18.90	104724
3/4	14	26.44	140	22.0	20.0	16.0	4	24.40	104727
1	11	33.24	160	26.0	25.0	20.0	4	30.70	105142

G DIN ISO 228 (BSP)

Uniquement pour taraudage synchrone
Nur für Synchronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado

PM

~DIN 376 (d_2 h6)



	Z470VS-3		RTS462VS-3	RTS462VS-5
				
				
				

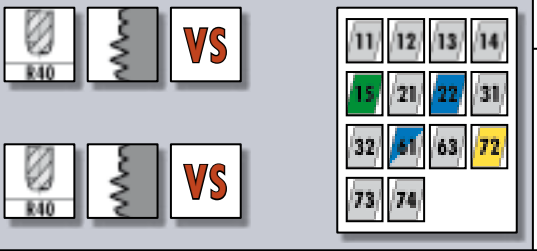
Z470VS-3

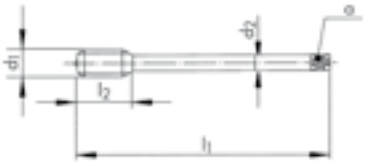


RTS
Rigid Tapping Synchro

RTS462VS-3

RTS462VS-5





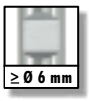


∅" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 h6 mm	a mm			ID
1/8	28	9.72	100	14.0	*8.0	*6.2	3	8.75	165198
1/4	19	13.15	110	14.0	*12.0	*9.0	4	11.60	165199
3/8	19	16.66	110	18.0	12.0	9.0	4	15.20	165200
1/2	14	20.95	125	20.0	16.0	12.0	4	18.90	165201

* Norme DC / * DC Norm / * Norma DC

∅" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 h6 mm	a mm			ID	ID
1/8	28	9.72	100	14.0	*8.0	*6.2	3	8.75	151861	170629
1/4	19	13.15	110	14.0	*12.0	*9.0	3	11.60	151868	170631
3/8	19	16.66	110	18.0	12.0	9.0	4	15.20	151872	170633
1/2	14	20.95	125	20.0	16.0	12.0	4	18.90	150685	170635

* Norme DC / * DC Norm / * Norma DC



sur demande
auf Anfrage
on request
su richiesta
sobre pedido

FPS FAS

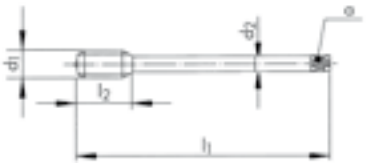
FORMING

FPS481VS-3 VS



FAS481VS-3 VS





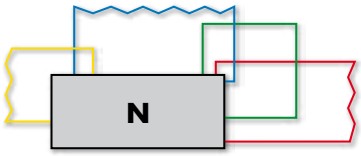


Ø" G	d_1 P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm		Tol.	FPS481VS-3 ID	FAS481VS-3 ID
1/8	**28**	9.72	90	22.0	7.0	5.5	9.25	+ 0.05	**166721**	**166733**
1/4	**19**	13.15	100	20.0	11.0	9.0	12.50	+ 0.05	**166722**	**166734**
3/8	**19**	16.66	100	20.0	12.0	9.0	16.00	+ 0.05	**166723**	**166735**
1/2	**14**	20.95	125	22.0	16.0	12.0	20.00	+ 0.05	**166724**	**166736**

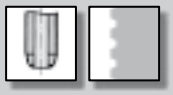
G DIN ISO 228 (BSP)

HSSE





N210-1



N210-3





N210-S

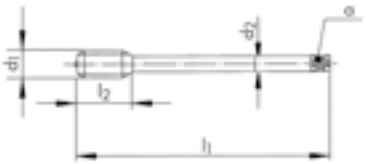


N210-1	N210-3	N210-S











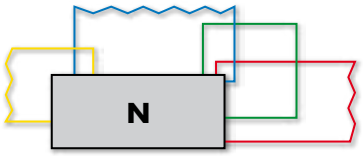
∅" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID	ID	ID
1/16	28	7.72	63	18.0	6.0	4.9	3	6.75		101418	
1/8	28	9.72	63	22.0	7.0	5.5	3	8.75	101404	101421	119386
1/4	19	13.15	70	20.0	11.0	9.0	3	11.60	101403	101420	119336
3/8	19	16.66	70	20.0	12.0	9.0	4	15.20	101409	101427	110938
1/2	14	20.95	80	22.0	16.0	12.0	4	18.90	101402	101419	119264
5/8	14	22.91	80	25.0	18.0	14.5	4	20.90	101411	105140	110940
3/4	14	26.44	90	28.0	20.0	16.0	4	24.40	101408	101426	110937
7/8	14	30.20	90	28.0	22.0	18.0	4	28.20	* 101412	* 101429	
1	11	33.24	100	32.0	25.0	20.0	4	30.70	101405	101422	110933
1 1/8	11	37.89	125	32.0	28.0	22.0	4	35.30		101415	
1 1/4	11	41.91	125	32.0	32.0	24.0	5	39.30	101400	101414	111425
1 3/8	11	44.32	125	32.0	36.0	29.0	5	41.80		* 101417	
1 1/2	11	47.80	140	32.0	36.0	29.0	5	45.20	101399	101413	110934
1 3/4	11	53.74	140	36.0	40.0	32.0	5	51.20		* 101416	
2	11	59.61	160	36.0	45.0	35.0	5	57.00	101407	101425	110935
2 1/2	11	75.18	160	36.0	50.0	39.0	6	72.60		101423	
3	11	87.88	160	40.0	50.0	39.0	6	85.30		* 101428	

Rp, Rc DIN EN 10226

HSSE

DIN 5156 (Rp)

DC (Rc)



N420-3			N410-3

N420-3











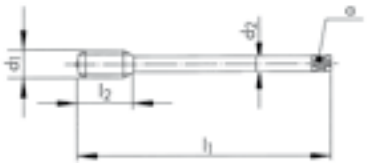


N410-3









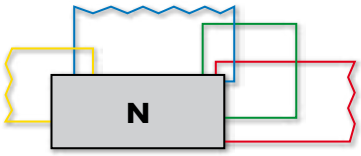


Ø" d_1 Rp	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
1/8	28	9.72	90	22.0	7.0	5.5	3	8.60	104911
1/4	19	13.15	100	20.0	11.0	9.0	3	11.50	104912
3/8	19	16.66	100	20.0	12.0	9.0	3	15.00	104913
1/2	14	20.95	125	22.0	16.0	12.0	4	18.50	104914
3/4	14	26.44	140	28.0	20.0	16.0	4	24.00	104915
1	11	33.24	160	32.0	25.0	20.0	4	30.25	104916

Ø" d_1 Rc	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm		ID
1/8	28	9.72	71	13.0	8.0	6.2	5	104917
1/4	19	13.15	80	20.0	11.0	9.0	5	104918
3/8	19	16.66	90	20.0	12.0	9.0	5	104919
1/2	14	20.95	100	26.0	16.0	12.0	5	104920
3/4	14	26.44	110	26.0	20.0	16.0	5	104921
1	11	33.24	125	32.0	25.0	20.0	5	104922

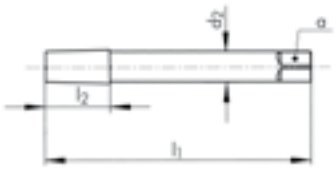
Vc (m/min) Ø d1

	Rc	1/16" - 1/4"	3/8" - 1/2"	3/4" - 1"	1.1/4" - 2"
31 74		10	8	7	5
62		18	15	13	10



D5800





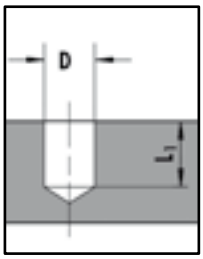


Ø″ Rc	l_1 mm	l_2 mm	d_2 mm	a mm	ID
1/16	70	17.0	6.0	4.9	**118701**
1/8	70	17.0	8.0	6.2	**110531**
1/4	80	27.0	10.0	8.0	**110530**
3/8	85	27.0	12.0	9.0	**110535**
1/2	95	35.0	16.0	12.0	**110529**
3/4	105	35.0	20.0	16.0	**110534**
1	130	43.0	25.0	20.0	**110532**

Kernloch-Durchmesser für kegeliges Rohrgewinde nach DIN EN 10226
Core hole diameters for tapered pipe thread to DIN EN 10226

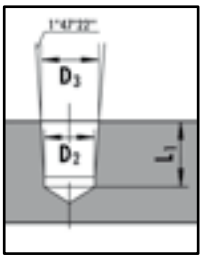
Bohrung zylindrisch
Vermeiden, da schnellere Abnützung des Gewinde-bohrers und Klemmen

Parallel hole
Increased tap wear, not recommended



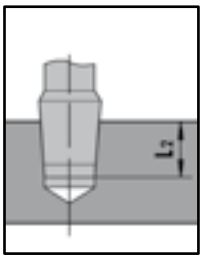
Bohrung konisch 1:16
Zylindrisch bohren nach Ø D_2 und konisch aufreiben auf Ø D_3

Tapered hole 1:16
Pre-drill at Ø D_2 and taper-ream to Ø D_3



Gewindeschneiden
Gewindebohrer auf Nennmass L_2 eindrehen

Tapped hole
Engage tap to hole depth L_2 = nominal Ø



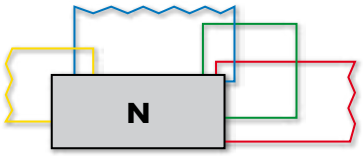
Ø″ Rc	L_1 min. mm	D_1 mm	D_2 mm	D_3 mm	L_2 mm
1/16	11.90	6.20	6.10	6.56	10.60
1/8	11.90	8.20	8.10	8.57	10.60
1/4	17.70	11.00	10.75	11.45	15.70
3/8	18.10	14.50	14.25	14.95	16.10
1/2	24.00	18.00	17.75	18.63	21.40
3/4	25.30	23.50	23.00	24.12	21.50
1	30.60	29.50	29.00	30.29	26.30

W BS 84 (BSW)

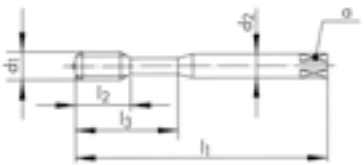
HSS

~ISO 529

ISO 529



	N1110-3	N1210-3	N1120-4	N1220-4
				
				
	C 2 x P	C 2 x P	B 4 x P	B 4 x P

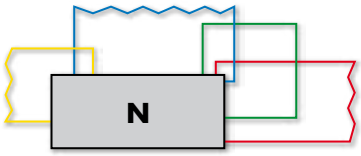


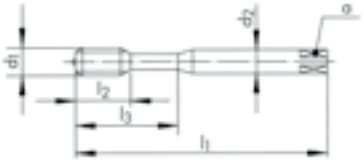


Ø" d_1 W	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
1/8	40	3.17	48	11.0	18	3.15	2.50	3	2.50	103025		103126	
5/32	32	3.96	53	13.0	21	4.00	3.15	3	3.10	103031		103130	
3/16	24	4.76	58	16.0	25	5.00	4.00	3	3.60	103026		103127	
1/4	20	6.35	66	19.0	30	6.30	5.00	3	4.90	103024		103125	
5/16	18	7.93	72	22.0	35	8.00	6.30	3	6.40	103030		103129	
3/8	16	9.52	80	24.0	39	10.00	8.00	3	7.70	103028		103128	
7/16	14	11.11	85	22.0		8.00	6.30	3	9.10		103642		103771
1/2	12	12.70	89	24.0		9.00	7.10	3	10.30		103634		103767
9/16	12	14.28	95	24.0		11.20	9.00	3	11.90		* 103644		
5/8	11	15.87	102	32.0		12.50	10.00	3	13.30		103641		103770
3/4	10	19.05	112	33.0		14.00	11.20	3	16.20		103640		103769
1	8	25.40	130	45.0		18.00	14.00	4	21.90		* 103635		

W, SV Schaublin

HSSE ~ISO 529 ISO 529 HSS DC



	N1110-3	N1210-3	N5120
			
	NEW	NEW	NEW
			
			  

N1110-3 — 31 62 74

N1210-3 — 31 62 74

N5120 — ≥ Ø3 — 11 12

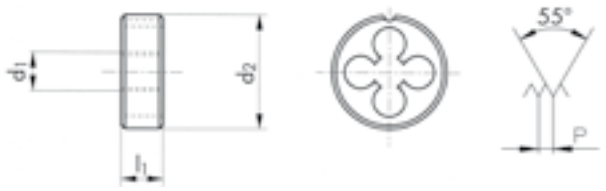
W = 55°

SV = 45°/5°

Ø" d_1 W	P TPI/mm		l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
5	36 TPI/1"	B6	58	16.0	25	5.0	4.0	3	4.20*	103029
6.82	0.625	B8	66	19.0	30	7.1	5.6	3	6.15*	111143

Ø" d_1 SV	P mm		l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
10	0.833	W10	80	24.0	39	10.0	8.0	3	8.80*	130429	
12	1.250	W12	89	24.0		9.0	7.1	3	10.50*		103591
15	1.250	W15	90	23.0		11.2	9.0	3	13.50*		103592
20	1.666	W20	112	37.0		14.0	11.2	4	17.80*		103593
25	1.693	W25	120	30.0		18.0	14.0	4	22.70*		103594

*Tol. +0.1 mm 0



Ø d_1 W	P mm		d_2 mm	l_1 mm			ID
6.82	0.625	B6	25.0	9.0	4	6.77	130215

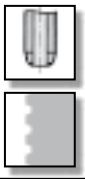
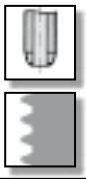
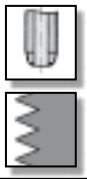
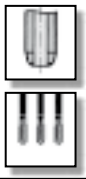
NPT, NPTF

Maschinengewindebohrer, NPT ANSI B1.20.1 und NPTF B1.20.3
Directory - Machine taps, NPT ANSI B1.20.1 and NPTF B1.20.3

	N						
Merkmale **Characteristics**		V	V				
							
Lochart **Hole type**							
	N410-3	**N410V-3**	**N411V-3**	**D5800**			
NPT DIN lang **NPT DIN long** **DC**	**170**	**170**	**170**	**171**			
NPTF DIN lang **NPTF DIN long** **DC**	**170**			**171**			

PG, TR

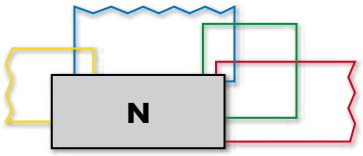
Maschinen- und Handgewindebohrer, PG DIN 40430, TR ISO 2901-2904, DIN 103
Directory - Machine and hand taps, PG DIN 40430, TR ISO 2901-2904, DIN 103

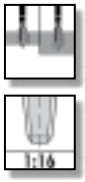
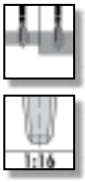
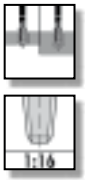
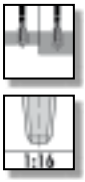
		N						
Merkmale **Characteristics**								
								
Lochart **Hole type**								
								
		**N420-3**	**N410-1**	**N410-2**	**N410-3**	**N410-S**	**N410-8**	
PG DIN lang **PG DIN long**	**DIN 40433**	172						
TR DIN lang **TR DIN long**	**DC**		173	173	173	173	172	
Toleranz **Tolerance**	**TR 7H**				173	173	172	

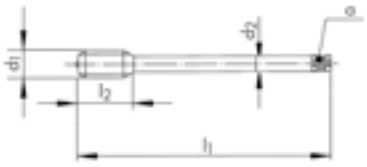
NPT, NPTF ANSI B1.20.1, ANSI B1.20.3

HSSE





	N410-3	N410V-3	N411V-3	N410-3
				
				
				
	NPT	NPT	NPT	NPTF





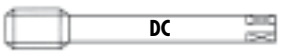
Ø" d_1 NPT, NPTF	P TPI	l_1 mm	l_2 mm	d_2 mm	a mm		ID	ID	ID	ID
1/16	27	71	13.0	7.0	5.5	3	101961	102021	102031	101971
1/8	27	71	13.0	8.0	6.2	5	101964	102024	102034	101974
1/4	18	80	20.0	11.0	9.0	5	101963	102023	102033	101973
3/8	18	90	20.0	12.0	9.0	5	101968	102028	102038	101978
1/2	14	100	26.0	16.0	12.0	5	101962	102022	102032	101972
3/4	14	110	26.0	20.0	16.0	5	101967	102027	102037	101977
1	11.5	125	32.0	25.0	20.0	5	101965	102025	102035	101975
1 1/4	11.5	125	32.0	32.0	24.0	5	101960	102020		
1 1/2	11.5	140	32.0	36.0	29.0	5	101959	102019		
2	11.5	160	32.0	36.0	29.0	7	101966	102026		

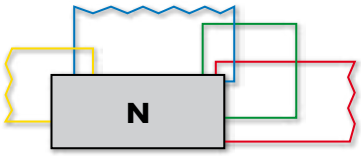
Vc (m/min) Ø d1

NPT, NPTF	1/16" - 1/4"	3/8" - 1/2"	3/4" - 1"	1.1/4" - 2"
11 12 14 32	6	5	4	3
21	5	4	3	2
31 74	10	8	7	5
62	18	15	13	10

NPT, NPTF ANSI B1.20.1, ANSI B1.20.3

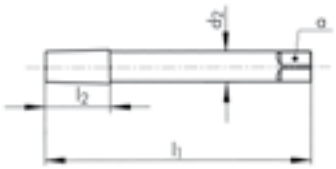
HSSE





D5800





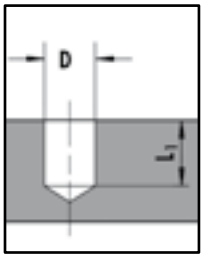


∅″ NPT, NPTF	l_1 mm	l_2 mm	d_2 mm	a mm	ID
1/16	70	17.0	6.0	4.9	118701
1/8	70	17.0	8.0	6.2	110531
1/4	80	27.0	10.0	8.0	110530
3/8	85	27.0	12.0	9.0	110535
1/2	95	35.0	16.0	12.0	110529
3/4	105	35.0	20.0	16.0	110534
1	130	43.0	25.0	20.0	110532

Kernloch-Durchmesser für NPT- und NPTF-Gewinde
Core hole diameters for NPT and NPTF threads

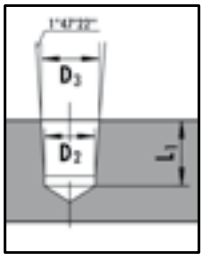
Bohrung zylindrisch
Vermeiden, da schnellere Abnützung des Gewinde-bohrers und Klemmen

Parallel hole
Increased tap wear, not recommended



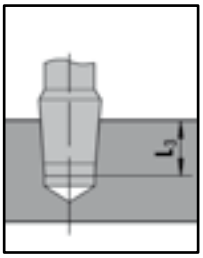
Bohrung konisch 1:16
Zylindrisch bohren nach Ø D_2 und konisch aufreiben auf Ø D_3

Tapered hole 1:16
Pre-drill at ∅ D_2 and taper-ream to ∅ D_3



Gewindeschneiden
Gewindebohrer auf Nennmass L_3 eindrehen

Tapped hole
Engage tap to hole depth L_3 = nominal ∅



**Es wird empfohlen, das Kernloch auf D_3 maxi konisch aufzureiben.*

*Taper-ream at upper limit D_3 is recommended

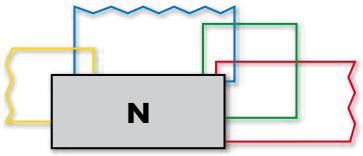
∅″ NPT, NPTF	D mm	L_1 mm	D_2 mm	NPT D_3(+0.05) mm	NPTF D_3(+0.05) mm	L_3 mm
1/16	6.15	12.00	6.00	6.39	6.41	10.20
1/8	8.50	12.00	8.30	8.74	8.76	10.30
1/4	11.00	17.50	10.80	11.36	11.40	15.10
3/8	14.50	17.50	14.20	14.80	14.84	15.30
1/2	17.90	23.00	17.50	18.32	18.33	20.00
3/4	23.20	23.00	22.80	23.67	23.68	20.50
1	29.00	28.00	28.60	29.69	29.72	24.60

PG DIN 40430 TR ISO 2901-2904, DIN 103

HSSE

DIN 40433

DC



N420-3			N410-8





N420-3







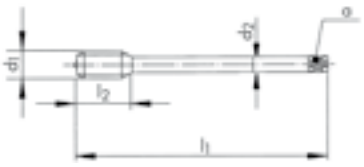


N410-8



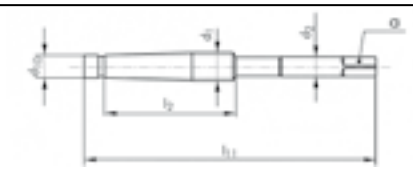








∅ d_1 PG	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm			ID
7	20	12.50	100	24.0	9.0	7.0	3	11.30	104901
9	18	15.20	100	26.0	12.0	9.0	3	13.90	104902
11	18	18.60	110	26.0	14.0	11.0	4	17.30	104903
13.5	18	20.40	125	28.0	16.0	12.0	4	19.10	104904
16	18	22.50	125	28.0	18.0	14.5	4	21.20	104905
21	16	28.30	150	36.0	22.0	18.0	4	26.80	104906
29	16	37.00	170	38.0	28.0	22.0	4	35.50	104907
36	16	47.00	190	38.0	36.0	29.0	5	45.50	104908





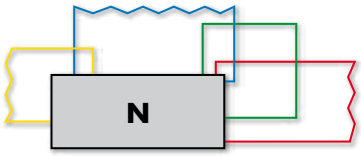
7H

∅ d_1 TR	P mm	l_{11} mm	l_2 mm	d_{10} mm	d_2 mm	α mm			ID
10	2.00	100	45.0	8.20	7.0	5.5	3	8.20	102008
12	3.00	140	75.0	9.25	8.0	6.2	3	9.25	102009
14	3.00	150	75.0	11.25	10.0	8.0	3	11.25	102010
16	4.00	180	100.0	12.25	11.0	9.0	3	12.25	102011
18	4.00	180	100.0	14.25	12.0	9.0	3	14.25	102012
20	4.00	190	100.0	16.25	14.0	11.0	3	16.25	102013
22	5.00	220	110.0	17.25	16.0	12.0	4	17.25	111616
24	5.00	220	110.0	19.25	18.0	14.5	4	19.25	102015

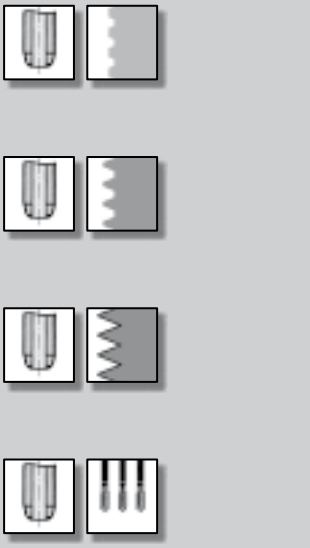
TR ISO 2901-2904, DIN 103

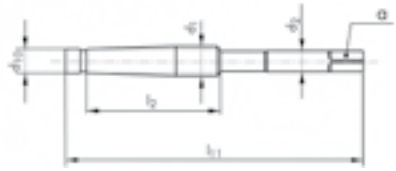
HSSE





	N410-1	N410-2	N410-3	N410-S
				
				
			7H	7H







∅ d_1 TR	P mm	l_{11} mm	l_2 mm	d_{10} mm	d_2 mm	a mm			ID	ID	ID	ID
10	2.00	85	30.0	8.20	7.0	5.5	3	8.20	* 101827	* 101838	* 101979	* 110972
12	3.00	115	45.0	9.25	8.0	6.2	3	9.25	* 101828	* 101839	* 101980	* 110973
16	4.00	165	65.0	12.25	11.0	9.0	3	12.25	* 101830	* 101841	* 101982	* 110975
20	4.00	175	65.0	16.25	14.0	11.0	3	16.25	* 101832	* 101843	* 101984	* 110977

EG *Maschinengewindebohrer, Aufnahmegewinde für Gewindeeinsätze EG M, EG UNC, EG UNF*
Directory - Machine taps for wire screw thread inserts EG M, EG UNC, EG UNF

	N				Z	S	
Merkmale **Characteristics**		V	R40	R40 V	R45 VS	VS	R35 VS
							
Lochart **Hole type**							
	N320-4	**N320V-4**	**N360-3**	**N360V-3**	**Z370VS-3**	**S320VS-4**	**S360VS-3**
DIN lang **DIN long** ~DIN 40435	176	176	177	177			
DIN lang **DIN long** ~DIN 2184-1	180/183		180/183		181/184	184	184
Gewinde **Thread** EG M	176	176	177	177			
Gewinde **Thread** EG UNC	180		180		181		
Gewinde **Thread** EG UNF	183		183		184	184	184
	N420-4	**N420V-4**	**N460-3**	**N460V-3**			
DIN lang **DIN long** ~DIN 40435	176	176	177	177			
DIN lang **DIN long** ~DIN 2184-1	180/183		180/183				
Gewinde **Thread** EG M	176	176	177	177			
Gewinde **Thread** EG UNC	180		180				
Gewinde **Thread** EG UNF	183		183				

SA			TL	
	R15	R10	VS	R15 VS
				
				
SA320-4	**SA350-3**	**SA390-3**	**TL320VS-4**	**TL351VS-3**
178	178	179	178	178
182/185	182/185	184	182/185	182/185
178	178	179	178	178
182	182		182	182
185	185	184	185	185

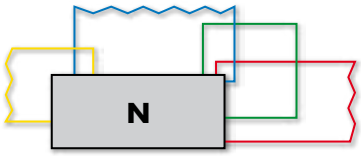
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DC®

EG M ISO DIN 8140

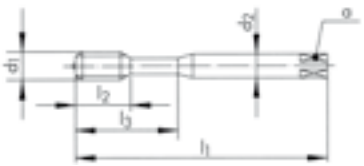
≤ Ø 2.8 PM | > Ø 2.8 HSSE

~DIN 40435

~DIN 40435



			N320-4	N320V-4	N420-4	N420V-4
N320-4		61 63 71 72 73 81				
N320V-4	V	11 12 13 14 21 32				
N420-4		61 63 71 72 73 81	B 4 x P	B 4 x P	B 4 x P	B 4 x P
N420V-4	V	11 12 13 14 21 32	6H mod	6H mod	6H mod	6H mod





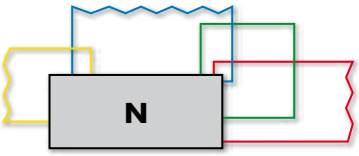
∅ d_1 EG M	P mm	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
2	0.40	2.520	50	10.0		2.8	2.1	3	2.10	101537	118788		
2.5	0.45	3.084	56	12.0	18	3.5	2.7	3	2.65	101538			
3	0.50	3.650	56	13.0	20	4.0	3.0	3	3.15	101539	142804		
4	0.70	4.910	70	15.0	25	6.0	4.9	3	4.20	101540	142805		
5	0.80	6.040	80	17.0	30	6.0	4.9	3	5.25	101541	142806		
6	1.00	7.300	80	17.0	30	7.0	5.5	3	6.30	101542	142807		
8	1.25	9.624	100	22.0	39	10.0	8.0	3	8.40	101543	142808		
10	1.50	11.948	100	24.0		9.0	7.0	3	10.40			102252	142809
12	1.75	14.274	110	28.0		11.0	9.0	3	12.50			102253	142810
14	2.00	16.598	110	30.0		12.0	9.0	3	14.60				* 142811
16	2.00	18.598	125	33.0		14.0	11.0	3	16.60			102255	142812

EG M ISO DIN 8140

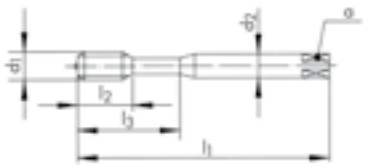
≤ Ø 2.8 PM | > Ø 2.8 HSSE

~DIN 40435

~DIN 40435



	N360-3	N360V-3	N460-3	N460V-3
				
				
	C 2.5 x P	C 2.5 x P	C 2.5 x P	C 2.5 x P
	6H mod	6H mod	6H mod	6H mod
	ID	ID	ID	ID
N360-3				
N360V-3				
N460-3				
N460V-3				





∅ d_1 EG M	P mm	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
2	0.40	2.520	50	9.0		2.8	2.1	2	2.10	101599			
2.5	0.45	3.084	56	5.5	18	3.5	2.7	3	2.65	101600			
3	0.50	3.650	56	6.5	20	4.0	3.0	3	3.15	101601	142813		
4	0.70	4.910	70	9.0	25	6.0	4.9	3	4.20	101602	142814		
5	0.80	6.040	80	11.0	30	6.0	4.9	3	5.25	101603	142815		
6	1.00	7.300	80	11.0	30	7.0	5.5	3	6.30	101604	142816		
8	1.25	9.624	100	14.0	39	10.0	8.0	3	8.40	101605	142817		
10	1.50	11.948	100	14.0		9.0	7.0	3	10.40			102335	142818
12	1.75	14.274	110	14.0		11.0	9.0	3	12.50			102336	142819
14	2.00	16.598	110	18.0		12.0	9.0	3	14.60			102337	142820
16	2.00	18.598	125	21.0		14.0	11.0	3	16.60			102338	142821

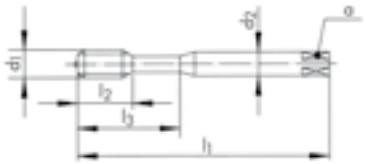
EG M ISO DIN 8140

PM

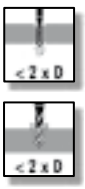
~DIN 40435

aero

SA320-4	52 53
SA350-3 R15	52 53
TL320VS-4 VS	41 42
TL351VS-3 R15 VS	41 42





	SA320-4	SA350-3	TL320VS-4	TL351VS-3
				
				
				
	6H mod	6H mod	6H mod	6H mod

∅ d_1 EG M	P mm	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID	ID	ID
3	0.50	3.650	56	13.0		4.0	3.0	3	3.15	147676	147682	* 152001	150478
4	0.70	4.910	70	15.0		6.0	4.9	3	4.20	147678	147684	* 152002	152003
5	0.80	6.040	80	15.0	23	6.0	4.9	3	5.25	147680	147686		150184
6	1.00	7.300	80	15.0	23	7.0	5.5	3	6.30	147688	147692	* 152004	152005
8	1.25	9.624	100	20.0	33	10.0	8.0	3	8.40	149354	149356	* 152088	152089

EG M ISO DIN 8140

PM

~DIN 40435

aero

SA390-3

R10

53

SA390-3



< 1.5 x D

< 1.5 x D





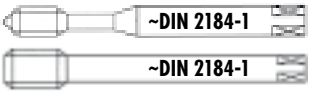
C
2.5 x P

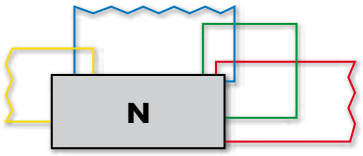
6H
mod

∅ d_1 EG M	P mm	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
3	**0.50**	3.650	56	13.0	4.0	3.0	3	3.15	**149669**
4	**0.70**	4.910	70	15.0	6.0	4.9	3	4.20	**149688**
5	**0.80**	6.040	80	20.0	6.0	4.9	3	5.25	**149710**
6	**1.00**	7.300	80	20.0	7.0	5.5	3	6.30	**149723**
8	**1.25**	9.624	100	30.0	10.0	8.0	3	8.40	**149748**
10	**1.50**	11.948	110	35.0	12.0	9.0	3	10.40	**149767**

EG UNC NASM33537

HSSE



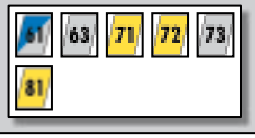


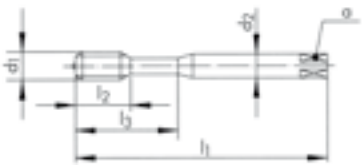
	N320-4	N420-4	N360-3	N460-3
				
				
				
	3B	3B	3B	3B

N320-4  

N420-4  

N360-3  

N460-3  





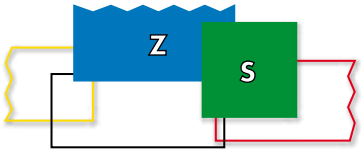
										N320-4	N420-4	N360-3	N460-3
										B 4 x P	B 4 x P	C 2.5 x P	C 2.5 x P
Ø" d_1 EG UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID		
4	40	3.67	56	13.0	20	4.0	3.0	3	3.05	110946			
6	32	4.53	70	15.0	25	6.0	4.9	3	3.75	110948			
8	32	5.19	70	15.0	25	6.0	4.9	3	4.45	110949			
10	24	6.20	80	17.0	30	7.0	5.5	3	5.10	* 110945			
1/4	20	8.00	90	20.0	35	8.0	6.2	3	6.70	110944			
5/16	18	9.77	100	22.0	39	10.0	8.0	3	8.40	110947			
3/8	16	11.59	110	24.0		9.0	7.0	3	10.00		110033		
1/2	13	15.23	110	30.0		12.0	9.0	3	13.30		104935		

Ø" d_1 EG UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
4	40	3.67	56	6.5	20	4.0	3.0	3	3.05	110018	
6	32	4.53	70	9.0	25	6.0	4.9	3	3.75	110019	
8	32	5.19	70	9.0	25	6.0	4.9	3	4.45	110956	
10	24	6.20	80	11.0	30	7.0	5.5	3	5.10	110954	
1/4	20	8.00	90	12.5	35	8.0	6.2	3	6.70	110024	
5/16	18	9.77	100	14.0	39	10.0	8.0	3	8.40	111759	
3/8	16	11.58	110	14.0		9.0	7.0	3	10.00		111715
1/2	13	15.23	110	18.0		12.0	9.0	3	13.30		111558

EG UNC NASM33537

PM

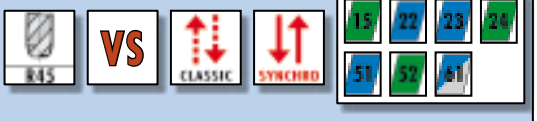
~DIN 2184-1 (d_2 h6)



Z370VS-3



Z370VS-3











3B

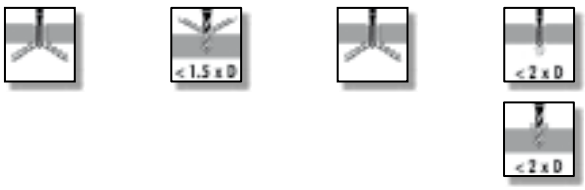
∅" d_1 EG UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	α mm			ID
4	40	3.67	56	6.5	20	4.0(h9)	3.0	3	3.05	165126
6	32	4.53	70	9.0	25	6.0	4.9	3	3.75	165127
8	32	5.19	70	9.0	25	6.0	4.9	3	4.45	165128

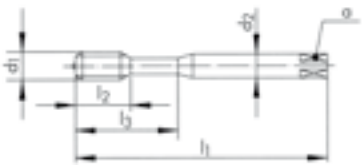
EG UNC NASM33537

PM

~DIN 2184-1

aero

	SA320-4	SA350-3	TL320VS-4	TL351VS-3
				
				
	B 4 x P	C 2.5 x P	B 4 x P	C 2.5 x P
	3B	3B	3B	3B

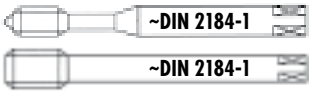


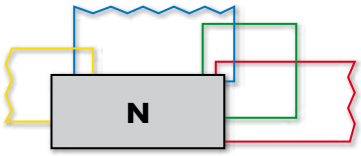


Ø" d_1 EG UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			SA320-4 ID	SA350-3 ID	TL320VS-4 ID	TL351VS-3 ID
4	40	3.67	56	13.0		4.0	3.0	3	3.05	149073	149075	* 152030	152031
6	32	4.53	70	15.0		6.0	4.9	3	3.75	149121	149123	* 152040	152041
8	32	5.19	70	15.0		6.0	4.9	3	4.45	149170	149172	* 152052	152053
1/4	20	8.00	90	18.0	29	8.0	6.2	3	6.70	149284	149286	* 152073	152074
5/16	18	9.77	100	20.0	33	10.0	8.0	3	8.40	* 149358	* 149360	* 152090	* 152091

EG UNF NASM33537

HSSE



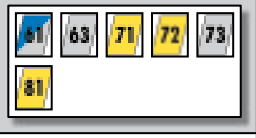


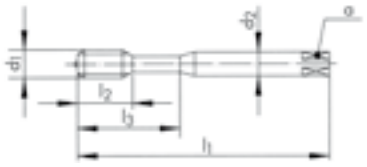
	N320-4	N420-4	N360-3	N460-3
				
				
				
	3B	3B	3B	3B

N320-4  

N420-4  

N360-3  

N460-3  





∅" d_1 EG UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
6	40	4.33	63	14.0	21	4.5	3.4	3	3.70	118879	
8	36	5.08	70	15.0	25	6.0	4.9	3	4.40	118882	
10	32	5.85	80	17.0	30	6.0	4.9	3	5.10	104941	
1/4	28	7.52	90	20.0	35	8.0	6.2	3	6.65	110234	
5/16	24	9.31	90	20.0	35	9.0	7.0	3	8.20	118876	
3/8	24	10.89	100	19.0		8.0	6.2	3	9.80		118873
1/2	20	14.35	100	24.0		11.0	9.0	3	13.10		118865

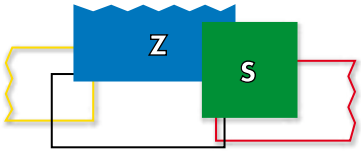
∅" d_1 EG UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID	ID
6	40	4.33	63	7.5	21	4.5	3.4	3	3.70	110959	
8	36	5.08	70	9.0	25	6.0	4.9	3	4.40	110960	
10	32	5.85	80	11.0	30	6.0	4.9	3	5.10	104946	
1/4	28	7.52	90	12.5	35	8.0	6.2	3	6.65	110020	
5/16	24	9.31	90	12.5	35	9.0	7.0	3	8.20	111619	
3/8	24	10.89	100	19.0		8.0	6.2	3	9.80		110027
1/2	20	14.35	100	14.0		11.0	9.0	3	13.10		104951

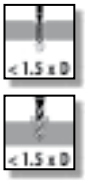
EG UNF NASM33537

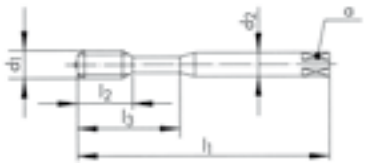
PM

~DIN 2184-1 (d_2 h6)

~DIN 2184-1



	Z370VS-3	S320VS-4	S360VS-3	SA390-3
				
	 < 3 x D		 < 2 x D	 < 1.5 x D < 1.5 x D
	 C 2.5 x P	 B 4 x P	 C 2.5 x P	 C 2.5 x P
	3B	3B	3B	3B





Ø" d_1 EG UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h6 mm	a mm			ID
10	32	5.85	80	11.0	30	6.0	4.9	3	5.10	165129
1/4	28	7.52	90	12.5	35	8.0	6.2	3	6.65	165130
5/16	24	9.31	90	12.5	35	*8.0	*6.2	3	8.20	165131

* Norme DC / * DC Norm / * Norma DC

Ø" d_1 EG UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
10	32	5.85	80	17.0	30	6.0	4.9	3	5.10	111821
1/4	28	7.52	90	20.0	35	8.0	6.2	3	6.65	111822
5/16	24	9.31	90	20.0	35	9.0	7.0	3	8.20	111823

Ø" d_1 EG UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			ID
10	32	5.85	80	11.0	30	6.0	4.9	3	5.10	111811
1/4	28	7.52	90	12.5	35	8.0	6.2	3	6.65	111812
5/16	24	9.31	90	12.5	35	9.0	7.0	3	8.20	111824

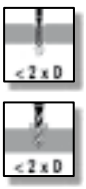
Ø" d_1 EG UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
10	32	5.85	80	20.0	6.0	4.9	3	5.10	149702
1/4	28	7.52	90	25.0	8.0	6.2	3	6.65	149724

EG UNF NASM33537

PM

~DIN 2184-1

aero

	SA320-4	SA350-3	TL320VS-4	TL351VS-3
				
				
				
	3B	3B	3B	3B





∅" d_1 EG UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 mm	a mm			SA320-4 ID	SA350-3 ID	TL320VS-4 ID	TL351VS-3 ID
10	**32**	5.85	80	15.0	23	6.0	4.9	3	5.10	**149190**	**149192**	* **148009**	**148008**
1/4	**28**	7.52	90	18.0	29	8.0	6.2	3	6.65	**146099**	**149268**	* **148015**	**148014**
5/16	**24**	9.31	90	20.0	31	9.0	7.0	3	8.20	**149336**	**149338**		**148021**

KRONENGEWINDEBOHRER CROWN TAPS

Allgemeines

Der DC-Kronengewindebohrer mit "V"-Oberflächenbehandlung ist ein Hochleistungswerkzeug, das eine sichere Toleranzhaltigkeit und eine sehr saubere Oberflächenqualität garantiert.

Anwendungsbereich

Dank der stirnseitigen Aussparung, die die Spanaufnahme erlaubt, kann der Kronengewindebohrer sowohl für das Schneiden von Durchgangs- als auch von Sacklöchern verwendet werden. Er ist bestimmt für die Bearbeitung von Werkstoffen mit einer Zugfestigkeit von bis zu 850 N/mm² und einer Bruchdehnung von maximal 30 %.

Einsatz

Der DC-Kronengewindebohrer kann für Durchgangslöcher jeglicher Gewindetiefe eingesetzt werden. Für einwandfreie Sacklochgewinde muss jedoch die Tiefe der Kernlochbohrung jeweils entsprechend angepasst und die nachstehenden Hinweise befolgt werden:

- *Gewinde schneiden, bis Rutschkupplung anspricht*
- *Gewindebohrer zurückdrehen und Späne entfernen*
- *Gewinde fertig schneiden.*

Spezielle Anforderungen

Das einwandfreie Funktionieren der DC-Kronengewindebohrer und der damit erzielten Gewindequalität sind abhängig von folgenden Voraussetzungen:

- *Zentrierfehler darf 0.1 mm nicht überschreiten*
- *Einsatz eines entsprechenden Gewindeschneidfutters, das einen einwandfreien Rundlauf ermöglicht*
- *Korrekte Schnittgeschwindigkeit wählen*
- *Schneidöl dem Werkstoff anpassen*
- *Einspannen in einem Gewindeschneidfutter mit Längenausgleich und Überlastungskupplung*
- *Überlastungskupplung so einstellen, dass das Ansprechdrehmoment nur leicht höher liegt als das Schneiddrehmoment.*

Es ist empfehlenswert, beim ersten Gewinde die Rutschkupplung bis zum Gleiten zu entlasten und dann schrittweise anzuziehen, bis der Gewindebohrer mitgenommen wird.

Spanaufnahme

Die Spanaufnahmekapazität der stirnseitigen Krone ist ausreichend für:

Gewindedurchmesser	*Ø 20 - 29 mm*	*≥ Ø 30 mm*
M	*-*	*1.4 x D*
MF	*1.2 x D*	*1.4 x D*
UN-8	*-*	*1.4 x D*
G	*1.2 x D*	*1.4 x D*

General information

The DC crown tap with "V" surface treatment to prevent cold welding is a tool of high performance, which offers a very high quality surface finish of the tapped threads.

Application rang

Thanks to the front recess providing space for the chip collection, the DC crown tap is suitable for both, through and blind hole tapping. The crown tap can be used for materials with a tensile strength up to 850 N/mm² and an elongation of maximum 30 %.

Utilization

The crown tap can be used for through holes of any depth. However, for an optimal blind hole threading, the core hole depth must be adapted accordingly and the following application instructions must be followed:

- Tap until tapping head clutch slips
- Retract tap and clear chips
- Tap to the full depth.

General hints

The efficient operation of DC crown taps, as well as the quality of the cut threads, depend on observation of the following rules:

- Do not exceed the maximum permissible centering error of 0.1 mm
- The tap must run concentrically, use a suitable tapping head
- Tap at the correct cutting speed
- Select a coolant to suit the material being tapped
- Use a tapping head with axial compensation and safety clutch
- Set the safety clutch so that it will slip at just above the tapping torque.

When tapping the first hole, slacken the clutch until it slips, then gradually tighten it until the tap is driven.

Chip accumulation

The chip accumulation capacity of the recess is the following :

Thread diameter	Ø 20 - 29 mm	≥ Ø 30 mm
M	-	1.4 x D
MF	1.2 x D	1.4 x D
UN-8	-	1.4 x D
G	1.2 x D	1.4 x D

Schnittgeschwindigkeiten und Drehzahlen (Richtwerte) - Cutting and spindle speeds (guide values)

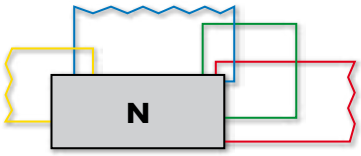
M	P	V_c (m/min)	n (U/min)
30	3.5	7.9	84
33	3.5	7.7	74
36	4.0	7.5	66
39	4.0	7.3	60
42	4.5	7.1	54
45	4.5	6.9	49
48	5.0	6.6	44
52	5.0	6.4	39
56	5.5	6.1	35
60	5.5	5.8	31
64	6.0	5.5	28
68	6.0	5.2	25

MF	P	V_c (m/min)	n (U/min)
22	1.5	8.0	116
24	1.5	8.0	106
26	1.5	7.9	97
28	1.5	7.9	90
30	1.5	7.9	84
30	2.0	7.9	84
32	1.5	7.8	77
32	2.0	7.8	77
33	1.5	7.7	74
33	2.0	7.7	74
34	1.5	7.6	71
35	1.5	7.6	69
36	1.5	7.5	66
36	2.0	7.5	66
36	3.0	7.5	66
38	1.5	7.3	62
40	1.5	7.2	57
40	2.0	7.2	57
42	1.5	7.1	54
42	2.0	7.1	54
42	3.0	7.1	54
42	4.0	7.1	54

MF	P	V_c (m/min)	n (U/min)
45	1.5	6.9	49
45	2.0	6.9	49
48	1.5	6.6	44
48	2.0	6.6	44
48	3.0	6.6	44
48	4.0	6.6	44
50	1.5	6.5	41
52	1.5	6.4	39
52	3.0	6.4	39
55	1.5	6.2	36
56	4.0	6.1	35
60	2.0	5.8	31
64	4.0	5.5	28
68	4.0	5.2	25
72	6.0	5.0	22
76	6.0	4.7	20
80	2.0	4.4	18
80	4.0	4.4	18
80	6.0	4.4	18
90	6.0	3.7	13
100	6.0	3.0	10
110	6.0	2.5	7

UN-8	P TPI	V_c (m/min)	n (U/min)
1 1/4"	8.0	7.8	77
1 3/8"	8.0	7.6	69
1 1/2"	8.0	7.3	62
1 5/8"	8.0	7.1	55
1 3/4"	8.0	6.9	49
1 7/8"	8.0	6.7	45
2"	8.0	6.4	40

G	P TPI	V_c (m/min)	n (U/min)
1"	11.0	7.7	74
1 1/4"	11.0	7.1	54
1 1/2"	11.0	6.6	44
2"	11.0	5.8	31
2 1/4"	11.0	5.4	26
2 1/2"	11.0	4.8	20
2 3/4"	11.0	4.3	17
3"	11.0	3.8	14

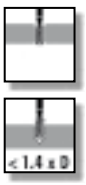


N470V-4



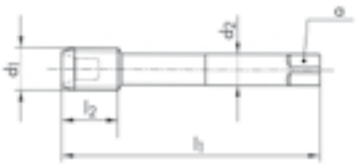








ISO 2
6H



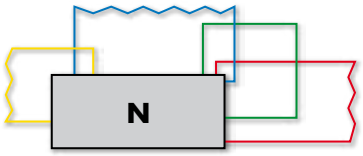


∅ d_1 M	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
30	3.50	180	39.0	22.0	18.0	5	26.50	102575
33	3.50	180	39.0	22.0	18.0	5	29.50	* 102576
36	4.00	200	43.0	25.0	20.0	5	32.00	102577
39	4.00	200	43.0	25.0	20.0	5	35.00	102578
42	4.50	220	47.0	28.0	22.0	5	37.50	102579
45	4.50	220	47.0	28.0	22.0	5	40.50	102580
48	5.00	240	52.0	32.0	24.0	5	43.00	102581
52	5.00	240	52.0	32.0	24.0	5	47.00	102582
56	5.50	260	58.0	36.0	29.0	6	50.50	102583
60	5.50	260	58.0	36.0	29.0	6	54.50	102584
64	6.00	290	64.0	40.0	32.0	6	58.00	102585
68	6.00	290	64.0	40.0	32.0	6	62.00	* 102586

MF ISO DIN 13

HSSE





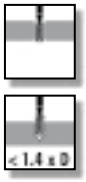
N470V-3





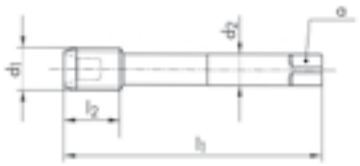
N470V-3













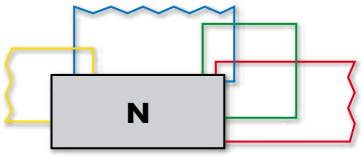
∅ d_1 MF	P mm	l_1 mm	l_2 mm	d_2 mm	a mm			ID
Δ22	1.50	125	28.0	18.0	14.5	4	20.50	* 102526
Δ26	1.50	140	30.0	18.0	14.5	4	24.50	* 102529
Δ28	1.50	140	30.0	20.0	16.0	4	26.50	* 102530
30	1.50	160	32.0	22.0	18.0	5	28.50	* 102531
32	1.50	160	32.0	22.0	18.0	5	30.50	* 102533
34	1.50	160	26.0	22.0	18.0	5	32.50	* 102537
35	1.50	175	28.0	25.0	20.0	5	33.50	* 102538
36	2.00	175	35.0	25.0	20.0	5	34.00	102540
36	3.00	200	43.0	25.0	20.0	5	33.00	102541
38	1.50	175	28.0	25.0	20.0	5	36.50	* 102542
40	1.50	190	31.0	28.0	22.0	5	38.50	* 102543
40	2.00	190	38.0	28.0	22.0	5	38.00	* 102544
42	2.00	190	38.0	28.0	22.0	5	40.00	102546
42	3.00	220	47.0	28.0	22.0	5	39.00	102547
48	1.50	205	34.0	32.0	24.0	5	46.50	* 102551
48	3.00	205	41.0	32.0	24.0	5	45.00	102553
52	3.00	205	41.0	32.0	24.0	5	49.00	102557
56	4.00	260	58.0	36.0	29.0	6	52.00	102559
64	4.00	290	64.0	40.0	32.0	6	60.00	102561
80	4.00	270	56.0	45.0	35.0	7	76.00	* 102564

Δ 

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N470V-3

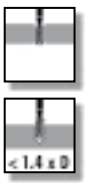


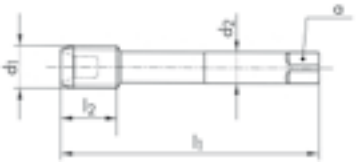
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N470V-3





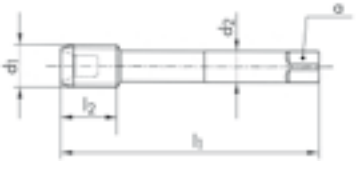






2B

Ø" d_1 UN	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm			ID
1 1/4	8	31.75	180	39.0	22.0	18.0	5	28.70	102566
1 3/8	8	34.92	180	39.0	22.0	18.0	5	31.80	102568
1 1/2	8	38.10	200	43.0	25.0	20.0	5	35.00	102565
1 5/8	8	41.27	220	47.0	28.0	22.0	5	38.20	102569
1 3/4	8	44.45	220	47.0	28.0	22.0	5	41.40	102567
1 7/8	8	47.62	240	52.0	32.0	24.0	5	44.50	102570
2	8	50.80	205	41.0	32.0	24.0	5	47.70	102572
2 1/4	8	57.15	220	45.0	36.0	29.0	6	54.10	102571
2 1/2	8	63.50	220	45.0	36.0	29.0	6	60.40	111879







Ø" d_1 G	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm	α mm			ID
Δ 1/2	14	20.95	140	32.0	16.0	12.0	4	18.90	* 102521
Δ 3/4	14	26.44	150	34.0	20.0	16.0	4	24.40	102525
1	11	33.24	160	32.0	22.0	18.0	5	30.70	102522
1 1/4	11	41.91	190	38.0	28.0	22.0	5	39.30	102519
1 1/2	11	47.80	205	41.0	32.0	24.0	5	45.20	102518
1 3/4	11	53.74	205	41.0	32.0	24.0	5	51.20	* 102520
2	11	59.61	220	45.0	36.0	29.0	6	57.00	102524

Δ



KOMBI-GEWINDEBOHRER

Allgemeines

Der DC-Kombi-Gewindebohrer ist ein Werkzeug, das das Schneiden des Kernloches und des Gewindes in einem Arbeitsgang erlaubt, ohne dass ein Werkzeugwechsel notwendig ist.
Er ist ideal für den Einsatz auf CNC-Maschinen, Bohrtasteinheiten, Drehbänken mit Revolverkopf und Gewindeschneidmaschinen.

Anwendungsbereich

Werkstoffe mit einer Zugfestigkeit bis 750 N/mm² lassen sich mit dem DC-Kombi-Gewindebohrer bearbeiten, also gewisse Stähle, Grauguss, Messing, Aluminium.

Spezielle Anforderungen

- *Das Kernloch muss vollständig durchbohrt sein, bevor der Gewindebohrer zu schneiden beginnt.*
- *Bei der Bearbeitung von kurzspanenden Werkstoffen darf die Gewindetiefe 1.8 x D nicht überschreiten (Typ N5952 bis 2 x D).*
- *Bei der Bearbeitung von langspanenden Werkstoffen darf die Gewindetiefe 1.2 x D nicht überschreiten.*
- *Schmieren wie beim Gewindeschneiden.*

Schnittgeschwindigkeiten

Wenn die Maschine, auf der die Kombibohrer eingesetzt werden, es erlaubt, ist es vorteilhaft, die idealste Drehzahl für das Gewindeschneiden zu wählen. (Siehe dazu unsere Anwendungstabelle auf Seite 7).
Für Maschinen, auf denen eine unterschiedliche Drehzahl für das Bohren und Gewindeschneiden nicht eingestellt werden kann, empfehlen wir die nachstehend aufgeführten Schnittwerte.

Programmierungs-Instruktionen

Ansenkung:

Gleichzeitig zentrieren und ansenken.

Programmschritte bei Spindelvorschub und Rotation, 100 % synchronisiert (Idealfall):

1) Kombi-Gewindebohrer im Eilgang in Arbeitsposition bringen

2) Bohren:
- *Drehzahl einstellen*
- *Vorschub einstellen*
- *lange Späne vermeiden*
- *Späne entfernen*

3) Gewindeanschnitt in Startposition bringen

4) Gewindeschneiden:
- *Drehzahl einstellen*
- *Vorschub (100 %) einstellen*
- *Gewindetiefe einstellen*
- *Gewindebohrer muss vor Arbeitsbeginn spanfrei sein*

5) Kombi-Gewindebohrer zurück in Startposition.

Programmschritte bei nicht voller Synchronisation von Spindelvorschub und Rotation:

Wichtig: Kombi-Gewindebohrer in Futter spannen, mit blockierter Andrucksfeder, jedoch mit Längenausgleich.

1) Kombi-Gewindebohrer im Eilgang in Arbeitsposition bringen

2) Bohren:
- *Drehzahl einstellen*
- *Vorschub einstellen*
- *lange Späne vermeiden*
- *Späne entfernen*

3) Gewindeanschnitt in Startposition bringen

4) Gewindeschneiden:
- *Drehzahl einstellen*
- *Vorschub = 90 - 95 %*
- *Gewindetiefe einstellen*

5) Kombi-Gewindebohrer zurück in Startposition.

Schnittgeschwindigkeiten und Drehzahlen (Richtwerte)

		Durchmesser und Drehzahl U/min										
Werkstoffgruppen	**Vc (m/min)**	**M3**	**M4**	**M5**	**M6**	**M8**	**M10**	**M12**	**M14**	**M16**	**M18**	**M20**
Stähle bis 500 N/mm²	20	2120	1600	1270	1060	800	640	530	460	400	360	320
Stähle über 500 N/mm²	15	1600	1200	950	800	600	480	400	340	300	270	240
Grauguss weich	20	2120	1600	1270	1060	800	640	530	460	400	360	320
Grauguss hart	15	1600	1200	950	800	600	480	400	340	300	270	240
Messing	25	2650	2000	1600	1330	950	800	660	570	500	450	400
Aluminium	25	2650	2000	1600	1330	950	800	660	570	500	450	400

COMBINATION DRILL/TAPS

General information

DC combination drill/taps - two tools in one, which allows the drilling and the threading of a workpiece without changing the tool.
It is the optimal solution for CNC-machines, drilling heads, turret lathes and tapping machines.

Application rang

DC combination drill/taps are recommended for use in materials with a tensile strenght up to 750 N/mm², such as certain steels, cast iron, aluminium, brass.

General hints

- The core hole must be completely drilled through before the tap starts cutting.
- In short chipping materials, the depth of thread should not exceed 1.8 x D (type N5952 up to 2 x D).
- In long chipping materials, the depth of thread should not exceed 1.2 x D.
- Lubricate as for tapping.

Cutting speeds

On drilling heads and CNC-machines, the ideal speeds for drilling and tapping are selected (see our application chart on page 7).
If the same speed is selected for both drilling and tapping, we recommend the values indicated below.

Programming instructions

Countersinking:

Center and countersink simultaneously.

Programming steps for spindle feed and rotation 100 % synchronised (ideal case):

1) Combi-drill-tap in rapid to start position

2) Drilling:
- set speed
- set feed
- avoid long chips
- clear shavings

3) Tapping section in start position

4) Tapping:
- set speed
- feed = 100 % pitch
- set thread depth
- tap must be free of swarf before starting to cut

5) Combi-drill-tap returns to start position.

Programming steps for spindle feed rotation not fully synchronised:

Important: Mount combination drill-tap in chuck with locked pressure spring, but with axial compensation on pull.

1) Combi-drill-tap in rapid to start position

2) Drilling:
- set speed
- set feed
- avoid long chips
- clear shavings

3) Tapping section in start position

4)Tapping:
- set speed
- feed = 90 - 95 % pitch
- set thread depth

5) Combi-drill-tap returns to start position.

Cutting and spindle speeds (guide values)

		Speeds for different diameters										
Material groups	**Vc (m/min)**	**M3**	**M4**	**M5**	**M6**	**M8**	**M10**	**M12**	**M14**	**M16**	**M18**	**M20**
Steels up to 500 N/mm²	20	2120	1600	1270	1060	800	640	530	460	400	360	320
Steels over 500 N/mm²	15	1600	1200	950	800	600	480	400	340	300	270	240
Cast iron, soft	20	2120	1600	1270	1060	800	640	530	460	400	360	320
Cast iron, hard	15	1600	1200	950	800	600	480	400	340	300	270	240
Brass	25	2650	2000	1600	1330	950	800	660	570	500	450	400
Aluminium	25	2650	2000	1600	1330	950	800	660	570	500	450	400

M, MF ISO DIN 13

HSSE



N5951

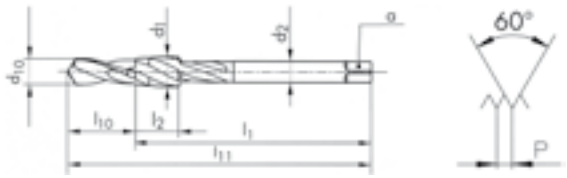


N5952



N5951





N5951	N5952	N5951	
			
ISO 2 6H	ISO 2 6H	7H EN 60423	

∅ d_1 M	P mm	l_{11} mm	l_2 mm	d_2 mm	α mm	d_{10} mm	l_{10} mm	ID
3	0.50	62.0	12.5	3.5	2.7	2.55	9.0	104578
4	0.70	66.0	16.0	4.5	3.4	3.36	10.0	104580
5	0.80	75.5	18.0	6.0	4.9	4.26	12.5	104583
6	1.00	81.0	20.0	6.0	4.9	5.05	14.0	104585
8	1.25	93.0	12.0	6.0	4.9	6.80	20.0	104588
10	1.50	99.0	14.0	7.0	5.5	8.55	22.0	104571
12	1.75	106.0	16.0	9.0	7.0	10.30	25.0	104573
16	2.00	123.0	20.0	12.0	9.0	14.10	32.0	104576
20	2.50	132.0	22.0	16.0	12.0	17.60	36.0	104577

∅ d_1 M	P mm	l_{11} mm	l_2 mm	d_2 mm	α mm	d_{10} mm	l_{10} mm	ID
4	0.70	77.0	16.0	4.5	3.4	3.36	21.0	104608
5	0.80	87.0	18.0	6.0	4.9	4.26	24.0	104609
6	1.00	94.0	20.0	6.0	4.9	5.05	27.0	104610
8	1.25	109.0	12.0	6.0	4.9	6.80	36.0	104611
10	1.50	118.0	14.0	7.0	5.5	8.55	41.0	104603

∅ d_1 MF	P mm	l_{11} mm	l_2 mm	d_2 mm	α mm	d_{10} mm	l_{10} mm	ID
4	0.50	66.0	16.0	4.5	3.4	3.55	10.0	* 104579
5	0.75	75.5	18.0	6.0	4.9	4.31	12.5	* 123379
8	1.00	93.0	12.0	6.0	4.9	7.05	20.0	104587
10	1.00	99.0	14.0	7.0	5.5	9.05	22.0	104570

∅ d_1 MF	P mm	l_{11} mm	l_2 mm	d_2 mm	α mm	d_{10} mm	l_{10} mm	ID
12	1.50	106.0	16.0	9.0	7.0	10.55	25.0	142825
16	1.50	123.0	16.0	12.0	9.0	14.55	32.0	142826
20	1.50	132.0	18.0	16.0	12.0	18.55	36.0	111844
25	1.50	155.0	22.0	18.0	14.5	23.55	45.0	111845
32	1.50	170.0	24.0	22.0	18.0	30.55	50.0	111846

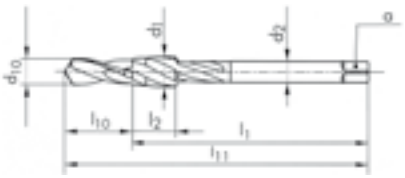
UNC ANSI B1.1 G DIN ISO 228 PG DIN 40430

HSSE



N5951





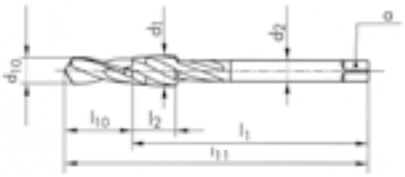


N5951



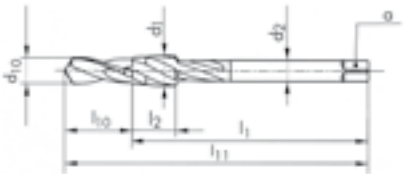
2B

∅" d_1 UNC	P TPI	d_1 mm	l_{11} mm	l_2 mm	d_2 mm	a mm	d_{10} mm	l_{10} mm	ID
6	32	3.50	66.0	16.0	4.0	3.0	2.80	10.0	* 104601
10	24	4.82	75.5	18.0	4.5	3.4	3.86	12.5	* 104598
1/4	20	6.35	81.0	20.0	7.0	5.5	5.15	14.0	* 104597
1/2	13	12.70	106.0	16.0	9.0	7.0	10.85	25.0	* 104596





∅" d_1 G	P TPI	d_1 mm	l_{11} mm	l_2 mm	d_2 mm	a mm	d_{10} mm	l_{10} mm	ID
1/8	28	9.72	93.0	12.0	7.0	5.5	8.75	20.0	104567
1/4	19	13.15	106.0	14.0	11.0	9.0	11.75	25.0	104566
3/8	19	16.66	123.0	16.0	12.0	9.0	15.25	32.0	104569
1/2	14	20.95	132.0	18.0	16.0	12.0	19.00	36.0	104565
3/4	14	26.44	155.0	22.0	18.0	14.5	24.45	45.0	* 104568





∅ d_1 PG	P TPI	d_1 mm	l_{11} mm	l_2 mm	d_2 mm	a mm	d_{10} mm	l_{10} mm	ID
7	20	12.50	106.0	14.0	9.0	7.0	11.40	25.0	* 104594
9	18	15.20	114.0	15.0	12.0	9.0	13.95	28.0	* 104595
13.5	18	20.40	132.0	18.0	16.0	12.0	19.15	36.0	* 104590
16	18	22.50	142.0	20.0	18.0	14.5	21.25	40.0	* 104591
29	16	37.00	203.0	28.0	28.0	22.0	35.65	63.0	* 104593

DC THREADING TECHNOLOGY

KODIERUNG - CODIFICATION

VHM-Gewindewirbler Solid carbide thread whirl cutters



Beispiel - Example

Gewindewirbler	Thread whirl cutter	GW					
Einzahn	Single tooth		10				
Mehrzahn-Einzelprofil	Single profile, multi toothed		20				
Mehrzahn-Doppelprofil	Double pitch with multi flutes		30				
Mehrzahn-Vollprofil	Multi fluted with full profile		40				
Gewindelänge 2.5 x D_1	Thread length 2.5 x D_1			16			
Gewindelänge 4 x D_1	Thread length 4 x D_1			19			
Verschleissschutzschicht	Wear-protective coating				VS		
Spezialausführung	Special execution					SP	

VHM-Gewindefräser Solid carbide thread milling cutters



Beispiel - Example

Standardausführung	Standard execution	GF						
Für gehärteten Stahl (55 - 63 HRC)	For hardened steels (55 - 63 HRC)	GFH						
Mit 45° Senkfase	With 45° chamfer for countersinking	GFS						
Polyvalenter Gewindefräser	For multi sizes thread milling cutters	GFM						
Bohrgewindefräser	Thrillers	BGF						
Spiralnuten 27° (GF), 10° (GFH)	Spiral flutes 27° (GF), 10° (GFH)		61					
Spiralnuten 27° (GFS)	Spiral flutes 27° (GFS)		66					
Spiralnuten 15° (GFM)	Spiral flutes 15° (GFM)		62					
Bohrgewindefräser zweilippig	Thrillers 2 flutes		67					
Bohrgewindefräser dreilippig	Thrillers 3 flutes		68					
Aussenkühlung	External lubrication			1				
Innenkühlung	Internal lubrication			6				
Gewindelänge 1.5 x D_1	Thread length 1.5 x D_1				0			
Gewindelänge 2 x D_1	Thread length 2 x D_1				5			
Gewindelänge 2.5 x D_1	Thread length 2.5 x D_1				6			
Verschleissschutzschicht	Wear-protective coating					VS		
Spezialausführung	Special execution						SP	

Piktogramme - Pictographs



Vollhartmetall
Solid carbide



10° Rechtsspiralnuten
10° right hand spiral flutes



15° Rechtsspiralnuten
15° right hand spiral flutes



27° Rechtsspiralnuten
27° right hand spiral flutes



27° Rechtsspiralnuten
27° right hand spiral flutes



Mit 45° Senker zum Anfasen des Gewindes
With 45° chamfer for countersinking



Anzahl Spannuten (Z)
Number of flutes (Z)



Kühlkanal
Internal cooling channel



Kühlkanal (BGF, 2 Spannuten)
Internal cooling channel (BGF, 2 flutes)



Kühlkanal (BGF, 3 Spannuten)
Internal cooling channel (BGF, 3 flutes)



DC -Verschleissschutzschicht
DC wear-protective coating



EG-Gewinde
Thread EG (for wire screw thread inserts)



Gewindelänge 2.5 x D_1
Thread length 2.5 x D_1



Gewindelänge 4 x D_1
Thread length 4 x D_1



Kernlochdurchmesser
Core hole diameter



Gewindelänge 1.5 x D_1
Thread length 1.5 x D_1



Gewindelänge 2 x D_1
Thread length 2 x D_1



Gewindelänge 2.5 x D_1
Thread length 2.5 x D_1



Innengewinde
Internal thread



Aussengewinde
External thread



Sacklöcher (BGF)
Blind holes (BGF)



Durchgangslöcher (BGF)
Through holes (BGF)



BGF, 2 Spannuten
BGF, 2 flutes



BGF, 3 Spannuten
BGF, 3 flutes



Für Werkstoffe ≤ 63 HRC (GFH)
For materials ≤ 63 HRC (GFH)



Konisches Gewinde 1:16 (NPT - NPTF)
Tapered thread 1:16 (NPT - NPTF)



Rundlaufgenauigkeit
Shape accuracy



Toleranzklasse h5
Tolerance class h5



Drallwinkel
Helix angle



Schweizerische Uhrenindustrie-Norm
Norm of Swiss Watch Industry

Bemerkung GFM



Zur Vermeidung grösserer Profilüberfräsungen darf der Fräser-Ø für Regelgewinde nicht grösser als ⅔ (Feingewinde ¾) des zu fräsenden Gewinde-Ø sein.

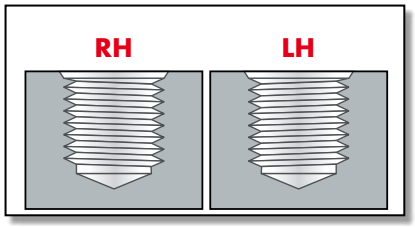
Notice GFM



In order to avoid profile defects it is important that the tool diameter does not exceed ⅔ of the diameter of the work-piece thread for coarse threads (¾ for fine threads).

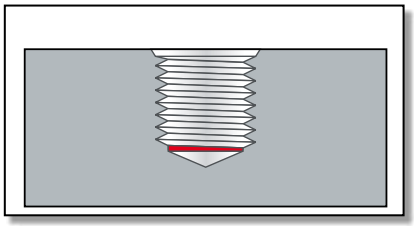
VORTEILE - ADVANTAGES

GW-GF-GFH-GFS-GFM



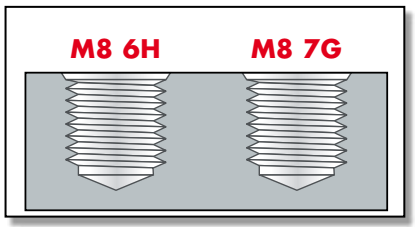
Ein einziger Gewindefräser für Rechts- und Linksgewinde

The same cutter can be used for right and left hand threads



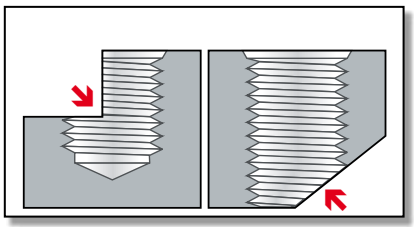
Für Gewinde bis fast auf den Grund der Vorbohrung

For threads to be cut near to the bottom of blind holes



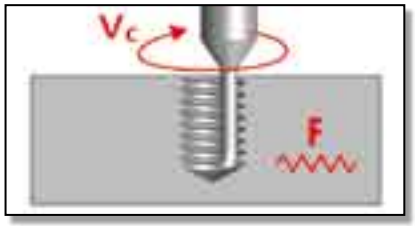
Je nach Wahl, gewünschte Toleranz einstellbar

Required tolerance adjustable as per users choice



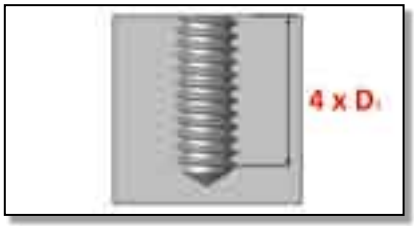
Für Gewinde mit unterbrochenem Schnitt, mit schrägem Anschnitt oder Austritt

For threads with interrupted cut or with oblique entrance or exit



Schnittgeschwindigkeit und Vorschub können dem zu bearbeitenden Werkstoff individuell angepasst werden.

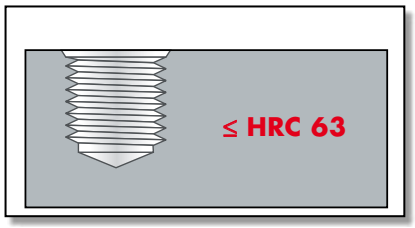
The cutting speed and feed rate can be matched individually to each work-piece material.



GW

Ideal für tiefe Sacklöcher.

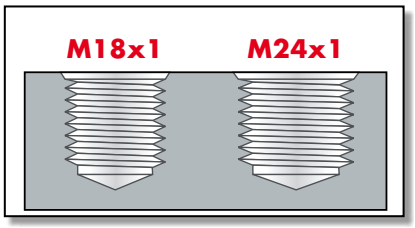
Ideal for deep blind holes.



GFH

Gewinde in hochfeste Werkstoffe können realisiert werden

To realise threads in hardened materials

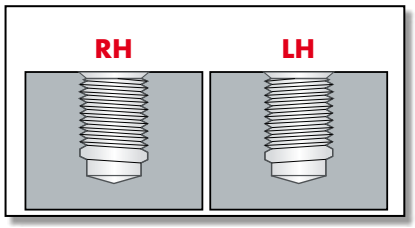


GFM

Ein einziger Gewindefräser für einen grossen Durchmesserbereich

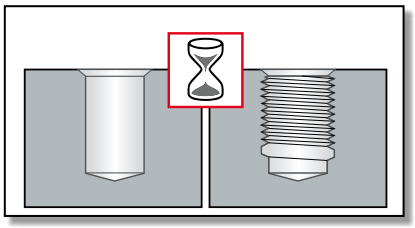
One only tool for threads of a wide range of diameters with the same pitch

BGF



Ein einziger Gewindefräser für Rechts- und Linksgewinde

The same cutter can be used for right and left hand threads



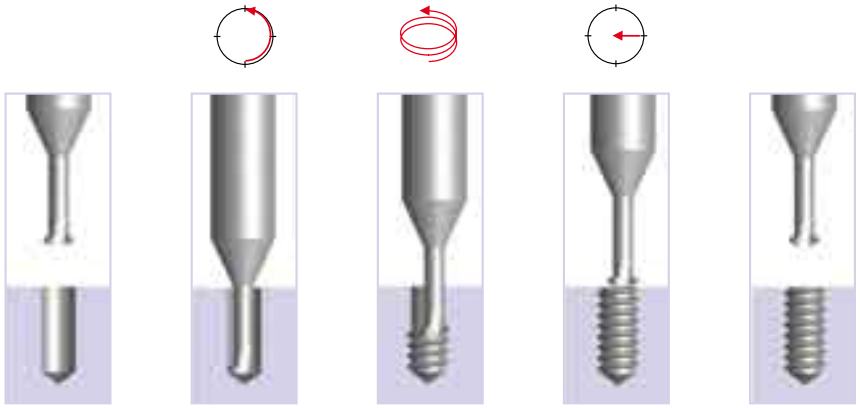
Platzgewinn im Werkzeugmagazin der Maschine und Einsparung von Bearbeitungszeit

Time-saving when tool changing and space-saving in the tool carrousel

PROGRAMMIERZYKLUS - PROGRAMMING CYCLE

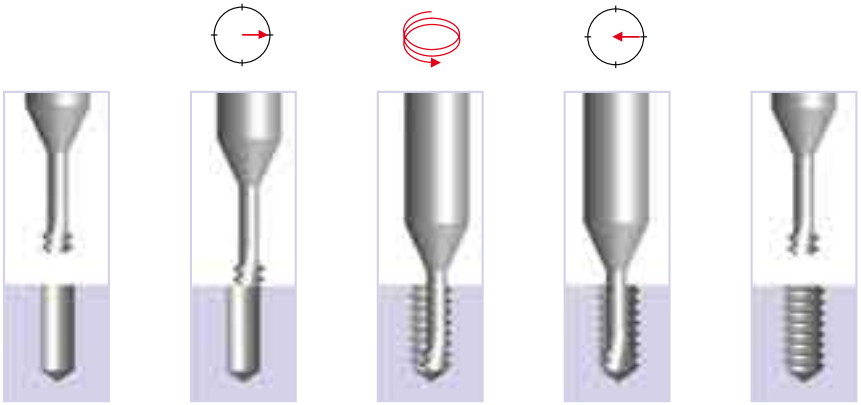
Rechtsgewinde im Gleichlauf – Right hand thread climb milling

GW1016
GW1016VS
GW2016
GW2016VS

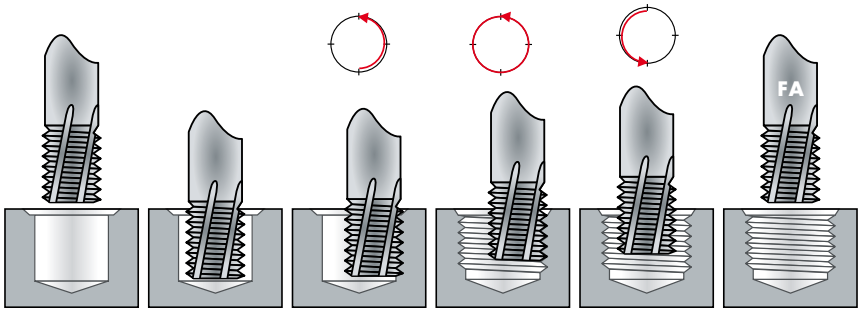


Rechtsgewinde im Gegenlauf – Conventional right hand thread milling

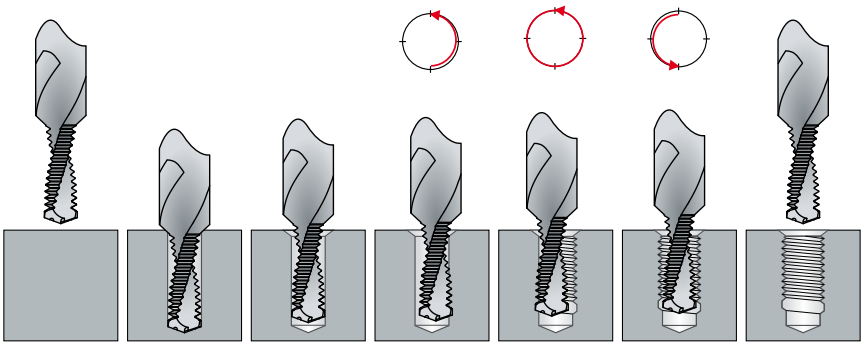
GW3016
GW3016VS
GW3019
GW3019VS
GW4016
GW4016VS
GW4019
GW4019VS



Programmierzyklus für Typ GF - Operating cycle type GF



Programmierzyklus für Typ BGF - Operating cycle type BGF



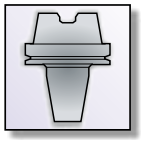
Besondere Anforderungen – Specific requirements



CNC-Bearbeitungsmaschine mit 3-Achsen-Bahnsteuerung — CNC machine with 3-D continuous path control



HSC-Bearbeitung — High speed cutting



Absoluter Rundlauf des Aufspannfutters — Perfect concentricity of fixture

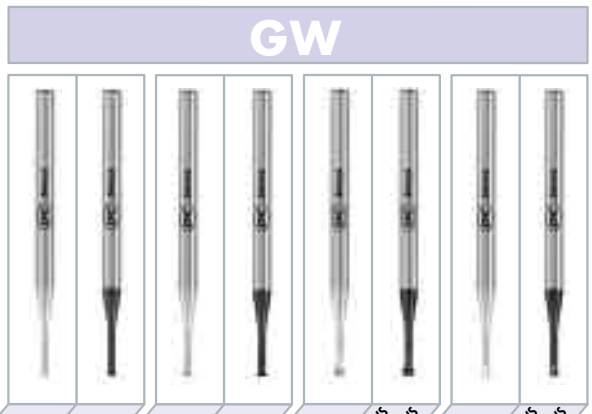
DC-Anwendungstabelle für Gewindewirbler
DC Application chart for thread whirling

	Werkstoff-Gruppen Material groups		Werkstoffbezeichnung	Material designation	Härte Hardness (HB)	Festigkeit Tensile strength Rm (N/mm2)
10	Stahl Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700
		12	Baustahl, Einsatzstahl	Structural / cementation steels	< 200	< 700
		13	Kohlenstoffstahl	Carbon steels	< 300	<1000
		14	Stahl legiert <850 N/mm²	Alloy steels <850 N/mm²	< 250	< 850
		15	Stahl legiert / vergütet >850 - <1150 N/mm²	Alloy steels hard. / temp. >850 - <1150 N/mm²	> 250	> 850
		16	Hochfester Stahl <55 HRC	High tensile alloy steels <55 HRC	> 250	> 850
20	Rostfreier Stahl Stainless Steels	21	Rostfreier Stahl / geschwefelt	Free machining stainless steels	< 250	< 850
		22	Austenitisch	Austenitic stainless steels	< 250	< 850
		23	Ferritisch, martensitisch <850 N/mm²	Ferritic and martensitic <850 N/mm²	< 250	< 850
		24	Ferritisch, martensitisch >850 - <1150 N/mm²	Ferritic and martens. >850 - <1150 N/mm²	> 250	> 850
30	Guss Cast iron	31	Grauguss	Cast iron	< 250	< 850
		32	Kugelgraphitguss	Spheroidal graphite + malleable cast iron	< 250	< 850
40	Titan Titanium	41	Reintitan	Pure titanium	< 250	< 850
		42	Titanlegierung	Titanium alloys	> 250	> 850
50	Nickel Nickel	51	Nickellegierung 1 <850 N/mm²	Nickel alloys 1 <850 N/mm²	< 250	< 850
		52	Nickellegierung 2 >850 - <1150 N/mm²	Nickel alloys 2 >850 - <1150 N/mm²	> 250	> 850
		53	Nickellegierung 3 >1150 - ≤1600 N/mm²	Nickel alloys 3 >1150 - ≤1600 N/mm²	> 340	> 1150
60	Kupfer Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolitic copper)	< 120	< 400
		62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700
		63	Messing (langspanend)	Long chip brass	< 200	< 700
70	Aluminium Magnesium Aluminium Magnesium	71	Al unlegiert	Al unalloyed	< 100	< 350
		72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500
		73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400
		74	Al legiert Si > 10 %, Mg-Legierung	Al alloyed Si > 10 %, Mg-Alloys	< 120	< 400
80	Kunststoff Plastic compounds	81	Thermoplaste	Thermoplastics	-	-
		82	Duroplaste	Duroplastics	-	-
		83	Faserverstärkte Kunststoffe	Glass fibre reinforced plastics	-	-
90	Edelm. - M. Prec.	91	Gelbgold	Yellow gold	-	-
		92	Rotgold	Red gold	-	-
		93	Weissgold	White gold	-	-
		94	Silber	Silver	-	-

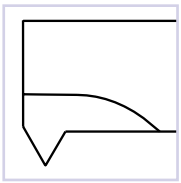
Einsatz – Use

S Optimal mit Schneidöl — S Optimal with cutting oil
S Geeignet mit Schneidöl — S Suitable with cutting oil
E Optimal mit Emulsion — E Optimal with emulsion
E Geeignet mit Emulsion — E Suitable with emulsion

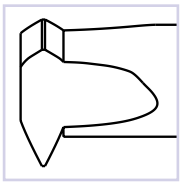
GW



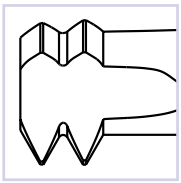
GW1016



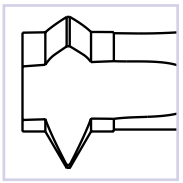
GW2016



GW3016/19



GW4016/19



GW1016	GW1016VS	GW2016	GW2016VS	GW3016	GW3019	GW3016VS	GW3019VS	GW4016	GW4019	GW4016VS	GW4019VS	Vc (m/min) Standard	Vc (m/min) Beschichtet / Coated	Vorschub fz (mm/Zahn) Ø 0.3 - 1.0	Vorschub fz (mm/Zahn) Ø 1.01 - 3.0	Milling fz (mm/tooth) Ø 3.01 - 6.0	Milling fz (mm/tooth) Ø 6.01 - 12.0	
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	60 – 80	80 – 100	0.004 – 0.01	0.01 – 0.05	0.04 – 0.10	0.08 – 0.15	11
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	60 – 80	80 – 100	0.004 – 0.01	0.01 – 0.05	0.04 – 0.10	0.08 – 0.15	12
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	50 – 70	70 – 90	0.004 – 0.01	0.01 – 0.05	0.02 – 0.10	0.05 – 0.15	13
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	50 – 70	70 – 90	0.004 – 0.01	0.01 – 0.05	0.02 – 0.10	0.05 – 0.15	14
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	15 – 35	30 – 50	0.004 – 0.01	0.01 – 0.05	0.02 – 0.08	0.04 – 0.15	15
	SE		SE		SE				SE		SE		15 – 40	0.003 – 0.01	0.006 – 0.03	0.008 – 0.05	0.01 – 0.08	16
	SE		SE		SE				SE		SE		40 – 60	0.004 – 0.01	0.01 – 0.05	0.02 – 0.10	0.05 – 0.15	21
	SE		SE		SE				SE		SE		30 – 50	0.004 – 0.01	0.01 – 0.03	0.02 – 0.05	0.03 – 0.08	22
	SE		SE		SE				SE		SE		30 – 50	0.004 – 0.01	0.01 – 0.03	0.02 – 0.05	0.03 – 0.08	23
	SE		SE		SE				SE		SE		30 – 50	0.004 – 0.01	0.01 – 0.03	0.02 – 0.05	0.03 – 0.08	24
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	60 – 90	90 – 120	0.004 – 0.01	0.01 – 0.05	0.04 – 0.10	0.08 – 0.15	31
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	50 – 70	70 – 90	0.004 – 0.01	0.01 – 0.05	0.02 – 0.10	0.05 – 0.15	32
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	15 – 35	20 – 40	0.004 – 0.01	0.01 – 0.03	0.02 – 0.05	0.03 – 0.08	41
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	10 – 30	15 – 35	0.004 – 0.01	0.01 – 0.03	0.02 – 0.05	0.03 – 0.08	42
	SE		SE		SE				SE		SE		20 – 40	0.004 – 0.01	0.01 – 0.03	0.02 – 0.05	0.03 – 0.08	51
	SE		SE		SE				SE		SE		20 – 40	0.004 – 0.01	0.01 – 0.03	0.02 – 0.05	0.03 – 0.08	52
	SE		SE		SE				SE		SE		20 – 30	0.003 – 0.01	0.006 – 0.03	0.008 – 0.05	0.01 – 0.08	53
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	150 – 200	200 – 250	0.004 – 0.01	0.01 – 0.05	0.02 – 0.10	0.05 – 0.15	61
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	100 – 150	150 – 200	0.004 – 0.01	0.01 – 0.05	0.04 – 0.10	0.08 – 0.15	62
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	100 – 150	150 – 200	0.004 – 0.01	0.01 – 0.05	0.02 – 0.10	0.05 – 0.15	63
SE		SE		SE		SE		SE		SE		150 – 250		0.004 – 0.01	0.01 – 0.05	0.05 – 0.10	0.10 – 0.20	71
SE		SE		SE		SE		SE		SE		150 – 250		0.004 – 0.01	0.01 – 0.05	0.05 – 0.10	0.10 – 0.20	72
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	150 – 250	200 – 300	0.004 – 0.01	0.01 – 0.05	0.05 – 0.10	0.10 – 0.20	73
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	150 – 250	200 – 300	0.004 – 0.01	0.01 – 0.05	0.04 – 0.10	0.08 – 0.15	74
E	E	E	E	E	E	E	E	E	E	E	E	150 – 250	200 – 300	0.004 – 0.01	0.01 – 0.05	0.05 – 0.10	0.10 – 0.20	81
E	E	E	E	E	E	E	E	E	E	E	E	80 – 150	100 – 200	0.004 – 0.01	0.01 – 0.05	0.04 – 0.10	0.08 – 0.15	82
	E		E		E				E		E		80 – 100	0.004 – 0.01	0.01 – 0.05	0.04 – 0.10	0.08 – 0.15	83
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	100 – 150	150 – 200	0.004 – 0.01	0.01 – 0.05	0.04 – 0.10	0.08 – 0.15	91
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	60 – 90	90 – 120	0.004 – 0.01	0.01 – 0.05	0.02 – 0.10	0.04 – 0.15	92
	SE		SE		SE				SE		SE		30 – 50	0.004 – 0.01	0.01 – 0.03	0.02 – 0.05	0.03 – 0.08	93
SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	60 – 90	90 – 120	0.004 – 0.01	0.01 – 0.05	0.02 – 0.10	0.04 – 0.15	94

Bei den oben aufgeführten Daten handelt es sich um Richtwerte. The indicated values are a guideline.

DC-Anwendungstabelle für Gewindefräser und Bohrgewindefräser
DC Application chart for thread milling cutters and thrillers

Werkstoff-Gruppen Material groups		Werkstoffbezeichnung Für Werkstoffbeispiele siehe Seiten 5 - 6.	Material designation Examples for application groups, pag. 5 - 6.	Härte Hardness (HB)	Festigkeit Tensile strength Rm (N/mm^2)
10 Stahl Steels	11	Automatenstahl	Free-cutting steels	< 200	< 700
	12	Baustahl, Einsatzstahl	Structural / cementation steels	< 200	< 700
	13	Kohlenstoffstahl	Carbon steels	< 300	< 1000
	14	Stahl legiert <850 N/mm^2	Alloy steels <850 N/mm^2	< 250	< 850
	15	Stahl legiert / vergütet >850 - <1150 N/mm^2	Alloy steels hard. / temp. >850 - <1150 N/mm^2	> 250	> 850
	16	Hochfester Stahl	High tensile alloy steels	> 250	> 850
	*	Hochfester Stahl 55 - 63 HRC	High tensile alloy steels 55 - 63 HRC	> 560	> 2000
20 Rostfreier Stahl Stainless Steels	21	Rostfreier Stahl / geschwefelt	Free machining stainless steels	< 250	< 850
	22	Austenitisch	Austenitic stainless steels	< 250	< 850
	23	Ferritisch, martensitisch <850 N/mm^2	Ferritic and martensitic <850 N/mm^2	< 250	< 850
	24	Ferritisch, martensitisch >850 - <1150 N/mm^2	Ferritic and martens. >850 - <1150 N/mm^2	> 250	> 850
30 Guss Cast iron	31	Grauguss	Cast iron	< 250	< 850
	32	Kugelgraphitguss, Temperguss	Spheroidal graphite + malleable cast iron	< 250	< 850
40 Titan Titanium	41	Reintitan	Pure titanium	< 250	< 850
	42	Titanlegierung	Titanium alloys	> 250	> 850
50 Nickel Nickel	51	Nickellegierung 1 <850 N/mm^2	Nickel alloys 1 <850 N/mm^2	< 250	< 850
	52	Nickellegierung 2 >850 - <1150 N/mm^2	Nickel alloys 2 >850 - <1150 N/mm^2	> 250	> 850
	53	Nickellegierung 3 >1150 - ≤1600 N/mm^2	Nickel alloys 3 >1150 - ≤1600 N/mm^2	> 340	> 1150
60 Kupfer Copper	61	Reinkupfer (Elektrolytkupfer)	Pure copper (electrolitic copper)	< 120	< 400
	62	Messing, Bronze, Rotguss (kurzspanend)	Short chip brass, phosphor bronze, gun metal	< 200	< 700
	63	Messing (langspanend)	Long chip brass	< 200	< 700
70 Aluminium Magnesium Aluminium Magnesium	71	Al unlegiert	Al / Mg unalloyed	< 100	< 350
	72	Al legiert Si < 1.5 %	Al alloyed Si < 1.5 %	< 150	< 500
	73	Al legiert Si > 1.5 % - < 10 %	Al alloyed Si > 1.5 % - < 10 %	< 120	< 400
	74	Al legiert Si > 10 %, Mg-Legierung	Al alloyed Si > 10 %, Mg-Alloys	< 120	< 400
80 Kunststoff Plastic compounds	81	Thermoplaste	Thermoplastics	-	-
	82	Duroplaste	Duroplastics	-	-
	83	Faserverstärkte Kunststoffe	Glass fibre reinforced plastics	-	-
	*	Gewindefräser Typ GFH	Thread milling cutter type GFH		

Formel zur Berechnung des "Fräsvorschubes"

Vorschub $V_{fK} = f_z \times Z \times n$

Vorschub der Werkzeugmitte $V_{fM} = \dfrac{V_{fK} \times (\text{Nenndurchmesser des Gewindes} - \text{Fräserdurchmesser})}{\text{Nenndurchmesser des Gewindes}}$

Auf CNC-Maschinen, die den Vorschub der Werkzeugmitte nicht automatisch berechnen, muss der Wert " Vorschub Werkzeugmitte V_{fM}" berücksichtigt werden.

Thread milling feed rates

Feed rate $V_{fK} = f_z \times Z \times n$

Feed rate of the tool middle $V_{fM} = \dfrac{V_{fK} \times (\text{nominal thread } \varnothing - \varnothing \text{ of the thread milling cutter})}{\text{nominal thread } \varnothing}$

On CNC machines, which do not calculate for themselves the feed rate at the tool-centre, the value "centre of the tool V_{fM}" must be considered.

Gewindefräser
Thread milling cutters

Vc (m/min)		*Fräsvorschub fz (mm/Zahn)* Rate of feed fz (mm/tooth)
Standard Standard	*Beschichtet VS* Coated VS	
50 - 100	80 - 150	0.04 - 0.15
40 - 80	60 - 120	0.04 - 0.15
40 - 80	60 - 120	0.02 - 0.10
40 - 80	60 - 120	0.02 - 0.10
30 - 60	50 - 90	0.02 - 0.08
20 - 40	30 - 60	0.01 - 0.05
10 - 30	20 - 40	0.005 - 0.02
30 - 60	50 - 90	0.02 - 0.10
20 - 40	30 - 60	0.01 - 0.05
30 - 60	50 - 90	0.02 - 0.08
20 - 40	30 - 60	0.01 - 0.05
50 - 100	80 - 150	0.05 - 0.15
50 - 80	80 - 120	0.02 - 0.10
40 - 70	60 - 100	0.02 - 0.08
20 - 40	30 - 60	0.01 - 0.05
20 - 40	30 - 60	0.02 - 0.08
20 - 40	30 - 60	0.02 - 0.08
10 - 20	20 - 30	0.005 - 0.02
150 - 200	200 - 250	0.05 - 0.15
150 - 200	200 - 250	0.05 - 0.15
150 - 200	200 - 250	0.05 - 0.15
100 - 250	150 - 300	0.05 - 0.20
100 - 250	150 - 300	0.05 - 0.20
100 - 250	150 - 300	0.05 - 0.20
100 - 250	150 - 300	0.05 - 0.15
100 - 200	150 - 300	0.05 - 0.20
50 - 100	80 - 150	0.04 - 0.15
60 - 80	80 - 120	0.04 - 0.15

Bohrgewindefräser
Thrillers

Vc (m/min)		*Bohrvorschub f (mm/U)* Drilling f (mm/rev.)	*Fräsvorschub fz (mm/Zahn)* Milling fz (mm/tooth)
Standard Standard	*Beschichtet VS* Coated VS		
50 - 100	80 - 150	0.1 - 0.3	0.05 - 0.15
50 - 80	80 - 120	0.1 - 0.2	0.02 - 0.10
100 - 250	150 - 300	0.1 - 0.4	0.05 - 0.20
100 - 250	150 - 300	0.1 - 0.4	0.05 - 0.20
100 - 250	150 - 300	0.1 - 0.4	0.05 - 0.20
100 - 250	150 - 300	0.1 - 0.4	0.05 - 0.20
100 - 200	150 - 250	0.1 - 0.3	0.05 - 0.15

Bei den oben aufgeführten Daten handelt es sich um Richtwerte. The indicated values are a guideline.

Technische Hinweise

- Δ *Die Bearbeitung von langspanenden Werkstoffen verlangt ein mehrmaliges Unterbrechen des Bohrzyklus zum Entfernen der Späne.*
- Δ *Bitte wenden Sie sich an* **DC SWISS SA** *wenn Sie die Bohrgewindefräser in andere Werkstoffe einsetzen möchten.*

Technical notes

- Δ When machining long chipping materials, they may require deburring operations.
- Δ Please ask **DC SWISS SA** before using BGF type thrillers in materials where no cutting data is given.

Inhaltsverzeichnis - VHM-Gewindewirbler Typ GW
Directory - Solid carbide thread whirl cutters type GW

		GW					
Typ **Type**		GW1016 / GW1016VS	GW2016 / GW2016VS	GW3016 / GW3016VS	GW3019 / GW3019VS	GW4016* / GW4016VS*	GW4019* / GW4019VS*
Beschichtung **Coating**		VS	VS	VS	VS	VS	VS
							
Gewindelänge **Thread length**		2.5 x D_1	2.5 x D_1	2.5 x D_1	4 x D_1	2.5 x D_1	4 x D_1
Merkmale **Characteristics**		R10	R10	R10	R10	R10	R10
M	ISO DIN 13 ISO DIN 14		207	208/209	208/209	212	212
MF	ISO DIN 13			208/209	208/209		
UNC	ANSI B1.1			210	210	213	213
UNF	ANSI B1.1			211	211	213	213
S	NIHS	206	207				

*Ersetzt worden durch GW4116/ GW4119
Replaced by GW4116/ GW4119

Inhaltsverzeichnis - VHM-Gewindefräser Typ GF
Directory - Solid carbide thread milling cutters type GF

	GF					
Typ Type	GF6110 / GF6110VS	GF6160 / GF6160VS	GF6115 / GF6115VS	GF6165 / GF6165VS	GF6116 / GF6116VS	GF6166 / GF6166VS
Beschichtung Coating	VS	VS	VS	VS	VS	VS
						
Gewindelänge Thread length	1.5 x D1	1.5 x D1	2 x D1	2 x D1	2.5 x D1	2.5 x D1
Merkmale Characteristics						
M ISO DIN 13	214		215	215	216	216
MF ISO DIN 13	217			218		218
UNC ANSI B1.1	219			220		220
UNF ANSI B1.1	221			222		222
UN ANSI B1.1						
G (BSP) DIN ISO 228				223		223
PG DIN 40430						
NPT ANSI B1.20.1		224				
NPTF ANSI B1.20.3		224				
EG M DIN 8140						

Inhaltsverzeichnis - VHM-Gewindefräser Typ GFH und GFS
Directory - Solid carbide thread milling cutters type GFH and GFS

		GFH	GFS					
Typ Type		GFH6110VS	GFS6610	GFS6610VS	GFS6660	GFS6660VS	GFS6615	GFS6615VS	GFS6665	GFS6665VS	GFS6616	GFS6616VS
Beschichtung Coating		VS		VS		VS		VS		VS		VS
												
Gewindelänge Thread length												
Merkmale Characteristics												
M	ISO DIN 13	214	225		225		226		226		227	
MF	ISO DIN 13		228		228		229		229			
UNC	ANSI B1.1		230		230		231		231			
UNF	ANSI B1.1		232		232		233		233			
UN/EF/S	ANSI B1.1											
G (BSP)	DIN ISO 228				234				234			
PG	DIN 40430											
NPT	ANSI B1.20.1				235							
NPTF	ANSI B1.20.3				235							
EG M	DIN 8140											

Inhaltsverzeichnis - VHM-Gewindefräser und VHM-Bohrgewindefräser Typ GFM und BGF
Directory - Solid carbide thread milling cutters and thrillers type GFM and BGF

	GFM		BGF									
GFS6666	GFS6666VS	GFM6260	GFM6260VS	BGF6760	BGF6760VS	BGF6765	BGF6765VS	BGF6766	BGF6766VS	BGF6865	BGF6865VS	BGF6866	BGF6866VS
	VS		VS		VS		VS		VS		VS		VS
													
													
		 		 		 		 		 		 	
227		236		240		241		241		242		242	
		236		243		243							
		237											
		237											
		237											
		238											
		239											
		239											

VHM CAR | < 3µm | DC | h5

GW

GW1016 R10

GW1016VS R10 VS

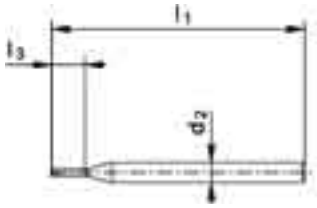


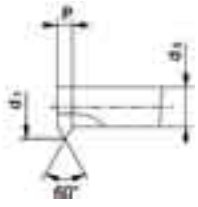












∅ D_1 S	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			ID	ID
0.3	**0.08**	0.21	39	0.9	3	0.10	1	0.23 *	**166930**	**166940**
0.4	**0.10**	0.29	39	1.2	3	0.15	1	0.32 *	**166931**	**166941**
0.5	**0.125**	0.36	39	1.5	3	0.19	1	0.40 *	**166932**	**166942**
0.6	**0.15**	0.43	39	1.7	3	0.23	1	0.48 *	**166933**	**166943**
0.7	**0.175**	0.50	39	2.0	3	0.27	1	0.56 *	**166934**	**166944**
0.8	**0.20**	0.57	39	2.3	3	0.31	1	0.64 *	**166935**	**166945**
0.9	**0.225**	0.64	39	2.6	3	0.34	1	0.72 *	**166936**	**166946**
1.0	**0.25**	0.71	39	2.9	3	0.38	1	0.80 *	**166937**	**166947**
1.2	**0.25**	0.91	39	3.4	3	0.58	1	1.00 *	**166938**	**166948**
1.4	**0.30**	1.06	39	3.9	3	0.66	1	1.15 *	**166939**	**166949**

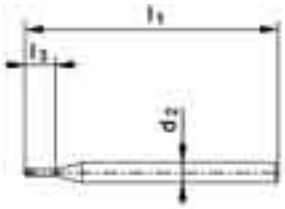
***Tol.** $^{+0.02}_{0}$ mm

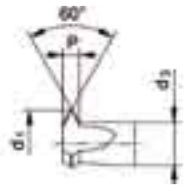
VHM CAR | < 3µm | DC | h5

GW

GW2016 — R10

GW2016VS — R10 — VS





	GW2016	GW2016VS
		
		
	 2.5 x D1	 2.5 x D1

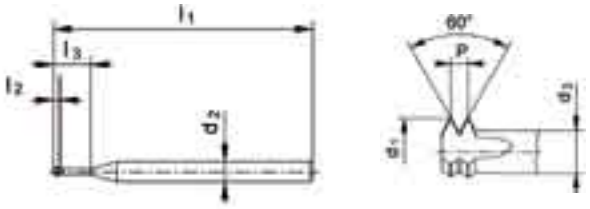
∅ D1 S	P mm	d1 mm	l1 mm	l3 mm	d2 h5 mm	d3 mm		→ ←	ID	ID
0.8	0.20	0.57	39	2.3	3	0.29	3	0.64 *	166969	166988
0.9	0.225	0.64	39	2.6	3	0.33	3	0.72 *	166970	166989
1.0	0.25	0.71	39	2.9	3	0.36	3	0.80 *	166971	166990
1.2	0.25	0.91	39	3.4	3	0.56	3	1.00 *	166972	166991
1.4	0.30	1.06	39	3.9	3	0.64	3	1.15 *	166973	166992

∅ D1 M	P mm	d1 mm	l1 mm	l3 mm	d2 h5 mm	d3 mm		→ ←	ID	ID
0.8	0.20	0.57	39	2.3	3	0.29	3	0.62	166974	166993
0.9	0.225	0.64	39	2.6	3	0.33	3	0.70	166975	166994
1.0	0.25	0.71	39	2.9	3	0.36	3	0.75	166976	166995
1.2	0.25	0.91	39	3.4	3	0.56	3	0.95	166977	166996
1.4	0.30	1.06	39	3.9	3	0.64	3	1.10	166978	166997
1.6	0.35	1.20	39	4.5	3	0.71	3	1.25	166979	166998
1.8	0.35	1.40	39	5.0	3	0.91	3	1.45	166980	166999
2.0	0.40	1.54	39	5.6	3	0.98	3	1.60	166981	167000
2.5	0.45	1.98	39	6.9	3	1.35	3	2.05	166982	167001
3.0	0.50	2.43	51	8.4	5	1.73	4	2.50	166983	167002
3.5	0.60	2.81	51	9.9	5	1.97	4	2.90	166984	167003
4.0	0.70	3.20	51	11.3	5	2.22	4	3.30	166985	167004
5.0	0.80	4.08	51	14.0	5	2.96	4	4.20	166986	167005
6.0	1.00	4.90	51	16.8	5	3.50	4	5.00	166987	167006

*Tol. +0.02 mm 0

GW

GW3016	R10		
GW3016VS	R10	VS	
GW3019	R10		
GW3019VS	R10	VS	



GW3016	GW3016VS	GW3019	GW3019VS
			
			
2.5 x D1	2.5 x D1	4 x D1	4 x D1

∅ D_1 M, MF	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			ID	ID
0.8	0.20	0.57	39	2.3	3	0.29	3	0.62	167021	167035
0.9	0.225	0.64	39	2.6	3	0.33	3	0.70	167022	167036
1.0	0.25	0.71	39	2.9	3	0.36	3	0.75	167023	167037
1.2	0.25	0.91	39	3.4	3	0.56	3	0.95	167024	167038
1.4	0.30	1.06	39	3.9	3	0.64	3	1.10	167025	167039
1.6	0.35	1.20	39	4.5	3	0.71	3	1.25	167026	167040
1.8	0.35	1.40	39	5.0	3	0.91	3	1.45	167027	167041
2.0	0.20	1.77	39	5.3	3	1.49	3	1.80	175225	171442
2.0	0.40	1.54	39	5.6	3	0.98	3	1.60	167028	167042
2.5	0.20	2.27	39	6.6	3	1.99	3	2.30	175226	175241
2.5	0.25	2.21	39	6.6	3	1.86	3	2.25	175227	167299
2.5	0.45	1.98	39	6.9	3	1.35	3	2.05	167029	167043

∅ D_1 M, MF	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			ID	ID
0.8	0.20	0.57	39	3.5	3	0.29	3	0.62	167063	167077
0.9	0.225	0.64	39	3.9	3	0.33	3	0.70	167064	167078
1.0	0.25	0.71	39	4.4	3	0.36	3	0.75	167065	167079
1.2	0.25	0.91	39	5.2	3	0.56	3	0.95	167066	167080
1.4	0.30	1.06	39	6.0	3	0.64	3	1.10	167067	167081
1.6	0.35	1.20	39	6.9	3	0.71	3	1.25	167068	167082
1.8	0.35	1.40	39	7.7	3	0.91	3	1.45	167069	167083
2.0	0.20	1.77	39	8.3	3	1.49	3	1.80	175254	175270
2.0	0.40	1.54	39	8.6	3	0.98	3	1.60	167070	167084
2.5	0.20	2.27	39	10.3	3	1.99	3	2.30	175255	175271
2.5	0.25	2.21	39	10.4	3	1.86	3	2.25	175256	175272
2.5	0.45	1.98	39	10.6	3	1.35	3	2.05	167071	167085

M, MF ISO DIN 13

VHM CAR | < 3µm | DC | h5

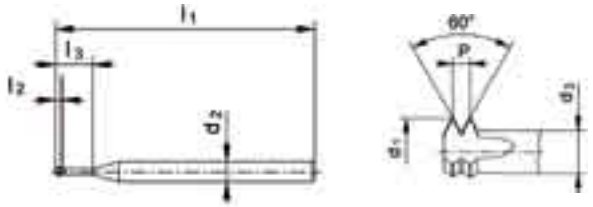
GW

	GW3016	GW3016VS	GW3019	GW3019VS
	R10	R10 VS	R10	R10 VS









∅ D_1 M, MF	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			ID	ID
3.0	0.35	2.60	51	8.2	5	2.11	4	2.65	175228	175242
3.0	0.50	2.43	51	8.4	5	1.73	4	2.50	167030	167044
3.5	0.60	2.81	51	9.9	5	1.97	4	2.90	167031	167045
4.0	0.70	3.20	51	11.3	5	2.22	4	3.30	167032	167046
5.0	0.80	4.08	51	14.0	5	2.96	4	4.20	167033	167047
6.0	1.00	4.85	51	16.8	5	3.45	4	5.00	167034	167048
8.0	1.25	5.95	63	23.0	6*	4.20	5	6.80	175229	175243
10.0	1.50	7.95	67	28.0	8*	5.85	5	8.50	175230	175244
12.0	1.75	9.95	76	34.0	10*	7.50	5	10.20	175231	175245

∅ D_1 M, MF	P mm	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			ID	ID
3.0	0.35	2.60	51	12.7	5	2.11	4	2.65	175257	175273
3.0	0.50	2.43	51	12.9	5	1.73	4	2.50	167072	167086
3.5	0.60	2.81	51	15.1	5	1.97	4	2.90	167073	167087
4.0	0.70	3.20	51	17.3	5	2.22	4	3.30	167074	167088
5.0	0.80	4.08	51	21.5	5	2.96	4	4.20	167075	167089
6.0	1.00	4.85	51	25.8	5	3.45	4	5.00	167076	167090
8.0	1.25	5.95	75	35.0	6*	4.20	5	6.80	175258	175274
10.0	1.50	7.95	83	43.0	8*	5.85	5	8.50	175259	175275
12.0	1.75	9.95	95	52.0	10*	7.50	5	10.20	175260	175276

*Tol. h6

UNC ANSI B1.1

VHM CAR | < 3µm | DC | h5

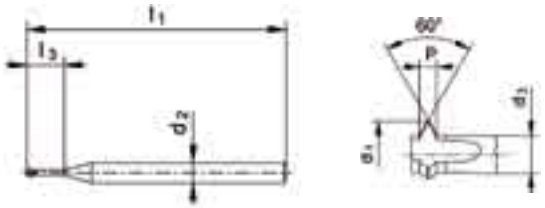
GW

	GW3016	GW3016VS	GW3019	GW3019VS
	R10	R10 VS	R10	R10 VS









∅ D_1 UNC	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			ID	ID
2	56	1.66	39	6.1	3	1.02	3	1.75	167472	167500
4	40	2.11	39	8.0	3	1.22	3	2.25	167473	167501
6	32	2.59	51	10.2	5	1.48	4	2.75	167474	167502
8	32	3.25	51	11.9	5	2.14	4	3.40	167475	167503
10	24	3.60	51	14.0	5	2.12	4	3.80	173983	173986
1/4	20	4.89	51	18.2	5	3.11	4	5.10	167476	167504
5/16	18	5.95	63	23.0	6*	3.97	5	6.50	175232	175246
3/8	16	7.10	67	27.0	8*	4.87	5	8.00	175233	173546
1/2	13	9.95	76	36.0	10*	7.21	5	10.80	175234	175247

∅ D_1 UNC	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			ID	ID
2	56	1.66	39	9.4	3	1.02	3	1.75	167479	167507
4	40	2.11	39	12.2	3	1.22	3	2.25	167480	167508
6	32	2.59	51	15.5	5	1.48	4	2.75	167481	167509
8	32	3.25	51	18.1	5	2.14	4	3.40	167482	167510
10	24	3.60	51	21.3	5	2.12	4	3.80	173982	173979
1/4	20	4.89	51	27.7	5	3.11	4	5.10	167483	167511
5/16	18	5.95	75	35.0	6*	3.97	5	6.50	175261	175277
3/8	16	7.10	83	41.0	8*	4.87	5	8.00	175262	175278
1/2	13	9.95	95	55.0	10*	7.21	5	10.80	175263	175279

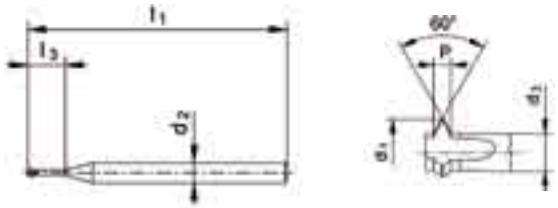
*Tol. h6

UNF ANSI B1.1

VHM CAR | < 3µm | DC | h5

GW

GW3016	R10		
GW3016VS	R10	VS	
GW3019	R10		
GW3019VS	R10	VS	



	GW3016	GW3016VS	GW3019	GW3019VS
				
				
				

∅ D_1 UNF	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			ID	ID
0	80	1.15	39	4.3	3	0.71	3	1.20	175235	175248
1	72	1.44	39	5.1	3	0.95	3	1.50	175236	175249
4	48	2.23	39	7.9	3	1.49	3	2.35	175237	175250
8	36	3.35	51	11.7	5	2.36	4	3.50	175238	175251
10	32	3.91	51	13.5	5	2.80	4	4.05	167477	167505
1/4	28	4.95	51	17.6	5	3.68	4	5.50	167478	167506
5/16	24	5.95	63	22.0	6*	4.47	5	6.90	175239	175252
3/8	24	7.10	67	26.0	8*	5.62	5	8.50	175240	175253

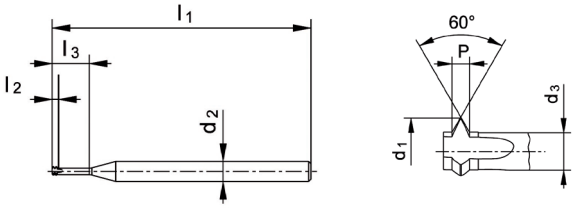
∅ D_1 UNF	P TPI	d_1 mm	l_1 mm	l_3 mm	d_2 h5 mm	d_3 mm			ID	ID
0	80	1.15	39	6.6	3	0.71	3	1.20	175264	175280
1	72	1.44	39	7.9	3	0.95	3	1.50	175265	175281
4	48	2.23	39	12.1	3	1.49	3	2.35	175266	172376
8	36	3.35	51	18.0	5	2.36	4	3.50	175267	175282
10	32	3.91	51	20.8	5	2.80	4	4.05	167484	167512
1/4	28	4.95	51	27.1	5	3.68	4	5.50	167485	167513
5/16	24	5.95	75	34.0	6*	4.47	5	6.90	175268	175283
3/8	24	7.10	83	40.0	8*	5.62	5	8.50	175269	175284

*Tol. h6

VHM CAR | < 3µm | DC | h5

GW

GW4016	R10		
GW4016VS	R10	VS	
GW4019	R10		
GW4019VS	R10	VS	



GW4016*	GW4016VS*	GW4019*	GW4019VS*
			
			
			

∅ D_1 M	P mm	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h5 mm	d_3 mm			ID	ID
0.8	0.20	0.51	39	0.40	2.3	3	0.23	3	0.58*	167105	167119
0.9	0.225	0.57	39	0.45	2.6	3	0.26	3	0.65*	167106	167120
1.0	0.25	0.64	39	0.50	2.9	3	0.29	3	0.70*	167107	167121
1.2	0.25	0.84	39	0.50	3.4	3	0.49	3	0.90*	167108	167122
1.4	0.30	0.97	39	0.60	4.0	3	0.55	3	1.05*	167109	167123
1.6	0.35	1.09	39	0.70	4.6	3	0.60	3	1.19*	167110	167124
1.8	0.35	1.29	39	0.70	5.1	3	0.80	3	1.39*	167111	167125
2.0	0.40	1.42	39	0.80	5.6	3	0.86	3	1.54*	167112	167126
2.5	0.45	1.85	39	0.90	7.0	3	1.22	3	1.98*	167113	167127
3.0	0.50	2.28	51	1.00	8.5	5	1.58	4	2.43*	167114	167128
3.5	0.60	2.63	51	1.20	10.0	5	1.79	4	2.80*	167115	167129
4.0	0.70	2.99	51	1.40	11.4	5	2.01	4	3.20*	167116	167130
5.0	0.80	3.84	51	1.60	14.1	5	2.72	4	4.10*	167117	167131
6.0	1.00	4.55	51	2.00	17.0	5	3.15	4	4.90*	167118	167132

∅ D_1 M	P mm	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_2 h5 mm	d_3 mm			ID	ID
0.8	0.20	0.51	39	0.40	3.5	3	0.23	3	0.58*	167147	167161
0.9	0.225	0.57	39	0.45	4.0	3	0.26	3	0.65*	167148	167162
1.0	0.25	0.64	39	0.50	4.4	3	0.29	3	0.70*	167149	167163
1.2	0.25	0.84	39	0.50	5.2	3	0.49	3	0.90*	167150	167164
1.4	0.30	0.97	39	0.60	6.1	3	0.55	3	1.05*	167151	167165
1.6	0.35	1.09	39	0.70	7.0	3	0.60	3	1.19*	167152	167166
1.8	0.35	1.29	39	0.70	7.8	3	0.80	3	1.39*	167153	167167
2.0	0.40	1.42	39	0.80	8.6	3	0.86	3	1.54*	167154	167168
2.5	0.45	1.85	39	0.90	10.7	3	1.22	3	1.98*	167155	167169
3.0	0.50	2.28	51	1.00	13.0	5	1.58	4	2.43*	167156	167170
3.5	0.60	2.63	51	1.20	15.2	5	1.79	4	2.80*	167157	167171
4.0	0.70	2.99	51	1.40	17.4	5	2.01	4	3.20*	167158	167172
5.0	0.80	3.84	51	1.60	21.6	5	2.72	4	4.10*	167159	167173
6.0	1.00	4.55	51	2.00	26.0	5	3.15	4	4.90*	167160	167174

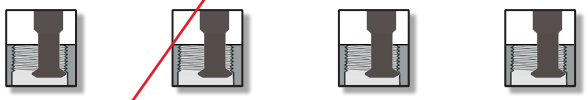
*Tol. +0.03 mm 0

*Ersetzt worden durch GW4116/ GW4119
Replaced by GW4116/ GW4119

UNC-UNF ANSI B1.1

VHM CAR | < 3µm | DC | h5

GW

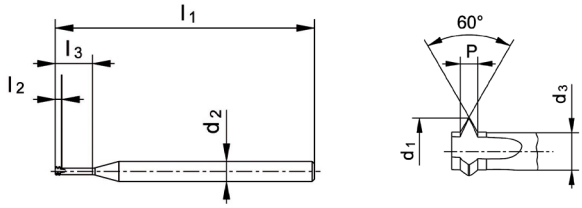
	GW4016*	GW4016VS*	GW4019*	GW4019VS*
				
				
				

GW4016 — R10

GW4016VS — R10 — VS

GW4019 — R10

GW4019VS — R10 — VS



Ø" D1 UNC	P TPI	d1 mm	l1 mm	l2 mm	l3 mm	d2 h5 mm	d3 mm			GW4016* ID	GW4016VS* ID	GW4019*	GW4019VS*
2	56	1.52	39	0.91	6.2	3	0.89	3	1.65*	167486	167514		
4	40	1.92	39	1.27	8.1	3	1.03	3	2.10*	167487	167515		
6	32	2.35	51	1.59	10.4	5	1.24	4	2.60*	167488	167516		
1/4	20	4.51	51	2.54	18.5	5	2.73	4	5.00*	167490	167518		

Ø" D1 UNF	P TPI	d1 mm	l1 mm	l2 mm	l3 mm	d2 h5 mm	d3 mm			GW4016* ID	GW4016VS* ID	GW4019*	GW4019VS*
10	32	3.67	51	1.59	13.7	5	2.56	4	3.95*	167491	167519		
1/4	28	4.95	51	1.81	17.7	5	3.68	4	5.35*	167492	167520		

Ø" D1 UNC	P TPI	d1 mm	l1 mm	l2 mm	l3 mm	d2 h5 mm	d3 mm			GW4016*	GW4016VS*	GW4019* ID	GW4019VS* ID
2	56	1.52	39	0.90	9.5	3	0.89	3	1.65*			167493	167521
4	40	1.92	39	1.27	12.4	3	1.03	3	2.10*			167494	167522
6	32	2.35	51	1.59	15.6	5	1.24	4	2.60*			167495	167523
1/4	20	4.51	51	2.54	28.0	5	2.73	4	5.00*			167497	167525

Ø" D1 UNF	P TPI	d1 mm	l1 mm	l2 mm	l3 mm	d2 h5 mm	d3 mm			GW4016*	GW4016VS*	GW4019* ID	GW4019VS* ID
10	32	3.67	51	1.59	20.9	5	2.56	4	3.95*			167498	167526
1/4	28	4.95	51	1.81	27.3	5	3.68	4	5.35*			167499	167527

*Tol. +0.03 mm 0

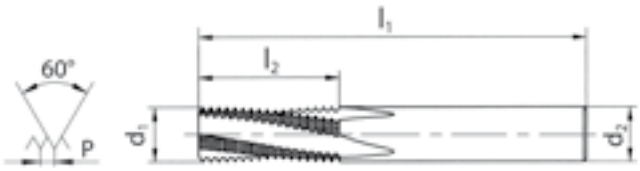
*Ersetzt worden durch GW4116/ GW4119
Replaced by GW4116/ GW4119

GF - GFH

GF6110 R27

GF6110VS R27 VS

GFH6110VS R10 VS

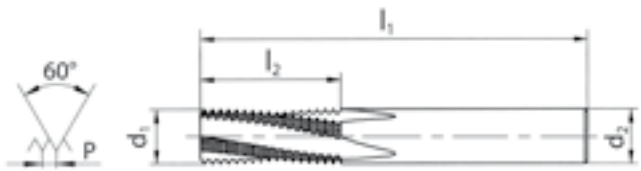


	GF6110	GF6110VS		GFH6110VS
				
				HRC ≤ 63
				
	 1.5 x Ø	 1.5 x Ø		 1.5 x Ø

∅ D_1 M	P mm	d_1 mm	l_1 mm	l_2 mm	d_2 mm	GF	GFH		ID	ID		ID
2	**0.40**	1.50	48	3.4	6	2		1.60	**125233**	**115993**		
2.5	**0.45**	1.90	48	4.3	6	3		2.05	**150565**	**152124**		
3	**0.50**	2.30	48	5.3	6	3	3	2.50	**125660**	**116395**		**150072**
3.5	**0.60**	2.70	48	6.3	6	3		2.90	**116350**	**135217**		
4	**0.70**	3.00	48	7.4	6	3	3	3.30	**125944**	**116396**		**150073**
5	**0.80**	3.80	48	9.2	6	3	4	4.20	**126158**	**116397**		**150074**
6	**1.00**	4.50	54	10.5	6		4	5.00				**150075**
8	**1.25**	5.95	54	13.1	6		5	6.80				**150076**
10	**1.50**	7.95	64	17.3	8		5	8.50				**150077**
12	**1.75**	9.95	74	20.1	10		5	10.20				**151326**

GF

GF6115	R27
GF6115VS	R27, VS
GF6165	R27
GF6165VS	R27, VS



GF6115	GF6115VS	GF6165	GF6165VS
			
			
			

∅ D_1 M	P mm	d_1 mm	l_1 mm	l_2 mm	d_2 mm			ID	ID	ID	ID
4	0.70	3.00	48	8.8	6	3	3.30	146298	146969		
5	0.80	3.80	48	10.8	6	3	4.20	146299	146970		
6	1.00	4.50	54	13.5	6	3	5.00	146300	146971	126350	116398
8	1.25	5.95	54	18.1	6	3	6.80	146321	146972	126586	116399
10	1.50	7.95	64	21.8	8	4	8.50	146322	146973	124836	116400
12	1.75	9.95	72	25.4	10	4	10.20			116342	116401
14	2.00	9.95	74	31.0	10	4	12.00			125066	116402
16	2.00	11.95	80	35.0	12	4	14.00			125114	115990
18	2.50	13.95	90	41.3	14	4	15.50			125229	116403
20							17.50				

VHM CAR — DIN 6535 HA — HB HE — sur demande / auf Anfrage / on request / su richiesta / sobre pedido

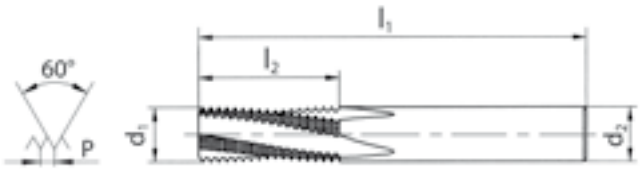
GF

GF6116 — R27

GF6116VS — R27 VS

GF6166 — R27

GF6166VS — R27 VS







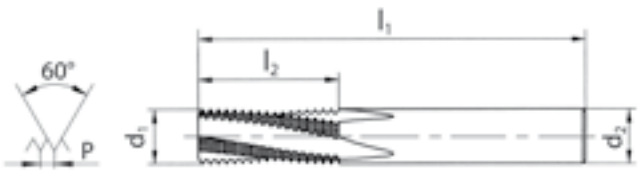


∅ D_1 M	P mm	d_1 mm	l_1 mm	l_2 mm	d_2 mm			ID	ID	ID	ID
4	0.70	3.00	48	10.9	6	3	3.30	155365	155370		
5	0.80	3.80	48	13.2	6	3	4.20	155366	155371		
6	1.00	4.50	54	16.5	6	3	5.00	155367	155372	155375	155382
8	1.25	5.95	54	21.9	6	3	6.80	155368	155373	155376	155383
10	1.50	7.95	64	26.3	8	4	8.50	155369	155374	155377	155384
12	1.75	9.95	74	32.4	10	4	10.20			155378	155385
14	2.00	9.95	74	37.0	10	4	12.00			155379	155386
16	2.00	11.95	90	43.0	12	4	14.00			155380	155387
18	2.50	13.95	105	53.8	14	4	15.50			155381	155388
20							17.50				

GF

GF6110 R27

GF6110VS R27 VS



GF6110	GF6110VS		
			
			
			

∅ D_1 MF	P mm	d_1 mm	l_1 mm	l_2 mm	d_2 mm			ID	ID
4	0.50	3.00	48	7.3	6	3	3.50	135218	135219
5	0.50	3.80	48	8.8	6	3	4.50	135069	135220

MF ISO DIN 13

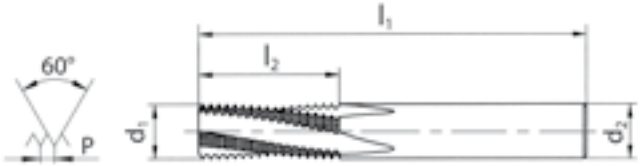
VHM CAR



HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GF

GF6165	R27
GF6165VS	R27 VS
GF6166	R27
GF6166VS	R27 VS









∅ D_1 MF	P mm	d_1 mm	l_1 mm	l_2 mm	d_2 mm			GF6165 ID	GF6165VS ID	GF6166	GF6166VS
6	0.50	4.50	54	12.8	6	3	5.50	135221	135222		
6	0.75	4.50	54	13.1	6	3	5.25	123664	123665		
8	0.50	5.95	54	17.8	6	3	7.50	135002	135223		
8	0.75	5.95	54	16.9	6	3	7.25	143110	135224		
8	1.00	5.95	54	17.5	6	3	7.00	124239	116404		
10	1.00	7.95	64	21.5	8	4	9.00	119986	116405		
10	1.25	7.95	64	21.9	8	4	8.80	120102	116406		
12	1.00	9.95	72	25.5	10	4	11.00	120303	116407		
12	1.50	9.95	72	26.3	10	4	10.50	120392	120393		

∅ D_1 MF	P mm	d_1 mm	l_1 mm	l_2 mm	d_2 mm			GF6165 ID	GF6165VS ID	GF6166	GF6166VS
6	0.50	4.50	54	15.8	6	3	5.50			155389	155398
6	0.75	4.50	54	16.1	6	3	5.25			155390	155399
8	0.50	5.95	54	20.8	6	3	7.50			155391	155400
8	0.75	5.95	54	20.6	6	3	7.25			155392	155401
8	1.00	5.95	54	21.5	6	3	7.00			155393	155402
10	1.00	7.95	64	26.5	8	4	9.00			155394	155403
10	1.25	7.95	64	26.9	8	4	8.80			155395	155404
12	1.00	9.95	74	31.5	10	4	11.00			155396	155405
12	1.50	9.95	74	32.3	10	4	10.50			155397	155406

UNC ANSI B1.1

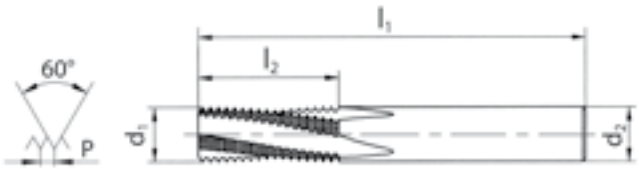
VHM CAR



HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GF

GF6110	R27
GF6110VS	R27 VS



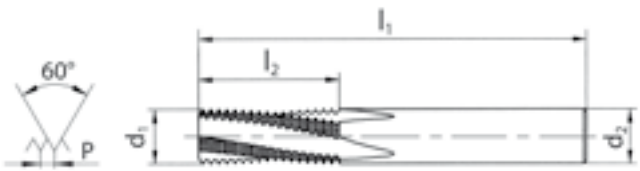
Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			GF6110 ID	GF6110VS ID
10	24	3.60	48	10.1	6.0	3	3.80	135225	135226
12	24	4.10	48	10.1	6.0	3	4.40	135227	135228
1/4	20	4.80	54	12.1	6.0	3	5.10	135229	135230

UNC ANSI B1.1

VHM CAR — DIN 6535 HA — HB HE — sur demande / auf Anfrage / on request / su richiesta / sobre pedido

GF

GF6165	R27			
GF6165VS	R27		VS	
GF6166	R27			
GF6166VS	R27		VS	









Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			GF6165 ID	GF6165VS ID
1/4	20	4.80	54	14.6	6.0	3	5.10	155407	155408
5/16	18	5.95	54	17.6	6.0	3	6.50	116047	135231
3/8	16	7.10	64	21.5	8.0	4	8.00	135232	135233
7/16	14	7.95	64	24.5	8.0	4	9.30	116049	135234
1/2	13	9.95	72	28.4	10.0	4	10.80	135235	135236

Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			GF6166 ID	GF6166VS ID
1/4	20	4.80	54	17.1	6.0	3	5.10	155409	155414
5/16	18	5.95	54	21.9	6.0	3	6.50	155410	155415
3/8	16	7.10	64	26.2	8.0	4	8.00	155411	155416
7/16	14	7.95	64	29.9	8.0	4	9.30	155412	155417
1/2	13	9.95	74	34.2	10.0	4	10.80	155413	155418

UNF ANSI B1.1

VHM CAR



HB HE

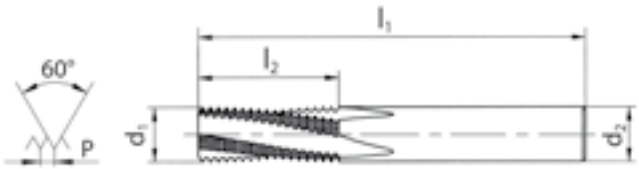
sur demande
auf Anfrage
on request
su richiesta
sobre pedido

GF

GF6110 R27

GF6110VS R27 VS

	GF6110	GF6110VS
		
		
		



Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			ID	ID
10	**32**	3.60	48	8.3	6.0	3	4.05	**128659**	**135237**
12	**28**	4.10	48	9.5	6.0	3	4.60	**135238**	**135239**
1/4	**28**	4.80	54	11.3	6.0	3	5.50	**135240**	**135176**

UNF ANSI B1.1

VHM CAR — DIN 6535 HA — HB HE — sur demande / auf Anfrage / on request / su richiesta / sobre pedido

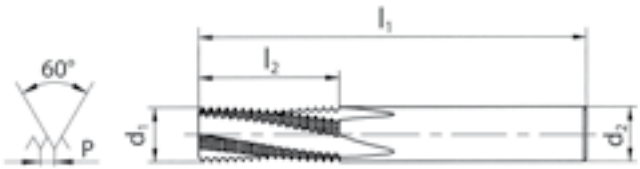
GF

	GF6165	GF6165VS	GF6166	GF6166VS
	R27	R27 VS	R27	R27 VS







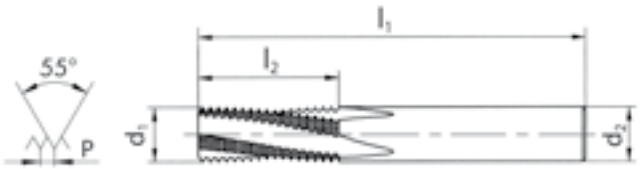


Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			ID	ID
1/4	28	4.80	54	14.1	6.0	3	5.50	155419	155420
5/16	24	5.95	54	17.5	6.0	3	6.90	135242	135243
3/8	24	7.10	64	20.6	8.0	4	8.50	135182	135245
7/16	20	7.95	64	24.8	8.0	4	9.80	135246	135247
1/2	20	9.95	72	27.3	10.0	4	11.40	135183	135249

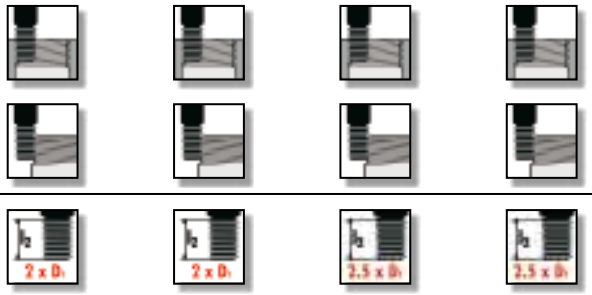
Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			ID	ID
1/4	28	4.80	54	16.8	6.0	3	5.50	155421	155426
5/16	24	5.95	54	20.6	6.0	3	6.90	155422	155427
3/8	24	7.10	64	24.9	8.0	4	8.50	155423	155428
7/16	20	7.95	64	28.6	8.0	4	9.80	155424	155429
1/2	20	9.95	74	33.7	10.0	4	11.40	155425	155430

GF

GF6165	R27			
GF6165VS	R27		VS	
GF6166	R27			
GF6166VS	R27		VS	







Ø" G	D_1	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			GF6165 ID	GF6165VS ID	GF6166 ID	GF6166VS ID
1/8		28	7.95	64	21.3	8.0	4	8.75	119347	116409		
1/4		19	9.95	72	28.7	10.0	4	11.60	119292	116410		
3/8		19	13.60	80	35.4	14.0	4	15.20	119678	116411		

Ø" G	D_1	P TPI	d_1 mm	l_1 mm	l_2 mm	d_2 mm			GF6165 ID	GF6165VS ID	GF6166 ID	GF6166VS ID
1/8		28	7.95	64	24.9	8.0	4	8.75			155431	155434
1/4		19	9.95	74	34.1	10.0	4	11.60			155432	155435
3/8		19	13.60	90	43.4	14.0	4	15.20			155433	155436

NPT, NPTF ANSI B1.20.1 ANSI B1.20.3

VHM CAR



HB HE

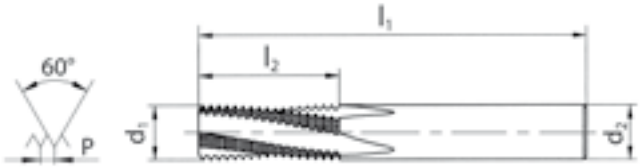
sur demande
auf Anfrage
on request
su richiesta
sobre pedido

GF

	GF6160	GF6160VS
		
		
		

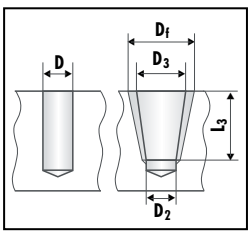
GF6160 

GF6160VS 



Ø" D1 NPT	P TPI	d1 mm	l1 mm	l2 mm	d2 mm		GF6160 ID	GF6160VS ID
1/8	27	7.30	64	9.9	8.0	4	116371	116435
1/4	18	9.95	72	14.8	12.0	4	135250	135251
3/8	18	12.50	80	14.8	14.0	4	135252	135253
1/2	14	14.70	90	19.1	16.0	4	155437	155438

Ø" D1 NPTF	P TPI	d1 mm	l1 mm	l2 mm	d2 mm		GF6160 ID	GF6160VS ID
1/8	27	7.30	64	9.9	8.0	4	* 135254	
1/4	18	9.95	72	14.8	12.0	4	* 135256	* 135257
3/8	18	12.50	80	14.8	14.0	4	* 135258	* 135259
1/2	14	14.70	90	19.1	16.0	4	* 155439	* 155440

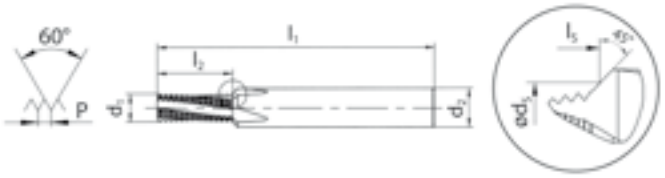


	Vorbohrung Core hole			
			NPT NPTF	
Ø D1	D	D2	D3 (+0.05)	
1/8	8.5	8.3	8.74	8.76
1/4	11.0	10.8	11.36	11.40
3/8	14.5	14.2	14.80	14.84
1/2	17.9	17.5	18.32	18.33

Fräsen Milling	
Df	L3
9.81	6.92
12.99	10.02
16.41	10.33
20.37	13.57

GFS

GFS6610	R27, 45°
GFS6610VS	R27, 45°, VS
GFS6660	R27, 45°
GFS6660VS	R27, 45°, VS





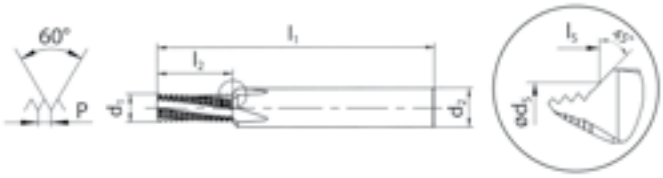




∅ D_1 M	P mm	d_1 mm	l_1 mm	l_2 mm	l_s mm	d_s mm	d_2 mm			GFS6610 ID	GFS6610VS ID	GFS6660 ID	GFS6660VS ID
2	**0.40**	1.50	48	3.4	3.7	2.1	6	2	1.60	* 135331	* 135332		
2.5	**0.45**	1.90	48	4.3	4.7	2.6	6	3	2.05	* 155441	* 155443		
3	**0.50**	2.30	48	5.3	5.6	3.1	6	3	2.50	135333	135334		
3.5	**0.60**	2.70	48	5.7	6.2	3.6	6	3	2.90	* 155442	* 155444		
4	**0.70**	3.00	48	7.3	7.9	4.1	6	3	3.30	135335	135336		
5	**0.80**	3.80	54	9.2	9.9	5.1	6	3	4.20	135337	135338		
6	**1.00**	4.50	62	10.5	11.3	6.2	8	3	5.00	135339	116175		
8	**1.25**	5.95	74	13.1	14.3	8.2	10	3	6.80			135340	116172
10	**1.50**	7.95	80	17.3	18.4	10.3	12	4	8.50			135341	116173
12	**1.75**	9.95	90	20.1	21.3	12.3	14	4	10.20			135342	116174
14	**2.00**	10.80	102	25.0	26.8	14.4	16	4	12.00			* 135343	* 135344
16	**2.00**	12.80	102	27.0	28.8	16.4	18	4	14.00			135345	135346
18	**2.50**	13.95	125	33.8	36.0	18.5	25	4	15.50			* 135347	* 135348
20					37.0	20.5			17.50				

GFS

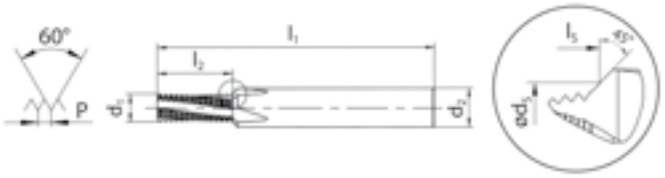
GFS6615	R27, 45°
GFS6615VS	R27, 45°, VS
GFS6665	R27, 45°
GFS6665VS	R27, 45°, VS



∅ D_1 M	P mm	d_1 mm	l_1 mm	l_2 mm	l_s mm	d_s mm	d_2 mm			GFS6615 ID	GFS6615VS ID	GFS6665 ID	GFS6665VS ID
2	0.40	1.50	48	4.6	4.9	2.1	6	2	1.60	135349	135350		
2.5	0.45	1.90	48	5.6	6.0	2.6	6	3	2.05	155445	155447		
3	0.50	2.30	48	6.8	7.1	3.1	6	3	2.50	125661	135351		
3.5	0.60	2.70	48	7.5	8.0	3.6	6	3	2.90	* 155446	* 147108		
4	0.70	3.00	48	8.8	9.3	4.1	6	3	3.30	125946	135352		
5	0.80	3.80	54	10.8	11.5	5.1	6	3	4.20	126160	116178		
6	1.00	4.50	62	13.5	14.3	6.2	8	3	5.00	126352	135353	155524	155525
8	1.25	5.95	74	18.1	19.3	8.2	10	3	6.80			126587	116343
10	1.50	7.95	80	21.8	22.9	10.3	12	4	8.50			124837	135354
12	1.75	9.95	90	25.4	26.6	12.3	14	4	10.20			124973	135355
14	2.00	10.80	102	31.0	32.8	14.4	16	4	12.00			* 125067	* 135356
16	2.00	12.80	102	35.0	36.8	16.4	18	4	14.00			125116	135357
18	2.50	13.95	125	41.3	43.5	18.5	25	4	15.50			* 125231	* 135358
20					44.5	20.5			17.50				

GFS

GFS6616	R27, 45°
GFS6616VS	R27, 45°, VS
GFS6666	R27, 45°
GFS6666VS	R27, 45°, VS









∅ D_1 M	P mm	d_1 mm	l_1 mm	l_2 mm	l_s mm	d_s mm	d_2 mm			GFS6616 ID	GFS6616VS ID	GFS6666 ID	GFS6666VS ID
3	0.50	2.30	48	8.3	8.7	3.1	6	3	2.50	155448	155452		
4	0.70	3.00	48	10.9	11.5	4.1	6	3	3.30	155449	155453		
5	0.80	3.80	54	13.2	13.9	5.1	6	3	4.20	155450	155454		
6	1.00	4.50	62	16.5	17.4	6.2	8	3	5.00	155451	155455	155456	155463
8	1.25	5.95	74	21.9	23.0	8.2	10	3	6.80			155457	155464
10	1.50	7.95	80	26.3	27.5	10.3	12	4	8.50			155458	155465
12	1.75	9.95	90	32.4	33.6	12.3	14	4	10.20			155459	155466
14	2.00	10.80	102	37.0	38.8	14.4	16	4	12.00			* 155460	* 155467
16	2.00	12.80	102	43.0	44.8	16.4	18	4	14.00			155461	155468
18	2.50	13.95	125	53.8	56.1	18.5	25	4	15.50			* 155462	* 155469
20					57.1	20.5			17.50				

MF ISO DIN 13

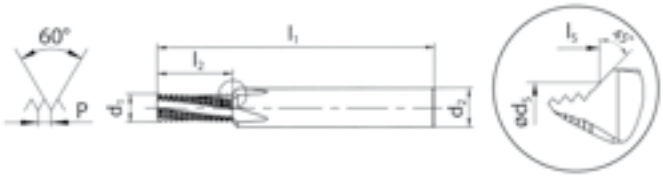
VHM CAR



HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GFS

GFS6610	R27	45°		
GFS6610VS	R27	45°	VS	
GFS6660	R27	45°		
GFS6660VS	R27	45°		VS

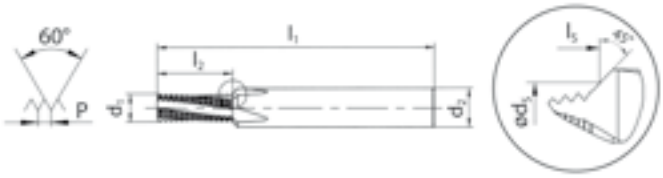


	GFS6610	GFS6610VS	GFS6660	GFS6660VS
				
				
				

∅ D_1 MF	P mm	d_1 mm	l_1 mm	l_2 mm	l_s mm	d_s mm	d_2 mm			GFS6610 ID	GFS6610VS ID	GFS6660 ID	GFS6660VS ID
4	0.50	3.00	48	7.3	7.8	4.1	6	3	3.50	135359	135360		
5	0.50	3.80	54	8.8	9.4	5.1	6	3	4.50	135361	135362		
6	0.50	4.50	62	9.8	10.6	6.2	8	3	5.50	135363	135364		
6	0.75	4.50	62	10.1	11.0	6.2	8	3	5.25	135365	135366		
8	0.50	5.95	74	12.8	13.9	8.2	10	3	7.50			135367	135368
8	0.75	5.95	74	13.1	14.3	8.2	10	3	7.25			135369	135370
8	1.00	5.95	74	13.5	14.6	8.2	10	3	7.00			135371	135372
10	1.00	7.95	80	16.5	17.7	10.3	12	4	9.00			135373	135374
10	1.25	7.95	80	16.9	18.1	10.3	12	4	8.80			* 135375	* 135376
12	1.00	9.95	90	19.5	20.7	12.3	14	4	11.00			135377	135378
12	1.50	9.95	90	20.3	21.4	12.3	14	4	10.50			135379	135380
14	1.50	10.80	102	23.3	25.0	14.4	16	4	12.50			135381	135382
16	1.50	12.80	102	26.3	28.1	16.4	18	4	14.50			135383	135384

GFS

GFS6615	R27, 45°
GFS6615VS	R27, 45°, VS
GFS6665	R27, 45°
GFS6665VS	R27, 45°, VS



GFS6615	GFS6615VS	GFS6665	GFS6665VS
			
			
			

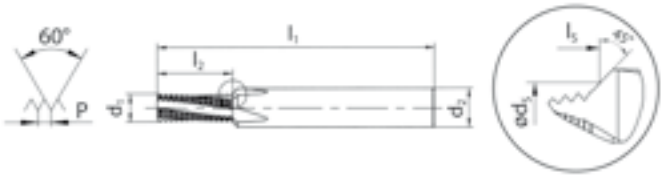
∅ D_1 MF	P mm	d_1 mm	l_1 mm	l_2 mm	l_s mm	d_s mm	d_2 mm			GFS6615 ID	GFS6615VS ID	GFS6665 ID	GFS6665VS ID
4	**0.50**	3.00	48	8.8	9.3	4.1	6	3	3.50	**135385**	**135386**		
5	**0.50**	3.80	54	10.8	11.4	5.1	6	3	4.50	**135387**	**135388**		
6	**0.50**	4.50	62	12.8	13.6	6.2	8	3	5.50	**135389**	**135390**		
6	**0.75**	4.50	62	13.1	14.0	6.2	8	3	5.25	**135391**	**135392**		
8	**0.50**	5.95	74	17.8	18.9	8.2	10	3	7.50			**135393**	**135394**
8	**0.75**	5.95	74	16.9	18.0	8.2	10	3	7.25			**135395**	**135396**
8	**1.00**	5.95	74	17.5	18.6	8.2	10	3	7.00			**135397**	**135398**
10	**1.00**	7.95	80	21.5	22.7	10.3	12	4	9.00			**135399**	**135400**
10	**1.25**	7.95	80	21.9	23.0	10.3	12	4	8.80			**135401**	**135402**
12	**1.00**	9.95	90	25.5	26.7	12.3	14	4	11.00			**135403**	**135404**
12	**1.50**	9.95	90	26.3	27.4	12.3	14	4	10.50			**135405**	**135406**
14	**1.50**	10.80	102	30.8	32.5	14.4	16	4	12.50			**135407**	**135408**
16	**1.50**	12.80	102	33.8	35.6	16.4	18	4	14.50			**135409**	**135410**

UNC ANSI B1.1

VHM CAR — DIN 6535 HA — HB HE — sur demande / auf Anfrage / on request / su richiesta / sobre pedido

GFS

GFS6610	R27	45°		
GFS6610VS	R27	45°	VS	
GFS6660	R27	45°		
GFS6660VS	R27	45°		VS



GFS6610	GFS6610VS	GFS6660	GFS6660VS
			
			
			

Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_s mm	d_s mm	d_2 mm			ID	ID	ID	ID
10	24	3.60	54	10.1	10.7	4.9	6	3	3.80	* 135420	* 135421		
12	24	4.10	54	10.1	10.8	5.6	6	3	4.40	* 135422	* 135423		
1/4	20	4.80	62	12.1	12.9	6.5	8	3	5.10	* 135424	* 135425	* 155470	* 155473
5/16	18	5.95	74	14.8	15.9	8.1	10	3	6.50	* 135426	* 135427	* 155471	* 155474
3/8	16	7.10	80	16.7	18.0	9.8	12	4	8.00	* 135428	* 135429	* 155472	* 155475
7/16	14	7.95	80	19.0	20.8	11.4	12	4	9.30			* 135430	* 135431
1/2	13	9.95	90	22.5	24.0	13.0	14	4	10.80			* 135432	* 135433
9/16	12	10.80	102	24.4	26.3	14.6	16	4	12.20			* 135434	* 135435
5/8	11	11.90	102	26.5	28.8	16.3	18	4	13.60			* 135436	* 135437

UNC ANSI B1.1

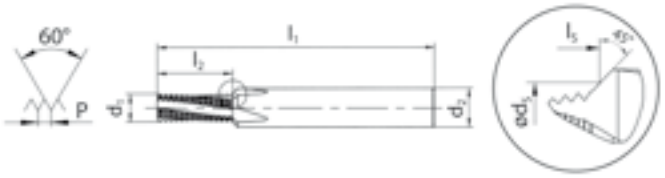
VHM CAR



HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GFS

	GFS6615	GFS6615VS	GFS6665	GFS6665VS
				
				
				
	ID	ID	ID	ID
10 - 24	* 135438	* 135439		
12 - 24	* 135440	* 135441		
1/4 - 20	* 135442	* 135443	* 155476	* 155479
5/16 - 18	* 135444	* 135445	* 155477	* 155480
3/8 - 16	* 135446	* 135447	* 155478	* 155481
7/16 - 14			* 135448	* 135449
1/2 - 13			* 135450	* 135451
9/16 - 12			* 135452	* 135453
5/8 - 11			* 135454	* 135455



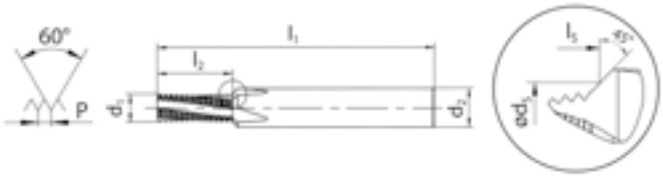
Ø" D_1 UNC	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_s mm	d_2 mm		
10	24	3.60	54	12.2	12.8	4.9	6	3	3.80
12	24	4.10	54	13.2	14.0	5.6	6	3	4.40
1/4	20	4.80	62	14.6	15.5	6.5	8	3	5.10
5/16	18	5.95	74	17.6	18.7	8.1	10	3	6.50
3/8	16	7.10	80	21.5	22.8	9.8	12	4	8.00
7/16	14	7.95	80	24.5	26.2	11.4	12	4	9.30
1/2	13	9.95	90	28.4	29.9	13.0	14	4	10.80
9/16	12	10.80	102	32.8	34.7	14.6	16	4	12.20
5/8	11	11.90	102	35.8	38.0	16.3	18	4	13.60

UNF ANSI B1.1

VHM CAR — DIN 6535 HA — HB HE — sur demande / auf Anfrage / on request / su richiesta / sobre pedido

GFS

GFS6610	R27	45°		
GFS6610VS	R27	45°	VS	
GFS6660	R27	45°		
GFS6660VS	R27	45°		VS



Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_s mm	d_s mm	d_2 mm		
10	32	3.60	54	8.3	9.0	4.9	6	3	4.05
12	28	4.10	54	9.5	10.3	5.6	6	3	4.60
1/4	28	4.80	62	11.3	12.2	6.5	8	3	5.50
5/16	24	5.95	74	13.2	14.3	8.1	10	3	6.90
3/8	24	7.10	80	16.4	17.3	9.8	12	4	8.50
7/16	20	7.95	80	18.4	20.1	11.4	12	4	9.80
1/2	20	9.95	90	21.0	22.5	13.0	14	4	11.40
9/16	18	11.60	102	23.3	24.8	14.6	16	4	12.90
5/8	18	11.90	102	26.1	28.3	16.3	18	4	14.50

GFS6610	GFS6610VS	GFS6660	GFS6660VS
			
			
			
ID	ID	ID	ID
* 135456	* 135457		
* 135458	* 135459		
* 135460	* 135461	* 155482	* 155485
* 135462	* 135463	* 155483	* 155486
* 135464	* 135465	* 155484	* 155487
		* 135466	* 135467
		* 135468	* 135469
		* 135470	* 135471
		* 135472	* 135473

UNF ANSI B1.1

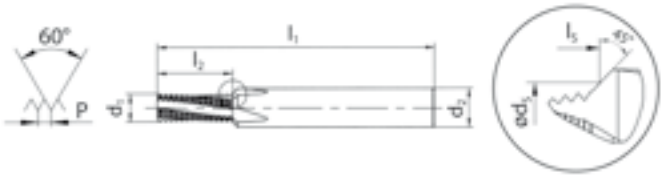
VHM CAR



HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GFS

	R27	45°	VS
GFS6615	●	●	
GFS6615VS	●	●	●
GFS6665	●	●	
GFS6665VS	●	●	●

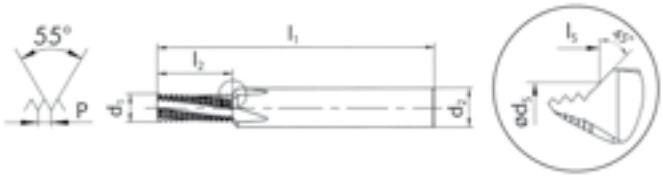


Ø" D_1 UNF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_3 mm	d_3 mm	d_2 mm		
10	32	3.60	54	11.5	12.2	4.9	6	3	4.05
12	28	4.10	54	12.3	13.0	5.6	6	3	4.60
1/4	28	4.80	62	14.1	14.9	6.5	8	3	5.50
5/16	24	5.95	74	17.5	18.6	8.1	10	3	6.90
3/8	24	7.10	80	20.6	21.5	9.8	12	4	8.50
7/16	20	7.95	80	24.8	26.5	11.4	12	4	9.80
1/2	20	9.95	90	27.3	28.8	13.0	14	4	11.40
9/16	18	11.60	102	30.4	31.9	14.6	16	4	12.90
5/8	18	11.90	102	34.6	36.8	16.3	18	4	14.50

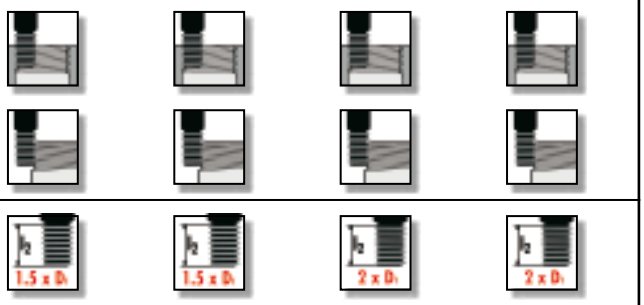
GFS6615	GFS6615VS	GFS6665	GFS6665VS
			
			
			
ID	ID	ID	ID
128660	135474		
* 135475	* 135476		
128578	135477	155488	155491
135478	135479	155489	155492
135480	135481	155490	155493
		* 135482	* 135483
		* 135484	* 135485
		* 135486	* 135487
		* 135488	* 135489

GFS

GFS6660	R27, 45°
GFS6660VS	R27, 45°, VS
GFS6665	R27, 45°
GFS6665VS	R27, 45°, VS







Ø" G	D_1	P TPI	d_1 mm	l_1 mm	l_2 mm	l_s mm	d_s mm	d_2 mm			GFS6660 ID	GFS6660VS ID	GFS6665 ID	GFS6665VS ID
1/8		28	7.95	80	15.9	16.9	10.0	12	4	8.75	* 135411	* 135412		
1/4		19	9.95	90	22.1	23.8	13.5	14	4	11.60	* 135413	* 135414		
3/8		19	12.80	102	27.4	29.5	17.1	18	4	15.20	* 135415	* 135416		

Ø" G	D_1	P TPI	d_1 mm	l_1 mm	l_2 mm	l_s mm	d_s mm	d_2 mm			GFS6660 ID	GFS6660VS ID	GFS6665 ID	GFS6665VS ID
1/8		28	7.95	80	21.3	22.3	10.0	12	4	8.75			* 119349	* 135417
1/4		19	9.95	90	28.7	30.5	13.5	14	4	11.60			* 119298	* 135418
3/8		19	12.80	102	35.4	37.6	17.1	18	4	15.20			* 119680	* 135419

NPT, NPTF ANSI B1.20.1 ANSI B1.20.3

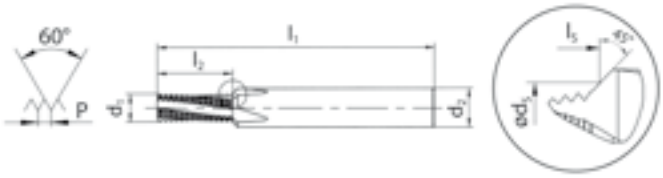
VHM CAR — DIN 6535 HA — HB HE — sur demande / auf Anfrage / on request / su richiesta / sobre pedido

GFS

	GFS6660	GFS6660VS
		
		
		

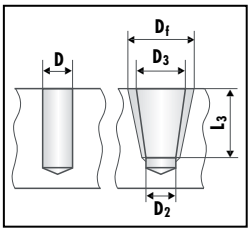
GFS6660 — R27, 45°

GFS6660VS — R27, 45°, VS



Ø" D_1 NPT	P TPI	d_1 mm	l_1 mm	l_2 mm	l_s mm	d_s mm	d_2 mm		GFS6660 ID	GFS6660VS ID
1/8	27	7.30	70	9.9	11.2	10.6	12	4	* 126910	* 135490
1/4	18	9.95	80	14.8	16.4	14.0	16	4	* 126899	* 135491
3/8	18	12.50	80	14.8	16.9	17.6	18	4	* 126928	* 135492

Ø" D_1 NPTF	P TPI	d_1 mm	l_1 mm	l_2 mm	l_s mm	d_s mm	d_2 mm		GFS6660 ID	GFS6660VS ID
1/8	27	7.30	70	9.9	11.2	10.6	12	4	* 135493	* 135494
1/4	18	9.95	80	14.8	16.4	14.0	16	4	* 135495	* 135496
3/8	18	12.50	80	14.8	16.9	17.6	18	4	* 135497	* 135498



	Vorbohrung / Core hole			
			NPT NPTF	
Ø D_1	D	D_2	D_3 (+0.05)	
1/8	8.5	8.3	8.74	8.76
1/4	11.0	10.8	11.36	11.40
3/8	14.5	14.2	14.80	14.84

Fräsen / Milling	
D_f	L_3
9.81	6.92
12.99	10.02
16.41	10.33

M, MF ISO DIN 13

VHM CAR



HB HE

sur demande
auf Anfrage
on request
su richiesta
sobre pedido

GFM

GFM6260



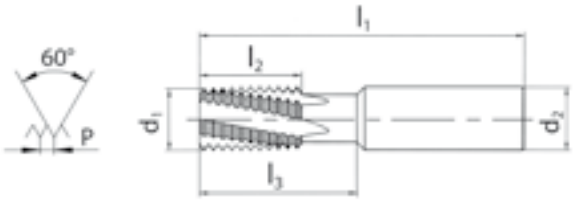
GFM6260VS











d_1 mm	P mm	∅ D_1 ≥ M, MF	l_1 mm	l_2 mm	l_3 mm	d_2 mm		GFM6260 ID	GFM6260VS ID
8	0.50	10	64	16.0	16	8.0	4	116450	135260
8	0.75	10	64	15.8	16	8.0	4	116340	135261
10	0.75	14	70	15.8	26	10.0	4	116128	135262
10	1.00	14	70	16.0	26	10.0	4	118657	135263
10	1.25	14	70	16.3	26	10.0	4	118659	135264
10	1.50	14	70	16.5	26	10.0	4	118661	135265
12	0.50	18	80	20.0	32	12.0	4	116129	135214
12	0.75	18	80	20.3	32	12.0	4	155526	155527
12	1.00	18	80	20.0	32	12.0	4	118664	135007
12	1.50	18	80	21.0	32	12.0	4	118669	135181
12	2.00	18	80	20.0	32	12.0	4	118673	135269
16	1.00	24	90	25.0	42	16.0	4	118680	135270
16	1.50	24	90	25.5	42	16.0	4	118682	116017
16	2.00	24	90	26.0	42	16.0	4	118684	135271
16	2.50	24	90	25.0	42	16.0	4	118689	135272
16	3.00	24	90	27.0	42	16.0	4	158760	150564
20	1.00	30	105	33.0	52	20.0	5	135273	135274
20	1.50	30	105	33.0	52	20.0	5	118694	135275
20	2.00	30	105	34.0	52	20.0	5	116338	135276
20	2.50	30	105	32.5	52	20.0	5	* 135277	
20	3.00	30	105	33.0	52	20.0	5	118699	135279
20	3.50	30	105	38.5	52	20.0	5	144195	144065

UN UNC, UNF UNEF, UNS ANSI B1.1

VHM CAR



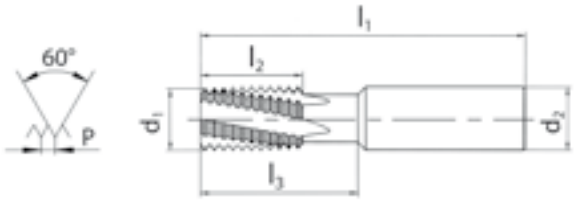
HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GFM

GFM6260 R1S

GFM6260VS R1S VS

	GFM6260	GFM6260VS
		
	 2/3	 2/3
		



d_1 mm	P TPI	Ø" D_1 ≥ UN	l_1 mm	l_2 mm	l_3 mm	d_2 mm		ID	ID
10	24	1/2	70	15.9	26	10	4	135288	135289
12	24	3/4	80	20.1	32	12	4	135290	135291
12	20	3/4	80	20.3	32	12	4	135292	135293
12	18	3/4	80	19.8	32	12	4	135294	135295
12	16	3/4	80	20.6	32	12	4	135296	135297
12	10	3/4	80	20.3	32	12	4	150963	155494
16	24	1	90	25.4	42	16	4	135298	135299
16	20	1	90	25.4	42	16	4	135300	135301
16	18	1	90	25.4	42	16	4	135302	135303
16	16	1	90	25.4	42	16	4	135304	135305
16	14	1	90	25.4	42	16	4	135306	135307
16	12	1	90	25.4	42	16	4	135308	135309
16	9	1	90	25.4	42	16	4	150964	155495
16	8	1	90	25.4	42	16	4	150965	155496
20	24	1 1/4	105	32.8	52	20	5	* 135310	* 135311
20	20	1 1/4	105	33.0	52	20	5	* 135312	* 135313
20	18	1 1/4	105	32.5	52	20	5	135314	135315
20	16	1 1/4	105	33.4	52	20	5	118697	135316
20	14	1 1/4	105	32.7	52	20	5	135317	135318
20	12	1 1/4	105	31.8	52	20	5	135319	135320
20	8	1 1/4	105	31.8	52	20	5	135321	135322
20	7	1 1/4	105	32.7	52	20	5	150962	155497

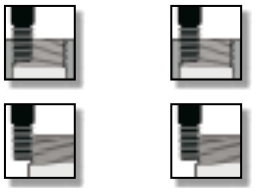
GFM

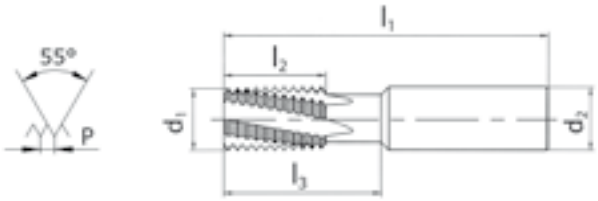
GFM6260 R15

GFM6260VS R15 VS









d_1 mm	P TPI	∅" D_1 G	l_1 mm	l_2 mm	l_3 mm	d_2 mm		GFM6260 ID	GFM6260VS ID
10	**19**	1/4 - 3/8	70	16.0	26	10	4	**118655**	**135280**
16	**14**	1/2 - 7/8	90	25.4	42	16	4	**118678**	**135281**
20	**11**	≥ 1	105	32.3	52	20	5	**118691**	**135282**

NPT, NPTF ANSI B1.20.1 ANSI B1.20.3

VHM CAR



HB HE sur demande auf Anfrage on request su richiesta sobre pedido

GFM

	GFM6260	GFM6260VS
	R1.5	R1.5 VS

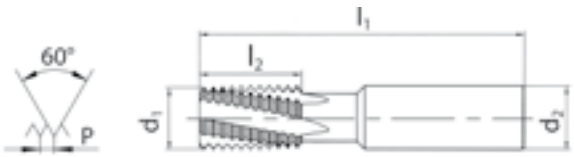










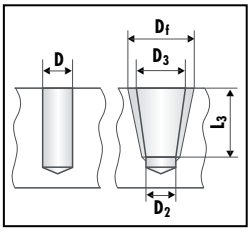






d_1 mm	P TPI	Ø" D_1 ≥ NPT	l_1 mm	l_2 mm	d_2 mm		GFM6260 ID	GFM6260VS ID
14.5	14	1/2	90	19.1	16	4	135323	135324
18.5	11.5	1	90	23.2	20	5	135325	135326

d_1 mm	P TPI	Ø" D_1 ≥ NPTF	l_1 mm	l_2 mm	d_2 mm		GFM6260 ID	GFM6260VS ID
14.5	14	1/2	90	19.1	16	4	* 135327	* 135328
18.5	11.5	1	90	23.2	20	5	* 135329	* 135330



	Vorbohrung Core hole			
Ø D_1	D	D_2	NPT D_3 (+0.05)	NPTF D_3 (+0.05)
1/2	17.9	17.5	18.32	18.33
3/4	23.2	22.8	23.67	23.68
1	29.0	28.6	29.69	29.72
1 1/4	37.7	37.3	38.45	38.48
1 1/2	44.0	43.5	44.52	44.55
2	56.0	55.5	56.56	56.59

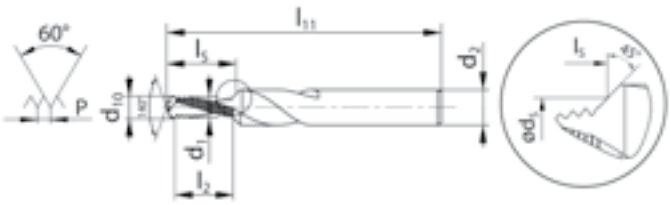
Fräsen Milling	
D_f	L_3
20.37	13.57
25.69	14.05
32.18	16.79
40.90	17.30
49.67	17.30
58.99	17.70

BGF

BGF6760 — R27 · 45° ·

BGF6760VS — R27 · 45° · VS

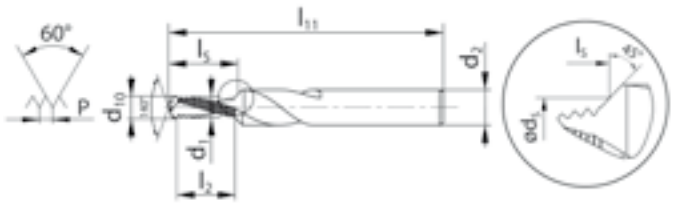




∅ D_1 M	P mm	d_1 mm	d_{10} mm	l_{11} mm	l_2 mm	l_s mm	d_s mm	d_2 mm		BGF6760 ID	BGF6760VS ID
4	**0.70**	3.10	3.30	48	5.6	7.4	4.1	6	2	**153400**	**153415**
5	**0.80**	4.00	4.20	54	7.2	9.4	5.1	6	2	**153401**	**153416**
6	**1.00**	4.75	5.00	62	9.0	11.7	6.2	8	2	**153402**	**153417**
8	**1.25**	6.50	6.75	74	11.2	14.6	8.2	10	2	**151911**	**153418**
10	**1.50**	8.25	8.50	80	14.9	19.1	10.3	12	2	**153403**	**151442**
12	**1.75**	9.95	10.25	90	17.4	22.1	12.3	14	2	**153404**	**153419**
14	**2.00**	11.60	12.00	102	19.9	25.1	14.4	16	2	* **153405**	* **153420**
16	**2.00**	13.60	14.00	102	23.9	29.5	16.4	18	2	* **153406**	* **153421**

BGF

BGF6765	R27	45°		
BGF6765VS	R27	45°		VS
BGF6766	R27	45°		
BGF6766VS	R27	45°		VS



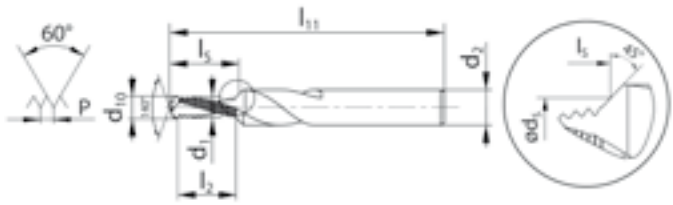
BGF6765	BGF6765VS	BGF6766	BGF6766VS
			
			
			
			
			

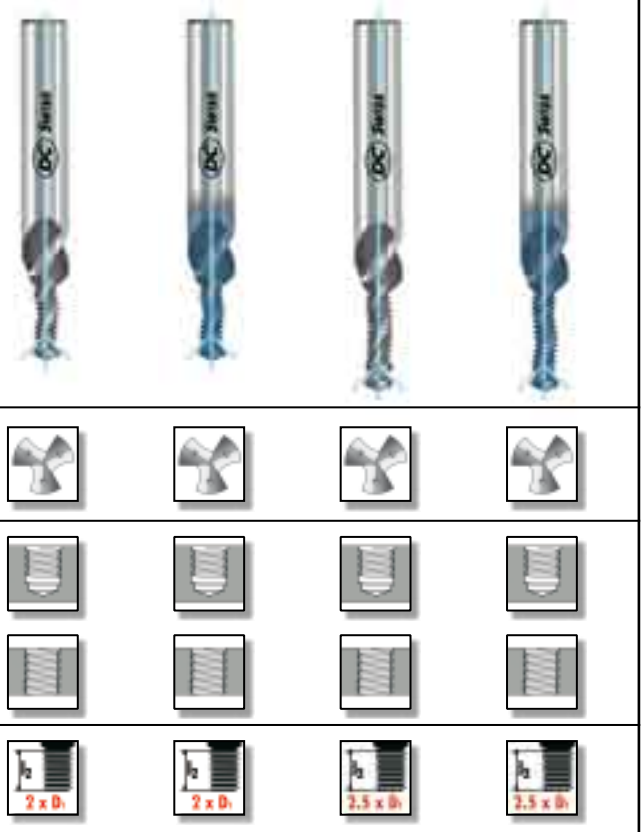
∅ D_1 M	P mm	d_1 mm	d_{10} mm	l_{11} mm	l_2 mm	l_s mm	d_s mm	d_2 mm		ID	ID
4	0.70	3.10	3.30	48	7.7	9.5	4.1	6	2	153430	153442
5	0.80	4.00	4.20	54	9.6	11.8	5.1	6	2	151305	151306
6	1.00	4.75	5.00	62	12.0	14.7	6.2	8	2	150933	151776
8	1.25	6.50	6.75	74	15.0	18.4	8.2	10	2	153431	150588
10	1.50	8.25	8.50	80	19.4	23.6	10.3	12	2	153432	150589
12	1.75	9.95	10.25	90	22.7	27.3	12.3	14	2	153433	150927
14	2.00	11.60	12.00	102	27.9	33.1	14.4	16	2	* 153434	* 153443
16	2.00	13.60	14.00	102	31.9	37.5	16.4	18	2	* 153435	* 151324

∅ D_1 M	P mm	d_1 mm	d_{10} mm	l_{11} mm	l_2 mm	l_s mm	d_s mm	d_2 mm		ID	ID
6	1.00	4.75	5.00	62	15.0	17.7	6.2	8	2	153451	153467
8	1.25	6.50	6.75	74	20.0	23.4	8.2	10	2	153452	153468
10	1.50	8.25	8.50	80	23.9	28.1	10.3	12	2	153453	153469
12	1.75	9.95	10.25	90	29.7	34.3	12.3	14	2	153454	153470
14	2.00	11.60	12.00	102	35.9	41.1	14.4	16	2	* 153455	* 153471
16	2.00	13.60	14.00	102	39.9	45.5	16.4	18	2	* 153456	* 153472

BGF

BGF6865	R27	45°		
BGF6865VS	R27	45°		VS
BGF6866	R27	45°		
BGF6866VS	R27	45°		VS



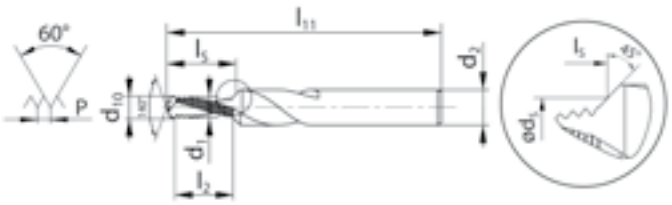


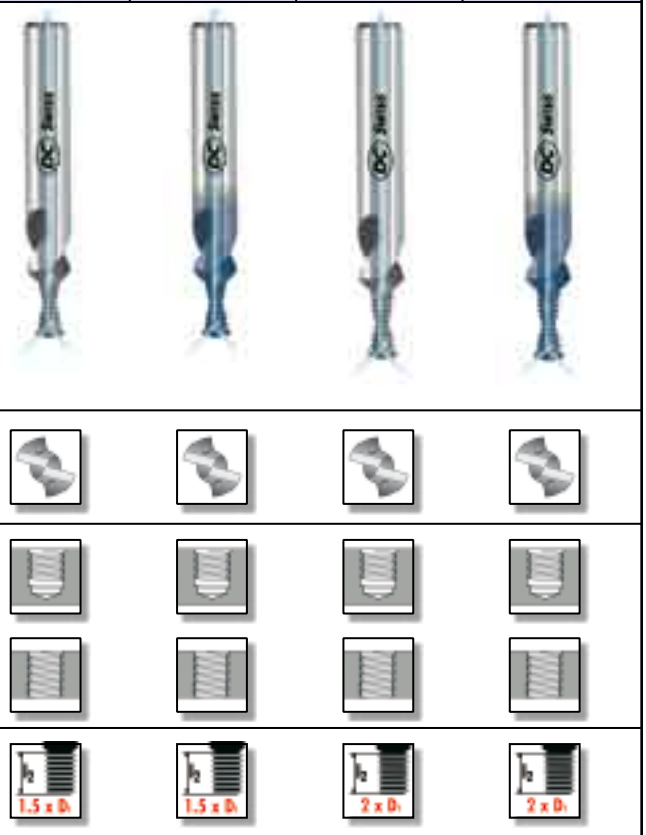
∅ D_1 M	P mm	d_1 mm	d_{10} mm	l_{11} mm	l_2 mm	l_5 mm	d_s mm	d_2 mm		BGF6865 ID	BGF6865VS ID	BGF6866 ID	BGF6866VS ID
6	1.00	4.75	5.00	62	12.0	14.7	6.2	8	3	* 153577	* 153589		
8	1.25	6.50	6.75	74	14.9	18.4	8.2	10	3	* 153578	* 153590		
10	1.50	8.25	8.50	80	19.4	23.6	10.3	12	3	* 153579	* 153591		
12	1.75	9.95	10.25	90	22.7	27.3	12.3	14	3	* 153580	* 153592		
14	2.00	11.60	12.00	102	27.9	33.1	14.4	16	3	* 153581	* 153593		
16	2.00	13.60	14.00	102	31.9	37.5	16.4	18	3	* 153582	* 153594		

∅ D_1 M	P mm	d_1 mm	d_{10} mm	l_{11} mm	l_2 mm	l_5 mm	d_s mm	d_2 mm		BGF6866 ID	BGF6866VS ID
6	1.00	4.75	5.00	62	15.0	17.7	6.2	8	3	* 153601	* 153613
8	1.25	6.50	6.75	74	20.0	23.4	8.2	10	3	* 153602	* 153614
10	1.50	8.25	8.50	80	23.9	28.1	10.3	12	3	* 153603	* 153615
12	1.75	9.95	10.25	90	29.7	34.3	12.3	14	3	* 153604	* 153616
14	2.00	11.60	12.00	102	35.9	41.1	14.4	16	3	* 153605	* 153617
16	2.00	13.60	14.00	102	39.9	45.5	16.4	18	3	* 153606	* 153618

BGF

BGF6760	R27	45°		
BGF6760VS	R27	45°		VS
BGF6765	R27	45°		
BGF6765VS	R27	45°		VS





∅ D_1 MF	P mm	d_1 mm	d_{10} mm	l_{11} mm	l_2 mm	l_s mm	d_s mm	d_2 mm		BGF6760 ID	BGF6760VS ID
6	0.75	5.00	5.25	62	9.0	11.4	6.2	8	2	* 153759	* 153780
8	1.00	6.75	7.00	74	12.0	15.0	8.2	10	2	* 153761	* 153782
10	1.00	8.75	9.00	80	15.0	18.5	10.3	12	2	* 153762	* 153783
12	1.00	10.70	11.00	90	18.0	21.9	12.3	14	2	* 153764	* 153785
12	1.50	10.20	10.50	90	17.9	22.5	12.3	14	2	* 153765	* 153786
14	1.50	12.10	12.50	102	20.9	26.0	14.4	16	2	* 153766	* 153787
16	1.50	14.10	14.50	102	23.9	29.4	16.4	18	2	* 153767	* 153788

∅ D_1 MF	P mm	d_1 mm	d_{10} mm	l_{11} mm	l_2 mm	l_s mm	d_s mm	d_2 mm		BGF6765 ID	BGF6765VS ID
6	0.75	5.00	5.25	62	9.0	11.4	6.2	8	2	* 153802	* 153824
8	1.00	6.75	7.00	74	12.0	15.0	8.2	10	2	* 153804	* 153826
10	1.00	8.75	9.00	80	15.0	18.5	10.3	12	2	* 153805	* 153827
12	1.00	10.70	11.00	90	18.0	21.9	12.3	14	2	* 153807	* 153829
12	1.50	10.20	10.50	90	17.9	22.5	12.3	14	2	* 153808	* 153830
14	1.50	12.10	12.50	102	20.9	26.0	14.4	16	2	* 153809	* 153831
16	1.50	14.10	14.50	102	23.9	29.4	16.4	18	2	* 153810	* 153832

Inhaltsverzeichnis - Runde-, Automaten-, Sechskant- und Glocken-Schneideisen
Directory - Round dies, button dies for Swiss automatics, hexagon die nuts and bell form dies

		N		MS	Z		N	Z
Merkmale Characteristics		HSS 1.75 x P	HSS 1.75 x P ≥Ø3	HSS 1.25 x P ≥Ø3	HSSE 2 x P ≥Ø2 NI	HSSE 2.25 x P ≥Ø2 NI	HSS 1.75 x P ≥Ø3	HSSE 2 x P ≥Ø2 NI
								
		N5110	N5120	MS5120	Z5120	Z5120LL	N5220	Z5220
M 6g	DIN 13	246	246		247	247	260	260
M 6e	DIN 13		246				260	
M 6g LH	DIN 13		246					
MF 6g	DIN 13	248	248-250		248-249		261	
MF 6e	DIN 13		248-249					
MF 6g LH	DIN 13		248-250					
UNC	ANSI B1.1	251	251					
UNF	ANSI B1.1	252	252					
UNEF	ANSI B1.1		253					
UN	ANSI B1.1		253					
UNS	ANSI B1.1		253					
G (BSP)	DIN ISO 228		254	255	255			
G (BSP) LH	DIN ISO 228		254					
G (BSP) -0.1 mm	DIN ISO 228			255				
R (BSPT)	DIN EN 10226		256					
NPT	ANSI B1.20.1		257					
NPTF	ANSI B1.20.3		257					
PG	DIN 40430		258					
TR	DIN 103		258					
W (BSW)	BS 84		259					
W (BSW) LH	BS 84		259					

N	
HSS 1.75 x P	HSS 1.75 x P ≥ Ø 3
	
N5310	**N5420**
262	**263**
262	
263	
263	

Piktogramme - Pictographs

HSS
HSS
HSS

HSSE
HSSE
HSSE

1.25 x P
1.25 Gewindegänge
1.25 chamfered threads

1.75 x P
1.75 Gewindegänge
1.75 chamfered threads

2 x P
2 Gewindegänge
2 chamfered threads

≥ Ø 3
Schälanschnitt ab Ø 3 mm
Peeling cut from Ø 3 mm

≥ Ø 3
Schälanschnitt, beidseitig, ab Ø 3 mm
Peeling cut on both sides from Ø 3 mm

Anzahl Spannuten
Number of flutes

Vordrehdurchmesser
Turned diameters

NI
Nitriert ($d_1 \geq 3$ mm, $P \geq 0.5$ mm)
Nitrided ($d_1 \geq 3$ mm, $P \geq 0.5$ mm)

Schneideisen mit 2 Aufschraublöchern
Die with 2 securing holes

6g
Toleranz 6g
Tolerance 6g

6e
Toleranz 6e
Tolerance 6e

MC
Toleranz "Medium Class"
Tolerance "Medium Class"

A
Toleranz A
Tolerance A

1:16
Konisches Gewinde 1:16 (NPT - NPTF - R)
Tapered thread 1:16 (NPT - NPTF - R)

LH
Linksgewinde
Left hand thread

M ISO DIN 13

HSS

DIN EN 22568

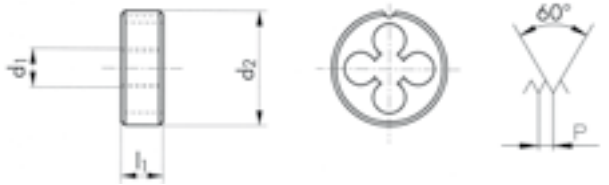
N5110

N5120

N5120 LH

N5120

LH



	N5110	N5120	N5120 LH	N5120
				
	1.75 x P	1.75 x P	1.75 x P	1.75 x P
	6g	6g	6g	6e

∅ d_1 M	P mm	d_2 mm	l_1 mm	6g	LH / 6e	→6g←	→6e←	ID	ID	ID	ID 6g - mm
1	0.25	16.0	5.0	3		0.97		103851			
1.1	0.25	16.0	5.0	3		1.07		124659			
1.2	0.25	16.0	5.0	3		1.17		103852			
1.4	0.30	16.0	5.0	3		1.36		103853			
1.6	0.35	16.0	5.0	3		1.54		103855			
1.7	0.35	16.0	5.0	3		1.64		103856			
1.8	0.35	16.0	5.0	3		1.74		103857			
2	0.40	16.0	5.0	3		1.93	1.90	103864			
2.2	0.45	16.0	5.0	3		2.13		103867			
2.3	0.40	16.0	5.0	3		2.23		103869			
2.5	0.45	16.0	5.0	3		2.43	2.40	103872			
2.6	0.45	16.0	5.0	3		2.53		103876			
3	0.50	20.0	5.0	3	4	2.92	2.90	103879	104067	104068	104066 0.030
3.5	0.60	20.0	5.0	3	4	3.41	3.38	103880	104071	104072	* 104070 0.030
4	0.70	20.0	5.0	3	4	3.91	3.87	103881	104114	104115	104113 0.035
4.5	0.75	20.0	7.0	4		4.40		103882	104117		
5	0.80	20.0	7.0	4	4	4.90	4.87	103883	104146	104147	104145 0.035
5.5	0.90	20.0	7.0	4		5.40		103884			
6	1.00	20.0	7.0	4	4	5.88	5.85	103885	104165	104166	104164 0.035
7	1.00	25.0	9.0	4	4	6.88		103886	104174	104175	
8	1.25	25.0	9.0	4	4	7.87	7.83	103887	104186	104187	104185 0.035
9	1.25	25.0	9.0	4		8.87		103888	104191		
10	1.50	30.0	11.0	4	4	9.85	9.82	103858	103953	103954	103952 0.035
12	1.75	38.0	14.0	4	4	11.83	11.80	103859	103973	103974	103972 0.035
14	2.00	38.0	14.0	4	4	13.82		103860	103989	103990	
16	2.00	45.0	18.0	4	4	15.82	15.79		104003	104004	* 104002 0.035
18	2.50	45.0	18.0	5		17.79		* 103862	104015		
20	2.50	45.0	18.0	5	5	19.79		103878	104028	104029	
22	2.50	55.0	22.0	5		21.79			104035		
24	3.00	55.0	22.0	5	5	23.76			104043	104044	
27	3.00	65.0	25.0	5		26.76			104058		
30	3.50	65.0	25.0	5	5	29.73			104079	104080	
33	3.50	65.0	25.0	6		32.73			104089		
36	4.00	65.0	25.0	7		35.70			104100		

≤ M1.4 6h

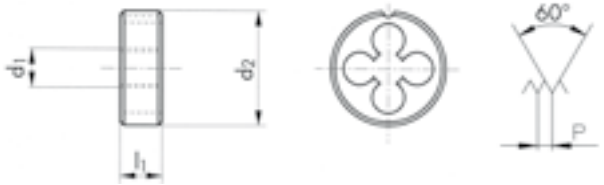
M ISO DIN 13

HSSE

DIN EN 22568

Z5120	≥ ∅2 · NI · 13 14 21
Z5120 LL	≥ ∅2 · NI · 13 14 15 21





2 x P · 2.25 x P

6g · 6g

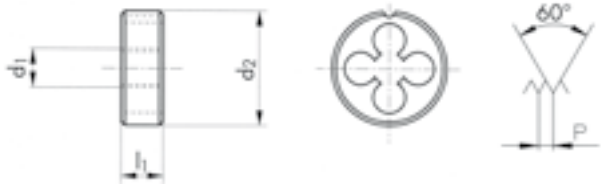
∅ d_1 M	P mm	d_2 mm	l_1 mm	Z5120	Z5120LL	→6g←	ID	ID
2	0.40	16.0	3.5	4	4	1.93	125269	105115
2.5	0.45	16.0	5.0	4	4	2.43	104779	105116
2.6	0.45	16.0	5.0	4		2.53	104780	
3	0.50	20.0	5.0	4	5	2.92	104788	105117
3.5	0.60	20.0	5.0	4		3.41	104789	
4	0.70	20.0	5.0	4	5	3.91	104790	105118
5	0.80	20.0	7.0	4	5	4.90	104792	105119
6	1.00	20.0	7.0	4	5	5.88	104795	105120
7	1.00	25.0	9.0	4		6.88	111424	
8	1.25	25.0	9.0	5	6	7.87	104798	105121
10	1.50	30.0	11.0	5	6	9.85	104767	105122
12	1.75	38.0	14.0	5	6	11.83	104770	105123
14	2.00	38.0	14.0	5		13.82	104773	
16	2.00	45.0	18.0	5		15.82	104776	
18	2.50	45.0	18.0	5		17.79	104778	
20	2.50	45.0	18.0	5		19.79	104783	
24	3.00	55.0	22.0	6		23.76	104787	

MF ISO DIN 13

N HSS Z HSSE

DIN EN 22568

N5120	≥ ∅3		11 12
N5120 LH	≥ ∅3	LH	11 12
N5120	≥ ∅3		11 12
Z5120	≥ ∅2	NI	13 14 21



	N5120	N5120 LH	N5120	Z5120
				
	1.75 x P	1.75 x P	1.75 x P	2 x P
	6g	6g	6e	6g

∅ d_1 MF	P mm	d_2 mm	l_1 mm	N	Z	→6g←	→6e←	ID	ID	ID	6g - mm	ID
* 2	0.25	16.0	5.0	4		1.93		103863				
* 2.5	0.35	16.0	5.0	4		2.44		103871				
3	0.35	20.0	5.0	4		2.94		104064				
3.5	0.35	20.0	5.0	4		3.44		104069				
4	0.35	20.0	5.0	4		3.94		104108				
4	0.50	20.0	5.0	4		3.93		104110				
4.5	0.50	20.0	5.0	4		4.43		104116				
5	0.50	20.0	5.0	4	4	4.93	4.90	104141	104142	104140	0.030	104791
5	0.75	20.0	7.0	4		4.90		104143				
5.5	0.50	20.0	5.0	4		5.43		104148				
6	0.50	20.0	5.0	4		5.93		104159	104160			104793
6	0.75	20.0	7.0	4	4	5.90		104162	104163			104794
7	0.50	25.0	9.0	4	4	6.93		104169				
7	0.75	25.0	9.0	4		6.90	6.87	104171		* 104170	0.035	
8	0.50	25.0	9.0	5		7.93		104177				
8	0.75	25.0	9.0	4	4	7.90		104180				104796
8	1.00	25.0	9.0	4	4	7.88	7.85	104183	104184	104182	0.035	104797
9	0.50	25.0	9.0	5		8.93		104188				
9	0.75	25.0	9.0	5		8.90		104189				
9	1.00	25.0	9.0	5		8.88		104190				
10	0.50	30.0	11.0	5		9.93		103942				
10	0.75	30.0	11.0	5	5	9.90	9.87	103945		* 103944	0.035	104765
10	1.00	30.0	11.0	5	5	9.88	9.85	103948	103949	103947	0.035	104766
10	1.25	30.0	11.0	4		9.86		103950	103951			
11	0.75	30.0	11.0	5		10.90		103956				
11	1.00	30.0	11.0	5		10.88		103957				
11	1.25	30.0	11.0	5		10.87		103958				
12	0.50	38.0	10.0	5		11.93		103960				
12	0.75	38.0	10.0	5		11.90	11.87	103962		* 103961	0.035	
12	1.00	38.0	10.0	5	5	11.88	11.85	103965	103966	103964	0.035	104768
12	1.25	38.0	10.0	4		11.86		103967	103968			
12	1.50	38.0	10.0	4	5	11.85		103970	103971			104769
13	1.00	38.0	10.0	5		12.88		103976				

* N5110

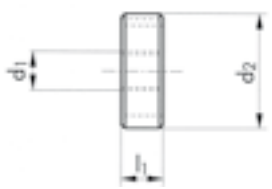
P 0.25 6h

MF ISO DIN 13

N HSS Z HSSE

DIN EN 22568

N5120	≥Ø3		11 12
N5120 LH	≥Ø3	LH	11 12
N5120	≥Ø3		11 12
Z5120	≥Ø2	NI	13 14 21







∅ d_1 MF	P mm	d_2 mm	l_1 mm	N	Z	→6g←	→6e←	N5120 ID	N5120 LH ID	N5120 ID	6g - mm	Z5120 ID
												
								1.75 x P	1.75 x P	1.75 x P		2 x P
								6g	6g	6e		6g
14	0.50	38.0	10.0	5		13.93		103977				
14	0.75	38.0	10.0	5		13.90		103979				
14	1.00	38.0	10.0	5	5	13.88		103981	103982			104771
14	1.25	38.0	10.0	5		13.86		103983				
14	1.50	38.0	10.0	5	5	13.85		103986	103987			104772
15	1.00	38.0	10.0	5		14.88		103991				
15	1.50	38.0	10.0	5		14.85		103992				
16	1.00	45.0	14.0	5	5	15.88	15.85	103996	103997	* 103995	0.035	104774
16	1.25	45.0	14.0	5		15.87		103998				
16	1.50	45.0	14.0	5	5	15.85		104000	104001			104775
17	1.00	45.0	14.0	5		16.88		104005				
18	1.00	45.0	14.0	5		17.88		104008				
18	1.50	45.0	14.0	5	5	17.85		104011	104012			
18	2.00	45.0	14.0	5		17.82		104013				
19	1.00	45.0	14.0	6		18.88		104017				
20	1.00	45.0	14.0	6	6	19.88		104021	104022			104781
20	1.50	45.0	14.0	6	6	19.85		104024	104025			104782
20	2.00	45.0	14.0	6		19.82		104026	* 104027			
21	1.00	45.0	14.0	7		20.88		111386				
22	1.00	55.0	16.0	6		21.88		104030				
22	1.50	55.0	16.0	5	6	21.85		104032				
22	2.00	55.0	16.0	5		21.82		104034				
23	1.00	55.0	16.0	6		22.88		121704				
24	1.00	55.0	16.0	6		23.88		104037				
24	1.50	55.0	16.0	6	6	23.85		104039				
24	2.00	55.0	16.0	6		23.82		104041	104042			
25	1.00	55.0	16.0	6		24.88		104045				
25	1.50	55.0	16.0	6		24.85		104046				
26	1.00	55.0	16.0	7		25.88		104049				
26	1.50	55.0	16.0	6		25.85		104050				
26	2.00	55.0	16.0	6		25.82		104052				
27	1.00	65.0	18.0	6		26.88		104053				
27	1.50	65.0	18.0	6		26.85		104054	* 104055			
27	2.00	65.0	18.0	6		26.82		104056				

MF ISO DIN 13

HSS

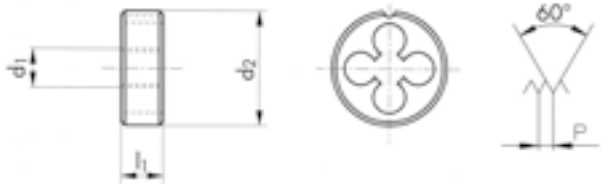
DIN EN 22568

N5120

N5120 LH

LH





∅ d_1 MF	P mm	d_2 mm	l_1 mm		→6g←	N5120 ID	N5120 LH ID
28	1.00	65.0	18.0	6	27.88	104060	
28	1.50	65.0	18.0	6	27.85	104061	
30	1.00	65.0	18.0	7	29.88	104073	
30	1.50	65.0	18.0	6	29.85	104074	
30	2.00	65.0	18.0	6	29.82	104076	
32	1.50	65.0	18.0	7	31.85	104082	* 104083
33	1.50	65.0	18.0	7	32.85	104085	
33	2.00	65.0	18.0	7	32.82	104086	
33	3.00	65.0	25.0	7	32.76	* 104088	
34	1.50	65.0	18.0	7	33.85	104091	
35	1.50	65.0	18.0	8	34.85	104092	* 104093
36	1.50	65.0	18.0	8	35.85	104095	* 104096
36	2.00	65.0	18.0	8	35.82	104097	
36	3.00	65.0	25.0	7	35.76	104099	
38	1.50	75.0	20.0	7	37.85	104101	
39	1.50	75.0	20.0	7	38.85	104104	
40	1.50	75.0	20.0	8	39.85	104118	* 104119
40	2.00	75.0	20.0	7	39.82	104120	
42	1.50	75.0	20.0	8	41.85	104122	
42	3.00	75.0	20.0	8	41.76	104125	
45	1.50	90.0	22.0	7	44.85	104127	
45	2.00	90.0	22.0	7	44.82	104129	
48	1.50	90.0	22.0	8	47.85	104133	* 104134
48	2.00	90.0	22.0	8	47.82	104135	
48	3.00	90.0	22.0	7	47.76	104137	
50	1.50	90.0	22.0	8	49.85	104150	
60	2.00	105.0	22.0	9	59.82	104168	

UNC ANSI B1.1

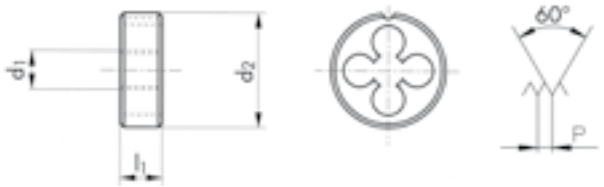
HSS

DIN EN 22568

N5110

N5120







N5110	N5120
1.75 x P	1.75 x P
2A	2A

Ø" d_1 UNC	P TPI	d_2 mm	l_1 mm		→2A←	ID	ID
1	64	16.0	5.0	3	1.79	103893	
2	56	16.0	5.0	4	2.12	103894	
3	48	16.0	5.0	4	2.44	103895	
4	40	16.0	5.0	4	2.76	103896	
5	40	20.0	5.0	4	3.09		104263
6	32	20.0	7.0	4	3.41		104266
8	32	20.0	7.0	4	4.07		104269
10	24	20.0	7.0	4	4.71		104258
12	24	20.0	7.0	4	5.37		104259
1/4	20	20.0	7.0	4	6.22		104256
5/16	18	25.0	9.0	4	7.80		104264
3/8	16	30.0	11.0	4	9.37		104262
7/16	14	30.0	11.0	4	10.95		104267
1/2	13	38.0	14.0	4	12.52		111387
9/16	12	38.0	14.0	4	14.10		104270
5/8	11	45.0	18.0	4	15.68		104265
3/4	10	45.0	18.0	5	18.84		104261
7/8	9	55.0	22.0	5	22.00		104268
1	8	55.0	22.0	5	25.16		104257
1 1/4	7	65.0	25.0	6	31.49		104251
1 1/2	6	75.0	30.0	6	37.81		104250
2	4.5	90.0	36.0	7	50.45		* 104260

UNF ANSI B1.1

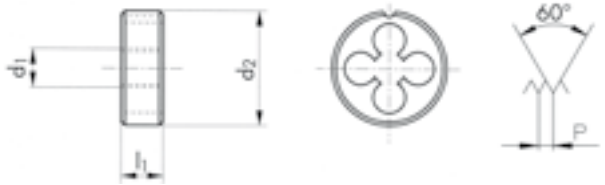
HSS

DIN EN 22568

N5110

N5120





	N5110	N5120		
				
	1.75 x P	1.75 x P		
	2A	2A		

Ø" d_1 UNF	P TPI	d_2 mm	l_1 mm		→2A←	ID	ID
0	**80**	16.0	5.0	3	1.47	**103897**	
1	**72**	16.0	5.0	3	1.79	**103898**	
2	**64**	16.0	5.0	4	2.12	**103899**	
3	**56**	16.0	5.0	4	2.44	**103900**	
4	**48**	16.0	5.0	4	2.77	**103901**	
5	**44**	20.0	5.0	4	3.10		**104299**
6	**40**	20.0	5.0	4	3.42		**104302**
8	**36**	20.0	7.0	4	4.08		**104305**
10	**32**	20.0	7.0	4	4.73		**104295**
12	**28**	20.0	7.0	4	5.38		**104296**
1/4	**28**	20.0	7.0	4	6.24		**104293**
5/16	**24**	25.0	9.0	4	7.82		**104300**
3/8	**24**	30.0	11.0	4	9.41		**104298**
7/16	**20**	30.0	11.0	5	10.98		**104303**
1/2	**20**	38.0	10.0	5	12.56		**104292**
9/16	**18**	38.0	10.0	5	14.14		**104306**
5/8	**18**	45.0	14.0	5	15.73		**104301**
3/4	**16**	45.0	14.0	6	18.89		**104297**
7/8	**14**	55.0	16.0	5	22.05		**104304**
1	**12**	55.0	16.0	6	25.21		**104294**
1 1/4	**12**	65.0	18.0	7	31.56		**104289**
1 1/2	**12**	75.0	20.0	7	37.91		**111390**

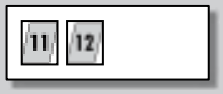
UNEF, UNS, UN ANSI B1.1

HSS

DIN EN 22568

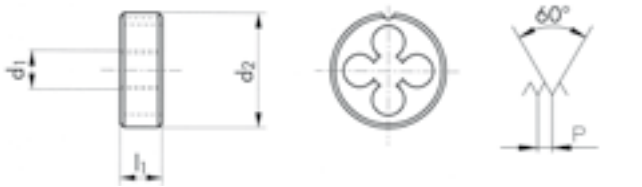
N5120





N5120









Ø" d_1 UNEF	P TPI	d_2 mm	l_1 mm		→2A←	ID
12	32	20.0	7.0	4	5.39	104278
1/4	32	20.0	7.0	4	6.25	104275
5/16	32	25.0	9.0	4	7.84	104283
3/8	32	30.0	11.0	4	9.42	104282
7/16	28	30.0	11.0	5	11.00	104285
1/2	28	38.0	10.0	5	12.59	104274
9/16	24	38.0	10.0	5	14.17	104287
5/8	24	45.0	14.0	5	15.75	104284
3/4	20	45.0	14.0	5	18.91	104281
13/16	20	45.0	14.0	6	20.50	* 104279
7/8	20	55.0	16.0	5	22.09	* 104286
1	20	55.0	16.0	6	25.26	* 104276

Ø" d_1 UNS	P TPI	d_2 mm	l_1 mm		→2A←	ID
1/4	40	20.0	5.0	4	6.26	104309
1/4	36	20.0	5.0	4	6.26	104308
7/16	24	30.0	11.0	5	10.99	104311
1/2	24	38.0	10.0	5	12.58	104307
1	14	55.0	16.0	6	25.23	104310

Ø" d_1 UN	P TPI	d_2 mm	l_1 mm		→2A←	ID
1 1/8	8	65.0	25.0	5	28.33	104246
1 1/4	8	65.0	25.0	6	31.51	104245
1 1/2	8	75.0	20.0	7	37.85	104244
1 3/4	8	90.0	22.0	7	44.20	104247

G DIN ISO 228 (BSP)

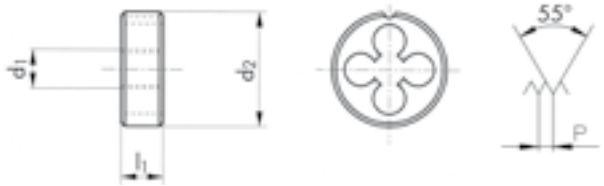
HSS

DIN EN 24231

N5120 ≥Ø3 — 11 12

N5120 LH ≥Ø3 — LH — 11 12





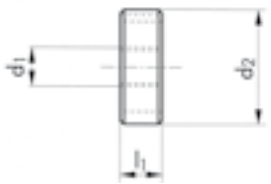


A A

Ø" G	d_1	P TPI	d_2 mm	l_1 mm		→ A ←	N5120 ID	N5120 LH ID
1/8		28	30.0	11.0	5	9.62	103926	
1/4		19	38.0	10.0	5	13.03	103924	103925
3/8		19	45.0	14.0	5	16.54	103935	103936
1/2		14	45.0	14.0	6	20.81	103922	103923
5/8		14	55.0	16.0	5	22.77	103938	
3/4		14	55.0	16.0	6	26.30	103933	103934
7/8		14	65.0	18.0	6	30.06	103940	
1		11	65.0	18.0	7	33.07	103928	
1 1/4		11	75.0	20.0	8	41.73	103918	
1 3/8		11	90.0	22.0	7	44.14	* 103921	
1 1/2		11	90.0	22.0	8	47.62	103917	
2		11	105.0	22.0	9	59.43	103932	
2 1/2		11	120.0	22.0	10	74.97	103930	

G DIN ISO 228 (BSP)

Z HSSE | MS HSS | DIN EN 24231

	Z5120	MS5120	MS5120
	≥ ∅2	≥ ∅3	≥ ∅3
	NI		
	13 14 21	∅2	∅2
			
			
	2 x P	1.25 x P	1.25 x P
	A	A	A - 0.1 mm

∅" G	d_1	P TPI	d_2 mm	l_1 mm	Z	MS	→ A ←	ID	ID	ID
	1/8	28	30.0	11.0	5	5	9.62	104761	* 101339	* 142831
	1/4	19	38.0	10.0	5	5	13.03	104760	101338	* 142832
	3/8	19	45.0	14.0	5	5	16.54	104764	101342	119716
	1/2	14	45.0	14.0	6	6	20.81	104759	101337	119243
	3/4	14	55.0	16.0	6	6	26.30	104763	101341	119648
	1	11	65.0	18.0	8	7	33.07	104762	101340	135186
	1 1/2	11	90.0	22.0		8	47.62		* 142830	

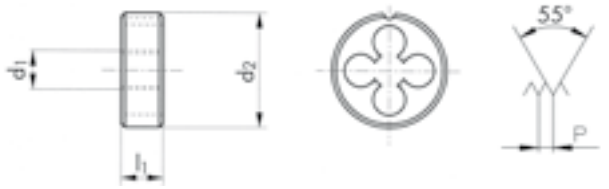
N5120





N5120





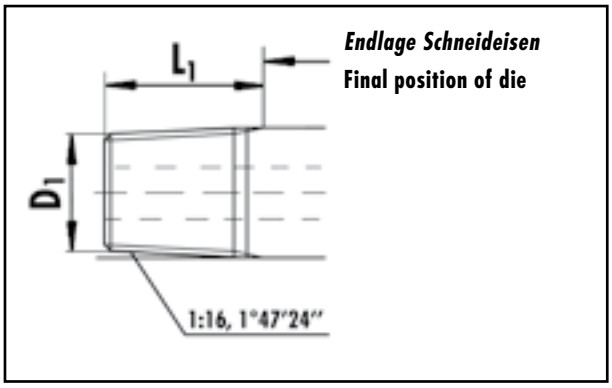




Ø" R	d_1	P TPI	d_2 mm	l_1 mm		ID
1/8		28	30.0	11.0	5	104226
1/4		19	38.0	14.0	5	104225
3/8		19	45.0	14.0	5	104230
1/2		14	45.0	18.0	6	104224
3/4		14	55.0	22.0	6	104229
1		11	65.0	25.0	7	104227

Richtwerte für den Drehdurchmesser

Turning dimensions for R threads (in mm)



Endlage Schneideisen
Final position of die

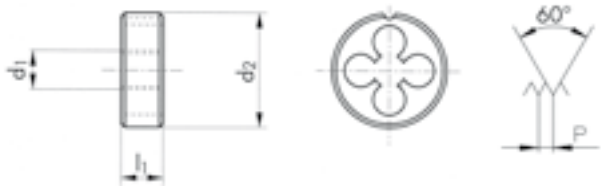
Ø" R	D_1 mini mm	D_1 maxi mm	D_1 (guide line) mm	L_1 (guide line) mm
1/8	9.422	9.534	9.48	8.2
1/4	12.700	12.863	12.78	12.1
3/8	16.181	16.343	16.26	12.5
1/2	20.330	20.555	20.44	16.4
3/4	25.735	25.960	25.85	17.7
1	32.455	32.743	32.60	20.9

NPT ANSI B1.20.1 NPTF ANSI B1.20.3

HSS

~DIN EN 22568

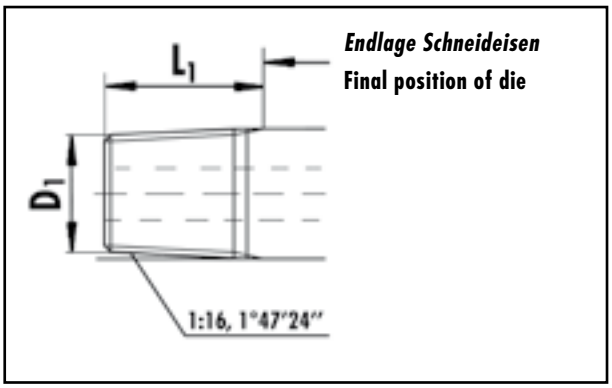
N5120	N5120	N5120		
N5120				



Ø" d_1 NPT, NPTF	P TPI	d_2 mm	l_1 mm		ID	ID
1/16	27	25.0	9.0	4	104194	
1/8	27	30.0	11.0	5	104197	* 104207
1/4	18	38.0	14.0	5	104196	
3/8	18	45.0	14.0	5	104201	
1/2	14	45.0	18.0	6	104195	* 104205
3/4	14	55.0	22.0	6	104200	
1	11.5	65.0	25.0	7	104198	* 104208
1 1/4	11.5	75.0	26.0	8	104193	

Richtwerte für den Drehdurchmesser

Turning dimensions for NPT and NPTF threads (in mm)



Endlage Schneideisen
Final position of die

Ø" NPT	D_1 mini mm	D_1 maxi mm	D_1 (guide line) mm	L_1 (guide line) mm	Ø" NPTF	D_1 mini mm	D_1 maxi mm	D_1 (guide line) mm	L_1 (guide line) mm
1/16	7.521	7.643	7.58	8.4	1/16	7.525	7.617	7.57	8.4
1/8	9.866	9.988	9.93	8.5	1/8	9.870	9.962	9.92	8.5
1/4	13.099	13.255	13.18	12.7	1/4	13.129	13.215	13.17	12.7
3/8	16.518	16.674	16.60	12.9	3/8	16.548	16.634	16.59	12.9
1/2	20.551	20.713	20.63	16.8	1/2	20.617	20.703	20.66	16.8
3/4	25.866	26.028	25.95	17.1	3/4	25.932	26.018	25.98	17.1
1	32.419	32.591	32.51	21.3	1	32.475	32.561	32.52	21.3
1 1/4	41.144	41.316	41.23	21.9					

PG DIN 40430 TR DIN 103

HSS | DIN EN 40434 | ~DIN EN 22568

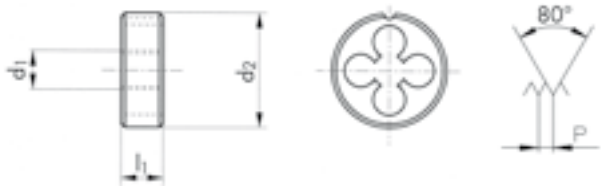
N5120 ≥Ø3 | 11 12

N5120 ≥Ø3 | 11 12

N5120 | N5120

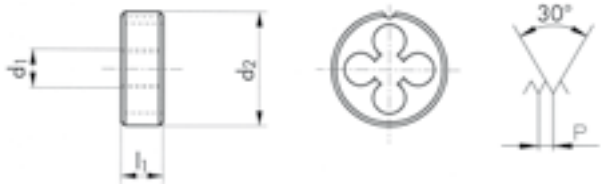
PG | TR



1.75 x P

∅ d_1 PG	P TPI	d_2 mm	l_1 mm			ID
7	20	38.0	10.0	5	12.40	104220
9	18	38.0	10.0	5	15.10	104221
11	18	45.0	14.0	5	18.50	104212
13.5	18	45.0	14.0	6	20.30	104213
16	18	55.0	16.0	5	22.40	104214
21	16	65.0	18.0	6	28.15	* 104215
29	16	65.0	18.0	8	36.85	* 104216
36	16	90.0	22.0	8	46.85	* 104217
42	16	90.0	22.0	10	53.85	* 104218
48	16	105.0	22.0	9	59.15	* 104219



1.75 x P

7e

∅ d_1 TR	P mm	d_2 mm	l_1 mm			ID
*10	2	38.0	14.0	4	9.91	* 104231
12	3	38.0	14.0	4	11.88	* 104232
16	4	45.0	18.0	4	15.85	* 104234
26	5	65.0	25.0	5	25.83	* 104239
28	5	65.0	25.0	5	27.83	* 104240
32	6	65.0	25.0	6	31.81	* 104242
36	6	65.0	25.0	6	35.81	* 104243

* ≥Ø3

W BS 84

HSS

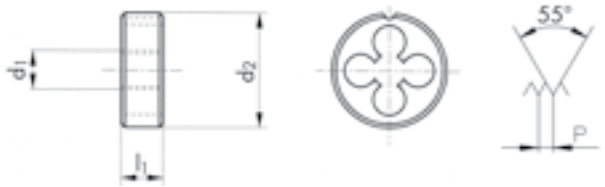
DIN EN 22568

N5120

N5120 LH

LH





1.75 x P

MC

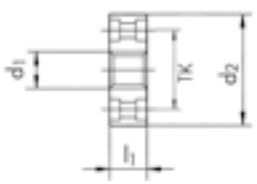
Ø" d_1 W	P TPI	d_2 mm	l_1 mm			N5120 ID	N5120 LH ID
1/8	40	20.0	5.0	4	3.09	104320	
5/32	32	20.0	7.0	4	3.88	104333	
3/16	24	20.0	7.0	4	4.66	104325	
1/4	20	20.0	7.0	4	6.24	104318	
5/16	18	25.0	9.0	4	7.82	104331	
3/8	16	30.0	11.0	4	9.40	104329	
7/16	14	30.0	11.0	4	10.98	104336	
1/2	12	38.0	14.0	4	12.56	104316	
5/8	11	45.0	18.0	4	15.72	104334	* 104335
3/4	10	45.0	18.0	5	18.89	104327	* 104328
7/8	9	55.0	22.0	5	22.10	* 104338	
1	8	55.0	22.0	5	25.27	104322	
1 3/8	6	65.0	25.0	6	34.77	* 104315	

M ISO DIN 13

N HSS Z HSSE DC

N5220	≥ Ø3		11 12	
N5220	≥ Ø3		11 12	
Z5220	≥ Ø2	NI	13 14 21	

N5220	N5220	Z5220	
			







	1.75 x P	1.75 x P	2 x P
	6g	6e	6g

∅ d_1 M	P mm	d_2 mm	l_1 mm		TK mm	→6g←	→6e←	ID	ID	6g - mm	ID
1.4	0.30	16.0	2.6	4	12.2	1.36		104346			
1.6	0.35	16.0	2.6	4	12.2	1.54		104347			
1.7	0.35	16.0	2.6	4	12.2	1.64		* 104348			
2	0.40	16.0	3.5	4	12.2	1.93	1.90	104367			
2.3	0.40	16.0	3.5	4	12.2	2.23		104369			
2.5	0.45	16.0	3.5	4	12.2	2.43	2.40	104371	* 104370	0.030	104803
2.6	0.45	16.0	3.5	4	12.2	2.53		104372			
3	0.50	16.0	3.5	4	12.2	2.92	2.90	104375	104374	0.030	104804
3.5	0.60	16.0	4.0	4	12.2	3.41		104376			
4	0.70	16.0	5.0	4	12.2	3.91	3.87	104380	104379	0.035	104805
5	0.80	20.0	7.0	4	15.0	4.90	4.87	104384	104383	0.035	104806
6	1.00	20.0	7.0	4	15.0	5.88	5.85	104388	104387	0.035	104807
7	1.00	25.0	7.0	4	19.0	6.88		* 104392			
8	1.25	25.0	9.0	4	19.0	7.87	7.83	104397	104396	0.035	104808
10	1.50	30.0	11.0	6	23.0	9.85	9.82	104354	104353	0.035	
12	1.75	30.0	11.0	6	23.0	11.83		104358			

≤ M1.4 6h

MF ISO DIN 13

HSS

DC

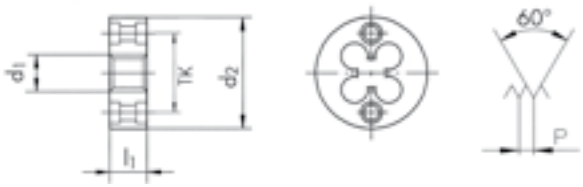
N5220





N5220









∅ d_1 MF	P mm	d_2 mm	l_1 mm		TK mm		ID
3	0.35	16.0	3.0	4	12.2	2.94	104373
4	0.35	16.0	3.5	4	12.2	3.94	* 104377
4	0.50	16.0	4.0	4	12.2	3.93	104378
5	0.50	20.0	5.0	4	15.0	4.93	104382
6	0.50	20.0	5.0	4	15.0	5.93	104385
6	0.75	20.0	7.0	4	15.0	5.90	104386
7	0.50	25.0	7.0	4	19.0	6.93	* 104389
7	0.75	25.0	7.0	4	19.0	6.90	* 104390
8	0.75	25.0	7.0	4	19.0	7.90	* 104394
8	1.00	25.0	7.0	4	19.0	7.88	* 104395
10	0.75	30.0	7.0	6	23.0	9.90	* 104350
10	1.00	30.0	7.0	6	23.0	9.88	* 104351
10	1.25	25.0	9.0	6	19.0	9.86	* 104352
12	1.00	30.0	7.0	6	23.0	11.88	* 104355
12	1.50	30.0	11.0	6	23.0	11.85	* 104356
14	1.00	35.0	10.0	6	27.5	13.88	* 104359
14	1.50	35.0	10.0	6	27.5	13.85	* 104360

M ISO DIN 13, MF ISO DIN 13

HSS

DIN 382

N5310

11 12

N5310





1.75 x P

6g

∅ d_1 M	P mm	s mm	l_1 mm			ID
3	0.50	18.0	5.0	3	2.92	104464
3.5	0.60	18.0	5.0	3	3.41	* 104465
4	0.70	18.0	5.0	3	3.91	104478
4.5	0.75	18.0	7.0	3	4.41	* 104479
5	0.80	18.0	7.0	4	4.90	104487
6	1.00	18.0	7.0	4	5.88	104493
7	1.00	21.0	9.0	4	6.88	* 104497
8	1.25	21.0	9.0	4	7.87	104502
9	1.25	21.0	9.0	5	8.87	* 104503
10	1.50	27.0	11.0	4	9.85	104438
12	1.75	36.0	14.0	4	11.83	104443
14	2.00	36.0	14.0	4	13.82	104445
16	2.00	41.0	18.0	4	15.82	104447
18	2.50	41.0	18.0	5	17.79	104450
20	2.50	41.0	18.0	5	19.79	104453
22	2.50	50.0	22.0	5	21.79	104456
24	3.00	50.0	22.0	5	23.76	104459
27	3.00	60.0	25.0	5	26.76	* 104463
30	3.50	60.0	25.0	5	29.73	104468
52	5.00	85.0	36.0	8	51.66	* 104489

∅ d_1 MF	P mm	s mm	l_1 mm			ID
6	0.75	18.0	7.0	4	5.90	* 104492
8	0.75	21.0	9.0	4	7.90	* 104500
8	1.00	21.0	9.0	4	7.88	* 104501
12	1.00	36.0	10.0	4	11.88	* 104440
20	1.50	41.0	14.0	6	19.85	* 104451
27	1.50	60.0	18.0	6	26.85	* 104461
27	2.00	60.0	18.0	6	26.82	* 104462
30	2.00	60.0	18.0	6	29.82	* 104467
33	1.50	60.0	18.0	7	32.85	* 104469
33	2.00	60.0	18.0	7	32.82	* 104470
38	1.50	70.0	20.0	8	37.85	* 104475
39	1.50	70.0	20.0	8	38.85	* 104476
40	1.50	70.0	20.0	8	39.85	* 104480
64	2.00	115.0	22.0	8	63.82	* 104495

G DIN ISO 228 (BSP) W BS 84 M ISO DIN 13

HSS DIN 382 DC

N5310	11 12					N5310	N5310		N5420
N5310	11 12								
N5420	≥ Ø3	11 12							
						1.75 x P	1.75 x P		1.75 x P
						A	MC		6g
Ø" d_1 G	P TPI	s mm	l_1 mm			ID			
1/4	19	36.0	10.0	5	13.03	104428			
3/8	19	41.0	14.0	5	16.54	104433			
1/2	14	41.0	14.0	6	20.81	104427			
5/8	14	50.0	16.0	6	22.77	* 104434			
3/4	14	50.0	16.0	6	26.30	104432			
7/8	14	60.0	18.0	6	30.06	* 104435			
1	11	60.0	18.0	7	33.07	104430			
1 3/8	11	85.0	22.0	7	44.14	* 104426			
1 3/4	11	100.0	22.0	8	53.57	* 104425			
Ø" d_1 W	P TPI	s mm	l_1 mm			ID			
1/8	40	18.0	5.0	3	3.09		* 104512		
3/16	24	18.0	7.0	3	4.66		* 104515		
7/16	14	27.0	11.0	5	10.98		* 104520		
9/16	12	36.0	14.0	4	14.14		* 104522		
7/8	9	50.0	22.0	5	22.10		* 104521		
1 3/8	6	60.0	25.0	6	34.77		* 104508		
1 1/2	6	70.0	30.0	6	37.95		* 104504		
1 3/4	5	85.0	36.0	6	44.28		* 104507		
2	4.5	85.0	36.0	7	50.63		* 104514		
Ø d_1 M	P mm	d_2 mm	l_1 mm						ID
2.5	0.45	16.0	8.0	4	2.43				* 104527
3.5	0.60	16.0	9.5	4	3.41				* 104530
4	0.70	16.0	9.5	4	3.90				* 104531
8	1.25	25.0	14.0	5	7.86				* 104535

Inhaltsverzeichnis - Gewindelehrdorne und Gewindelehrringe
Directory - Screw thread plug and ring gauges

Merkmale Characteristics								
								
		D5701-1	**D5701-2**	**D5703**		**D5720**	**D5722**	**D5725**
M 6H /6g	ISO DIN 13	266	266	266				
M 6G /6e	ISO DIN 13			266				
M 6H /6g LH	ISO DIN 13			266				
MF 6H /6g	ISO DIN 13	268-269	269	268-269				
MF 6G /6e	ISO DIN 13			268				
MF 6H /6g LH	ISO DIN 13			268				
UNC	ANSI B1.1	272		272				
UNF	ANSI B1.1	273		273				
UNEF	ANSI B1.1			273				
NPT	ANSI B1.20.1					275		
NPTF	ANSI B1.20.3					275		
G (BSP)	DIN ISO 228	274	274	274				
PG	DIN 40430							274
EG M	ISO DIN 8140			276				
EG UNC	NASM 33537			276				
EG UNF	NASM 33537			276				

			
D5704	**D5714**	**D5721**	**D5723**
267	267		
267	267		
267			
270-271	270-271		
270			
272	272		
273	273		
273	273		
		275	
		275	
274	274		
274			

Piktogramme - Pictographs

"Gut"
"Go"

"Ausschuss"
"No-go"

"Gut / Ausschuss"
"Go" / "No-go"

Toleranz 6H, "Gut"
Tolerance 6H, "Go"

Toleranz 6G, "Gut" / "Ausschuss"
Tolerance 6G, "Go" / "No-go"

Toleranz 6g, "Ausschuss"
Tolerance 6g, "No-go"

Linksgewinde
Left hand thread

M ISO DIN 13
DIN ISO 1502

D5701-1 M1 - M1.4 = 5H

D5703 M1 - M1.4 = 5H



		D5701-1	D5701-2	D5703	D5703 LH	D5703
		6H	6H	6H	6H LH	6G
∅ d_1 M	P mm	ID	ID	ID	ID	ID
1	0.25			100242		
1.1	0.25			100243		
1.2	0.25			100244		
1.4	0.30			100245		
1.6	0.35			100246	* 110168	
1.7	0.35			100247		
1.8	0.35			100248	* 110169	
2	0.40			100278	105159	104982
2.2	0.45			100280		
2.3	0.40			100281		
2.5	0.45			100283	105160	104979
2.6	0.45	* 100064		100285		
3	0.50			100310	104964	104976
3.5	0.60			100312		104977
4	0.70			100333	104966	104978
4.5	0.75	* 100114				
5	0.80			100348	104967	104980
6	1.00			100363	104968	104981
7	1.00			100369	* 110186	
8	1.25			100373	104969	104983
9	1.25			100375		
10	1.50			100253	104970	104984
11	1.50			* 100256		
12	1.75			100261	104971	104985
14	2.00	* 100045		100266		104986
16	2.00			100271	104973	104987
18	2.50	* 100055		100276		* 104988
20	2.50	* 100068		100289	104975	104989
22	2.50	* 100072		100293	* 110178	
24	3.00	* 100076		100297	110179	
27	3.00			100305	* 110180	
30	3.50			100316		
33	3.50	* 100101		100322		
36	4.00	* 100107		100328		
39	4.00	* 100109		100330		
42	4.50	100119	142843			
45	4.50	100122	142844			
48	5.00	100125	142845			
52	5.00	100132	142846			
56	5.50	100137	142847			

M ISO DIN 13
DIN ISO 1502

D5704 M1 - M1.4 = 6h

D5714 M1 - M1.4 = 6h

		D5704	D5704 LH	D5704	D5714	D5714
						
		6g	6g LH	6e	6g	6e
∅ d_1 M	P mm	ID	ID	ID	ID	ID
1	0.25	100480			110419	
1.2	0.25	100481			110420	
1.4	0.30	100482			110421	
1.6	0.35	100483			110422	
1.7	0.35	100484			111439	
1.8	0.35	100485			110423	
2	0.40	100515	105006	* 104997	100734	* 142833
2.2	0.45	100517			100735	
2.3	0.40	100518			100736	
2.5	0.45	100520		* 104991	100737	* 142834
2.6	0.45	100522			100738	
3	0.50	100547	105001	* 104990	100763	* 142835
3.5	0.60	100549	110302	* 110301	100765	* 142836
4	0.70	100570	105003	* 104992	100774	* 142837
5	0.80	100585	105004	* 104993	100778	* 143406
6	1.00	100600	105005	* 104994	100781	* 135556
7	1.00	100605	* 126560	* 104995	100783	* 142840
8	1.25	100611	105007	* 104996	100786	* 142841
9	1.25	100610			100788	
10	1.50	100490	105008	* 104998	100711	* 142842
11	1.50	* 100493			* 100713	
12	1.75	100498	105009		100718	
14	2.00	100503	105010		100723	
16	2.00	100508	105011	* 105000	100728	
18	2.50	100513	105012		100733	
20	2.50	100526	105013		100742	
22	2.50	100530	110298		100746	
24	3.00	100534			100750	
27	3.00	100542			100758	
30	3.50	100553			100769	
33	3.50	* 100559			* 100770	
36	4.00		* 110305			
39	4.00				* 110440	
42	4.50	* 100577				
45	4.50	* 100580			* 110448	
48	5.00				* 110451	
52	5.00	* 100590			* 110456	
56	5.50	* 100595			* 110461	

MF ISO DIN 13
DIN ISO 1502

		D5701-1	D5703	D5703 LH	D5703		
							
		6H	6H	6H LH	6G		
∅ d_1 MF	P mm	ID	ID	ID	ID		
2.5	0.35		100282				
3	0.35		100309				
4	0.35		100331				
4	0.50		100332				
4.5	0.50		* 100334				
5	0.50		100347	105016	105045		
6	0.50	* 100140	100361	110184			
6	0.75		100362		105046		
7	0.50		100367				
7	0.75	* 100147	100368				
8	0.50	* 100149	100370				
8	0.75		100371	105018	105047		
8	1.00	* 100151	100372	105019	105048		
9	1.00		100374				
10	0.50		100249				
10	0.75		100250				
10	1.00		100251	105020	105049		
10	1.25	* 100031	100252				
11	0.75	* 100033					
11	1.00	* 100034	100255				
12	0.75	* 100036	100257				
12	1.00		100258	105021	105050		
12	1.25		100259				
12	1.50	* 100039	100260	105022			
14	1.00		100263	110171			
14	1.25		100264				
14	1.50	* 100044	100265	105023	105052		
15	1.00	* 100046	100267				
15	1.50		100268				
16	1.00		100269	110172			
16	1.50	* 100049	100270	105024	105053		
17	1.00		100272				
18	1.00		100273				
18	1.50	* 100053	100274	105025	105054		
18	2.00	* 100054	100275				
20	1.00	* 100065	100286				
20	1.50		100287	105026			
20	2.00	* 100067	100288		* 110176		
22	1.00		100290				
22	1.50		100291	110177			
22	2.00		100292				
24	1.00		100294				
24	1.50		100295				
24	2.00		100296				

MF ISO DIN 13
DIN ISO 1502

	D5701-1	D5701-2	D5703			
						
	6H	6H	6H			
∅ d_1 MF	P mm	ID	ID	ID		
25	1.00	* 100077		100298		
25	1.50			100299		
25	2.00			100300		
26	1.00			100301		
26	1.50	* 100081		100302		
27	1.50	* 100082		100303		
27	2.00	* 100083		100304		
28	1.00			100306		
28	1.50	* 100086		100307		
28	2.00	* 100087		100308		
30	1.00	* 100092		100313		
30	1.50			100314		
30	2.00			100315		
32	1.00			100317		
32	1.50	* 100097		100318		
32	2.00			100319		
33	1.50			100320		
33	2.00	* 100100		100321		
35	1.50	* 100102		100323		
36	1.50	* 100104		100325		
36	2.00			100326		
36	3.00			100327		
38	1.50	* 100108		100329		
40	1.50			100336		
40	2.00			100337		
42	1.50	100117	142848			
42	2.00	100118	142849			
45	1.50	100120	110127			
45	2.00	100121	142851			
48	1.50	100123	123180			
48	2.00	100124	142853			
50	1.50	100128	142854			
50	2.00	100129	142855			
52	1.50	100130	123428			
52	2.00	100131	142857			
55	1.50	100133	123468			
55	2.00	100134	142859			
56	1.50	100135	142860			
56	2.00	100136	142861			
58	1.50	100138	142862			
58	2.00	100139	142863			
60	1.50	100143	142864			
60	2.00	100144	142865			

MF ISO DIN 13 DIN ISO 1502

		D5704	D5704 LH	D5714			
							
		6g	6g LH	6g			
∅ d_1 MF	P mm	ID	ID	ID			
2.5	0.35	100519		110427			
3	0.35	100546		100762			
3.5	0.35	100548		100764			
4	0.35	100568		100772			
4	0.50	100569		100773			
4.5	0.50	100571		100775			
5	0.50	100584	105057	100777			
6	0.50	100598	110307	100779			
6	0.75	100599	105058	100780			
7	0.50	100603		110467			
7	0.75	100604		100782			
8	0.50	100606					
8	0.75	100607	* 105059	100784			
8	1.00	100608	105060	100785			
9	1.00	100609		100787			
10	0.50	100486		100707			
10	0.75	100487		100708			
10	1.00	100488	105061	100709			
10	1.25	100489		100710			
11	1.00	100492		100712			
12	0.75	100494		100714			
12	1.00	100495	105062	100715			
12	1.25	100496		100716			
12	1.50	100497	105063	100717			
13	1.00	100499		100719			
14	1.00	100500	110290	100720			
14	1.25	100501		100721			
14	1.50	100502	105064	100722			
15	1.00	100504		100724			
15	1.50	100505		100725			
16	1.00	100506	110292	100726			
16	1.50	100507	105065	100727			
17	1.00	100509		100729			
18	1.00	100510		100730			
18	1.50	100511	105066	100731			
20	1.00	100523	110295	100739			
20	1.50	100524	105067	100740			
20	2.00	100525		100741			
22	1.00	100527		100743			
22	1.50	100528		100744			
22	2.00	100529		100745			
24	1.00	100531		100747			
24	1.50	100532		100748			
24	2.00	100533					

MF ISO DIN 13
DIN ISO 1502

		D5704	D5714				
							
		6g	6g				
∅ d_1 MF	P mm	ID	ID				
25	1.00	100535					
25	1.50	100536					
26	1.00	100538	* 100754				
26	1.50	100539	* 100755				
27	1.50	100540	* 100756				
27	2.00	100541	* 100757				
28	1.00	100543					
28	1.50	100544	* 100760				
30	1.00	100550					
30	1.50	100551					
30	2.00	100552	* 100768				
32	1.00	100554					
32	1.50	100555					
32	2.00	100556	* 110431				
33	1.50	100557	* 110432				
33	2.00	100558	* 110433				
35	1.50	100560					
36	1.50	100562					
36	2.00	100563					
36	3.00	100564					
38	1.50	100566	* 110439				
40	1.50	100573	* 110441				
42	1.50	100575					
42	2.00	100576					
45	1.50	100578					
45	2.00	100579	* 110447				
48	1.50	100581	* 110449				
48	2.00	100582					
50	1.50	100586	* 110452				
50	2.00	100587	* 110453				
52	1.50		* 110454				
52	2.00	100589					
55	1.50	100591					
55	2.00	100592	* 110458				
56	1.50	100593	* 110459				
56	2.00	100594	* 110460				
58	1.50	100596					
58	2.00	100597	* 110463				
60	1.50	100601	* 110464				
60	2.00	105014					

UNC ANSI B1.1 ANSI B1.2

	D5701-1	D5703	D5704	D5714		
						
	2B	2B	2A	2A		
Ø" d_1 UNC / P TPI	ID	ID	ID	ID		
1 / 64		100408	110347	110473		
2 / 56	* 110076	100414	110353	110479		
3 / 48	* 110077	100416		* 110480		
4 / 40	* 110080	110224	110357	110483		
5 / 40		100420	* 110358	* 110484		
6 / 32	* 110084	100423	110361	110487		
8 / 32	* 110087	100426	110364	110490		
10 / 24	* 110074	100412	110351	110477		
12 / 24		100413				
1/4 / 20		100410	110349	110475		
5/16 / 18	* 110082	100421	110359	110485		
3/8 / 16	* 110079	100418	110356	110482		
7/16 / 14	* 110085	100424	110362	110488		
1/2 / 13	* 110071	100409	110348	110474		
9/16 / 12		100427	110365	* 110491		
5/8 / 11	* 110083	100422	110360			
3/4 / 10	* 110078	100417	110355	* 110481		
7/8 / 9		100425	110363	* 110489		
1 / 8	* 110073	100411	110350	* 110476		
1 1/8 / 7	* 110068	100405	* 110345	* 110471		
1 1/4 / 7	* 110067	100404	* 110344	* 110470		
1 3/8 / 6	* 110069	100407	* 110346	* 110472		
1 1/2 / 6	* 110066	100403	* 110343	* 110469		

UNF, UNEF ANSI B1.1 ANSI B1.2

	D5701-1	D5703	D5704	D5714		
						
	2B	2B	2A	2A		
Ø" d_1 UNF / P TPI	ID	ID	ID	ID		
0 80		110246	* 110378	* 110503		
1 72	* 110105	110251	110383	110508		
2 64		110256	110389	110514		
3 56	* 110112	110257	110390	110515		
4 48		110260	110393	110518		
5 44	* 110116	* 110261				
6 40		110264	110397	110522		
8 36	* 110122	110267	* 110400			
10 32		110254	110387	110512		
12 28		110255	110388	110513		
1/4 28	* 110107	110006	110385	110510		
5/16 24	* 110117	110262	110395	110520		
3/8 24	* 110114	110259	110392	110517		
7/16 20	* 110120	110265	110398	111440		
1/2 20	* 110106	110252	110384	110509		
9/16 18		110268	110401			
5/8 18	* 110118	110263	110396			
3/4 16		110258	110391	* 110516		
7/8 14		110266	110399			
1 12		128646	110386			
1 1/8 12	* 110103	110249	110381	* 110506		
1 1/4 12	* 110102	110248	110380	* 110505		
1 3/8 12	* 110104	110250	* 110382	* 110507		
1 1/2 12		110247	110379			

Ø" d_1 UNEF / P TPI		ID	ID	ID		
12	32	110238	* 110370	* 110495		
1/4	32	110236	110368	110493		
5/16	32	110241	110373	110498		
3/8	32	110240	110372	110497		
7/16	28	110243	110375	110500		
1/2	28	110235	110367	110492		
9/16	24	110245	110377	110502		
5/8	24	110242	110374	110499		
3/4	20	110239	110371	110496		
7/8	20	110244		* 110501		
1	20	110253	110369	110494		

G DIN ISO 228 (BSP) DIN EN ISO 228-2 PG DIN 40430 DIN 40431

Ø" d_1 G	P TPI	D5701-1	D5701-2	D5703	D5704	D5714	D5725
							
							
		ID	ID	ID	ID	ID	
1/8	28	* 110044		110009	110277	110408	
1/4	19			110003	110276	110407	
3/8	19	* 110052		110162	110284	110415	
1/2	14			110001	110275	110406	
5/8	14			110164	110286	110417	
3/4	14			110161	110283	110414	
7/8	14	* 110054		110165	* 110287	* 110418	
1	11			110156	110278	110409	
1 1/8	11			110154		* 110404	
1 1/4	11	110041	119459		110272		
1 1/2	11	110040	119429		110271		
1 3/4	11	110043	142868		110274	* 110405	
2	11	110050	110126		110282		
2 1/4	11					* 110411	
2 1/2	11		* 110125				
2 3/4	11					* 110412	
3	11				* 110285	* 110416	

Ø d_1 PG	P TPI				ID		ID
7	20						110216
9	18						110217
11	18						110205
13.5	18						110209
16	18				* 110330		110210
21	16				* 110331		110211
29	16				* 110332		110212

NPT, NPTF

ANSI B1.20.1 / ANSI B1.20.3
ANSI B1.20.1 / ANSI B1.20.5

	D5720	D5721				
						
						
Ø" d_1 NPT / P TPI	ID	ID				
1/16 / 27	110190	110313				
1/8 / 27	110193	110316				
1/4 / 18	110192	110315				
3/8 / 18	110197	110320				
1/2 / 14	110191	110314				
3/4 / 14	110196	110319				
1 / 11.5	110194	110317				
1 1/4 / 11.5	110189	110312				
1 1/2 / 11.5	110188	110311				
2 / 11.5	110195	110318				
Ø" d_1 NPTF / P TPI	ID	ID				
1/8 / 27	110201	* 110324				
1/4 / 18	110200	* 110323				
3/8 / 18	110204	* 110327				
1/2 / 14	110199	* 110322				
3/4 / 14	110203	* 110326				
1 / 11.5	110202	* 110325				



EG M ISO DIN 8140 ISO DIN 1502 EG UNC, EG UNF NASM 33537

	D5703	D5703	D5703			
						
	6H	3B	3B			
∅ d_1 EG M / P mm	ID					
2.5 / 0.45	110132					
3 / 0.50	110133					
4 / 0.70	110134					
5 / 0.80	110135					
6 / 1.00	110136					
8 / 1.25	110137					
10 / 1.50	110128					
12 / 1.75	110129					
16 / 2.00	110131					
∅" d_1 EG UNC / P TPI		ID				
4 / 40		170252				
6 / 32		170253				
8 / 32		170254				
10 / 24		170255				
1/4 / 20		170256				
5/16 / 18		170257				
3/8 / 16		170258				
∅" d_1 EG UNF / P TPI			ID			
6 / 40			170259			
8 / 36			170260			
10 / 32			161020			
1/4 / 28			151790			
5/16 / 24			170261			
3/8 / 24			160134			

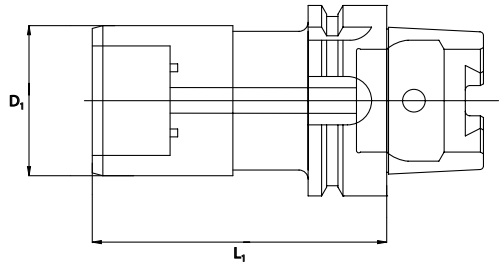

DC
SYNCHRO

SRT *Synchron-Gewindeschneidfutter mit Axial-Stossdämpfer*
Tapping chucks with axial shock absorber

Uniquement pour taraudage synchrone
Nur für Synchronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado

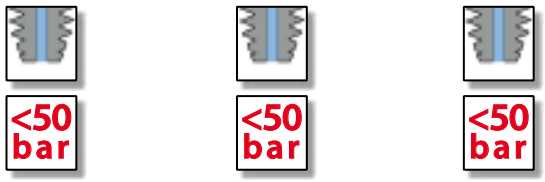
DIN 69 893 A

HSK



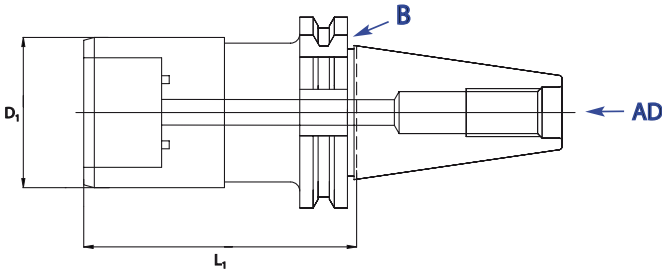
		D1 mm	L1 mm			282	SRT-HSK63-312 ID	SRT-HSK63-520 ID	SRT-HSK63-1433 ID
M3	- M12	36	72.0	HSK A 63	S1		170111		
M5	- M20	53	89.0	HSK A 63	S2			170112	
M14	- M33	78	121.0	HSK A 63	S3				170114





MAS/BT Form AD + B

BT



		D1 mm	L1 mm			282	SRT-BT40-312 ID	SRT-BT40-520 ID	SRT-BT40-1433 ID
M3	- M12	36	71.0	BT 40	S1		170133		
M5	- M20	53	85.0	BT 40	S2			170134	
M14	- M33	78	121.0	BT 40	S3				170135



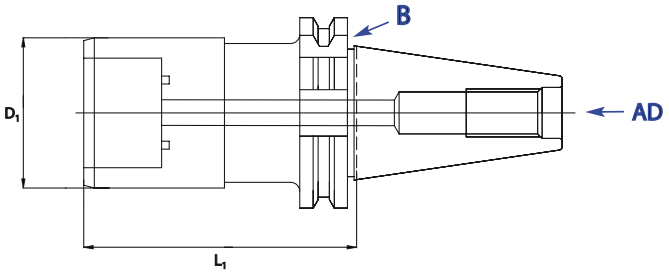


SRT *Synchron-Gewindeschneidfutter mit Axial-Stossdämpfer*
Tapping chucks with axial shock absorber

Uniquement pour taraudage synchrone
Nur für Synchronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado

DIN 69 871 Form AD + B

SK



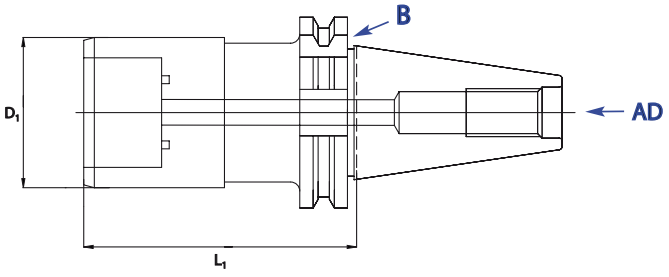
	D1 mm	L1 mm			282	SRT-SK40-312 ID	SRT-SK40-520 ID	SRT-SK40-1433 ID
M3 - M12	36	65.0	SK 40	S1		170124		
M5 - M20	53	79.0	SK 40	S2			170125	
M14 - M33	78	115.0	SK 40	S3				170126





DIN 69 871 Form AD + B

SK



	D1 mm	L1 mm			282	SRT-SK50-520 ID	SRT-SK50-1433 ID	SRT-SK50-2248 ID
M5 - M20	53	79.0	SK 50	S2		170128		
M14 - M33	78	115.0	SK 50	S3			170129	
M22 - M48	96	170.0	SK 50	S4				170130





SRT *Synchron-Gewindeschneidfutter mit Axial-Stossdämpfer*
Tapping chucks with axial shock absorber

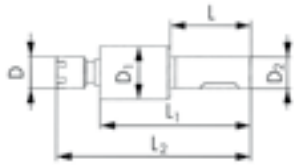
Uniquement pour taraudage synchrone
Nur für Synchronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado

DIN 1835 B

SRT032-D6	SRT054-D12	ER8

SRT nano

SRT032 / SRT054



D9865-









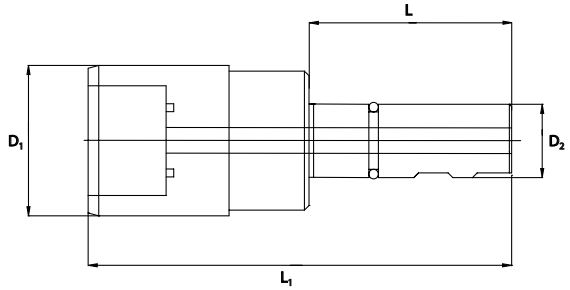
	D mm	D_1 mm	D_2 mm	L mm	L_1 mm	L_2 mm	ID	ID
M0.3 - M2	12	11	6	25	40	56.0	157610	
M0.5 - M4	12	20	12	33	59	75.0		127413

No	D_2 mm	L_3 mm	d_2 mm	ID
ER8-0200	8.5	13.5	2.0	118895
ER8-0250	8.5	13.5	2.5	118896
ER8-0300	8.5	13.5	3.0	118897
ER8-0350	8.5	13.5	3.5	118898
ER8-0400	8.5	13.5	4.0	118899
ER8-0450	8.5	13.5	4.5	118900

DIN 1835 B

SRT312-D20	SRT312-D25	SRT520-D25

SRT short











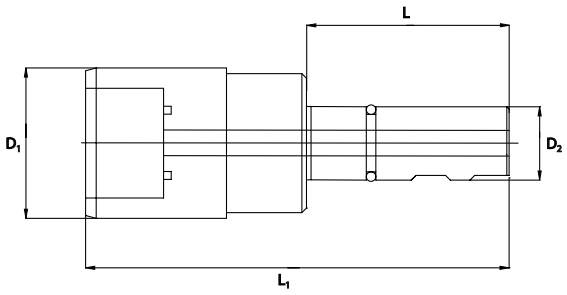
	D_1 mm	D_2 mm	L mm	L_1 mm		282	ID	ID	ID
M3 - M12	39	20	47	86.0	S1		162832		
M3 - M12	39	25	53	90.0	S1			162831	
M5 - M20	56	25	53	110.0	S2				162833

SRT *Synchron-Gewindeschneidfutter mit Axial-Stossdämpfer*
Tapping chucks with axial shock absorber

Uniquement pour taraudage synchrone
Nur für Synchronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado

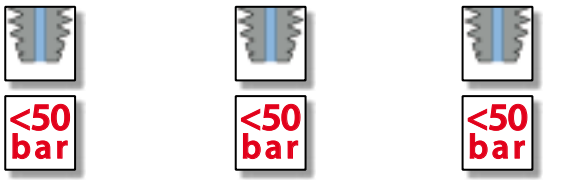
DIN 1835 B

SRT



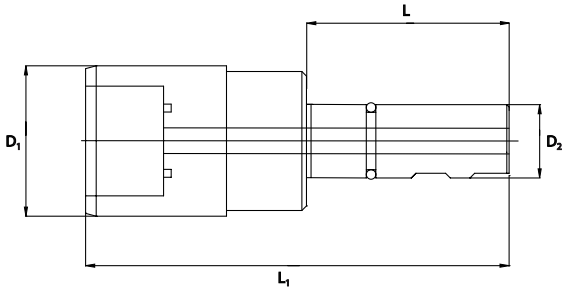
		D_1 mm	D_2 mm	L mm	L_1 mm		282	SRT-1D20-312 ID	SRT-1D25-312 ID	SRT-2D25-520 ID
M3	- M12	36	20	51.0	97	S1		170140		
M3	- M12	36	25	57.0	103	S1			170020	
M5	- M20	53	25	57.0	131	S2				170141





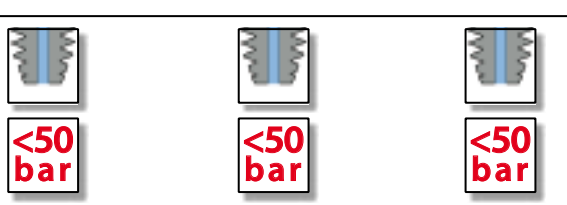
DIN 1835 B

SRT



		D_1 mm	D_2 mm	L mm	L_1 mm		282	SRT-2D32-520 ID	SRT-3D25-1433 ID	SRT-3D32-1433 ID
M5	- M20	53	32	61.5	135.5	S2		170142		
M14	- M33	78	25	57.0	164.5	S3			170143	
M14	- M33	78	32	61.5	169.0	S3				170144

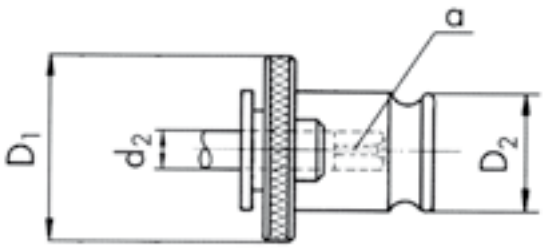




SRT *Einsätze ohne Sicherheitskupplung*
Inserts without slipping clutch

Uniquement pour taraudage synchrone
Nur für Synchronbearbeitung
Only for rigid tapping
Solo per maschiatura sincrona
Solo para roscado sincronizado

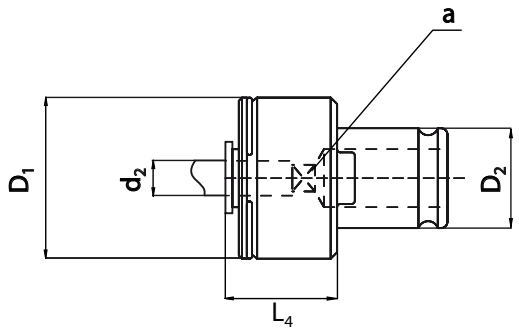
SRT





No	D_1 mm	D_2 mm	d_2 mm	a mm	S1- ID	S2- ID	S3- ID	S4- ID
S1-0028	30	19.0	2.8	2.1	129915			
S1-0035	30	19.0	3.5	2.7	129916			
S1-0045	30	19.0	4.5	3.4	129918			
S1-0060	30	19.0	6.0	4.9	129920			
S1-0070	30	19.0	7.0	5.5	129921			
S1-0080	30	19.0	8.0	6.2	129922			
S1-0090	30	19.0	9.0	7.0	129923			
S1-0100	30	19.0	10.0	8.0	129924			
S1-0110	30	19.0	11.0	9.0	129925			
S2-0060	48	31.0	6.0	4.9		129927		
S2-0070	48	31.0	7.0	5.5		129928		
S2-0080	48	31.0	8.0	6.2		129929		
S2-0090	48	31.0	9.0	7.0		129930		
S2-0100	48	31.0	10.0	8.0		129931		
S2-0110	48	31.0	11.0	9.0		148303		
S2-0120	48	31.0	12.0	9.0		129932		
S2-0140	48	31.0	14.0	11.0		129933		
S2-0160	48	31.0	16.0	12.0		129934		
S2-0180	48	31.0	18.0	14.5		151355		
S3-0110	70	48.0	11.0	9.0			170145	
S3-0120	70	48.0	12.0	9.0			170146	
S3-0140	70	48.0	14.0	11.0			170147	
S3-0160	70	48.0	16.0	12.0			170148	
S3-0180	70	48.0	18.0	14.5			170149	
S3-0200	70	48.0	20.0	16.0			170150	
S3-0220	70	48.0	22.0	18.0			170151	
S3-0250	70	48.0	25.0	20.0			170152	
S4-0180	96	60.0	18.0	14.5				170153
S4-0200	96	60.0	20.0	16.0				170154
S4-0220	96	60.0	22.0	18.0				170155
S4-0250	96	60.0	25.0	20.0				170156
S4-0280	96	60.0	28.0	22.0				170157
S4-0320	96	60.0	32.0	24.0				170158
S4-0360	96	60.0	36.0	29.0				170159

CLASSIC





No	D_1 mm	D_2 mm	d_2 mm	a mm	L_4 mm	SC1- ID	SC2- ID	SC3- ID	SC4- ID
SC1-0028	32	19.0	2.8	2.1	25	170160			
SC1-0035	32	19.0	3.5	2.7	25	170161			
SC1-0045	32	19.0	4.5	3.4	25	170162			
SC1-0060	32	19.0	6.0	4.9	25	170163			
SC1-0070	32	19.0	7.0	5.5	25	170164			
SC1-0080	32	19.0	8.0	6.2	25	170165			
SC1-0090	32	19.0	9.0	7.0	25	170166			
SC1-0100	32	19.0	10.0	8.0	25	170167			
SC2-0060	50	31.0	6.0	4.9	34		170168		
SC2-0070	50	31.0	7.0	5.5	34		170169		
SC2-0080	50	31.0	8.0	6.2	34		170170		
SC2-0090	50	31.0	9.0	7.0	34		170171		
SC2-0100	50	31.0	10.0	8.0	34		170172		
SC2-0110	50	31.0	11.0	9.0	34		170173		
SC2-0120	50	31.0	12.0	9.0	34		170174		
SC2-0140	50	31.0	14.0	11.0	34		170175		
SC2-0160	50	31.0	16.0	12.0	34		170176		
SC2-0180	50	31.0	18.0	14.5	34		170177		
SC3-0110	72	48.0	11.0	9.0	45			170178	
SC3-0120	72	48.0	12.0	9.0	45			170179	
SC3-0140	72	48.0	14.0	11.0	45			170180	
SC3-0160	72	48.0	16.0	12.0	45			170181	
SC3-0180	72	48.0	18.0	14.5	45			170182	
SC3-0200	72	48.0	20.0	16.0	45			170183	
SC3-0220	72	48.0	22.0	18.0	45			170184	
SC3-0250	72	48.0	25.0	20.0	45			170185	
SC4-0180	96	60.0	18.0	14.5	68				170186
SC4-0200	96	60.0	20.0	16.0	68				170187
SC4-0220	96	60.0	22.0	18.0	68				170188
SC4-0250	96	60.0	25.0	20.0	68				170189
SC4-0280	96	60.0	28.0	22.0	68				170190
SC4-0320	96	60.0	32.0	24.0	68				170191
SC4-0360	96	60.0	36.0	29.0	68				170192

Vollhartmetall-Spiralbohrer
Solid carbide twist drills

VHM CAR

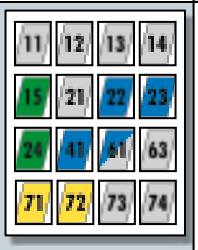
DC

DIN 6537 HAK

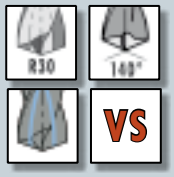
HBK HEK sur demande auf Anfrage on request su richiesta sobre pedido

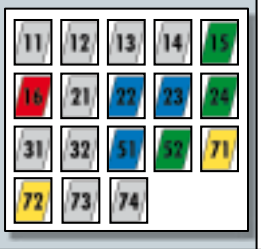
F313VS



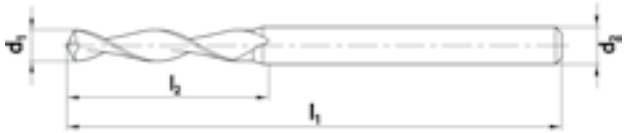


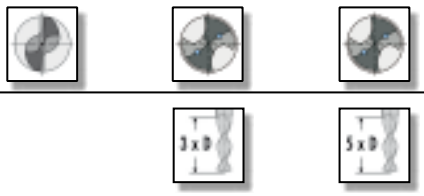
F285VS
F286VS



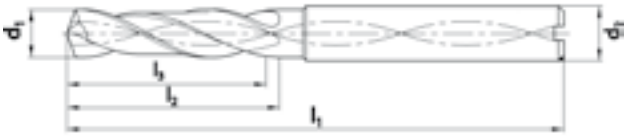








∅ d_1 (h_7)	d_2 (h_6) mm	l_1 mm	l_2 mm			ID
0.88	3.0	38.0	8.0	2	M 1	158515
1.08	3.0	38.0	10.0	2	M 1.2	158516
1.25	3.0	38.0	12.0	2	M 1.4	158517
1.45	3.0	38.0	12.0	2	M 1.6	158518
1.65	3.0	38.0	12.0	2	M 1.8	158519
1.80	3.0	38.0	12.0	2	M 2	158520
1.95	3.0	38.0	12.0	2	UNC 2-56	158521
2.30	3.0	38.0	16.0	2	M 2.5	158522
2.55	3.0	38.0	16.0	2	UNC 4-40	158523
2.80	3.0	38.0	16.0	2	M 3	158524



∅ d_1 (m_7)	d_2 (h_6) mm	l_1 mm	l_2 mm	l_3 mm			ID
3.25	6.0	62.0	20.0	14.0	2	M 3.5	158527
3.70	6.0	62.0	20.0	14.0	2	M 4	158528
4.65	6.0	66.0	24.0	17.0	2	M 5	158532
5.55	6.0	66.0	28.0	20.0	2	M 6	158534
7.40	8.0	79.0	41.0	29.0	2	M 8	158540
9.30	10.0	89.0	47.0	35.0	2	M 10	158544
11.20	12.0	102.0	55.0	40.0	2	M 12	158546

∅ d_1 (m_7)	d_2 (h_6) mm	l_1 mm	l_2 mm	l_3 mm			ID
3.30	6.0	66.0	28.0	23.0	2	M 4	160989
4.20	6.0	74.0	36.0	29.0	2	M 5	160990
5.00	6.0	82.0	44.0	35.0	2	M 6	160991
6.80	8.0	91.0	53.0	43.0	2	M 8	160992
8.50	10.0	103.0	61.0	49.0	2	M 10	160993
10.20	12.0	118.0	71.0	56.0	2	M 12	160994

Gewindeschneid-Sortimente
Tap assortments

Boxset			**D5855**	**D5860**	**D5891**
D5855	ISO 2 6H	N1110-S M3, M4, M5, M6, M8, M10 N1210-S M12			
D5860	ISO 2 6H HSS	N1110-S M3, M4, M5, M6, M8, M10 N1210-S M12 FO DIN 338 D2.5, 3.3, 4.2, 5.0, 6.8, FO DIN 338 8.5, 10.2			
D5891	ISO 2 6H	N310-3 M3, M4, M5, M6, M8, M10 N410-3 M12			
No D5855 / D5860 / D5891			**ID**	**ID**	**ID**
M3 - M12			118728	118733	170922

Boxset			**D5892**
D5892	ISO 2 6H V	N320V-4 M3, M4, M5, M6, M8, M10	
No D5892			**ID**
M3 - M10			170921

Boxset			**D5896**
D5896	140 < 2.5 x D ISO 2 6H V	N360V-3 M3, M4, M5, M6, M8, M10	
No D5896			**ID**
M3 - M10			167599

Schneideisenhalter und Windeisen
Die stocks and tap wrenches

D5810- *Schneideisenhalter für runde Schneideisen nach DIN EN 22568, DIN EN 24230, DIN EN 24231, DIN EN 40434.*
Die stocks for round dies to DIN EN 22568, DIN EN 24230, DIN EN 24231, DIN EN 40434.

D5820- *Windeisen verstellbar DIN 1814*
Tap wrenches, adjustable DIN 1814

D5810- **D5820-**





DIN EN No D5810-	∅	M ∅	MF ∅	UNC ∅	UNF ∅	UNEF UNS UN ∅	W ∅	G (BSP) ∅	NPT NPTF R (BSPT) ∅	ID
1	16 x 5	1 - 2.6	2 - 2.6	No 1 - 4	No 1 - 4		1/16" - 3/32"			170712
2	20 x 5	3 - 4	3 - 6	No 5	No 5 - 6		1/8"			170713
3	20 x 7	4.5 - 6		No 6 - 1/4"	No 8 - 1/4"	No 12 - 1/4"	5/32" - 1/4"			170714
4	25 x 9	7 - 9	7 - 9	5/16"	5/16"	5/16"	5/16"		1/16"	170715
5	30 x 11	10 - 11	10 - 11	3/8" - 7/16"	3/8" - 7/16"	3/8" - 7/16"	3/8" - 7/16"	1/8"	1/8"	170716
6	38 x 10		12 - 15		1/2" - 9/16"	1/2" - 9/16"		1/4"		170717
7	38 x 14	12 - 14		1/2" - 9/16"			1/2" - 9/16"		1/4"	170718
8	45 x 14		16 - 20		5/8" - 3/4"	5/8" - 13/16"		3/8" - 1/2"	3/8"	170719
9	45 x 18	16 - 20		5/8" - 3/4"			5/8" - 3/4"		1/2"	170720
10	55 x 16		22 - 26		7/8" - 1"	7/8" - 1"		5/8" - 3/4"		170721
11	55 x 22	22 - 24		7/8" - 1"			7/8" - 1"		3/4"	170722
12	65 x 18		*27 - 36		1 1/8" - 1 3/8"	1 1/16" - 1 3/8"		7/8" - 1"		170723
13	65 x 25	27 - 36		1 1/8" - 1 3/8"			1 1/8" - 1 3/8"		1"	170724
14	75 x 20		38 - 42		1 1/2"	1 7/16" - 1 1/2"		1 1/8" - 1 1/4"		170725
15	75 x 30	39 - 42		1 1/2"			1 1/2" - 1 5/8"			170726
16	90 x 22		45 - 52			1 3/4" - 2"		1 3/8" - 1 3/4"		170727
17	90 x 36	45 - 52		1 3/4"- 2"			1 3/4"- 2"			170728
18	105 x 22		55 - 65					2" - 2 1/4"		170729

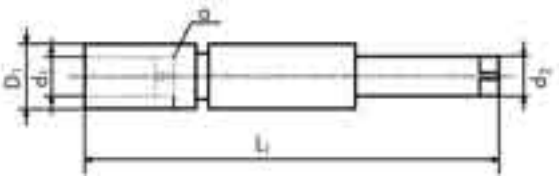
** Ausnahme Steigung 3 mm (Nr. 13 verlangen).*
For 3 mm pitches use No. 13.

No D5820-	a mm	ID
0	1.9 - 3.0	170730
1	2.5 - 5.5	170731
2	4.3 - 8.0	170732
3	5.5 - 12.0	170733
4	9.5 - 15.5	170734
5	12.5 - 22.4	170735

Verlängerungen
Tap extension sleeves

D5830- *Verlängerungen für Gewindebohrer, ~DIN 377.*
Tap extension sleeves ~DIN 377.

D5840- *Verlängerungen für Gewindebohrer.*
Tap extension sleeves.



D5830-	D5840-		





No D5830-	a mm	L_1 mm	D_1 mm	ID
1	2.10	60	6	110571
2	2.24	70	6	110572
3	2.40	70	6	110573
4	2.50	80	7	110574
5	2.80	90	7	110575
6	3.00	90	7	110579
7	3.15	95	7	110580
8	3.40	95	8	110581
9	3.55	100	8	118706
10	3.80	100	9	118707
11	4.00	105	10	118708
12	4.30	105	10	118709
13	4.50	105	10	118710
14	4.90	110	10	118711
15	5.00	110	11	118712
16	5.50	115	12	118713
17	5.60	110	12	118714
18	6.20	120	14	118715
19	6.30	120	14	118716
20	7.00	125	15	118717
21	7.10	120	15	118718
22	7.50	120	15	118719
23	8.00	125	17	118720
24	9.00	130	19	118721
25	10.00	140	21	110562
26	11.00	150	23	110563
27	11.20	145	23	110564
28	12.00	155	25	110565
29	12.50	160	25	110566
30	14.00	165	28	110567
31	14.50	175	29	110568
32	16.00	180	30	110569
33	18.00	200	33	110570
34	20.00	220	36	110576
35	22.00	220	40	110577
36	22.40	240	40	110578

No D5840-	a mm	L_1 mm	d_2 mm	d_1 mm	D_1 mm	ID
10	2.70	130	6	3.5	7.5	169928
11	3.40	130	6	4.5	8.5	169929
1	4.90	130	6	6.0	12.0	142137
2	5.50	130	7	7.0	13.0	142138
3	6.20	130	8	8.0	13.0	142139
4	7.00	130	9	9.0	17.0	142140
5	8.00	130	10	10.0	17.0	142141
6	9.00	130	11	11.0	17.0	142142
7	9.00	130	12	12.0	20.0	142143
8	11.00	130	14	14.0	20.0	142144
9	12.00	130	16	16.0	25.0	142145

HÄRTEVERGLEICHSTABELLE - HARDNESS CHART

HRC *Rockwellhärte* Hardness Rockwell	HB *Brinellhärte* Hardness Brinell	HV *Vickershärte* Hardness Vickers	N/mm² Mpa *Zugfestigkeit* Tensile strength
25	253	266	854
26	254	273	873
27	265	279	897
28	272	286	914
29	274	294	944
30	287	302	970
31	295	310	995
32	302	318	1024
33	311	327	1052
34	320	336	1082
35	329	345	1111
36	337	355	1139
37	346	364	1168
38	354	373	1198
39	363	382	1227
40	373	392	1262
41	382	402	1296
42	392	412	1327
43	402	423	1362
44	413	434	1401
45	424	446	1442
46	436	459	1481
47	448	471	1524
48	460	484	1572
49	474	499	1625
50	488	513	1668
51	502	528	1733
52	518	545	1793
53	532	560	1845
54	548	578	1912
55	566	596	1979
56	585	615	2050
57	603	634	2121
58		654	
59		675	
60		698	

Umrechnungstabelle für Härtewerte, Auszug aus DIN 50150
Conversion chart for hardness values, according to DIN 50150

ZOLL-MM - INCHES-MM

Ø" d_1	Ø mm	TPI UN UNC	UNF	UNEF	4	6	8	12	16	20	28	32	W(BSW)	BSF	G (BSP) Rp	Ø mm
0	1.52		80										48			
1/16"	1.59														28	7.72
1	1.85	64	72													
2	2.18	56	64													
3/32"	2.38															
3	2.51	48	56													
4	2.84	40	48													
5	3.17	40	44													
1/8"	3.17												40		28	9.72
6	3.50	32	40													
5/32"	3.96												32			
8	4.16	32	36													
3/16"	4.76												24	32		
10	4.82	24	32													
12	5.48	24	28	32												
7/32"	5.55												24	28		
1/4"	6.35	20	28	32									20	26	19	13.15
9/32"	7.14													26		
5/16"	7.93	18	24	32						20	28					
3/8"	9.52	16	24	32						20	28		16	20	19	16.66
7/16"	11.11	14	20	28					16			32	14	18		
1/2"	12.70	13	20	28					16			32	12	16	14	20.95
9/16"	14.28	12	18	24					16	20	28	32	12	16		
5/8"	15.87	11	18	24				12	16	20	28	32	11	14	14	22.91
11/16"	17.46			24				12	16	20	28	32		14		
3/4"	19.05	10	16	20				12			28	32	10	12	14	26.44
13/16"	20.64			20				12	16		28	32		12		
7/8"	22.22	9	14	20				12	16		28	32	9	11	14	30.20
15/16"	23.81			20				12	16		28	32				
1"	25.40	8	12	20					16		28	32	8	10	11	33.24
1 1/16"	26.99			18			8	12	16	20	28					
1 1/8"	28.57	7	12	18			8		16	20	28		7	9	11	37.89
1 3/16"	30.16			18			8	12	16	20	28					
1 1/4"	31.75	7	12	18			8		16	20	28		7	9	11	41.91
1 5/16"	33.34			18			8	12	16	20	28					
1 3/8"	34.92	6	12	18			8		16	20	28		6	8	11	44.32
1 7/16"	36.51			18		6	8	12	16	20	28					
1 1/2"	38.10	6	12	18			8		16	20	28		6	8	11	47.80
1 9/16"	39.69			18		6	8	12	16	20						
1 5/8"	41.28			18		6	8	12	16	20			5	8		
1 11/16"	42.86			18		6	8	12	16	20						
1 3/4"	44.45	5				6	8	12	16	20			5	7	11	53.74
1 13/16"	46.04					6	8	12	16	20						
1 7/8"	47.63					6	8	12	16	20			4 1/2			
1 15/16"	49.21					6	8	12	16	20						
2"	50.80	4 1/2				6	8	12	16	20			4 1/2	7	11	59.61
2 1/8"	53.97					6	8	12	16	20						
2 1/4"	57.15	4 1/2				6	8	12	16	20			4	6	11	65.71
2 3/8"	60.32					6	8	12	16	20						
2 1/2"	63.50	4				6	8	12	16	20			4	6	11	75.18
2 5/8"	66.67				4	6	8	12	16	20						
2 3/4"	69.85	4				6	8	12	16	20			3 1/2	6	11	81.53
2 7/8"	73.02				4	6	8	12	16	20						
3"	76.20	4				6	8	12	16	20			3 1/2	5	11	87.88
3 1/8"	79.37				4	6	8	12	16							
3 1/4"	82.55	4				6	8	12	16				3 1/4	5	11	93.98
3 3/8"	85.72				4	6	8	12	16							
3 1/2"	88.90	4				6	8	12	16				3 1/4	4 1/2	11	100.33
3 5/8"	92.07				4	6	8	12	16							
3 3/4"	95.25	4				6	8	12	16				3	4 1/2	11	106.68
3 7/8"	98.42				4	6	8	12	16							
4"	101.60	4				6	8	12	16				3	4 1/2	11	113.03

UMRECHNUNGSTABELLE - CONVERSION TABLE

Ø d_1	Vc m/min															
	1	2	3	4	5	6	8	10	12	15	20	25	30	40	50	60
	min^{-1}															
1	318	637	955	1273	1592	1910	2546	3183	3820	4775	6366	7958	9549	12732	15915	19099
2	159	318	477	637	796	955	1273	1592	1910	2387	3183	3979	4775	6366	7958	9549
3	106	212	318	424	531	637	849	1061	1273	1592	2122	2653	3183	4244	5305	6366
4	80	159	239	318	398	477	637	796	955	1194	1592	1989	2387	3183	3979	4775
5	64	127	191	255	318	382	509	637	764	955	1273	1592	1910	2546	3183	3820
6	53	106	159	212	265	318	424	531	637	796	1061	1326	1592	2122	2653	3183
8	40	80	119	159	199	239	318	398	477	597	796	995	1194	1592	1989	2387
10	32	64	95	127	159	191	255	318	382	477	637	796	955	1273	1592	1910
12	27	53	80	106	133	159	212	265	318	398	531	663	796	1061	1326	1592
14	23	45	68	91	114	136	182	227	273	341	455	568	682	909	1137	1364
16	20	40	60	80	99	119	159	199	239	298	398	497	597	796	995	1194
18	18	35	53	71	88	106	141	177	212	265	354	442	531	707	884	1061
20	16	32	48	64	80	95	127	159	191	239	318	398	477	637	796	955
25	13	25	38	51	64	76	102	127	153	191	255	318	382	509	637	764
30	11	21	32	42	53	64	85	106	127	159	212	265	318	424	531	637
35	9	18	27	36	45	55	73	91	109	136	182	227	273	364	455	546
40	8	16	24	32	40	48	64	80	95	119	159	199	239	318	398	477
45	7	14	21	28	35	42	57	71	85	106	141	177	212	283	354	424
50	6	13	19	25	32	38	51	64	76	95	127	159	191	255	318	382

KERNLOCHBOHRUNGEN - CORE HOLES

M DIN 13, ISO 261, *5H / 6H

Ø	P	Kern-Ø Mutter - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
*1	0.25	0.729	0.785	0.75
*1.1	0.25	0.829	0.885	0.85
*1.2	0.25	0.929	0.985	0.95
*1.4	0.30	1.075	1.142	1.10
1.6	0.35	1.221	1.321	1.25
1.7	0.35	1.321	1.421	1.35
1.8	0.35	1.421	1.521	1.45
2	0.40	1.567	1.679	1.60
2.2	0.45	1.713	1.838	1.75
2.3	0.40	1.867	1.979	1.90
2.5	0.45	2.013	2.138	2.05
2.6	0.45	2.113	2.238	2.15
3	0.50	2.459	2.599	2.50
3.5	0.60	2.850	3.010	2.90
4	0.70	3.242	3.422	3.30
4.5	0.75	3.688	3.878	3.75
5	0.80	4.134	4.334	4.20
6	1.00	4.917	5.153	5.00
7	1.00	5.917	6.153	6.00
8	1.25	6.647	6.912	6.80
9	1.25	7.647	7.912	7.80
10	1.50	8.376	8.676	8.50
11	1.50	9.376	9.676	9.50
12	1.75	10.106	10.441	10.20
14	2.00	11.835	12.210	12.00
16	2.00	13.835	14.210	14.00
18	2.50	15.294	15.744	15.50
20	2.50	17.294	17.744	17.50
22	2.50	19.294	19.744	19.50
24	3.00	20.752	21.252	21.00
27	3.00	23.752	24.252	24.00
30	3.50	26.211	26.771	26.50
33	3.50	29.211	29.771	29.50
36	4.00	31.670	32.270	32.00
39	4.00	34.670	35.270	35.00
42	4.50	37.129	37.799	37.50
45	4.50	40.129	40.799	40.50
48	5.00	42.587	43.297	43.00
52	5.00	46.587	47.297	47.00
56	5.50	50.046	50.796	50.50

MF DIN 13, ISO 261, 6H

Ø	P	Kern-Ø Mutter - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
2.5	0.35	2.121	2.221	2.15
3	0.35	2.621	2.721	2.65
3.5	0.35	3.121	3.221	3.15
4	0.50	3.459	3.599	3.50
4.5	0.50	3.959	4.099	4.00
5	0.50	4.459	4.599	4.50
5.5	0.50	4.959	5.099	5.00
6	0.75	5.188	5.378	5.25
7	0.75	6.188	6.378	6.25
8	0.75	7.188	7.378	7.25

MF DIN 13, ISO 261, 6H

Ø	P	Kern-Ø Mutter - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
8	1.00	6.917	7.153	7.00
9	0.75	8.188	8.378	8.25
9	1.00	7.917	8.153	8.00
10	0.75	9.188	9.378	9.25
10	1.00	8.917	9.153	9.00
10	1.25	8.647	8.912	8.80
11	0.75	10.188	10.378	10.25
11	1.00	9.917	10.153	10.00
12	1.00	10.917	11.153	11.00
12	1.25	10.647	10.912	10.80
12	1.50	10.376	10.676	10.50
14	1.00	12.917	13.153	13.00
14	1.25	12.647	12.912	12.80
14	1.50	12.376	12.676	12.50
15	1.00	13.917	14.153	14.00
15	1.50	13.376	13.676	13.50
16	1.00	14.917	15.153	15.00
16	1.50	14.376	14.676	14.50
17	1.00	15.917	16.153	16.00
17	1.50	15.376	15.676	15.50
18	1.00	16.917	17.153	17.00
18	1.50	16.376	16.676	16.50
18	2.00	15.835	16.210	16.00
20	1.00	18.917	19.153	19.00
20	1.50	18.376	18.676	18.50
20	2.00	17.835	18.210	18.00
22	1.00	20.917	21.153	21.00
22	1.50	20.376	20.676	20.50
22	2.00	19.835	20.210	20.00
24	1.00	22.917	23.153	23.00
24	1.50	22.376	22.676	22.50
24	2.00	21.835	22.210	22.00
25	1.00	23.917	24.153	24.00
25	1.50	23.376	23.676	23.50
25	2.00	22.835	23.210	23.00
27	1.50	25.376	25.676	25.50
27	2.00	24.835	25.210	25.00
28	1.00	26.917	27.153	27.00
28	1.50	26.376	26.676	26.50
28	2.00	25.835	26.210	26.00
30	1.00	28.917	29.153	29.00
30	1.50	28.376	28.676	28.50
30	2.00	27.835	28.210	28.00
32	1.50	30.376	30.676	30.50
32	2.00	29.835	30.210	30.00
33	1.50	31.376	31.676	31.50
33	2.00	30.835	31.210	31.00
35	1.50	33.376	33.676	33.50
36	1.50	34.376	34.676	34.50
36	2.00	33.835	34.210	34.00
36	3.00	32.752	33.252	33.00
39	1.50	37.376	37.676	37.50
39	2.00	36.835	37.210	37.00
39	3.00	35.752	36.252	36.00
40	1.50	38.376	38.676	38.50

KERNLOCHBOHRUNGEN - CORE HOLES

MF DIN 13, ISO 261, 6H

Ø	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
40	**2.00**	37.835	38.210	38.00
40	**3.00**	36.752	37.252	37.00
42	**1.50**	40.376	40.676	40.50
42	**2.00**	39.835	40.210	40.00
42	**3.00**	38.752	39.252	39.00
45	**1.50**	43.376	43.676	43.50
45	**2.00**	42.835	43.210	43.00
45	**3.00**	41.752	42.252	42.00
48	**1.50**	46.376	46.676	46.50
48	**2.00**	45.835	46.210	46.00
48	**3.00**	44.752	45.252	45.00
50	**1.50**	48.376	48.676	48.50
50	**2.00**	47.835	48.210	48.00
50	**3.00**	46.752	47.252	47.00
52	**1.50**	50.376	50.676	50.50
52	**2.00**	49.835	50.210	50.00
52	**3.00**	48.752	49.252	49.00
55	**2.00**	52.835	53.210	53.00
60	**2.00**	57.835	58.210	58.00

MF EN 60423:1994, 7H

Ø	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
8	**1.00**	6.917	7.217	7.00
10	**1.00**	8.917	9.217	9.00
12	**1.50**	10.376	10.751	10.50
16	**1.50**	14.376	14.751	14.50
20	**1.50**	18.376	18.751	18.50
25	**1.50**	23.376	23.751	23.50
32	**1.50**	30.376	30.751	30.50
40	**1.50**	38.376	38.751	38.50
63	**1.50**	61.376	61.751	61.50

UNC ANSI B1.1, 2B

Ø"	P	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
1	**64**	0.397	1.425	1.582	1.45
2	**56**	0.454	1.695	1.871	1.75
3	**48**	0.529	1.941	2.146	2.00
4	**40**	0.635	2.157	2.385	2.25
5	**40**	0.635	2.487	2.697	2.55
6	**32**	0.794	2.642	2.895	2.75
8	**32**	0.794	3.302	3.530	3.40
10	**24**	1.058	3.683	3.962	3.80
12	**24**	1.058	4.344	4.597	4.40
1/4"	**20**	1.270	4.979	5.257	5.10
5/16"	**18**	1.411	6.401	6.731	6.50

UNC ANSI B1.1, 2B

Ø"	P	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
3/8"	**16**	1.588	7.798	8.153	8.00
7/16"	**14**	1.814	9.144	9.550	9.30
1/2"	**13**	1.954	10.592	11.023	10.80
9/16"	**12**	2.117	11.989	12.446	12.20
5/8"	**11**	2.309	13.386	13.868	13.60
3/4"	**10**	2.540	16.307	16.840	16.60
7/8"	**9**	2.822	19.177	19.761	19.50
1"	**8**	3.175	21.971	22.606	22.30
1 1/8"	**7**	3.629	24.638	25.349	25.00
1 1/4"	**7**	3.629	27.813	28.524	28.20
1 3/8"	**6**	4.233	30.353	31.115	30.80
1 1/2"	**6**	4.233	33.528	34.290	34.00
1 3/4"	**5**	5.080	38.964	39.827	39.50
2"	**4.5**	5.644	44.679	45.593	45.30

UNJC ISO 3161:1999, 3B

Ø"	P	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
4	**40**	0.635	2.228	2.393	2.30
5	**40**	0.635	2.558	2.723	2.60
6	**32**	0.794	2.733	2.939	2.80
8	**32**	0.794	3.393	3.599	3.45
10	**24**	1.058	3.795	4.064	3.90
12	**24**	1.058	4.455	4.704	4.55
1/4"	**20**	1.270	5.113	5.387	5.20
5/16"	**18**	1.411	6.563	6.833	6.70
3/8"	**16**	1.588	7.978	8.255	8.10
7/16"	**14**	1.814	9.347	9.639	9.40
1/2"	**13**	1.954	10.798	11.095	10.90
9/16"	**12**	2.117	12.228	12.482	12.40
5/8"	**11**	2.309	13.627	13.904	13.80
3/4"	**10**	2.540	16.576	16.881	16.70

KERNLOCHBOHRUNGEN - CORE HOLES

UNF ANSI B1.1, 2B

Ø"	P	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
0	**80**	0.318	1.182	1.305	1.20
1	**72**	0.353	1.474	1.612	1.50
2	**64**	0.397	1.756	1.912	1.80
3	**56**	0.454	2.025	2.197	2.10
4	**48**	0.529	2.271	2.458	2.35
5	**44**	0.577	2.551	2.740	2.60
6	**40**	0.635	2.820	3.022	2.90
8	**36**	0.706	3.404	3.606	3.50
10	**32**	0.794	3.963	4.165	4.05
12	**28**	0.907	4.496	4.724	4.60
1/4"	**28**	0.907	5.360	5.588	5.50
5/16"	**24**	1.058	6.782	7.035	6.90
3/8"	**24**	1.058	8.382	8.636	8.50
7/16"	**20**	1.270	9.729	10.033	9.80
1/2"	**20**	1.270	11.329	11.607	11.40
9/16"	**18**	1.411	12.751	13.081	12.90
5/8"	**18**	1.411	14.351	14.681	14.50
3/4"	**16**	1.588	17.323	17.678	17.50
7/8"	**14**	1.814	20.270	20.675	20.40
1"	**12**	2.117	23.114	23.571	23.30
1 1/8"	**12**	2.117	26.289	26.746	26.50
1 1/4"	**12**	2.117	29.464	29.921	29.70
1 3/8"	**12**	2.117	32.639	33.096	32.80
1 1/2"	**12**	2.117	35.814	36.271	36.00

UNJF ISO 3161:1999, 3B

Ø"	P	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
0	**80**	0.318	1.217	1.298	1.25
1	**72**	0.353	1.511	1.603	1.55
2	**64**	0.397	1.798	1.902	1.85
3	**56**	0.454	2.073	2.189	2.15
4	**48**	0.529	2.329	2.466	2.35
5	**44**	0.577	2.614	2.764	2.70
6	**40**	0.635	2.888	3.053	2.95
8	**36**	0.706	3.480	3.663	3.60
10	**32**	0.794	4.054	4.255	4.10
12	**28**	0.907	4.602	4.816	4.70
1/4"	**28**	0.907	5.466	5.662	5.55
5/16"	**24**	1.058	6.906	7.109	7.00
3/8"	**24**	1.058	8.494	8.679	8.60
7/16"	**20**	1.270	9.876	10.084	10.00
1/2"	**20**	1.270	11.463	11.661	11.55
9/16"	**18**	1.411	12.913	13.122	13.05
5/8"	**18**	1.411	14.501	14.702	14.60
3/4"	**16**	1.588	17.506	17.722	17.60
7/8"	**14**	1.814	20.460	20.706	20.50
1"	**12**	2.117	23.340	23.594	23.40

UNEF ANSI B1.1, 2B

Ø"	P	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
12	**32**	0.794	4.623	4.826	4.70
1/4"	**32**	0.794	5.487	5.689	5.60
5/16"	**32**	0.794	7.087	7.264	7.20
3/8"	**32**	0.794	8.662	8.864	8.75
7/16"	**28**	0.907	10.135	10.337	10.25
1/2"	**28**	0.907	11.710	11.938	11.85
9/16"	**24**	1.058	13.132	13.385	13.20
5/8"	**24**	1.058	14.732	14.986	14.80
11/16"	**24**	1.058	16.307	16.560	16.40
3/4"	**20**	1.270	17.679	17.957	17.80
13/16"	**20**	1.270	19.254	19.558	19.40
7/8"	**20**	1.270	20.854	21.132	21.00
1"	**20**	1.270	24.029	24.307	24.10

UN ANSI B1.1, 2B

Ø"	P	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
5/16"	**20**	1.270	6.554	6.858	6.70
3/8"	**20**	1.270	8.154	8.432	8.30
9/16"	**20**	1.270	12.904	13.208	13.00
5/8"	**20**	1.270	14.504	14.782	14.60
1 1/8"	**8**	3.175	25.146	25.781	25.50
1 1/4"	**8**	3.175	28.321	28.956	28.70
1 3/8"	**8**	3.175	31.496	32.131	31.80
1 1/2"	**8**	3.175	34.671	35.306	35.00
1 5/8"	**8**	3.175	37.846	38.481	38.20
1 3/4"	**8**	3.175	41.021	41.656	41.40
1 7/8"	**8**	3.175	44.196	44.831	44.50
2"	**8**	3.175	47.371	48.006	47.70
2 1/4"	**8**	3.175	53.721	54.356	54.10
2 1/2"	**8**	3.175	60.071	60.706	60.40

KERNLOCHBOHRUNGEN - CORE HOLES

UNS ANSI B1.1, 2B

Ø"	P	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
10	**36**	0.706	4.064	4.216	4.10
10	**40**	0.635	4.141	4.292	4.20
10	**56**	0.454	4.344	4.445	4.40
1/4"	**36**	0.706	5.588	5.740	5.65
1/4"	**40**	0.635	5.665	5.816	5.70
1/4"	**48**	0.529	5.766	5.892	5.80
1/4"	**56**	0.454	5.868	5.969	5.90
5/16"	**36**	0.706	7.163	7.340	7.25
3/8"	**36**	0.706	8.763	8.940	8.80
7/16"	**24**	1.058	9.957	10.210	10.00
1/2"	**24**	1.058	11.557	11.811	11.60
1"	**14**	1.814	23.445	23.825	23.60

G (BSP) DIN ISO 228

Ø"	P	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
1/16"	**28**	0.907	6.561	6.843	6.75
1/8"	**28**	0.907	8.566	8.848	8.75
1/4"	**19**	1.337	11.445	11.890	11.60
3/8"	**19**	1.337	14.950	15.395	15.20
1/2"	**14**	1.814	18.631	19.172	18.90
5/8"	**14**	1.814	20.587	21.128	20.90
3/4"	**14**	1.814	24.117	24.658	24.40
7/8"	**14**	1.814	27.877	28.418	28.20
1"	**11**	2.309	30.291	30.931	30.70
1 1/8"	**11**	2.309	34.939	35.579	35.30
1 1/4"	**11**	2.309	38.952	39.592	39.30
1 3/8"	**11**	2.309	41.365	42.005	41.80
1 1/2"	**11**	2.309	44.845	45.485	45.20
1 3/4"	**11**	2.309	50.788	51.428	51.20
2"	**11**	2.309	56.656	57.296	57.00
2 1/4"	**11**	2.309	62.752	63.392	63.10
2 1/2"	**11**	2.309	72.226	72.866	72.60
3"	**11**	2.309	84.926	85.566	85.30

W (BSW) BS 84, (DIN11 - 1970)

Ø"	P	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
(3/32")	**48**				1.80
1/8"	**40**	0.635	2.362	2.591	2.50
(5/32")	**32**				3.10
3/16"	**24**	1.058	3.406	3.744	3.60
(7/32")	**24**				4.40
1/4"	**20**	1.270	4.724	5.156	4.90
5/16"	**18**	1.411	6.129	6.588	6.40
3/8"	**16**	1.588	7.493	7.988	7.70
7/16"	**14**	1.814	8.791	9.332	9.10
1/2"	**12**	2.117	9.987	10.589	10.30
5/8"	**11**	2.309	12.918	13.558	13.30
3/4"	**10**	2.540	15.799	16.484	16.20
7/8"	**9**	2.822	18.613	19.355	19.25
1"	**8**	3.175	21.336	22.149	21.90

PG DIN 40430

Ø	P	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
7	**20**	1.270	11.28	11.43	11.35
9	**18**	1.411	13.86	14.01	13.90
11	**18**	1.411	17.26	17.41	17.30
13.5	**18**	1.411	19.06	19.21	19.10
16	**18**	1.411	21.16	21.31	21.20
21	**16**	1.588	26.78	27.03	26.80
29	**16**	1.588	35.48	35.73	35.50
36	**16**	1.588	45.48	45.73	45.50
42	**16**	1.588	52.48	52.73	52.50
48	**16**	1.588	57.78	58.03	57.80

TR ISO 2901-2904, DIN 103, 7H

Ø	P	*Kern-Ø Mutter* - Core Ø nut		
d_1	mm	Ø mini	Ø maxi	Ø guide line
10	**2**	8	8.236	8.20
12	**3**	9	9.315	9.25
14	**3**	11	11.315	11.25
16	**4**	12	12.375	12.25
18	**4**	14	14.375	14.25
20	**4**	16	16.375	16.25
22	**5**	17	17.450	17.25
24	**5**	19	19.450	19.25
26	**5**	21	21.450	21.25
28	**5**	23	23.450	23.25
30	**6**	24	24.500	24.25
32	**6**	26	26.500	26.25

AUSSENDURCHMESSER - TURNED DIAMETERS

M DIN 13, ISO 261, *6h / 6g

Ø	P	Aussen-Ø Bolzen - Thread outside Ø		
d_1	mm	Ø mini	Ø maxi	Ø guide line
*1	0.25	0.933	1.000	0.97
*1.1	0.25	1.033	1.100	1.07
*1.2	0.25	1.133	1.200	1.17
*1.4	0.30	1.325	1.400	1.36
1.6	0.35	1.496	1.581	1.54
1.7	0.35	1.596	1.681	1.64
1.8	0.35	1.696	1.781	1.74
2	0.40	1.886	1.981	1.93
2.2	0.45	2.080	2.180	2.13
2.3	0.40	2.186	2.300	2.23
2.5	0.45	2.380	2.480	2.43
2.6	0.45	2.480	2.600	2.53
3	0.50	2.874	2.980	2.92
3.5	0.60	3.354	3.479	3.41
4	0.70	3.838	3.978	3.91
4.5	0.75	4.338	4.478	4.40
5	0.80	4.826	4.976	4.90
6	1.00	5.794	5.974	5.88
7	1.00	6.794	6.974	6.88
8	1.25	7.760	7.972	7.87
9	1.25	8.760	8.972	8.87
10	1.50	9.732	9.968	9.85
11	1.50	10.732	10.968	10.85
12	1.75	11.701	11.966	11.83
14	2.00	13.682	13.962	13.82
16	2.00	15.682	15.962	15.82
18	2.50	17.623	17.958	17.79
20	2.50	19.623	19.958	19.79
22	2.50	21.623	21.958	21.79
24	3.00	23.577	23.952	23.76
27	3.00	26.577	26.952	26.76
30	3.50	29.522	29.947	29.73
33	3.50	32.522	32.947	32.73
36	4.00	35.465	35.940	35.70
39	4.00	38.465	38.940	38.70
42	4.50	41.437	41.937	41.69
45	4.50	44.437	44.937	44.69
48	5.00	47.399	47.929	47.66
52	5.00	51.399	51.929	51.66
56	5.50	55.365	55.925	55.65

MF DIN 13, ISO 261, 6g

Ø	P	Aussen-Ø Bolzen - Thread outside Ø		
d_1	mm	Ø mini	Ø maxi	Ø guide line
2.5	0.35	2.396	2.481	2.44
3	0.35	2.896	2.981	2.94
3.5	0.35	3.396	3.481	3.44
4	0.50	3.874	3.980	3.93
4.5	0.50	4.374	4.480	4.43
5	0.50	4.874	4.980	4.93
5.5	0.50	5.374	5.480	5.43
6	0.75	5.838	5.978	5.90
7	0.75	6.838	6.978	6.90
8	0.75	7.838	7.978	7.90

MF DIN 13, ISO 261, 6g

Ø	P	Aussen-Ø Bolzen - Thread outside Ø		
d_1	mm	Ø mini	Ø maxi	Ø guide line
8	1.00	7.794	7.974	7.88
9	0.75	8.838	8.978	8.90
9	1.00	8.794	8.974	8.88
10	0.75	9.838	9.978	9.90
10	1.00	9.794	9.974	9.88
10	1.25	9.760	9.972	9.86
11	0.75	10.838	10.978	10.90
11	1.00	10.794	10.974	10.88
12	1.00	11.794	11.974	11.88
12	1.25	11.760	11.972	11.86
12	1.50	11.732	11.968	11.85
14	1.00	13.794	13.974	13.88
14	1.25	13.760	13.972	13.86
14	1.50	13.732	13.968	13.85
15	1.00	14.794	14.974	14.88
15	1.50	14.732	14.968	14.85
16	1.00	15.794	15.974	15.88
16	1.50	15.732	15.968	15.85
17	1.00	16.794	16.974	16.88
17	1.50	16.732	16.968	16.85
18	1.00	17.794	17.974	17.88
18	1.50	17.732	17.968	17.85
18	2.00	17.682	17.962	17.82
20	1.00	19.794	19.974	19.88
20	1.50	19.732	19.968	19.85
20	2.00	19.682	19.962	19.82
22	1.00	21.794	21.974	21.88
22	1.50	21.732	21.968	21.85
22	2.00	21.682	21.962	21.82
24	1.00	23.794	23.974	23.88
24	1.50	23.732	23.968	23.85
24	2.00	23.682	23.962	23.82
25	1.00	24.794	24.974	24.88
25	1.50	24.732	24.968	24.85
25	2.00	24.682	24.962	24.82
27	1.00	26.794	26.974	26.88
27	1.50	26.732	26.968	26.85
27	2.00	26.682	26.962	26.82
28	1.00	27.794	27.974	27.88
28	1.50	27.732	27.968	27.85
28	2.00	27.682	27.962	27.82
30	1.00	29.794	29.974	29.88
30	1.50	29.732	29.968	29.85
30	2.00	29.682	29.962	29.82
30	3.00	29.577	29.952	29.76
32	1.50	31.732	31.968	31.85
32	2.00	31.682	31.962	31.82
33	1.50	32.732	32.968	32.85
33	2.00	32.682	32.962	32.82
33	3.00	32.577	32.952	32.76
35	1.50	34.732	34.968	34.85
36	1.50	35.732	35.968	35.85
36	2.00	35.682	35.962	35.82
36	3.00	35.577	35.952	35.76
39	1.50	38.732	38.968	38.85
39	2.00	38.682	38.962	38.82
39	3.00	38.577	38.952	38.76

AUSSENDURCHMESSER - TURNED DIAMETERS

MF DIN 13, ISO 261, 6g

Ø	P	*Aussen-Ø Bolzen* - Thread outside Ø		
d_1	mm	Ø mini	Ø maxi	Ø guide line
40	**1.50**	39.732	39.968	39.85
40	**2.00**	39.682	39.962	39.82
40	**3.00**	39.577	39.952	39.76
42	**1.50**	41.732	41.968	41.85
42	**2.00**	41.682	41.962	41.82
42	**3.00**	41.577	41.952	41.76
45	**1.50**	44.732	44.968	44.85
45	**2.00**	44.682	44.962	44.82
45	**3.00**	44.577	44.952	44.76
48	**1.50**	47.732	47.968	47.85
48	**2.00**	47.682	47.962	47.82
48	**3.00**	47.577	47.952	47.76
50	**1.50**	49.732	49.968	49.85
50	**2.00**	49.682	49.962	49.82
50	**3.00**	49.577	49.952	49.76
52	**1.50**	51.732	51.968	51.85
52	**2.00**	51.682	51.962	51.82
52	**3.00**	51.577	51.952	51.76
52	**4.00**	51.465	51.940	51.70

UNC ANSI B1.1, 2A

Ø"	P	P *Aussen-Ø Bolzen* - Thread outside Ø			
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
1	**64**	0.397	1.743	1.838	1.79
2	**56**	0.454	2.066	2.169	2.12
3	**48**	0.529	2.383	2.496	2.44
4	**40**	0.635	2.695	2.824	2.76
5	**40**	0.635	3.026	3.154	3.09
6	**32**	0.794	3.333	3.484	3.41
8	**32**	0.794	3.991	4.142	4.07
10	**24**	1.058	4.618	4.800	4.71
12	**24**	1.058	5.279	5.461	5.37
1/4"	**20**	1.270	6.117	6.322	6.22
5/16"	**18**	1.411	7.687	7.907	7.80
3/8"	**16**	1.588	9.254	9.491	9.37
7/16"	**14**	1.814	10.816	11.076	10.95
1/2"	**13**	1.954	12.386	12.661	12.52
9/16"	**12**	2.117	13.958	14.246	14.10
5/8"	**11**	2.309	15.528	15.834	15.68
3/4"	**10**	2.540	18.677	19.004	18.84
7/8"	**9**	2.822	21.824	22.176	22.00
1"	**8**	3.175	24.969	25.349	25.16
1 1/8"	**7**	3.629	28.103	28.519	28.31
1 1/4"	**7**	3.629	31.278	31.694	31.49
1 3/8"	**6**	4.233	34.402	34.864	34.63
1 1/2"	**6**	4.233	37.577	38.039	37.81
1 3/4"	**5**	5.080	43.860	44.381	44.12
2"	**4.5**	5.644	50.168	50.726	50.45
2 1/4"	**4.5**	5.644	56.518	57.076	56.80
2 1/2"	**4**	6.350	62.817	63.421	63.12
2 3/4"	**4**	6.350	69.165	69.768	69.47
3"	**4**	6.350	75.515	76.118	75.82
3 1/4"	**4**	6.350	81.862	82.466	82.16
3 1/2"	**4**	6.350	88.212	88.816	88.51

UNC ANSI B1.1, 2A

Ø"	P	P *Aussen-Ø Bolzen* - Thread outside Ø			
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
3 3/4"	**4**	6.350	94.560	95.163	94.86
4"	**4**	6.350	100.910	101.513	101.21

UNF ANSI B1.1, 2A

Ø"	P	P *Aussen-Ø Bolzen* - Thread outside Ø			
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
0	**80**	0.318	1.431	1.511	1.47
1	**72**	0.353	1.751	1.838	1.79
2	**64**	0.397	2.073	2.169	2.12
3	**56**	0.454	2.393	2.496	2.44
4	**48**	0.529	2.713	2.827	2.77
5	**44**	0.577	3.036	3.157	3.10
6	**40**	0.635	3.356	3.484	3.42
8	**36**	0.706	4.006	4.145	4.08
10	**32**	0.794	4.651	4.803	4.73
12	**28**	0.907	5.296	5.461	5.38
1/4"	**28**	0.907	6.160	6.324	6.24
5/16"	**24**	1.058	7.727	7.909	7.82
3/8"	**24**	1.058	9.315	9.497	9.41
7/16"	**20**	1.270	10.874	11.079	10.98
1/2"	**20**	1.270	12.462	12.666	12.56
9/16"	**18**	1.411	14.031	14.251	14.14
5/8"	**18**	1.411	15.619	15.839	15.73
3/4"	**16**	1.588	18.774	19.011	18.89
7/8"	**14**	1.814	21.923	22.184	22.05
1"	**12**	2.117	25.065	25.354	25.21
1 1/8"	**12**	2.117	28.240	28.529	28.38
1 1/4"	**12**	2.117	31.415	31.704	31.56
1 3/8"	**12**	2.117	34.588	34.876	34.73
1 1/2"	**12**	2.117	37.763	38.051	37.91

UNEF ANSI B1.1, 2A

Ø"	P	P *Aussen-Ø Bolzen* - Thread outside Ø			
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
12	**32**	0.794	5.312	5.463	5.39
1/4"	**32**	0.794	6.173	6.324	6.25
5/16"	**32**	0.794	7.760	7.912	7.84
3/8"	**32**	0.794	9.348	9.499	9.42
7/16"	**28**	0.907	10.920	11.084	11.00
1/2"	**28**	0.907	12.507	12.672	12.59
9/16"	**24**	1.058	14.075	14.257	14.17
5/8"	**24**	1.058	15.662	15.844	15.75
11/16"	**24**	1.058	17.250	17.432	17.34
3/4"	**20**	1.270	18.812	19.016	18.91
13/16"	**20**	1.270	20.339	20.604	20.50
7/8"	**20**	1.270	21.987	22.191	22.09
15/16"	**20**	1.270	23.572	23.776	23.67
1"	**20**	1.270	25.159	25.364	25.26
1 1/8"	**18**	1.411	28.319	28.539	28.43
1 1/4"	**18**	1.411	31.491	31.711	31.60
1 1/2"	**18**	1.411	37.841	38.061	37.95

AUSSENDURCHMESSER - TURNED DIAMETERS

UN ANSI B1.1, 2A

Ø"	P	P Aussen-Ø Bolzen - Thread outside Ø			
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
5/16"	20	1.270	7.702	7.907	7.80
3/8"	20	1.270	9.289	9.494	9.39
9/16"	20	1.270	14.049	14.254	14.15
5/8"	20	1.270	15.637	15.841	15.74
1 1/8"	8	3.175	28.141	28.521	28.33
1 1/4"	8	3.175	31.316	31.696	31.51
1 3/8"	8	3.175	34.489	34.869	34.68
1 1/2"	8	3.175	37.664	38.044	37.85
1 5/8"	8	3.175	40.839	41.219	41.03
1 3/4"	8	3.175	44.011	44.391	44.20
1 7/8"	8	3.175	47.186	47.566	47.38
2"	8	3.175	50.361	50.741	50.55
2 1/4"	8	3.175	56.709	57.089	56.90
2 1/2"	8	3.175	63.059	63.439	63.25
2 3/4"	8	3.175	69.406	69.786	69.60
3"	8	3.175	75.753	76.133	75.94

UNS ANSI B1.1, 2A

Ø"	P	P Aussen-Ø Bolzen - Thread outside Ø			
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
10	36	0.706	4.664	4.803	4.73
10	40	0.635	4.674	4.803	4.74
10	56	0.454	4.705	4.808	4.76
1/4"	36	0.706	6.188	6.327	6.26
1/4"	40	0.635	6.198	6.327	6.26
1/4"	48	0.529	6.216	6.329	6.27
1/4"	56	0.454	6.226	6.329	6.28
5/16"	36	0.706	7.775	7.914	7.84
3/8"	36	0.706	9.360	9.499	9.43
7/16"	24	1.058	10.902	11.084	10.99
1/2"	24	1.058	12.487	12.669	12.58
1"	14	1.814	25.096	25.356	25.23

G (BSP) DIN ISO 228

Ø"	P	P Aussen-Ø Bolzen - Thread outside Ø			
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
1/16"	28	0.907	7.509	7.723	7.62
1/8"	28	0.907	9.514	9.728	9.62
1/4"	19	1.337	12.907	13.157	13.03
3/8"	19	1.337	16.412	16.662	16.54
1/2"	14	1.814	20.671	20.955	20.81
5/8"	14	1.814	22.627	22.911	22.77
3/4"	14	1.814	26.157	26.441	26.30
7/8"	14	1.814	29.917	30.201	30.06
1"	11	2.309	32.889	33.249	33.07
1 1/8"	11	2.309	37.537	37.897	37.72
1 1/4"	11	2.309	41.550	40.910	41.73
1 3/8"	11	2.309	43.963	44.323	44.14
1 1/2"	11	2.309	47.443	47.803	47.62
1 3/4"	11	2.309	53.386	53.746	53.57
2"	11	2.309	59.254	59.614	59.43
2 1/4"	11	2.309	65.276	65.710	65.49
2 1/2"	11	2.309	74.750	75.184	74.97
2 3/4"	11	2.309	81.100	81.534	81.32
3"	11	2.309	87.450	87.884	87.67
3 1/2"	11	2.309	99.896	100.330	100.11

W (BSW) BS 84

Ø"	P	P Aussen-Ø Bolzen - Thread outside Ø			
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
1/4"	20	1.270	6.165	6.319	6.24
5/16"	18	1.411	7.737	7.904	7.82
3/8"	16	1.588	9.312	9.489	9.40
7/16"	14	1.814	10.884	11.074	10.98
1/2"	12	2.117	12.456	12.662	12.56
5/8"	11	2.309	15.613	15.832	15.72
3/4"	10	2.540	18.771	19.004	18.89
7/8"	9	2.822	21.979	22.225	22.10
1"	8	3.175	25.138	25.400	25.27
1 1/8"	7	3.629	28.296	28.575	28.44
1 1/4"	7	3.629	31.465	31.750	31.61
1 1/2"	6	4.233	37.793	38.100	37.95
1 3/4"	5	5.080	44.117	44.450	44.28
2"	4.5	5.644	50.449	50.800	50.62
2 1/4"	4	6.350	56.779	57.150	56.96
2 1/2"	4	6.350	63.119	63.500	63.31

PG DIN 40430

Ø	P	P Aussen-Ø Bolzen - Thread outside Ø			
d_1	TPI	mm	Ø mini	Ø maxi	Ø guide line
7	20	1.270	12.3	12.5	12.40
9	18	1.411	15.0	15.2	15.10
11	18	1.411	18.4	18.6	18.50
13. 5	18	1.411	20.2	20.4	20.30
16	18	1.411	22.3	22.5	22.40
21	16	1.588	28.0	28.3	28.15
29	16	1.588	36.7	37.0	36.85
36	16	1.588	46.7	47.0	46.85
42	16	1.588	53.7	54.0	53.85
48	16	1.588	59.0	59.3	59.15

TR ISO 2901-2904, DIN 103, 7e

Ø	P	Aussen-Ø Bolzen - Thread outside Ø		
d_1	mm	Ø mini	Ø maxi	Ø guide line
10	2	9.820	10.000	9.91
12	3	11.764	12.000	11.88
14	3	13.764	14.000	13.88
16	4	15.700	16.000	15.85
18	4	17.700	18.000	17.85
20	4	19.700	20.000	19.85
22	5	21.665	22.000	21.83
24	5	23.665	24.000	23.83
26	5	25.665	26.000	25.83
28	5	27.665	28.000	27.83
30	6	29.625	30.000	29.81
32	6	31.625	32.000	31.81

TECHNISCHER FRAGEBOGEN

GEWINDEBOHRER UND GEWINDEFORMER

Angebotsanfrage ☐ *Versuchsresultat* ☐ *Beanstandung* ☐

Vertretung : _____ Kontaktperson : _____

Kunde : _____ E-Mail : _____

Tel.- /Fax-Nr : _____ Datum : _____

1. Werkzeug-Typ : _____ Abmessung : _____

Besonderheit : _____ Toleranzklasse : _____

2. Werkstoffgruppe : _____

Werkstoff-Nr : _____ Härte : _____ N/mm² /HB/HRC

Norm : _____ Bruchdehnung : _____ %

3. Gewinde : ☐Sackloch ☐Durchgangsloch Gewindelänge : _____ mm

Kernloch-Ø : _____ Tiefe : _____ mm

Aufbohrungs-Ø : _____ Tiefe : _____ mm

4. Schnittgeschwindigkeit (V_c) : _____ m/min _____ 1/min

Vorschub (f) : _____ %

5. Maschine : _____ ☐Innenkühlung

Arbeitsrichtung : ☐horizontal ☐vertikal

Synchro-Gewindeschneiden : ☐Soft-Rigidfutter **Gewindeschneidspindel :** ☐Längenausgleich

☐Spannzange ☐Ausklinkbar

☐Weldon ☐Rutschkupplung

☐Schrumpffutter ☐Automat. Umschaltung

6. Schmierung : ☐Emulsion ☐Schneidöl ☐Luft ☐MMS

Produkt : _____

7. Grund des Werkzeugwechsels : ☐Werkzeugverschleiss ☐Werkzeugbruch

☐Gewinde nicht korrekt (kontrolliert mit Lehre) ☐Zahnausbrüche im Anschnittbereich

☐Maschinenfehler ☐Zahnausbrüche im Führungsgewinde

8. Standzeitvergleich

Vergleichswerkzeug : _____

Resultat und Befund : _____

Bemerkungen : _____

_____

Kopie senden an : **DC SWISS SA - CH-2735 Malleray Fax +41 32 491 64 64**

TECHNICAL QUESTIONNAIRE

THREAD CUTTING AND THREAD FORMING

Enquiry ☐ *Test result* ☐ *Complaint* ☐

Agency : _____ Contact : _____

Customer : _____ E-mail : _____

Phone or fax : _____ Date : _____

1. Tool type : _____ Thread size : _____

Particularity : _____ Class of tolerance : _____

2. Material group : _____

Material N° : _____ Hardness : _____ N/mm² /HB/HRC

Norm : _____ Elongation : _____ %

3. Thread : ☐blind hole ☐through hole Threaded length : _____ mm

Core hole Ø : _____ Depth : _____ mm

Counter-bore Ø : _____ Depth : _____ mm

4. Cutting speed (V_c) : _____ m/min _____ 1/min

Feed (f) : _____ %

5. Machine : _____ ☐internal coolant

Working position : ☐horizontal ☐vertical

Rigid Tapping : ☐"Soft Rigid Tapping" **Tapping spindle :** ☐axial compensation

☐collet ☐de-clutching

☐Weldon ☐reversible

☐hot / cold shrunk ☐sliding clutch

6. Lubricant : ☐emulsion ☐oil ☐air ☐mist

Product : _____

7. Tool change reason : ☐tool wear ☐tool breakage

☐thread not correct (checked with thread plug gauge) ☐tooth breakage in the chamfer lead

☐machine error ☐tooth breakage in the guiding thread

8. Efficiency comparison

Tool under test : _____

Performance and observations : _____

Remarks : _____

_____

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TECHNISCHER FRAGEBOGEN

GEWINDEFRÄSEN UND GEWINDEWIRBELN

Angebotsanfrage ☐ *Versuchsresultat* ☐ *Beanstandung* ☐

Vertretung : _____ Kontaktperson : _____

Kunde : _____ E-Mail : _____

Tel.- /Fax-Nr : _____ Datum : _____

1. Werkzeug-Typ : _____

Nenn-Ø : _____ Steigung : _____

Serie : _____ Beschichtung : _____

2. Werkstoffgruppe : _____

Werkstoff-Nr : _____ Härte : _____ N/mm^2 /HB/HRC

Norm : _____ Bruchdehnung : _____ %

3. Gewinde : ☐Innen ☐Aussen **Lochart :** ☐Sackloch ☐Durchgangsloch

Gewindelänge : _____ mm

Kernloch-Ø : _____ Tiefe : _____ mm

Aufbohrungs-Ø : _____ Tiefe : _____ mm

4. Schnittgeschwindigkeit (V_c) : _____ m/min _____ 1/min

Vorschub (f) : _____ mm/U **Vorschub (f_z) :** _____ mm/Zahn

5. Maschine : _____ ☐Innenkühlung

Arbeitsrichtung : ☐horizontal Werkzeugaufnahme : ☐Spannzange ☐Weldon / Whistle Notch

☐vertikal ☐Hydrodehnspannfutter ☐Schrumpffutter

6. Schmierung : ☐Emulsion ☐Schneidöl ☐Luft ☐MMS

Produkt : _____

7. Grund des Werkzeugwechsels ☐Werkzeugverschleiss ☐Werkzeugbruch

☐Gewinde nicht korrekt (kontrolliert mit Lehre) ☐Maschinenfehler

8. Standzeitvergleich

Vergleichswerkzeug : _____

Resultat und Befund : _____

_____

Bemerkungen : _____

_____

_____

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TECHNICAL QUESTIONNAIRE

THREAD MILLING AND THREAD WHIRLING

Enquiry ☐ *Test result* ☐ *Complaint* ☐

Agency : _____ Contact : _____

Customer : _____ E-mail : _____

Phone or fax : _____ Date : _____

1. Tool type : _____

Tool Ø : _____ Pitch : _____

Serie : _____ Coating : _____

2. Material group : _____

Material N° : _____ Hardness : _____ N/mm² /HB/HRC

Norm : _____ Elongation : _____ %

3. Thread : ☐internal ☐external **Hole :** ☐blind ☐through

Threaded length : _____ mm

Core hole Ø : _____ Depth : _____ mm

Counter-bore Ø : _____ Depth : _____ mm

4. Cutting speed (V_c) : _____ m/min _____ 1/min

Feed (f) : _____ mm/rev. **Feed (f_z) :** _____ mm/tooth

5. Machine : _____ ☐internal coolant

Working position : ☐horizontal ☐vertical

Tool attachment : ☐collet ☐hydraulic chuck ☐Weldon / Whistle Notch ☐hot / cold shrunk

6. Lubricant : ☐emulsion ☐oil ☐air ☐mist

Product : _____

7. Tool change reason : ☐tool wear ☐tool breakage

☐incorrect threading (inspected with gauge) ☐programme error

8. Efficiency comparison

Tool under test : _____

Performance and observations : _____

Remarks : _____

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Prices	Our prices are quoted for deliveries ex works Malleray, excluding VAT, packing, insurance, freight, customs' and legalisation duties. Should prices increase, we reserve the right to invoice tools already acknowledged at the new prices.
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ZUSCHLÄGE - PRICE SUPPLEMENTS

Zuschläge für Abänderungen von blanken Gewindebohren und Oberflächen-Behandlungen

	Auf Bruttopreis pro Stück	*Anteil an Einrichtkosten pro Typ und Abmessung (netto)*
Abändern des Spanwinkels (Ø 5 - 20 mm)	10 %	auf Anfrage
Verlängern des Anschnittes (bis Ø 20 mm)	10 %	auf Anfrage
Kürzen des Anschnittes (Ø 3 - 20 mm)	20 %	auf Anfrage
Schälanschnitt anschleifen (Ø 5 - 20 mm)	10 %	auf Anfrage
Abschleifen der Zentrierspitze	3 %	auf Anfrage
Verjüngen des Führungsgewindes ab Ø 4 mm	12 %	auf Anfrage
NV-Plasmanitrierung + "V"-Oberflächenbehandlung	10 %	auf Anfrage
DC-"V"-Oberflächenbehandlung	8 %	auf Anfrage
Zusätzliche Markierung	5 %	auf Anfrage
Kühlkanal, mit stirnseitigem Schmiermittelaustritt	auf Anfrage	auf Anfrage
Kühlkanal, mit seitlichem Schmiermittelaustritt	auf Anfrage	auf Anfrage
Beschichtungen TiN, TiCN, VS, CrN, HL	auf Anfrage	auf Anfrage

Price supplements for modifications for bright finished taps and surface treatments

	On gross price each	Participation of set-up costs per type and size (net)
Modification of cutting angle (Ø 5 - 20 mm)	10 %	on request
Lengthening of chamfer (up to Ø 20 mm)	10 %	on request
Shortening of chamfer (Ø 3 - 20 mm)	20 %	on request
Grinding of peeling cut (Ø 5 - 20 mm)	10 %	on request
Removal of centre point	3 %	on request
Truncated thread from Ø 4 mm	12 %	on request
NV-Plasma nitriding + "V" surface treatment	10 %	on request
DC "V" surface treatment	8 %	on request
Additional marking	5 %	on request
Internal coolant, with frontal outflow	on request	on request
Internal coolant, with radial outflow	on request	on request
Coatings TiN, TiCN, VS, CrN, HL	on request	on request

Kosten für Prüfzertifikate - Prices for gauge test certificates

Für neue Gewindelehren (Neulieferung) / Messunsicherheit U95

For new ordered thread gauges / Measuring uncertainty U95

			Nettopreise / Net prices
D5703	**D5725**	Ø 1 - 2.9 mm	*auf Anfrage / on request*
		Ø 3 - 40 mm	*auf Anfrage / on request*
D5701-1	**D5701-2**	Ø 1 - 2.9 mm	*auf Anfrage / on request*
		Ø 3 - 40 mm	*auf Anfrage / on request*
		Ø 41 - 80 mm	*auf Anfrage / on request*
		Ø 81 - 200 mm	*auf Anfrage / on request*
D5704	**D5714**	Ø 1 - 2.9 mm	*auf Anfrage / on request*
		Ø 3 - 40 mm	*auf Anfrage / on request*
		Ø 41 - 80 mm	*auf Anfrage / on request*
		Ø 81 - 200 mm	*auf Anfrage / on request*
D5720 / D5721	**D5722 / D5723**	Ø 3 - 40 mm	*auf Anfrage / on request*
		Ø 41 - 80 mm	*auf Anfrage / on request*
		Ø > 80 mm	*auf Anfrage / on request*

Alle zertifizierten Gewindelehren werden mit der auf dem entsprechenden Prüfzertifikat aufgeführten Identnummer beschriftet.

All "certified" gauges will be marked with the identity number of the corresponding test certificate.



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Warning

Thread tools can break or shatter either through technical failure or negligence, and can endanger the health of the operator. Always obey the safety and health regulations, also the wearing of safety glasses is compulsory.
The grinding of threading tools causes hazardous particles, and must be performed only under most rigorous safety standards.

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