BASS
TECHNIK FÜR GEWINDE

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OUR JOB
YOUR SOLUTION

CATALOG 17

Edition 11/2025

17

You can find the current edition of our catalog on our website.

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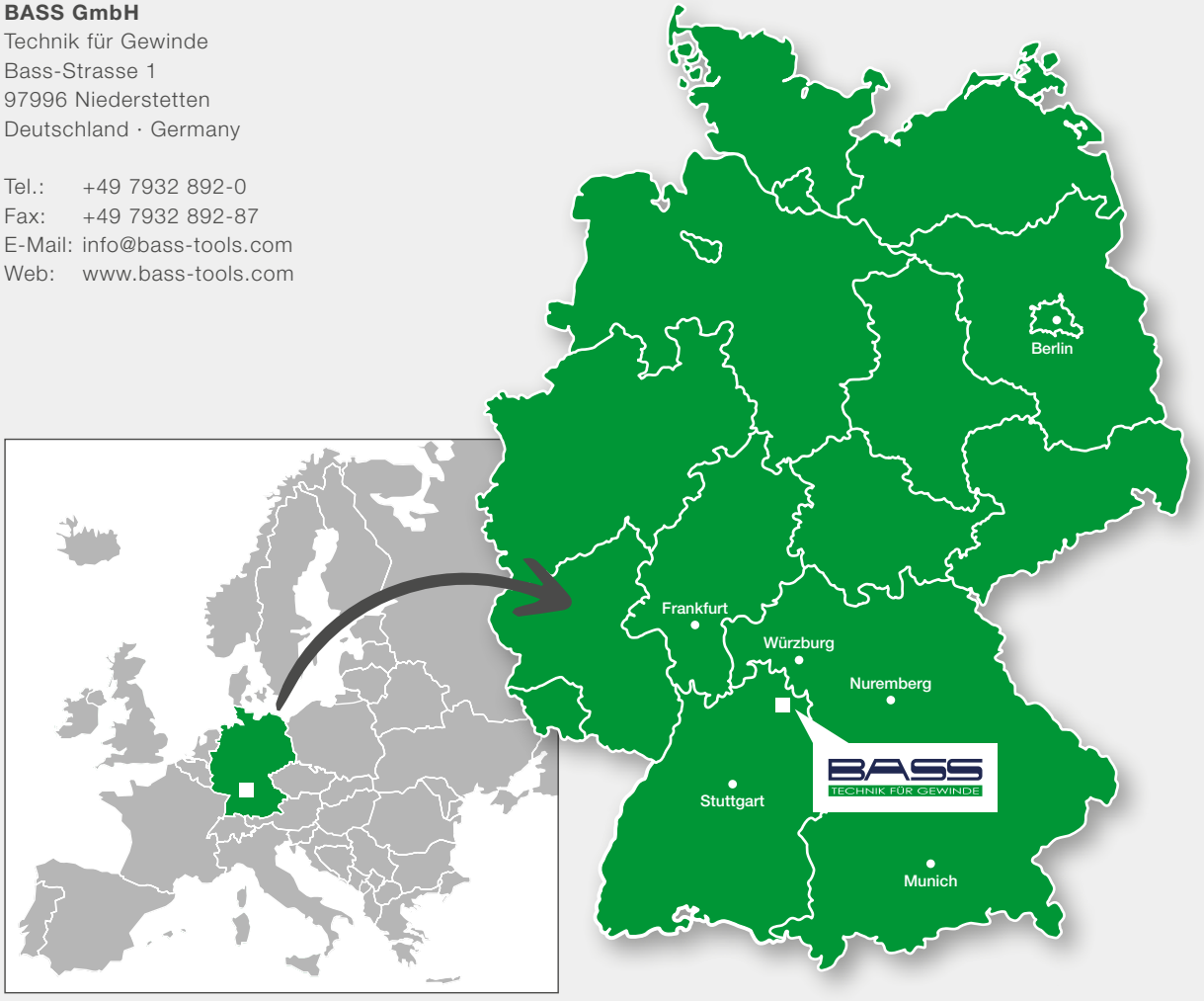

BASS
TECHNIK FÜR GEWINDE

OUR JOB – YOUR SOLUTION

Threading is our passion. Since the very beginnings of BASS in 1947 we develop, produce and sell threading tools for industrial tapping with one goal: making our customers successful.

No matter if cutting tap, roll form tap, or thread milling – when it comes to the machining of internal threads we are your partner in product and process.

We are proud of our long history and the experience that comes with it. So we can find the perfect product for your application. No matter if serial production or single high-value workpiece, we always aim to reduce your costs per thread.

Our tools are produced in our modern headquarters, located in southern Germany, according to state-of-the-art processes using modern machinery and the skillsets of our high-trained employees. Every product leaving BASS shares our very own DNA for reliable thread machining and high-quality service from the first contact until the last part that drops from your product line.

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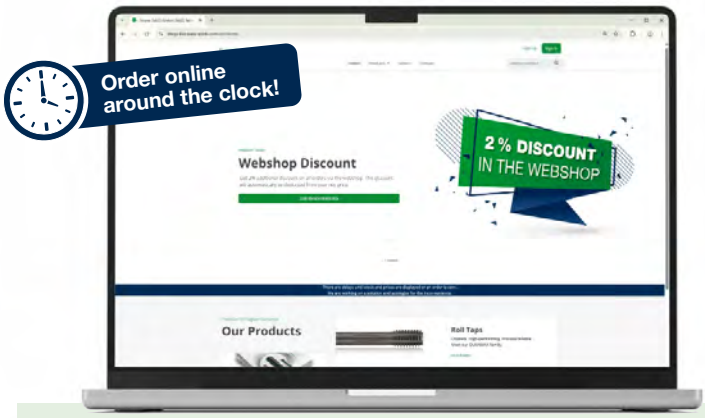

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BASS SPECIALS

J-Threads

Rounded thread profile for aerospace.
Catalog: MJ / UNJC / UNJF / EG MJ

Minimum Quantity Lubrication

Roll taps with axial or radial inner coolant for minimum quantity lubrication, with disposal at external or internal cone; tap holders for MQL.
Catalog: DURAMAX GAL / HST SYNCHRO MMS

Standard Roll Taps made of Solid Carbide

Highest tool lifes for stable machining conditions.
Catalog: DURAMAX H / DURAMAX GAL

Standard Roll Taps and Cutting Taps for STI-Threads (EG)

For the machining of helical coil threads for wire thread inserts.
Catalog: EG M / EG MJ / EG MF / EG UNC / EG UNF

Wide Variety of Standard Geometries

We do exceptional things as standard – like variable polygon forms at roll taps or changing helix angles in flutes to thread up to 4xD.
Catalog: DURAMAX HZP geometry / DOMINANT VA45 DF

NOT IN THE CATALOG?

LET US KNOW – SPECIALS ARE OUR SPECIALTY.

CONTENT

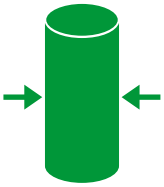
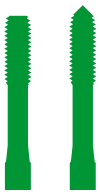
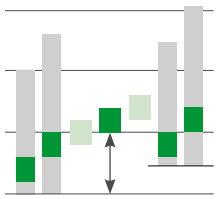
CATALOG 17

GENERAL INFORMATION

CONTENT

GENERAL INFORMATION

GENERAL INFORMATION

			
Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9. Data stated in the catalog may differ.	Taps and roll taps are manufactured with a center point up to dimension M6 or UNC or UNF 1/4“ – except tools with chamfer form E or with internal coolant KA and KR. Taps with chamfer form B are manufactured with a center point up to dimension M8 or UNC or UNF 5/16“. Illustrations in the catalog may differ. Indicated lengths do not include length of tip.	The geometry types VARIANT VA and DOMINANT VA45 will be adjusted to x-tolerances (6HX, 6GX, …) in all classes with the introduction of Catalog 17 in order to improve tool lives. During the transition phase, tools without x-tolerances may still be stocked. More information on tolerance classes: p. 253	The stated Ø d_1 can differ from the actual milling cutter Ø. The effective Ø is marked on the tool.

Trademarks

BASS TECHNIK FÜR GEWINDE	The BASS logo along with the slogan „Technik für Gewinde“, as well as our type designations AVANT, DURAMAX, DOMINANT, HST SYNCHRO, VARIANT and VARIO are registered trademarks of BASS GmbH.

Cutting taps

VARIANT®

- straight flutes and spiral point
- for through hole
- chip evacuation forwards

VARIO®

- straight flutes
- for through and blind hole
- for short-chipping materials
- flutes pick up the chips

AVANT®

- spiral flute 12–25°
- for blind hole, thread depth up to 2.5xD
- chip evacuation backwards

DOMINANT®

- spiral flute 38–45°
- for blind hole, thread depth up to 3xD (dynamic flute: 4xD)
- chip evacuation backwards

Roll taps

DURAMAX®

- with or without oil grooves
- for through and blind hole
- for formable materials up to 1.400 N/mm²

Materials

HSSE-PM	Powder metal
VHM	Solid carbide

GENERAL INFORMATION

Applications	
GAL	for cast aluminium
GG	for grey cast iron
H	for high resistant materials
HO	for high resistant materials, without oil grooves
HVA	for heat resistant and high resistant stainless steels
HZ	for tough materials
HZP	for tough materials (Performance)
MHST	for synchronized employment
MS	for brass
N	for normal materials
NB	for sheet metal processing
NI	for nickel and nickel alloys
NO	for normal materials, without oil grooves
SH	for hardened steel 39-63 HRC
TIH	for titanium and nickel alloys and for high resistant materials
VA	for stainless steel
W	for soft materials
WM	tool set, no. 1 with cylindrical pilot

Other abbreviations	
AK	disposal of MQL at the square with external cone
AZ	interrupted threads
DF	dynamic flute
FL	with long flutes
HK	with high core
KA	axial coolant
KR	radial coolant
LH	left hand
LSP	left spiral flute
MG	multi-groove
MKA	axial interior coolant for minimum quantity lubrication
MKR	radial interior coolant for minimum quantity lubrication
RSP	right spiral flute
SL	tools with long shank
SR	tools with short shank
TS	shank for Trumpf machines
1	reinforced shank
2	reduced shank
h6	shank tolerance

Types of bore holes

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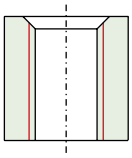	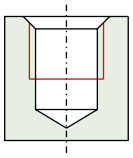	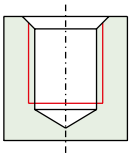	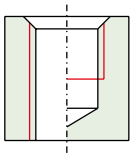	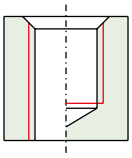
for through holes (chamfer form B, chamfer form D)	for blind holes with normal thread chamfer (chamfer form C)	for blind holes with short thread chamfer (chamfer form E, chamfer form F)	for through and blind holes with normal thread chamfer (chamfer form C, chamfer form D)	for through and blind holes with short thread chamfer (chamfer form E)

Coatings and surface finishings

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BA	**BNE**	**BT**	**BX**	**FNT**	**HL**	**TICN**	**TIN**	**VAP**

TAP RECOMMENDATIONS

In the table below you will find our recommendations for standard and performance taps for each material group.

Please note: Tools not included in this table can still be a good choice. Most tools are named without coolant, please make sure to choose fitting coolant for your application. For a more detailed choice please use our application table.

Whenever you are unsure which tool fits best please get in contact with us. We are glad to help.

	Application	Examples	R_m N/mm²	HB	HRC	Roll Tap Through & Blind Hole		Cutting Tap Through Hole		Cutting Tap Blind Hole	
						Standard Tap	Performance Tap	Standard Tap	Performance Tap	Standard Tap	Performance Tap
P	**Steel materials**										
	Magnetic soft steel	FeP01	> 100 < 450			DURAMAX N TIN	DURAMAX H BT	VARIANT N TIN	VARIANT MHST TIN* / VA HL	DOMINANT N38 TIN	DOMINANT MHST45 HL* / VA45 HL
	Construction steel / case hardening steel	En40B	> 300 < 700			DURAMAX N TIN	DURAMAX H BX	VARIANT N TIN	VARIANT MHST TIN* / VA HL	DOMINANT N38 TIN	DOMINANT MHST45 HL* / VA45 HL
	Carbon steel	080M46	> 400 < 950			DURAMAX N TIN	DURAMAX H BX	VARIANT N TIN	VARIANT MHST TIN* / VA HL	DOMINANT N38 TIN	DOMINANT MHST45 HL* / VA45 HL
	Alloyed / heat-treatable steel	En19A	> 450 < 950			DURAMAX N TIN	DURAMAX HZP BX	VARIANT H TIN	VARIANT MHST TIN* / VA HL	DOMINANT HZ38 TICN	DOMINANT MHST45 HL* / VA45 KA HL
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40	DURAMAX N TIN	DURAMAX HZP BX	VARIANT H TICN	VARIANT MHST TIN* / VA HL	DOMINANT HZ38 TICN	DOMINANT MHST45 HL* / VA45 KA HL
M	**Stainless steel**										
	Ferritic / martensitic steel	420S37	> 450 < 1200			DURAMAX H TIN	DURAMAX H BT	VARIANT MHST TIN* / VA HL	VARIANT MHST TIN* / VA HL	DOMINANT MHST45 HL* / VA45 TIN	DOMINANT MHST45 HL* / VA45 HL
	Austenitic steel	320S18	> 400 < 950			DURAMAX H TIN	DURAMAX H BT	VARIANT MHST TIN* / VA HL	VARIANT HVA BT / MHST TIN*	DOMINANT MHST45 HL* / VA45 TIN	DOMINANT MHST45 HL* / VA45 HL
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48	DURAMAX H TIN	DURAMAX H BT	VARIANT TIH TICN	VARIANT HVA BT / MHST TIN*	DOMINANT MHST45 HL* / VA45 HL	AVANT HVA15 KA HK BT
K	**Cast iron**										
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300		✕	✕	VARIO GG TICN	VARIO GG BT	AVANT H15 TICN	VARIO GG BT
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350		✕	✕	VARIANT H TICN	VARIO GG BT	AVANT H15 TICN	AVANT GAL15 KA TICN VHM
	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200		○ DURAMAX H BT	○ DURAMAX H BT	VARIANT H TICN	VARIO GG BT	AVANT H15 TICN	AVANT GAL15 KA TICN VHM
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32	○ DURAMAX H BT	○ DURAMAX H BT	VARIANT H TICN	VARIO GG BT	AVANT TIH13 TICN	AVANT GAL15 KA TICN VHM
N	**Copper**										
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120		DURAMAX N TIN	DURAMAX H BT	VARIANT H TIN	VARIANT MHST TIN* / VA HL	DOMINANT MHST45 HL* / VA45 TIN	DOMINANT MHST45 HL* / VA45 HL
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200		○ DURAMAX N TIN	○ DURAMAX H BT	VARIANT MHST TIN* / VA TIN	VARIO MS	AVANT H25 HL	AVANT H25 HL
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200		DURAMAX N TIN	DURAMAX H BT	VARIANT N TIN	VARIANT MHST TIN* / VA HL	DOMINANT MHST45 HL* / VA45 HL	DOMINANT MHST45 HL* / VA45 TIN
	Copper-alu-nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200		○ DURAMAX N TIN	○ DURAMAX H BT	VARIANT MHST TIN* / VA TIN	VARIO H TICN	AVANT H15 TICN	AVANT H25 HL
	Copper-alu-nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220		DURAMAX N TIN	DURAMAX H BT	VARIANT H TIN	VARIANT TIH TICN	DOMINANT MHST45 HL* / VA45 TIN	AVANT TIH13 TICN
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190		DURAMAX N TIN	DURAMAX H BT	VARIANT TIH TICN	VARIANT TIH TICN	AVANT H15 TICN	AVANT TIH13 TICN
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47	○ DURAMAX N TIN	○ DURAMAX H BT	VARIO SH TICN SR VHM	VARIO SH TICN SR VHM	AVANT NI13 TICN	AVANT NI13 TICN

formable ○ limited formable ✕ not formable *for synchronized machining

BASS TECHNIK FÜR GEWINDE

TAP RECOMMENDATIONS

	Application	Examples	R_m N/mm²	HB	HRC	Roll Tap Through & Blind Hole		Cutting Tap Through Hole		Cutting Tap Blind Hole	
						Standard Tap	Performance Tap	Standard Tap	Performance Tap	Standard Tap	Performance Tap
N	**Aluminium / Magnesium**										
	Alu wrought alloy Si ≤0.5%	1B	> 100 < 700	> 30 < 200		DURAMAX H BT	DURAMAX GAL BT	VARIANT N (TIN)	VARIANT VA BNE / MHST TIN*	DOMINANT N38	DOMINANT VA45 BNE / MHST45 KA HL
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200		DURAMAX H TIN	DURAMAX GAL BT	VARIANT MHST TIN* / VA TIN	VARIANT MHST TIN* / VA HL	DOMINANT MHST45 HL* / VA45 TIN	AVANT GAL15 TICN VHM
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265		DURAMAX H BT	DURAMAX GAL BT	VARIANT MHST TIN* / VA TIN	VARIANT MHST TIN* / VA HL	DOMINANT MHST45 HL* / VA45 TIN	AVANT GAL15 TICN VHM
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150		×	×	VARIO GG TICN	VARIO GG BT	AVANT H15 TICN	AVANT GAL15 TICN VHM
	Synthetics										
	Thermoplastic (long chipping)	Styreme	> 20 < 80			×	×	VARIANT N TIN	VARIANT MHST TIN* / VA HL	DOMINANT N38	DOMINANT MHST45 HL / VA45
	Duroplastic (short chipping)	Toufnell	> 80 < 110			×	×	VARIO GG TICN	VARIO GG BT	DOMINANT N38	DOMINANT MHST45 HL / VA45
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440		×	×	VARIO GG TICN	VARIO GG BT	AVANT GAL15 KA TICN VHM	AVANT GAL15 KA TICN VHM
	Special materials										
	Cobalt alloyed		> 400 < 2000	> 120 < 590		×	×	VARIANT TIH TICN	VARIO GG TICN	AVANT TIH13 TICN	AVANT TIH13 TICN
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52	×	×	VARIANT NI TICN	VARIO GG TICN	AVANT NI13 TICN	AVANT NI13 TICN
	TIC-hard material			> 440 < 495	> 47 < 50	×	×	VARIO SH TICN SR HSSE-PM	VARIO SH TICN SR HSSE-PM	VARIO SH TICN SR HSSE-PM	VARIO SH TICN SR HSSE-PM
	Graphite		> 38 < 60			×	×	VARIO GG BT	VARIO GG TICN VHM	VARIO GG BT	VARIO GG TICN VHM
S	**Titanium**										
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200		DURAMAX H BT	DURAMAX GAL BT	VARIANT TIH TICN	VARIANT HVA BT / MHST TIN*	AVANT TIH13 TICN	AVANT HVA15 BT
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27	DURAMAX H BT	O DURAMAX GAL BT	VARIANT TIH TICN	VARIANT HVA BT / MHST TIN*	AVANT TIH13 TICN	AVANT HVA15 BT
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40	DURAMAX H BT	O DURAMAX GAL BT	VARIANT TIH TICN	VARIANT HVA BT / MHST TIN*	AVANT TIH13 TICN	AVANT HVA15 BT
	Nickel										
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175		DURAMAX H BT	DURAMAX GAL BT	VARIANT MHST TIN* / VA TIN	VARIANT MHST TIN* / VA HL	AVANT NI13 TICN	AVANT NI13 TICN
	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39	O DURAMAX GAL BT	O DURAMAX GAL BT	VARIANT MHST TIN* / VA TIN	VARIANT TIH TICN	AVANT HVA15 BT	AVANT TIH13 TICN
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48	×	×	VARIANT NI TICN	VARIANT NI TICN	AVANT NI13 TICN	AVANT NI13 TICN
H	**Steel materials**										
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45	DURAMAX N TIN	DURAMAX H BT	VARIANT H TICN	VARIANT MHST TIN* / TIH TICN / VA HL	DOMINANT MHST45 HL* / VA45 HL	AVANT TIH13 TICN
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48	×	×	VARIANT H TICN	VARIANT TIH TICN	DOMINANT MHST45 HL* / VA45 HL	AVANT TIH13 TICN
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 56	×	×	VARIO SH TICN SR HSSE-PM	VARIO SH TICN SR HSSE-PM	AVANT NI13 TICN	VARIO SH TICN SR HSSE-PM
	Hardened steel	BA2			> 56 < 63	×	×	VARIO SH TICN SR VHM	VARIO SH TICN SR VHM	AVANT NI13 TICN	VARIO SH TICN SR VHM

APPLICATION TABLE FOR ROLL TAPS

cutting speed

$$v_c = \frac{n * \pi * d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c * 1000}{\pi * d_1}$$

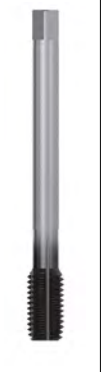
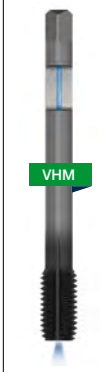
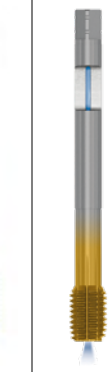
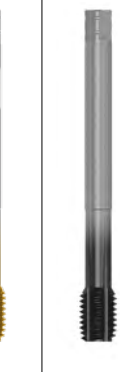
How to proceed
1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type

GT = thread depth

						through and blind hole			
						DURAMAX N	**DURAMAX N**	**DURAMAX NO**	**DURAMAX NB**
									
					model	HSSE-PM	TIN HSSE-PM	TIN HSSE-PM	TIN TS HSSE-PM
					GT = $Ød_1$ ×	3	3	3	3
					thread type	**M:** 32	**M:** 32–34 **MF:** 98–99 **G:** 120 **UNC:** 134 **UNF:** 140	**M:** 34–35	**M:** 36
	Application	**Examples of materials**	**R_m N/mm²**	**HB**	**HRC**	**vc m/min**			
P	**Steel materials**								
	Magnetic soft steel	FeP01	> 100 < 450				**20–30**	20–30	**20–30**
	Construction steel / case hardening steel	En40B	> 300 < 700				**20–50**	20–50	**20–50**
	Carbon steel	080M46	> 400 < 950				**20–30**	20–30	**20–30**
	Alloyed / heat-treatable steel	En19A	> 450 < 950				**15–30**	15–30	**15–30**
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40		**10–20**	10–20	**10–20**
M	**Stainless steel**								
	Ferritic / martensitic steel	420S37	> 450 < 1200				**6–12**	6–12	**6–12**
	Austenitic steel	320S18	> 400 < 950				**8–12**	8–12	**8–12**
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48		4–10	4–10	4–10
K	**Cast iron**								
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300					
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350					
	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200					
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32				
N	**Copper**								
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120		4–8	10–30	**10–30**	10–35
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200					
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200			**15–35**	15–35	**15–35**
	Copper-alu-nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200					
	Copper-alu-nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220					
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190					
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47				
	Aluminium / Magnesium								
	Alu wrought alloy Si ≤0.5%	1B	> 100 < 700	> 30 < 200		15–30			
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200		10–25	**20–40**	20–40	**20–40**
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265			**15–40**	15–40	**15–40**
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150					
	Synthetics								
	Thermoplastic (long chipping)	Styreme	> 20 < 80						
	Duroplastic (short chipping)	Toufnell	> 80 < 110						
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440					
	Special materials								
	Cobalt alloyed		> 400 < 2000	> 120 < 590					
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52				
	TIC-hard material			> 440 < 495	> 47 < 50				
	Graphite		> 38 < 60						
S	**Titanium**								
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200		**10–15**			
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27				
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40				
	Nickel								
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175		10–25	**10–25**	10–25	**10–25**
	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39				
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48				
H	**Steel materials**								
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45				
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48				
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 53				
	Hardened steel	BA2			> 53 < 63				

Tool well suitable Tool suitable

BASS TECHNIK FÜR GEWINDE

	through and blind hole											
	DURAMAX H	**DURAMAX H**	**DURAMAX H**	**DURAMAX H**	**DURAMAX H**	**DURAMAX H**	**DURAMAX H**	**DURAMAX H**	**DURAMAX H**	**DURAMAX HO**	**DURAMAX HZP**	**DURAMAX GAL**
												
	TIN HSSE-PM	KA TIN HSSE-PM	KR TIN HSSE-PM	BT HSSE-PM	KA BT HSSE-PM	KA BT VHM	KR BT HSSE-PM	KR BT VHM	BX HSSE-PM	TIN HSSE-PM	KA BX HSSE-PM	BT HSSE-PM
	3	3	3	3	3	3	3	3	3	3	3	3
	M: 38 **MF:** 98 **G:** 120 **EG M:** 153 **EG MF:** 156 **EG MJ:** 165	**M:** 39 **MF:** 98	**M:** 39	**M:** 41, 42, 44 **MF:** 100 **G:** 120 **UNC:** 134 **UNF:** 140	**M:** 42–44 **MF:** 100	**M:** 42	**M:** 42–43	**M:** 44	**M:** 45 **MF:** 100	**M:** 46	**M:** 48–49 **MF:** 101	**M:** 48–51 **MF:** 102–103 **G:** 120
	vc m/min											
	Steel materials											
	20–30	**20–30**	**20–30**	**20–35**	**20–35**	**30–40**	**20–35**	**30–40**	**20–35**	20–30	**30–40**	**20–35**
	20–50	**20–50**	**20–50**	**20–55**	**20–55**	**20–60**	**20–55**	**20–60**	**20–55**	20–50	**20–60**	**20–55**
	20–30	**20–30**	**20–30**	**20–35**	**20–35**	**20–60**	**20–35**	**20–60**	**20–35**	20–30	**20–60**	**20–35**
	15–30	**15–30**	**15–30**	**15–35**	**15–35**	**20–50**	**15–35**	**20–50**	**15–35**	15–30	**20–50**	**15–35**
	10–20	**10–20**	**10–20**	**10–25**	**10–25**	**15–35**	**10–25**	**15–35**	**10–25**	10–20	**15–35**	**10–25**
	Stainless steel											
	6–12	**6–12**	**6–12**	**6–15**	**6–15**	**10–25**	**6–15**	**10–25**	**6–15**	6–12	**10–25**	**6–15**
	8–12	**8–12**	**8–12**	**8–15**	**8–15**	**10–25**	**8–15**	**10–25**	**8–15**	8–12	**10–25**	**8–15**
	4–10	**4–10**	**4–10**	**4–12**	**4–12**	**10–25**	**4–12**	**10–25**	**4–12**	4–10	**10–25**	**4–12**
	Cast iron											
	Copper											
	10–30	10–30	10–30	10–35	10–35	25–50	10–35	**25–50**	10–35	**10–30**	10–30	10–35
	15–35	**15–35**	**15–35**	**15–40**	**15–40**	**25–60**	**15–40**	**25–60**	**15–40**	15–35	15–35	**15–40**
	Aluminium / Magnesium											
				15–40	15–40	25–80	15–40	**25–80**	15–40		15–40	**20–50**
	20–40	**20–40**	**20–40**	**20–60**	**20–60**	**30–80**	**20–60**	**30–80**	**20–60**	20–40	20–60	**20–60**
	15–40	**15–40**	**15–40**	**15–50**	**15–50**	**30–60**	**15–50**	**30–60**	**15–50**	15–40	15–50	**15–50**
	Synthetics											
	Special materials											
	Titanium											
	Nickel											
	10–25	**10–25**	**10–25**	**10–25**	**10–25**	**12–35**	**10–25**	**12–35**	**10–25**	10–25	10–25	
	Steel materials											
											5–8	

APPLICATION TABLE FOR CUTTING TAPS AND ROLL TAPS

cutting speed

$$v_c = \frac{n * \pi * d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c * 1000}{\pi * d_1}$$

How to proceed
1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type

GT = thread depth

						through and blind hole			
						DURAMAX GAL	**DURAMAX GAL**	**DURAMAX GAL**	**DURAMAX GAL**
									
					model	KA BT VHM	MKA BT HSSE-PM	MKA BT MG HSSE-PM	MKR BT HSSE-PM
					GT = $Ød_1$ ×	3	3	3	3
					thread type	**M:** 50	**M:** 50	**M:** 50 **MF:** 102	**M:** 48, 49, 51 **MF:** 102
	Application	**Examples of materials**	**R_m N/mm²**	**HB**	**HRC**	**vc m/min**			
P	**Steel materials**								
	Magnetic soft steel	FeP01	> 100 < 450			**30–40**	**20–35**	**20–35**	**20–35**
	Construction steel / case hardening steel	En40B	> 300 < 700			**20–60**	**20–55**	**20–55**	**20–55**
	Carbon steel	080M46	> 400 < 950			**20–60**	**20–35**	**20–35**	**20–35**
	Alloyed / heat-treatable steel	En19A	> 450 < 950			**20–50**	15–35	15–35	15–35
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40	**15–35**	**10–25**	**10–25**	**10–25**
M	**Stainless steel**								
	Ferritic / martensitic steel	420S37	> 450 < 1200			**10–25**	**6–15**	**6–15**	**6–15**
	Austenitic steel	320S18	> 400 < 950			**10–25**	**8–15**	**8–15**	**8–15**
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48	**10–25**	**4–12**	**4–12**	**4–12**
K	**Cast iron**								
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300					
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350					
	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200					
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32				
N	**Copper**								
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120		**25–50**	10–35	10–35	10–35
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200					
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200		**25–60**	**15–40**	**15–40**	**15–40**
	Copper-alu-nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200					
	Copper-alu-nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220					
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190					
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47				
	Aluminium / Magnesium								
	Alu wrought alloy Si ≤0.5%	1B	> 100 < 700	> 30 < 200		**30–90**	**20–50**	**20–50**	**20–50**
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200		**30–90**	**20–60**	**20–60**	**20–60**
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265		**30–70**	**15–50**	**15–50**	**15–50**
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150					
	Synthetics								
	Thermoplastic (long chipping)	Styreme	> 20 < 80						
	Duroplastic (short chipping)	Toufnell	> 80 < 110						
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440					
	Special materials								
	Cobalt alloyed		> 400 < 2000	> 120 < 590					
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52				
	TIC-hard material			> 440 < 495	> 47 < 50				
	Graphite		> 38 < 60						
S	**Titanium**								
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200					
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27				
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40				
	Nickel								
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175		**10–25**	**10–25**	**10–25**	**10–15**
	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39				
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48				
H	**Steel materials**								
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45				
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48				
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 53				
	Hardened steel	BA2			> 53 < 63				

	through and blind hole		through hole									
	DURAMAX GAL	**DURAMAX GAL**	**VARIANT N**	**VARIANT N**	**VARIANT H**	**VARIANT H**	**VARIANT H**	**VARIANT H**	**VARIANT VA**	**VARIANT VA**	**VARIANT VA**	**VARIANT VA**
												
	MKR AK BT HSSE-PM	MKR AK BT VHM	HSSE-PM	TIN HSSE-PM	HSSE-PM	VAP HSSE-PM	TIN HSSE-PM	TICN HSSE-PM	VAP HSSE-PM	TIN HSSE-PM	HL HSSE-PM	BNE HSSE-PM
	3	3	3	3	3	3	3	3	3	3	3	3
	M: 51 **MF:** 102	**M:** 51 **MF:** 104 **EG M:** 153 **EG MJ:** 165	**M:** 52 **UNEF:** 146	**M:** 52 **UNEF:** 146	**M:** 54–55 **BSW:** 151	**M:** 56–57	**M:** 56, 58–60 **BSW:** 151	**M:** 60–61 **MF:** 106–107	**M:** 62–63	**M:** 62–65 **MF:** 106–108 **G:** 121 **UNC:** 135 **UNF:** 141	**M:** 64–65 **MF:** 106–107 **G:** 121 **UNC:** 135 **UNF:** 141 **EG M:** 154–155	**M:** 64–65
	vc m/min											
	Steel materials											
	20–35	**30–40**		**20–30**					10–15	**20–30**	**20–30**	
	20–55	**20–60**	10–20	**20–30**					10–20	**20–30**	**20–30**	
	20–35	**20–60**	10–20	**20–30**	10–20	10–20	**20–30**	**20–30**	10–20	**20–30**	**20–30**	
	15–35	**20–50**			10–15	10–15	**15–35**	15–35	10–15	**15–35**	**15–35**	
	10–25	**15–35**			5–10		10–20	**10–20**		10–20	10–20	
	Stainless steel											
	6–15	**10–25**				4–6	6–12		**4–6**	6–12	**6–12**	
	8–15	**10–25**				3–8	6–12		3–8	6–12	**6–12**	
	4–12	**10–25**				1–4	3–6		1–4	3–8	**3–8**	
	Cast iron											
							10–25	**10–25**		8–20	8–20	
							15–25	**15–25**		15–25	15–25	
								5–15		5–15	5–15	
	Copper											
	10–35	**25–50**			6–10		**10–25**			**10–25**	10–25	10–35
										15–35	15–35	15–35
	15–40	**25–60**		**15–35**			**15–35**			**15–35**	15–35	15–40
										10–20		10–25
					6–12		12–20	**15–25**		**15–25**		15 –30
	Aluminium / Magnesium											
	20–50	**25–80**	**10–25**									15–40
	20–60	**30–80**	**10–25**	**15–40**						**15–40**	**15–40**	**15–40**
	15–50	**30–60**		**15–40**						**15–40**	**15–40**	**15–40**
								20–30				15–40
	Synthetics											
			10–25	**10–25**						**10–25**		
	Special materials											
	Titanium											
									5–10			
	Nickel											
	10–25	**12–35**		**8–15**						**8–15**		10–25
										3–6		10–20
	Steel materials											
								3–8				

APPLICATION TABLE FOR CUTTING TAPS

cutting speed

$$v_c = \frac{n * \pi * d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c * 1000}{\pi * d_1}$$

How to proceed
1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type

GT = thread depth

						through hole			
						VARIANT MHST	**VARIANT MHST**	**VARIANT HVA**	**VARIANT TIH**
									
					model	HK TIN HSSE–PM	KR HK TIN HSSE–PM	HK BT HSSE–PM	TICN HSSE–PM
					GT = $Ød_1$ ×	3	3	3	3
					thread type	**M:** 66	**M:** 66 **MF:** 108	**M:** 66	**M:** 67 **MF:** 108 **MJ:** 160 **UNJC:** 161 **UNJF:** 163
	Application	**Examples of materials**	**R_m N/mm²**	**HB**	**HRC**	**vc m/min**			
P	**Steel materials**								
	Magnetic soft steel	FeP01	> 100 < 450			**20–80**	**20–80**		
	Construction steel / case hardening steel	En40B	> 300 < 700			**20–80**	**20–80**		
	Carbon steel	080M46	> 400 < 950			**20–80**	**20–80**		
	Alloyed / heat–treatable steel	En19A	> 450 < 950			**15–45**	**15–45**		20–30
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40	**15–35**	**15–35**		**10–25**
M	**Stainless steel**								
	Ferritic / martensitic steel	420S37	> 450 < 1200			**8–12**	**8–12**		
	Austenitic steel	320S18	> 400 < 950			**8–15**	**8–15**	**8–15**	
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48	**3–10**	**3–10**	**3–12**	**3–10**
K	**Cast iron**								
	Grey cast iron	EN–GJL–200	> 150 < 1000	> 100 < 300					
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350		**15–25**	**15–25**		**15–25**
	Malleable cast iron	EN–GJMB–350–10	> 300 < 700	> 100 < 200		**15–25**	**15–25**		**15–25**
	Cast iron with vermicular graphite	EN–GJV–300	> 700 < 1000	> 200 < 300	> 20 < 32	**5–15**	**5–15**		**5–15**
N	**Copper**								
	Copper non–alloyed	Cu–ETP–2 C 101	> 200 < 400	> 60 < 120		**20–30**	**20–30**		
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200		**20–60**	**20–60**		
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200		**20–50**	**20–50**		
	Copper–alu–nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200		15–30	**15–30**		**10–20**
	Copper–alu–nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220		15–25	15–25		**15–25**
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190					**5–12**
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47				
	Aluminium / Magnesium								
	Alu wrought alloy Si ≤0.5%	1B	> 100 < 700	> 30 < 200					
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200		**20–60**	**20–60**		
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265		**20–60**	**20–60**		
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150		**25–40**	**25–40**		**25–35**
	Synthetics								
	Thermoplastic (long chipping)	Styreme	> 20 < 80			**15–30**	**15–30**		
	Duroplastic (short chipping)	Toufnell	> 80 < 110						
	Fibre–reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440					
	Special materials								
	Cobalt alloyed		> 400 < 2000	> 120 < 590					**1–2**
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52				
	TIC–hard material			> 440 < 495	> 47 < 50				
	Graphite		> 38 < 60						
S	**Titanium**								
	Titanium non–alloyed	TA.2	> 300 < 700	> 90 < 200				**5–12**	**5–12**
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27			**5–15**	**5–12**
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40			**2–4**	**2–4**
	Nickel								
	Nickel non–alloyed	BS3072: NA11	> 400 < 600	> 120 < 175		**10–25**	**10–25**		
	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39	**4–8**	**4–8**	4–8	**3–6**
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48				
H	**Steel materials**								
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45	**8–15**	**8–15**		**3–12**
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48				3–10
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 53				
	Hardened steel	BA2			> 53 < 63				

	through hole	through and blind hole										
	VARIANT NI	**VARIO N**	**VARIO N**	**VARIO N**	**VARIO H**	**VARIO H**	**VARIO H**	**VARIO SH**	**VARIO SH**	**VARIO HZ**	**VARIO GG**	**VARIO GG**
												
	TICN HSSE–PM	HSSE	HSSE–PM	TIN HSSE–PM	VAP HSSE–PM	KA TICN HSSE–PM	KA HL SL FL HSSE–PM	TICN SR HSSE–PM	TICN SR VHM	AZ TIN HSSE–PM	TICN HSSE–PM	KA TICN HSSE–PM
	3	2	2	2	2	2	2.5	1.5	2.5	–	2	3
	M: 67 **MJ:** 160 **UNJC:** 161 **UNJF:** 163	**Pg:** 152	**Rp:** 128 **Rc:** 129 **NPT:** 130 **NPTF:** 131 **NPSM:** 132 **NPSF:** 133 **UNEF:** 146 **Rd:** 149 **W:** 150	**Rp:** 128 **Rc:** 129 **NPT:** 130 **NPTF:** 131 **NPSM:** 132 **NPSF:** 133 **UNEF:** 146 **Rd:** 149	**Rc:** 129	**M:** 68	**M:** 68	**M:** 69 **MF:** 110 **G:** 122	**M:** 69	**NPT:** 130	**M:** 70 **MF:** 110 **G:** 122 **UNC:** 135 **UNF:** 142	**M:** 70–71 **MF:** 110
	vc m/min											
	Steel materials											
		15–25	15–25	15–30			15–35			15–35		
		15–25	15–25	15–30			15–35			15–35		
		15–25	15–25	15–30	10–30	15–35	15–35			15–35		
					10–20	**10–20**	**10–20**			10–20		
	Stainless steel											
										5–10		
										5–10		
										2–5		
	Cast iron											
				15–30	15–30	20–30	20–30			20–30	**20–40**	**20–60**
				10–25	10–25	15–25	**10–25**			15–25	15–25	**15–25**
				10–25	10–25	15–25	**15–25**			15–25	15–25	**15–25**
						5–15	**5–15**				5–15	**5–15**
	Copper											
		10–25	10–25	15–30								
						15–35						
				10–20		**10–20**				10–20		
				10–20		**15–25**						
				6–10		**8–12**						
									5–10			
	Aluminium / Magnesium											
		10–25	10–25							15–35		
		10–25	10–25							15–35		
										10–25		
						25–35					**25–35**	**25–35**
	Synthetics											
		5–15	5–15	5–15	5–15	5–15					**5–15**	**5–15**
											3–10	**3–10**
	Special materials											
									4–8			
	2–3								**4–8**			
									4–8			
												5–15
	Titanium											
	Nickel											
	2–3											
	Steel materials											
					4–10	4–10	**4–10**					
	2–4							2–4				
								1–3	**2–4**			
									1–3			

APPLICATION TABLE FOR CUTTING TAPS

cutting speed

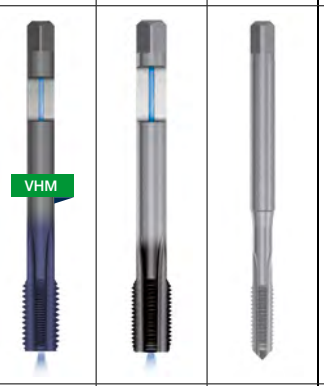
$$v_c = \frac{n * \pi * d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c * 1000}{\pi * d_1}$$

How to proceed
1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type

GT = thread depth

						through and blind hole				
						VARIO GG	**VARIO GG**	**VARIO MS**		
										
					model	KA TICN VHM	KA BT HSSE-PM	HSSE-PM		
					GT = $Ød_1$ ×	3	3	2		
					thread type	**M:** 70–71	**M:** 71 **MF:** 110	**M:** 72		
	Application	**Examples of materials**	**R_m N/mm²**	**HB**	**HRC**	**vc m/min**				
P	**Steel materials**									
	Magnetic soft steel	FeP01	> 100 < 450							
	Construction steel / case hardening steel	En40B	> 300 < 700							
	Carbon steel	080M46	> 400 < 950							
	Alloyed / heat-treatable steel	En19A	> 450 < 950							
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40					
M	**Stainless steel**									
	Ferritic / martensitic steel	420S37	> 450 < 1200							
	Austenitic steel	320S18	> 400 < 950							
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48					
K	**Cast iron**									
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300		**40–80**	**30–70**			
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350		**25–50**	**20–35**			
	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200		**25–50**	**20–35**			
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32	**20–40**	**5–20**			
N	**Copper**									
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120						
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200				**10–35**		
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200						
	Copper-alu-nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200				5–15		
	Copper-alu-nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220						
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190						
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47					
	Aluminium / Magnesium									
	Alu wrought alloy Si ≤0.5%	1B	> 100 < 700	> 30 < 200						
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200						
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265						
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150		**30–60**	**25–40**			
	Synthetics									
	Thermoplastic (long chipping)	Styreme	> 20 < 80							
	Duroplastic (short chipping)	Toufnell	> 80 < 110			**20–40**	**5–20**	5–15		
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440		**5–20**	**3–15**	3–10		
	Special materials									
	Cobalt alloyed		> 400 < 2000	> 120 < 590		**4–8**				
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52	4–8				
	TIC-hard material			> 440 < 495	> 47 < 50					
	Graphite		> 38 < 60			**20–50**	**8–20**			
S	**Titanium**									
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200						
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27					
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40					
	Nickel									
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175						
	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39					
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48					
H	**Steel materials**									
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45					
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48					
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 53					
	Hardened steel	BA2			> 53 < 63					

	blind hole											
	AVANT H05	**AVANT H15**	**AVANT H15**	**AVANT H15**	**AVANT H15**	**AVANT H25**	**AVANT VA15**	**AVANT HVA15**	**AVANT GAL15**	**AVANT GAL15**	**AVANT TIH13**	**AVANT NI13**
												
	HSSE-PM	HSSE-PM	TICN HSSE-PM	KA TICN HSSE-PM	KA HL SL FL HSSE-PM	HL HSSE-PM	VAP HSSE-PM	KA HK BT HSSE-PM	KA TICN HSSE-PM	KA TICN VHM	TICN HSSE-PM	TICN HSSE-PM
	–	2	2	2	2	2	–	2.5	2.5	2.5	2.5	2.5
	Tr: 148	**M:** 74 **G:** 123 **UN:** 147	**M:** 74–75 **MF:** 111 **G:** 123 **UN:** 147	**M:** 74 **MF:** 111	**M:** 75	**M:** 76 **MF:** 111 **G:** 123	**NPT:** 130 **NPTF:** 131	**M:** 76	**M:** 77 **MF:** 112	**M:** 77 **MF:** 112	**M:** 77 **MF:** 112 **UNC:** 135 **UNF:** 142 **MJ:** 160 **UNJC:** 161 **UNJF:** 163	**M:** 78 **MJ:** 160 **UNJC:** 161 **UNJF:** 163
	vc m/min											
	Steel materials											
							10–15					
					15–35	**20–30**	10–20					
	10–15				**15–35**	**20–30**	10–20					
	8–15	10–15	**15–35**	**15–35**	**15–35**	**15–35**	10–15		**15–35**	**15–35**		
	5–10	5–10	**10–20**	**10–20**	**10–20**	**10–20**	5–10		**10–20**	**10–20**	**10–25**	
	Stainless steel											
						6–12	6–12					
						6–12	6–12	8–15				
						3–6	3–6	**3–12**			**3–10**	
	Cast iron											
			20–30	20–30	20–30		10–20					
			10–25	**10–25**	**10–25**	10–25	8–20		**10–25**	**30–70**	**15–25**	
			15–25	**15–25**	**15–25**		8–20		**15–25**	**30–70**	**15–25**	
			5–15	5–15	5–15				5–15	**20–40**	**5–15**	
	Copper											
		6–10					6–10					
		15–35				15–35	15–35					
		10–25	**15–35**	**15–35**		**15–35**	10–25		**15–35**			
		5–15	**10–20**	**10–20**			5–15		**10–20**	**20–40**	**10–20**	
		10–15	**15–25**	**15–25**			10–15		**15–25**		**15–25**	
		8–12	**8–12**	**8–12**					**8–12**	**12–25**	**5–12**	
												1–2
	Aluminium / Magnesium											
						15–40						
	10–25					15–35			**15–40**	**30–70**		
						15–35			**15–40**	**30–60**		
			25–35	**25–35**					**25–35**	**50–70**	**25–35**	
	Synthetics											
										5–25		
	Special materials											
											1–2	
												2–3
	Titanium											
								5–12			**5–10**	
								5–15			**5–12**	
								2–4			**2–4**	
	Nickel											
								3–6			**3–6**	
												2–3
	Steel materials											
			4–10	4–10	**4–10**	**5–8**			4–10	4–10	**3–10**	
												2–4

APPLICATION TABLE FOR CUTTING TAPS

cutting speed

$$v_c = \frac{n * \pi * d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c * 1000}{\pi * d_1}$$

How to proceed
1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type

GT = thread depth

						blind hole			
						DOMINANT N38	**DOMINANT N38**	**DOMINANT HZ38**	**DOMINANT HZ38**
									
					model	HSSE-PM	TIN HSSE-PM	HSSE-PM	VAP HSSE-PM
					GT = $Ød_1$ ×	2.5	2.5	2.5	2.5
					thread type	**M:** 80	**M:** 80	**M:** 80–81 **MF:** 113 **G:** 124 **UNC:** 136 **UNF:** 143 **UN:** 147	**M:** 80–81
	Application	**Examples of materials**	**R_m N/mm²**	**HB**	**HRC**	**vc m/min**			
P	**Steel materials**								
	Magnetic soft steel	FeP01	> 100 < 450				**20–30**		
	Construction steel / case hardening steel	En40B	> 300 < 700			10–20	**20–30**	10–20	10–20
	Carbon steel	080M46	> 400 < 950			10–20	**20–30**	10–20	10–20
	Alloyed / heat-treatable steel	En19A	> 450 < 950					10–15	10–15
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40			5–10	
M	**Stainless steel**								
	Ferritic / martensitic steel	420S37	> 450 < 1200						4–8
	Austenitic steel	320S18	> 400 < 950						4–8
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48				
K	**Cast iron**								
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300					
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350					
	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200					
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32				
N	**Copper**								
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120				4–8	
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200					
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200		10–25	15–35	10–25	
	Copper-alu-nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200					
	Copper-alu-nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220				10–15	10–15
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190					
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47				
	Aluminium / Magnesium								
	Alu wrought alloy Si ≤0.5%	1B	> 100 < 700	> 30 < 200		**10–25**			
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200		10–25	**15–40**		
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265		10–20	**15–40**		
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150					
	Synthetics								
	Thermoplastic (long chipping)	Styreme	> 20 < 80			10–25	**10–25**		
	Duroplastic (short chipping)	Toufnell	> 80 < 110						
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440					
	Special materials								
	Cobalt alloyed		> 400 < 2000	> 120 < 590					
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52				
	TIC-hard material			> 440 < 495	> 47 < 50				
	Graphite		> 38 < 60						
S	**Titanium**								
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200					
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27				
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40				
	Nickel								
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175					
	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39				
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48				
H	**Steel materials**								
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45				
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48				
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 53				
	Hardened steel	BA2			> 53 < 63				

	blind hole											
	DOMINANT HZ38	**DOMINANT HZ38**	**DOMINANT HZ38**	**DOMINANT HZ38**	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT MHST45**
												
	TIN HSSE-PM	TICN HSSE-PM	HL HSSE-PM	KA HL HSSE-PM	HSSE-PM	VAP HSSE-PM	TIN HSSE-PM	HL HSSE-PM	KA HL HSSE-PM	BNE HSSE-PM	HL DF HSSE-PM	HK HL HSSE-PM
	2.5	2.5	2.5	2.5	3	3	3	3	3	3	>3	3
	M: 82 **MF:** 113 **G:** 124	**M:** 82	**M:** 82–84 **MF:** 113 **G:** 124 **UNC:** 136 **UNF:** 143 **UN:** 147	**M:** 82 **MF:** 113	**M:** 84–85 **MF:** 114 **G:** 125 **UNC:** 136–137 **UNF:** 143	**M:** 86	**M:** 86–87 **MF:** 114 **G:** 125 **UNC:** 138 **UNF:** 144	**M:** 87–91 **MF:** 116–118 **G:** 126–127 **UNC:** 138–139 **UNF:** 144–145 **EG M:** 154–155 **EG MF:** 157 **EG UNC:** 158 **EG UNF:** 159 **EG MJ:** 166	**M:** 88–89	**M:** 91	**M:** 94 **MF:** 116–117	**M:** 94
	vc m/min											
	Steel materials											
						10–15	20–30	**20–30**	**20–30**		**20–30**	**20–60**
	20–30		**20–30**	**20–30**		10–20	20–30	**20–30**	**20–30**		**20–30**	**20–60**
	20–30		**20–30**	**20–30**	10–20	10–20	20–30	**20–30**	**20–30**		**20–30**	**20–60**
	15–35	**15–35**	**15–35**	**15–35**	10–15	10–15	15–35	**15–35**	**15–35**		**15–35**	**15–45**
	10–20	**10–20**	**10–20**	**10–20**	5–10	5–10	10–20	**10–20**	**10–20**		**10–20**	**15–35**
	Stainless steel											
			6–12	6–12		4–6	6–12	**6–12**	**6–12**		**6–12**	**8–12**
			6–12	6–12		4–8	6–12	**6–12**	**6–12**		**6–12**	**8–15**
			3–6	3–6			3–6	**3–6**	**3–6**		**3–6**	**3–10**
	Cast iron											
								20–30	20–30		20–30	
		10–25	10–25	10–25				10–25	10–25		10–25	15–25
		15–25	15–25	15–25				15–25	15–25		15–25	15–25
		5–15	5–15	5–15				5–15	5–15		5–15	5–15
	Copper											
	10–25						10–25		10–25	**10–35**	**10–25**	
	15–35				10–25		**15–35**		15–35	**15–40**	**15–35**	
	15–25	**15–25**			10–15		**15–25**			**15–30**	**15–25**	
	Aluminium / Magnesium											
					10–25		15–35	**15–35**	**15–35**	**15–40**	**15–35**	**15–35**
					10–25		**15–40**	**15–40**	**15–40**	**15–45**	**15–40**	**20–60**
					10–20		**15–40**	**15–40**	**15–40**	**15–45**	**15–40**	**20–60**
	Synthetics											
					10–25		10–25					
	Special materials											
	Titanium											
						5–10				5–10		
										5–12		
	Nickel											
							8–15	**8–15**	**8–15**	**8–20**	**8–15**	**10–25**
								3–6	3–6	3–6	3–6	**4–8**
	Steel materials											
		4–10	4–10				5–8	5–8	5–8		5–8	**8–12**
												2–8

APPLICATION TABLE FOR CUTTING TAPS

cutting speed

$$v_c = \frac{n * \pi * d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c * 1000}{\pi * d_1}$$

How to proceed
1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type

GT = thread depth

						blind hole			
						DOMINANT MHST45	**DOMINANT HVA45**	**DOMINANT HVA45**	
									
					model	KA HK HL HSSE-PM	HL HSSE-PM	HK BT HSSE-PM	
					GT = $Ød_1$ ×	3	3	3	
					thread type	**M:** 94–95	**UNJC:** 162 **UNJF:** 164	**M:** 95	
	Application	**Examples of materials**	**R_m N/mm²**	**HB**	**HRC**	**vc m/min**			
P	**Steel materials**								
	Magnetic soft steel	FeP01	> 100 < 450			**20–60**			
	Construction steel / case hardening steel	En40B	> 300 < 700			**20–60**	20–60	20–60	
	Carbon steel	080M46	> 400 < 950			**20–60**	20–60	20–60	
	Alloyed / heat-treatable steel	En19A	> 450 < 950			**15–45**	15–45	15–45	
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40	**15–35**	15–35	15–35	
M	**Stainless steel**								
	Ferritic / martensitic steel	420S37	> 450 < 1200			**8–12**	**8–12**	**8–12**	
	Austenitic steel	320S18	> 400 < 950			**8–15**	8–15	8–15	
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48	**3–10**	3–10	**3–12**	
K	**Cast iron**								
	Grey cast iron	EN-GJL-200	> 150 < 1000	> 100 < 300		20–60			
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350		15–25			
	Malleable cast iron	EN-GJMB-350-10	> 300 < 700	> 100 < 200		15–25			
	Cast iron with vermicular graphite	EN-GJV-300	> 700 < 1000	> 200 < 300	> 20 < 32	5–15			
N	**Copper**								
	Copper non-alloyed	Cu-ETP-2 C 101	> 200 < 400	> 60 < 120		**20–30**	**20–30**	20–30	
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200					
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200		**20–50**	**20–50**	20–50	
	Copper-alu-nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200					
	Copper-alu-nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220			**20–50**	20–50	
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190					
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47				
	Aluminium / Magnesium								
	Alu wrought alloy Si ≤0.5%	1B	> 100 < 700	> 30 < 200		**15–35**	15–35	15–35	
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200		**20–60**	20–60	20–60	
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265		**20–60**	20–60	20–60	
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150					
	Synthetics								
	Thermoplastic (long chipping)	Styreme	> 20 < 80				15–20	15–20	
	Duroplastic (short chipping)	Toufnell	> 80 < 110						
	Fibre-reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440					
	Special materials								
	Cobalt alloyed		> 400 < 2000	> 120 < 590					
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52				
	TIC-hard material			> 440 < 495	> 47 < 50				
	Graphite		> 38 < 60						
S	**Titanium**								
	Titanium non-alloyed	TA.2	> 300 < 700	> 90 < 200			5–12	**5–12**	
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27		5–15	5–15	
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40		2–4	2–4	
	Nickel								
	Nickel non-alloyed	BS3072: NA11	> 400 < 600	> 120 < 175		**10–25**			
	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39	**4–8**	**3–6**	3–6	
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48				
H	**Steel materials**								
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45	**8–12**	8–12	8–12	
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48	2–8	2–8	2–8	
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 53				
	Hardened steel	BA2			> 53 < 63				

APPLICATION TABLE THREAD MILLING CUTTERS

APPLICATION TABLE FOR THREAD MILLING CUTTERS

cutting speed

$$v_c = \frac{n * \pi * d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c * 1000}{\pi * d_1}$$

feed rate outer contour

$$v_{fA} = v_{fAA} = n * f_z * z$$

How to proceed
1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type and page

GT = thread depth

model		GFA N KA	GFA N KA TICN	d < 8	d > 8
M	p.	175	175		
MF	p.	176	176		
G	p.	177	177		
UNC / UNF	p.		178 / 179		
NPT / NPTF	p.	180 / 181	180 / 181		

	Application	Examples of materials	R_m N/mm²	HB	HRC	vc m/min		fz mm	
P	**Steel materials**								
	Magnetic soft steel	FeP01	> 100 < 450			40–80	80–200	0.030–0.060	0.040–0.150
	Construction steel / case hardening steel	En40B	> 300 < 700			40–80	80–200	0.015–0.060	0.040–0.150
	Carbon steel	080M46	> 400 < 950			30–80	60–120	0.015–0.060	0.040–0.150
	Alloyed / heat–treatable steel	En19A	> 450 < 950			30–80	60–120	0.015–0.060	0.040–0.150
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40	20–60	40–120	0.010–0.060	0.040–0.100
M	**Stainless steel**								
	Ferritic / martensitic steel	420S37	> 450 < 1200			20–40	40–100	0.010–0.050	0.020–0.150
	Austenitic steel	320S18	> 400 < 950			20–40	30–60	0.010–0.050	0.020–0.150
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48	20–40	40–80	0.010–0.040	0.020–0.100
K	**Cast iron**								
	Grey cast iron	EN–GJL–200	> 150 < 1000	> 100 < 300		80–140	100–200	0.020–0.100	0.040–0.150
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350		60–120	80–200	0.020–0.080	0.040–0.120
	Malleable cast iron	EN–GJMB–350–10	> 300 < 700	> 100 < 200		80–140	100–200	0.020–0.100	0.040–0.150
	Cast iron with vermicular graphite	EN–GJV–300	> 700 < 1000	> 200 < 300	> 20 < 32	60–120	80–200	0.020–0.080	0.040–0.120
N	**Copper**								
	Copper non–alloyed	Cu–ETP–2 C 101	> 200 < 400	> 60 < 120		100–300	150–400	0.040–0.120	0.070–0.200
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200		100–300	150–400	0.040–0.120	0.070–0.200
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200		100–300	150–400	0.040–0.120	0.070–0.200
	Copper–alu–nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200		60–120	100–250	0.020–0.060	0.030–0.120
	Copper–alu–nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220		60–120	100–250	0.020–0.060	0.030–0.120
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190		60–80	60–120	0.020–0.060	0.030–0.120
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47	60–80	60–120	0.010–0.040	0.020–0.100
	Aluminium / Magnesium								
	Alu wrought alloy Si ≤0.5%	1B	> 100 < 700	> 30 < 200		100–300	150–400	0.030–0.120	0.070–0.200
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200		100–300	150–400	0.030–0.120	0.070–0.200
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265		100–300	150–400	0.030–0.120	0.070–0.200
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150		120–200	150–350	0.030–0.120	0.070–0.200
	Synthetics								
	Thermoplastic (long chipping)	Styreme	> 20 < 80			60–150	100–400	0.040–0.120	0.060–0.200
	Duroplastic (short chipping)	Toufnell	> 80 < 110			60–150	100–400	0.040–0.120	0.060–0.150
	Fibre–reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440			60–100	0.040–0.120	0.060–0.150
	Special materials								
	Cobalt alloyed		> 400 < 2000	> 120 < 590			30–50	0.020–0.060	0.040–0.100
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52		30–60	0.010–0.020	0.015–0.080
	TIC–hard material			> 440 < 495	> 47 < 50				
	Graphite		> 38 < 60						
S	**Titanium**								
	Titanium non–alloyed	TA.2	> 300 < 700	> 90 < 200		15–40	30–80	0.015–0.080	0.030–0.150
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27	15–40	30–80	0.015–0.080	0.030–0.150
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40	15–40	30–60	0.015–0.060	0.030–0.120
	Nickel								
	Nickel non–alloyed	BS3072: NA11	> 400 < 600	> 120 < 175			30–60	0.020–0.060	0.040–0.100
	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39		30–60	0.020–0.060	0.040–0.100
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48		30–40	0.015–0.050	0.030–0.080
H	**Steel materials**								
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45	20–60	40–80	0.010–0.050	0.030–0.100
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48	20–40	30–60	0.010–0.020	0.015–0.080
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 56				
	Hardened steel	BA2			> 56 < 63				

BASS TECHNIK FÜR GEWINDE

	GFA HZP			GFE N		GFD HZP			
									
	KA BA	d < 8	d > 8	–	d < 8	BA	KA BA	d < 8	d > 8
	182			187		189	189		
	182								
	183						190		
	184 / 185					191	191		
	vc m/min	fz mm		vc m/min	fz mm	vc m/min		fz mm	
	Steel materials								
	100–130	0.030–0.090	0.090–0.200	40–80	0.008–0.016	100–130	100–130	0.030–0.090	0.090–0.200
	100–130	0.030–0.090	0.090–0.200	40–80	0.008–0.016	100–130	100–130	0.030–0.090	0.090–0.200
	100–120	0.030–0.090	0.090–0.200	30–80	0.008–0.016	100–120	100–120	0.030–0.090	0.090–0.200
	80–105	0.030–0.090	0.090–0.200	30–80	0.008–0.016	80–105	80–105	0.030–0.090	0.090–0.200
	70–95	0.030–0.090	0.090–0.200	20–60	0.005–0.01	70–95	70–95	0.030–0.090	0.090–0.200
	Stainless steel								
	40–60	0.020–0.080	0.080–0.150	20–40	0.005–0.01	40–60	40–60	0.020–0.080	0.080–0.150
	30–50	0.020–0.080	0.080–0.150	20–40	0.005–0.01	30–50	30–50	0.020–0.080	0.080–0.150
	30–50	0.020–0.080	0.080–0.150	20–40	0.005–0.01	30–50	30–50	0.020–0.080	0.080–0.150
	Cast iron								
	120–140	0.040–0.110	0.110–0.230	80–140	0.008–0.016	120–140	120–140	0.040–0.110	0.110–0.230
	90–110	0.040–0.110	0.110–0.230	60–120	0.008–0.016	90–110	90–110	0.030–0.110	0.090–0.230
	85–105	0.030–0.090	0.090–0.200	60–120	0.008–0.016	85–105	85–105	0.040–0.110	0.110–0.230
	70–90	0.025–0.080	0.080–0.160	60–120	0.008–0.016	70–90	70–90	0.025–0.080	0.080–0.160
	Copper								
	260–300	0.070–0.210	0.210 – 0.300	100–300	0.01–0.02	260–300	260–300	0.070–0.210	0.210–0.300
	260–300	0.070–0.210	0.210 – 0.300	100–300	0.01–0.02	260–300	260–300	0.070–0.210	0.210–0.300
	250–270	0.070–0.210	0.210 – 0.300	100–300	0.01–0.02	250–270	250–270	0.070–0.210	0.210–0.300
	260–300	0.070–0.210	0.210 – 0.300	60–200	0.008–0.016	260–300	260–300	0.070–0.210	0.210–0.300
	250–270	0.070–0.210	0.210 – 0.300	60–200	0.008–0.016	250–270	250–270	0.070–0.210	0.210–0.300
	250–270	0.070–0.210	0.210 – 0.300	60–80	0.005–0.012	250–270	250–270	0.070–0.210	0.210–0.300
	250–270	0.070–0.210	0.210 – 0.300	60–80	0.005–0.012	250–270	250–270	0.070–0.210	0.210–0.300
	Aluminium / Magnesium								
	400–420	0.070–0.210	0.210 – 0.300	100–300	0.01–0.02	400–420	400–420	0.070–0.210	0.210–0.300
	410–430	0.070–0.210	0.210 – 0.300	100–300	0.01–0.02	410–430	410–430	0.070–0.210	0.210–0.300
	450–480	0.070–0.210	0.210 – 0.300	100–300	0.01–0.02	450–480	450–480	0.070–0.210	0.210–0.300
	470–490	0.070–0.210	0.210 – 0.300	120–200	0.01–0.02	470–490	470–490	0.070–0.210	0.210–0.300
	Synthetics								
				60–150	0.01–0.02				
				60–150	0.01–0.02				
	Special materials								
	Titanium								
	30–50	0.030–0.080	0.070–0.150	15–40	0.005–0.01	30–50	30–50	0.030–0.080	0.070–0.150
	20–40	0.030–0.080	0.070–0.150	15–40	0.005–0.01	20–40	20–40	0.030–0.080	0.070–0.150
	20–40	0.030–0.080	0.070–0.150	15–40	0.005–0.01	20–40	20–40	0.030–0.080	0.070–0.150
	Nickel								
	30–50	0.020–0.060	0.060–0.100			30–50	30–50	0.020–0.060	0.060–0.100
	15–35	0.020–0.050	0.040–0.090			15–35	15–35	0.020–0.050	0.040–0.090
	10–30	0.020–0.050	0.040–0.090			10–30	10–30	0.020–0.050	0.040–0.090
	Steel materials								
	70–95	0.030–0.090	0.090–0.200	20–60	0.005–0.01	70–95	70–95	0.030–0.090	0.090–0.200
	40–60	0.020–0.080	0.080–0.150	20–40	0.005–0.01	40–60	40–60	0.020–0.080	0.080–0.150

APPLICATION TABLE FOR THREAD MILLING CUTTERS

cutting speed

$$v_c = \frac{n * \pi * d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c * 1000}{\pi * d_1}$$

feed rate outer contour

$$v_{fA} = v_{fAA} = n * f_z * z$$

How to proceed
1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type and page

GT = thread depth

model		GFD SH		
		BA	d < 5	d > 5
M	p.	192		
MF	p.			
G	p.			
UNC / UNF	p.			
NPT / NPTF	p.			

	Application	Examples of materials	R_m N/mm²	HB	HRC	vc m/min	fz mm	
P	**Steel materials**							
	Magnetic soft steel	FeP01	> 100 < 450					
	Construction steel / case hardening steel	En40B	> 300 < 700					
	Carbon steel	080M46	> 400 < 950					
	Alloyed / heat–treatable steel	En19A	> 450 < 950					
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40			
M	**Stainless steel**							
	Ferritic / martensitic steel	420S37	> 450 < 1200					
	Austenitic steel	320S18	> 400 < 950					
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48			
K	**Cast iron**							
	Grey cast iron	EN–GJL–200	> 150 < 1000	> 100 < 300				
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350				
	Malleable cast iron	EN–GJMB–350–10	> 300 < 700	> 100 < 200				
	Cast iron with vermicular graphite	EN–GJV–300	> 700 < 1000	> 200 < 300	> 20 < 32			
N	**Copper**							
	Copper non–alloyed	Cu–ETP–2 C 101	> 200 < 400	> 60 < 120				
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200				
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200				
	Copper–alu–nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200				
	Copper–alu–nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220				
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190				
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47			
	Aluminium / Magnesium							
	Alu wrought alloy Si ≤0.5%	1B	> 100 < 700	> 30 < 200				
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200				
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265				
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150				
	Synthetics							
	Thermoplastic (long chipping)	Styreme	> 20 < 80					
	Duroplastic (short chipping)	Toufnell	> 80 < 110					
	Fibre–reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440				
	Special materials							
	Cobalt alloyed		> 400 < 2000	> 120 < 590				
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52			
	TIC–hard material			> 440 < 495	> 47 < 50			
	Graphite		> 38 < 60					
S	**Titanium**							
	Titanium non–alloyed	TA.2	> 300 < 700	> 90 < 200				
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27			
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40			
	Nickel							
	Nickel non–alloyed	BS3072: NA11	> 400 < 600	> 120 < 175				
	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39			
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48			
H	**Steel materials**							
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45			
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48	40–55	0.020–0.050	0.030–0.100
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 56	35–45	0.016–0.040	0.020–0.080
	Hardened steel	BA2			> 56 < 63	30–40	0.012–0.030	0.012–0.060

BASS TECHNIK FÜR GEWINDE

	GFM N			GFM HZP		GFS N			
									
	KA	KA TICN		KA BA		KA	KA TICN	d < 8	d > 8
	195	195		196		201 / 202	201 / 202		
	195	195		196			203		
				197					
				198					
	vc m/min		fz mm	vc m/min	fz mm	vc m/min		fz mm	
	Steel materials								
	40–80	80–200	0.040–0.150	100–130	0.130–0.200	40–80	80–200	0.030–0.060	0.040–0.150
	40–80	80–200	0.040–0.150	100–130	0.130–0.200	40–80	80–200	0.015–0.060	0.040–0.150
	30–80	60–120	0.040–0.150	100–120	0.130–0.200	30–80	60–120	0.015–0.060	0.040–0.150
	30–80	60–120	0.040–0.150	80–105	0.130–0.200	30–80	60–120	0.015–0.060	0.040–0.150
	20–60	40–120	0.040–0.120	70–95	0.130–0.200	20–60	40–120	0.010–0.060	0.040–0.100
	Stainless steel								
	20–40	40–100	0.030–0.080	40–60	0.100–0.180	20–40	40–100	0.010–0.050	0.020–0.150
	20–40	30–60	0.030–0.080	30–50	0.100–0.180	20–40	30–60	0.010–0.050	0.020–0.150
	20–40	40–80	0.030–0.080	30–50	0.100–0.180	20–40	40–80	0.010–0.040	0.020–0.100
	Cast iron								
	80–140	100–200	0.040–0.100	120–140	0.150–0.230	80–140	100–200	0.020–0.100	0.040–0.150
	60–120	80–200	0.040–0.100	90–110	0.150–0.230	60–120	80–200	0.020–0.080	0.040–0.120
	80–140	100–200	0.040–0.100	85–105	0.150–0.230	80–140	100–200	0.020–0.100	0.040–0.150
	60–120	80–200	0.040–0.080	70–90	0.150–0.230	60–120	80–200	0.020–0.080	0.040–0.120
	Copper								
	100–300	150–400	0.070–0.200	260–300	0.210–0.290	100–300	150–400	0.040–0.120	0.070–0.200
	100–300	150–400	0.070–0.200	260–300	0.210–0.290	100–300	150–400	0.040–0.120	0.070–0.200
	100–300	150–400	0.050–0.150	250–270	0.210–0.290	100–300	150–400	0.040–0.120	0.070–0.200
	60–120	100–250	0.050–0.150	260–300	0.210–0.290	60–120	100–250	0.020–0.060	0.030–0.120
	60–120	100–250	0.050–0.150	250–270	0.210–0.290	60–120	100–250	0.020–0.060	0.030–0.120
	60–80	60–120	0.050–0.150	250–270	0.210–0.290	60–80	60–120	0.020–0.060	0.030–0.120
	60–80	60–120	0.020–0.080	250–270	0.210–0.290	60–80	60–120	0.010–0.040	0.020–0.100
	Aluminium / Magnesium								
	100–300	150–400	0.070–0.200	400–420	0.210–0.290	100–300	150–400	0.030–0.120	0.070–0.200
	100–300	150–400	0.070–0.200	410–430	0.210–0.290	100–300	150–400	0.030–0.120	0.070–0.200
	100–300	150–400	0.070–0.200	450–480	0.210–0.290	100–300	150–400	0.030–0.120	0.070–0.200
	120–200	150–350	0.070–0.200	470–490	0.210–0.290	120–200	150–350	0.030–0.120	0.070–0.200
	Synthetics								
	60–150	100–400	0.060–0.200			60–150	100–400	0.040–0.120	0.060–0.200
	60–150	100–400	0.060–0.200			60–150	100–400	0.040–0.120	0.060–0.150
		60–100	0.060–0.150				60–100	0.040–0.120	0.060–0.150
	Special materials								
		30–50	0.020–0.080				30–50	0.020–0.060	0.040–0.100
		30–60	0.015–0.060				30–50	0.010–0.020	0.015–0.080
	Titanium								
	15–40	30–80	0.030–0.100	30–50	0.130–0.200	15–40	30–80	0.015–0.080	0.030–0.150
	15–40	30–80	0.030–0.080	20–40	0.130–0.200	15–40	30–80	0.015–0.080	0.030–0.150
	15–40	30–60	0.030–0.080	20–40	0.130–0.200	15–40	30–60	0.015–0.060	0.030–0.120
	Nickel								
		30–60	0.050–0.100	30–50	0.060–0.120		30–60	0.020–0.060	0.040–0.100
		15–35	0.030–0.080	30–50	0.050–0.110		30–60	0.020–0.060	0.040–0.100
		15–35	0.030–0.080	10–30	0.050–0.110		30–40	0.015–0.050	0.030–0.080
	Steel materials								
	20–60	40–80	0.030–0.100	70–95	0.130–0.200	20–60	40–80	0.010–0.050	0.030–0.100
	20–40	30–60	0.015–0.100	40–60	0.100–0.180	20–40	30–60	0.010–0.020	0.015–0.080

APPLICATION TABLE FOR THREAD MILLING CUTTERS

cutting speed

$$v_c = \frac{n * \pi * d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c * 1000}{\pi * d_1}$$

feed rate outer contour

$$v_{fA} = v_{fAA} = n * f_z * z$$

How to proceed
1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type and page

GT = thread depth

		ZBGF H		
model		LH BA	d ≤ 3	d > 3 ≤ 5
M	p.	205		
MF	p.	205		
G	p.	206		
UNC / UNF	p.	207 / 208		
NPT / NPTF	p.			

	Application	Examples of materials	R_m N/mm²	HB	HRC	vc m/min	fz mm	
P	**Steel materials**							
	Magnetic soft steel	FeP01	> 100 < 450			80–90	0.011–0.015	0.018–0.023
	Construction steel / case hardening steel	En40B	> 300 < 700			75–80	0.011–0.015	0.017–0.023
	Carbon steel	080M46	> 400 < 950			65–75	0.011–0.014	0.017–0.022
	Alloyed / heat–treatable steel	En19A	> 450 < 950			65–75	0.011–0.014	0.017–0.022
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40	60–70	0.010–0.014	0.016–0.021
M	**Stainless steel**							
	Ferritic / martensitic steel	420S37	> 450 < 1200			40–45	0.009–0.015	0.015–0.019
	Austenitic steel	320S18	> 400 < 950			35–40	0.009–0.015	0.015–0.019
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48	30–40	0.008–0.012	0.013–0.018
K	**Cast iron**							
	Grey cast iron	EN–GJL–200	> 150 < 1000	> 100 < 300		80–90	0.011–0.015	0.018–0.023
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350		75–85	0.011–0.015	0.018–0.023
	Malleable cast iron	EN–GJMB–350–10	> 300 < 700	> 100 < 200		70–80	0.011–0.015	0.018–0.023
	Cast iron with vermicular graphite	EN–GJV–300	> 700 < 1000	> 200 < 300	> 20 < 32	50–55	0.010–0.013	0.016–0.020
N	**Copper**							
	Copper non–alloyed	Cu–ETP–2 C 101	> 200 < 400	> 60 < 120				
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200				
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200				
	Copper–alu–nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200				
	Copper–alu–nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220				
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190				
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47			
	Aluminium / Magnesium							
	Alu wrought alloy Si ≤0.5%	1B	> 100 < 700	> 30 < 200				
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200				
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265		80–90	0.011–0.015	0.018–0.023
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150				
	Synthetics							
	Thermoplastic (long chipping)	Styreme	> 20 < 80					
	Duroplastic (short chipping)	Toufnell	> 80 < 110					
	Fibre–reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440				
	Special materials							
	Cobalt alloyed		> 400 < 2000	> 120 < 590				
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52			
	TIC–hard material			> 440 < 495	> 47 < 50			
	Graphite		> 38 < 60					
S	**Titanium**							
	Titanium non–alloyed	TA.2	> 300 < 700	> 90 < 200		45–54	0.009–0.012	0.015–0.019
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27	40–50	0.009–0.012	0.015–0.019
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40	35–45	0.009–0.012	0.015–0.019
	Nickel							
	Nickel non–alloyed	BS3072: NA11	> 400 < 600	> 120 < 175				
	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39			
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48			
H	**Steel materials**							
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45	50–55	0.010–0.014	0.016–0.021
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48	50–55	0.010–0.013	0.016–0.020
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 56	30–40	0.009–0.012	0.014–0.018
	Hardened steel	BA2			> 56 < 63	30–40	0.008–0.011	0.013–0.016

BASS TECHNIK FÜR GEWINDE

	ZBGF H		BGF W					
								
	d > 5 ≤ 8	d > 8 ≤ 12			d < 8		d > 8	
			KA	KA FNT	fb mm/U	fz mm	fb mm/U	fz mm
			211	211				
			212	212				
	fz mm		vc m/min		fz mm			
	Steel materials							
	0.031 – 0.038	0.045 – 0.050						
	0.030 – 0.038	0.043 – 0.050						
	0.030 – 0.037	0.043 – 0.048						
	0.030 – 0.037	0.043 – 0.048						
	0.028 – 0.035	0.041 – 0.046						
	Stainless steel							
	0.026 – 0.031	0.037 – 0.041						
	0.026 – 0.031	0.037 – 0.041						
	0.022 – 0.029	0.032 – 0.039						
	Cast iron							
	0.031 – 0.038	0.045 – 0.050	80 – 120	100 – 200	0.100 – 0.150	0.020 – 0.050	0.150 – 0.220	0.050 – 0.100
	0.031 – 0.038	0.045 – 0.050	80 – 120	100 – 200	0.100 – 0.150	0.020 – 0.050	0.150 – 0.220	0.050 – 0.100
	0.031 – 0.038	0.045 – 0.050	80 – 120	100 – 200	0.100 – 0.150	0.020 – 0.050	0.150 – 0.220	0.050 – 0.100
	0.022 – 0.027	0.032 – 0.036	50 – 80	80 – 120	0.070 – 0.120	0.015 – 0.040	0.120 – 0.200	0.040 – 0.080
	Copper							
			100 – 300		0.060 – 0.100	0.030 – 0.060	0.100 – 0.300	0.060 – 0.100
	Aluminium / Magnesium							
			100 – 300	150 – 400	0.100 – 0.250	0.030 – 0.060	0.250 – 0.300	0.060 – 0.100
			100 – 300	150 – 400	0.100 – 0.250	0.030 – 0.060	0.250 – 0.300	0.060 – 0.100
	0.031 – 0.038	0.045 – 0.050	100 – 300	150 – 400	0.100 – 0.250	0.030 – 0.060	0.250 – 0.300	0.060 – 0.100
			100 – 200	100 – 250	0.100 – 0.250	0.030 – 0.060	0.250 – 0.300	0.060 – 0.100
	Synthetics							
			60 – 120	60 – 120	0.100 – 0.250	0.030 – 0.060	0.250 – 0.300	0.060 – 0.100
			60 – 100	60 – 100	0.100 – 0.250	0.030 – 0.060	0.250 – 0.300	0.060 – 0.100
			40 – 60	60 – 80	0.100 – 0.150	0.020 – 0.050	0.150 – 0.250	0.050 – 0.080
	Special materials							
	Titanium							
	0.026 – 0.031	0.037 – 0.041						
	0.026 – 0.031	0.037 – 0.041						
	0.026 – 0.031	0.037 – 0.041						
	Nickel							
	Steel materials							
	0.027 – 0.035	0.039 – 0.046						
	0.027 – 0.033	0.039 – 0.044						
	0.024 – 0.029	0.035 – 0.039						
	0.025 – 0.027	0.032 – 0.036						

APPLICATION TABLE FOR THREAD MILLING CUTTERS

cutting speed

$$v_c = \frac{n * \pi * d_1}{1000}$$

number of revolutions (rpm)

$$n = \frac{v_c * 1000}{\pi * d_1}$$

feed rate outer contour

$$v_{fA} = v_{fAA} = n * f_z * z$$

How to proceed
1. Select hole type
2. Select application
3. Search for cutting speed (vc m/min)
4. Select thread type and page

GT = thread depth

BFW / GFK

						BFW-017052-G05 BFW-017076-G05 BFW-020063-G1 BFW-020095-G1 GFK-02002008-G1 p. 214	BFW-030071-G2 BFW-030105-G2 GFK-03003012-G2 p. 214	
	Application	**Examples of materials**	**R_m N/mm²**	**HB**	**HRC**	**vc m/min**	**fz mm**	
P	**Steel materials**							
	Magnetic soft steel	FeP01	> 100 < 450			170–200	0.120–0.230	0.130–0.390
	Construction steel / case hardening steel	En40B	> 300 < 700			170–200	0.120–0.230	0.130–0.390
	Carbon steel	080M46	> 400 < 950			170–200	0.120–0.230	0.130–0.390
	Alloyed / heat–treatable steel	En19A	> 450 < 950			170–200	0.120–0.230	0.130–0.390
	Alloyed steel	BD2	> 800 < 1250	> 235 < 370	> 22 < 40	100–150	0.120–0.230	0.130–0.390
M	**Stainless steel**							
	Ferritic / martensitic steel	420S37	> 450 < 1200			70–100	0.100–0.200	0.110–0.350
	Austenitic steel	320S18	> 400 < 950			70–100	0.100–0.200	0.110–0.350
	High temperature steel	301S81	> 850 < 1550	> 250 < 455	> 25 < 48	70–100	0.100–0.200	0.110–0.350
K	**Cast iron**							
	Grey cast iron	EN–GJL–200	> 150 < 1000	> 100 < 300		170–200	0.120–0.230	0.130–0.390
	Cast iron with nodular graphite	Grade 420/12	> 350 < 1000	> 100 < 350		170–200	0.120–0.230	0.130–0.390
	Malleable cast iron	EN–GJMB–350–10	> 300 < 700	> 100 < 200		170–200	0.120–0.230	0.130–0.390
	Cast iron with vermicular graphite	EN–GJV–300	> 700 < 1000	> 200 < 300	> 20 < 32	170–200	0.120–0.230	0.130–0.390
N	**Copper**							
	Copper non–alloyed	Cu–ETP–2 C 101	> 200 < 400	> 60 < 120		170–200	0.120–0.230	0.130–0.390
	Copper alloyed (short chipping)	CZ 120	> 350 < 700	> 100 < 200		170–200	0.120–0.230	0.130–0.390
	Copper alloyed (long chipping)	CZ 108	> 150 < 700	> 45 < 200		170–200	0.120–0.230	0.130–0.390
	Copper–alu–nickel alloyed (short chipping)	CN 102	> 150 < 700	> 45 < 200		170–200	0.120–0.230	0.130–0.390
	Copper–alu–nickel alloyed (long chipping)	CA 104	> 500 < 750	> 150 < 220		170–200	0.120–0.230	0.130–0.390
	Special copper alloyed ≤ Ampco 20	CA 105	> 550 < 650	> 160 < 190		170–200	0.120–0.230	0.130–0.390
	Special copper alloyed ≥ Ampco 21	AMPCO 21	> 700 < 1500	> 200 < 440	> 21 < 47	70–100	0.100–0.200	0.110–0.350
	Aluminium / Magnesium							
	Alu wrought alloy Si ≤0.5%	1B	> 100 < 700	> 30 < 200		300–400	0.120–0.230	0.130–0.390
	Alu alloyed Si ≤6%	LM22	> 150 < 700	> 45 < 200		300–400	0.120–0.230	0.130–0.390
	Alu alloyed Si >6%	LM9	> 150 < 900	> 45 < 265		300–400	0.120–0.230	0.130–0.390
	Magnesium wrought alloy	MAG 101	> 150 < 500	> 45 < 150		300–400	0.120–0.230	0.130–0.390
	Synthetics							
	Thermoplastic (long chipping)	Styreme	> 20 < 80			150–300	0.120–0.230	0.130–0.390
	Duroplastic (short chipping)	Toufnell	> 80 < 110			150–300	0.120–0.230	0.130–0.390
	Fibre–reinforced plastic	Carbonfibre	> 800 < 1500	> 235 < 440		70–100	0.120–0.230	0.130–0.390
	Special materials							
	Cobalt alloyed		> 400 < 2000	> 120 < 590		70–100	0.100–0.200	0.110–0.350
	Tungsten alloyed		> 1400 < 1800	> 410 < 530	> 44 < 52			
	TIC–hard material			> 440 < 495	> 47 < 50			
	Graphite		> 38 < 60					
S	**Titanium**							
	Titanium non–alloyed	TA.2	> 300 < 700	> 90 < 200		70–100	0.100–0.200	0.110–0.350
	Titanium alloyed	TA.10	> 450 < 900	> 135 < 265	> 14 < 27	70–100	0.100–0.200	0.110–0.350
	Titanium alloyed	TA.10	> 900 < 1250	> 265 < 370	> 27 < 40	70–100	0.100–0.200	0.110–0.350
	Nickel							
	Nickel non–alloyed	BS3072: NA11	> 400 < 600	> 120 < 175		70–100	0.100–0.200	0.110–0.350
	Nickel alloyed	BS3072: NA13	> 400 < 1200	> 120 < 350	> 12 < 39	70–100	0.100–0.200	0.110–0.350
	Nickel alloyed	INCONEL alloy718	> 1200 < 1550	> 350 < 455	> 39 < 48	70–100	0.100–0.200	0.110–0.350
H	**Steel materials**							
	Alloyed steel	En19A	> 1100 < 1400	> 325 < 410	> 34 < 45	100–150	0.120–0.230	0.130–0.390
	Alloyed steel	251A58	> 1200 < 1550	> 350 < 455	> 39 < 48	70–100	0.120–0.230	0.130–0.390
	Hardened steel	708A30	> 1600 < 2000	> 470 < 590	> 48 < 56			
	Hardened steel	BA2			> 56 < 63			

BASS TECHNIK FÜR GEWINDE

BFW / GFK			AFK					
								
	BFW-033100-G2 BFW-033150-G2 GFK-03303012-G2 p. 214	BFW-050150-G3 BFW-050200-G3 GFK-04203516-G3 GFK-05003516-G3 p. 214		AFK-042040-G1 AFK-042040-G2 AFK-042040-G3 p. 215	AFK-052040-G2 AFK-052040-G3 p. 215	AFK-063050-G2 AFK-063050-G3 p. 215	AFK-080050-G2 AFK-080050-G3 p. 215	AFK-100050-G3 p. 215
	fz mm		vc m/min	fz mm				
	Steel materials							
	0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	100–150	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	Stainless steel							
	0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690
	0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690
	0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690
	Cast iron							
	0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	Copper							
	0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	170–200	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690
	Aluminium / Magnesium							
	0.130–0.390	0.150–0.500	300–400	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	300–400	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	300–400	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	300–400	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	Synthetics							
	0.130–0.390	0.150–0.500	150–300	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	150–300	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	70–100	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	Special materials							
	0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690
	Titanium							
	0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690
	0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690
	0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690
	Nickel							
	0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690
	0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690
	0.110–0.390	0.130–0.490	70–100	0.130–0.490	0.130–0.490	0.140–0.530	0.160–0.620	0.170–0.690
	Steel materials							
	0.130–0.390	0.150–0.500	100–150	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030
	0.130–0.390	0.150–0.500	70–100	0.170–0.460	0.170–0.460	0.220–0.800	0.250–0.930	0.280–1.030

CUTTING TAPS AND ROLL TAPS

CONTENT

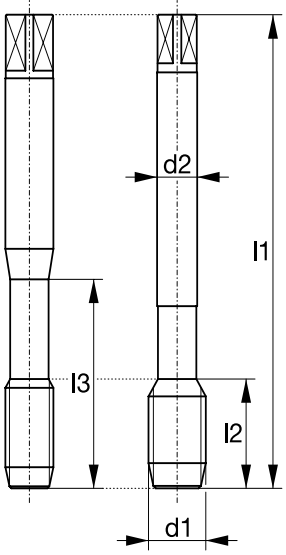
CUTTING TAPS, ROLL TAPS

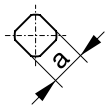
Roll taps

M

ISO Metric coarse thread DIN 13

type 1 type 2





(number of polygones)

General dimensions
DIN 2174

series	**DURAMAX N**	**DURAMAX N TIN**	**DURAMAX N TIN**
model			
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	C / 2–3	**E / 1.5–2**
thread tol.	6HX	6HX	6HX
shank tol.	h9	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P		10–50	10–50
M		4–12	4–12
K			
N	4–30	10–40	10–40
S	10–25	10–25	10–25
H			

i For detailed cutting speeds please refer to the application table.

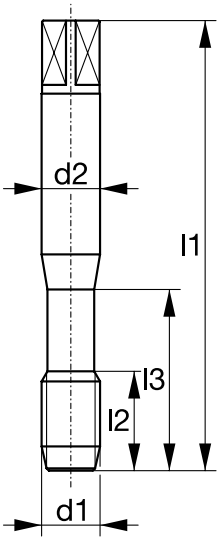
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
M	2	0.4	45	9	14	2.8	2.1	3	1	1.82	106360*	106542*	
M	2.5	0.45	50	9	14	2.8	2.1	4	1	2.3		106543*	
M	3	0.5	56	10	18	3.5	2.7	4	1	2.8	106365*	106545*	106508
M	3.5	0.6	56	11	20	4	3	4	1	3.25	106366*	106546*	
M	4	0.7	63	12	21	4.5	3.4	4	1	3.7	106367*	106547*	106509
M	5	0.8	70	14	25	6	4.9	5	1	4.65	106383*	106550*	106510
M	5	0.8	70	14	25	6	4.9	5	1	4.65		082258	
M	6	1	80	16	30	6	4.9	5	1	5.55	000081*	106552*	106511
M	6	1	80	16	30	6	4.9	5	1	5.55		082262	
M	8	1.25	90	18	35	8	6.2	5	1	7.45	106491	106555	106512
M	10	1.5	100	20	39	10	8	5	1	9.35	106338	106541	106507
M	12	1.75	110	24	–	9	7	5	2	11.2		106755	
M	14	2	110	25	–	11	9	6	2	13.1		106757	
M	16	2	110	27	–	12	9	6	2	15.1		106758	

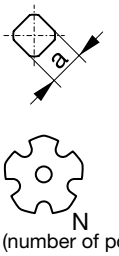
* with tip

Roll taps

M — **ISO Metric coarse thread DIN 13**

type 1





General dimensions
DIN 2174

series	**DURAMAX N**	**DURAMAX N**		
model	**TIN**	**TIN**		
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	**6GX**	**7GX**		
shank tol.	h9	h9		
thread depth	3xD	3xD		
bore hole				
P	10–50	10–50		
M	4–12	4–12		
K				
N	10–40	10–40		
S	10–25	10–25		
H				

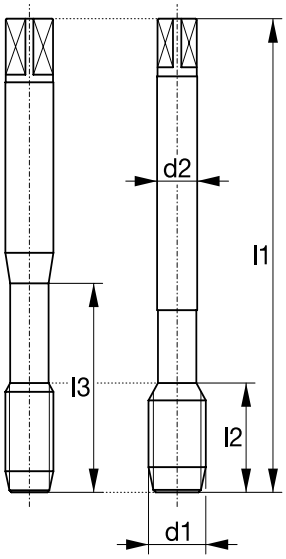
i For detailed cutting speeds please refer to the application table.

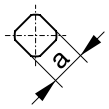
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
M	3	0.5	56	10	18	3.5	2.7	4	1	2.8	106471*	
M	4	0.7	63	12	21	4.5	3.4	4	1	3.7	106473*	106487*
M	5	0.8	70	14	25	6	4.9	5	1	4.65	106474*	106488*
M	5	0.8	70	14	25	6	4.9	5	1	4.65	082259	
M	6	1	80	16	30	6	4.9	5	1	5.55	106475*	106489*
M	6	1	80	16	30	6	4.9	5	1	5.55	082263	
M	8	1.25	90	18	35	8	6.2	5	1	7.45	106476	106490
M	10	1.5	100	20	39	10	8	5	1	9.35	106466	007877

Roll taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2





(number of polygones)

General dimensions
DIN 2174

	series	DURAMAX N	DURAMAX N	DURAMAX NO
	model	**TIN**	**TIN SL**	**TIN**
	material	HSSE-PM	HSSE-PM	HSSE-PM
				
	chamfer	C / 2–3	C / 2–3	C / 2–3
	thread tol.	**6HX+0.1**	6HX	4HX
	shank tol.	h9	h9	h9
	thread depth	3xD	3xD	3xD
	bore hole			
P		10–50	10–50	10–50
M		4–12	4–12	4–12
K				
N		10–40	10–40	10–40
S		10–25	10–25	10–25
H				

i For detailed cutting speeds please refer to the application table.

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number		
M	1	0.25	40	5.5	–	2.5	2.1	3	1	0.88			019226*
M	1.2	0.25	40	6	–	2.5	2.1	3	1	1.08			018409*
M	1.4	0.3	40	7	–	2.5	2.1	3	1	1.26			019228*
M	3	0.5	56	10	18	3.5	2.7	4	1	2.8	■ 039366*		
M	3	0.5	100	10	18	3.5	2.7	4	1	2.8		024901*	
M	4	0.7	63	12	21	4.5	3.4	4	1	3.7	■ 009917*		
M	4	0.7	125	12	21	4.5	3.4	4	1	3.7		005028*	
M	5	0.8	70	14	25	6	4.9	5	1	4.75	■ 000070		
M	5	0.8	140	14	25	6	4.9	5	1	4.65		024225*	
M	6	1	80	16	30	6	4.9	5	1	5.65	■ 098392		
M	6	1	160	16	30	6	4.9	5	1	5.55		024191*	
M	8	1.25	90	18	35	8	6.2	5	1	7.45	■ 106553		
M	8	1.25	180	18	35	8	6.2	5	1	7.45		024902	
M	10	1.5	100	20	39	10	8	5	1	9.35	■ 031469		
M	10	1.5	200	20	39	10	8	5	1	9.35		024903	
M	12	1.75	110	24	–	9	7	5	2	11.2	■ 024502		
M	14	2	110	25	–	11	9	6	2	13.1	■ 098369		
M	16	2	110	27	–	12	9	6	2	15.1	■ 098373		

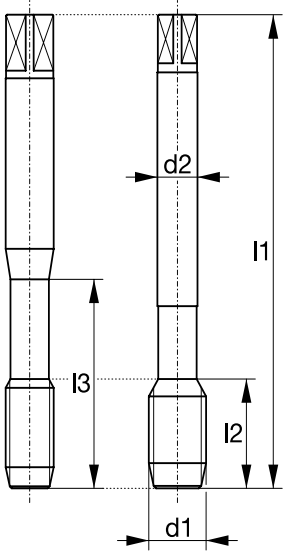
* with tip | ■ new

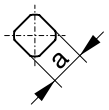
BASS TECHNIK FÜR GEWINDE

Roll taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2





(number of polygones)

General dimensions
DIN 2174

series	**DURAMAX NO**	**DURAMAX NO**		
model	**TIN**	**TIN**		
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	6HX	**6GX**		
shank tol.	h9	h9		
thread depth	3xD	3xD		
bore hole				
P	10–50	10–50		
M	4–12	4–12		
K				
N	10–40	10–40		
S	10–25	10–25		
H				

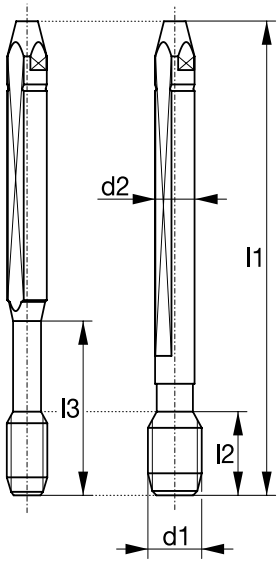
i For detailed cutting speeds please refer to the application table.

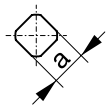
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
M	1.6	0.35	40	8	–	2.5	2.1	3	1	1.44	009995*	081901*
M	1.7	0.35	40	8	–	2.5	2.1	3	1	1.54	024710*	081902*
M	1.8	0.35	40	8	–	2.5	2.1	3	1	1.64	024711*	081903*
M	2	0.4	45	9	–	2.8	2.1	3	1	1.82	106428*	106400*
M	2.5	0.45	50	9	14	2.8	2.1	4	1	2.3	106429*	106401*
M	3	0.5	56	10	18	3.5	2.7	4	1	2.8	106430*	106402*
M	3.5	0.6	56	11	20	4	3	4	1	3.25	106431*	106403*
M	4	0.7	63	12	21	4.5	3.4	4	1	3.7	106432*	106404*
M	5	0.8	70	14	25	6	4.9	5	1	4.65	106434*	106405*
M	6	1	80	16	30	6	4.9	5	1	5.55	106435*	106406*
M	8	1.25	90	18	35	8	6.2	5	1	7.45	106437	106407
M	10	1.5	100	20	39	10	8	5	1	9.35	106247	106399
M	12	1.75	110	24	–	9	7	5	2	11.2	106736	081904

Roll taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2





(number of polygones)

General dimensions
DIN 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	**DURAMAX NB**	**DURAMAX NB**		
model	**TIN TS**	**TIN TS**		
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	6HX	**6GX**		
shank tol.	h6	h6		
thread depth	3xD	3xD		
bore hole				
P	10–50	10–50		
M	4–12	4–12		
K				
N	10–40	10–40		
S	10–25	10–25		
H				

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
M	2.5	0.45	68	12	–	6	4.9	4	1	2.3	056826	078892
M	3	0.5	68	12	–	6	4.9	4	1	2.8	056827	078893
M	4	0.7	68	12	25	6	4.9	4	1	3.7	056828	078894
M	5	0.8	68	12	25	6	4.9	4	1	4.65	056830	078895
M	6	1	68	12	25	6	4.9	4	1	5.55	056831	078896
M	8	1.25	68	12	–	6	4.9	4	2	7.45	056832	078897
M	10	1.5	68	12	–	6	4.9	4	2	9.35	056833	078898

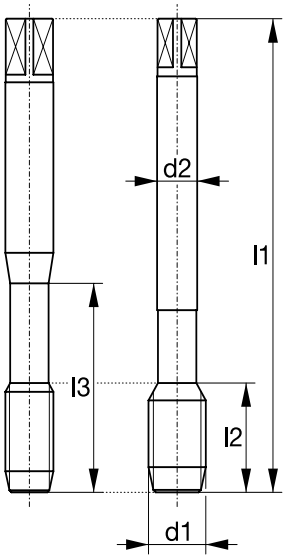
Roll taps

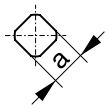
M

ISO Metric coarse thread DIN 13

series	**DURAMAX H**		
model	**TIN**		
material	HSSE-PM		

type 1 type 2





(number of polygones)

chamfer	C / 2–3			
thread tol.	6HX			
shank tol.	h6			
thread depth	3xD			
bore hole				

General dimensions
DIN 2174

P	10–50			
M	4–12			
K				
N	10–40			
S	10–25			
H				

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
M	3	0.5	56	10	18	3.5	2.7	4	1	2.8	107193*
M	4	0.7	63	12	21	4.5	3.4	4	1	3.7	107194*
M	5	0.8	70	14	25	6	4.9	5	1	4.65	107196*
M	5	0.8	70	14	25	6	4.9	5	1	4.65	082260
M	6	1	80	16	30	6	4.9	5	1	5.55	107222*
M	6	1	80	16	30	6	4.9	5	1	5.55	082265
M	8	1.25	90	18	35	8	6.2	5	1	7.45	107231
M	10	1.5	100	20	39	10	8	5	1	9.35	107190
M	12	1.75	110	24	–	9	7	5	2	11.2	107248
M	14	2	110	25	–	11	9	6	2	13.1	024514
M	16	2	110	27	–	12	9	6	2	15.1	107249
M	18	2.5	125	32	–	14	11	7	2	16.8	083126
M	20	2.5	140	32	–	16	12	7	2	18.8	020147
M	22	2.5	140	32	–	18	14.5	7	2	20.8	037284
M	24	3	160	36	–	18	14.5	7	2	22.6	024715

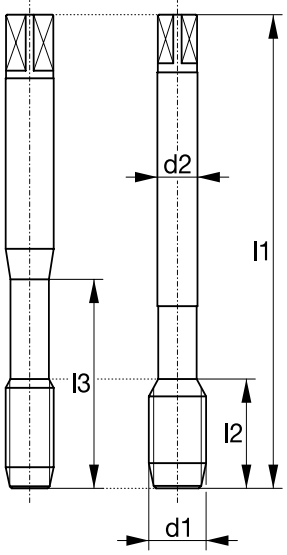
* with tip

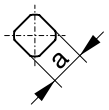
Roll taps

M — **ISO Metric coarse thread DIN 13**

series	DURAMAX H	DURAMAX H		
model	KA TIN	KR TIN		
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	6HX	6HX		
shank tol.	h6	h6		
thread depth	3xD	3xD		
bore hole				
P	10–50	10–50		
M	4–12	4–12		
K				
N	10–40	10–40		
S	10–25	10–25		
H				

type 1 type 2





(number of polygones)

General dimensions
DIN 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

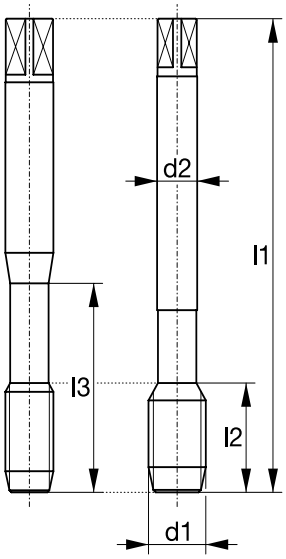
i For detailed cutting speeds please refer to the application table.

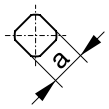
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
M	5	0.8	70	14	25	6	4.9	5	1	4.65	107240	
M	6	1	80	16	30	6	4.9	5	1	5.55	107241	107243
M	8	1.25	90	18	35	8	6.2	5	1	7.45	004724	001989
M	10	1.5	100	20	39	10	8	5	1	9.35	004725	004726
M	12	1.75	110	24	–	9	7	5	2	11.2	004967	007517
M	14	2	110	25	–	11	9	6	2	13.1	033807	022052
M	16	2	110	27	–	12	9	6	2	15.1	005117	007156
M	18	2.5	125	32	–	14	11	7	2	16.8	082106	030708
M	20	2.5	140	32	–	16	12	7	2	18.8	014362	019905
M	22	2.5	140	32	–	18	14.5	7	2	20.8	075767	033591
M	24	3	160	36	–	18	14.5	7	2	22.6	030657	030760
M	27	3	160	36	–	20	16	8	2	25.6	082108	030786
M	30	3.5	180	40	–	22	18	8	2	28.3	048823	030787
M	33	3.5	180	40	–	25	20	10	2	31.3	082109	033592
M	36	4	200	50	–	28	22	10	2	34.1	075818	030788
M	39	4	200	50	–	32	24	10	2	37.1	082110	033593
M	42	4.5	200	50	–	32	24	10	2	39.8	056158	032577
M	45	4.5	220	55	–	36	29	10	2	42.8	082113	033594
M	48	5	250	60	–	36	29	10	2	45.6	056159	033595

Roll taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2





(number of polygones)

General dimensions
DIN 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	**DURAMAX H**	**DURAMAX H**	**DURAMAX H**
model	**TIN**	**TIN**	**TIN**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	**F / <1.5**	C / 2–3	**E / 1.5–2**
thread tol.	6HX	**6GX**	**6GX**
shank tol.	h6	h6	h6
thread depth	3xD	3xD	3xD
bore hole			
P	10–50	10–50	10–50
M	4–12	4–12	4–12
K			
N	10–40	10–40	10–40
S	10–25	10–25	10–25
H			

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
M	3	0.5	56	10	18	3.5	2.7	4	1	2.8	■ 100160		004729
M	4	0.7	63	12	21	4.5	3.4	4	1	3.7	■ 097737		082672
M	5	0.8	70	14	25	6	4.9	5	1	4.65	■ 053294	107226*	082673
M	5	0.8	70	14	25	6	4.9	5	1	4.65		082261	
M	6	1	80	16	30	6	4.9	5	1	5.55	■ 065019	107227*	046373
M	6	1	80	16	30	6	4.9	5	1	5.55		082264	
M	8	1.25	90	18	35	8	6.2	5	1	7.45	■ 100161	107228	049099
M	10	1.5	100	20	39	10	8	5	1	9.35	■ 100162	107223	049737
M	12	1.75	110	24	–	9	7	5	2	11.2			082674

* with tip | ■ new

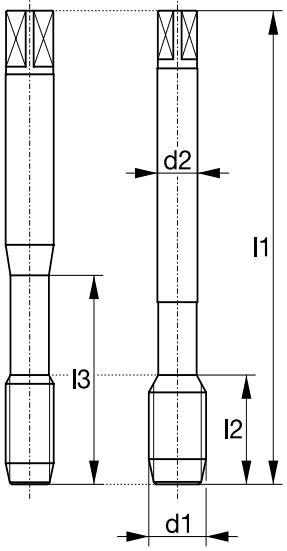
BASS TECHNIK FÜR GEWINDE

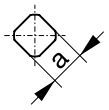
Roll taps

M — **ISO Metric coarse thread DIN 13**

series	**DURAMAX H**	**DURAMAX H**		
model	**LH TIN**	**BT**		
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	6HX	6HX		
shank tol.	h6	h6		
thread depth	3xD	3xD		
bore hole				
P	10–50	10–55		
M	4–12	4–15		
K				
N	10–40	10–60		
S	10–25	10–25		
H				

type 1 type 2





(number of polygones)

General dimensions
DIN 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

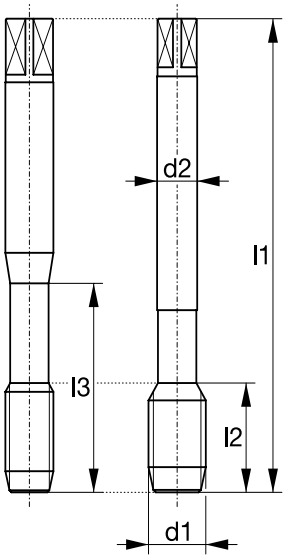
i For detailed cutting speeds please refer to the application table.

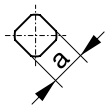
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
M	3	0.5	56	10	18	3.5	2.7	4	1	2.8	057792*	052508*
M	4	0.7	63	12	21	4.5	3.4	4	1	3.7	082114*	050403*
M	5	0.8	70	14	25	6	4.9	5	1	4.65	071170*	054125*
M	6	1	80	16	30	6	4.9	5	1	5.55	082115*	050145*
M	8	1.25	90	18	35	8	6.2	5	1	7.45	033181	051431
M	10	1.5	100	20	39	10	8	5	1	9.35	039307	054822
M	12	1.75	110	24	–	9	7	5	2	11.2	040999	053680
M	14	2	110	25	–	11	9	6	2	13.1	082116	
M	16	2	110	27	–	12	9	6	2	15.1	082117	054869
M	20	2.5	140	32	–	16	12	7	2	18.8		060184
M	24	3	160	36	–	18	14.5	7	2	22.6		060185

Roll taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2



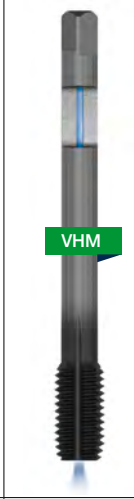
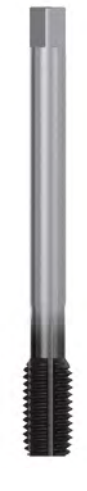


(number of polygones)

General dimensions
DIN 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

	series	DURAMAX H	DURAMAX H	DURAMAX H	DURAMAX H
	model	**KA BT**	**KA BT**	**KR BT**	**BT**
	material	HSSE-PM	VHM	HSSE-PM	HSSE-PM
					
	chamfer	C / 2–3	C / 2–3	C / 2–3	**E / 1.5–2**
	thread tol.	6HX	6HX	6HX	6HX
	shank tol.	h6	h6	h6	h6
	thread depth	3xD	3xD	3xD	3xD
	bore hole				
P		10–55	15–60	10–55	10–55
M		4–15	10–25	4–15	4–15
K					
N		10–60	25–80	10–60	10–60
S		10–25	12–35	10–25	10–25
H					

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
M	3	0.5	56	10	18	3.5	2.7	4	1	2.8				058435
M	4	0.7	63	12	21	4.5	3.4	4	1	3.7				059126
M	5	0.8	70	14	25	6	4.9	5	1	4.65	054569	081857	053613	059112
M	6	1	80	16	30	6	4.9	5	1	5.55	051434	081858	053764	059113
M	6	1	80	16	–	4.5	3.4	5	**2**	5.55	■ 098395			
M	8	1.25	90	18	35	8	6.2	5	1	7.45	051435	065869	057219	056453
M	8	1.25	90	18	–	6	4.9	5	**2**	7.45	■ 098396			
M	10	1.5	100	20	39	10	8	5	1	9.35	051436	058029	053612	059115
M	10	1.5	100	20	–	7	5.5	5	**2**	9.35	■ 098397			
M	12	1.75	110	24	–	9	7	5	2	11.2	053762		050075	059117
M	14	2	110	25	–	11	9	6	2	13.1	064154		059889	
M	16	2	110	27	–	12	9	6	2	15.1	053763		053585	
M	18	2.5	125	32	–	14	11	7	2	16.8	082246		084722	
M	20	2.5	140	32	–	16	12	7	2	18.8	057225		054688	
M	22	2.5	140	32	–	18	14.5	7	2	20.8	069975		084723	
M	24	3	160	36	–	18	14.5	7	2	22.6	057216		056172	
M	27	3	160	36	–	20	16	8	2	25.6	082247		066770	
M	30	3.5	180	40	–	22	18	8	2	28.3	067741		060281	
M	33	3.5	180	40	–	25	20	10	2	31.3	082248		066771	
M	36	4	200	50	–	28	22	10	2	34.1	082250		060785	
M	39	4	200	50	–	32	24	10	2	37.1	082251		066772	

■ new

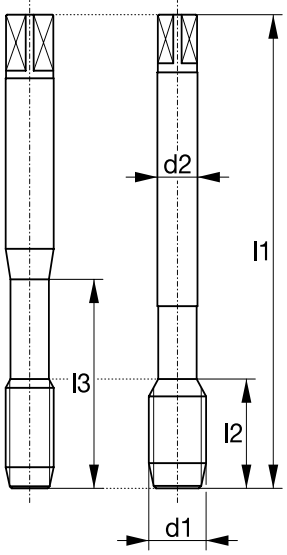
BASS TECHNIK FÜR GEWINDE

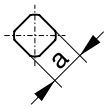
Roll taps

M

ISO Metric coarse thread DIN 13

type 1 type 2





(number of polygones)

General dimensions
DIN 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

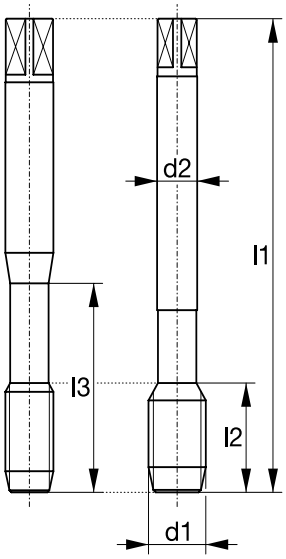
series	**DURAMAX H**		**DURAMAX H**
model	**KA BT**		**KR BT**
material	HSSE-PM		HSSE-PM
			
chamfer	C / 2–3		C / 2–3
thread tol.	6HX		6HX
shank tol.	h6		h6
thread depth	3xD		3xD
bore hole			
P	10–55		10–55
M	4–15		4–15
K			
N	10–60		10–60
S	10–25		10–25
H			

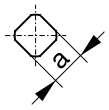
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
M	42	4.5	200	50	–	32	24	10	2	39.8	065076	063811
M	45	4.5	220	55	–	36	29	10	2	42.8	082252	066775
M	48	5	250	60	–	36	29	10	2	45.6	082253	060786

Roll taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2



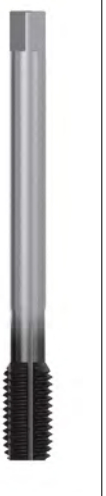


(number of polygones)

General dimensions
DIN 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	**DURAMAX H**	**DURAMAX H**	**DURAMAX H**	**DURAMAX H**
model	**KA BT**	**KR BT**	**BT**	**BT**
material	HSSE-PM	VHM	HSSE-PM	HSSE-PM
				
chamfer	**E / 1.5–2**	**E / 1.5–2**	C / 2–3	**E / 1.5–2**
thread tol.	6HX	6HX	**6GX**	**6GX**
shank tol.	h6	h6	h6	h6
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	10–55	15–60	10–55	10–55
M	4–15	10–25	4–15	4–15
K				
N	10–60	25–80	10–60	10–60
S	10–25	12–35	10–25	10–25
H				

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number			
M	3	0.5	56	10	18	3.5	2.7	4	1	2.8				■ 098404
M	4	0.7	63	12	21	4.5	3.4	4	1	3.7				■ 107579
M	5	0.8	70	14	25	6	4.9	5	1	4.65	079289	081856	■ 057718*	■ 073098
M	6	1	80	16	30	6	4.9	5	1	5.55	055175	081853	■ 056306*	■ 059703
M	6	1	80	16	–	4.5	3.4	5	**2**	5.55	■ 098398			
M	8	1.25	90	18	35	8	6.2	5	1	7.45	057771	081854	■ 054907	■ 059521
M	8	1.25	90	18	–	6	4.9	5	**2**	7.45	■ 098399			
M	10	1.5	100	20	39	10	8	5	1	9.35	057772	081855	■ 053487	■ 066649
M	10	1.5	100	20	–	7	5.5	5	**2**	9.35	■ 098402			
M	12	1.75	110	24	–	9	7	5	2	11.2	057199			■ 098408
M	14	2	110	25	–	11	9	6	2	13.1	082256			
M	16	2	110	27	–	12	9	6	2	15.1	082257			

* with tip | ■ new

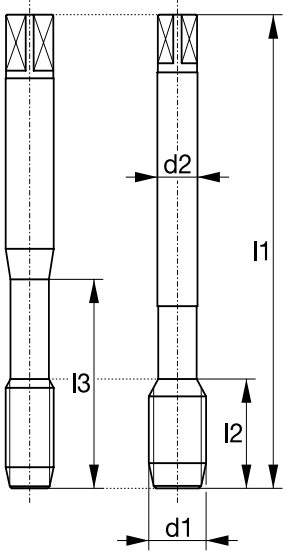
BASS TECHNIK FÜR GEWINDE

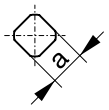
Roll taps

M — **ISO Metric coarse thread DIN 13**

series	**DURAMAX H**	**DURAMAX H**		
model	**BX**	**BX**		
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	6HX	**6GX**		
shank tol.	h6	h6		
thread depth	3xD	3xD		
bore hole				
P	10–55	10–55		
M	4–15	4–15		
K				
N	10–60	10–60		
S	10–25	10–25		
H				

type 1 type 2





(number of polygones)

General dimensions
DIN 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

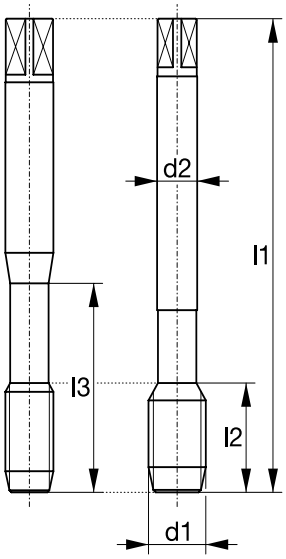
i For detailed cutting speeds please refer to the application table.

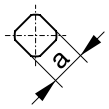
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number	
M	3	0.5	56	10	18	3.5	2.7	4	1	2.8	■ 090492*	■ 090493*
M	4	0.7	63	12	21	4.5	3.4	4	1	3.7	■ 090494*	■ 090495*
M	5	0.8	70	14	25	6	4.9	5	1	4.65	■ 090496*	■ 090497*
M	6	1	80	16	30	6	4.9	5	1	5.55	■ 084395*	■ 082716*
M	8	1.25	90	18	35	8	6.2	5	1	7.45	■ 084396	■ 087234
M	10	1.5	100	20	39	10	8	5	1	9.35	■ 090498	■ 090383
M	12	1.75	110	24	–	9	7	5	2	11.2	■ 090501	■ 090502
M	14	2	110	25	–	11	9	6	2	13.1	■ 093665	
M	16	2	110	27	–	12	9	6	2	15.1	■ 090503	■ 090504
M	18	2.5	125	32	–	14	11	7	2	16.8	■ 098409	
M	20	2.5	140	32	–	16	12	7	2	18.8	■ 098410	
M	22	2.5	140	32	–	18	14.5	7	2	20.8	■ 098411	
M	24	3	160	36	–	18	14.5	7	2	22.6	■ 098412	

Roll taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2





(number of polygones)

General dimensions
DIN 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	DURAMAX HO TIN	DURAMAX HO TIN	DURAMAX HO TIN
model			
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	C / 2–3	C / 2–3
thread tol.	4HX	6HX	**6GX**
shank tol.	h6	h6	h6
thread depth	3xD	3xD	3xD
bore hole			
P	10–50	10–50	10–50
M	4–12	4–12	4–12
K			
N	10–40	10–40	10–40
S	10–25	10–25	10–25
H			

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number	
M	1	0.25	40	5.5	–	2.5	2.1	3	1	0.88	081907*	
M	1.2	0.25	40	6	–	2.5	2.1	3	1	1.08	081908*	
M	1.4	0.3	40	7	–	2.5	2.1	3	1	1.26	060889*	
M	1.6	0.35	40	8	–	2.5	2.1	3	1	1.44	041891*	081913*
M	1.7	0.35	40	8	–	2.5	2.1	3	1	1.54	081909*	081914*
M	1.8	0.35	40	8	–	2.5	2.1	3	1	1.64	081910*	081915*
M	2	0.4	45	9	–	2.8	2.1	3	1	1.82	022815*	081916*
M	2.5	0.45	50	9	14	2.8	2.1	4	1	2.3	022814*	081917*
M	3	0.5	56	10	18	3.5	2.7	4	1	2.8	107198*	034684*
M	4	0.7	63	12	21	4.5	3.4	4	1	3.7	107200*	107205*
M	5	0.8	70	14	25	6	4.9	5	1	4.65	107201*	107206*
M	6	1	80	16	30	6	4.9	5	1	5.55	107202*	107207*
M	8	1.25	90	18	35	8	6.2	5	1	7.45	107213	107208
M	10	1.5	100	20	39	10	8	5	1	9.35	107197	107203
M	12	1.75	110	24	–	9	7	5	2	11.2	107251	081905

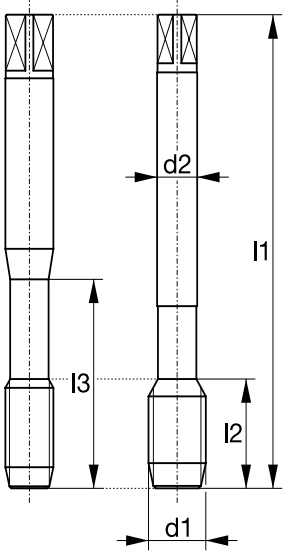
* with tip

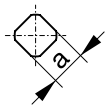
Roll taps

M — ISO Metric coarse thread DIN 13

series	DURAMAX HZP	DURAMAX HZP	DURAMAX GAL	DURAMAX GAL
model	KA BX	KA BX	BT	MKR BT
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	C / 2–3
thread tol.	6HX	**6GX**	6HX	6HX
shank tol.	h6	h6	h6	h6
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	15–60	15–60	10–55	10–55
M	10–25	10–25	4–15	4–15
K				
N	10–60	10–60	10–60	10–60
S	10–25	10–25		10–15
H	5–8	5–8		

type 1 type 2





(number of polygones)

General dimensions
DIN 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

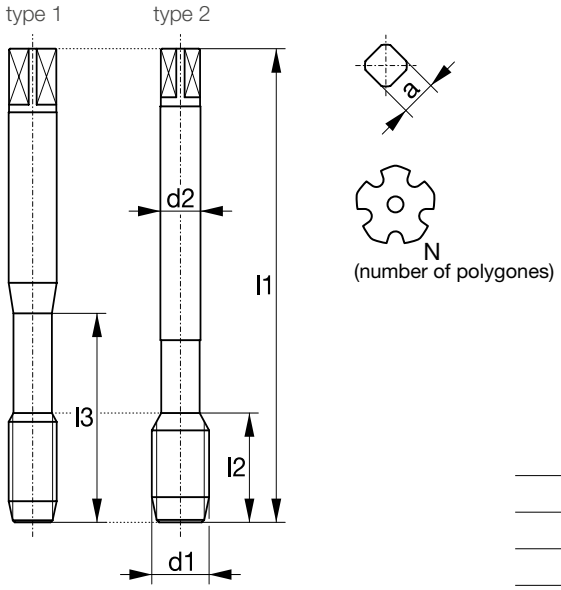
i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
M	1	0.25	40	5.5	–	2.5	2.1	3	1	0.88			■ 098667*	
M	1.4	0.3	40	7	–	2.5	2.1	3	1	1.26			■ 098668*	
M	1.6	0.35	40	8	–	2.5	2.1	3	1	1.44			■ 098669*	
M	2	0.4	45	9	–	2.8	2.1	3	1	1.82			■ 098670*	
M	2.5	0.45	50	9	14	2.8	2.1	4	1	2.3			■ 098671*	
M	3	0.5	56	7	18	3.5	2.7	4	1	2.8			■ 098647*	
M	3	0.5	56	7	18	3.5	2.7	5	1	2.8	■ 098006**	■ 097898**		
M	3.5	0.6	56	7	20	4	3	4	1	3.25			■ 098681*	
M	4	0.7	63	8	21	4.5	3.4	4	1	3.7			■ 098649*	
M	4	0.7	63	8	21	4.5	3.4	6	1	3.7	■ 098009	■ 097899		
M	5	0.8	70	9	25	6	4.9	5	1	4.65			■ 098655*	■ 098714
M	5	0.8	70	9	25	6	4.9	6	1	4.65	■ 098010	■ 097901		
M	6	1	80	10	30	6	4.9	5	1	5.55			■ 098657*	■ 058771
M	6	1	80	10	30	6	4.9	6	1	5.55	■ 097892	■ 097903		
M	7	1	80	10	30	7	5.5	5	1	6.55			■ 098683	
M	8	1.25	90	13	35	8	6.2	5	1	7.45			■ 098659	■ 098712
M	8	1.25	90	13	35	8	6.2	6	1	7.45	■ 098011	■ 097904		
M	9	1.25	90	13	35	9	7	5	1	8.45			■ 098684	
M	10	1.5	100	15	39	10	8	5	1	9.35			■ 098661	■ 098710
M	10	1.5	100	15	39	10	8	8	1	9.35	■ 098013	■ 098020		
M	11	1.5	100	15	–	8	6.2	5	2	10.35			■ 098693	

* with tip | ** without internal coolant | ■ new

Roll taps

M — ISO Metric coarse thread DIN 13



General dimensions
DIN 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

i For detailed cutting speeds please refer to the application table.

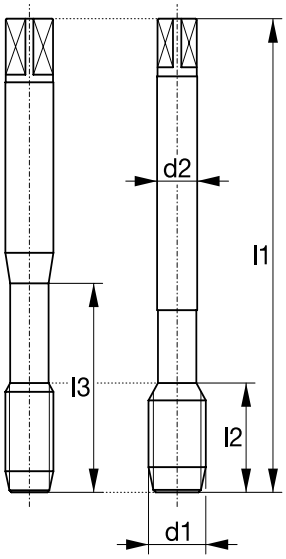
series	DURAMAX HZP	DURAMAX HZP	DURAMAX GAL	DURAMAX GAL
model	KA BX	KA BX	BT	MKR BT
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	C / 2–3
thread tol.	6HX	**6GX**	6HX	6HX
shank tol.	h6	h6	h6	h6
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	15–60	15–60	10–55	10–55
M	10–25	10–25	4–15	4–15
K				
N	10–60	10–60	10–60	10–60
S	10–25	10–25		10–15
H	5–8	5–8		

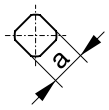
Ød1	P	l1	l2	l3	Ød2	a	N	type		identification number			
M 12	1.75	110	18	–	9	7	5	2	11.2			■ 098665	■ 098708
M 12	1.75	110	18	–	9	7	10	2	11.2	■ 098014	■ 098022		
M 14	2	110	20	–	11	9	6	2	13.1			■ 098695	■ 098707
M 14	2	110	20	–	11	9	10	2	13.1	■ 097893	■ 098108		
M 16	2	110	20	–	12	9	6	2	15.1			■ 098696	■ 098705
M 16	2	110	20	–	12	9	10	2	15.1	■ 076820	■ 098109		
M 18	2.5	125	25	–	14	11	7	2	16.8			■ 098697	■ 098703
M 18	2.5	125	25	–	14	11	10	2	16.8	■ 097895	■ 098107		
M 20	2.5	140	25	–	16	12	7	2	18.8			■ 098698	■ 098701
M 20	2.5	140	25	–	16	12	10	2	18.8	■ 097897	■ 098015		
M 22	2.5	140	25	–	18	14.5	7	2	20.8			■ 098700	■ 098699
M 24	3	160	30	–	18	14.5	7	2	22.6			■ 098702	■ 098691

Roll taps

M — ISO Metric coarse thread DIN 13

type 1 type 2





(number of polygones)

General dimensions
DIN 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	DURAMAX GAL	DURAMAX GAL	DURAMAX GAL	DURAMAX GAL
model	BT	KA BT	MKA BT	MKA BT MG
material	HSSE-PM	VHM	HSSE-PM	HSSE-PM
				
chamfer	**E / 1.5–2**	**E / 1.5–2**	**E / 1.5–2**	**E / 1.5–2**
thread tol.	6HX	6HX	6HX	6HX
shank tol.	h6	h6	h6	h6
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	10–55	15–60	10–55	10–55
M	4–15	10–25	4–15	4–15
K				
N	10–60	25–90	10–60	10–60
S		10–25	10–25	10–25
H				

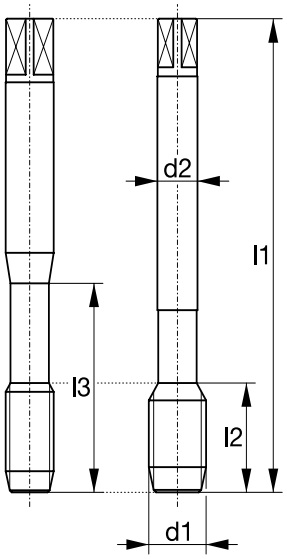
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
M	2	0.4	45	9	–	2.8	2.1	3	1	1.82	■ 098690			
M	2.5	0.45	50	9	14	2.8	2.1	4	1	2.3	■ 098689			
M	3	0.5	56	7	18	3.5	2.7	4	1	2.8	■ 098688			
M	3.5	0.6	56	7	20	4	3	4	1	3.25	■ 098687			
M	4	0.7	63	8	21	4.5	3.4	4	1	3.7	■ 098686			
M	5	0.8	70	9	25	6	4.9	5	1	4.65	■ 098685	081866	■ 098675	
M	6	1	80	10	30	6	4.9	5	1	5.55	■ 098682	081862	■ 098674	059620
M	7	1	80	10	30	7	5.5	5	1	6.55				059625
M	8	1.25	90	13	35	8	6.2	5	1	7.45	■ 098680	067115	■ 098673	059628
M	10	1.5	100	15	39	10	8	5	1	9.35	■ 098679	074230	■ 098666	059636
M	12	1.75	110	18	–	9	7	5	2	11.2	■ 098678	073888	■ 098664	
M	14	2	110	20	–	11	9	6	2	13.1	■ 098677		■ 098663	
M	16	2	110	20	–	12	9	6	2	15.1	■ 098676		■ 098662	

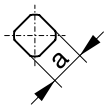
■ new

Roll taps

M — ISO Metric coarse thread DIN 13

type 1 type 2





(number of polygones)

General dimensions
DIN 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

i For detailed cutting speeds please refer to the application table.

series	DURAMAX GAL	DURAMAX GAL	DURAMAX GAL	DURAMAX GAL
model	**MKR BT**	**MKR AK BT**	**MKR AK BT**	**BT**
material	HSSE-PM	HSSE-PM	VHM	HSSE-PM
				
chamfer	**E / 1.5–2**	**E / 1.5–2**	**E / 1.5–2**	C / 2–3
thread tol.	6HX	6HX	6HX	**6GX**
shank tol.	h6	h6	h6	h6
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	10–55	10–55	15–60	10–55
M	4–15	4–15	10–25	4–15
K				
N	10–60	10–60	25–80	10–60
S	10–15	10–25	12–35	
H				

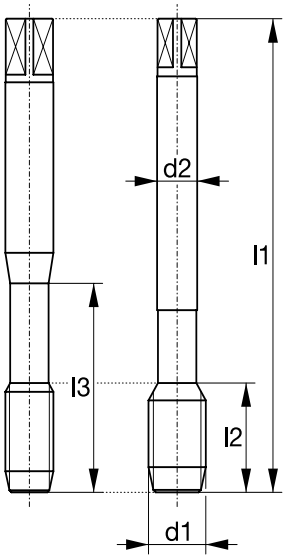
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number			
M	2	0.4	45	9	–	2.8	2.1	3	1	1.82				■ 098660*
M	2.5	0.45	50	9	14	2.8	2.1	4	1	2.3				■ 098658*
M	3	0.5	56	7	18	3.5	2.7	4	1	2.8				■ 098656*
M	3.5	0.6	56	7	20	4	3	4	1	3.25				■ 098654*
M	4	0.7	63	8	21	4.5	3.4	4	1	3.7				■ 098653*
M	5	0.8	70	9	25	6	4.9	5	1	4.65	821012	078780	069226	■ 098651*
M	6	1	80	10	30	6	4.9	5	1	5.55	049279	074940	075602	■ 092487*
M	8	1.25	90	13	35	8	6.2	5	1	7.45	071466	081891	075603	■ 098648
M	10	1.5	100	15	39	10	8	5	1	9.35	070515	081892	074796	■ 092488
M	12	1.75	110	18	–	9	7	5	2	11.2	080433	081893	075601	■ 098646
M	14	2	110	20	–	11	9	6	2	13.1				■ 098645
M	16	2	110	20	–	12	9	6	2	15.1				■ 098644

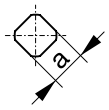
Cutting taps

M — **ISO Metric coarse thread DIN 13**

	series	model	material	
	VARIANT N	**VARIANT N TIN**		
	HSSE-PM	HSSE-PM		

type 1 type 2





(number of flutes)

chamfer	B / 3–5.5	B / 3–5.5
thread tol.	ISO2/6H	ISO2/6H
shank tol.	h9	h9
thread depth	3xD	3xD
bore hole		
P	10–20	20–30
M		
K		
N	10–25	10–40
S		8–15
H		

General dimensions
DIN 371 / DIN 376

i For detailed cutting speeds please refer to the application table.

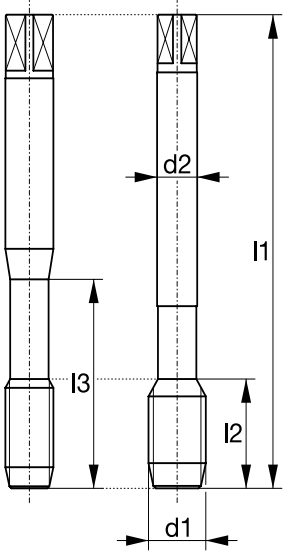
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
M	3	0.5	56	10	18	3.5	2.7	3	1	2.5	105339*	105449*
M	4	0.7	63	12	21	4.5	3.4	3	1	3.3	105347*	105451*
M	5	0.8	70	14	25	6	4.9	3	1	4.2	105365*	105452*
M	6	1	80	16	30	6	4.9	3	1	5	105369*	105453*
M	8	1.25	90	18	35	8	6.2	3	1	6.8	105411*	105456*
M	10	1.5	100	20	39	10	8	3	1	8.5	105320	105446
M	12	1.75	110	24	–	9	7	3	2	10.2	105610	105718
M	16	2	110	27	–	12	9	3	2	14	105617	105720
M	20	2.5	140	32	–	16	12	4	2	17.5	105627	105722

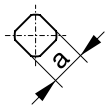
* with tip

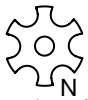
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

series	**VARIANT H**	**VARIANT H**	**VARIANT H**	**VARIANT H**
model				
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	B / 3–5.5	B / 3–5.5	B / 3–5.5	B / 3–5.5
thread tol.	ISO1/4H	ISO2/6H	**ISO3/6G**	**7G**
shank tol.	h9	h9	h9	h9
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	5–20	5–20	5–20	5–20
M				
K				
N	6–12	6–12	6–12	6–12
S				
H				

i For detailed cutting speeds please refer to the application table.

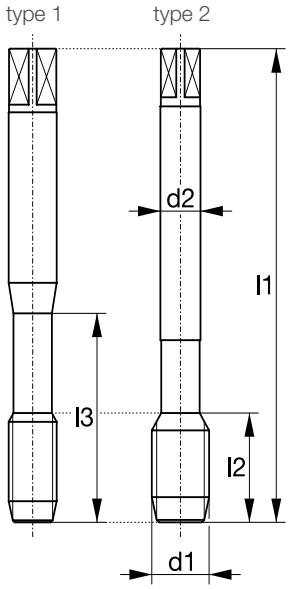
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
M	1.2	0.25	40	6	10.5	2.5	2.1	2	1	0.95	108301*		
M	1.4	0.3	40	7	12	2.5	2.1	2	1	1.1	108302*		
M	1.6	0.35	40	8	13	2.5	2.1	2	1	1.25	108303*		
M	1.7	0.35	40	8	13	2.5	2.1	2	1	1.3	108304*		
M	2	0.4	45	9	14	2.8	2.1	2	1	1.6	108312*		
M	2.2	0.45	45	9	14	2.8	2.1	2	1	1.75	108313*		
M	2.3	0.4	45	9	14	2.8	2.1	2	1	1.9	108314*		
M	2.5	0.45	50	9	14	2.8	2.1	2	1	2.05	108315*		
M	2.6	0.45	50	9	14	2.8	2.1	2	1	2.1	108316*		
M	3	0.5	56	10	18	3.5	2.7	3	1	2.5	108324*	108356*	033607*
M	3	0.5	56	10	–	3.5	2.7	3	**2**	2.5	■ 098420*		
M	3.5	0.6	56	11	20	4	3	3	1	2.9	108325*		
M	4	0.7	63	12	21	4.5	3.4	3	1	3.3	108328*	108358*	038361*
M	4	0.7	63	12	–	2.8	2.1	3	**2**	3.3	■ 098421*		
M	5	0.8	70	14	25	6	4.9	3	1	4.2	108347*	108359*	108376*
M	5	0.8	70	14	–	3.5	2.7	3	**2**	4.2	■ 108537*		
M	6	1	80	16	30	6	4.9	3	1	5	108349*	108360*	038362*
M	6	1	80	16	–	4.5	3.4	3	**2**	5	108538*		
M	8	1.25	90	18	35	8	6.2	3	1	6.8	108380*	108361*	108377*
M	8	1.25	90	18	–	6	4.9	3	**2**	6.8	108542*		

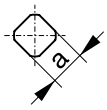
* with tip | ■ new

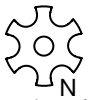
BASS TECHNIK FÜR GEWINDE

Cutting taps

M — **ISO Metric coarse thread DIN 13**







(number of flutes)

General dimensions
DIN 371 / DIN 376

		VARIANT H	VARIANT H	VARIANT H
series				
model				
material		HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer		B / 3–5.5	B / 3–5.5	B / 3–5.5
thread tol.		ISO2/6H	**ISO3/6G**	**7G**
shank tol.		h9	h9	h9
thread depth		3xD	3xD	3xD
bore hole				
P		5–20	5–20	5–20
M				
K				
N		6–12	6–12	6–12
S				
H				

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
M	10	1.5	100	20	39	10	8	3	1	8.5	108305	108352	108373
M	10	1.5	100	20	–	7	5.5	3	**2**	8.5	108506		
M	12	1.75	110	24	–	9	7	3	2	10.2	108507		
M	14	2	110	25	–	11	9	3	2	12	108511		
M	16	2	110	27	–	12	9	3	2	14	108513		
M	20	2.5	140	32	–	16	12	4	2	17.5	108518		
M	24	3	160	36	–	18	14.5	4	2	21	108522		
M	27	3	160	36	–	20	16	4	2	24	108524		
M	30	3.5	180	40	–	22	18	4	2	26.5	108525		
M	33	3.5	180	40	–	25	20	4	2	29.5	108526		
M	36	4	200	50	–	28	22	4	2	32	108527		
M	39	4	200	50	–	32	24	4	2	35	108528		
M	42	4.5	200	50	–	32	24	4	2	37.5	108530		
M	45	4.5	220	55	–	36	29	4	2	40.5	108531		
M	48	5	250	60	–	36	29	4	2	43	038315		
M	52	5	250	60	–	40	32	4	2	47	038338		
M	56	5.5	250	60	–	40	32	4	2	50.5	038339		

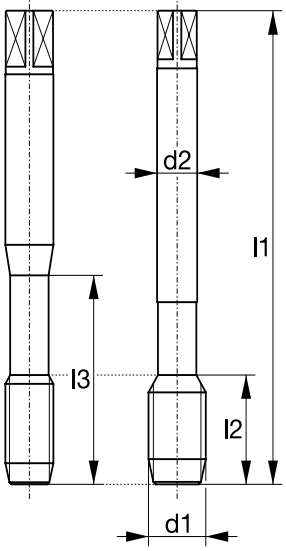
Cutting taps

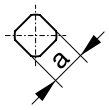
M

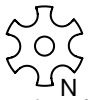
ISO Metric coarse thread DIN 13

series	VARIANT H	VARIANT H	VARIANT H
model	VAP	VAP	TIN
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	B / 3–5.5	B / 3–5.5	B / 3–5.5
thread tol.	ISO1/4H	ISO2/6H	ISO1/4H
shank tol.	h9	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P	10–20	10–20	10–35
M	1–8	1–8	3–12
K			10–25
N			10–35
S			
H			

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

i For detailed cutting speeds please refer to the application table.

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number	
M	1	0.25	40	5	–	2.5	2.1	2	1	0.75		■ 098501*
M	1.1	0.25	40	5	–	2.5	2.1	2	1	0.85		■ 098500*
M	1.2	0.25	40	6	10.5	2.5	2.1	2	1	0.95	038372*	008819*
M	1.4	0.3	40	7	12	2.5	2.1	2	1	1.1	000091*	006715*
M	1.6	0.35	40	8	13	2.5	2.1	2	1	1.25	108417*	
M	1.7	0.35	40	8	13	2.5	2.1	2	1	1.3	038370*	
M	2	0.4	45	9	14	2.8	2.1	2	1	1.6	110253*	
M	2.2	0.45	45	9	14	2.8	2.1	2	1	1.75	110254*	
M	2.3	0.4	45	9	14	2.8	2.1	2	1	1.9	038371*	
M	2.5	0.45	50	9	14	2.8	2.1	2	1	2.05	110255*	
M	2.6	0.45	50	9	14	2.8	2.1	2	1	2.1	004336*	
M	3	0.5	56	10	18	3.5	2.7	3	1	2.5	110256*	
M	3.5	0.6	56	11	20	4	3	3	1	2.9	010672*	
M	4	0.7	63	12	21	4.5	3.4	3	1	3.3	110259*	
M	5	0.8	70	14	25	6	4.9	3	1	4.2	110262*	
M	6	1	80	16	30	6	4.9	3	1	5	110264*	
M	6	1	80	16	–	4.5	3.4	3	**2**	5	002288*	
M	8	1.25	90	18	35	8	6.2	3	1	6.8	110268*	
M	8	1.25	90	18	–	6	4.9	3	**2**	6.8	110292*	
M	10	1.5	100	20	39	10	8	3	1	8.5	110251	
M	10	1.5	100	20	–	7	5.5	3	**2**	8.5	110279	

* with tip | ■ new

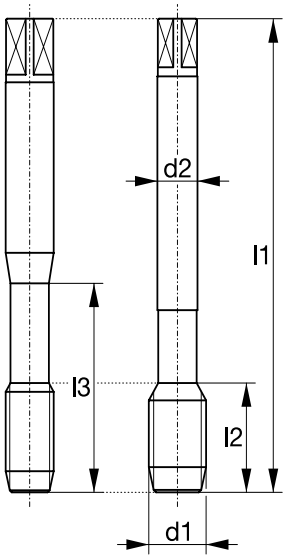
BASS TECHNIK FÜR GEWINDE

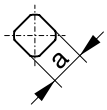
Cutting taps

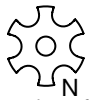
M

ISO Metric coarse thread DIN 13

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

series		**VARIANT H**		
model		**VAP**		
material		HSSE-PM		
				
chamfer		B / 3–5.5		
thread tol.		ISO2/6H		
shank tol.		h9		
thread depth		3xD		
bore hole				
P		10–20		
M		1–8		
K				
N				
S				
H				

i For detailed cutting speeds please refer to the application table.

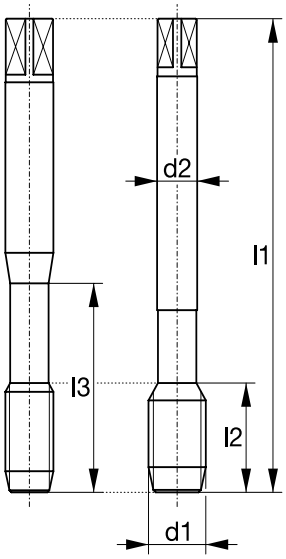
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
M	12	1.75	110	24	–	9	7	3	2	10.2	110281
M	14	2	110	25	–	11	9	3	2	12	110282
M	16	2	110	27	–	12	9	3	2	14	110283
M	18	2.5	125	32	–	14	11	3	2	15.5	110285
M	20	2.5	140	32	–	16	12	4	2	17.5	110286
M	22	2.5	140	32	–	18	14.5	4	2	19.5	110287
M	24	3	160	36	–	18	14.5	4	2	21	110288

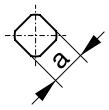
Cutting taps

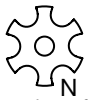
M

ISO Metric coarse thread DIN 13

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

series	**VARIANT H**	**VARIANT H**	**VARIANT H**
model	**TIN**	**TIN**	**TIN**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	B / 3–5.5	B / 3–5.5	B / 3–5.5
thread tol.	ISO2/6H	**ISO3/6G**	**7G**
shank tol.	h9	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P	10–35	10–35	10–35
M	3–12	3–12	3–12
K	10–25	10–25	10–25
N	10–35	10–35	10–35
S			
H			

i For detailed cutting speeds please refer to the application table.

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number		
M	1.6	0.35	40	8	13	2.5	2.1	2	1	1.25	006800*		
M	1.7	0.35	40	8	13	2.5	2.1	2	1	1.3	015516*		
M	1.8	0.35	40	8	–	2.5	2.1	2	1	1.45	■ 027231*		
M	2	0.4	45	9	14	2.8	2.1	2	1	1.6	108405*		■ 064896*
M	2.2	0.45	45	9	14	2.8	2.1	2	1	1.75	108406*		
M	2.3	0.4	45	9	14	2.8	2.1	2	1	1.9	004334*		
M	2.5	0.45	50	9	14	2.8	2.1	2	1	2.05	108407*		
M	2.6	0.45	50	9	14	2.8	2.1	2	1	2.1	014604*		
M	3	0.5	56	10	18	3.5	2.7	3	1	2.5	108408*	108367*	004297*
M	3	0.5	56	11	–	3.5	2.7	3	**2**	2.5	■ 098502*		
M	3.5	0.6	56	11	20	4	3	3	1	2.9	108409*		
M	4	0.7	63	12	21	4.5	3.4	3	1	3.3	108410*	108368*	004298*
M	4	0.7	63	13	–	2.8	2.1	3	**2**	3.3	■ 007566*		
M	4.5	0.75	70	16	25	6	4.9	3	1	3.7	■ 108411*		
M	5	0.8	70	14	25	6	4.9	3	1	4.2	108412*	108369*	108378*
M	5	0.8	70	16	–	3.5	2.7	3	**2**	4.2	■ 066986*		
M	6	1	80	16	30	6	4.9	3	1	5	108413*	108370*	004346*
M	6	1	80	16	–	4.5	3.4	3	**2**	5	108566*		
M	7	1	80	19	30	7	5.5	3	1	6	■ 108414*		
M	8	1.25	90	18	35	8	6.2	3	1	6.8	108415*	108371*	108379*
M	8	1.25	90	18	–	6	4.9	3	**2**	6.8	002368*		

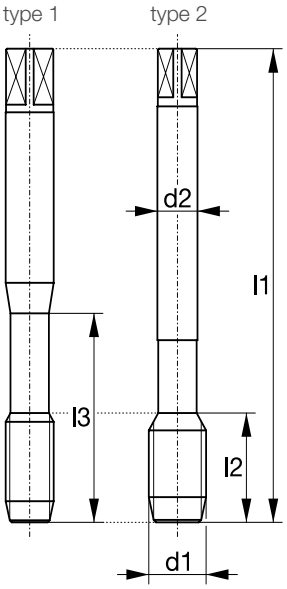
* with tip | ■ new

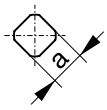
BASS TECHNIK FÜR GEWINDE

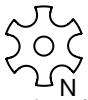
Cutting taps

M

ISO Metric coarse thread DIN 13







(number of flutes)

General dimensions
DIN 371 / DIN 376

series	**VARIANT H**	**VARIANT H**	**VARIANT H**
model	**TIN**	**TIN**	**TIN**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	B / 3–5.5	B / 3–5.5	B / 3–5.5
thread tol.	ISO2/6H	**ISO3/6G**	**7G**
shank tol.	h9	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P	10–35	10–35	10–35
M	3–12	3–12	3–12
K	10–25	10–25	10–25
N	10–35	10–35	10–35
S			
H			

i For detailed cutting speeds please refer to the application table.

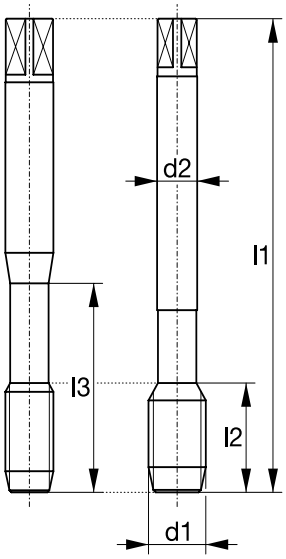
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number		
M	10	1.5	100	20	39	10	8	3	1	8.5	108403	108364	004347
M	10	1.5	100	20	–	7	5.5	3	**2**	8.5	002367		
M	12	1.75	110	24	–	9	7	3	2	10.2	108555		■ 029389
M	14	2	110	25	–	11	9	3	2	12	108557		
M	16	2	110	27	–	12	9	3	2	14	108558		■ 074118
M	18	2.5	125	32	–	14	11	3	2	15.5	108560		
M	20	2.5	140	32	–	16	12	4	2	17.5	108561		
M	22	2.5	140	32	–	18	14.5	4	2	19.5	009370		
M	24	3	160	36	–	18	14.5	4	2	21	108563		
M	27	3	160	36	–	20	16	4	2	24	■ 108564		
M	30	3.5	180	40	–	22	18	4	2	26.5	■ 017226		
M	33	3.5	180	40	–	25	20	4	2	29.5	■ 004060		
M	36	4	200	50	–	28	22	4	2	32	■ 108565		
M	39	4	200	50	–	32	24	4	2	35	■ 059553		
M	42	4.5	200	50	–	32	24	4	2	37.5	■ 047456		
M	45	4.5	220	55	–	36	29	4	2	40.5	■ 073878		
M	48	5	250	60	–	36	29	4	2	43	■ 046218		
M	52	5	250	60	–	40	32	4	2	47	■ 059554		
M	56	5.5	250	60	–	40	32	4	2	50.5	■ 002767		

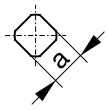
Cutting taps

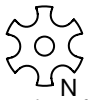
M — **ISO Metric coarse thread DIN 13**

series	**VARIANT H**	**VARIANT H**		
model	**TIN**	**TICN**		
material	HSSE-PM	HSSE-PM		
				
chamfer	B / 3–5.5	B / 3–5.5		
thread tol.	**6H+0.1**	ISO2/6H		
shank tol.	h9	h9		
thread depth	3xD	3xD		
bore hole				
P	10–35	10–35		
M	3–12			
K	10–25	5–25		
N	10–35	15–30		
S				
H		3–8		

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
M	2	0.4	45	8	–	2.8	2.1	2	1	1.6	■ 052987*	
M	3	0.5	56	10	18	3.5	2.7	3	1	2.5	■ 040640*	108395*
M	3.5	0.6	56	11	20	4	3	3	1	2.9		108396*
M	4	0.7	63	12	21	4.5	3.4	3	1	3.3		108397*
M	4	0.7	63	12	21	4.5	3.4	3	1	3.4	004352*	
M	5	0.8	70	14	25	6	4.9	3	1	4.2		108398*
M	5	0.8	70	14	25	6	4.9	3	1	4.3	004353*	
M	6	1	80	16	30	6	4.9	3	1	5		108399*
M	6	1	80	16	30	6	4.9	3	1	5.1	004354*	
M	6	1	80	16	–	4.5	3.4	3	**2**	5		108552*
M	8	1.25	90	18	35	8	6.2	3	1	6.8		108400*
M	8	1.25	90	18	35	8	6.2	3	1	6.9	108416*	
M	8	1.25	90	18	–	6	4.9	3	**2**	6.8		108553*
M	10	1.5	100	20	39	10	8	3	1	8.5		108391
M	10	1.5	100	20	39	10	8	3	1	8.6	003298	
M	12	1.75	110	24	–	9	7	3	2	10.2		108546
M	12	1.75	110	24	–	9	7	3	2	12.3	■ 108556	
M	14	2	110	25	–	11	9	3	2	12		108547
M	16	2	110	27	–	12	9	3	2	14		108548
M	16	2	110	27	–	12	9	3	2	14.1	■ 108559	
M	18	2.5	125	32	–	14	11	3	2	15.5		108549

* with tip | ■ new

BASS TECHNIK FÜR GEWINDE

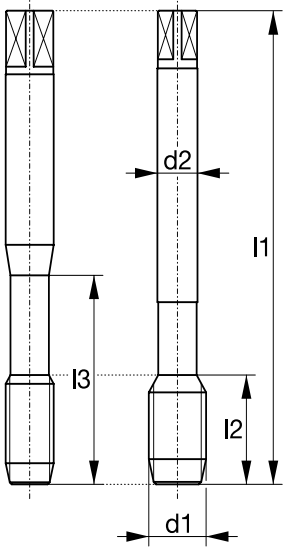
Cutting taps

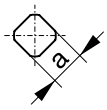
M

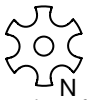
ISO Metric coarse thread DIN 13

		VARIANT H		
series				
model		TICN		
material		HSSE-PM		

type 1 type 2







(number of flutes)

chamfer		B / 3–5.5		
thread tol.		ISO2/6H		
shank tol.		h9		
thread depth		3xD		
bore hole				
P		10–35		
M				
K		5–25		
N		15–30		
S				
H		3–8		

General dimensions
DIN 371 / DIN 376

i For detailed cutting speeds please refer to the application table.

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number
M	20	2.5	140	32	–	16	12	4	2	17.5	108550
M	22	2.5	140	32	–	18	14.5	4	2	19.5	003574
M	24	3	160	36	–	18	14.5	4	2	21	108551

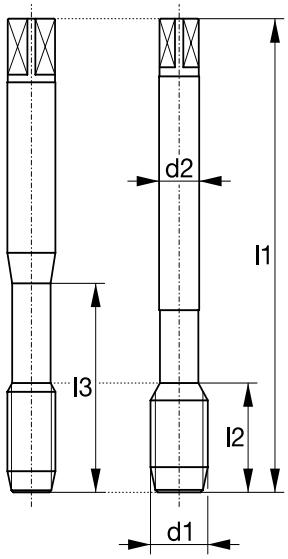
Cutting taps

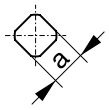
M

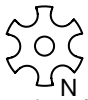
ISO Metric coarse thread DIN 13

series	VARIANT VA	VARIANT VA	VARIANT VA
model	VAP	TIN	TIN
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	B / 3–5.5	B / 3–5.5	B / 3–5.5
thread tol.	6HX	6HX	**6GX**
shank tol.	h9	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P	10–20	10–35	10–35
M	1–8	3–12	3–12
K		5–25	5–25
N		10–40	10–40
S	5–10	3–15	3–15
H			

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

i For detailed cutting speeds please refer to the application table.

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number		
M	2	0.4	45	9	14	2.8	2.1	2	1	1.6			■ 056412*
M	2	0.4	45	9	14	2.8	2.1	2	1	1.6	004355*	005402*	
M	2.5	0.45	50	9	14	2.8	2.1	2	1	2.05	004358*	004371*	
M	2.6	0.45	50	9	14	2.8	2.1	2	1	2.1	022688*	013891*	
M	3	0.5	56	10	18	3.5	2.7	3	1	2.5	004360*	004370*	004372*
M	4	0.7	63	12	21	4.5	3.4	3	1	3.3	004362*	004369*	004373*
M	5	0.8	70	14	25	6	4.9	3	1	4.2	004363*	003420*	004374*
M	6	1	80	16	30	6	4.9	3	1	5	004364*	003421*	004375*
M	8	1.25	90	18	35	8	6.2	3	1	6.8	004366*	003422*	004376*
M	8	1.25	90	18	–	6	4.9	3	**2**	6.8		■ 011247*	
M	10	1.5	100	20	39	10	8	3	1	8.5	004368	003423	004377
M	10	1.5	100	20	–	7	5.5	3	**2**	8.5	004378	004382	
M	12	1.75	110	24	–	9	7	3	2	10.2	004379	004383	027248
M	14	2	110	25	–	11	9	3	2	12		007996	052409
M	16	2	110	27	–	12	9	3	2	14	004380	004384	
M	16	2	110	27	–	12	9	3	2	14			■ 022166
M	18	2.5	125	32	–	14	11	3	2	15.5	012480	710350	
M	20	2.5	140	32	–	16	12	4	2	17.5	004381	004385	
M	20	2.5	140	32	–	16	12	4	2	17.5			■ 029730
M	24	3	160	36	–	18	14.5	4	2	21	008920	008921	
M	24	3	160	36	–	18	14.5	4	2	21			■ 049979

* with tip | ■ new

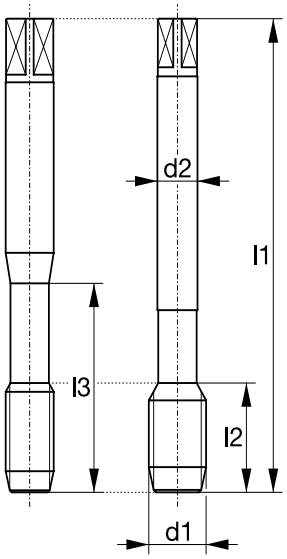
BASS TECHNIK FÜR GEWINDE

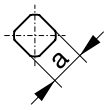
Cutting taps

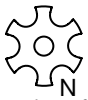
M

ISO Metric coarse thread DIN 13

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

series	**VARIANT VA**	**VARIANT VA**		
model	**VAP**	**TIN**		
material	HSSE-PM	HSSE-PM		
				
chamfer	B / 3–5.5	B / 3–5.5		
thread tol.	6HX	6HX		
shank tol.	h9	h9		
thread depth	3xD	3xD		
bore hole				
P	10–20	10–35		
M	1–8	3–12		
K		5–25		
N		10–40		
S	5–10	3–15		
H				

i For detailed cutting speeds please refer to the application table.

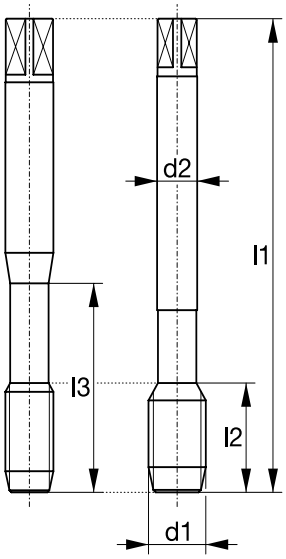
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
M	27	3	160	36	–	20	16	4	2	24	033973	011373
M	30	3.5	180	40	–	22	18	4	2	26.5	031427	372021
M	36	4	200	50	–	28	22	4	2	32	025573	372024

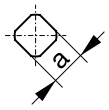
Cutting taps

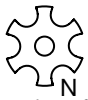
M — **ISO Metric coarse thread DIN 13**

	series	model	material
	VARIANT VA	HL	HSSE-PM
	VARIANT VA	BNE	HSSE-PM
	VARIANT VA	LH TIN	HSSE-PM
	VARIANT VA	TIN SL	HSSE-PM

type 1 type 2







(number of flutes)

chamfer	B / 3–5.5	B / 3–5.5	B / 3–5.5	B / 3–5.5
thread tol.	6HX	6HX	6HX	6HX
shank tol.	h9	h9	h9	h9
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	10–35		10–35	10–35
M	3–12		3–12	3–12
K	5–25		5–25	5–25
N	10–40	10–40	10–40	10–40
S		10–25	3–15	3–15
H				

General dimensions
~DIN 371 / ~DIN 376

i For detailed cutting speeds please refer to the application table.

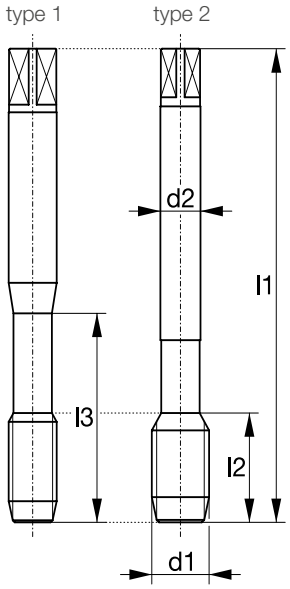
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number			
M	2	0.4	45	9	14	2.8	2.1	2	1	1.6	027258*	■ 098422*		
M	2.5	0.45	50	9	14	2.8	2.1	2	1	2.05	323059*	■ 098423*		
M	3	0.5	56	10	18	3.5	2.7	3	1	2.5	022977*	■ 098427*	015768*	
M	3	0.5	100	10	18	3.5	2.7	3	1	2.5				024890*
M	4	0.7	63	12	21	4.5	3.4	3	1	3.3	020720*	■ 098428*	010379*	
M	4	0.7	125	12	21	4.5	3.4	3	1	3.3				024891*
M	4	0.7	125	12	–	2.8	2.1	3	**2**	3.3				■ 098507*
M	5	0.8	70	14	25	6	4.9	3	1	4.2	022978*	■ 098429*	007244*	
M	5	0.8	140	14	25	6	4.9	3	1	4.2				024892*
M	5	0.8	140	16	–	3.5	2.7	3	**2**	4.2				■ 063117*
M	6	1	80	16	30	6	4.9	3	1	5	022979*	■ 098425*	010380*	
M	6	1	160	16	30	6	4.9	3	1	5				024893*
M	6	1	160	16	–	4.5	3.4	3	**2**	5				024904*
M	8	1.25	90	18	35	8	6.2	3	1	6.8	022980*	■ 098426*	018797*	
M	8	1.25	180	18	35	8	6.2	3	1	6.8				024894*
M	8	1.25	90	18	–	6	4.9	3	**2**	6.8	■ 031666*			
M	8	1.25	180	18	–	6	4.9	3	**2**	6.8				024905*

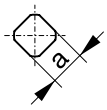
* with tip | ■ new

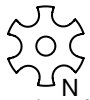
BASS TECHNIK FÜR GEWINDE

Cutting taps

M — **ISO Metric coarse thread DIN 13**







(number of flutes)

General dimensions
~DIN 371 / ~DIN 376

series	VARIANT VA	VARIANT VA	VARIANT VA	VARIANT VA
model	**HL**	**BNE**	**LH TIN**	**TIN SL**
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	B / 3–5.5	B / 3–5.5	B / 3–5.5	B / 3–5.5
thread tol.	6HX	6HX	6HX	6HX
shank tol.	h9	h9	h9	h9
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	10–35		10–35	10–35
M	3–12		3–12	3–12
K	5–25		5–25	5–25
N	10–40	10–40	10–40	10–40
S		10–25	3–15	3–15
H				

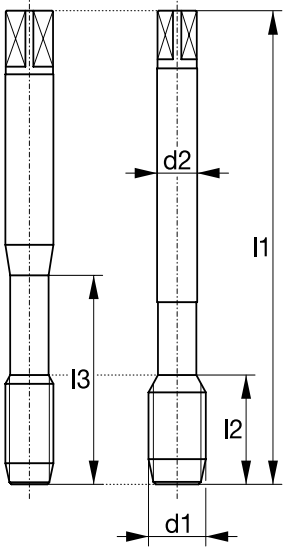
i For detailed cutting speeds please refer to the application table.

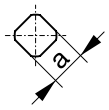
Ød1	P	l1	l2	l3	Ød2	a	N	type		identification number			
M 10	1.5	100	20	39	10	8	3	1	8.5	022981	■ 098430	082083	
M 10	1.5	200	20	39	10	8	3	1	8.5				024895
M 10	1.5	100	20	–	7	5.5	3	**2**	8.5	024297			
M 10	1.5	200	20	–	7	5.5	3	**2**	8.5				024906
M 12	1.75	110	24	–	9	7	3	2	10.2	023819	■ 098431	036325	
M 12	1.75	220	24	–	9	7	3	2	10.2				024907
M 14	2	110	25	–	11	9	3	2	12	031365			
M 14	2	220	25	–	11	9	3	2	12				024908
M 16	2	110	27	–	12	9	3	2	14	024313		036323	
M 16	2	220	27	–	12	9	3	2	14				024909
M 20	2.5	140	32	–	16	12	4	2	17.5	024649			
M 20	2.5	280	32	–	16	12	4	2	17.5				024910
M 24	3	160	36	–	18	14.5	4	2	21	031367			
M 27	3	160	36	–	20	16	4	2	24	031368			
M 30	3.5	180	40	–	22	18	4	2	26.5	031369			
M 36	4	200	50	–	28	22	4	2	32	031371			

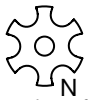
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
~DIN 371 / DIN 376

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	VARIANT MHST	VARIANT MHST	VARIANT HVA
model	HK TIN	KR HK TIN	HK BT
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	B / 3–5.5	B / 3–5.5	B / 3–5.5
thread tol.	6HX	6HX	6HX
shank tol.	h6	h6	h9
thread depth	3xD	3xD	3xD
bore hole			
P	15–80	15–80	
M	3–15	3–15	3–15
K	5–25	5–25	
N	15–60	15–60	
S	4–25	4–25	2–15
H	8–15	8–15	

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number		
M	3	0.5	56	10	18	3.5	2.7	3	1	2.5	107309*		
M	3.5	0.6	56	11	20	4	3	3	1	2.9	107310*		
M	4	0.7	63	12	21	4.5	3.4	3	1	3.3	107311*		
M	5	0.8	70	14	25	6	4.9	3	1	4.2	107312*		
M	6	1	80	10	24	6	4.9	3	1	5			070287*
M	6	1	80	16	30	6	4.9	3	1	5	107313*	107316	
M	8	1.25	90	18	24	8	6.2	4	1	6.8			070587*
M	8	1.25	90	18	35	8	6.2	3	1	6.8	107314*	107317	
M	10	1.5	100	20	30	10	8	4	1	8.5			071672
M	10	1.5	100	20	39	10	8	3	1	8.5	107308	107315	
M	12	1.75	110	22	–	9	7	4	2	10.2			076734
M	12	1.75	110	24	–	9	7	3	2	10.2	107318	019348	
M	14	2	110	25	–	11	9	3	2	12	■ 075358		
M	16	2	110	27	–	12	9	3	2	14	107319	019349	
M	18	2	125	32	–	14	11	3	2	15.5	■ 751074		
M	20	2	140	32	–	16	12	4	2	17.5	■ 054191		
M	22	2	140	32	–	18	14.5	4	2	19.5	■ 095024		
M	24	2	160	36	–	18	14.5	4	2	21	■ 041725		

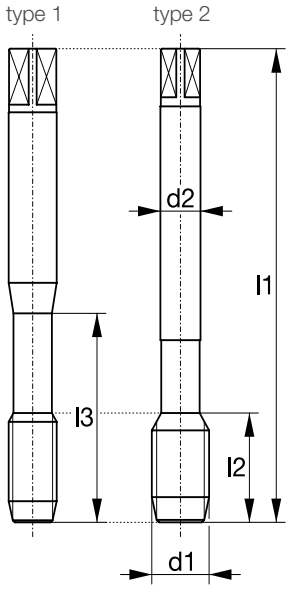
* with tip | ■ new

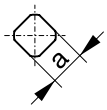
BASS TECHNIK FÜR GEWINDE

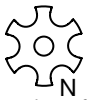
Cutting taps

M

ISO Metric coarse thread DIN 13







(number of flutes)

General dimensions
DIN 371 / DIN 376

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

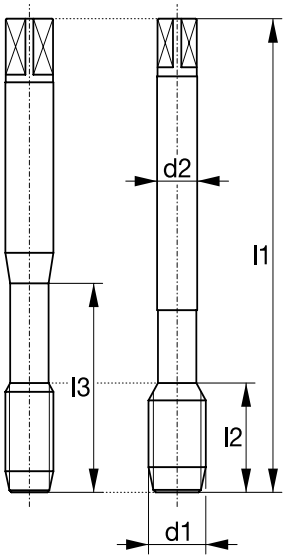
series	VARIANT TIH	VARIANT TIH	VARIANT NI
model	TICN	TICN	TICN
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	B / 3–5.5	B / 3–5.5	B / 3–5.5
thread tol.	4HX	6HX	6HX
shank tol.	h6	h6	h6
thread depth	3xD	3xD	3xD
bore hole			
P	10–30	10–30	
M	3–10	3–10	
K	5–25	5–25	
N	5–35	1–35	2–3
S	2–12	2–12	2–3
H	3–12	3–12	2–4

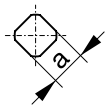
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number	
M	1.6	0.35	40	8	–	2.5	2.1	2	1	1.25	■ 070013*	
M	2	0.4	45	9	–	2.8	2.1	2	1	1.6	■ 108814*	108837*
M	2.2	0.45	45	9	–	2.8	2.1	2	1	1.75		108838*
M	2.5	0.45	50	9	–	2.8	2.1	2	1	2.05		108839*
M	3	0.5	56	11	–	3.5	2.7	3	1	2.5		108840* 023608*
M	3.5	0.6	56	12	–	4	3	3	1	2.9		108841*
M	4	0.7	63	13	–	4.5	3.4	3	1	3.3		108842* 063938*
M	4.5	0.75	70	16	–	6	4.9	3	1	3.7		108843*
M	5	0.8	70	16	–	6	4.9	3	1	4.2		108844* 082120*
M	6	1	80	16	30	6	4.9	3	1	5		108845*
M	6	1	80	19	–	6	4.9	3	1	5		107782*
M	8	1.25	90	18	35	8	6.2	3	1	6.8		108846* 009462*
M	10	1.5	100	20	39	10	8	3	1	8.5		108836 011803
M	12	1.75	110	24	–	9	7	3	2	10.2		108868
M	12	1.75	110	24	–	9	7	4	2	10.2		010415
M	14	2	110	25	–	11	9	3	2	12		000115
M	16	2	110	27	–	12	9	3	2	14		108869

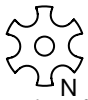
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
DIN371 / ~DIN376

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	**VARIO H**	**VARIO H**	
model	**KA TICN**	**KA HL SL FL**	
material	HSSE-PM	HSSE-PM	
			
chamfer	C / 2–3	C / 2–3	
thread tol.	ISO2/6H	6HX	
shank tol.	h9	h9	
thread depth	2xD	2.5xD	
bore hole			
P	10–35	10–35	
M			
K	5–30	5–30	
N	5–35		
S			
H	4–10	4–10	

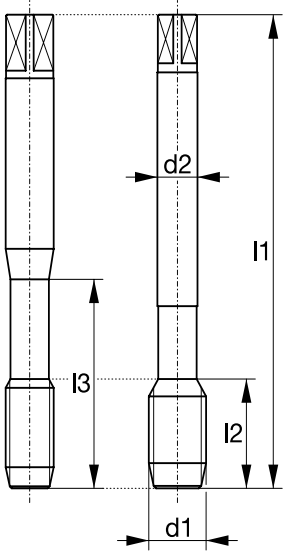
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
M	6	1	80	16	30	6	4.9	3	1	5	111670
M	8	1.25	90	18	35	8	6.2	3	1	6.8	111671
M	10	1.5	100	20	39	10	8	3	1	8.5	111669
M	24	3	240	36	–	18	14.5	4	2	21	070706
M	30	3.5	270	40	–	22	18	4	2	26.5	070707
M	36	4	300	50	–	28	22	5	2	32	070708

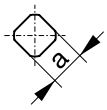
BASS TECHNIK FÜR GEWINDE

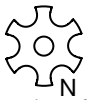
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
~DIN2184-2

series	**VARIO SH**	**VARIO SH**	**VARIO SH**
model	**TICN SR**	**TICN SR**	**TICN SR**
material	HSSE-PM	VHM	HSSE-PM
			
chamfer	C / 2–3	C / 2–3	**D / 3–5.5**
thread tol.	6HX	6HX	6HX
shank tol.	h9	h6	h9
thread depth	2.5xD	2.5xD	2.5xD
bore hole			
P			
M			
K			
N		4–10	
S			
H	1–4	1–4	1–4

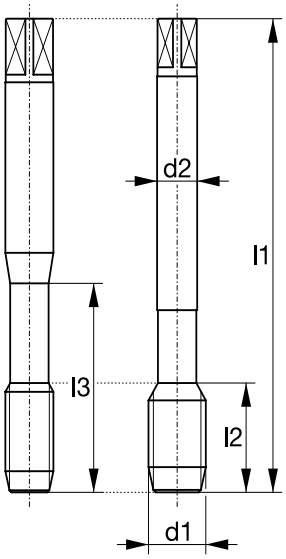
i For detailed cutting speeds please refer to the application table.

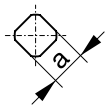
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
M	3	0.5	40	11	–	3.5	2.7	3	1	2.55		050232*	
M	3	0.5	46	11	19	3.5	2.7	4	1	2.55	083499*		■ 097857
M	4	0.7	45	13	–	4.5	3.4	4	1	3.4		037121*	
M	4	0.7	52	13	21	4.5	3.4	4	1	3.4	083500*		■ 097858
M	5	0.8	50	16	–	6	4.9	4	1	4.3		037122*	
M	5	0.8	60	16	24	6	4.9	4	1	4.3	083501*		■ 097862
M	6	1	56	18	–	6	4.9	5	1	5.1		037123*	
M	6	1	62	19	29	6	4.9	4	1	5.1	083502*		■ 097865
M	8	1.25	63	25	–	8	6.2	5	1	6.9		037124	
M	8	1.25	70	22	–	6	4.9	5	2	6.9	083503		■ 097866
M	10	1.5	70	30	–	10	8	5	1	8.6		037125	
M	10	1.5	75	24	–	7	5.5	5	2	8.6	083504		■ 097868
M	12	1.75	75	24	–	9	7	4	2	10.4		037126	
M	12	1.75	82	29	–	9	7	5	2	10.4	083505		■ 097869
M	14	2	88	30	–	11	9	5	2	12.1	083506		
M	16	2	80	27	–	12	9	6	2	14.1		037127	
M	16	2	95	32	–	12	9	5	2	14.1	083507		■ 097871
M	20	2.5	105	37	–	16	12	5	2	17.7	083508		■ 097872
M	24	3	160	38	–	18	14.5	5	2	21.2	083509		■ 097873

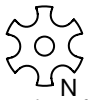
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	**VARIO GG**	**VARIO GG**	**VARIO GG**	**VARIO GG**
model	**TICN**	**KA TICN**	**KA TICN**	**KA TICN**
material	HSSE-PM	HSSE-PM	VHM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	**E / 1.5–2**
thread tol.	6HX	6HX	6HX	6HX
shank tol.	h9	h6	h6	h6
thread depth	2xD	3xD	3xD	3xD
bore hole				
P				
M				
K	5–40	5–60	20–80	5–60
N	3–35	3–35	4–60	3–35
S				
H				

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
M	3	0.5	56	10	18	3.5	2.7	3	1	2.5	103941*			
M	4	0.7	63	12	21	4.5	3.4	3	1	3.3	103942*		004572	
M	5	0.8	70	14	25	6	4.9	3	1	4.2	103943*	002701	004573	
M	6	1	80	16	30	6	4.9	3	1	5	103944*	107323	004574	107327
M	8	1.25	90	18	35	8	6.2	4	1	6.8	103946	107324	004575	107328
M	10	1.5	100	20	39	10	8	4	1	8.5	103939	107321	004576	107326
M	10	1.5	100	20	–	7	5.5	4	**2**	8.5	105179			
M	12	1.75	110	24	–	9	7	4	2	10.2	105180	107336	004577	107342
M	14	2	110	25	–	11	9	4	2	12	105181	107337		
M	16	2	110	27	–	12	9	4	2	14	105182	107338		004723
M	20	2.5	140	32	–	16	12	4	2	17.5	105184	107340		

* with tip

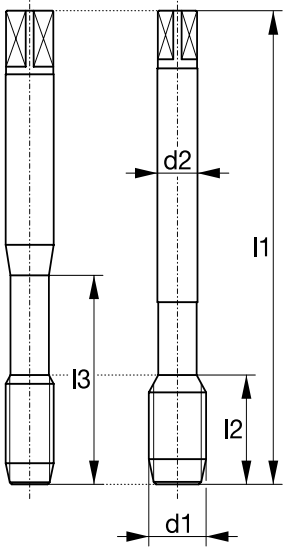
BASS TECHNIK FÜR GEWINDE

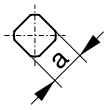
Cutting taps

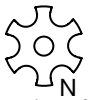
M — **ISO Metric coarse thread DIN 13**

series	**VARIO GG**	**VARIO GG**	**VARIO GG**
model	**KA TICN**	**KA BT**	**TICN SL**
material	VHM	HSSE-PM	HSSE-PM
			
chamfer	**E / 1.5–2**	**E / 1.5–2**	C / 2–3
thread tol.	6HX	6HX	6HX
shank tol.	h6	h6	h9
thread depth	3xD	3xD	2xD
bore hole			
P			
M			
K	20–80	5–70	5–40
N	4–60	3–40	3–35
S			
H			

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
M	4	0.7	63	12	21	4.5	3.4	3	1	3.3	082085		
M	4	0.7	125	12	21	4.5	3.4	3	1	3.3			024716*
M	5	0.8	70	14	25	6	4.9	3	1	4.2	016257		
M	5	0.8	140	14	25	6	4.9	3	1	4.2			024718*
M	6	1	80	16	30	6	4.9	3	1	5	016256	710085	
M	6	1	160	16	30	6	4.9	3	1	5			024717*
M	8	1.25	90	18	35	8	6.2	4	1	6.8	027218	059047	
M	8	1.25	180	18	35	8	6.2	4	1	6.8			024719
M	10	1.5	100	20	39	10	8	4	1	8.5	027219	061551	
M	10	1.5	200	20	39	10	8	4	1	8.5			024720
M	12	1.75	110	24	–	9	7	4	2	10.2	023135	061550	
M	12	1.75	220	24	–	9	7	4	2	10.2			024722
M	16	2	110	27	–	12	9	4	2	14		710110	
M	16	2	220	27	–	12	9	4	2	14			024723

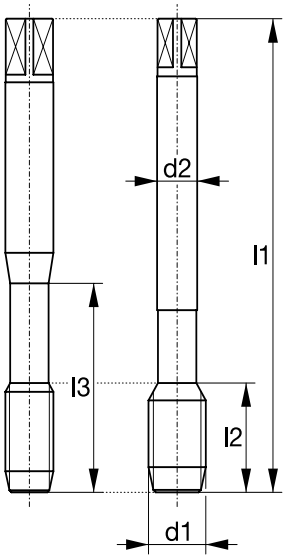
* with tip

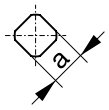
Cutting taps

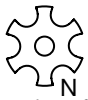
M — **ISO Metric coarse thread DIN 13**

series	**VARIO MS**		
model			
material	HSSE-PM		

type 1 type 2







(number of flutes)

chamfer	C / 2–3
thread tol.	6HX
shank tol.	h9
thread depth	2xD
bore hole	

General dimensions
~DIN 371 / ~DIN 376

P	
M	
K	
N	3–35
S	
H	

i For detailed cutting speeds please refer to the application table.

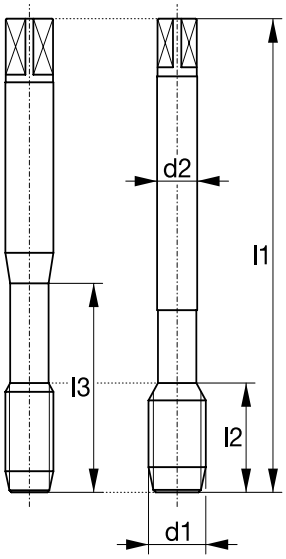
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
M	3	0.5	56	10	18	3.5	2.7	3	1	2.5	103462*
M	3.5	0.6	56	11	20	4	3	3	1	2.9	103463*
M	4	0.7	63	12	21	4.5	3.4	3	1	3.3	103464*
M	5	0.8	70	14	25	6	4.9	3	1	4.2	103470*
M	6	1	80	16	30	6	4.9	3	1	5	103471*
M	8	1.25	90	18	35	8	6.2	4	1	6.8	103478
M	10	1.5	100	20	39	10	8	4	1	8.5	103455

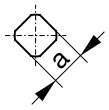
* with tip

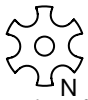
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

	series	AVANT H15	AVANT H15 TICN	AVANT H15 KA TICN	AVANT H15 TICN
	model				
	material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
					
	chamfer	C / 2–3	C / 2–3	C / 2–3	**E / 1.5–2**
	thread tol.	ISO2/6H	ISO2/6H	ISO2/6H	ISO2/6H
	shank tol.	h9	h9	h9	h9
	thread depth	2xD	2xD	2xD	2xD
	bore hole				
P		5–15	10–35	10–35	10–35
M					
K			5–30	5–30	5–30
N		5–35	8–35	8–35	8–35
S					
H			4–10	4–10	4–10

i For detailed cutting speeds please refer to the application table.

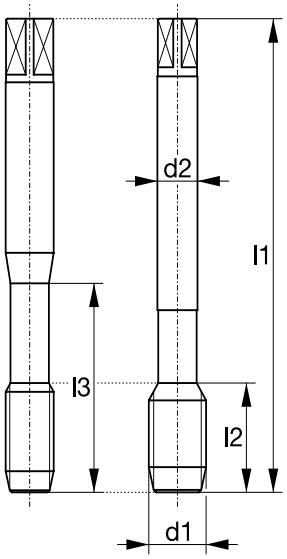
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
M	3	0.5	56	10	18	3.5	2.7	3	1	2.5	107393*	107424*		024303
M	4	0.7	63	12	21	4.5	3.4	3	1	3.3	107394*	107425*		004439
M	5	0.8	70	14	25	6	4.9	3	1	4.2	107405*	107426*		004440
M	6	1	80	16	30	6	4.9	3	1	5	107406*	107427*	111685	107419
M	8	1.25	90	18	35	8	6.2	3	1	6.8	107412	107428	111686	107420
M	10	1.5	100	20	39	10	8	3	1	8.5	107387	107423	111684	004441
M	12	1.75	110	24	–	9	7	3	2	10.2	107801	107861	111714	
M	14	2	110	25	–	11	9	3	2	12	107803	107862		
M	16	2	110	27	–	12	9	3	2	14	107807	107863	111715	
M	18	2.5	125	32	–	14	11	4	2	15.5	107809	018738		
M	20	2.5	140	32	–	16	12	4	2	17.5	107811	002362	004475	
M	24	3	160	36	–	18	14.5	4	2	21	107813	107864	021155	

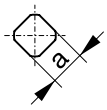
* with tip

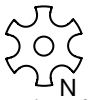
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / ~DIN 376

series	**AVANT H15**	**AVANT H15**	**AVANT H15**
model	**TICN**	**TICN**	**KA HL SL FL**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	**E / 1.5–2**	C / 2–3
thread tol.	**ISO3/6G**	**ISO3/6G**	6HX
shank tol.	h9	h9	h9
thread depth	2xD	2xD	2xD
bore hole			
P	10–35	10–35	10–35
M			
K	5–30	5–30	5–30
N	8–35	8–35	
S			
H	4–10	4–10	4–10

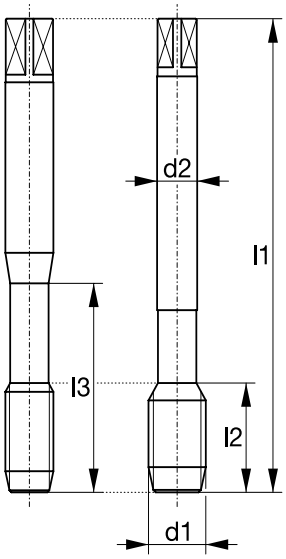
i For detailed cutting speeds please refer to the application table.

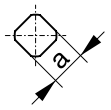
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number	
M	3	0.5	56	10	18	3.5	2.7	3	1	2.5	004432*	007372
M	4	0.7	63	12	21	4.5	3.4	3	1	3.3	004433*	004470
M	5	0.8	70	14	25	6	4.9	3	1	4.2	004435*	004471
M	6	1	80	16	30	6	4.9	3	1	5	004436*	004472
M	8	1.25	90	18	35	8	6.2	3	1	6.8	004437	004473
M	10	1.5	100	20	39	10	8	3	1	8.5	004438	004474
M	12	1.75	140	24	–	9	7	3	2	10.2		037112
M	16	2	140	28	–	12	9	3	2	14		037113
M	18	2.5	190	32	–	14	11	3	2	15.5		037114
M	20	2.5	210	32	–	16	12	3	2	17.5		037115
M	24	3	240	36	–	18	14.5	4	2	21		037116
M	27	3	240	36	–	20	16	4	2	24		037117
M	30	3.5	270	40	–	22	18	4	2	26.5		037118
M	33	3.5	270	40	–	25	20	4	2	29.5		037119
M	36	4	300	50	–	28	22	5	2	32		037120

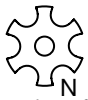
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

series	**AVANT H25**	**AVANT H25**	**AVANT HVA15**	**AVANT HVA15**
model	**HL**	**HL**	**KA HK BT**	**KA HK BT**
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	**E / 1.5–2**	**E / 1.5–2**	C / 2–3	**E / 1.5–2**
thread tol.	6HX	**6GX**	6HX	6HX
shank tol.	h9	h9	h9	h9
thread depth	2xD	2xD	2.5xD	2.5xD
bore hole				
P	10–35	10–35		
M	3–12	3–12	3–15	3–15
K	10–25	10–25		
N	15–40	15–40		
S			2–15	2–15
H	5–8	5–8		

i For detailed cutting speeds please refer to the application table.

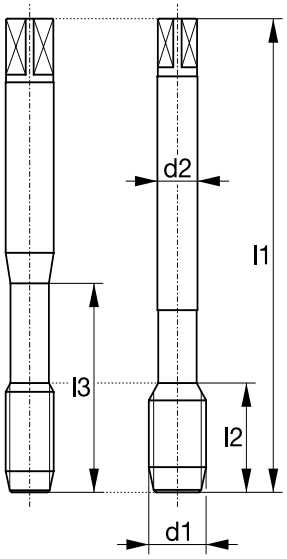
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number			
M	4	0.7	63	8	21	4.5	3.4	3	1	3.3	038067	038191		
M	5	0.8	70	9	25	6	4.9	3	1	4.2	038065	038192		
M	6	1	80	10	30	6	4.9	3	1	5	035797	038193	082121	076707
M	8	1.25	90	13	35	8	6.2	4	1	6.8	035798	038194	076708	082152
M	10	1.5	100	15	39	10	8	4	1	8.5	035799	038196	076709	076720
M	12	1.75	110	18	–	9	7	4	2	10.2	035800		076710	082153
M	14	2	110	20	–	11	9	5	2	12	035801			
M	16	2	110	20	–	12	9	5	2	14	035802			

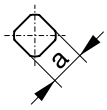
BASS TECHNIK FÜR GEWINDE

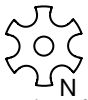
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
~DIN 371 / DIN 371 / DIN 376

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	AVANT GAL15	AVANT GAL15	AVANT TIH13	AVANT TIH13
model	KA TICN	KA TICN	TICN	TICN
material	HSSE-PM	VHM	HSSE-PM	HSSE-PM
				
chamfer	**E / 1.5–2**	**E / 1.5–2**	C / 2–3	C / 2–3
thread tol.	6HX	6HX	4HX	6HX
shank tol.	h6	h6	h6	h6
thread depth	2.5xD	2.5xD	2.5xD	2.5xD
bore hole				
P	10–35	10–35	10–25	10–25
M			3–10	3–10
K	5–25	20–70	5–25	5–25
N	8–40	5–70	1–35	1–35
S			2–12	2–12
H	4–10	4–10	3–10	3–10

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number			
M	1.6	0.35	40	8	–	2.5	2.1	3	1	1.25			■ 099391*	■ 063641*
M	2	0.4	45	9	–	2.8	2.1	3	1	1.6			■ 091205*	■ 017783*
M	2.5	0.45	50	9	–	2.8	2.1	3	1	2.05				■ 000069*
M	3	0.5	56	11	–	3.5	2.7	3	1	2.5				108755*
M	4	0.7	63	13	–	4.5	3.4	3	1	3.3				108756*
M	5	0.8	70	9	25	6	4.9	3	1	4.2	036973	■ 098436		
M	5	0.8	70	16	–	6	4.9	3	1	4.2				108757*
M	6	1	80	10	30	6	4.9	3	1	5	035274	037093		
M	6	1	80	16	30	6	4.9	3	1	5				108758*
M	8	1.25	90	13	35	8	6.2	3	1	6.8	034631	037095		
M	8	1.25	90	18	35	8	6.2	3	1	6.8				108759
M	10	1.5	100	15	39	10	8	3	1	8.5	036974	037082		
M	10	1.5	100	20	39	10	8	3	1	8.5				108754
M	12	1.75	110	18	–	9	7	3	2	10.2	036975	037096		
M	12	1.75	110	24	–	9	7	3	2	10.2				108793
M	14	2	110	25	–	11	9	3	2	12				■ 000117
M	16	2	110	27	–	12	9	3	2	14				108794

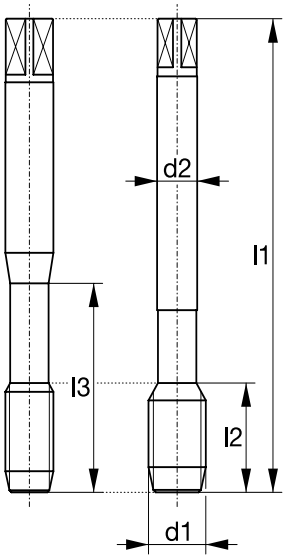
Cutting taps

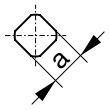
M

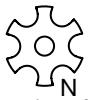
ISO Metric coarse thread DIN 13

series	**AVANT NI13**		
model	**TICN**		
material	HSSE-PM		

type 1 type 2







(number of flutes)

chamfer	C / 2–3
thread tol.	6HX
shank tol.	h6
thread depth	2.5xD
bore hole	

General dimensions
~DIN 371 / DIN 376

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

P	
M	
K	
N	1–3
S	2–3
H	2–4

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
M	3	0.5	56	11	–	3.5	2.7	3	1	2.5	082154*
M	4	0.7	63	13	–	4.5	3.4	3	1	3.3	000528*
M	5	0.8	70	16	–	6	4.9	3	1	4.2	082155*
M	6	1	80	19	–	6	4.9	3	1	5	107765*
M	8	1.25	90	18	35	8	6.2	3	1	6.8	003910
M	10	1.5	100	20	39	10	8	3	1	8.5	011804
M	12	1.75	110	24	–	9	7	4	2	10.2	008884

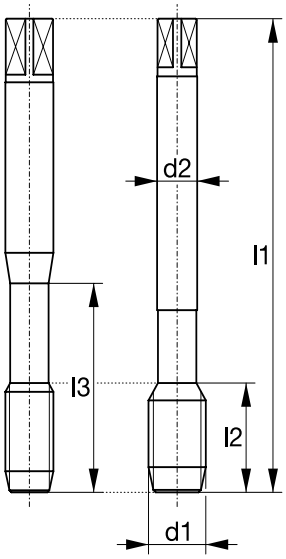
* with tip

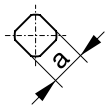
BASS TECHNIK FÜR GEWINDE

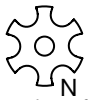
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

series	**DOMINANT N38**	**DOMINANT N38 TIN**	**DOMINANT HZ38**	**DOMINANT HZ38 VAP**
model				
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	C / 2–3
thread tol.	ISO2/6H	ISO2/6H	ISO2/6H	ISO2/6H
shank tol.	h9	h9	h9	h9
thread depth	2.5xD	2.5xD	2.5xD	2.5xD
bore hole				
P	10–20	20–30	5–20	10–20
M				4–8
K				
N	10–25	10–40	4–25	10–15
S				
H				

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
M	2	0.4	45	9	14	2.8	2.1	2	1	1.6			111228*	110332*
M	2.5	0.45	50	5	14	2.8	2.1	2	1	2.05			111231*	110333*
M	3	0.5	56	7	18	3.5	2.7	3	1	2.5	103622*	103732*	111233*	006839*
M	4	0.7	63	8	21	4.5	3.4	3	1	3.3	103627*	103734*	111235*	005768*
M	5	0.8	70	9	25	6	4.9	3	1	4.2	103651*	103735*	111245*	004923*
M	6	1	80	10	30	6	4.9	3	1	5	103655*	103736*	111247*	111288*
M	8	1.25	90	13	35	8	6.2	3	1	6.8	103698	103738	111262	004922
M	10	1.5	100	15	39	10	8	3	1	8.5	103587	103727	111221	111287
M	10	1.5	100	15	–	7	5.5	3	**2**	8.5			111357	
M	12	1.75	110	18	–	9	7	3	2	10.2	104755	104852	111359	111413
M	14	2	110	20	–	11	9	4	2	12			111363	006840
M	16	2	110	20	–	12	9	3	2	14	104765	104855		
M	16	2	110	20	–	12	9	4	2	14			111365	111414
M	18	2.5	125	25	–	14	11	4	2	15.5			111368	005769
M	20	2.5	140	25	–	16	12	4	2	17.5	104773	104859	111371	005770
M	22	2.5	140	25	–	18	14.5	4	2	19.5			111374	111415
M	24	3	160	30	–	18	14.5	4	2	21			111376	005771
M	27	3	160	30	–	20	16	4	2	24			111379	111416
M	30	3.5	180	35	–	22	18	4	2	26.5			111380	111417
M	33	3.5	180	35	–	25	20	4	2	29.5			111381	111418
M	36	4	200	40	–	28	22	4	2	32			111382	006332

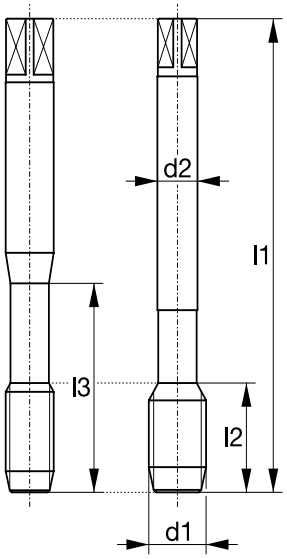
* with tip

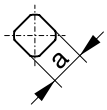
Cutting taps

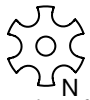
M

ISO Metric coarse thread DIN 13

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

series			**DOMINANT HZ38**	**DOMINANT HZ38 VAP**
model				
material			HSSE-PM	HSSE-PM
				
chamfer			C / 2–3	C / 2–3
thread tol.			ISO2/6H	ISO2/6H
shank tol.			h9	h9
thread depth			2.5xD	2.5xD
bore hole				
P			5–20	10–20
M				4–8
K				
N			4–25	10–15
S				
H				

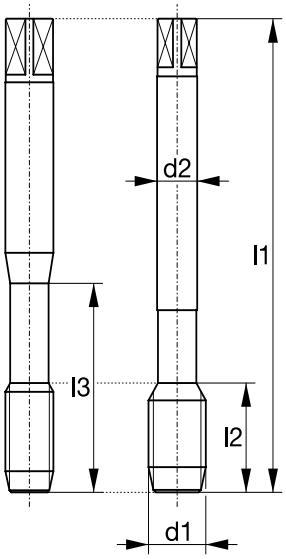
i For detailed cutting speeds please refer to the application table.

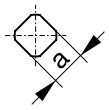
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number	
M	39	4	200	40	–	32	24	5	2	35	019602	018496
M	42	4.5	200	40	–	32	24	5	2	37.5	019107	034745
M	45	4.5	220	45	–	36	29	5	2	40.5	019604	038695
M	48	5	250	50	–	36	29	5	2	43	019605	018498
M	52	5	250	55	–	40	32	5	2	47	019606	033212
M	56	5.5	250	55	–	40	32	5	2	50.5	007163	038712

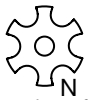
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

	series	DOMINANT HZ38	DOMINANT HZ38	DOMINANT HZ38	DOMINANT HZ38
	model	TIN	TICN	HL	KA HL
	material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
					
	chamfer	C / 2–3	C / 2–3	C / 2–3	**E / 1.5–2**
	thread tol.	ISO2/6H	ISO2/6H	ISO2/6H	ISO2/6H
	shank tol.	h9	h9	h9	h9
	thread depth	2.5xD	2.5xD	2.5xD	2.5xD
	bore hole				
P		10–35	10–35	10–35	10–35
M				3–12	3–12
K			5–25	5–25	5–25
N		10–35	15–25		
S					
H			4–10	4–10	

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
M	2	0.4	45	9	14	2.8	2.1	2	1	1.6	111277*		022329*	
M	2.5	0.45	50	5	14	2.8	2.1	2	1	2.05	111257*		018419*	
M	3	0.5	56	7	18	3.5	2.7	3	1	2.5	111279*	037175*	044886*	
M	4	0.7	63	8	21	4.5	3.4	3	1	3.3	111280*	037176*	774006*	
M	5	0.8	70	9	25	6	4.9	3	1	4.2	111281*	037178*	015172*	
M	6	1	80	10	30	6	4.9	3	1	5	111282*	037181*	044887*	065957
M	8	1.25	90	13	35	8	6.2	3	1	6.8	111285	111273	036159	065958
M	10	1.5	100	15	39	10	8	3	1	8.5	111274	111269	044888	065960
M	10	1.5	100	15	–	7	5.5	3	**2**	8.5	004476		048898	
M	12	1.75	110	18	–	9	7	3	2	10.2	111399	037182	036157	065961
M	14	2	110	20	–	11	9	4	2	12	111401		044889	
M	16	2	110	20	–	12	9	4	2	14	111402	004910	042207	065962
M	18	2.5	125	25	–	14	11	4	2	15.5	111405		044890	
M	20	2.5	140	25	–	16	12	4	2	17.5	111406	037184	044560	053239
M	22	2.5	140	25	–	18	14.5	4	2	19.5	111408		109365	
M	24	3	160	30	–	18	14.5	4	2	21	002040	002327	034555	066638
M	27	3	160	30	–	20	16	4	2	24			046256	
M	30	3.5	180	35	–	22	18	4	2	26.5			026237	
M	33	3.5	180	35	–	25	20	4	2	29.5			047331	
M	36	4	200	40	–	28	22	4	2	32			026238	
M	39	4	200	40	–	32	24	5	2	35			054126	

* with tip

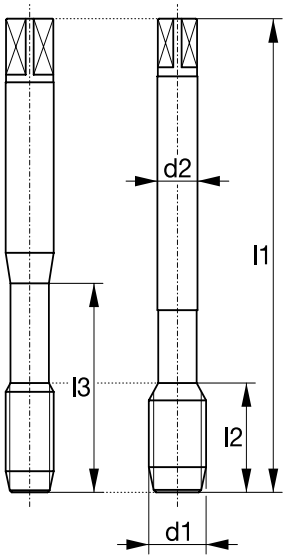
BASS TECHNIK FÜR GEWINDE

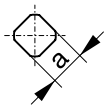
Cutting taps

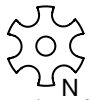
M

ISO Metric coarse thread DIN 13

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

series			**DOMINANT HZ38**
model			**HL**
material			HSSE-PM
			
chamfer			C / 2–3
thread tol.			ISO2/6H
shank tol.			h9
thread depth			2.5xD
bore hole			
P			10–35
M			3–12
K			5–25
N			
S			
H			4–10

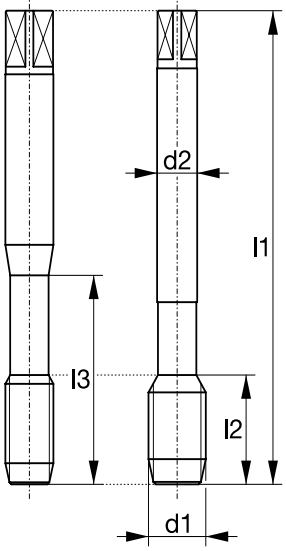
i For detailed cutting speeds please refer to the application table.

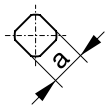
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
M	42	4.5	200	40	–	32	24	5	2	37.5	046375
M	45	4.5	220	45	–	36	29	5	2	40.5	061340
M	48	5	250	50	–	36	29	5	2	43	046394
M	52	5	250	55	–	40	32	5	2	47	046395
M	56	5.5	250	55	–	40	32	5	2	50.5	046396

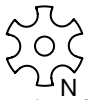
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
~DIN 371 / ~DIN 376

	series	DOMINANT HZ38	DOMINANT VA45	DOMINANT VA45	DOMINANT VA45
	model	LH HL			
	material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
					
	chamfer	C / 2–3	C / 2–3	C / 2–3	C / 2–3
	thread tol.	ISO2/6H	6HX	**6GX**	**7GX**
	shank tol.	h9	h9	h9	h9
	thread depth	2.5xD	3xD	3xD	3xD
	bore hole				
P		10–35	5–20	5–20	5–20
M		3–12			
K		5–25			
N			10–25	10–25	10–25
S					
H		4–10			

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
M	2	0.4	45	9	14	2.8	2.1	2	1	1.6		038343*	038351*	
M	2.5	0.45	50	9	14	2.8	2.1	2	1	2.05		038344*	038350*	038363*
M	3	0.5	56	7	18	2.2	2.7	3	1	2.5	082093*	024650*	024682*	024867*
M	3	0.5	56	7	–	2.2	2.7	3	**2**	2.5		■ 098438*		
M	3.5	0.6	56	7	20	4	3	3	1	2.9		033230*		
M	4	0.7	63	8	21	4.5	3.4	3	1	3.3	082094*	019921*	024683*	024868*
M	4	0.7	63	8	–	2.8	2.1	3	**2**	3.3		■ 098439*		
M	4.5	0.75	70	9	25	6	4.9	3	1	3.7		■ 098442*		
M	5	0.8	70	9	25	6	4.9	3	1	4.2	062253*	019922*	024685*	024869*
M	5	0.8	70	9	–	3.5	2.7	3	**2**	4.2		024653*		
M	6	1	80	10	30	6	4.9	3	1	5	082098*	019923*	024686*	024870*
M	6	1	80	10	–	4.5	3.4	3	**2**	5		024654*		
M	7	1	80	10	30	7	5.5	3	1	6		108999*		
M	8	1.25	90	13	35	8	6.2	3	1	6.8	049287	024651	024687	024871
M	8	1.25	90	13	–	6	4.9	3	**2**	6.8		024655		
M	10	1.5	100	15	39	10	8	3	1	8.5	082100	024652	024688	024872
M	10	1.5	100	15	–	7	5.5	3	**2**	8.5		024656		
M	12	1.75	110	18	–	9	7	4	2	10.2		024657	024700	
M	14	2	110	20	–	11	9	4	2	12		024658		
M	16	2	110	20	–	12	9	4	2	14		024659	024702	
M	18	2.5	125	25	–	14	11	4	2	15.5		024660		

* with tip | ■ new

BASS TECHNIK FÜR GEWINDE

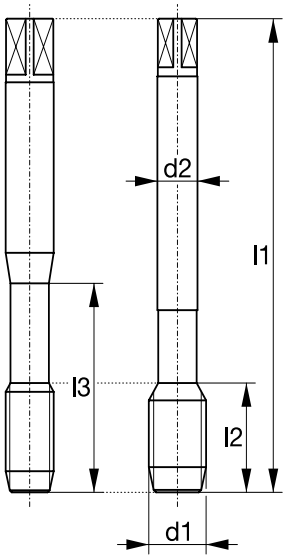
Cutting taps

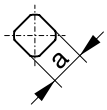
M

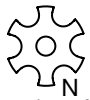
ISO Metric coarse thread DIN 13

series		**DOMINANT VA45**		
model				
material		HSSE-PM		
				
chamfer		C / 2–3		
thread tol.		6HX		
shank tol.		h9		
thread depth		3xD		
bore hole				
P		5–20		
M				
K				
N		10–25		
S				
H				

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

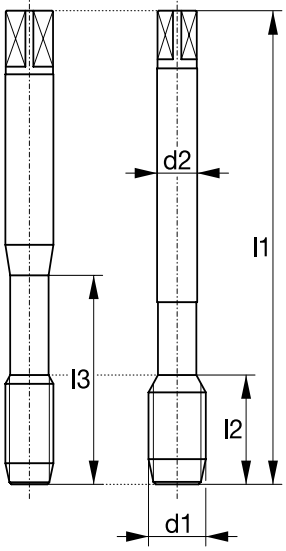
i For detailed cutting speeds please refer to the application table.

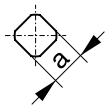
Ød1	P	l1	l2	l3	Ød2	a	N	type		identification number
M 20	2.5	140	25	–	16	12	4	2	17.5	024661
M 22	2.5	140	25	–	18	14.5	4	2	19.5	024662
M 24	3	160	30	–	18	14.5	4	2	21	024663
M 27	3	160	30	–	20	16	4	2	24	024664
M 30	3.5	180	35	–	22	18	4	2	26.5	024666
M 33	3.5	180	35	–	25	20	4	2	29.5	024667
M 36	4	200	40	–	28	22	4	2	32	024668

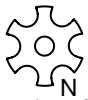
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

series	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45**
model	**VAP**	**TIN**	**TIN**	**TIN**
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	**E / 1.5–2**
thread tol.	6HX	6HX	**6GX**	**6GX**
shank tol.	h9	h9	h9	h9
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	5–20	10–35	10–35	10–35
M	4–8	3–12	3–12	3–12
K				
N		10–40	10–40	10–40
S	5–10	8–15	8–15	8–15
H		5–8	5–8	5–8

i For detailed cutting speeds please refer to the application table.

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number			
M	2	0.4	45	9	14	2.8	2.1	2	1	1.6			■ 047679*	
M	2.5	0.45	50	9	14	2.8	2.1	2	1	2.05			■ 112724*	
M	3	0.5	56	7	18	3.5	2.7	3	1	2.5	013741*	013744*	024689*	035906
M	3.5	0.6	56	7	20	4	3	3	1	2.9		■ 014161*		
M	4	0.7	63	8	21	4.5	3.4	3	1	3.3	013748*	013767*	024690*	024695
M	4.5	0.75	70	9	25	6	4.9	3	1	3.7		■ 098447*		
M	5	0.8	70	9	25	6	4.9	3	1	4.2	013750*	013768*	024691*	024696
M	6	1	80	10	30	6	4.9	3	1	5	013751*	010964*	024692*	024697
M	8	1.25	90	13	35	8	6.2	3	1	6.8	013753	013770	024693	024698
M	8	1.25	90	13	–	6	4.9	3	**2**	6.8		025078		
M	10	1.5	100	15	39	10	8	3	1	8.5	013755	013771	024694	024699
M	10	1.5	100	15	–	7	5.5	3	**2**	8.5		025079		
M	12	1.75	110	18	–	9	7	4	2	10.2	013778	013781	024704	
M	14	2	110	20	–	11	9	4	2	12	013779			
M	16	2	110	20	–	12	9	4	2	14	013780	013787	024706	
M	18	2.5	125	25	–	14	11	4	2	15.5	054018			
M	20	2.5	140	25	–	16	12	4	2	17.5	020523	019067		
M	24	3	160	30	–	18	14.5	4	2	21	028849	017495		

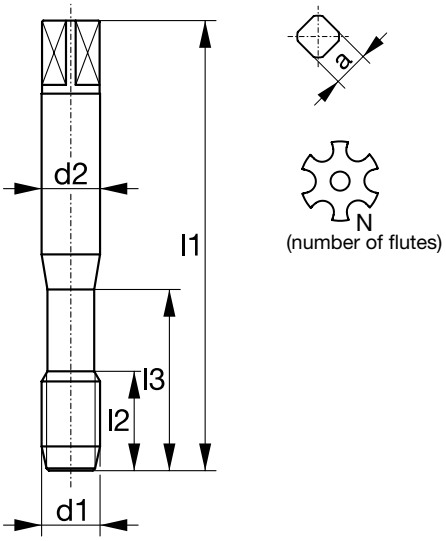
* with tip | ■ new

BASS TECHNIK FÜR GEWINDE

Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1



General dimensions
DIN 371

	series	DOMINANT VA45	DOMINANT VA45	DOMINANT VA45
	model	**TIN**	**TIN**	**HL**
	material	HSSE-PM	HSSE-PM	HSSE-PM
				
	chamfer	C / 2–3	C / 2–3	C / 2–3
	thread tol.	**7GX**	**6HX+0.1**	4HX
	shank tol.	h9	h9	h9
	thread depth	3xD	3xD	3xD
	bore hole			
P		10–35	10–35	10–35
M		3–12	3–12	3–12
K				5–30
N		10–40	10–40	15–40
S		8–15	8–15	3–15
H		5–8	5–8	5–8

i For detailed cutting speeds please refer to the application table.

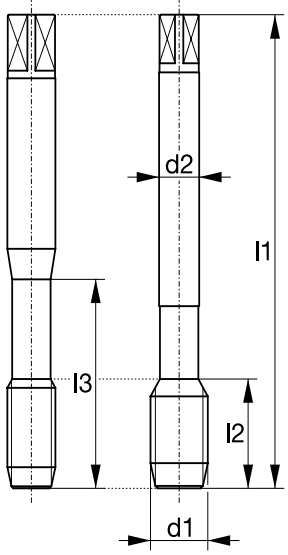
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number		
M	1	0.25	40	5	–	2.5	2.1	2	1	0.75			■ 098513*
M	1.1	0.25	40	5	–	2.5	2.1	2	1	0.85			■ 098512*
M	1.2	0.25	40	5	–	2.5	2.1	2	1	0.95			■ 063643*
M	2.5	0.45	50	9	14	2.8	2.1	2	1	2.05	■ 096314*		
M	3	0.5	56	7	18	3.5	2.7	3	1	2.5	024873*		
M	3	0.5	56	7	18	3.5	2.7	3	1	2.6		024879*	
M	4	0.7	63	8	21	4.5	3.4	3	1	3.3	024874*		
M	4	0.7	63	8	21	4.5	3.4	3	1	3.4		024880*	
M	5	0.8	70	9	25	6	4.9	3	1	4.2	024875*		
M	5	0.8	70	9	25	6	4.9	3	1	4.3		024881*	
M	6	1	80	10	30	6	4.9	3	1	5	024876*		
M	6	1	80	10	30	6	4.9	3	1	5.1		024882*	
M	8	1.25	90	13	35	8	6.2	3	1	6.8	024877		
M	8	1.25	90	13	35	8	6.2	3	1	6.9		024883	
M	10	1.5	100	15	39	10	8	3	1	8.5	024878		
M	10	1.5	100	15	39	10	8	3	1	8.6		024884	

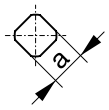
Cutting taps

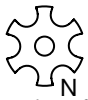
M — **ISO Metric coarse thread DIN 13**

series	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45**
model	**HL**	**KA HL**	**HL**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	C / 2–3	**E / 1.5–2**
thread tol.	6HX	6HX	6HX
shank tol.	h9	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P	10–35	10–35	10–35
M	3–12	3–12	3–12
K	5–30	5–30	5–30
N	15–40	10–40	15–40
S	3–15	3–15	3–15
H	5–8	5–8	5–8

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

i For detailed cutting speeds please refer to the application table.

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number		
M	1.4	0.3	40	6	–	2.5	2.1	2	1	1.1	■ 063642*		
M	1.6	0.35	40	7	–	2.5	2.1	2	1	1.25	■ 063644*		
M	1.7	0.35	40	8	–	2.5	2.1	2	1	1.3	■ 098514*		
M	1.8	0.35	40	8	–	2.5	2.1	2	1	1.45	■ 079835*		
M	2	0.4	45	9	14	2.8	2.1	2	1	1.6	■ 043738*		■ 038087
M	2.2	0.45	45	3.6	9	2.8	2.1	2	1	1.75	■ 050124*		
M	2.3	0.4	45	9	14	2.8	2.1	2	1	1.9	■ 072511*		
M	2.5	0.45	50	9	14	2.8	2.1	2	1	2.05	■ 112416*		
M	2.6	0.45	50	9	14	2.8	2.1	2	1	2.1	■ 037213*		
M	3	0.5	56	7	18	3.5	2.7	3	1	2.5	013746*		024673
M	3	0.5	56	7	–	3.5	2.7	3	**2**	2.5	■ 098516*		
M	3.5	0.6	56	7	20	4	3	3	1	2.9	■ 041629*		
M	4	0.7	63	8	21	4.5	3.4	3	1	3.3	013756*		024674
M	4	0.7	63	8	–	2.8	2.1	3	**2**	3.3	■ 085461*		
M	4.5	0.75	70	9	25	6	4.9	3	1	3.7	■ 056267*		
M	5	0.8	70	9	25	6	4.9	3	1	4.2	013758*	024670	024675
M	5	0.8	70	9	–	3.5	2.7	3	**2**	4.2	■ 047681*		
M	6	1	80	10	30	6	4.9	3	1	5	013764*	016409	024676
M	6	1	80	10	–	4.5	3.4	3	**2**	5	■ 085460*		
M	7	1	80	10	30	7	5.5	3	1	6	■ 038791*		

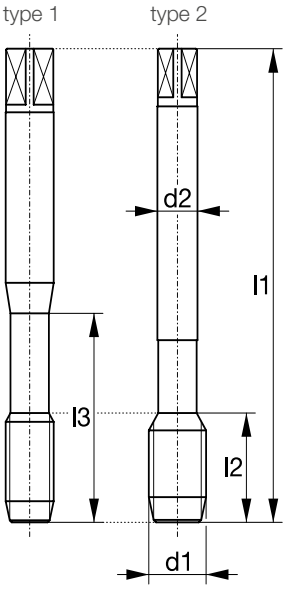
* with tip | ■ new

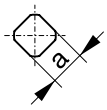
BASS TECHNIK FÜR GEWINDE

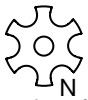
Cutting taps

M

ISO Metric coarse thread DIN 13







(number of flutes)

General dimensions
DIN 371 / DIN 376

series	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45**
model	**HL**	**KA HL**	**HL**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	C / 2–3	**E / 1.5–2**
thread tol.	6HX	6HX	6HX
shank tol.	h9	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P	10–35	10–35	10–35
M	3–12	3–12	3–12
K	5–30	5–30	5–30
N	15–40	10–40	15–40
S	3–15	3–15	3–15
H	5–8	5–8	5–8

i For detailed cutting speeds please refer to the application table.

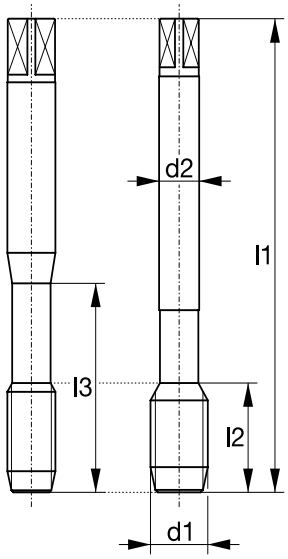
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number		
M	8	1.25	90	13	35	8	6.2	3	1	6.8	013765	017414	023066
M	8	1.25	90	13	–	6	4.9	3	**2**	6.8	■ 047382		
M	10	1.5	100	15	39	10	8	3	1	8.5	013766	024671	024194
M	10	1.5	100	15	–	7	5.5	3	**2**	8.5	■ 047383		
M	12	1.75	110	18	–	9	7	4	2	10.2	013782	017415	024677
M	14	2	110	20	–	11	9	4	2	12	013785	024332	■ 016695
M	16	2	110	20	–	12	9	4	2	14	013788	014597	107474
M	18	2.5	125	25	–	14	11	4	2	15.5	019460		
M	20	2.5	140	25	–	16	12	4	2	17.5	019068	024334	126054
M	22	2.5	140	25	–	18	14.5	4	2	19.5	031363		
M	24	3	160	30	–	18	14.5	4	2	21	019461		■ 112679
M	27	3	160	30	–	20	16	4	2	24	■ 321075		
M	30	3.5	180	35	–	22	18	4	2	26.5	109941		
M	33	3.5	180	35	–	25	20	4	2	29.5	■ 031364		
M	36	4	200	40	–	28	22	4	2	32	■ 030263		

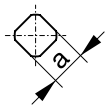
Cutting taps

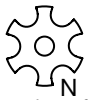
M — **ISO Metric coarse thread DIN 13**

series	**DOMINANT VA45**	**DOMINANT VA45**		
model	**HL**	**HL**		
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	**E / 1.5–2**		
thread tol.	**6GX**	**6GX**		
shank tol.	h9	h9		
thread depth	3xD	3xD		
bore hole				
P	10–35	10–35		
M	3–12	3–12		
K	5–30	5–30		
N	15–40	15–40		
S	3–15	3–15		
H	5–8	5–8		

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

i For detailed cutting speeds please refer to the application table.

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number	
M	2	0.4	45	9	14	2.8	2.1	2	1	1.6	■ 106678*	
M	2.5	0.45	50	9	14	2.8	2.1	2	1	2.05	■ 046708*	
M	3	0.5	56	7	18	3.5	2.7	3	1	2.5	036080*	025080
M	4	0.7	63	8	21	4.5	3.4	3	1	3.3	112439*	038373
M	5	0.8	70	9	25	6	4.9	3	1	4.2	112441*	038374
M	6	1	80	10	30	6	4.9	3	1	5	112438*	034513
M	8	1.25	90	13	35	8	6.2	3	1	6.8	015456	038375
M	10	1.5	100	15	39	10	8	3	1	8.5	015457	038376
M	12	1.75	110	18	–	9	7	4	2	10.2	027471	
M	14	2	110	20	–	11	9	4	2	12	■ 098517	
M	16	2	110	20	–	12	9	4	2	14	112451	
M	20	2.5	140	25	–	16	12	4	2	17.5	■ 098518	
M	24	3	160	30	–	18	14.5	4	2	21	■ 323022	

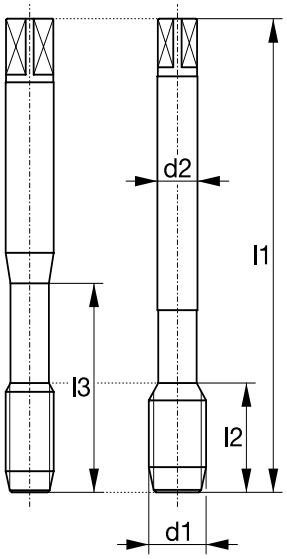
* with tip | ■ new

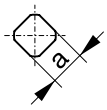
BASS TECHNIK FÜR GEWINDE

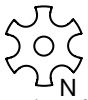
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

series	DOMINANT VA45	DOMINANT VA45	DOMINANT VA45
model	**HL**	**HL**	**BNE**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	C / 2–3	C / 2–3
thread tol.	**7GX**	**6HX+0.1**	6HX
shank tol.	h9	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P	10–35	10–35	
M	3–12	3–12	
K	5–30	5–30	
N	15–40	15–40	10–45
S	3–15	3–15	3–20
H	5–8	5–8	

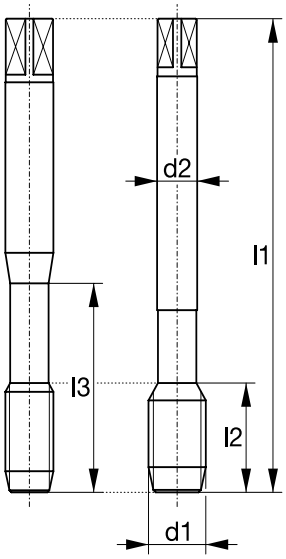
i For detailed cutting speeds please refer to the application table.

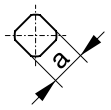
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number		
M	2	0.4	45	9	14	2.8	2.1	2	1	1.6	■ 043719*		■ 095957*
M	2	0.4	45	9	14	2.8	2.1	2	1	1.7		■ 063594*	
M	2.5	0.45	50	9	14	2.8	2.1	2	1	2.05	■ 112419*		■ 095718*
M	3	0.5	56	7	18	3.5	2.7	3	1	2.5	112427*		■ 094838*
M	3	0.5	56	7	18	3.5	2.7	3	1	2.6		036282*	
M	4	0.7	63	8	21	4.5	3.4	3	1	3.3	112428*		■ 094473*
M	4	0.7	63	8	21	4.5	3.4	3	1	3.4		036283*	
M	5	0.8	70	9	25	6	4.9	3	1	4.2	112429*		■ 095188*
M	5	0.8	70	9	25	6	4.9	3	1	4.3		036284*	
M	6	1	80	10	30	6	4.9	3	1	5	112430*		■ 095189*
M	6	1	80	10	30	6	4.9	3	1	5.1		033185*	
M	8	1.25	90	13	35	8	6.2	3	1	6.8	031904		■ 095228
M	8	1.25	90	13	35	8	6.2	3	1	6.9		033186	
M	10	1.5	100	15	39	10	8	3	1	8.5	034567		■ 098477
M	10	1.5	100	15	39	10	8	3	1	8.6		033187	
M	12	1.75	110	18	–	9	7	4	2	10.2	■ 098519		■ 098478
M	12	1.75	110	18	–	9	7	4	2	10.3		■ 050616	
M	16	2	110	20	–	12	9	4	2	14	■ 098520		
M	16	2	110	20	–	12	9	4	2	14.1		■ 098521	

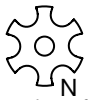
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
~DIN 371 / ~DIN 376

series	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45**
model	**LH HL**	**SL**	**HL SL**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	C / 2–3	C / 2–3
thread tol.	6HX	6HX	6HX
shank tol.	h9	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P	10–35	5–20	10–35
M	3–12		3–12
K	5–30		5–30
N	15–40	10–25	15–40
S	3–15		3–15
H	5–8		5–8

i For detailed cutting speeds please refer to the application table.

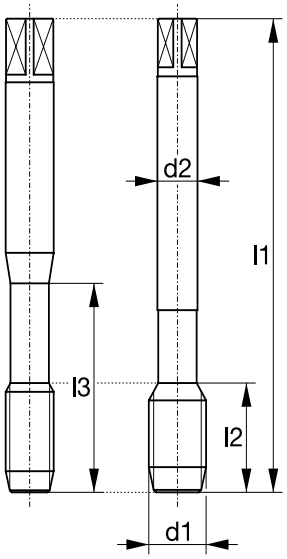
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
M	3	0.5	56	7	18	3.5	2.7	3	1	2.5	■ 098525*	
M	3	0.5	100	7	18	3.5	2.7	3	1	2.5	033431*	024896*
M	4	0.7	63	8	21	4.5	3.4	3	1	3.3	■ 078387*	
M	4	0.7	125	8	21	4.5	3.4	3	1	3.3	038702*	024897*
M	4	0.7	125	8	–	2.8	2.1	3	**2**	3.3		■ 098522
M	5	0.8	70	9	25	6	4.9	3	1	4.2	■ 054206*	
M	5	0.8	140	9	25	6	4.9	3	1	4.2	710204*	024898*
M	5	0.8	140	9	–	3.5	2.7	3	**2**	4.2		■ 098523
M	6	1	80	10	30	6	4.9	3	1	5	■ 036331*	
M	6	1	160	10	30	6	4.9	3	1	5	031413*	017486*
M	6	1	160	10	–	4.5	3.4	3	**2**	5	038706*	024911*
M	8	1.25	90	13	35	8	6.2	3	1	6.8	■ 036330	
M	8	1.25	180	13	35	8	6.2	3	1	6.8	038703	024899
M	8	1.25	180	13	–	6	4.9	3	**2**	6.8	038707	024912
M	10	1.5	100	15	39	10	8	3	1	8.5	■ 036335	
M	10	1.5	200	15	39	10	8	3	1	8.5	038701	024900
M	10	1.5	200	15	–	7	5.5	3	**2**	8.5	038704	024913
M	12	1.75	110	18	–	9	7	4	2	10.2	■ 083125	
M	12	1.75	220	18	–	9	7	4	2	10.2	034530	024914
M	14	2	110	20	–	11	9	4	2	12	■ 042485	
M	14	2	220	20	–	11	9	4	2	12	038705	024915

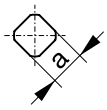
* with tip | ■ new

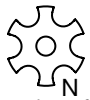
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
~DIN 371 / ~DIN 376

	series	DOMINANT VA45	DOMINANT VA45	DOMINANT VA45	
	model	**LH HL**	**SL**	**HL SL**	
	material	HSSE-PM	HSSE-PM	HSSE-PM	
					
	chamfer	C / 2–3	C / 2–3	C / 2–3	
	thread tol.	6HX	6HX	6HX	
	shank tol.	h9	h9	h9	
	thread depth	3xD	3xD	3xD	
	bore hole				
P		10–35	5–20	10–35	
M		3–12		3–12	
K		5–30		5–30	
N		15–40	10–25	15–40	
S		3–15		3–15	
H		5–8		5–8	

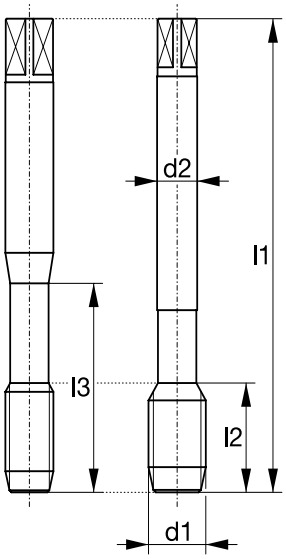
i For detailed cutting speeds please refer to the application table.

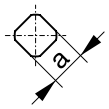
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number		
M	16	2	110	20	–	12	9	4	2	14	■ 038783		
M	16	2	220	20	–	12	9	4	2	14		030041	024916
M	20	2.5	140	25	–	16	12	4	2	17.5	■ 042018		
M	20	2.5	280	25	–	16	12	4	2	17.5		037252	024917
M	24	3	160	30	–	18	14.5	4	2	21	■ 098527		

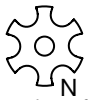
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	DOMINANT VA45	DOMINANT MHST45	DOMINANT MHST45	DOMINANT MHST45
model	**HL DF**	**HK HL**	**KA HK HL**	**HK HL**
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	**E / 1.5–2**
thread tol.	6HX	6HX	6HX	6HX
shank tol.	h9	h6	h6	h6
thread depth	**>3xD**	3xD	3xD	3xD
bore hole				
P	10–35	15–60	15–60	15–60
M	3–12	3–15	3–15	3–15
K	5–30	5–25	5–60	5–25
N	10–40	15–60	15–60	15–60
S	3–15	4–25	4–25	4–25
H	5–8	2–12	2–12	2–12

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number			
M	3	0.5	56	7	18	3.5	2.7	3	1	2.5	■ 098479*	036347*		036354
M	4	0.7	63	8	21	4.5	3.4	3	1	3.3	■ 098484*	034383*		036355
M	5	0.8	70	9	25	6	4.9	3	1	4.2	■ 098480*	036348*	036364	036363
M	6	1	80	10	30	6	4.9	3	1	5	■ 098481*	036349*	036361	036356
M	8	1.25	90	13	35	8	6.2	3	1	6.8	■ 098485	036350	030591	036357
M	10	1.5	100	15	39	10	8	3	1	8.5	■ 098487	036351	036362	036358
M	12	1.75	110	18	–	9	7	4	2	10.2	■ 098486	036352		
M	14	2	110	20	–	11	9	4	2	12	■ 098488			
M	16	2	110	20	–	12	9	4	2	14	■ 098489	036353		

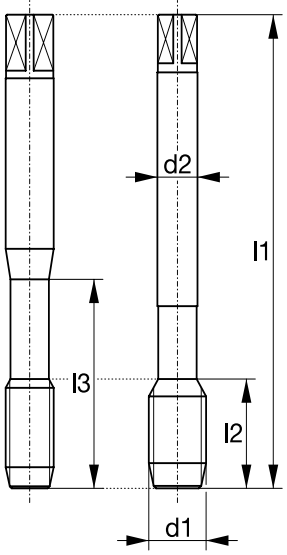
* with tip | ■ new

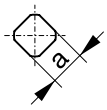
BASS TECHNIK FÜR GEWINDE

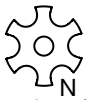
Cutting taps

M — **ISO Metric coarse thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 376

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

i For detailed cutting speeds please refer to the application table.

series	**DOMINANT MHST45**	**DOMINANT HVA45**	**DOMINANT HVA45**
model	**KA HK HL**	**HK BT**	**HK BT**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	**E / 1.5–2**	C / 2–3	**E / 1.5–2**
thread tol.	6HX	6HX	6HX
shank tol.	h6	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P	15–60	15–60	15–60
M	3–15	3–15	3–15
K	5–60		
N	15–60	15–60	15–60
S	4–25	2–15	2–15
H	2–12	2–12	2–12

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number	
M	3	0.5	56	7	15	3.5	2.7	3	1	2.5		082158*	082161
M	4	0.7	63	8	18	4.5	3.4	3	1	3.3		082159*	082163
M	5	0.8	70	9	18	6	4.9	3	1	4.2		071260	082164
M	6	1	80	10	25	6	4.9	3	1	5		070787	076724
M	6	1	80	10	30	6	4.9	3	1	5	065650		
M	8	1.25	90	13	35	8	6.2	3	1	6.8	058709		
M	8	1.25	90	13	30	8	6.2	4	1	6.8		070648	076725
M	10	1.5	100	15	39	10	8	3	1	8.5	065950		
M	10	1.5	100	15	30	10	8	4	1	8.5		076722	076726
M	12	1.75	110	18	–	9	7	4	2	10.2	065951	076723	076727
M	16	2	110	20	–	12	9	4	2	14	065954		

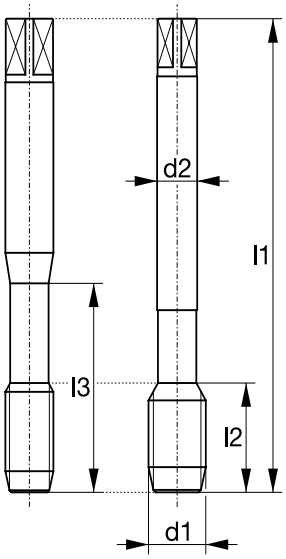
Cutting taps

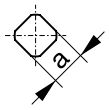
M

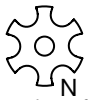
ISO Metric coarse thread DIN 13

series	**HGB WM 3S**		
model	**set**		
material	HSSE-PM		

type 1 type 2







(number of flutes)

chamfer	C / 2–3
thread tol.	6HX
shank tol.	h9
thread depth	3xD
bore hole	

General dimensions
DIN 352

P	●
M	●
K	●
N	●
S	○
H	○

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
M	3	0.5	40	10	18	3.5	2.7	3	1	2.5	004816*
M	4	0.7	45	12	21	4.5	3.4	3	1	3.3	004817*
M	5	0.8	50	14	25	6	4.9	3	1	4.2	004818*
M	6	1	56	16	27	6	4.9	3	1	5	004819*
M	8	1.25	63	18	–	6	4.9	3	2	6.8	004820
M	10	1.5	70	20	–	7	5.5	3	2	8.5	004810
M	12	1.75	75	24	–	9	7	3	2	10.2	004811
M	16	2	80	27	–	12	9	3	2	14	004813
M	20	2.5	95	32	–	16	12	5	2	17.5	004815

● Tool well suitable ○ Tool suitable * with tip

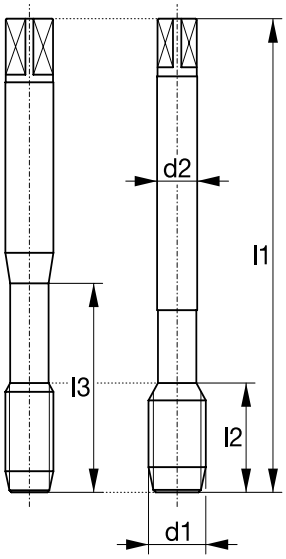
BASS TECHNIK FÜR GEWINDE

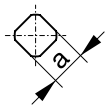
Roll taps

MF

ISO Metric fine thread DIN 13

type 1 type 2





(number of polygones)

General dimensions
DIN 2174 / ~DIN 374

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	DURAMAX N	DURAMAX N	DURAMAX H	DURAMAX H
model	TIN	TIN	TIN	KA TIN
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	C / 2–3
thread tol.	6HX	**6GX**	6HX	6HX
shank tol.	h9	h9	h6	h6
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	10–50	10–50	10–50	10–50
M	4–12	4–12	4–12	4–12
K				
N	10–40	10–40	10–40	10–40
S	10–25	10–25	10–25	10–25
H				

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
MF	4	0.5	63	8	21	4.5	3.4	4	1	3.8	002238*			
MF	5	0.5	70	9	25	6	4.9	5	1	4.8	106592*			
MF	6	0.5	80	10	30	6	4.9	5	1	5.8	106593*			
MF	6	0.75	80	14	30	6	4.9	5	1	5.65	106594*			
MF	8	1	90	18	–	6	4.9	5	2	7.55	106838		372008	
MF	10	1	90	18	–	7	5.5	5	2	9.55	106824	106804	024838	025703
MF	10	1.25	100	20	–	7	5.5	5	2	9.45	106825			
MF	12	1	100	22	–	9	7	5	2	11.55	106826			
MF	12	1.25	100	22	–	9	7	5	2	11.45	106827	004244		
MF	12	1.5	100	22	–	9	7	5	2	11.35	106828	004245	024839	025704
MF	14	1	100	22	–	11	9	6	2	13.55	106829			
MF	14	1.5	100	22	–	11	9	6	2	13.35	106830	106806	024840	020658
MF	16	1	100	22	–	12	9	6	2	15.55	106832			
MF	16	1.5	100	20	–	12	9	6	2	15.35			016834	
MF	16	1.5	100	22	–	12	9	6	2	15.35	106833	004246		025705
MF	18	1	110	20	–	14	11	7	2	17.55	024835			
MF	18	1.5	110	25	–	14	11	7	2	17.35	106834			
MF	20	1	125	25	–	16	12	7	2	19.55	009208			
MF	20	1.5	125	25	–	16	12	7	2	19.35	106835			
MF	22	1.5	125	25	–	18	14.5	7	2	21.35	106836			
MF	24	1.5	140	28	–	18	14.5	7	2	23.35	012687			

* with tip

BASS TECHNIK FÜR GEWINDE

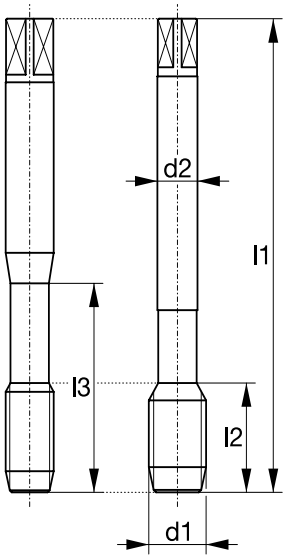
Roll taps

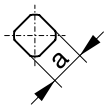
MF

ISO Metric fine thread DIN 13

series	**DURAMAX N**
model	**TIN**
material	HSSE-PM

type 1 type 2





N
(number of polygones)

General dimensions
DIN 2174 / ~DIN 374

chamfer	C / 2–3
thread tol.	6HX
shank tol.	h9
thread depth	3xD
bore hole	
P	10–50
M	4–12
K	
N	10–40
S	10–25
H	

i For detailed cutting speeds please refer to the application table.

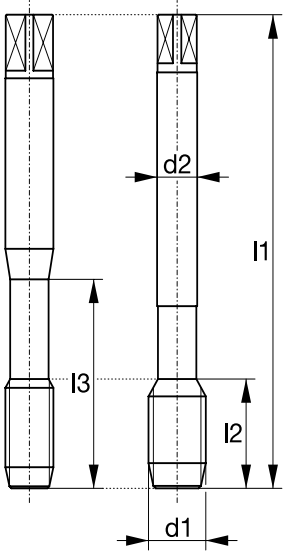
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
MF	26	1.5	140	28	–	18	14.5	8	2	25.35	106837
MF	30	1.5	150	28	–	22	18	8	2	29.35	024837

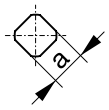
Roll taps

MF

ISO Metric fine thread DIN 13

type 1 type 2





(number of polygones)

General dimensions
DIN 2174 / ~DIN 374

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	**DURAMAX H**	**DURAMAX H**	**DURAMAX H**
model	**BT**	**KA BT**	**BX**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	**E / 1.5–2**	C / 2–3
thread tol.	6HX	6HX	6HX
shank tol.	h6	h6	h6
thread depth	3xD	3xD	3xD
bore hole			
P	10–55	10–55	10–55
M	4–15	4–15	4–15
K			
N	10–60	10–60	10–60
S	10–25	10–25	10–25
H			

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
MF	8	1	90	18	35	8	6.2	5	1	7.55	060199	066777	■ 098474
MF	8	1	90	18	–	6	4.9	5	**2**	7.55		■ 098475	
MF	10	1	90	18	39	10	8	5	1	9.55	054868	066781	■ 098472
MF	10	1	90	18	–	7	5.5	5	**2**	9.55		■ 098476	
MF	10	1.25	100	20	39	10	8	5	1	9.45	060200		■ 098473
MF	12	1	100	22	–	9	7	5	2	11.55	060201	066782	■ 098471
MF	12	1.25	100	22	–	9	7	5	2	11.45	060202		■ 098470
MF	12	1.5	100	22	–	9	7	5	2	11.35	055569	066783	■ 098469
MF	14	1.5	100	22	–	11	9	6	2	13.35	060260	066784	■ 098468
MF	16	1.5	100	22	–	12	9	6	2	15.35	055150	066785	■ 098467
MF	18	1.5	110	25	–	14	11	7	2	17.35	052934		■ 098466
MF	20	1.5	125	25	–	16	12	7	2	19.35	060203		■ 098465
MF	24	1.5	140	28	–	18	14.5	7	2	23.35	060204		■ 098464

■ new

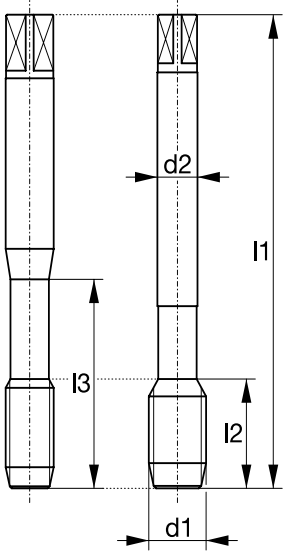
BASS TECHNIK FÜR GEWINDE

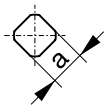
Roll taps

MF

ISO Metric fine thread DIN 13

type 1 type 2





(number of polygones)

General dimensions
DIN 2174 / ~DIN 374

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	**DURAMAX HZP**	**DURAMAX HZP**	
model	**KA BX**	**KA BX**	
material	HSSE-PM	HSSE-PM	
			
chamfer	C / 2–3	C / 2–3	
thread tol.	6HX	**6GX**	
shank tol.	h6	h6	
thread depth	3xD	3xD	
bore hole			
P	15–60	15–60	
M	10–25	10–25	
K			
N	10–60	10–60	
S	10–25	10–25	
H	5–8	5–8	

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
MF	8	1	90	13	35	8	6.2	6	1	7.55	■ 098103	■ 098118
MF	10	1	90	12	39	10	8	8	1	9.55	■ 098106	■ 098120
MF	12	1	100	15	–	9	7	10	2	11.55	■ 098110	■ 098121
MF	12	1.5	100	15	–	9	7	10	2	11.35	■ 098111	■ 098122
MF	14	1.5	100	15	–	11	9	10	2	13.35	■ 098113	■ 098123
MF	16	1.5	100	15	–	12	9	10	2	15.35	■ 098114	■ 098124
MF	18	1.5	110	18	–	14	11	10	2	17.35	■ 098115	■ 098125
MF	20	1.5	125	18	–	16	12	10	2	19.35	■ 098117	■ 098126

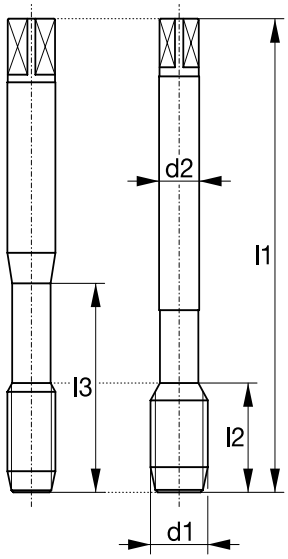
Roll taps

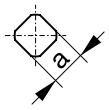
MF

ISO Metric fine thread DIN 13

	DURAMAX GAL BT	DURAMAX GAL MKA BT MG	DURAMAX GAL MKR BT	DURAMAX GAL MKR AK BT
series				
model				
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	**E / 1.5–2**	**E / 1.5–2**	**E / 1.5–2**
thread tol.	6HX	6HX	6HX	6HX
shank tol.	h6	h6	h6	h6
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	10–55	10–55	10–55	10–55
M	4–15	4–15	4–15	4–15
K				
N	10–60	10–60	10–60	10–60
S		10–25	10–15	10–25
H				

type 1 type 2





(number of polygones)

General dimensions
DIN 2174 / ~DIN 374

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
MF	4	0.5	63	8	21	4.5	3.4	4	1	3.8	■ 098704*			
MF	5	0.5	70	9	25	6	4.9	5	1	4.8	■ 098706*			
MF	6	0.5	80	10	–	6	4.9	5	**2**	5.8	■ 098711*			
MF	6	0.75	80	10	–	6	4.9	5	**2**	5.65	■ 098709*			
MF	7	0.75	80	10	–	7	5.5	5	**2**	6.65	■ 098713*			
MF	8	0.5	80	13	–	6	4.9	5	**2**	7.8	■ 098725			
MF	8	0.75	80	13	–	6	4.9	5	**2**	7.65	■ 098723			
MF	8	1	90	13	35	8	6.2	5	1	7.55		059626		
MF	8	1	90	13	–	6	4.9	5	**2**	7.55	■ 098719		081887	074228
MF	9	1	90	13	35	9	7	5	1	8.55		059631		
MF	10	1	90	12	39	10	8	5	1	9.55		059634		
MF	10	1	90	12	–	7	5.5	5	**2**	9.55	■ 098741		081888	081894
MF	10	1.25	100	15	–	7	5.5	5	**2**	9.45	■ 098742		081889	081895
MF	12	1	100	15	–	9	7	5	2	11.55	■ 098738			
MF	12	1.25	100	15	–	9	7	5	2	11.45	■ 098739		065502	081896
MF	12	1.5	100	15	–	9	7	5	2	11.35	■ 098740	059638	066279	081897
MF	14	1	100	15	–	11	9	6	2	13.55	■ 098735			
MF	14	1.25	100	15	–	11	9	6	2	13.45	■ 098736			
MF	14	1.5	100	15	–	11	9	6	2	13.35	■ 098737	059639	016244	081898
MF	16	1	100	15	–	12	9	6	2	15.55	■ 098733			
MF	16	1.5	100	15	–	12	9	6	2	15.35	■ 098734		078640	064948

* with tip | ■ new

BASS TECHNIK FÜR GEWINDE

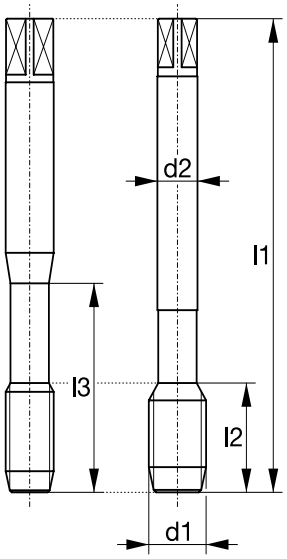
Roll taps

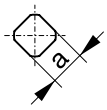
MF

ISO Metric fine thread DIN 13

series	**DURAMAX GAL**
model	**BT**
material	HSSE-PM

type 1 type 2





(number of polygones)

chamfer	C / 2–3
thread tol.	6HX
shank tol.	h6
thread depth	3xD
bore hole	

General dimensions
DIN 2174 / ~DIN 374

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

P	10–55
M	4–15
K	
N	10–60
S	
H	

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
MF	18	1	110	18	–	14	11	7	2	17.55	■ 098731
MF	18	1.5	110	18	–	14	11	7	2	17.35	■ 098732
MF	20	1	125	18	–	16	12	7	2	19.35	■ 098728
MF	20	1.5	125	18	–	16	12	7	2	19.35	■ 098729
MF	22	1.5	125	18	–	18	14.5	7	2	21.35	■ 098727
MF	24	1.5	140	20	–	18	14.5	7	2	23.35	■ 098726

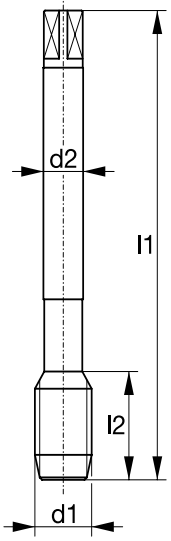
Roll taps

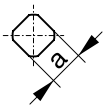
MF

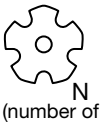
ISO Metric fine thread DIN 13

series	**DURAMAX GAL**		
model	**MKR AK BT**		
material	VHM		

type 2







N
(number of polygones)

chamfer	**E / 1.5–2**
thread tol.	6HX
shank tol.	h6
thread depth	3xD
bore hole	

General dimensions
DIN 2174 / ~DIN 374

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

P	15–60
M	10–25
K	
N	25–80
S	12–35
H	

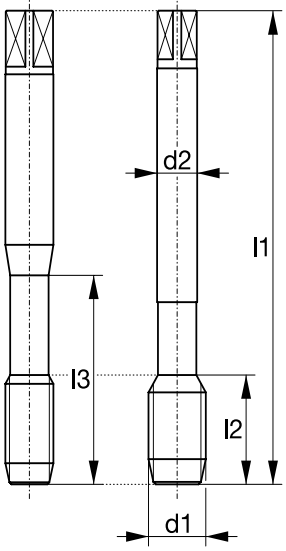
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
MF	8	1	90	13	–	6	4.9	5	2	7.55	080906
MF	10	1	90	12	–	7	5.5	5	2	9.55	081872
MF	10	1.25	100	15	–	7	5.5	5	2	9.45	081873
MF	12	1.25	100	15	–	9	7	5	2	11.45	081874
MF	12	1.5	100	15	–	9	7	5	2	11.35	081875
MF	14	1.5	100	15	–	11	9	6	2	13.35	081876
MF	16	1.5	100	15	–	12	9	6	2	15.35	081969

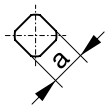
BASS TECHNIK FÜR GEWINDE

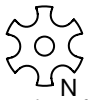
Cutting taps

MF — **ISO Metric fine thread DIN 13**

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 374

series	VARIANT H	VARIANT VA	VARIANT VA
model	TICN	TIN	HL
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	B / 3–5.5	B / 3–5.5	B / 3–5.5
thread tol.	ISO2/6H	6HX	6HX
shank tol.	h9	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P	10–35	10–35	10–35
M		3–12	3–12
K	5–25	5–25	5–25
N	15–30	10–40	10–40
S		3–15	
H	3–8		

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
MF	2.5	0.35	56	9	14	2.8	2.1	2	1	2.15			■ 098569*
MF	2.6	0.35	56	9	14	2.8	2.1	2	1	2.25			■ 098568*
MF	3	0.35	56	7	18	3.5	2.7	3	1	2.65			■ 098567*
MF	3.5	0.35	56	7	20	4	3	3	1	3.15			■ 098566*
MF	4	0.35	63	8	21	4.5	3.4	3	1	3.65			■ 098565*
MF	4	0.5	63	8	21	4.5	3.4	3	1	3.5		024725*	■ 098564*
MF	4.5	0.5	70	9	25	6	4.9	3	1	4			■ 098563*
MF	5	0.5	70	9	25	6	4.9	3	1	4.5		024726*	■ 098562*
MF	6	0.5	80	10	30	6	4.9	3	1	5.5		024727*	
MF	6	0.5	80	14	–	6	4.9	3	**2**	5.5			■ 098561*
MF	6	0.75	80	16	30	6	4.9	3	1	5.2		024728*	
MF	6	0.75	80	14	–	6	4.9	3	**2**	5.2			■ 088591*
MF	6.5	0.75	80	14	–	5.5	4.3	3	**2**	5.75			■ 098560*
MF	7	0.5	80	14	–	7	5.5	3	**2**	6.5			■ 098559*
MF	7	0.75	80	14	30	7	5.5	3	1	6.2		013489*	
MF	8	0.75	80	14	–	6	4.9	3	2	7.25			■ 098558*
MF	8	1	90	18	–	6	4.9	3	2	7	001954*	004092*	043044*
MF	9	1	90	18	–	7	5.5	3	2	8			■ 060180
MF	10	0.75	90	14	–	7	5.5	3	2	9.2			■ 098557
MF	10	1	90	18	–	7	5.5	3	2	9	000536	004093	043043
MF	10	1.25	100	20	–	7	5.5	3	2	8.8		010324	048899
MF	11	1	90	20	–	8	6.2	4	2	10			■ 044448

* with tip | ■ new

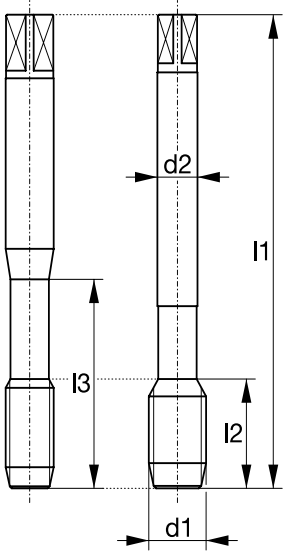
BASS TECHNIK FÜR GEWINDE

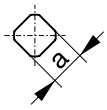
Cutting taps

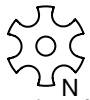
MF

ISO Metric fine thread DIN 13

type 1 type 2







(number of flutes)

General dimensions
DIN 371 / DIN 374

series	VARIANT H	VARIANT VA	VARIANT VA
model	TICN	TIN	HL
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	B / 3–5.5	B / 3–5.5	B / 3–5.5
thread tol.	ISO2/6H	6HX	6HX
shank tol.	h9	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P	10–35	10–35	10–35
M		3–12	3–12
K	5–25	5–25	5–25
N	15–30	10–40	10–40
S		3–15	
H	3–8		

i For detailed cutting speeds please refer to the application table.

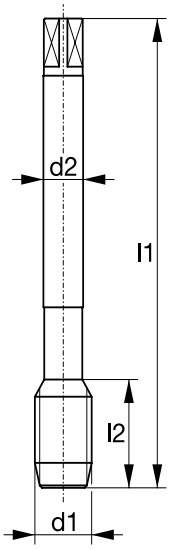
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number		
MF	12	0.5	100	22	–	9	7	4	2	11.5			■ 053230
MF	12	0.75	100	20	–	9	7	4	2	11.2			048900
MF	12	1	100	22	–	9	7	4	2	11			042020
MF	12	1.25	100	22	–	9	7	3	2	10.8		010325	034630
MF	12	1.5	100	22	–	9	7	3	2	10.5	108611	004094	048868
MF	13	1	100	22	–	11	9	4	2	12			■ 045255
MF	14	1	100	22	–	11	9	4	2	13			044423
MF	14	1.25	100	22	–	11	9	3	2	12.8			048901
MF	14	1.5	100	22	–	11	9	3	2	12.5	108613	004095	048902
MF	16	1	100	22	–	12	9	4	2	15			039590
MF	16	1.5	100	22	–	12	9	4	2	14.5	108614	004096	038216
MF	18	1	110	25	–	14	11	4	2	16.5			■ 049565
MF	18	1.5	110	25	–	14	11	4	2	16.5		019500	038217
MF	20	1	125	25	–	16	12	4	2	19			038285
MF	20	1.5	125	25	–	16	12	4	2	18.5		019347	038218
MF	22	1.5	125	25	–	18	14.5	4	2	20.5		026304	038219
MF	24	1.5	140	28	–	18	14.5	4	2	22.5		024793	048903
MF	26	1.5	140	28	–	18	14.5	4	2	24.5			■ 039592
MF	30	1.5	150	28	–	22	18	5	2	28.5			■ 050311

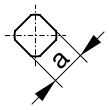
Cutting taps

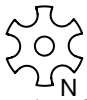
MF

ISO Metric fine thread DIN 13

type 2







(number of flutes)

General dimensions
~ DIN 374

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	VARIANT VA	VARIANT VA	VARIANT MHST	VARIANT TIH
model	LH TIN	TIN SL	KR HK TIN	TICN
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	B / 3–5.5	B / 3–5.5	B / 3–5.5	B / 3–5.5
thread tol.	6HX	6HX	6HX	6HX
shank tol.	h9	h9	h6	h6
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	10–35	10–35	15–80	10–30
M	3–12	3–12	3–15	3–10
K	5–25	5–25	5–25	5–25
N	10–40	10–40	15–60	1–35
S	3–15	3–15	4–25	2–12
H			8–15	3–12

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
MF	8	1	90	18	–	6	4.9	3	2	7	■ 034276*		■ 098433*	
MF	8	1	180	18	–	6	4.9	3	2	7		■ 109790*		
MF	10	1	90	18	–	7	5.5	3	2	9	■ 024789		■ 098434	033748
MF	10	1	180	18	–	7	5.5	3	2	9		■ 109791		
MF	10	1.25	100	20	–	7	5.5	3	2	8.8	■ 024790			
MF	10	1.25	200	20	–	7	5.5	3	2	8.8		■ 098575		
MF	12	1.25	100	22	–	9	7	3	2	10.8	■ 024791		■ 098435	
MF	12	1.25	200	22	–	9	7	3	2	10.8		■ 044909		
MF	12	1.5	100	22	–	9	7	3	2	10.5	■ 024792		■ 028770	011138
MF	12	1.5	200	22	–	9	7	3	2	10.5		■ 109364		
MF	14	1.25	100	22	–	11	9	3	2	12.8			■ 098432	
MF	14	1.5	100	22	–	11	9	3	2	12.5			■ 040891	011139
MF	14	1.5	200	22	–	11	9	3	2	12.5		■ 012171		
MF	16	1.5	100	22	–	12	9	3	2	14.5			■ 049617	
MF	16	1.5	100	22	–	12	9	4	2	14.5	■ 098577			029718
MF	16	1.5	200	22	–	12	9	4	2	14.5		■ 099544		
MF	18	1.5	110	25	–	14	11	4	2	16.5				030926
MF	20	1.5	125	25	–	16	12	4	2	18.5	■ 036321			029217
MF	20	1.5	250	25	–	16	12	4	2	18.5		■ 061094		
MF	24	1.5	140	28	–	18	14.5	4	2	22.5	■ 098578			

* with tip | ■ new

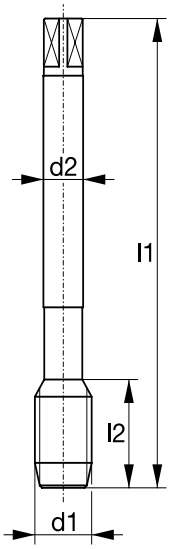
BASS TECHNIK FÜR GEWINDE

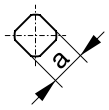
Cutting taps

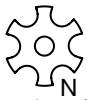
MF

ISO Metric fine thread DIN 13

type 2







(number of flutes)

General dimensions
DIN 374

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

i For detailed cutting speeds please refer to the application table.

series	**VARIO SH**	**VARIO GG**	**VARIO GG**	**VARIO GG**
model	**TICN SR**	**TICN**	**KA TICN**	**KA BT**
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	**E / 1.5–2**
thread tol.	6HX	6HX	6HX	6HX
shank tol.	h9	h9	h6	h6
thread depth	2.5xD	2xD	3xD	3xD
bore hole				
P				
M				
K		5–40	5–60	5–70
N		3–35	3–35	3–40
S				
H	1–4			

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
MF	8	0.75	70	22	–	6	4.9	5	2	7.3	083510		
MF	8	1	70	22	–	6	4.9	5	2	7.1	083511		
MF	8	1	90	18	–	6	4.9	4	2	7		105251	003049	082087
MF	10	1	75	24	–	7	5.5	5	2	9.1	083512		
MF	10	1	90	18	–	7	5.5	4	2	9		105245	003050	065408
MF	12	1.5	82	29	–	9	7	5	2	10.6	083513		
MF	12	1.5	100	22	–	9	7	4	2	10.5		002495	004188	710112
MF	14	1	100	22	–	11	9	4	2	13		■ 105200		
MF	14	1.5	88	30	–	11	9	5	2	12.6	083514			
MF	14	1.5	100	22	–	11	9	4	2	12.5		105249	004189	066776
MF	16	1.5	95	32	–	12	9	5	2	14.6	083515			
MF	16	1.5	100	22	–	12	9	4	2	14.5		004187	004190	065503

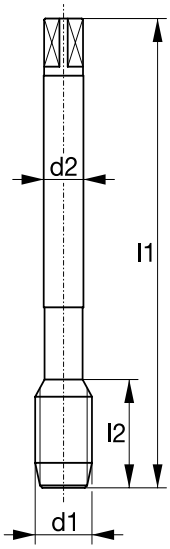
■ new

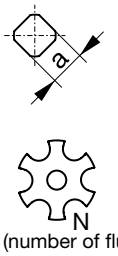
BASS TECHNIK FÜR GEWINDE

Cutting taps

MF — **ISO Metric fine thread DIN 13**

type 2





(number of flutes)

General dimensions
DIN 374

series	**AVANT H15**	**AVANT H15**	**AVANT H25**
model	**TICN**	**KA TICN**	**HL**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	**E / 1.5–2**	**E / 1.5–2**
thread tol.	ISO2/6H	ISO2/6H	6HX
shank tol.	h9	h9	h9
thread depth	2xD	2xD	2xD
bore hole			
P	10–35	10–35	10–35
M			3–12
K	5–30	5–30	10–25
N	8–35	8–35	15–40
S			
H	4–10	4–10	5–8

i For detailed cutting speeds please refer to the application table.

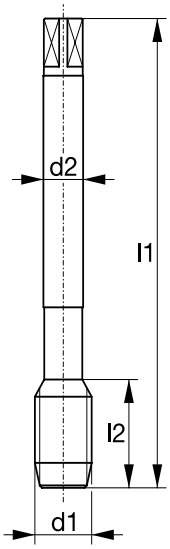
	Ød$_1$	P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
MF	8	1	90	13	–	6	4.9	4	2	7		035803
MF	10	1	90	12	–	7	5.5	4	2	9		035804
MF	10	1	90	18	–	7	5.5	3	2	9	107908	004099
MF	12	1.5	100	15	–	9	7	5	2	10.5		035805
MF	12	1.5	100	22	–	9	7	3	2	10.5	107912	004100
MF	14	1.5	100	15	–	11	9	5	2	12.5		039298
MF	14	1.5	100	22	–	11	9	3	2	12.5	107913	111730
MF	16	1.5	100	15	–	12	9	5	2	14.5		035806
MF	16	1.5	100	22	–	12	9	4	2	14.5	107914	
MF	18	1.5	110	25	–	14	11	4	2	16.5	107916	
MF	20	1.5	125	25	–	16	12	4	2	18.5	107917	

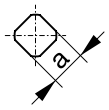
Cutting taps

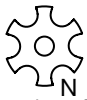
MF

ISO Metric fine thread DIN 13

type 2







(number of flutes)

General dimensions
DIN 374

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	**AVANT GAL15**	**AVANT GAL15**	**AVANT TIH13**
model	**KA TICN**	**KA TICN**	**TICN**
material	HSSE-PM	VHM	HSSE-PM
			
chamfer	**E / 1.5–2**	**E / 1.5–2**	C / 2–3
thread tol.	6HX	6HX	6HX
shank tol.	h6	h6	h6
thread depth	2.5xD	2.5xD	2.5xD
bore hole			
P	10–35	10–35	10–25
M			3–10
K	5–25	20–70	5–25
N	8–40	5–70	1–35
S			2–12
H	4–10	4–10	3–10

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
MF	8	1	90	13	–	6	4.9	3	2	7	■ 098437		
MF	10	1	90	12	–	7	5.5	3	2	9	036976	037097	
MF	10	1	90	18	–	7	5.5	3	2	9			036466
MF	10	1.25	100	15	–	7	5.5	3	2	8.8	036977	037088	
MF	12	1.25	100	15	–	9	7	3	2	10.8	036978	037098	
MF	12	1.5	100	15	–	9	7	3	2	10.5	036979	037099	
MF	12	1.5	100	22	–	9	7	3	2	10.5			038383
MF	14	1.5	100	15	–	11	9	3	2	12.5	036980	039777	
MF	14	1.5	100	22	–	11	9	3	2	12.5			031464
MF	16	1.5	100	15	–	12	9	4	2	14.5	036981	039778	
MF	16	1.5	100	22	–	12	9	4	2	14.5			676053
MF	18	1.5	110	25	–	14	11	4	2	16.5			038384
MF	20	1.5	125	25	–	16	12	4	2	18.5			038385

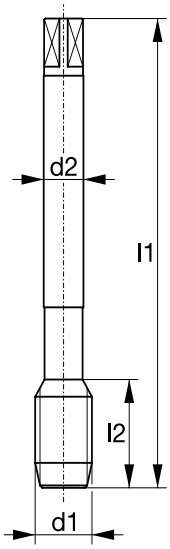
■ new

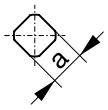
BASS TECHNIK FÜR GEWINDE

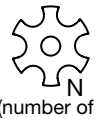
Cutting taps

MF — **ISO Metric fine thread DIN 13**

type 2







(number of flutes)

General dimensions
DIN 374

series	**DOMINANT HZ38**	**DOMINANT HZ38 TIN**	**DOMINANT HZ38 HL**	**DOMINANT HZ38 KA HL**
model				
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	**E / 1.5–2**
thread tol.	ISO2/6H	ISO2/6H	ISO2/6H	ISO2/6H
shank tol.	h9	h9	h9	h9
thread depth	2.5xD	2.5xD	2.5xD	2.5xD
bore hole				
P	5–20	10–35	10–35	10–35
M			3–12	3–12
K			5–25	5–25
N	4–25	10–35		
S				
H			4–10	

i For detailed cutting speeds please refer to the application table.

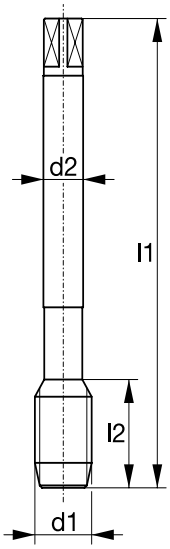
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
MF	8	1	90	13	–	6	4.9	3	2	7	111452	108175	048904	065963
MF	10	1	90	12	–	7	5.5	3	2	9	111420	111454	036158	065964
MF	10	1.25	100	15	–	7	5.5	3	2	8.8	111421		048905	
MF	12	1	100	15	–	9	7	4	2	11	111422		048907	
MF	12	1.25	100	15	–	9	7	4	2	10.8	111423		048912	
MF	12	1.5	100	15	–	9	7	4	2	10.5	111424	111458	048914	065965
MF	14	1	100	15	–	11	9	4	2	13	111425		048915	
MF	14	1.5	100	15	–	11	9	4	2	12.5	111426	111460	048916	065966
MF	16	1	100	15	–	12	9	4	2	15	111428		048917	
MF	16	1.5	100	15	–	12	9	4	2	14.5	111429	111461	048918	065967
MF	18	1.5	110	18	–	14	11	4	2	16.5	111430		048919	
MF	20	1.5	125	18	–	16	12	4	2	18.5	111432	111463	048920	063916
MF	22	1.5	125	18	–	18	14.5	4	2	20.5	111434		048921	
MF	24	1.5	140	20	–	18	14.5	5	2	22.5	111436		022311	063917

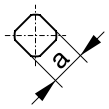
Cutting taps

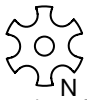
MF

ISO Metric fine thread DIN 13

type 2







(number of flutes)

General dimensions
DIN 374

series	**DOMINANT VA45**	**DOMINANT VA45 TIN**		
model				
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	6HX	6HX		
shank tol.	h9	h9		
thread depth	3xD	3xD		
bore hole				
P	5–20	10–35		
M		3–12		
K				
N	10–25	10–40		
S		8–15		
H		5–8		

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
MF	8	1	90	13	–	6	4.9	3	2	7	024794	018363
MF	10	1	90	12	–	7	5.5	3	2	9	024796	019482
MF	10	1.25	100	15	–	7	5.5	3	2	8.8	024797	024813
MF	12	1	100	15	–	9	7	4	2	11	024798	024814
MF	12	1.25	100	15	–	9	7	4	2	10.8	024799	024815
MF	12	1.5	100	15	–	9	7	4	2	10.5	024800	019493
MF	14	1	100	15	–	11	9	4	2	13	024801	024816
MF	14	1.5	100	15	–	11	9	4	2	12.5	024802	021639
MF	16	1	100	15	–	12	9	4	2	15	024803	109982
MF	16	1.5	100	15	–	12	9	4	2	14.5	024804	023354
MF	18	1.5	110	18	–	14	11	4	2	16.5	024806	024817
MF	20	1	125	18	–	16	12	4	2	19	024807	024450
MF	20	1.5	125	18	–	16	12	4	2	18.5	024808	023355
MF	22	1.5	125	18	–	18	14.5	4	2	20.5	024809	024818
MF	24	1.5	140	20	–	18	14.5	5	2	22.5	024810	024819
MF	26	1.5	140	20	–	18	14.5	5	2	24.5	024811	029495

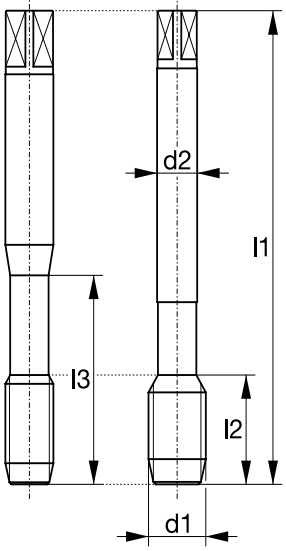
BASS TECHNIK FÜR GEWINDE

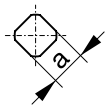
Cutting taps

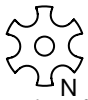
MF

ISO Metric fine thread DIN 13

type 1 type 2







(number of flutes)

General dimensions
DIN 374

series	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45**
model	**HL**	**HL DF**	**LH HL**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	C / 2–3	C / 2–3
thread tol.	6HX	6HX	6HX
shank tol.	h9	h9	h9
thread depth	3xD	**>3xD**	3xD
bore hole			
P	10–35	10–35	10–35
M	3–12	3–12	3–12
K	5–30	5–30	5–30
N	15–40	10–40	15–40
S	3–15	3–15	3–15
H	5–8	5–8	5–8

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
MF	2.5	0.35	56	9	14	2.8	2.1	2	1	2.15	■ 098600*		
MF	2.6	0.35	56	9	14	2.8	2.1	2	1	2.25	■ 098602*		
MF	3	0.35	56	7	18	3.5	2.7	3	1	2.65	■ 052651*		
MF	3.5	0.35	56	7	20	4	3	3	1	3.15	■ 098596*		
MF	4	0.35	63	8	21	4.5	3.4	3	1	3.65	■ 098594*		
MF	4	0.5	63	8	21	4.5	3.4	3	1	3.5	■ 098592*		
MF	4.5	0.5	70	9	25	6	4.9	3	1	4	■ 098591*		
MF	5	0.5	70	9	25	6	4.9	3	1	4.5	024731*	■ 098462*	
MF	6	0.75	80	10	30	6	4.9	3	1	5.2	024733*	■ 098461*	
MF	6	0.5	80	10	–	4.5	3.4	3	**2**	5.5	■ 098587*		
MF	6	0.75	80	10	–	4.5	3.4	3	**2**	5.2	■ 098586*		
MF	6.5	0.75	80	10	–	5.5	4.3	3	2	5.75	■ 098585		
MF	7	0.5	80	10	–	7	5.5	3	2	6.5	■ 098584		
MF	7	0.75	80	10	–	7	5.5	3	2	6.2	■ 024734		
MF	8	0.75	80	10	–	8	6.2	3	2	7.25	■ 112390		
MF	8	1	90	13	–	6	4.9	3	2	7	023356	■ 098460	■ 066044
MF	9	1	90	13	–	7	5.5	3	2	8	■ 098582		
MF	10	0.75	90	12	–	7	5.5	3	2	9.2	■ 042351		
MF	10	1	90	12	–	7	5.5	3	2	9	023357	■ 037158	■ 057286
MF	10	1.25	100	15	–	7	5.5	3	2	8.8	027465	■ 098459	■ 081245
MF	11	1	90	12	–	8	6.2	3	2	10	■ 082849		

* with tip | ■ new

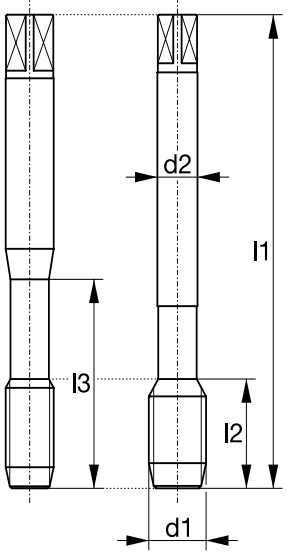
BASS TECHNIK FÜR GEWINDE

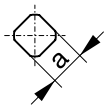
Cutting taps

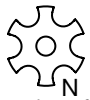
MF

ISO Metric fine thread DIN 13

type 1 type 2







(number of flutes)

General dimensions
DIN 374

series	DOMINANT VA45	DOMINANT VA45	DOMINANT VA45
model	**HL**	**HL DF**	**LH HL**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	C / 2–3	C / 2–3
thread tol.	6HX	6HX	6HX
shank tol.	h9	h9	h9
thread depth	3xD	**>3xD**	3xD
bore hole			
P	10–35	10–35	10–35
M	3–12	3–12	3–12
K	5–30	5–30	5–30
N	15–40	10–40	15–40
S	3–15	3–15	3–15
H	5–8	5–8	5–8

i For detailed cutting speeds please refer to the application table.

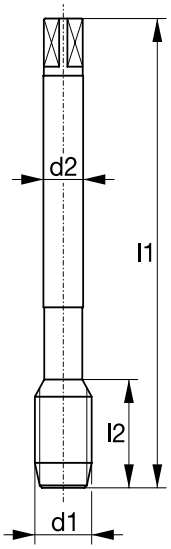
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number		
MF	12	0.5	100	15	–	9	7	4	2	11.5	■ 053555		
MF	12	0.75	100	15	–	9	7	4	2	11.2	■ 098580		
MF	12	1	100	15	–	9	7	4	2	11	036339	■ 027286	
MF	12	1.25	100	15	–	9	7	4	2	10.8	034629	■ 108295	■ 098610
MF	12	1.5	100	15	–	9	7	4	2	10.5	023358	■ 098458	■ 098612
MF	13	1	100	15	–	11	9	4	2	12	■ 051224		
MF	14	1	100	15	–	11	9	4	2	13	027337	■ 027285	
MF	14	1.5	100	15	–	11	9	4	2	12.5	021645	■ 098457	
MF	16	1	100	15	–	12	9	4	2	15	036338	■ 098456	
MF	16	1.5	100	15	–	12	9	4	2	14.5	023359	023359	■ 051788
MF	18	1	110	16	–	14	11	4	2	16.5	■ 067956		
MF	18	1.5	110	18	–	14	11	4	2	16.5	027875		
MF	20	1	125	18	–	16	12	4	2	19	036343		
MF	20	1.5	125	18	–	16	12	4	2	18.5	023360		■ 050614
MF	22	1.5	125	18	–	18	14.5	4	2	20.5	036340		
MF	24	1.5	140	20	–	18	14.5	5	2	22.5	035828		■ 061533
MF	26	1.5	140	20	–	18	14.5	5	2	24.5	035627		
MF	30	1.5	150	36	–	22	18	5	2	28.5	■ 057843		

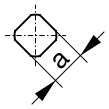
Cutting taps

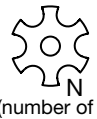
MF

ISO Metric fine thread DIN 13

type 2







(number of flutes)

General dimensions
~ DIN 374

series	**DOMINANT VA45**			
model	**HL SL**			
material	HSSE-PM			
				
chamfer	C / 2–3			
thread tol.	6HX			
shank tol.	h9			
thread depth	3xD			
bore hole				
P	10–35			
M	3–12			
K	5–30			
N	15–40			
S	3–15			
H	5–8			

i For detailed cutting speeds please refer to the application table.

	Ød$_1$	P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
MF	8	1	180	13	–	6	4.9	3	2	7	■ 081136
MF	10	1	180	12	–	7	5.5	3	2	9	■ 046192
MF	10	1.25	200	15	–	7	5.5	3	2	8.8	■ 098605
MF	12	1.25	200	15	–	9	7	4	2	10.8	■ 098606
MF	12	1.5	200	15	–	9	7	4	2	10.5	■ 067872
MF	14	1.5	200	15	–	11	9	4	2	12.5	■ 050858
MF	16	1.5	200	15	–	12	9	4	2	14.5	■ 085466
MF	20	1.5	250	18	–	16	12	4	2	18.5	■ 033805

■ new

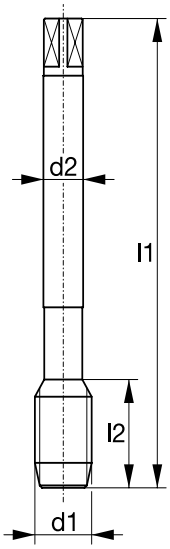
BASS TECHNIK FÜR GEWINDE

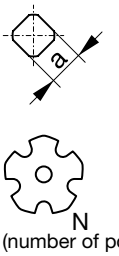
Roll taps

G

British standard pipe thread
DIN EN ISO 228

type 2





General dimensions
DIN 2189

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	DURAMAX N	DURAMAX H	DURAMAX H	DURAMAX GAL
model	TIN	TIN	BT	BT
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	C / 2–3
thread tol.	–	**+0.05**	–	–
shank tol.	h9	h9	h9	h6
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	10–50	10–50	10–55	10–55
M	4–12	4–12	4–15	4–15
K				
N	10–40	10–40	10–60	10–60
S	10–25	10–25	10–25	
H				

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
G	1/8"	28	90	18	–	7	5.5	5	2	9.25	106866		066786	
G	1/8"	28	90	12	–	7	5.5	5	2	9.25				■ 098724
G	1/8"	28	90	18	–	7	5.5	5	2	9.30		■ 098455		
G	1/4"	19	100	22	–	11	9	6	2	12.5	106865		066787	
G	1/4"	19	100	15	–	11	9	6	2	12.5				■ 098722
G	1/4"	19	100	22	–	11	9	6	2	12.55		■ 098454		
G	3/8"	19	100	22	–	12	9	6	2	16	106868		066789	
G	3/8"	19	100	15	–	12	9	6	2	16				■ 098721
G	3/8"	19	100	22	–	12	9	6	2	16.05		■ 098453		
G	1/2"	14	125	25	–	16	12	7	2	20	106864		066820	
G	1/2"	14	125	18	–	16	12	7	2	20				■ 098720
G	1/2"	14	125	25	–	16	12	7	2	20.05		■ 098448		
G	5/8"	14	125	25	–	18	14.5	7	2	22			066821	■ 098718
G	3/4"	14	140	28	–	20	16	8	2	25.5	106867		066822	■ 098717
G	7/8"	14	150	22	–	22	18	8	2	29.25				■ 098716
G	1"	11	160	30	–	25	20	10	2	32	024215		066823	■ 098715

■ new

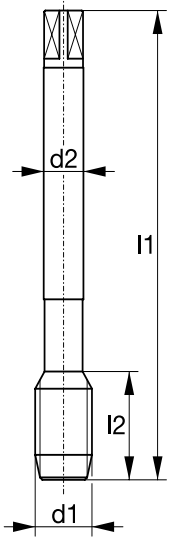
BASS TECHNIK FÜR GEWINDE

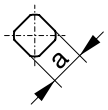
Cutting taps

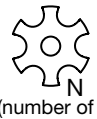
G

British standard pipe thread
DIN EN ISO 228

type 2







(number of flutes)

General dimensions
DIN 5156

series	**VARIANT VA**	**VARIANT VA**	**VARIANT VA**
model	**TIN**	**HL**	**HL SL**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	B / 3–5.5	B / 3–5.5	B / 3–5.5
thread tol.	–	–	–
shank tol.	h9	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P	10–35	10–35	10–35
M	3–12	3–12	3–12
K	5–25	5–25	5–25
N	10–40	10–40	10–40
S	3–15		
H			

i For detailed cutting speeds please refer to the application table.

Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number		
G	1/16"	28	90	20	–	6	4.9	3	2	6.56		■ 098571	
G	1/8"	28	90	18	–	7	5.5	3	2	8.8	005191	038737	
G	1/8"	28	180	20	–	7	5.5	3	2	8.8			■ 020008
G	1/4"	19	100	22	–	11	9	3	2	11.8	005190	045668	
G	1/4"	19	200	22	–	11	9	3	2	11.8			■ 071200
G	3/8"	19	100	22	–	12	9	4	2	15.25	005193	045669	
G	3/8"	19	200	22	–	12	9	4	2	15.25			■ 077174
G	1/2"	14	125	25	–	16	12	4	2	19	005192	045671	
G	1/2"	14	250	25	–	16	12	4	2	19			■ 055342
G	5/8"	14	125	25	–	18	14.5	4	2	21		048922	
G	3/4"	14	140	28	–	20	16	4	2	24.5	005196	045673	
G	3/4"	14	280	28	–	20	16	4	2	24.5			■ 098574
G	1"	11	160	30	–	25	20	5	2	30.75	005189	045674	
G	1"	11	280	30	–	25	20	5	2	30.75			■ 074842

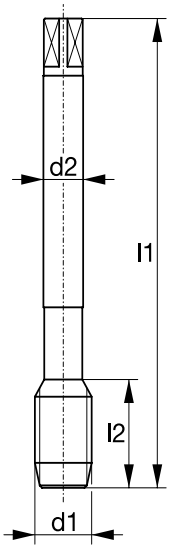
Cutting taps

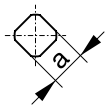
G

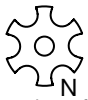
British standard pipe thread DIN EN ISO 228

series	**VARIO SH**	**VARIO GG**		
model	**TICN SR**	**TICN**		
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	–	–		
shank tol.	h9	h9		
thread depth	2.5xD	2xD		
bore hole				
P				
M				
K		5–40		
N		3–35		
S				
H	1–4			

type 2







(number of flutes)

General dimensions
DIN 5156

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
G	1/8"	28	63	18	–	7	5.5	5	2	8.8	083516
G	1/8"	28	90	18	–	7	5.5	4	2	8.8	105288
G	1/4"	19	70	20	–	20	9	5	2	11.8	083517
G	1/4"	19	100	22	–	11	9	4	2	11.8	105287
G	3/8"	19	70	22	–	22	9	5	2	15.3	083518
G	3/8"	19	100	22	–	12	9	4	2	15.25	105290
G	1/2"	14	125	25	–	16	12	5	2	19	105286
G	3/4"	14	140	28	–	20	16	5	2	24.5	105289
G	1"	11	160	30	–	25	20	6	2	30.75	004583

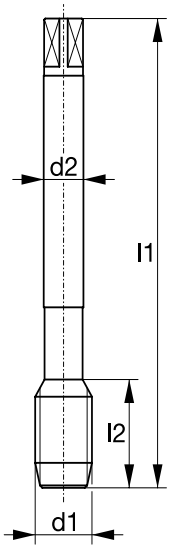
BASS TECHNIK FÜR GEWINDE

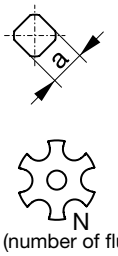
Cutting taps

G

British standard pipe thread DIN EN ISO 228

type 2





(number of flutes)

General dimensions
DIN 5156

	series	AVANT H15	AVANT H15 TICN	AVANT H25 HL
	model			
	material	HSSE-PM	HSSE-PM	HSSE-PM
				
	chamfer	C / 2–3	C / 2–3	**E / 1.5–2**
	thread tol.	–	–	–
	shank tol.	h9	h9	h9
	thread depth	2xD	2xD	2xD
	bore hole			
P		5–15	10–35	10–35
M				3–12
K			5–30	10–25
N		5–35	8–35	15–40
S				
H			4–10	5–8

i For detailed cutting speeds please refer to the application table.

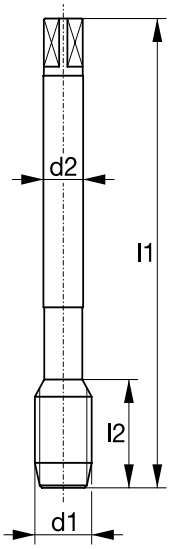
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number		
G	1/8"	28	90	18	–	7	5.5	3	2	8.8	107938	■ 030460	
G	1/8"	28	90	12	–	7	5.5	4	2	8.8			043467
G	1/4"	19	100	22	–	11	9	4	2	11.8	107936	■ 107944	
G	1/4"	19	100	15	–	11	9	5	2	11.8			043468
G	3/8"	19	100	22	–	12	9	4	2	15.25	107940	■ 107947	
G	3/8"	19	100	15	–	12	9	5	2	15.25			043469
G	1/2"	14	125	25	–	16	12	4	2	19	107935	■ 107943	
G	1/2"	14	125	18	–	16	12	5	2	19			043470
G	3/4"	14	140	20	–	20	16	6	2	24.5			043471
G	1"	11	160	24	–	25	20	6	2	30.75			043472

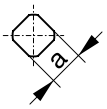
Cutting taps

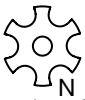
G

British standard pipe thread DIN EN ISO 228

type 2







(number of flutes)

General dimensions
DIN 5156

series	DOMINANT HZ38	DOMINANT HZ38 TIN	DOMINANT HZ38 HL	
model				
material	HSSE-PM	HSSE-PM	HSSE-PM	
				
chamfer	C / 2–3	C / 2–3	C / 2–3	
thread tol.	–	–	–	
shank tol.	h9	h9	h9	
thread depth	2.5xD	2.5xD	2.5xD	
bore hole				
P	5–20	10–35	10–35	
M			3–12	
K			5–25	
N	4–25	10–35		
S				
H			4–10	

i For detailed cutting speeds please refer to the application table.

	Ød$_1$	P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
G	1/8"	28	90	12	–	7	5.5	3	2	8.8	111476	111485	036288
G	1/4"	19	100	15	–	11	9	4	2	11.8	111475	111484	043785
G	3/8"	19	100	15	–	12	9	4	2	15.25	111478	111487	048937
G	1/2"	14	125	18	–	16	12	4	2	19	111474	111483	048924
G	5/8"	14	125	18	–	18	14.5	4	2	21			048938
G	3/4"	14	140	20	–	20	16	5	2	24.5	111477	111486	048936
G	1"	11	160	24	–	25	20	5	2	30.75	111471	111482	048923

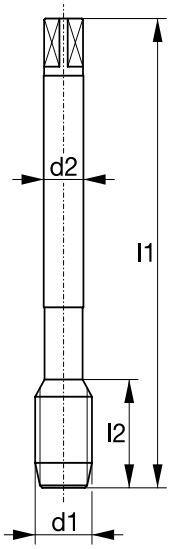
BASS TECHNIK FÜR GEWINDE

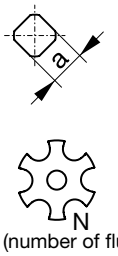
Cutting taps

G

British standard pipe thread DIN EN ISO 228

type 2





(number of flutes)

General dimensions
DIN 5156

series	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45 TIN**
model				
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	**E / 1.5–2**	C / 2–3
thread tol.	–	**+0.05**	–	–
shank tol.	h9	h9	h9	h9
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	5–20	5–20	5–20	10–35
M				3–12
K				
N	10–25	10–25	10–25	10–40
S				8–15
H				5–8

i For detailed cutting speeds please refer to the application table.

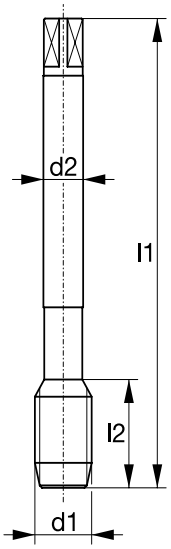
Ød1		P	l1	l2	l3	Ød2	a	N	type		identification number			
G	1/8"	28	90	12	–	7	5.5	3	2	8.8	024849	■ 098446	082166	024856
G	1/4"	19	100	15	–	11	9	4	2	11.8	024850	■ 039796	037149	024857
G	3/8"	19	100	15	–	12	9	4	2	15.25	024851	■ 029915	082167	024858
G	1/2"	14	125	18	–	16	12	4	2	19	024852	■ 036652	082168	024859
G	5/8"	14	125	18	–	18	14.5	4	2	21			083593	024860
G	3/4"	14	140	20	–	20	16	5	2	24.5	024854		082169	024861
G	1"	11	160	24	–	25	20	5	2	30.75	024855		082170	024862

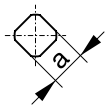
Cutting taps

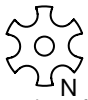
G

British standard pipe thread DIN EN ISO 228

type 2







(number of flutes)

General dimensions
DIN 5156

series	DOMINANT VA45	DOMINANT VA45	DOMINANT VA45	DOMINANT VA45
model	**TIN**	**HL**	**HL**	**HL**
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	**E / 1.5–2**
thread tol.	**+0.05**	–	**+0.05**	–
shank tol.	h9	h9	h9	h9
thread depth	3xD	3xD	3xD	3xD
bore hole				
P	10–35	10–35	10–35	10–35
M	3–12	3–12	3–12	3–12
K		5–30	5–30	5–30
N	10–40	15–40	15–40	15–40
S	8–15	3–15	3–15	3–15
H	5–8	5–8	5–8	5–8

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
G	1/16"	28	90	9.1	–	6	4.9	3	2	6.56		■ 098570		
G	1/8"	28	90	12	–	7	5.5	3	2	8.8		026956		049277
G	1/8"	28	90	12	–	7	5.5	3	2	8.85	■ 042320		■ 025393	
G	1/4"	19	100	15	–	11	9	4	2	11.8		026957		034737
G	1/4"	19	100	15	–	11	9	4	2	11.85	■ 442157		■ 111499	
G	3/8"	19	100	15	–	12	9	4	2	15.25		026958		034738
G	3/8"	19	100	15	–	12	9	4	2	15.3	■ 033190		■ 111513	
G	1/2"	14	125	18	–	16	12	4	2	19		026959		072230
G	1/2"	14	125	18	–	16	12	4	2	19.05	■ 021378		■ 040207	
G	5/8"	14	125	18	–	18	14.5	4	2	21		038377		082171
G	3/4"	14	140	20	–	20	16	5	2	24.5		032554		083594
G	7/8"	14	150	22	–	22	18	5	2	28.25				■ 098443
G	1"	11	160	24	–	25	20	5	2	30.75		030112		082172

■ new

BASS TECHNIK FÜR GEWINDE

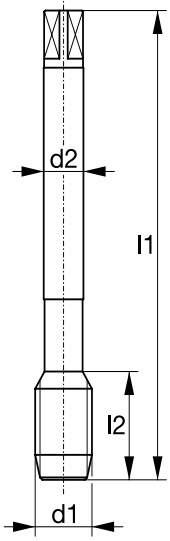
Cutting taps

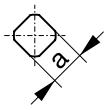
G

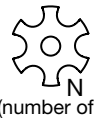
British standard pipe thread DIN EN ISO 228

series	**DOMINANT VA45**		
model	**HL SL**		
material	HSSE-PM		

type 2







(number of flutes)

chamfer	C / 2–3
thread tol.	–
shank tol.	h9
thread depth	3xD
bore hole	

General dimensions
DIN 5156

P	10–35
M	3–12
K	5–30
N	15–40
S	3–15
H	5–8

i For detailed cutting speeds please refer to the application table.

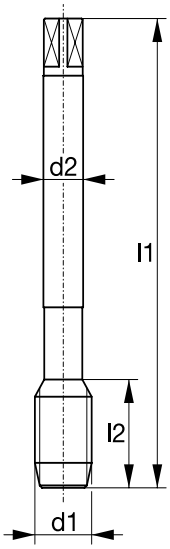
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
G	1/8"	28	180	9.1	–	7	5.5	3	2	8.8	■ 027062
G	1/4"	19	200	15	–	11	9	4	2	11.8	■ 058939
G	3/8"	19	200	13.4	–	12	9	4	2	15.25	■ 027064
G	1/2"	14	250	18.2	–	16	12	4	2	19	■ 027065
G	3/4"	14	280	28	–	20	16	5	2	24.5	■ 088379
G	1"	11	280	30	–	25	20	5	2	30.75	■ 091025

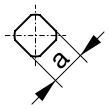
Cutting taps

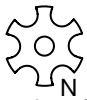
Rp

British standard pipe thread DIN EN 10226-1

type 2







(number of flutes)

series	**VARIO N**	**VARIO N TIN**		
model				
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	–	–		
shank tol.	h9	h9		
thread depth	2xD	2xD		
bore hole				
P	15–25	15–30		
M				
K		10–30		
N	5–25	5–30		
S				
H				

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
Rp	1/8"	28	90	18	–	7	5.5	3	2	8.6	110032	■ 110037
Rp	1/4"	19	100	22	–	11	9	3	2	11.5	110031	■ 105311
Rp	3/8"	19	100	22	–	12	9	3	2	15	110036	■ 110038
Rp	1/2"	14	125	25	–	16	12	4	2	18.5	110030	■ 039809
Rp	3/4"	14	140	28	–	20	16	4	2	24	110035	■ 039810
Rp	1"	11	160	30	–	25	20	4	2	30.25	110027	■ 092798
Rp	1.1/4"	11	170	30	–	32	24	6	2	39	110029	■ 092799
Rp	1.1/2"	11	190	32	–	36	29	6	2	44.85	110028	■ 092800

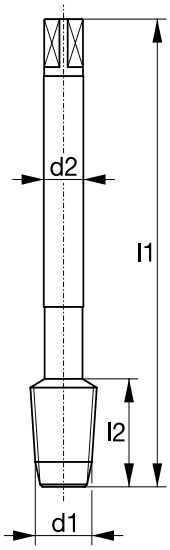
■ new

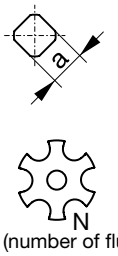
Cutting taps

Rc

Whitworth-Pipe thread DIN EN 10226-2 and ISO 7/1 tapered 1:16

type 2





(number of flutes)

series	**VARIO N**	**VARIO N TIN**	**VARIO H VAP**
model			
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	C / 2–3	C / 2–3
thread tol.	–	–	–
shank tol.	h9	h9	h9
thread depth	2xD	2xD	2xD
bore hole			
P	15–25	15–30	10–30
M			
K		10–30	10–30
N	5–25	5–30	5–15
S			
H			4–10

i For detailed cutting speeds please refer to the application table.

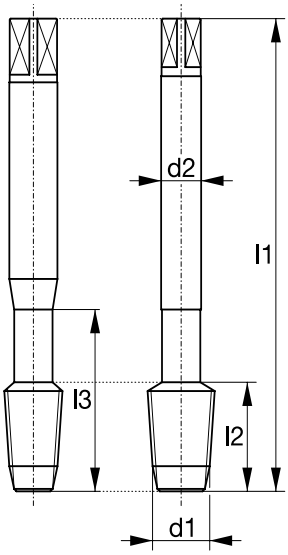
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
Rc	1/8"	28	90	13	–	7	5.5	4	2	8.3	110044	■ 037876	110057
Rc	1/4"	19	100	20	–	11	9	4	2	11.1	110043	■ 088230	110056
Rc	3/8"	19	110	20	–	12	9	4	2	14.5	110047	■ 095806	110059
Rc	1/2"	14	125	26	–	16	12	5	2	18	110042	■ 095807	110055
Rc	3/4"	14	140	26	–	20	16	5	2	23.5	110046	■ 095808	110058
Rc	1"	11	150	32	–	25	20	5	2	29.75	110039	■ 029535	110054

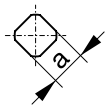
Cutting taps

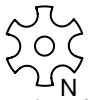
NPT

American standard taper pipe thread ASME B1.20.1 tapered 1:16

type 1 type 2







(number of flutes)

series	VARIO N	VARIO N TIN	VARIO HZ AZ TIN	AVANT VA15 VAP
model				
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	C / 2–3
thread tol.	–	–	–	–
shank tol.	h9	h9	h9	h9
thread depth	2xD	2xD	–	–
bore hole				
P	15–25	15–30	10–35	5–20
M			2–10	3–12
K		10–30	15–30	8–20
N	5–25	5–30	10–35	5–35
S				
H				

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
NPT	1/16"	27	80	13	30	8	6.2	3	1	6.15				107955
NPT	1/16"	27	80	13	–	6	4.9	4	**2**	6.15	104417	■ 006360		
NPT	1/8"	27	90	13	29	11	9	3	1	8.4			111349	
NPT	1/8"	27	90	13	29	11	9	4	1	8.4				107958
NPT	1/8"	27	90	13	–	7	5.5	4	**2**	8.4	104420	■ 104442		
NPT	1/4"	18	100	20	37	14	11	4	1	11.1				107957
NPT	1/4"	18	100	20	37	14	11	5	1	11.1			111348	
NPT	1/4"	18	100	20	–	11	9	4	**2**	11.1	104419	■ 006361		
NPT	3/8"	18	110	20	–	16	12	4	1	14.3				107961
NPT	3/8"	18	110	20	–	16	12	5	1	14.3			111351	
NPT	3/8"	18	110	20	–	12	9	4	**2**	14.3	104424	■ 006362		
NPT	1/2"	14	125	26	–	16	12	5	2	17.9	104418	■ 006363		
NPT	1/2"	14	125	26	–	18	14.4	5	2	17.9			111347	107956
NPT	3/4"	14	140	26	–	20	16	5	2	23.2	104423	■ 021913		
NPT	3/4"	14	140	26	–	22	18	5	2	23.2			111350	107960
NPT	1"	11.5	150	32	–	25	20	5	2	29	104414	■ 010330		
NPT	1"	11.5	150	32	–	28	22	5	2	29			111344	107952
NPT	1.1/4"	11.5	160	32	–	32	24	6	2	37.7	104416	■ 010333		107954
NPT	1.1/2"	11.5	180	32	–	36	29	6	2	44	104415	■ 010331		
NPT	1.1/2"	11.5	160	32	–	36	29	6	2	44				107953

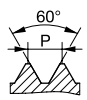
■ new

BASS TECHNIK FÜR GEWINDE

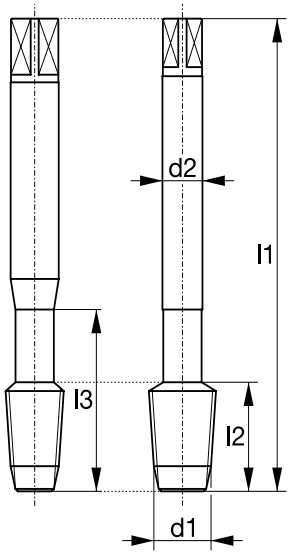
Cutting taps

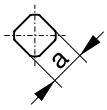
NPTF

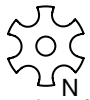
American standard taper pipe thread ASME B1.20.3 tapered 1:16



type 1 type 2







(number of flutes)

series	VARIO N	VARIO N TIN	AVANT VA15 VAP
model			
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	C / 2–3	C / 2–3
thread tol.	–	–	–
shank tol.	h9	h9	h9
thread depth	2xD	2xD	–
bore hole			
P	15–25	15–30	5–20
M			3–12
K		10–30	8–20
N	5–25	5–30	5–35
S			
H			

i For detailed cutting speeds please refer to the application table.

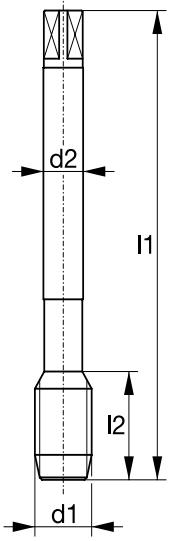
Ød1	P	l1	l2	l3	Ød2	a	N	type		identification number	
NPTF 1/16"	27	80	13	30	8	6.2	3	1	6.1		107973
NPTF 1/8"	27	90	13	29	11	9	4	1	8.4		107976
NPTF 1/8"	27	90	13	–	7	5.5	4	**2**	8.4	104433	■ 015207
NPTF 1/4"	18	100	20	37	14	11	4	1	11		107975
NPTF 1/4"	18	100	20	–	11	9	4	**2**	11	104432	■ 048298
NPTF 3/8"	18	110	20	–	16	12	4	1	14.3		107979
NPTF 3/8"	18	110	20	–	12	9	4	**2**	14.3	104436	■ 037506
NPTF 1/2"	14	125	26	–	16	12	5	2	17.6	104431	■ 048299
NPTF 1/2"	14	125	26	–	18	14.4	5	2	17.6		107974
NPTF 3/4"	14	140	26	–	20	16	5	2	23	104435	■ 048297
NPTF 3/4"	14	140	26	–	22	18	5	2	23		107978
NPTF 1"	11.5	150	32	–	28	22	5	2	29		107970

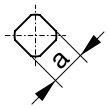
Cutting taps

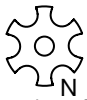
NPSM

American standard straight pipe thread ASME B1.20.1

type 2







(number of flutes)

series	**VARIO N**	**VARIO N TIN**		
model				
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	–	–		
shank tol.	h9	h9		
thread depth	2xD	2xD		
bore hole				
P	15–25	15–30		
M				
K		10–30		
N	5–25	5–30		
S				
H				

i For detailed cutting speeds please refer to the application table.

Ød$_1$			P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
NPSM	1/8"	–	27	90	18	–	7	5.5	3	2	9.1	109775	■ 096131
NPSM	1/4"	–	18	100	22	–	11	9	3	2	12	109774	■ 096132
NPSM	3/8"	–	18	100	22	–	12	9	3	2	15.5	109778	■ 096133
NPSM	1/2"	–	14	125	25	–	16	12	4	2	19	109773	■ 096134
NPSM	3/4"	–	14	140	28	–	20	16	4	2	24.5	109777	■ 096135

■ new

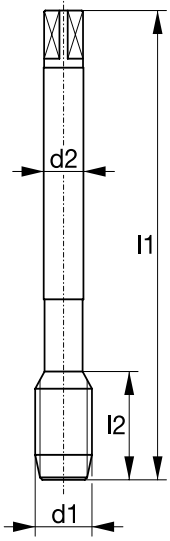
BASS TECHNIK FÜR GEWINDE

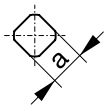
Cutting taps

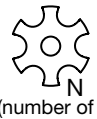
NPSF

Thread
ASME B1.20.3

type 2







(number of flutes)

series	**VARIO N**	**VARIO N TIN**		
model				
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	–	–		
shank tol.	h9	h9		
thread depth	2xD	2xD		
bore hole				
P	15–25	15–30		
M				
K		10–30		
N	5–25	5–30		
S				
H				

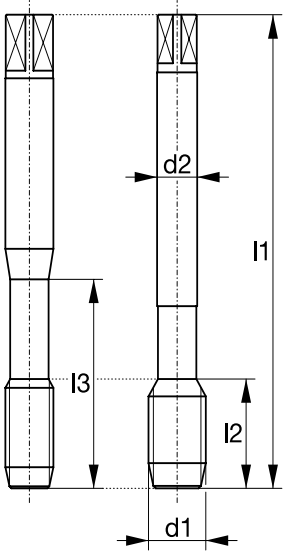
i For detailed cutting speeds please refer to the application table.

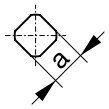
Ød$_1$			P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
NPSF	1/8"	–	27	90	18	–	7	5.5	3	2	8.7	108935	■ 022463
NPSF	1/4"	–	18	100	22	–	11	9	3	2	11.3	108934	■ 028926
NPSF	3/8"	–	18	100	22	–	12	9	3	2	14.75	108937	■ 090275
NPSF	1/2"	–	14	125	25	–	16	12	4	2	18.25	108933	■ 096137
NPSF	3/4"	–	14	140	28	–	20	16	4	2	23.5	108936	■ 052889

Roll taps

UNC — **Unified coarse thread ASME B1.1**

type 1 type 2





(number of polygones)

General dimensions
DIN ~ 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	**DURAMAX N**	**DURAMAX H**		
model	**TIN**	**BT**		
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	2BX	2BX		
shank tol.	h9	h6		
thread depth	3	3		
bore hole				
P	10–50	10–55		
M	4–12	4–15		
K				
N	10–40	10–60		
S	10–25	10–25		
H				

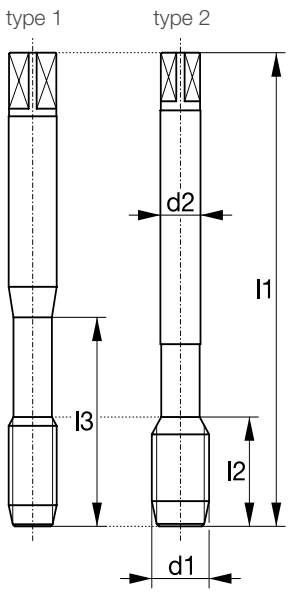
Ød$_1$	P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
UNC No4 –	40	56	10	18	3.5	2.7	4	1	2.55	■ 106622*	
UNC No6 –	32	56	11	20	4	3	4	1	3.15	■ 106624*	
UNC No8 –	32	63	12	21	4.5	3.4	4	1	3.8	■ 106625*	
UNC No10 –	24	70	14	25	6	4.9	5	1	4.35	106620*	066838*
UNC 1/4" –	20	80	16	30	7	5.5	5	1	5.8	106617*	066839*
UNC 5/16" –	18	90	18	35	8	6.2	5	1	7.3	106619	066840
UNC 3/8" –	16	100	20	39	10	8	5	1	8.8	106618	066841
UNC 7/16" –	14	100	22	–	8	6.2	5	2	10.3	106875	066843
UNC 1/2" –	13	110	24	–	9	7	6	2	11.8	106872	066844
UNC 9/16" –	12	110	25	–	11	9	6	2	13.35	■ 029665	
UNC 5/8" –	11	110	27	–	12	9	6	2	14.85	■ 037359	
UNC 3/4" –	10	125	32	–	14	11	7	2	17.8	■ 098418	
UNC 7/8" –	9	140	32	–	18	14.5	7	2	20.9	■ 098419	
UNC 1" –	8	160	36	–	18	14.5	8	2	23.9	■ 070488	

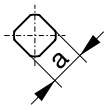
* with tip | ■ new

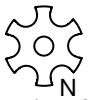
BASS TECHNIK FÜR GEWINDE

UNC

Unified coarse thread ASME B1.1







(number of flutes)

General dimensions
~DIN 371 / ~DIN 376

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

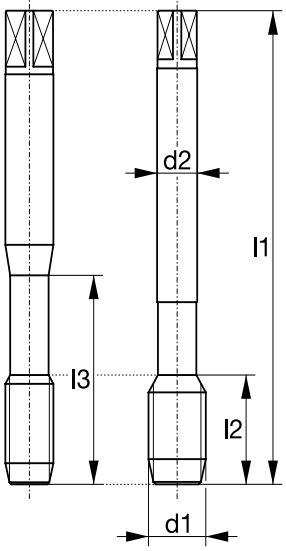
series	VARIANT VA	VARIANT VA	VARIO GG	AVANT TIH13
model	TIN	HL	TICN	TICN
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	B / 3–5.5	B / 3–5.5	C / 2–3	C / 2–3
thread tol.	2BX	2BX	2BX	3BX
shank tol.	h9	h9	h9	h6
thread depth	3xD	3xD	2xD	2.5xD
bore hole				
P	10–35	10–35		10–25
M	3–12	3–12		3–10
K	5–25	5–25	5–40	5–25
N	10–40	10–40	3–35	1–35
S	3–15			2–12
H				3–10

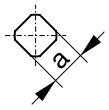
Ød1			P	l1	l2	l3	Ød2	a	N	type		identification number			
UNC	No2	–	56	45	9	14	2.8	2.1	2	1	1.85		■ 069365*		
UNC	No4	–	40	56	10	18	3.5	2.7	2	1	2.35		035006*		■ 098417*
UNC	No5	–	40	56	10	18	3.5	2.7	2	1	2.65		052275*		
UNC	No6	–	32	56	11	20	4	3	3	1	2.85		032247*		■ 042227*
UNC	No8	–	32	63	12	21	4.5	3.4	3	1	3.5		040512*		■ 098415*
UNC	No10	–	24	70	14	25	6	4.9	3	1	3.9	005222*	045660*		■ 098416*
UNC	No12	–	24	80	16	30	6	4.9	3	1	4.5		048939*		
UNC	1/4"	–	20	80	16	30	7	5.5	3	1	5.1	005223*	042477*	038709*	■ 050549*
UNC	5/16"	–	18	90	18	35	8	6.2	3	1	6.6	005224*	042478*	029297*	■ 050550
UNC	3/8"	–	16	100	20	39	10	8	3	1	8	005225	045663	025300	■ 098394
UNC	7/16"	–	14	100	22	–	8	6.2	3	2	9.4		048943		
UNC	1/2"	–	13	110	24	–	9	7	3	2	10.8	005226	042480	105293	■ 098393
UNC	9/16"	–	12	110	25	–	11	9	3	2	12.2		048942		
UNC	5/8"	–	11	110	27	–	12	9	3	2	13.5	005227	042125	017232	
UNC	3/4"	–	10	125	32	–	14	11	3	2	16.5	005228	045665	038710	
UNC	7/8"	–	9	140	32	–	18	14.5	4	2	19.5		042126	105298	
UNC	1"	–	8	160	36	–	18	14.5	4	2	22.25	005230	045666	038708	

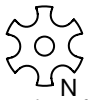
Cutting taps

UNC — **Unified coarse thread ASME B1.1**

type 1 type 2







(number of flutes)

General dimensions
~DIN 371 / ~DIN 376

series	**DOMINANT HZ38**	**DOMINANT HZ38 HL**	**DOMINANT VA45**	**DOMINANT VA45**
model				
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	C / 2–3
thread tol.	2B	2B	2BX	**3BX**
shank tol.	h9	h9	h9	h9
thread depth	2.5xD	2.5xD	3xD	3xD
bore hole				
P	5–20	10–35	5–20	5–20
M		3–12		
K		5–25		
N	4–25		10–25	10–25
S				
H		4–10		

i For detailed cutting speeds please refer to the application table.

Ød$_1$			P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
UNC	No2	–	56	45	9	14	2.8	2.1	2	1	1.85	107581*	■ 096190*	024068*	
UNC	No3	–	48	50	9	14	2.8	2.1	2	1	2.1	107582*	■ 096191*	024949*	
UNC	No4	–	40	56	7	18	3.5	2.7	3	1	2.35	107583*	■ 096193*	024950*	024961*
UNC	No5	–	40	56	7	18	3.5	2.7	3	1	2.65	107584*	■ 096194*	024951*	024962*
UNC	No6	–	32	56	7	20	4	3	3	1	2.85	107585*	■ 086656*	024952*	024963*
UNC	No8	–	32	63	8	21	4.5	3.4	3	1	3.5	107586*	■ 096196*	024953*	024964*
UNC	No10	–	24	70	9	25	6	4.9	3	1	3.9		048946*	024954*	024965*
UNC	No12	–	24	80	10	30	6	4.9	3	1	4.5		048947*		
UNC	1/4"	–	20	80	10	30	7	5.5	3	1	5.1	107566*	048945*	024956*	024967*
UNC	5/16"	–	18	90	13	35	8	6.2	3	1	6.6	107578	048948	024957	024968
UNC	3/8"	–	16	100	15	39	10	8	3	1	8	107568	048164	024958	024969
UNC	7/16"	–	14	100	18	–	8	6.2	3	2	9.4	108241	048950	024970	
UNC	1/2"	–	13	110	18	–	9	7	3	2	10.8	108231	048102		
UNC	1/2"	–	13	110	18	–	9	7	4	2	10.8			024971	
UNC	9/16"	–	12	110	20	–	11	9	4	2	12.2	108243	048951	024972	
UNC	5/8"	–	11	110	20	–	12	9	4	2	13.5	108240	048166	024973	
UNC	3/4"	–	10	125	25	–	14	11	4	2	16.5	108234	048167	024974	
UNC	7/8"	–	9	140	25	–	18	14.5	4	2	19.5	108242	048949	024975	
UNC	1"	–	8	160	30	–	18	14.5	4	2	22.25	108224	023449	024976	
UNC	1.1/8"	–	7	180	35	–	22	18	4	2	25			024977	
UNC	1.1/4"	–	7	180	35	–	22	18	4	2	28			024978	

* with tip | ■ new

BASS TECHNIK FÜR GEWINDE

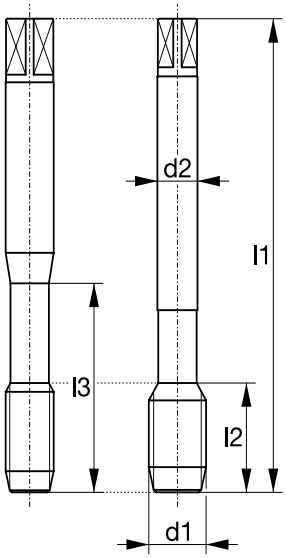
Cutting taps

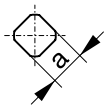
UNC

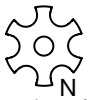
Unified coarse thread ASME B1.1

series			**DOMINANT VA45**	
model				
material			HSSE-PM	

type 1 type 2







(number of flutes)

General dimensions
~DIN 376

chamfer			C / 2–3	
thread tol.			2BX	
shank tol.			h9	
thread depth			3xD	
bore hole				
P			5–20	
M				
K				
N			10–25	
S				
H				

i For detailed cutting speeds please refer to the application table.

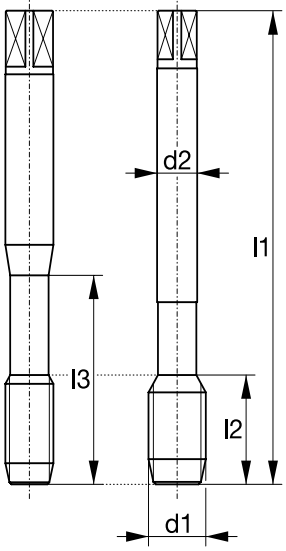
Ød$_1$	P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
UNC 1.3/8" –	6	200	40	–	28	22	4	2	30.75	024979
UNC 1.1/2" –	6	200	40	–	28	22	4	2	34	024980

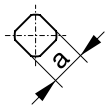
Cutting taps

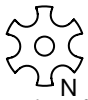
UNC

Unified coarse thread ASME B1.1

type 1 type 2







(number of flutes)

General dimensions
~DIN 371 / ~DIN 376

series	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45**
model	**TIN**	**HL**	**HL**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	C / 2–3	C / 2–3
thread tol.	2BX	2BX	**3BX**
shank tol.	h9	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P	10–35	10–35	10–35
M	3–12	3–12	3–12
K		5–30	5–30
N	10–40	15–40	15–40
S	8–15	3–15	3–15
H	5–8	5–8	5–8

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
UNC	No2 –	56	45	9	14	2.8	2.1	2	1	1.85		■ 107570*	
UNC	No3 –	48	50	9	14	2.8	2.1	2	1	2.1		■ 096315*	
UNC	No4 –	40	56	7	18	3.5	2.7	3	1	2.35		■ 055596*	■ 019633*
UNC	No5 –	40	56	7	18	3.5	2.7	3	1	2.65		■ 096317*	■ 096318*
UNC	No6 –	32	56	7	20	4	3	3	1	2.85		■ 044704*	■ 024945*
UNC	No8 –	32	63	8	21	4.5	3.4	3	1	3.5		■ 044964*	■ 052218*
UNC	No10 –	24	70	9	25	6	4.9	3	1	3.9	021499*	■ 028946*	■ 028947*
UNC	No12 –	24	80	10	30	6	4.9	3	1	4.6		■ 098510*	
UNC	1/4" –	20	80	10	30	7	5.5	3	1	5.1	021500*	021509*	■ 096321*
UNC	5/16" –	18	90	13	35	8	6.2	3	1	6.6	021501	021513	■ 028835
UNC	3/8" –	16	100	15	39	10	8	3	1	8	021502	021514	■ 028826
UNC	7/16" –	14	100	18	–	8	6.2	3	2	9.4	021503	021515	
UNC	1/2" –	13	110	18	–	9	7	4	2	10.8	021504	021516	
UNC	9/16" –	12	110	20	–	11	9	4	2	12.2		■ 012485	
UNC	5/8" –	11	110	20	–	12	9	4	2	13.5	021506	021517	
UNC	3/4" –	10	125	25	–	14	11	4	2	16.5	021507	021518	
UNC	7/8" –	9	140	25	–	18	14.5	4	2	19.5		■ 106317	
UNC	1" –	8	160	30	–	18	14.5	4	2	22.25	024981	038378	
UNC	1.1/8" –	7	180	35	–	22	18	4	2	25		■ 028962	
UNC	1.1/4" –	7	180	35	–	22	18	4	2	28		■ 107927	
UNC	1.3/8" –	6	200	40	–	28	22	4	2	30.75		■ 094135	

* with tip | ■ new

BASS TECHNIK FÜR GEWINDE

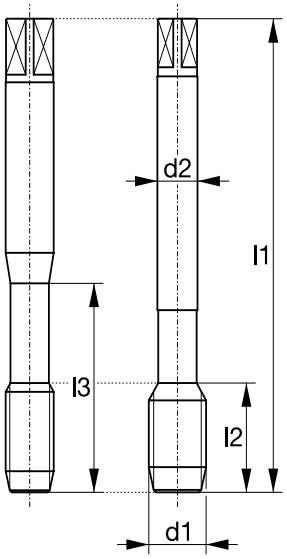
Cutting taps

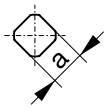
UNC

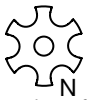
Unified coarse thread ASME B1.1

		DOMINANT VA45		
series				
model		HL		
material		HSSE-PM		

type 1 type 2







(number of flutes)

General dimensions
~DIN 376

chamfer		C / 2–3		
thread tol.		2BX		
shank tol.		h9		
thread depth		3xD		
bore hole				
P		10–35		
M		3–12		
K		5–30		
N		15–40		
S		3–15		
H		5–8		

i For detailed cutting speeds please refer to the application table.

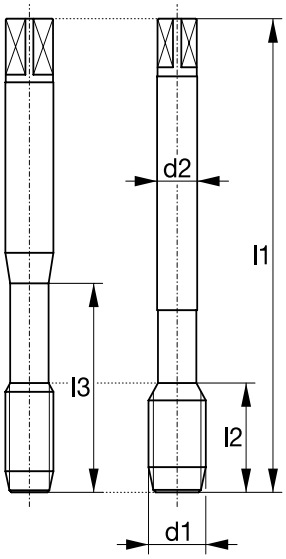
Ød$_1$	P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
UNC 1.1/2" –	6	200	40	–	28	22	4	2	34	■ 046401

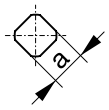
Roll taps

UNF

Unified fine thread ASME B1.1

type 1 type 2





(number of polygones)

General dimensions
~DIN 2174

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	**DURAMAX N**	**DURAMAX H**		
model	**TIN**	**BT**		
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	2BX	2BX		
shank tol.	h9	h6		
thread depth	3xD	3xD		
bore hole				
P	10–50	10–55		
M	4–12	4–15		
K				
N	10–40	10–60		
S	10–25	10–25		
H				

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
UNF	No4 –	48	56	10	18	3.5	2.7	4	1	2.6	■ 004463*	
UNF	No6 –	40	56	11	20	4	3	4	1	3.2	■ 011015*	
UNF	No8 –	36	63	12	21	4.5	3.4	4	1	3.85	■ 107170*	
UNF	No10 –	32	70	14	25	6	4.9	5	1	4.45	106654*	066832*
UNF	1/4" –	28	80	16	30	7	5.5	5	1	5.9	106650*	066833*
UNF	5/16" –	24	90	18	35	8	6.2	5	1	7.45	106653	066834
UNF	3/8" –	24	90	18	39	10	8	5	1	9.05	106652	066835
UNF	7/16" –	20	100	22	–	8	6.2	5	2	10.55	106891	066836
UNF	1/2" –	20	100	22	–	9	7	6	2	12.15	106888	066837
UNF	9/16" –	18	100	22	–	11	9	6	2	13.65	■ 104994	
UNF	5/8" –	18	100	22	–	12	9	6	2	15.25	■ 098413	
UNF	3/4" –	16	110	25	–	14	11	7	2	18.35	■ 079355	
UNF	7/8" –	14	125	25	–	18	14.5	7	2	21.4	■ 030214	
UNF	1" –	12	140	28	–	18	14.5	8	2	24.45	■ 044494	

* with tip | ■ new

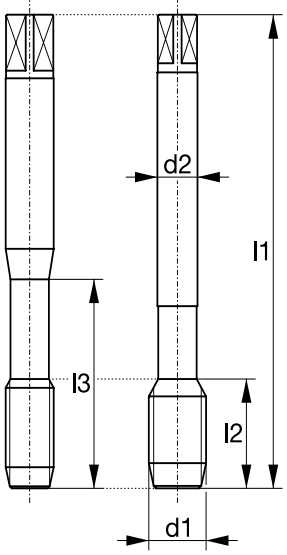
BASS TECHNIK FÜR GEWINDE

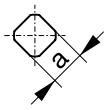
Cutting taps

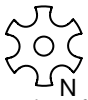
UNF

Unified fine thread ASME B1.1

type 1 type 2







(number of flutes)

General dimensions
~DIN 371 / ~DIN 374

series	**VARIANT VA**	**VARIANT VA**		
model	**TIN**	**HL**		
material	HSSE-PM	HSSE-PM		
				
chamfer	B / 3–5.5	B / 3–5.5		
thread tol.	2BX	2BX		
shank tol.	h9	h9		
thread depth	3xD	3xD		
bore hole				
P	10–35	10–35		
M	3–12	3–12		
K	5–25	5–25		
N	10–40	10–40		
S	3–15			
H				

i For detailed cutting speeds please refer to the application table.

Ød$_1$			P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
UNF	No2	–	64	45	9	9	2.8	2.1	2	1	1.85		066825*
UNF	No3	–	56	50	9	9	2.8	2.1	2	1	2.15		066826*
UNF	No4	–	48	56	10	18	3.5	2.7	3	1	2.4		066827*
UNF	No5	–	44	56	10	18	3.5	2.7	3	1	2.7		066828*
UNF	No6	–	40	56	11	20	4	3	3	1	2.95		066829*
UNF	No8	–	36	63	12	21	4.5	3.4	3	1	3.5		066830*
UNF	No10	–	32	70	14	25	6	4.9	3	1	4.1	005245*	045675*
UNF	No12	–	28	80	16	30	6	4.9	3	1	4.6		048952*
UNF	1/4"	–	28	80	16	30	7	5.5	3	1	5.5	005244*	042481*
UNF	5/16"	–	24	90	18	35	8	6.2	3	1	6.9	005246*	042483*
UNF	3/8"	–	24	90	18	39	10	8	3	1	8.5	005247	033290
UNF	7/16"	–	20	100	22	–	8	6.2	3	2	9.9	005248	033289
UNF	1/2"	–	20	100	22	–	9	7	3	2	11.5	005249	042484
UNF	9/16"	–	18	100	22	–	11	9	3	2	12.9		048963
UNF	5/8"	–	18	100	22	–	12	9	4	2	14.5	005250	042486
UNF	3/4"	–	16	110	25	–	14	11	4	2	17.5	005251	045667
UNF	7/8"	–	14	125	25	–	18	14.5	4	2	20.4		048962
UNF	1"	–	12	140	28	–	18	14.5	4	2	23.25	005252	048953

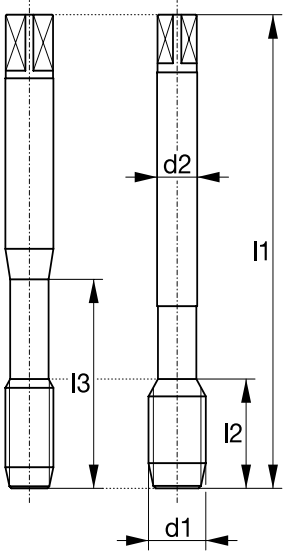
* with tip

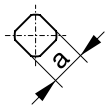
Cutting taps

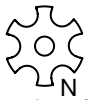
UNF

Unified fine thread ASME B1.1

type 1 type 2







(number of flutes)

General dimensions
~DIN 371 / ~DIN 374

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	**VARIO GG**	**AVANT TIH13**		
model	**TICN**	**TICN**		
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	2BX	**3BX**		
shank tol.	h9	h6		
thread depth	2xD	2.5xD		
bore hole				
P		10–25		
M		3–10		
K	5–40	5–25		
N	3–35	1–35		
S		2–12		
H		3–10		

Ød$_1$	P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
UNF No4 –	48	56	10	–	3.5	2.7	3	1	2.4	■ 098407*
UNF No6 –	40	56	11	–	4	3	3	1	2.95	■ 098405*
UNF No8 –	36	63	12	–	4.5	3.4	3	1	3.5	■ 032444*
UNF No10 –	32	70	14	–	6	4.9	3	1	4.1	■ 013420*
UNF 1/4" –	28	80	16	30	7	5.5	3	1	5.5	035872* ■ 013421*
UNF 5/16" –	24	90	18	35	8	6.2	3	1	6.9	■ 013422
UNF 5/16" –	24	90	18	35	8	6.2	4	1	6.9	103962
UNF 3/8" –	24	90	18	39	10	8	3	1	8.5	■ 018207
UNF 3/8" –	24	90	18	39	10	8	4	1	8.5	108485
UNF 1/2" –	20	100	22	–	9	7	3	2	11.5	■ 098401
UNF 1/2" –	20	100	22	–	9	7	4	2	11.5	105302
UNF 5/8" –	18	100	22	–	12	9	4	2	14.5	038711
UNF 3/4" –	16	110	25	–	14	11	4	2	17.5	108486
UNF 7/8" –	14	125	25	–	18	14.5	5	2	20.4	015962

* with tip | ■ new

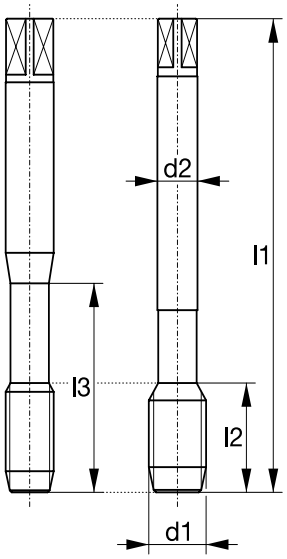
BASS TECHNIK FÜR GEWINDE

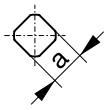
Cutting taps

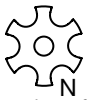
UNF

Unified fine thread ASME B1.1

type 1 type 2







(number of flutes)

General dimensions
~DIN 371 / ~DIN 374

series	DOMINANT HZ38	DOMINANT HZ38 HL	DOMINANT VA45	DOMINANT VA45
model				
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	C / 2–3
thread tol.	2B	2B	2BX	**3BX**
shank tol.	h9	h9	h9	h9
thread depth	2.5xD	2.5xD	3xD	3xD
bore hole				
P	5–20	10–35	5–20	5–20
M		3–12		
K		5–25		
N	4–25		10–25	10–25
S				
H		4–10		

i For detailed cutting speeds please refer to the application table.

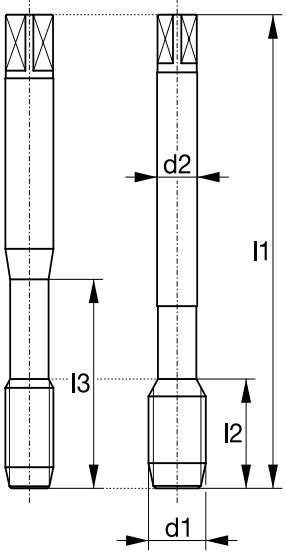
Ød1			P	l1	l2	l3	Ød2	a	N	type		identification number			
UNF	No3	–	56	50	9	14	2.8	2.1	2	1	2.15			025017*	025026*
UNF	No4	–	48	56	7	18	3.5	2.7	3	1	2.4			025018*	025027*
UNF	No5	–	44	56	7	18	3.5	2.7	3	1	2.7			025019*	025028*
UNF	No6	–	40	56	7	20	4	3	3	1	2.95			025020*	025029*
UNF	No8	–	36	63	8	21	4.5	3.4	3	1	3.5			025021*	025030*
UNF	No10	–	32	70	9	25	6	4.9	3	1	4.1	107619*	048964*	025022*	025031*
UNF	1/4"	–	28	80	10	30	7	5.5	3	1	5.5	107598*	048965*	025023*	025032*
UNF	5/16"	–	24	90	13	35	8	6.2	3	1	6.9	107614	048967	025024	025033
UNF	3/8"	–	24	90	12	39	10	8	3	1	8.5	107601	048966	025025	025034
UNF	7/16"	–	20	100	18	–	8	6.2	3	2	9.9	108265	048977	025035	
UNF	1/2"	–	20	100	15	–	9	7	4	2	11.5	108258	048969	025036	
UNF	9/16"	–	18	100	15	–	11	9	4	2	12.9	108267	048978	025037	
UNF	5/8"	–	18	100	15	–	12	9	4	2	14.5	108264	048975	025038	
UNF	3/4"	–	16	110	18	–	14	11	4	2	17.5	108259	048970	025039	
UNF	7/8"	–	14	125	18	–	18	14.5	4	2	20.4	108266	048976	025040	
UNF	1"	–	12	140	20	–	18	14.5	4	2	23.25	108253	048968	025041	
UNF	1.1/8"	–	12	150	22	–	22	18	4	2	26.5			025042	
UNF	1.1/4"	–	12	150	22	–	22	18	5	2	29.5			025043	
UNF	1.3/8"	–	12	170	24	–	28	22	6	2	32.75			025044	
UNF	1.1/2"	–	12	170	24	–	28	22	6	2	36			025045	

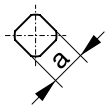
Cutting taps

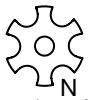
UNF

Unified fine thread ASME B1.1

type 1 type 2







(number of flutes)

General dimensions
~DIN 371 / ~DIN 374

series	**DOMINANT VA45**	**DOMINANT VA45**	**DOMINANT VA45**
model	**TIN**	**HL**	**HL**
material	HSSE-PM	HSSE-PM	HSSE-PM
			
chamfer	C / 2–3	C / 2–3	C / 2–3
thread tol.	2BX	2BX	**3BX**
shank tol.	h9	h9	h9
thread depth	3xD	3xD	3xD
bore hole			
P	10–35	10–35	10–35
M	3–12	3–12	3–12
K		5–30	5–30
N	10–40	15–40	15–40
S	8–15	3–15	3–15
H	5–8	5–8	5–8

i For detailed cutting speeds please refer to the application table.

Ød$_1$			P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number		
UNF	No2	–	64	45	3.6	14	2.8	2.1	2	1	1.85		■ 098509*	
UNF	No3	–	56	50	9	14	2.8	2.1	2	1	2.15		■ 059459*	■ 096451*
UNF	No4	–	48	56	7	18	3.5	2.7	3	1	2.4		■ 096448*	■ 019978*
UNF	No5	–	44	56	7	18	3.5	2.7	3	1	2.7		■ 096449*	■ 035079*
UNF	No6	–	40	56	7	20	4	3	3	1	2.95		■ 096450*	■ 049124*
UNF	No8	–	36	63	8	21	4.5	3.4	3	1	3.5		■ 030158*	■ 049125*
UNF	No10	–	32	70	9	25	6	4.9	3	1	4.1	021537*	028948*	■ 058263*
UNF	No12	–	28	80	8.5	30	6	4.9	3	1	4.6		■ 098508*	
UNF	1/4"	–	28	80	10	30	7	5.5	3	1	5.5	021539*	021547*	■ 026172*
UNF	5/16"	–	24	90	13	35	8	6.2	3	1	6.9	021540	021548	■ 105472
UNF	3/8"	–	24	90	12	39	10	8	3	1	8.5	021541	027334	■ 021549
UNF	7/16"	–	20	100	18	–	8	6.2	3	2	9.9	021542	031214	
UNF	1/2"	–	20	100	15	–	9	7	4	2	11.5	021543	029009	
UNF	9/16"	–	18	100	15	–	11	9	4	2	12.9		■ 062011	
UNF	5/8"	–	18	100	15	–	12	9	4	2	14.5	021544	021553	
UNF	3/4"	–	16	110	18	–	14	11	4	2	17.5	021545	107460	
UNF	7/8"	–	14	125	18	–	18	14.5	4	2	20.4	025046	038380	
UNF	1"	–	12	140	20	–	18	14.5	4	2	23.25	025047	038379	
UNF	1.1/8"	–	12	150	22	–	22	18	4	2	26.5		■ 085327	
UNF	1.1/4"	–	12	150	22	–	22	18	5	2	29.5		■ 078641	
UNF	1.3/8"	–	12	170	24	–	28	22	6	2	32.75		■ 036073	

* with tip | ■ new

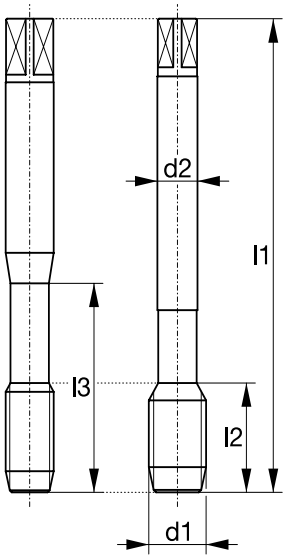
BASS TECHNIK FÜR GEWINDE

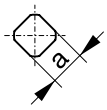
Cutting taps

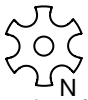
UNF — **Unified fine thread ASME B1.1**

series		**DOMINANT VA45**		
model		**HL**		
material		HSSE-PM		

type 1 type 2







(number of flutes)

chamfer		C / 2–3		
thread tol.		2BX		
shank tol.		h9		
thread depth		3xD		
bore hole				
P		10–35		
M		3–12		
K		5–30		
N		15–40		
S		3–15		
H		5–8		

General dimensions
~DIN 374

i For detailed cutting speeds please refer to the application table.

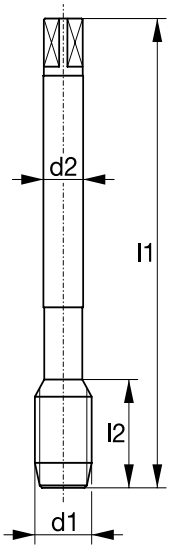
Ød$_1$	P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
UNF 1.1/2" –	12	170	24	–	28	22	6	2	36	■ 039938

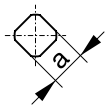
Cutting taps

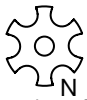
UNEF

Unified extra fine thread ASME B1.1

type 2







(number of flutes)

General dimensions
~DIN 374

series	**VARIANT N**	**VARIANT N TIN**	**VARIO N**	**VARIO N TIN**
model				
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	B / 3–5.5	B / 3–5.5	C / 2–3	C / 2–3
thread tol.	2B	2B	2B	2B
shank tol.	h9	h9	h9	h9
thread depth	3xD	3xD	2xD	2xD
bore hole				
P	10–20	20–30	15–25	15–30
M				
K				10–30
N	10–25	10–40	5–25	5–30
S		8–15		
H				

i For detailed cutting speeds please refer to the application table.

Ød$_1$	P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
UNEF 3/8" –	32	90	18	–	7	5.5	3	2	8.7	109963	■ 076497	109930	■ 074281
UNEF 7/16" –	28	90	18	–	8	6.2	3	2	10.2	109966	■ 095707		
UNEF 7/16" –	28	90	18	–	8	6.2	4	2	10.2			109933	■ 076968
UNEF 1/2" –	28	100	22	–	9	7	4	2	11.8	109960	■ 095709	109926	■ 046271
UNEF 9/16" –	24	100	22	–	11	9	4	2	13.2	109969	■ 095710	109935	■ 096138
UNEF 5/8" –	24	100	22	–	12	9	4	2	14.8	109965	■ 095712	109932	■ 112805
UNEF 11/16" –	24	110	20	–	14	11	4	2	16.4			109925	■ 096142
UNEF 3/4" –	20	110	25	–	14	11	4	2	17.8			109929	■ 096143
UNEF 13/16" –	20	125	25	–	16	12	4	2	19.4			109927	■ 096144
UNEF 7/8" –	20	125	25	–	18	14.5	4	2	21			109934	■ 096146
UNEF 1" –	20	140	28	–	18	14.5	4	2	24.15			109914	■ 096147
UNEF 1.1/16" –	18	140	28	–	20	16	4	2	25.6			109915	■ 096149
UNEF 1.1/8" –	18	150	28	–	22	18	4	2	27.2			109918	■ 096151
UNEF 1.1/4" –	18	150	28	–	22	18	5	2	30.35			109917	■ 096152
UNEF 1.5/16" –	18	170	30	–	28	22	6	2	31.95			109922	■ 034627
UNEF 1.3/8" –	18	170	30	–	28	22	6	2	33.5			109921	■ 096155
UNEF 1.1/2" –	18	170	30	–	28	22	6	2	36.7			109916	■ 096156

■ new

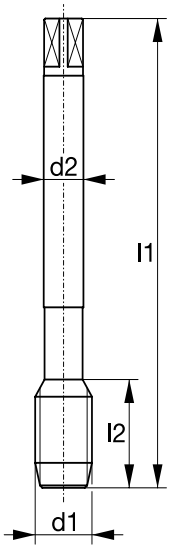
BASS TECHNIK FÜR GEWINDE

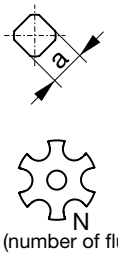
Cutting taps

UN

Unified thread ASME B1.1 8 thread series

type 2





(number of flutes)

General dimensions
~DIN 374

series	**AVANT H15**	**AVANT H15 TICN**	**DOMINANT HZ38**	**DOMINANT HZ38 HL**
model				
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	C / 2–3	C / 2–3	C / 2–3	C / 2–3
thread tol.	2B	2B	2B	2B
shank tol.	h9	h9	h9	h9
thread depth	2xD	2xD	3xD	3xD
bore hole				
P	5–15	10–35	5–20	10–35
M				3–12
K		5–30		5–25
N	5–35	8–35	4–25	
S				
H		4–10		4–10

i For detailed cutting speeds please refer to the application table.

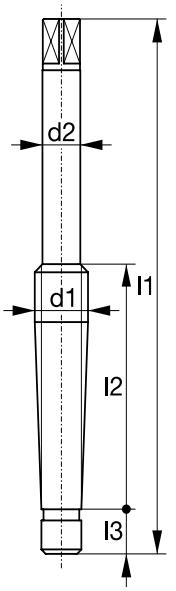
Ød1	P	l1	l2	l3	Ød2	a	N	type		identification number	
UN 1.1/8" –	8	180	35	–	22	18	4	2	25.4		005264 ■ 052416
UN 1.1/8" –	8	180	40	–	22	18	4	2	25.4	108003 ■ 018234	
UN 1.1/4" –	8	180	35	–	22	18	4	2	28.5		005265 ■ 039337
UN 1.1/4" –	8	180	40	–	22	18	4	2	28.5	108002 ■ 018235	
UN 1.3/8" –	8	200	35	–	28	22	5	2	31.8		005266 ■ 066172
UN 1.3/8" –	8	200	40	–	28	22	5	2	31.8	108006 ■ 111117	
UN 1.1/2" –	8	200	35	–	28	22	5	2	35		005267 ■ 050130
UN 1.1/2" –	8	200	40	–	28	22	5	2	35	108001 ■ 018233	
UN 1.5/8" –	8	200	35	–	32	24	5	2	38.1		005268 ■ 049892
UN 1.3/4" –	8	200	35	–	36	29	6	2	41.3		005269 ■ 055069
UN 1.7/8" –	8	225	35	–	36	29	6	2	44.5		005270 ■ 049472
UN 2" –	8	225	35	–	40	32	6	2	47.7		005271 ■ 096284

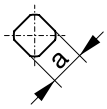
Cutting taps

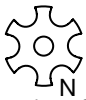
Tr

Metric ISO trapezoidal thread DIN 103

type 2







(number of flutes)

series	**AVANT H05**	**AVANT H05**		
model	**LSP**	**RSP LH**		
material	HSSE-PM	HSSE-PM		
				
chamfer	–	–		
thread tol.	7H	7H		
shank tol.	h9	h9		
thread depth	–	–		
bore hole				
P	5–15	5–15		
M				
K				
N	10–25	10–25		
S				
H				

i For detailed cutting speeds please refer to the application table.

Ød$_1$			P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
Tr	10	x	2	135	60	8	7	5.5	3	2	8.2	107016	107041
Tr	12	x	3	175	90	12	8	6.2	3	2	9.2	107019	
Tr	14	x	3	180	90	12	10	8	3	2	11.25	107021	107043
Tr	14	x	4	215	120	14	10	8	3	2	10.5	107022	
Tr	16	x	4	220	120	14	11	9	3	2	12.25	107025	107045
Tr	18	x	4	225	120	14	12	9	3	2	14.25	107027	107046
Tr	20	x	4	230	120	14	14	11	3	2	16.25	107029	107047
Tr	22	x	5	265	150	18	16	12	3	2	17.25	107031	107049
Tr	24	x	5	275	150	18	18	14.5	3	2	19.25	107034	107050
Tr	28	x	5	285	150	18	22	18	3	2	23.25	107036	
Tr	30	x	6	320	180	21	22	18	4	2	24.25	107037	107052

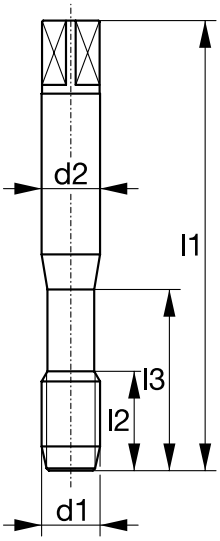
BASS TECHNIK FÜR GEWINDE

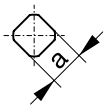
Cutting taps

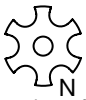
Rd

Round thread
DIN 405

type 1







(number of flutes)

series	**VARIO N**	**VARIO N TIN**		
model				
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.	7H	7H		
shank tol.	h9	h9		
thread depth	2xD	2xD		
bore hole				
P	15–25	15–30		
M				
K		10–30		
N	5–25	5–30		
S				
H				

i For detailed cutting speeds please refer to the application table.

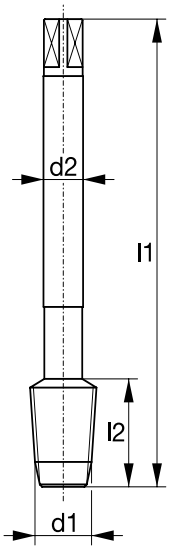
Ød$_1$			P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
Rd	10	x	1/10	110	22	49	9	7	3	1	8	110150	■ 096157
Rd	12	x	1/10	110	25	52	11	9	3	1	10	110151	■ 033286
Rd	14	x	1/8	110	27	–	12	9	3	1	11.5	110152	■ 042167
Rd	16	x	1/8	125	32	–	14	11	3	1	13.5	110153	■ 009652

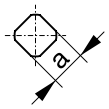
Cutting taps

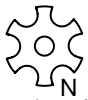
W

Tapered thread for gas cylinder valves DIN EN ISO 11363-1 / DIN 477

type 2







(number of flutes)

series	**VARIO N**	**VARIO N**		
model				
material	HSSE-PM	HSSE-PM		
				
chamfer	C / 2–3	C / 2–3		
thread tol.				
shank tol.	h9	h9		
thread depth	2xD	2xD		
bore hole				
P	15–25	15–25		
M				
K				
N	5–25	5–25		
S				
H				

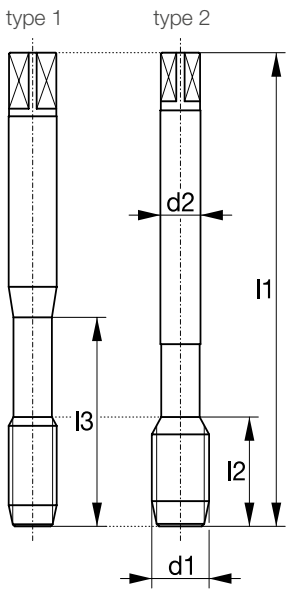
i For detailed cutting speeds please refer to the application table.

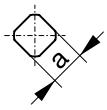
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
17E / W	19.8 –	14	95	27	–	16	12	4	2	14.7	110003
W	21.8 –	14	125	25	–	18	14.5	4	2	19.75	110007
W	24.32 –	14	140	28	–	18	14.5	4	2	22.25	110008
25E / W	28.8 –	14	132	33.5	–	22	18	5	2	22.7	110004
W	31.3 –	14	132	33.5	–	25	20	5	2	25.2	110005

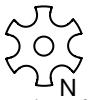
Cutting taps

BSW

British standard Whitworth thread BS 84







(number of flutes)

series	**VARIANT H**	**VARIANT H TIN**		
model				
material	HSSE-PM	HSSE-PM		
				
chamfer	B / 3–5.5	B / 3–5.5		
thread tol.	med.	med.		
shank tol.	h9	h9		
thread depth	3xD	3xD		
bore hole				
P	5–20	10–35		
M		3–12		
K		10–25		
N	6–12	10–35		
S				
H				

i For detailed cutting speeds please refer to the application table.

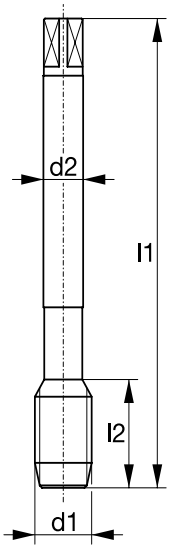
Ød$_1$			P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
BSW	1/4"	–	20	80	16	30	7	5.5	3	1	5.1	108430*	■ 095714*
BSW	5/16"	–	18	90	18	35	8	6.2	3	1	6.5	108435*	■ 095719*
BSW	3/8"	–	16	100	20	39	10	8	3	1	7.9	108434	■ 035082
BSW	1/2"	–	12	110	24	–	9	7	3	2	10.5	108635	■ 112409
BSW	5/8"	–	11	110	27	–	12	9	3	2	13.4	108637	■ 112408
BSW	3/4"	–	10	125	32	–	14	11	3	2	16.4	108636	■ 095787
BSW	7/8"	–	9	140	32	–	18	14.5	4	2	19.25	108638	■ 095788
BSW	1"	–	8	160	36	–	18	14.5	4	2	22	108634	■ 095789

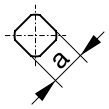
Cutting taps

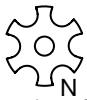
Pg

Steel Conduit Thread DIN 40430

type 2







(number of flutes)

General dimensions
DIN 2184-2

series	**VARIO N**			
model				
material	HSSE			
				
chamfer	C / 2–3			
thread tol.	–			
shank tol.	h9			
thread depth	2xD			
bore hole				
P	15–25			
M				
K				
N	5–25			
S				
H				

i For detailed cutting speeds please refer to the application table.

Ød$_1$			P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
Pg	7	–	20	70	22	–	9	7	4	2	11.4	■ 097875
Pg	9	–	18	70	22	–	12	9	4	2	13.9	■ 097877
Pg	11	–	18	80	22	–	14	11	4	2	17.3	■ 097878
Pg	13.5	–	18	80	22	–	16	12	4	2	19.1	■ 097879
Pg	16	–	18	80	22	–	18	14.5	4	2	21.25	■ 097885
Pg	21	–	16	90	22	–	22	18	4	2	27	■ 097886
Pg	29	–	16	100	25	–	28	22	6	2	35.6	■ 097887

■ new

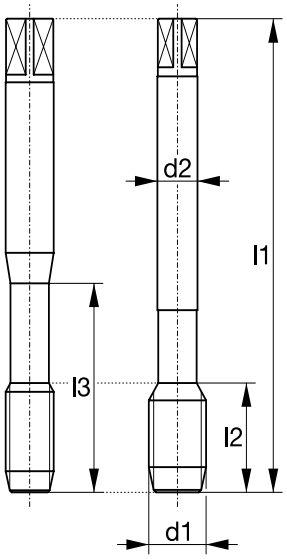
BASS TECHNIK FÜR GEWINDE

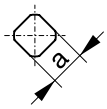
Roll taps

EG M

STI Metric ISO thread DIN 8140

type 1 type 2





(number of polygones)

General dimensions
DIN 40435

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

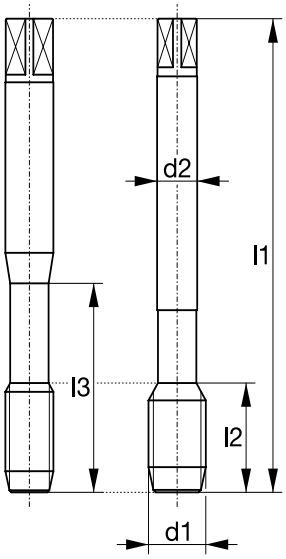
series	**DURAMAX H**	**DURAMAX GAL**	
model	**TIN**	**MKR AK BT**	
material	HSSE-PM	VHM	
			
chamfer	**E / 1.5–2**	**E / 1.5–2**	
thread tol.	6HX mod	6HX mod	
shank tol.	h6	h6	
thread depth	3xD	3xD	
bore hole			
P	10–50	15–60	
M	4–12	10–25	
K			
N	10–40	25–80	
S	10–25	12–35	
H			

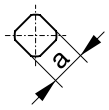
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
EG M	3	0.5	63	8	21	4.5	3.4	4	1	3.4	081974	
EG M	3.5	0.6	70	9	25	6	4.9	4	1	4	081975	
EG M	4	0.7	70	14	25	6	4.9	5	1	4.55	081978	
EG M	5	0.8	80	14	30	6	4.9	5	1	5.65	081979	
EG M	6	1	90	13	35	8	6.2	5	1	6.8		081877
EG M	6	1	90	18	35	8	6.2	5	1	6.8	081980	
EG M	8	1.25	100	15	39	10	8	5	1	9		081878
EG M	8	1.25	100	20	39	10	8	5	1	9	081981	
EG M	10	1.5	100	15	–	9	7	5	2	11.2		081879
EG M	10	1.5	100	22	–	9	7	5	2	11.2	076937	
EG M	12	1.75	110	25	–	11	9	6	2	13.4	081983	
EG M	16	2	125	32	–	14	11	7	2	17.6	081984	

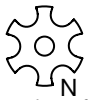
EG M

STI Metric ISO thread DIN 8140

type 1 type 2







(number of flutes)

General dimensions
DIN 40435

series	**VARIANT VA**	**DOMINANT VA45**		
model	**HL**	**HL**		
material	HSSE-PM	HSSE-PM		
				
chamfer	B / 3–5.5	**E / 1.5–2**		
thread tol.	6HX mod	6HX mod		
shank tol.	h9	h9		
thread depth	3xD	3xD		
bore hole				
P	10–35	10–35		
M	3–12	3–12		
K	5–25	5–30		
N	10–40	15–40		
S		3–15		
H		5–8		

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
EG M	2	0.4	50	9	14	2.8	2.1	2	1	2.1	■ 098614*	025654
EG M	2.5	0.45	56	7	18	3.5	2.7	3	1	2.65		025655
EG M	2.5	0.45	56	11	18	3.5	2.7	3	1	2.65	■ 098613*	
EG M	3	0.5	63	8	21	4.5	3.4	3	1	3.15		025658
EG M	3	0.5	63	13	21	4.5	3.4	3	1	3.15	■ 098611*	
EG M	3.5	0.6	70	9	25	6	4.9	3	1	3.7		025659
EG M	4	0.7	70	9	25	6	4.9	3	1	4.2		025660
EG M	4	0.7	70	16	25	6	4.9	3	1	4.2	■ 098608*	
EG M	5	0.8	80	10	30	6	4.9	3	1	5.25		025661
EG M	5	0.8	80	19	30	6	4.9	3	1	5.25	■ 083466*	
EG M	6	1	90	13	35	8	6.2	3	1	6.3		025663
EG M	6	1	90	22	35	8	6.2	3	1	6.3	■ 074474*	
EG M	8	1.25	100	15	39	10	8	3	1	8.4		025664
EG M	8	1.25	100	24	39	10	8	3	1	8.4	■ 098601	
EG M	10	1.5	100	15	–	9	7	4	2	10.5		025665
EG M	10	1.5	100	29	–	9	7	3	2	10.5	■ 098598	
EG M	12	1.75	110	20	–	11	9	4	2	12.5		025667
EG M	12	1.75	110	30	–	11	9	3	2	12.5	■ 098597	
EG M	14	2	100	15	–	12	9	4	2	14.6		■ 098391
EG M	16	2	125	25	–	14	11	4	2	16.5		110494
EG M	16	2	125	34	–	14	11	4	2	16.5	■ 098593	

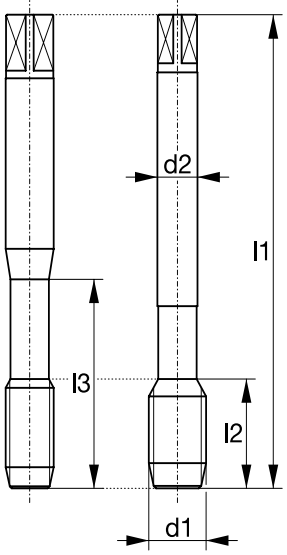
* with tip | ■ new

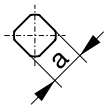
Cutting taps

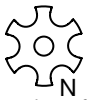
EG M

STI Metric ISO thread DIN 8140

type 1 type 2







(number of flutes)

General dimensions
DIN 40435

	series	VARIANT VA	DOMINANT VA45		
	model	**HL**	**HL**		
	material	HSSE-PM	HSSE-PM		
					
	chamfer	B / 3–5.5	**E / 1.5–2**		
	thread tol.	6HX mod	6HX mod		
	shank tol.	h9	h9		
	thread depth	3xD	3xD		
	bore hole				
P		10–35	10–35		
M		3–12	3–12		
K		5–25	5–30		
N		10–40	15–40		
S			3–15		
H			5–8		

i For detailed cutting speeds please refer to the application table.

Ød$_1$	P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
EG M 18	2.5	140	25	–	18	14.5	4	2	18.8	■ 103226
EG M 20	2.5	160	30	–	18	14.5	4	2	20.8	025668
EG M 20	2.5	160	34	–	18	14.5	4	2	20.8	■ 098588

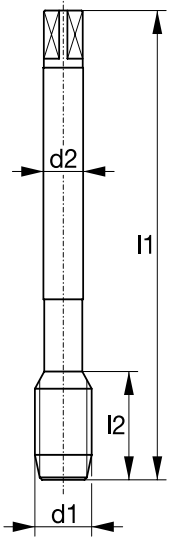
Roll taps

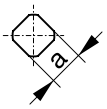
EG MF

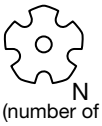
STI Metric
ISO fine thread
DIN 8140

series	**DURAMAX H**			
model	**TIN**			
material	HSSE-PM			
				
chamfer	**E / 1.5–2**			
thread tol.	6HX mod			
shank tol.	h6			
thread depth	3xD			
bore hole				
P	10–50			
M	4–12			
K				
N	10–40			
S	10–25			
H				

type 2







N
(number of polygones)

General dimensions
DIN 40435

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
EG MF 8	x	1	90	18	–	7	5.5	5	2	8.8	081985
EG MF 10	x	1	100	20	–	9	7	5	2	10.8	081986
EG MF 12	x	1	100	20	–	11	9	6	2	12.8	081988
EG MF 12	x	1.5	100	22	–	11	9	6	2	13.2	081989
EG MF 14	x	1.25	100	22	–	12	9	6	2	15	081990
EG MF 14	x	1.5	100	22	–	12	9	6	2	15.2	081992
EG MF 16	x	1.5	110	25	–	14	11	7	2	17.2	081993

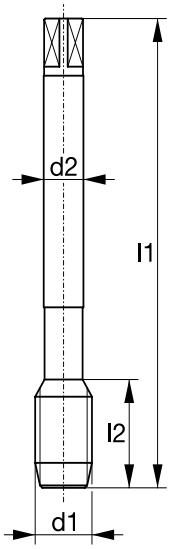
BASS TECHNIK FÜR GEWINDE

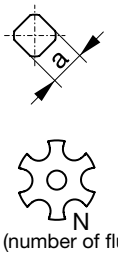
Cutting taps

EG MF

STI Metric
ISO fine thread
DIN 8140

type 2





(number of flutes)

General dimensions
DIN 40435

series	**DOMINANT VA45**			
model	**HL**			
material	HSSE-PM			
				
chamfer	**E / 1.5–2**			
thread tol.	6HX mod			
shank tol.	h9			
thread depth	3xD			
bore hole				
P	10–35			
M	3–12			
K	5–30			
N	15–40			
S	3–15			
H	5–8			

i For detailed cutting speeds please refer to the application table.

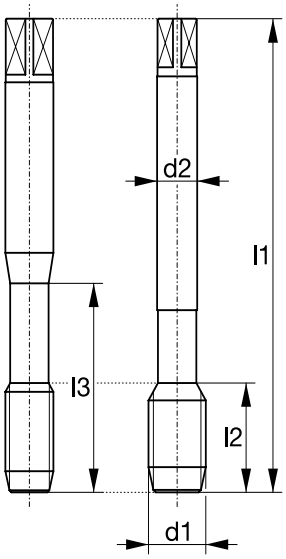
Ød$_1$			P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
EG MF	8	x	1	90	12	–	7	5.5	3	2	8.3	025669
EG MF	10	x	1	100	15	–	9	7	4	2	10.3	025670
EG MF	12	x	1	100	15	–	11	9	4	2	12.3	025671
EG MF	12	x	1.5	100	15	–	11	9	4	2	12.5	025672
EG MF	14	x	1.25	100	15	–	12	9	4	2	14.4	025673
EG MF	14	x	1.5	100	15	–	12	9	4	2	14.5	025674
EG MF	16	x	1.5	110	18	–	14	11	4	2	16.5	025675
EG MF	20	x	1.5	125	18	–	18	14.5	4	2	20.5	025676

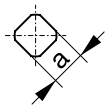
EG UNC

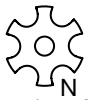
STI Unified coarse thread ASME B18.29.1

series	**DOMINANT VA45**
model	**HL**
material	HSSE-PM

type 1 type 2







(number of flutes)

chamfer	**E / 1.5–2**
thread tol.	3BX
shank tol.	h9
thread depth	3xD
bore hole	

General dimensions
~DIN 40435

P	10–35
M	3–12
K	5–30
N	15–40
S	3–15
H	5–8

i For detailed cutting speeds please refer to the application table.

Ød$_1$	P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
EG UNC No3 –	48	56	7	20	4	3	3	1	2.7	025678
EG UNC No4 –	40	63	8	21	4.5	3.4	3	1	3.1	025679
EG UNC No5 –	40	63	8	21	4.5	3.4	3	1	3.4	025680
EG UNC No6 –	32	70	9	25	6	4.9	3	1	3.8	025681
EG UNC No8 –	32	80	10	30	6	4.9	3	1	4.4	025682
EG UNC No10 –	24	80	10	30	7	5.5	3	1	5.2	025683
EG UNC 1/4" –	20	90	13	35	8	6.2	3	1	6.7	025685
EG UNC 5/16" –	18	100	15	39	10	8	3	1	8.4	025689
EG UNC 3/8" –	16	100	15	–	9	7	4	2	10	025687
EG UNC 7/16" –	14	110	20	–	11	9	4	2	11.7	025690
EG UNC 1/2" –	13	110	20	–	12	9	4	2	13.3	025684
EG UNC 5/8" –	11	125	25	–	14	11	4	2	16.5	025688
EG UNC 3/4" –	10	140	25	–	18	14.5	4	2	19.75	025686

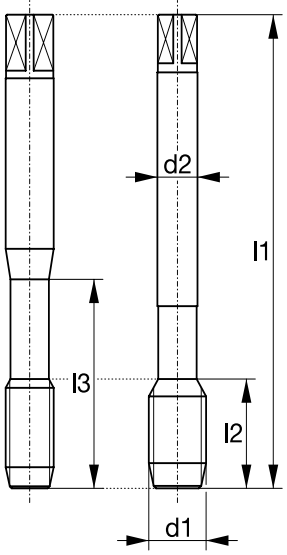
Cutting taps

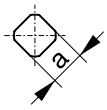
EG UNF

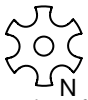
STI Unified fine thread ASME B18.29.1

series	**DOMINANT VA45**
model	**HL**
material	HSSE-PM

type 1 type 2







(number of flutes)

chamfer	**E / 1.5–2**
thread tol.	3BX
shank tol.	h9
thread depth	3xD
bore hole	

General dimensions
~DIN 40435

P	10–35
M	3–12
K	5–30
N	15–40
S	3–15
H	5–8

i For detailed cutting speeds please refer to the application table.

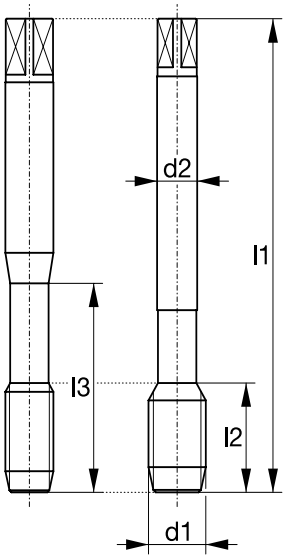
Ød$_1$	P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
EG UNF No6 –	40	70	9	25	6	4.9	3	1	3.7	025697
EG UNF No8 –	36	80	10	30	6	4.9	3	1	4.4	025701
EG UNF No10 –	32	80	10	30	6	4.9	3	1	5.1	025698
EG UNF 1/4" –	28	90	13	35	8	6.2	3	1	6.6	025699
EG UNF 5/16" –	24	90	12	39	10	8	3	1	8.25	025700
EG UNF 3/8" –	24	90	12	–	8	6.2	3	2	9.8	025694
EG UNF 7/16" –	20	100	15	–	9	7	4	2	11.5	025696
EG UNF 1/2" –	20	100	15	–	11	9	4	2	13.1	025692
EG UNF 5/8" –	18	110	18	–	14	11	4	2	16.25	025695
EG UNF 3/4" –	16	125	18	–	16	12	4	2	19.5	025693

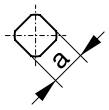
Cutting taps

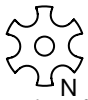
MJ

Metric coarse thread DIN ISO 5855

type 1 type 2







(number of flutes)

General dimensions
~DIN 371 / DIN 376

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	VARIANT TIH	VARIANT NI	AVANT TIH13	AVANT NI13
model	TICN	TICN	TICN	TICN
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	B / 3–5.5	B / 3–5.5	C / 2–3	C / 2–3
thread tol.	4HX	4HX	4HX	4HX
shank tol.	h6	h6	h6	h6
thread depth	3xD	3xD	2.5xD	2.5xD
bore hole				
P	10–30		10–25	
M	3–10		3–10	
K	5–25		5–25	
N	1–35	2–3	1–35	1–3
S	2–12	2–3	2–12	2–3
H	3–12	2–4	3–10	2–4

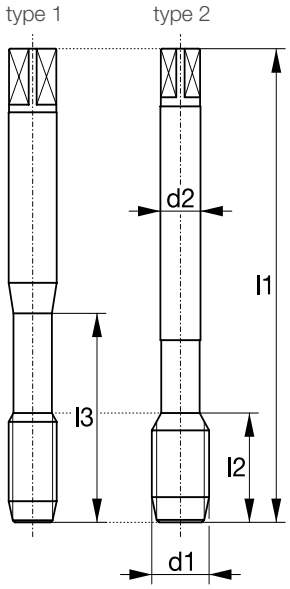
Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number			
MJ	3	0.5	56	11	–	3.5	2.7	3	1	2.6	108817*	048997*	111040*	046259*
MJ	4	0.7	63	13	–	4.5	3.4	3	1	3.4	108819*	049020*	111041*	049025*
MJ	5	0.8	70	16	–	6	4.9	3	1	4.3	108821*	049021*	111042*	049027*
MJ	6	1	80	16	30	6	4.9	3	1	5.1	112069*		111043*	
MJ	6	1	80	19	–	6	4.9	3	1	5.1		049022*		049028*
MJ	8	1.25	90	18	35	8	6.2	3	1	6.9	108823*	049023*	111044	035391
MJ	10	1.5	100	20	39	10	8	3	1	8.7	112071	049024	111051	035392
MJ	12	1.75	110	24	–	9	7	3	2	10.5	112073		111052	
MJ	12	1.75	110	24	–	9	7	4	2	10.5		049029		035393

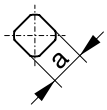
* with tip

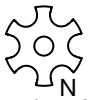
Cutting taps

UNJC

Unified coarse thread ASME B1.1 and ISO 3161







(number of flutes)

General dimensions
~DIN 371 / ~DIN 376

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	VARIANT TIH	VARIANT NI	AVANT TIH13	AVANT NI13
model	TICN	TICN	TICN	TICN
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	B / 3–5.5	B / 3–5.5	C / 2–3	C / 2–3
thread tol.	3BX	3BX	3BX	3BX
shank tol.	h6	h6	h6	h6
thread depth	3xD	3xD	2.5xD	2.5xD
bore hole				
P	10–30		10–25	
M	3–10		3–10	
K	5–25		5–25	
N	1–35	2–3	1–35	1–3
S	2–12	2–3	2–12	2–3
H	3–12	2–4	3–10	2–4

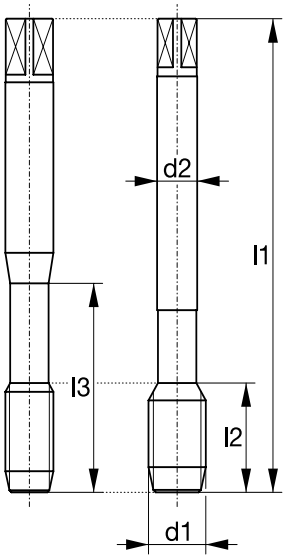
Ød1	P	l1	l2	l3	Ød2	a	N	type		identification number			
UNJC No4 –	40	56	11	–	3.5	2.7	2	1	2.3	017688*			
UNJC No4 –	40	56	11	–	3.5	2.7	3	1	2.3		049032*	108765*	049041*
UNJC No6 –	32	56	12	–	4	3	3	1	2.8	109548*	049033*	108766*	049042*
UNJC No8 –	32	63	13	–	4.5	3.4	3	1	3.5	109550*	049034*	109308*	049043*
UNJC No10 –	24	70	16	–	6	4.9	3	1	3.9	017684*	049035*	108764*	049044*
UNJC 1/4" –	20	80	16	30	7	5.5	3	1	5.2	109551*		109309*	
UNJC 1/4" –	20	80	20	–	7	5.5	3	1	5.2		049036*		049045*
UNJC 5/16" –	18	90	18	35	8	6.2	3	1	6.7	109552*	049039*	109310	049047
UNJC 3/8" –	16	100	20	39	10	8	3	1	8.1	110826	049037	006325	049046
UNJC 1/2" –	13	110	24	–	9	7	3	2	10.9	109554		108796	
UNJC 1/2" –	13	110	24	–	9	7	4	2	10.9		049040		049049

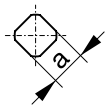
UNJC

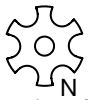
Unified coarse thread ASME B1.1 and ISO 3161

series	**DOMINANT HVA45**
model	**HL**
material	HSSE-PM

type 1 type 2







(number of flutes)

chamfer	**E / 1.5–2**
thread tol.	3BX
shank tol.	h6
thread depth	3xD
bore hole	

General dimensions
~DIN 371 / ~DIN 376

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

i For detailed cutting speeds please refer to the application table.

P	15–60
M	3–15
K	
N	15–60
S	2–15
H	3–12

Ød$_1$	P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
UNJC No4 –	40	56	7	15	3.5	2.7	3	1	2.35	■ 095243
UNJC No6 –	32	56	7	15	4	3	3	1	2.8	■ 095244
UNJC No8 –	32	63	8	18	4.5	3.4	3	1	3.5	■ 095247
UNJC No10 –	24	70	9	18	6	4.9	3	1	3.9	■ 095249
UNJC 1/4" –	20	80	10	25	7	5.5	3	1	5.2	■ 095250
UNJC 5/16" –	18	90	13	30	8	6.2	4	1	6.7	■ 095253
UNJC 3/8" –	16	100	15	30	10	8	4	1	8.1	■ 095255
UNJC 1/2" –	13	110	18	–	9	7	4	2	10.9	■ 095970

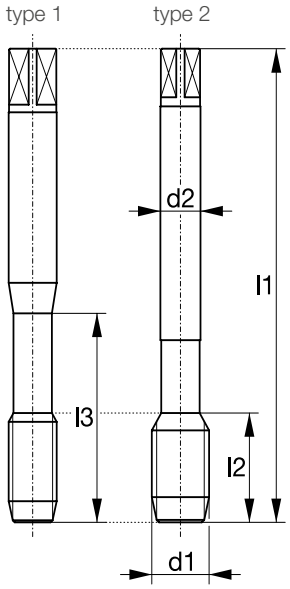
■ new

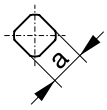
BASS TECHNIK FÜR GEWINDE

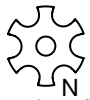
Cutting taps

UNJF

Unified fine thread ASME B1.1 and ISO 3161







(number of flutes)

General dimensions
~DIN 371 / ~DIN 374

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	VARIANT TIH	VARIANT NI	AVANT TIH13	AVANT NI13
model	TICN	TICN	TICN	TICN
material	HSSE-PM	HSSE-PM	HSSE-PM	HSSE-PM
				
chamfer	B / 3–5.5	B / 3–5.5	C / 2–3	C / 2–3
thread tol.	3BX	3BX	3BX	3BX
shank tol.	h6	h6	h6	h6
thread depth	3xD	3xD	2.5xD	2.5xD
bore hole				
P	10–30		10–25	
M	3–10		3–10	
K	5–25		5–25	
N	1–35	2–3	1–35	1–3
S	2–12	2–3	2–12	2–3
H	3–12	2–4	3–10	2–4

Ød1	P	l1	l2	l3	Ød2	a	N	type		identification number			
UNJF No4 –	48	56	11	–	3.5	2.7	3	1	2.4	109304*	049074*	109220*	049116*
UNJF No6 –	40	56	12	–	4	3	3	1	2.95	109305*	049076*	109207*	049117*
UNJF No8 –	36	63	13	–	4.5	3.4	3	1	3.6	109306*	049077*	109208*	049118*
UNJF No10 –	32	70	16	–	6	4.9	3	1	4.15	013425*	049054*	109231*	049119*
UNJF 1/4" –	28	80	16	30	7	5.5	3	1	5.6	013424*		109209*	
UNJF 1/4" –	28	80	20	–	7	5.5	3	1	5.6		029648*		030282*
UNJF 5/16" –	24	90	18	35	8	6.2	3	1	7	104661*	049080*	109211	049121
UNJF 3/8" –	24	90	18	39	10	8	3	1	8.6	109307	049079	109232	049120
UNJF 1/2" –	20	100	22	–	9	7	3	2	11.5	013428		109212	
UNJF 1/2" –	20	100	22	–	9	7	4	2	11.5		049082		049122

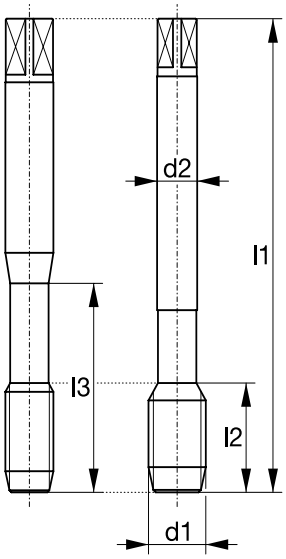
* with tip

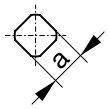
Cutting taps

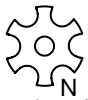
UNJF

Unified fine thread ASME B1.1 and ISO 3161

type 1 type 2







(number of flutes)

General dimensions
~DIN 371 / ~DIN 374

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

For detailed cutting speeds please refer to the application table.

series	**DOMINANT HVA45**			
model	**HL**			
material	HSSE-PM			
				
chamfer	**E / 1.5–2**			
thread tol.	3BX			
shank tol.	h6			
thread depth	3xD			
bore hole				
P	15–60			
M	3–15			
K				
N	15–60			
S	2–15			
H	3–12			

Ød$_1$	P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
UNJF No4 –	48	56	7	15	3.5	2.7	3	1	2.4	■ 095238
UNJF No6 –	40	56	7	15	4	3	3	1	2.95	■ 095239
UNJF No8 –	36	63	8	18	4.5	3.4	3	1	3.6	■ 095240
UNJF No10 –	32	70	9	18	6	4.9	3	1	4.15	■ 091386
UNJF 1/4" –	28	80	10	25	7	5.5	3	1	5.6	■ 091385
UNJF 5/16" –	24	90	13	30	8	6.2	3	1	7	■ 095241
UNJF 3/8" –	24	90	12	30	10	8	3	1	8.6	■ 095242
UNJF 1/2" –	20	100	15	–	9	7	4	2	11.5	■ 095969

■ new

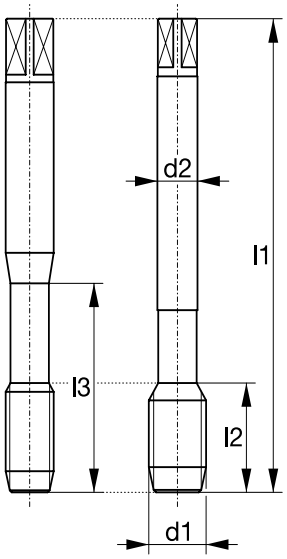
BASS TECHNIK FÜR GEWINDE

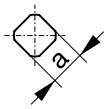
Roll taps

EG MJ

STI Metric ISO thread DIN 8140

type 1 type 2





(number of polygones)

General dimensions
DIN 40435

Tools made out of HSSE-PM with a shank diameter of < 6 mm or > 12 mm have shank tolerance h9.

i For detailed cutting speeds please refer to the application table.

series	**DURAMAX H**	**DURAMAX GAL**		
model	**TIN**	**MKR AK BT**		
material	HSSE-PM	VHM		
				
chamfer	**E / 1.5–2**	**E / 1.5–2**		
thread tol.	6HX mod	6HX mod		
shank tol.	h6	h6		
thread depth	3xD	3xD		
bore hole				
P	10–50	15–60		
M	4–12	10–25		
K				
N	10–40	25–80		
S	10–25	12–35		
H				

Ød$_1$			P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number	
EG MJ	3		0.5	63	8	21	4.5	3.4	4	1	3.4	■ 099296	
EG MJ	3.5		0.6	70	9	25	6	4.9	4	1	4	■ 099304	
EG MJ	4		0.7	70	14	25	6	4.9	5	1	4.55	■ 099305	
EG MJ	5		0.8	80	14	30	6	4.9	5	1	5.65	■ 099307	
EG MJ	6		1	90	18	35	8	6.2	5	1	6.8	■ 099308	■ 099315
EG MJ	8	x	1	90	18	–	7	5.5	5	**2**	8.8	■ 099303	
EG MJ	8		1.25	100	20	39	10	8	5	1	9	■ 099310	■ 099317
EG MJ	10	x	1	100	20	–	9	7	5	2	10.8	■ 099306	
EG MJ	10		1.5	100	22	–	9	7	5	2	11.2	■ 099311	■ 099318
EG MJ	12	x	1	100	20	–	11	9	6	2	12.8	■ 099319	
EG MJ	12	x	1.5	100	22	–	11	9	6	2	13.2	■ 099320	
EG MJ	12		1.75	110	25	–	11	9	6	2	13.4	■ 099312	
EG MJ	14	x	1.25	100	22	–	12	9	6	2	15	■ 099321	
EG MJ	14	x	1.5	100	22	–	12	9	6	2	15.2	■ 099322	
EG MJ	16	x	1.5	110	25	–	14	11	7	2	17.2	■ 099323	
EG MJ	16		2	125	32	–	14	11	7	2	17.6	■ 099313	

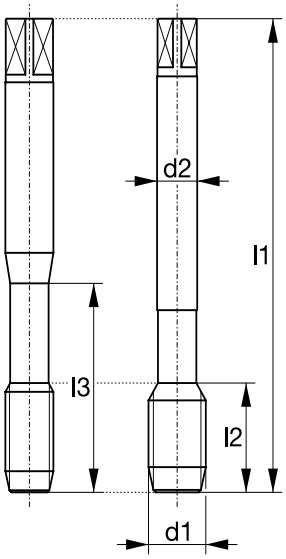
Cutting taps

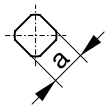
EG MJ

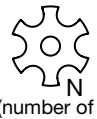
STI Metric ISO thread DIN 8140

series	**DOMINANT VA45**		
model	**HL**		
material	HSSE-PM		

type 1 type 2







(number of flutes)

chamfer	**E / 1.5–2**
thread tol.	6HX mod
shank tol.	h9
thread depth	3xD
bore hole	

General dimensions
~DIN 40435

P	10–35
M	3–12
K	5–30
N	15–40
S	3–15
H	5–8

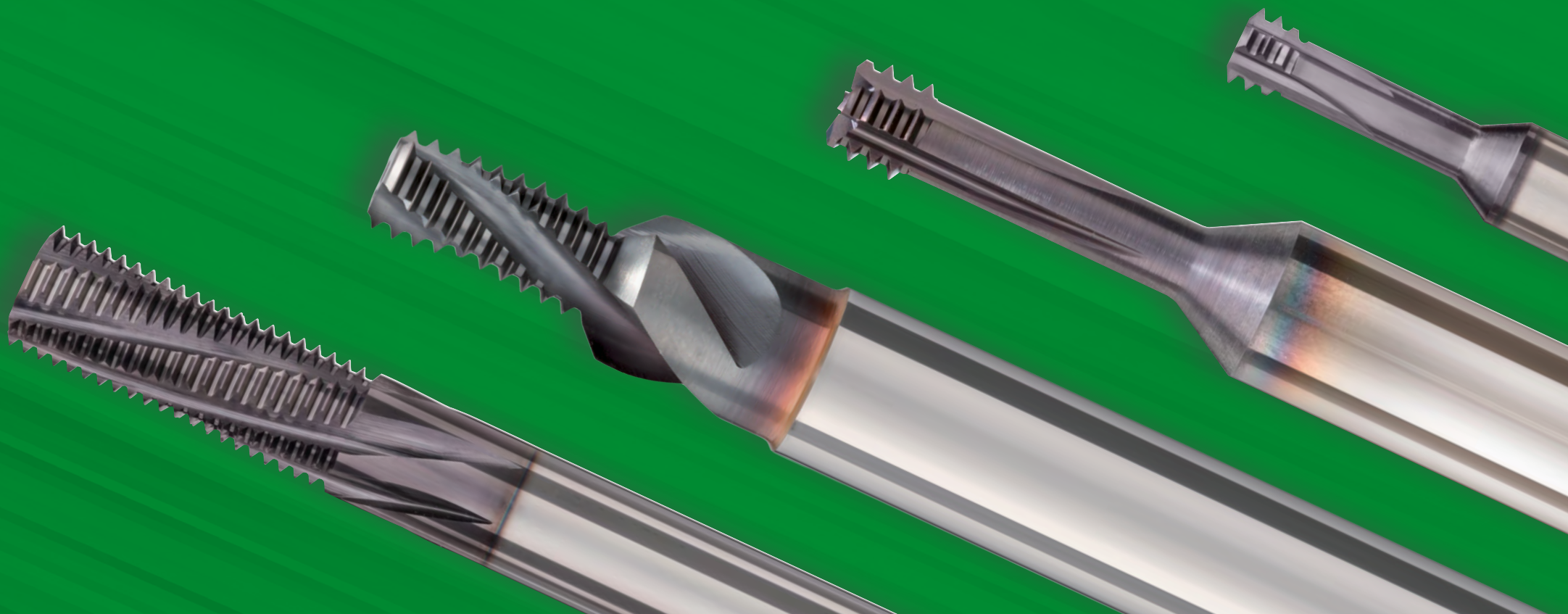
i For detailed cutting speeds please refer to the application table.

Ød$_1$		P	l$_1$	l$_2$	l$_3$	Ød$_2$	a	N	type		identification number
EG MJ	3	0.5	63	8	21	4.5	3.4	3	1	3.15	■ 098375
EG MJ	4	0.7	70	9	25	6	4.9	3	1	4.2	■ 098326
EG MJ	5	0.8	80	10	30	6	4.9	3	1	5.25	■ 047157
EG MJ	6	1	90	13	35	8	6.2	3	1	6.3	■ 098376
EG MJ	8	1.25	100	15	39	10	8	3	1	8.4	■ 098329
EG MJ	10	1.5	100	15	–	9	7	3	2	10.5	■ 098385
EG MJ	12	1.75	100	20	–	11	9	4	2	12.5	■ 098386

■ new

BASS TECHNIK FÜR GEWINDE

THREAD MILLING



CONTENT

THREAD MILLING CUTTERS

TYPES

Solid carbide thread milling cutters for internal threads

GFA

Models

- solid carbide thread milling cutter with right-hand spiral flutes (type N), or with left-hand spiral flutes (type HZP), internal coolant and cylindrical shank
- for thread milling of one particular thread size, for thread depth 2×D
- surface: without coating / TICN / BA
- thread types: M / MF / G / UNC / UNF / NPT / NPTF / for wire thread inserts (STI)

Advantage

Favourably priced tool for one thread size for nearly all materials

GFM

Models

- solid carbide thread milling cutter with right-hand spiral flutes (type N), or with left-hand spiral flutes (Type HZP), internal coolant and cylindrical shank
- for several applications for different thread diameters with the same pitch
- surface: without coating / TICN / BA
- thread types: M / MF / G / UN / for wire thread inserts (STI)

Advantage

Applicable for a large range of dimensions with the same pitch

GFE

Models

- solid carbide thread milling cutter with straight flutes and cylindrical shank
- for thread milling of one particular thread size, for thread depth 3×D
- surface: without coating
- thread types: M / MF / for wire thread inserts (STI)

Advantage

Deep threads (up to 3xD) for small dimensions, for almost all materials

GFS

Models

- solid carbide thread milling cutter with 45° countersink, spiral flutes, internal coolant and cylindrical shank, for countersinking and thread milling of one particular thread size
- for thread depth 2×D
- surface: without coating / TICN
- thread types: M / MF

Advantage

High productivity – countersinking and thread milling without tool change

GFD

Models

- solid carbide thread milling cutter with straight flutes (type SH), or with left-hand spiral flutes (type HZP), internal coolant (starting M4) and cylindrical shank
- for thread milling of one particular thread size, for thread depth 3×D
- surface: BA
- thread types: M / MF / UNC / UNF / for wire thread inserts (STI)

Advantage

Deep threads (up to 3xD) also for small dimensions, for almost all materials

ZBGF

Models

- solid carbide thread milling cutter with straight flutes, left-hand and cylindrical shank, for core hole drilling and thread milling of different thread diameters, for thread depth 2.5×D
- surface: BA
- thread types: M / MF / G / UNC / UNF / for wire thread inserts (STI)

Advantage

High productivity – drilling and thread milling without tool change

TYPES

Solid carbide thread milling cutters for internal threads

BGF

Models

- » solid carbide drill and thread milling cutter with countersink 45°, spiral flutes, internal coolant and cylindrical shank for drilling, countersinking and thread milling of one particular thread size, for thread depth 2×D
- » surface: without coating / FNT
- » thread types: M / MF

Advantage

High productivity – drilling, countersinking and thread milling without tool change

Thread milling systems with inserts

BFW

Models

Holder with solid carbide milling cutter inserts for fine threads starting with M20x1.5 and standard threads starting with M24; pitch 0.75–6.0 mm or 32–4 threads/1“.

Flanks ∡ 60°/ 55°.

Applicable for all working materials, with internal coolant, with cylindrical shank acc. DIN 1835 B.

GFK

Models

Thread milling head with solid carbide milling cutter inserts for fine threads starting with M24x1.5 and standard threads starting with M27; pitch 1.5–6.0 mm or 32–4 threads/1“.

Flanks ∡ 60°/ 55°.

Applicable for all working materials, with internal coolant, with tightening thread.

AFK

Models

Shell milling head with solid carbide milling cutter inserts for fine threads starting with M54x1.5 and standard threads starting with M60x5.5; pitch 0.75–6.0 mm or 16–4 threads/1“.

Flanks ∡ 60°/ 55°.

Applicable for all working materials, with internal coolant.

APPLICATION SPECIFICATIONS

Thread milling with solid carbide milling cutters

Conditions	» 3 axis CNC control » adequate clamping of workpiece and tool » stable machining conditions
Advantages	» only one tool for through and blind hole, right and left hand threads and all tolerances » exact thread position » high process security (short chips, tool breakage does not necessarily lead to defective threads) » different dimensions with the same pitch can be produced » compared to thread cutting: lower input power needed, especially for large dimensions
Disadvantages	» limited thread depth (up to 3xD) » in order to avoid profile damage: milling cutter diameter max. 2/3xD (3/4xD for fine threads) or use of profile corrected tools » other more economical procedures for workpieces with several identical threads

Explanation of the application table solid carbide thread milling cutters, solid carbide drill and thread milling cutters

How to proceed	» **Which machining steps are to be carried out?** **a)** Thread milling of one particular thread size, GFA see page 174 and the following **b)** Milling of deep threads and in small dimensions, GFE see page 186 and the following **c)** Milling of deep threads and in small dimensions, GFD see page 188 and the following **d)** Thread milling of different thread diameters, GFM see page 194 and the following **e)** Countersinking and thread milling, GFS see page 200 and the following **f)** Circular thread milling, ZBGF page 204 and the following **g)** Drilling, countersinking and thread milling, BGF see page 210 and the following » Select application » Cutting speed (v_c m/min) see table » Feed per tooth (fz mm/Z) see table (min. and max.)

Thread milling with thread milling systems – inserts

General	In order to avoid profile damage the milling cutter diameter should not exceed 2/3 (3/4 for fine threads) of the nominal diameter.
Advantages	» only one tool for different pitch and thread sizes, through and blind hole, right and left hand threads and all tolerances » high process security (short chips, tool breakage does not necessarily lead to defective threads) » high thread surface quality » suitable for large thread depths (low cutting forces) » completely cylindrical threads also for large thread depth » well suited for small series with varying pitch
Disadvantages	other more economical procedures for workpieces with several identical threads

Explanation of the application table thread milling systems with inserts

How to proceed	» **Which type of adapter do you require?** **a)** Cylindrical shank BFW see page 214 **b)** Thread milling head (tightening thread M) GFK see page 214 **c)** Shell milling head (pay attention to bore hole Ø d2) AFK page 215 » Select application » Cutting speed (v_c m/min) see table » Feed per tooth (fz mm/Z) see table (min. and max.)

GFA/GFD/GFE

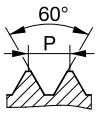
SOLID CARBIDE THREAD MILLING CUTTERS GFA

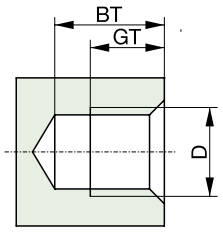
Machining steps for solid carbide thread milling cutters GFA

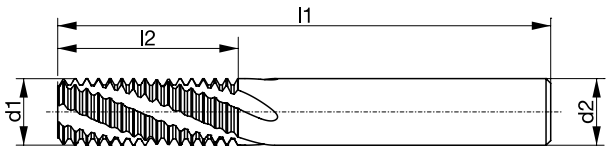
1. Start position: travel to center of machined hole
2. Approach to radial thread depth with descending loop
3. Interpolation machining begins, after machining run-out loop back to center
4. Return to start position, end of thread milling process

Solid carbide thread milling cutters GFA

M — **ISO Metric coarse thread DIN 13**







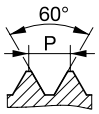
type	GFA N	GFA N
model	KA	KA TICN
material	VHM	VHM
		
thread length	2xD	2xD
cylindrical shank	DIN 6535 HA	DIN 6535 HA
P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	●	●

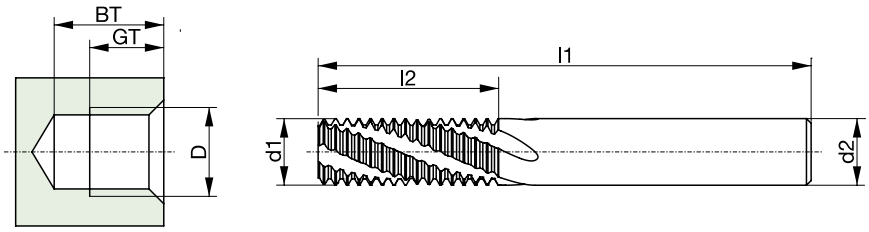
i For detailed cutting speeds please refer to the application table.

ØD		P	l_1	l_2	$Ød_1$	$Ød_2$	z	GT	BT		identification number	
M	6	1	54	14	4.70	6	3	12	12.5	5.0	025789	025790
M	8	1.25	54	18	5.95	6	3	16	17.0	6.8	025792	025793
M	10	1.5	64	22	7.95	8	4	20	21.0	8.5	025794	025795
M	12	1.75	74	27	9.95	10	4	24	25.0	10.2	025796	025797
M	14	2	74	31	9.95	10	4	28	29.0	12.0	025798	025799
M	16	2	80	35	11.95	12	4	32	33.0	14.0	025800	025801
M	18/20	2.5	90	41	13.95	14	4	40	41.5	15.5/17.5	025803	025805

Solid carbide thread milling cutters GFA

MF — ISO Metric fine thread DIN 13





type	**GFA N**	**GFA N**
model	**KA**	**KA TICN**
material	VHM	VHM
		
thread length	2xD	2xD
cylindrical shank	DIN 6535 HA	DIN 6535 HA
P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	●	●

i For detailed cutting speeds please refer to the application table.

ØD			P	l_1	l_2	$Ød_1$	$Ød_2$	z	GT	BT		identification number	
MF	6	x	0.75	54	13	4.90	6	3	12	12.5	5.2	025806	025807
MF	8	x	1	54	18	5.95	6	3	16	16.5	7.0	025808	025809
MF	10	x	1	64	22	7.95	8	4	20	20.5	9.0	025810	025811
MF	10	x	1.25	64	22	7.95	8	4	20	21.0	8.8	025812	025813
MF	12	x	1	74	26	9.95	10	4	24	24.5	11.0	025814	025815
MF	12	x	1.5	74	26	9.95	10	4	24	25.0	10.5	025816	025817
MF	14	x	1.5	80	31	11.95	12	4	28	29.0	12.5	067236	040583
MF	16	x	1.5	90	34	13.95	14	4	32	33.0	14.5	064257	065768

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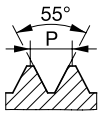
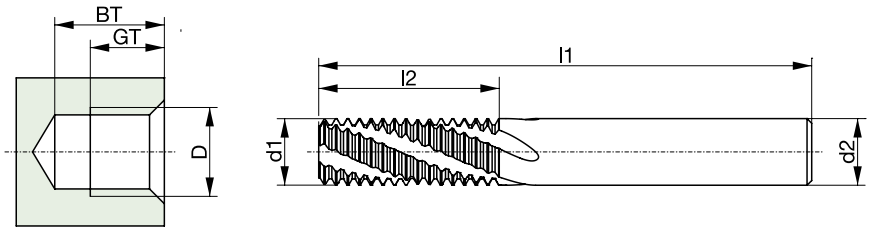
Solid carbide thread milling cutters GFA

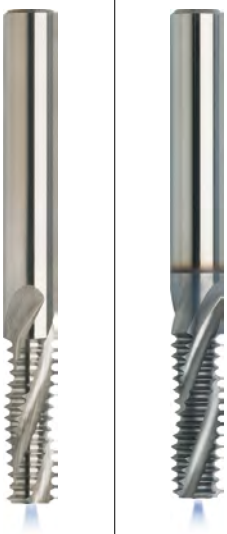
G

British standard pipe thread
DIN EN ISO 228



type	GFA N	GFA N
model	KA	KA TICN
material	VHM	VHM





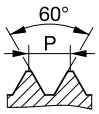
thread length	2xD	2xD
cylindrical shank	DIN 6535 HA	DIN 6535 HA
P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	●	●

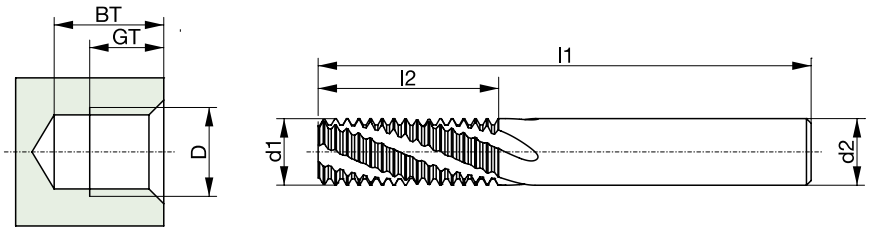
i For detailed cutting speeds please refer to the application table.

ØD		P	l_1	l_2	$Ød_1$	$Ød_2$	z	GT	BT		identification number	
G	1/8“	28	64	21	7.95	8	4	20	20.5	8.8	067242	067243
G	1/4“	19	74	28	9.95	10	4	28	27.5	11.8	067237	067245
G	3/8“	19	90	35	13.60	14	4	34	34.5	15.25	067247	107154
G	1/2“	14	102	44	15.95	16	5	42	43	19	067249	067330

Solid carbide thread milling cutters GFA

UNC — Unified coarse thread ASME B1.1





type		GFA N
model		KA TICN
material		VHM
thread length		2xD
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

i For detailed cutting speeds please refer to the application table.

ØD	P	l_1	l_2	Ød_1	Ød_2	z	GT	BT		identification number
UNC 1/4“ –	20	54	14	4.80	6	3	13	13.5	5.1	067246
UNC 5/16“ –	18	54	17	5.95	6	3	16	17	6.6	040263
UNC 3/8“ –	16	64	21	7.50	8	4	19	20	8.0	057494
UNC 7/16“ –	14	64	24	7.95	8	4	22	23	9.4	067248
UNC 1/2“ –	13	74	28	9.95	10	4	25	26	10.8	067251

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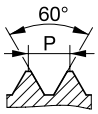
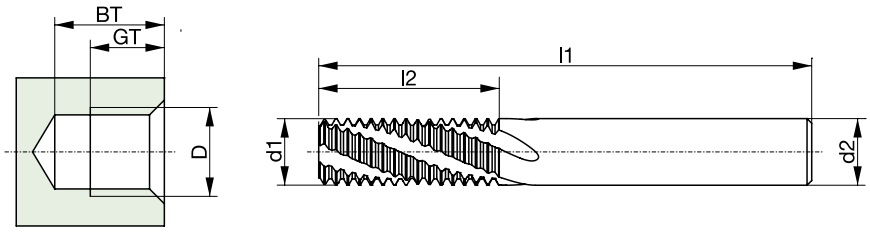
Solid carbide thread milling cutters GFA

UNF — Unified fine thread ASME B1.1



type		**GFA N**
model		**KA TICN**
material		VHM



thread length		2xD
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

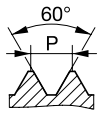
i For detailed cutting speeds please refer to the application table.

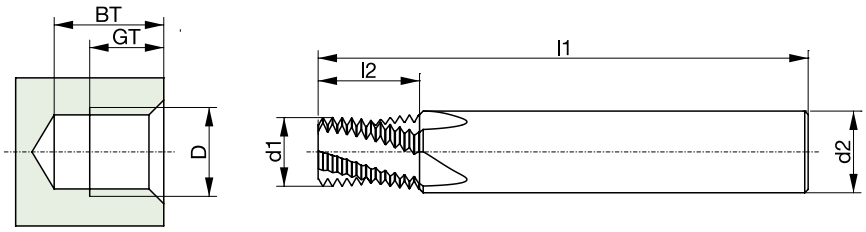
ØD	P	l_1	l_2	Ød$_1$	Ød$_2$	z	GT	BT		identification number
UNF 1/4“ –	28	54	14	4.80	6	3	13	13.5	5.5	039860
UNF 5/16“ –	24	54	17	5.95	6	3	16	17	6.9	067258
UNF 3/8“ –	24	64	20	7.95	8	4	19	20	8.5	067259
UNF 7/16“ –	20	64	24	7.95	8	4	22	23	9.9	067261
UNF 1/2“ –	20	74	27	9.95	10	4	25	26	11.5	067263

Solid carbide thread milling cutters GFA

NPT

American standard taper pipe thread
ASME B1.20.1 tapered 1:16





	type	GFA N	GFA N
	model	KA	KA TICN
	material	VHM	VHM
			
	thread length		
	cylindrical shank	DIN 6535 HA	DIN 6535 HA
P		●	●
M		●	●
K		●	●
N		●	●
S		●	●
H		●	●

i For detailed cutting speeds please refer to the application table.

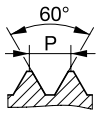
ØD			P	l_1	l_2	$Ød_1$	$Ød_2$	z	GT	BT		identification number	
NPT	1/8“	–	27	64	10	7.30	8	4	9	9.5	8.4	064748	045614
NPT	1/4“	–	18	72	19	9.95	12	4	14.3	15	11.1	102168	047533
NPT	3/8“	–	18	80	15	12.50	14	4	14.6	15	14.3	067260	047534
NPT	1/2“	–	14	80	19	12.50	14	4	19	20	17.9	067262	032855

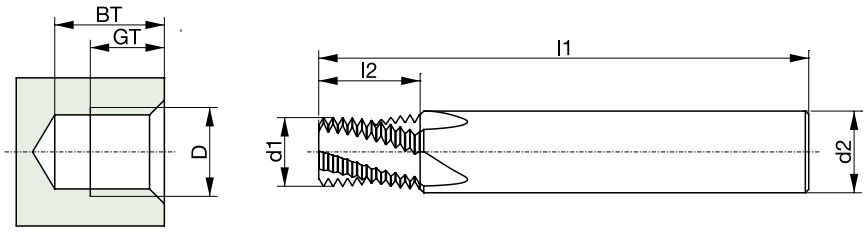
BASS TECHNIK FÜR GEWINDE

Solid carbide thread milling cutters GFA

NPTF

American standard taper pipe thread
ASME B1.20.3 tapered 1:16





	type	GFA N	GFA N
	model	KA	KA TICN
	material	VHM	VHM
			
	thread length		
	cylindrical shank	DIN 6535 HA	DIN 6535 HA
P		●	●
M		●	●
K		●	●
N		●	●
S		●	●
H		●	●

i For detailed cutting speeds please refer to the application table.

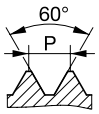
ØD	P	l_1	l_2	Ød_1	Ød_2	z	GT	BT		identification number	
NPTF 1/8“ –	27	64	10	7.30	8	4	9.7	10.5	8.4	067266	067267
NPTF 1/4“ –	18	72	19	9.95	12	4	14.3	15	11	067264	059274
NPTF 3/8“ –	18	80	15	12.50	14	4	14.6	15.5	14.3	067268	067265
NPTF 1/2“ –	14	80	19	12.50	14	4	19.0	20	17.6	067270	067269

Solid carbide thread milling cutters GFA

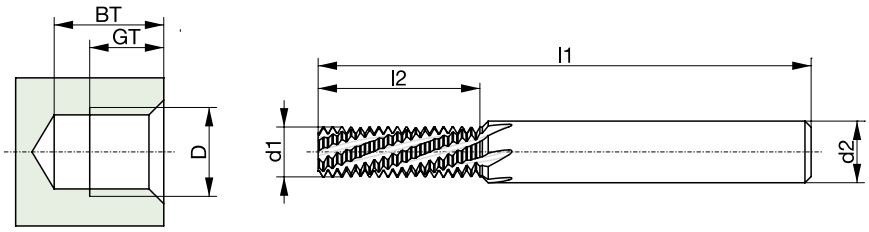
M
MF

ISO Metric coarse thread DIN 13

ISO Metric fine thread DIN 13



type		**GFA HZP**
model		**KA BA**
material		VHM



thread length		2xD
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

i Each item on this page can also produce larger dimensions with the same pitch.

i For detailed cutting speeds please refer to the application table.

ØD			P	l_1	l_2	$Ød_1$	$Ød_2$	z	GT	BT		identification number
M	3		0.5	54	6.7	2.36	6	4	6	6.5	2.50	081706
M	4		0.7	54	8.7	3.10	6	6	8	8.5	3.30	081708
M	5		0.8	58	10.7	3.98	6	6	10	10.5	4.20	081709
M	6		1	58	13.4	4.71	6	6	12	12.5	5.00	081710
M	8		1.25	68	18.0	6.41	8	6	16	17	6.80	081711
M	10		1.5	80	21.7	8.11	10	6	20	21	8.50	081712
M	12		1.75	82	25.3	9.80	10	6	24	25	10.20	081713
M	14		2	92	31.0	11.50	12	6	28	29	12.00	081714
MF	8	x	0.5	68	18.1	6.90	8	6	16	16.5	7.50	■ 095003
MF	8	x	0.75	68	17.9	6.70	8	6	16	16.5	7.25	■ 095004
MF	10	x	1	80	21.7	8.50	10	6	20	21	9.00	■ 095009
MF	10	x	1.25	80	22.0	8.30	10	6	20	21	8.75	■ 095010
MF	12	x	1.5	92	26.4	10.00	12	6	24	25	10.50	■ 095011

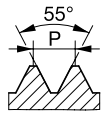
■ new

BASS TECHNIK FÜR GEWINDE

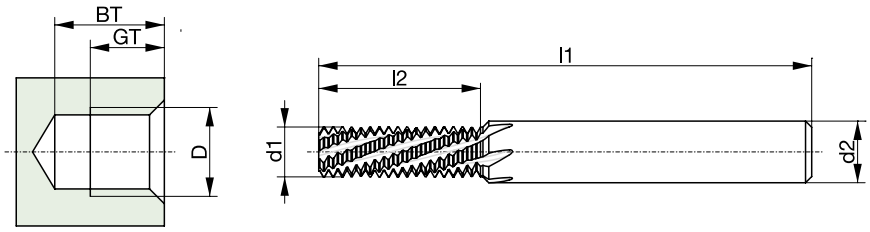
Solid carbide thread milling cutters GFA

G

British standard pipe thread
DIN EN ISO 228



type		**GFA HZP**
model		**KA BA**
material		VHM



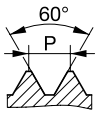
thread length		2xD
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

i For detailed cutting speeds please refer to the application table.

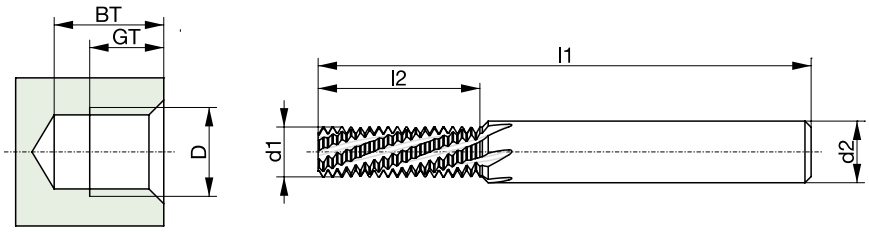
ØD	P	l_1	l_2	Ød_1	Ød_2	z	GT	BT		identification number
G 1/8“	28	80	21.3	8.46	10	6	20	20.5	8.8	■ 088953
G 1/4“	19	92	28.7	11.29	12	6	28	27.5	11.8	■ 088954
G 3/8“	19	94	35.3	13.95	14	6	34	34.5	15.25	■ 088910
G 1/2“	14	106	44.3	15.95	16	6	42	43	19	■ 095012

Solid carbide thread milling cutters GFA

UNC — **Unified coarse thread ASME B1.1**



type		GFA HZP
model		KA BA
material		VHM



thread length		2xD
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

i Each item on this page can also produce larger dimensions with the same pitch.

i For detailed cutting speeds please refer to the application table.

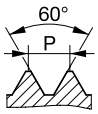
ØD	P	l_1	l_2	Ød_1	Ød_2	z	GT	BT		identification number
UNC No6	32	54	7.5	2.37	6	4	7	7.5	2.85	■ 095013
UNC No8	32	54	9.1	3.11	6	6	8.4	8.9	3.50	■ 095017
UNC No10	24	54	10.0	3.31	6	6	9.7	10.2	3.90	■ 095026
UNC No12	24	58	12.2	4.07	6	6	11	11.5	4.50	■ 095027
UNC 1/4"	20	58	13.3	4.62	6	6	13	13.5	5.10	■ 095028
UNC 5/16“	18	68	16.2	6.09	8	6	16	17	6.60	■ 095030
UNC 3/8“	16	68	19.8	7.48	8	6	19	20	8.00	■ 090278
UNC 7/16“	14	80	22.6	8.80	10	6	22	23	9.40	■ 095040
UNC 1/2“	13	92	26.4	10.26	12	6	25	26	10.80	■ 095041
UNC 9/16“	12	92	30.7	11.64	12	6	28.6	29.6	12.20	■ 095042

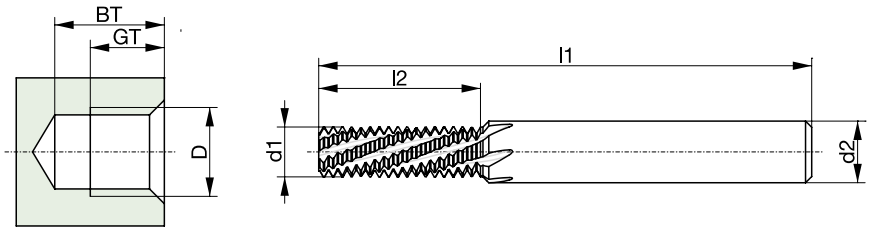
■ new

BASS TECHNIK FÜR GEWINDE

Solid carbide thread milling cutters GFA

UNF — Unified fine thread ASME B1.1





type		**GFA HZP**
model		**KA BA**
material		VHM

thread length		2xD
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

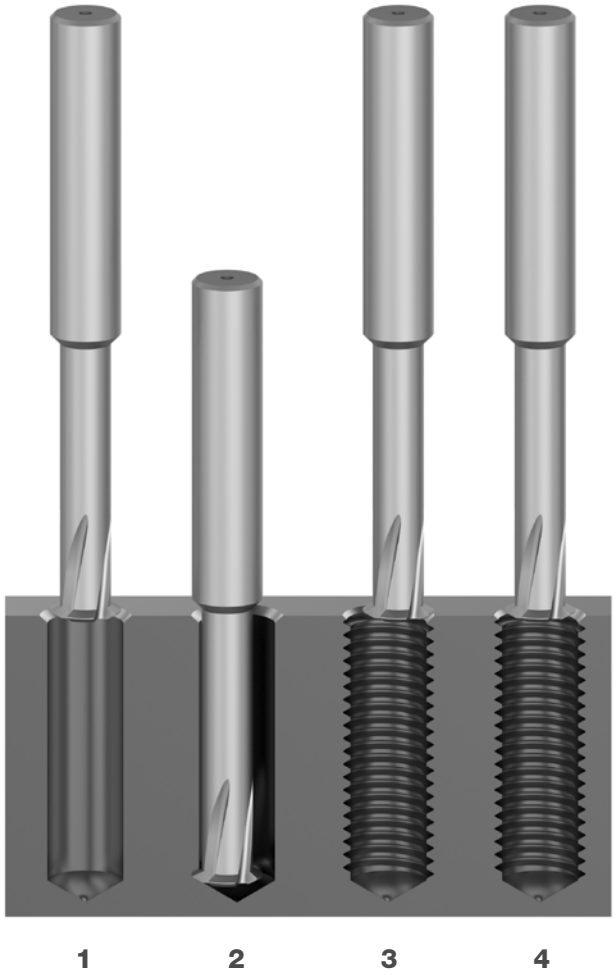
i Each item on this page can also produce larger dimensions with the same pitch.

i For detailed cutting speeds please refer to the application table.

ØD	P	l_1	l_2	Ød_1	Ød_2	z	GT	BT		identification number
UNF No6	40	54	7.3	2.69	6	4	7	7.5	2.95	■ 095079
UNF No8	36	54	8.8	3.27	6	6	8.4	8.9	3.5	■ 095080
UNF No10	32	54	9.9	3.81	6	6	9.7	10.2	4.1	■ 095081
UNF No12	28	58	11.3	4.32	6	6	11	11.5	4.6	■ 095083
UNF 1/4"	28	58	13.1	5.22	6	6	13	13.5	5.5	■ 095077
UNF 5/16"	24	68	16.4	6.63	8	6	16	17	6.9	■ 095084
UNF 3/8“	24	75	19.6	8.27	10	6	19	20	8.5	■ 095078
UNF 7/16“	20	80	23.5	9.59	10	6	22	23	9.9	■ 095085
UNF 1/2“	20	92	26.0	11.21	12	6	25	26	11.5	■ 088329
UNF 9/16“	18	94	28.9	12.62	14	6	28.6	29.6	12.9	■ 091430

SOLID CARBIDE THREAD MILLING CUTTERS GFE

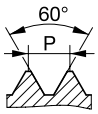
Machining steps for solid carbide thread milling cutters GFE



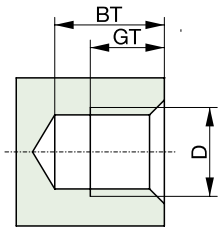
1. Start position: approach to center of machined hole
2. Approach to radial thread depth with descending loop
3. Circular milling, thread turn after thread turn
4. Return to start position, end of thread milling process

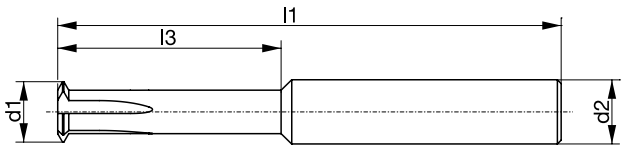
Solid carbide thread milling cutters GFE

M — **ISO Metric coarse thread DIN 13**



type		**GFE N**
model		
material		VHM





thread length		2xD
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

i For detailed cutting speeds please refer to the application table.

ØD	P	l_1	l_2	Ød_1	Ød_2	z	GT	BT		identification number
M 1.0/1.1	0.25	39	3.4	0.69	3	3	3.3	3.5	0.75/0.85	051781
M 1.2	0.25	39	3.7	0.89	3	3	3.6	3.8	0.95	067167
M 1.4	0.3	39	4.3	1.03	3	3	4.2	4.4	1.1	067169
M 1.6/1.7	0.35	39	5.2	1.17	3	3	5.1	5.3	1.25/1.35	048118
M 1.8	0.35	39	5.5	1.37	3	3	5.4	5.6	1.45	067170
M 2	0.4	39	6.1	1.51	3	4	6	6.3	1.6	051782
M 2.2	0.45	39	6.7	1.65	3	4	6.6	6.9	1.75	067172
M 2.3	0.4	39	7	1.80	3	4	6.9	7.1	1.9	067174
M 2.5/2.6	0.45	39	7.9	1.94	3	4	7.8	8.1	2.05/2.15	067175
M 3	0.5	39	9.2	2.38	3	4	9	9.3	2.5	067176
M 3.5	0.6	39	10.7	2.75	3	4	10.5	11	2.9	067177

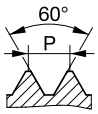
SOLID CARBIDE THREAD MILLING CUTTERS GFD

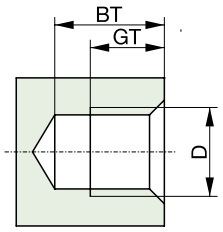
Machining steps for solid carbide thread milling cutters GFD

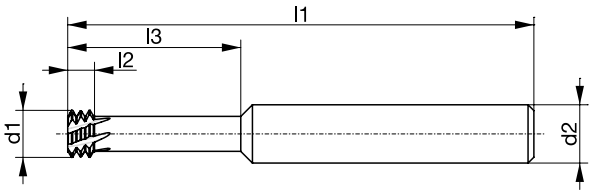
1. Start position: approach to center of machined hole
2. Approach to radial thread depth with descending loop
3. Circular milling, thread turn after thread turn
4. Return to start position, end of thread milling process

Solid carbide thread milling cutters GFD

M — **ISO Metric coarse thread DIN 13**







	type	GFD HZP	GFD HZP
	model	**BA**	**KA BA**
	material	VHM	VHM
			
	thread length	3xD	3xD
	cylindrical shank	DIN 6535 HA	DIN 6535 HA
P		●	●
M		●	●
K		●	●
N		●	●
S		●	●
H		●	●

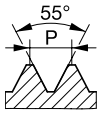
i For detailed cutting speeds please refer to the application table.

ØD		P	l_1	l_2	l_3	$Ød_1$	$Ød_2$	z	GT	BT		identification number
M	1.2	0.25	39	0.73	3.9	0.83	3	4	3.6	3.9	0.95	081767
M	1.4	0.3	39	0.87	4.5	0.98	3	4	4.2	4.5	1.10	081769
M	1.6	0.35	39	1.02	5.2	1.12	3	4	4.8	5.1	1.25	081770
M	1.8	0.35	39	1.02	5.8	1.32	3	4	5.4	5.7	1.45	081233
M	2	0.4	39	1.17	6.4	1.46	3	4	6	6.3	1.60	081278
M	2.2	0.45	39	1.31	7.1	1.60	3	4	6.6	6.9	1.75	081776
M	2.5	0.45	39	1.32	8.0	1.90	3	4	7.5	7.8	2.05	081777
M	3	0.5	39	1.46	9.5	2.36	3	4	9	9.3	2.50	079467
M	3.5	0.6	39	1.75	11.1	2.72	3	6	10.5	10.8	2.90	081778
M	4	0.7	54	2.04	12.7	3.10	6	6	12	12.3	3.30	081779
M	5	0.8	54	2.35	15.8	3.98	6	6	15	15.3	4.20	081780
M	6	1	54	2.92	19.0	4.71	6	6	18	18.3	5.00	081781
M	8	1.25	68	3.75	25.4	6.41	8	6	24	24.5	6.80	081782
M	10	1.5	75	4.5	31.7	8.11	10	6	30	30.5	8.50	081783
M	12	1.75	82	5.25	38.0	9.80	10	6	36	36.5	10.20	078835
M	14/16	2	100	6	50.0	11.50	12	6	48	48.8	12/14	081784
M	18/20	2.5	115	7.5	62.0	14.89	16	6	60	60.8	15.5/17.5	081785

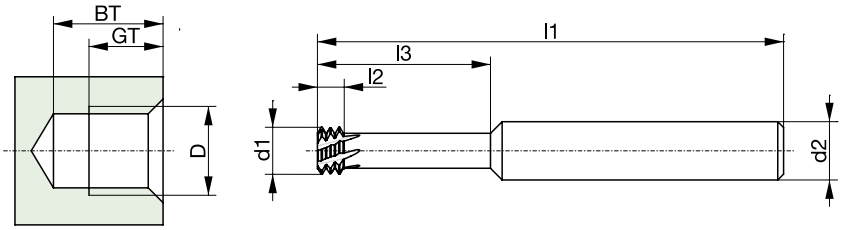
Solid carbide thread milling cutters GFD

G

British standard pipe thread
DIN EN ISO 228



type		**GFD HZP**
model		**KA BA**
material		VHM



thread length		3xD
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

i For detailed cutting speeds please refer to the application table.

ØD			P	l_1	l_2	l_3	$Ød_1$	$Ød_2$	z	GT	BT		identification number
G	1/16"	–	28	58	2.7	15.9	–	6	6	15	15.3	6.7	■ 099378
G	1/8"	–	28	68	2.7	20	–	8	6	19.5	19.8	8.8	■ 099379
G	1/4"	–	19	82	4	34.1	–	10	6	33.5	33.8	11.8	■ 099380
G	1/2"	–	14	95	5.45	46.4	–	14	6	46	46.3	19	■ 099381
G	1"	–	11	115	6.95	59.2	–	16	6	58.5	58.8	30.75	■ 099382

■ new

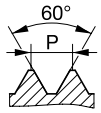
BASS TECHNIK FÜR GEWINDE

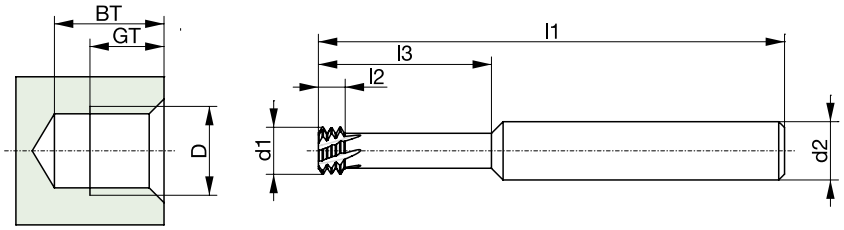
Solid carbide thread milling cutters GFD

UNC
UNF

Unified coarse thread ASME B1.1

Unified fine thread ASME B1.1





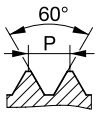
type	**GFD HZP**	**GFD HZP**
model	**BA**	**KA BA**
material	VHM	VHM
		
thread length	UNC 3xD UNF 2.5xD	UNC 3xD UNF 2.5xD
cylindrical shank	DIN 6535 HA	DIN 6535 HA
P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	●	●

i For detailed cutting speeds please refer to the application table.

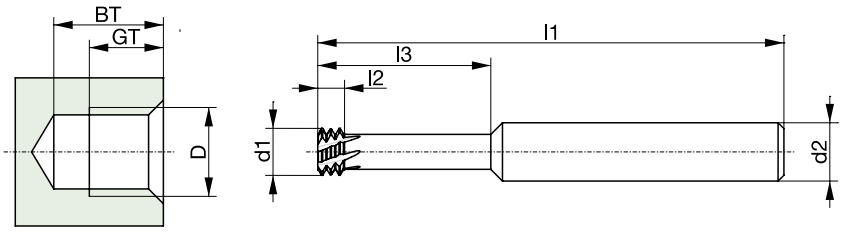
ØD		P	l_1	l_2	l_3	Ød_1	Ød_2	z	GT	BT	identification number
UNC No1	UNF No2	64	39	1.15	5.8	1.31	3	4	5.6	5.9	081788
UNC No2	UNF No3	56	39	1.31	6.8	1.6	3	4	6.6	6.9	081793
UNC No4	–	40	39	1.83	9	1.96	3	4	8.6	8.9	081806
UNC No5	UNF No6	40	39	1.84	10	2.33	3	4	9.6	9.9	081807
UNC No6	–	32	39	2.29	11	2.37	3	4	10.6	10.9	081808
UNC No8	–	32	54	2.3	13	3.11	6	6	12.5	12.8	081809
–	UNF No10	32	54	2.32	15	3.81	6	6	14.5	14.8	081813
–	UNF 1/4“	28	58	2.66	19.6	5.22	6	6	19.1	19.4	081814
UNC No10 / No12	–	24	54	3.06	15.2	3.33	6	6	14.8	15.3	081815
UNC 1/4“	–	20	58	3.68	19.7	4.62	6	6	19.1	19.6	081816

Solid carbide thread milling cutters GFD

M — ISO Metric coarse thread DIN 13



type	GFD SH
model	BA
material	VHM



thread length	2xD
cylindrical shank	DIN 6535 HA
P	
M	
K	
N	
S	
H	●

i For detailed cutting speeds please refer to the application table.

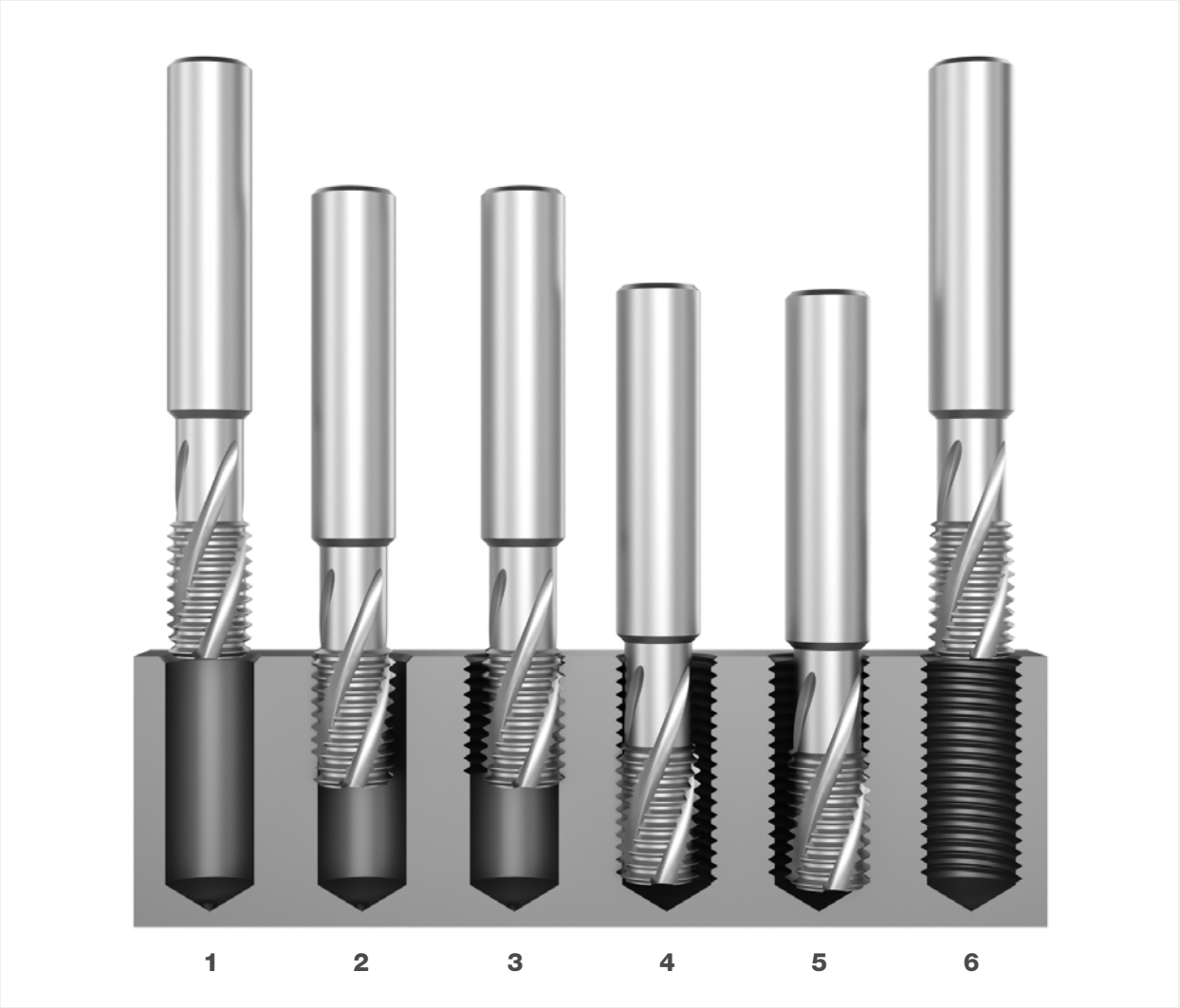
ØD		P	l_1	l_2	l_3	$Ød_1$	$Ød_2$	z	GT	BT		identification number
M	2	0.4	58	1.2	4.4	1.46	6	4	4	4.3	1.65	081817
M	2.5	0.45	58	1.35	5.5	1.89	6	4	5	5.3	2.10	081818
M	3	0.5	58	1.5	6.6	2.33	6	4	6	6.3	2.55	081819
M	3.5	0.6	58	1.8	7.7	2.71	6	4	7	7.3	2.95	081820
M	4	0.7	58	2.1	8.8	3.1	6	4	8	8.3	3.40	081821
M	5	0.8	58	2.4	11	3.9	6	4	10	10.3	4.30	081822
M	6	1	58	3.0	13.2	4.7	6	4	12	12.3	5.10	081823
M	8	1.25	62	3.75	17.5	6.4	8	4	16	16.5	6.90	079091

BASS TECHNIK FÜR GEWINDE

GEN

SOLID CARBIDE THREAD MILLING CUTTERS GFM

Machining steps for solid carbide thread milling cutters GFM



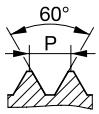
1. Start position: travel to center of machined hole
2. Approach to radial thread depth with descending loop
3. Interpolation machining begins, after machining runout loop back to center, plunge to desired thread depth
4. Approach to radial thread depth with descending loop
5. Interpolation machining continues, after machining run-out loop back to center
6. Return to start position, end of machining

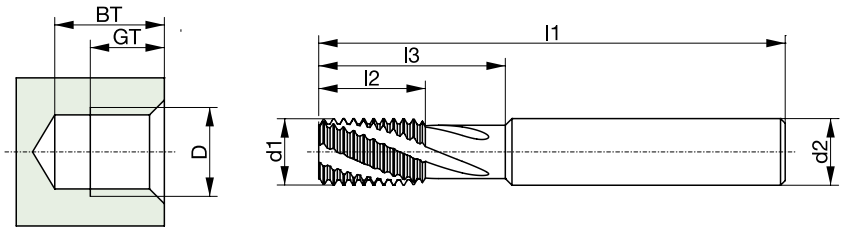
Solid carbide thread milling cutters GFM

M
MF

ISO Metric coarse thread DIN 13

ISO Metric fine thread DIN 13





type	GFM N	GFM N
model	KA	KA TICN
material	VHM	VHM
		
thread length	= l3	= l3
cylindrical shank	DIN 6535 HA	DIN 6535 HA
P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	●	●

i For detailed cutting speeds please refer to the application table.

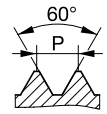
ØD	P	D ≥	l_1	l_2	l_3	Ød_1	Ød_2	z	GT	identification number	
10	0.75	12	70	16	25	9.95	10	4	25	111871	111901
10	1	12	70	16	25	9.95	10	4	25	111872	111902
10	1.5	14	70	16	25	9.95	10	4	25	111859	025461
12	1	16	80	20	31	11.95	12	4	31	111873	111903
12	1.5	16	80	20	31	11.95	12	4	31	111874	111904
12	2	16	80	20	31	11.95	12	4	31	111875	111905
16	1.5	22	90	25	40	15.95	16	5	40	111876	111906
16	2	22	90	25	40	15.95	16	5	40	111860	111866
16	2.5	22	90	25	40	15.95	16	5	40	111877	111907
18	3	24	102	33	50	17.95	18	5	50	024836	034447
20	1.5	26	105	33	50	19.95	20	5	50	111878	111908
20	2	27	105	33	50	19.95	20	5	50	111879	111909
20	3	30	105	33	50	19.95	20	5	50	111880	111910
20	3.5	30	105	33	50	19.95	20	5	50	067838	034448
20	4	36	105	33	50	19.95	20	5	50	085621	046820

Solid carbide thread milling cutters GFM

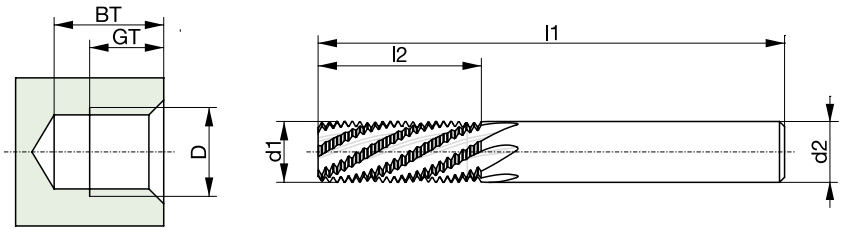
M
MF

ISO Metric coarse thread DIN 13

ISO Metric fine thread DIN 13



type		**GFM HZP**
model		**KA BA**
material		VHM



thread length		= l2
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

i For detailed cutting speeds please refer to the application table.

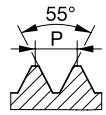
ØD	P	D ≥	l_1	l_2	Ød_1	Ød_2	z	GT	identification number
10	1	12	80	25.45	9.95	10	6	25	■ 086737
12	1	14	92	31.45	11.95	12	6	31	081715
12	1.5	16	92	32.2	11.95	12	6	32	081717
12	2	16	92	30.95	11.95	12	6	30.5	081722
16	1	18	106	40.45	15.95	16	8	40	081723
16	1.5	20	106	41.2	15.95	16	8	41	081724
16	2	20	106	40.95	15.95	16	8	40.5	081725
20	1.5	24	120	51.7	19.95	20	8	51.5	081726
20	2	26	120	50.9	19.95	20	8	50.5	081763
20	3	27	120	52.35	19.95	20	8	52	081765

■ new

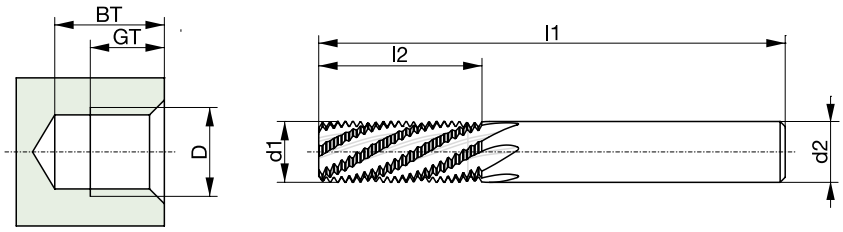
Solid carbide thread milling cutters GFM

G

British standard pipe thread
DIN EN ISO 228



type		**GFM HZP**
model		**KA BA**
material		VHM



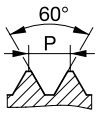
thread length		= l2
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

i For detailed cutting speeds please refer to the application table.

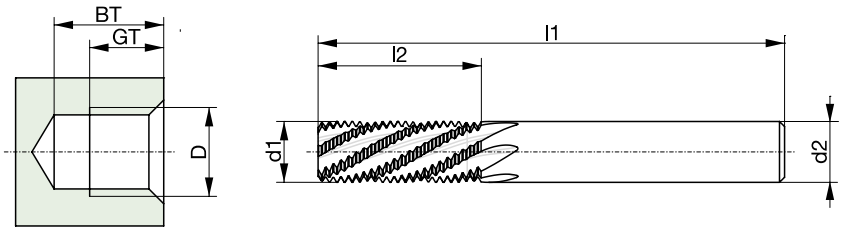
ØD	P	D ≥	l_1	l_2	Ød$_1$	Ød$_2$	z	GT	identification number
10	19	1/4“	82	26.0	9.95	10	6	25	■ 094103
16	14	1/2“	106	40.7	15.95	16	8	40	■ 088299
20	11	1“	120	51.9	19.95	20	8	50	■ 088298

Solid carbide thread milling cutters GFM

UN — **Unified thread ASME B1.1**



type		GFM HZP
model		KA BA
material		VHM



thread length		= l2
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

i For detailed cutting speeds please refer to the application table.

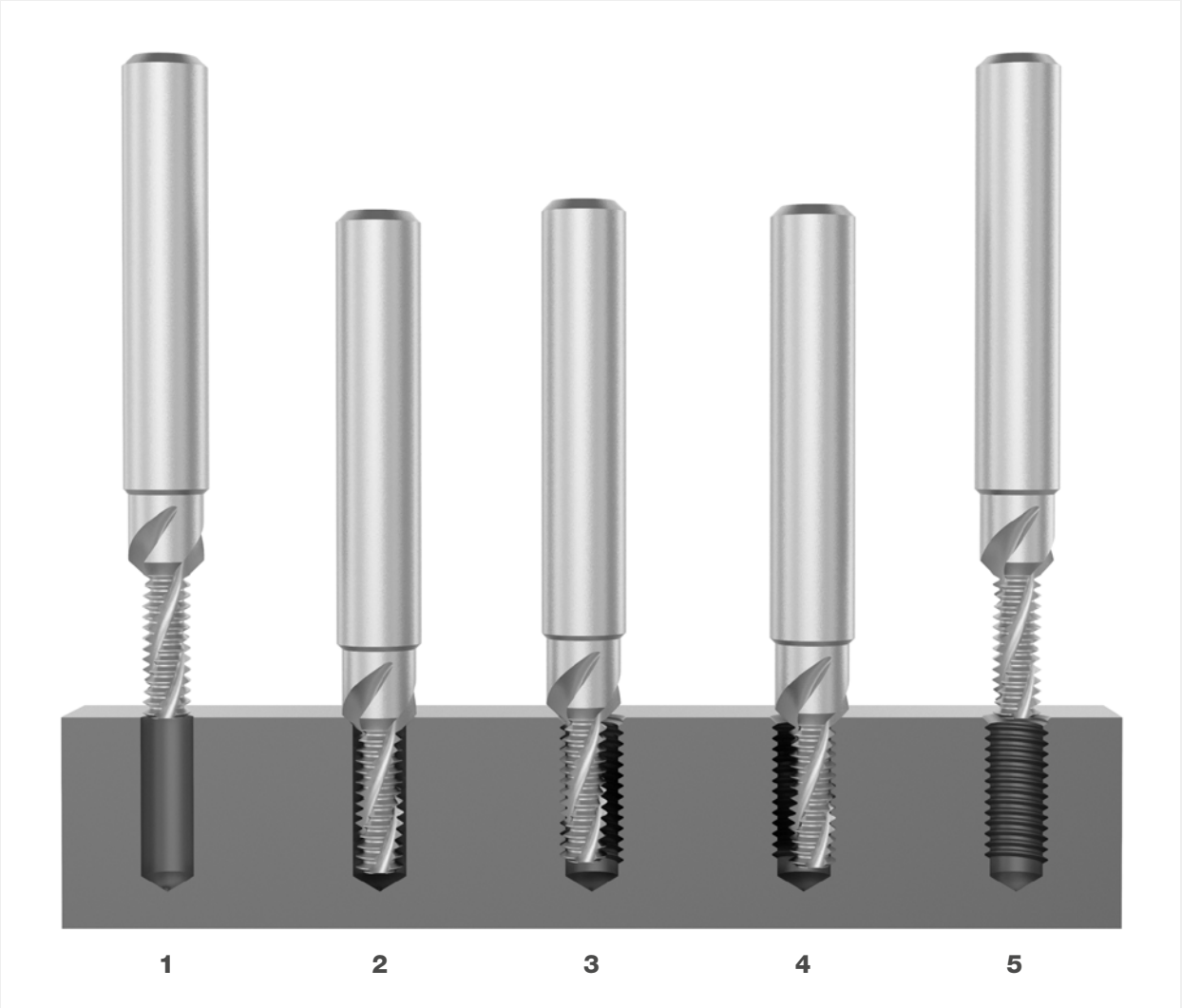
ØD	P	D ≥	l_1	l_2	Ød_1	Ød_2	z	GT	identification number
12	20	9/16"	92	31.1	11.95	12	6	30	■ 095108
12	18	5/8“	92	31.8	11.95	12	6	30	■ 095109
12	16	5/8“	92	30.9	11.95	12	6	30	■ 095111
16	16	7/8“	106	40.5	15.95	16	8	39	■ 095112
16	14	7/8“	106	40.8	15.95	16	8	39	■ 095113
16	12	7/8“	106	41.2	15.95	16	8	40	■ 095114
20	12	1“	120	51.8	19.95	20	8	50	■ 095115

■ new

ES

SOLID CARBIDE THREAD MILLING CUTTERS GFS WITH COUNTERSINK

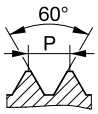
Machining steps for solid carbide thread milling cutters GFS with countersink

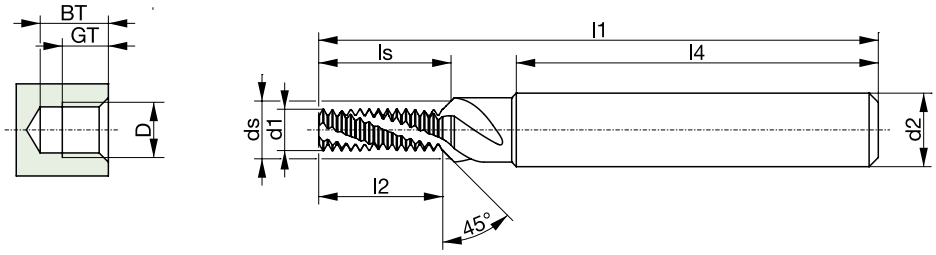


1. Start position: travel to center of machined hole
2. 90° countersinking
3. Withdrawal in Z-direction and approaching to radial thread depth with run-in loop
4. Interpolation machining begins, after machining run out loop back to center
5. Return to start position, end of thread milling process

Solid carbide thread milling cutters GFS with countersink

M — ISO Metric coarse thread DIN 13





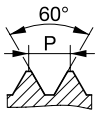
type	GFS N	GFS N
model	KA	KA TICN
material	VHM	VHM
		
thread length	1.5xD	1.5xD
cylindrical shank	DIN 6535 HA	DIN 6535 HA
P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	●	●

i For detailed cutting speeds please refer to the application table.

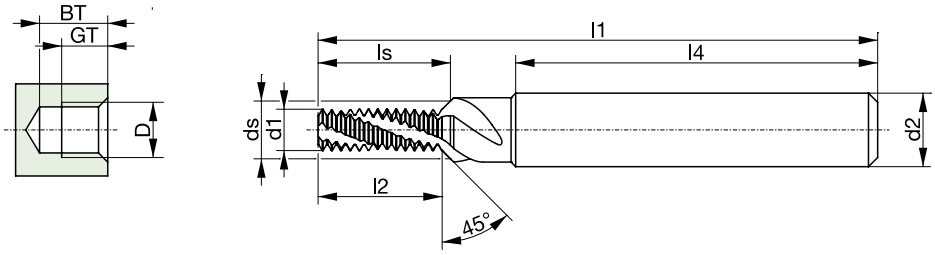
ØD		P	l_1	l_2	l_s	l_4	Ød$_1$	Ød$_2$	Ød$_s$	z	GT	BT		identification number	
M	4	0.7	48	7	7.9	36	3.10	6	4.2	3	6	8.4	3.30	037555	033211
M	5	0.8	54	9	9.9	36	3.90	6	5.3	3	7.5	10.4	4.20	037556	037128
M	6	1	62	10	11.3	36	4.70	8	6.3	3	9	11.8	5.00	037557	037129
M	8	1.25	74	13	14.1	40	6.40	10	8.4	3	12	14.6	6.80	037558	037130
M	10	1.5	80	17	18.4	45	8.10	12	10.5	4	15	18.9	8.50	037559	037131
M	12	1.75	90	20	21.5	45	9.95	14	12.6	4	18	22	10.20	037560	030206
M	16	2	102	27	26.5	48	13.40	18	16.8	4	24	27	14.00	037561	030208

Solid carbide thread milling cutters GFS with countersink

M — ISO Metric coarse thread DIN 13



type	GFS N	GFS N
model	KA	KA TICN
material	VHM	VHM



thread length	2xD	2xD
cylindrical shank	DIN 6535 HA	DIN 6535 HA
P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	●	●

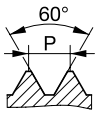
i For detailed cutting speeds please refer to the application table.

ØD		P	l_1	l_2	l_s	l_4	$Ød_1$	$Ød_2$	$Ød_s$	z	GT	BT		identification number	
M	4	0.7	48	9	9.3	36	3.10	6	4.2	3	8	9.8	3.30	111825	107092
M	5	0.8	54	11	11.5	36	3.90	6	5.3	3	10	12.0	4.20	111826	107093
M	6	1	62	13	14.3	36	4.70	8	6.3	3	12	14.8	5.00	111827	107094
M	8	1.25	74	18	19.1	40	6.40	10	8.4	3	16	19.6	6.80	111828	107095
M	10	1.5	80	22	22.9	45	8.10	12	10.5	4	20	23.4	8.50	111819	107086
M	12	1.75	90	25	26.7	45	9.95	14	12.6	4	24	27.2	10.20	111820	107087
M	14	2	102	31	32.5	48	11.50	16	14.7	4	28	33.0	12.00	111821	107088
M	16	2	102	35	36.6	48	13.40	18	16.8	4	32	37.1	14.00	111822	107089
M	18/20	2.5	125	41	43.2/44.2	50	13.95	22	19/21	4	40	44.7	15.5/17.5	111823	107090

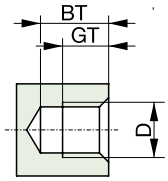
BASS TECHNIK FÜR GEWINDE

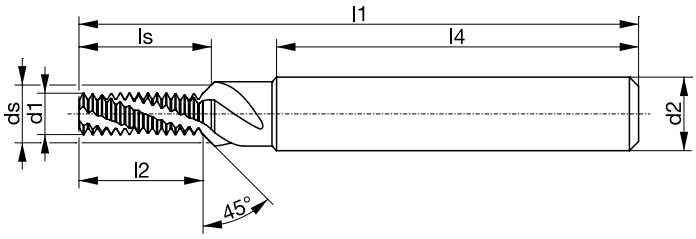
Solid carbide thread milling cutters GFS with countersink

MF — ISO Metric fine thread DIN 13



type		GFS N
model		KA TICN
material		VHM





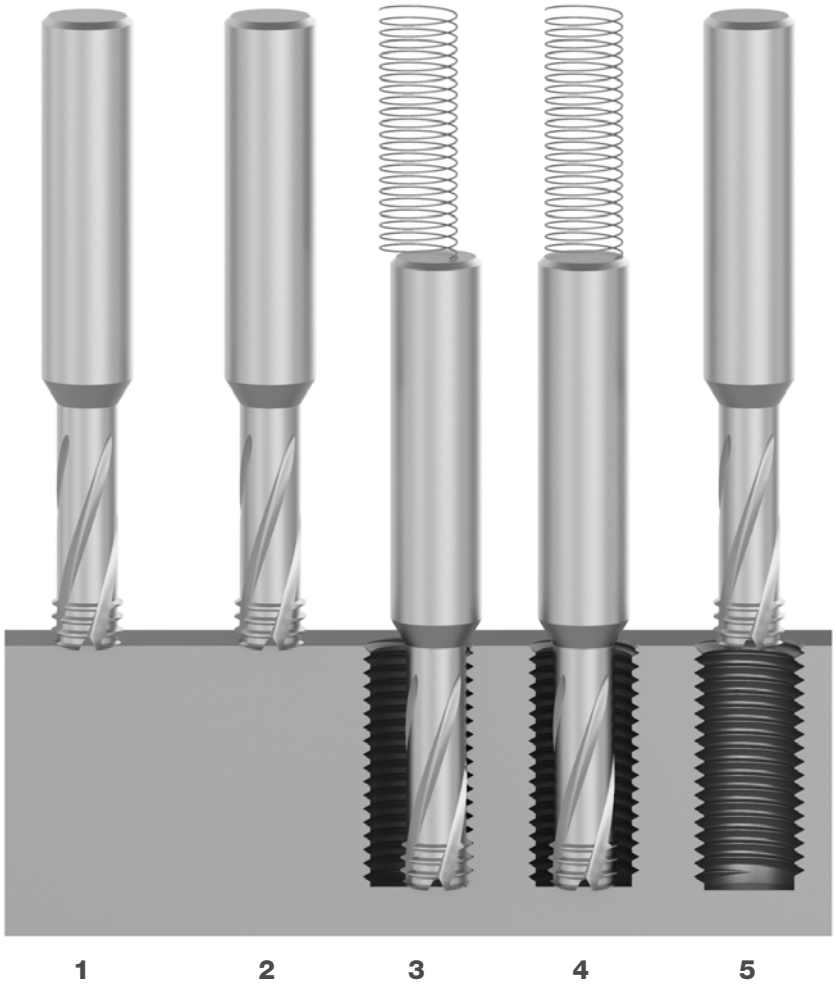
thread length		2xD
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

i For detailed cutting speeds please refer to the application table.

ØD	P	l_1	l_2	l_s	l_4	Ød_1	Ød_2	Ød_s	z	GT	BT		identification number
MF 6	x 0.75	62	13	13.8	36	4.90	8	6.3	3	12	14.5	5.20	108910
MF 8	x 0.75	74	17	17.7	40	6.80	10	8.4	3	16	18.5	7.20	108911
MF 8	x 1	74	18	18.4	40	6.60	10	8.4	3	16	19.0	7.00	108912
MF 10	x 1	80	21	22.5	45	8.50	12	10.5	4	20	23.0	9.00	108904
MF 10	x 1.25	80	22	22.9	45	8.30	12	10.5	4	20	23.5	8.80	108905
MF 12	x 1	90	25	26.6	45	10.40	14	12.6	4	24	27.5	11.00	108906
MF 12	x 1.5	90	26	27.5	45	10.00	14	12.6	4	24	28.0	10.50	108907
MF 14	x 1.5	102	31	32.1	48	12.00	16	14.7	4	28	33.0	12.50	108908
MF 16	x 1.5	102	34	35.2	48	13.90	18	16.8	4	32	36.0	14.50	108909

SOLID CARBIDE CIRCULAR THREAD MILLING CUTTERS ZBGF

Machining steps for solid carbide circular thread milling cutters ZBGF



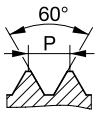
1. Move to intial position above centre of thread
2. Move to radial thread depth
3. Circular thread milling, thread per thread to final thread depth
4. Exit path in centre of bore hole
5. Return to initial position, end of machining cycle

Solid carbide circular thread milling cutters ZBGF

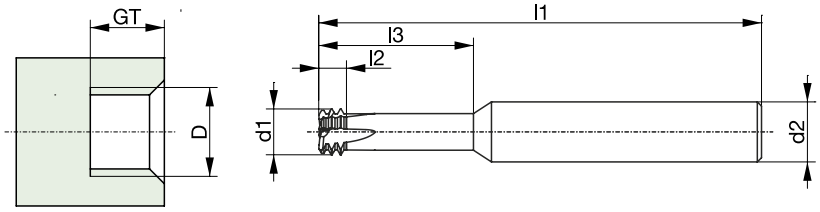
M
MF

ISO Metric coarse thread DIN 13

ISO Metric fine thread DIN 13



type		**ZBGF H**
model		**LH BA**
material		VHM



thread length		2.5xD
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

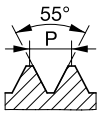
i For detailed cutting speeds please refer to the application table.

ØD		P	l_1	l_2	l_3	$Ød_1$	$Ød_2$	z	GT	identification number
M	2–2.5	0.4	58	1.2	5.8	1.46	6	4	5	081824
M	2.5–3	0.45	58	1.35	7.2	1.89	6	4	6.3	081825
M	3–4	0.5	58	1.5	8.2	2.33	6	4	7.5	104801
M	4–5	0.7	58	2.1	11.2	3.10	6	4	10	104806
M	5–6	0.8	58	2.4	13.7	3.90	6	4	12.5	026511
M	6–8	1	58	3	17.6	4.70	6	4	16	067235
M	8–10	1.25	62	3.75	22	6.40	8	4	20	067238
M	10–12	1.5	76	4.5	27.5	8.10	10	4	25	055302
M	12–14	1.75	76	5.25	32.8	9.80	10	4	30	067239
M	14–16	2	88	6	38.2	11.50	12	4	35	104890
M	16–18	2	92	6	43.2	13.40	14	4	40	104893
MF	8–10	0.75	62	2.25	22	6.80	8	4	20	104937
MF	10–12	1	76	3	27.5	8.50	10	4	25	104799

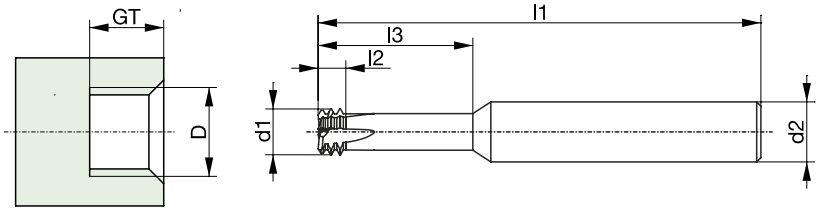
Solid carbide circular thread milling cutters ZBGF

G

British standard pipe thread
DIN EN ISO 228



type		**ZBGF H**
model		**LH BA**
material		VHM



thread length		2.5xD
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

i For detailed cutting speeds please refer to the application table.

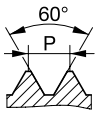
ØD		P	l_1	l_2	l_3	$Ød_1$	$Ød_2$	z	GT	identification number
G	1/16"	28	62	2.7	21.0	6.2	8	4	19.5	■ 095088
G	1/8“	28	76	2.7	27.0	8.1	10	4	24.5	■ 092124
G	1/4“	19	88	4.0	36.0	11.0	12	4	33	■ 092125
G	3/8“	19	96	4.0	44.0	14.4	16	4	42	■ 092126
G	1/2“	14	108	5.5	56.0	17.95	18	4	53	■ 092127

■ new

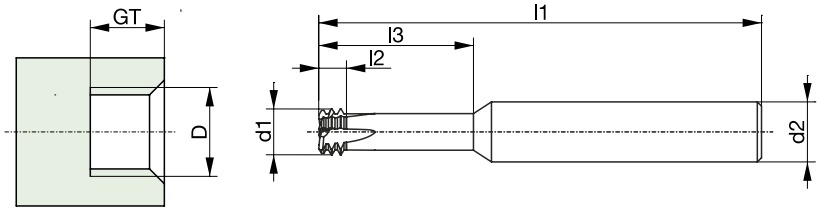
BASS TECHNIK FÜR GEWINDE

Solid carbide circular thread milling cutters ZBGF

UNC — Unified coarse thread ASME B1.1



type		ZBGF H
model		LH BA
material		VHM



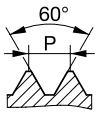
thread length		2.5xD
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

i For detailed cutting speeds please refer to the application table.

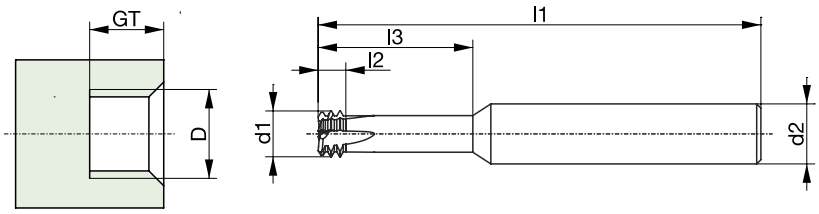
ØD	P	l_1	l_2	l_3	Ød_1	Ød_2	z	GT	identification number
UNC No4	40	58	1.9	8.3	2.05	6	4	7.3	■ 088607
UNC No6	32	58	2.4	10.2	2.52	6	4	9	■ 095091
UNC No8	32	58	2.4	11.7	3.17	6	4	10.5	■ 095092
UNC No10	24	58	3.2	14.0	3.55	6	4	12.5	■ 095098
UNC 1/4"	20	58	3.8	18.0	4.70	6	4	16	■ 095099
UNC 5/16"	18	62	4.3	22.2	6.10	8	4	20	■ 095100
UNC 3/8"	16	76	4.8	26.5	7.50	10	4	24	■ 095101
UNC 1/2"	13	78	5.9	35.0	9.95	10	4	32	■ 095090
UNC 5/8"	11	92	7.0	43.5	13.00	14	4	40	■ 095102

Solid carbide circular thread milling cutters ZBGF

UNF — **Unified fine thread ASME B1.1**



type		**ZBGF H**
model		**LH BA**
material		VHM



thread length		2.5xD
cylindrical shank		DIN 6535 HA
P		●
M		●
K		●
N		●
S		●
H		●

i For detailed cutting speeds please refer to the application table.

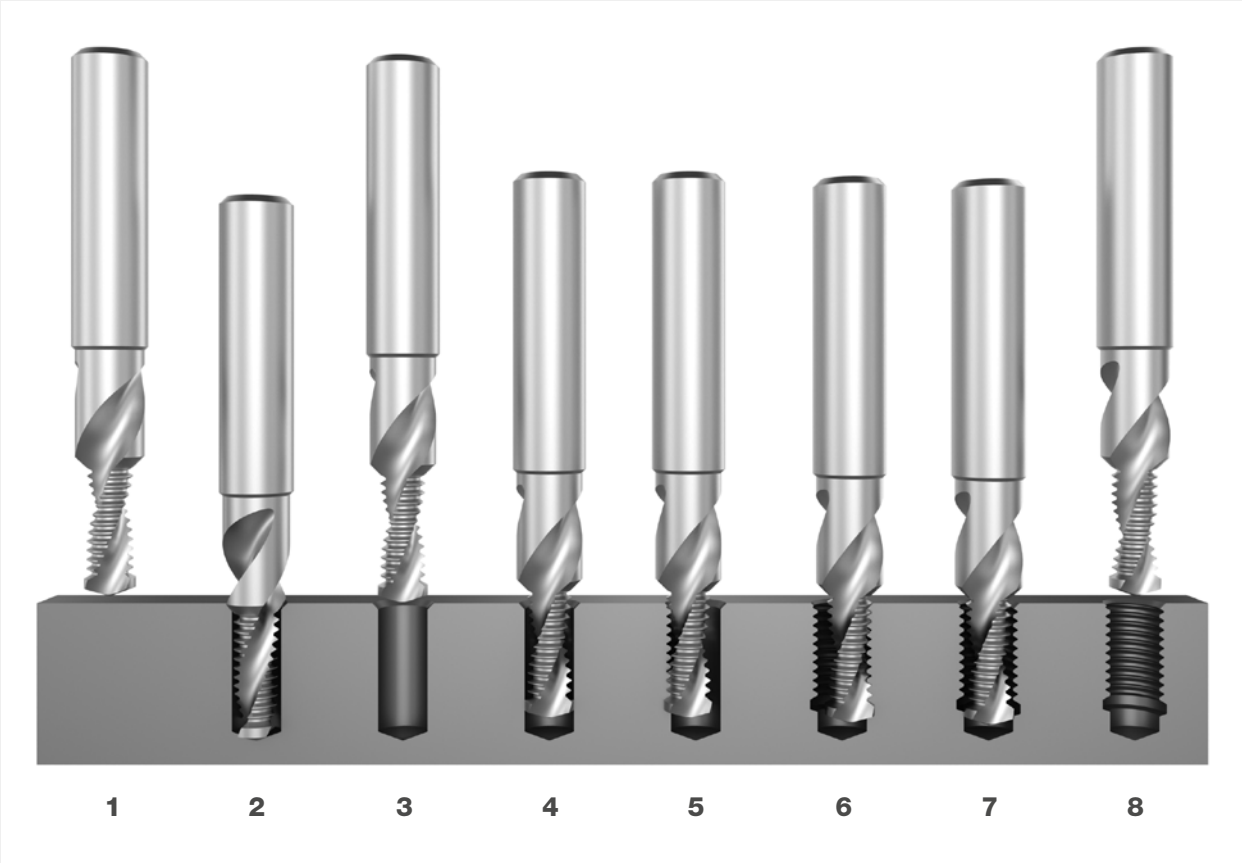
ØD	P	l_1	l_2	l_3	Ød_1	Ød_2	z	GT	identification number
UNF No4	48	58	1.6	8.3	2.16	6	4	7.3	■ 095105
UNF No8	36	58	2.1	11.7	3.26	6	4	9	■ 095119
UNF No10	32	58	2.4	14.0	3.81	6	4	10.5	■ 095120
UNF 1/4"	28	58	2.7	18.0	5.10	6	4	12.5	■ 095121
UNF 5/16"	24	62	3.2	22.0	6.50	8	4	16	■ 095122
UNF 3/8"	24	76	3.2	26.5	7.95	10	4	20	■ 095123
UNF 7/16"	20	78	3.8	30.0	9.30	10	4	24	■ 095124
UNF 1/2"	20	88	3.8	35.0	10.90	12	4	32	■ 095125
UNF 5/8"	18	92	4.3	43.0	13.90	14	4	40	■ 095126

■ new

BASS TECHNIK FÜR GEWINDE

SOLID CARBIDE DRILL AND THREAD MILLING CUTTERS BGF

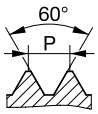
Machining steps for solid carbide drill and thread milling cutters BGF

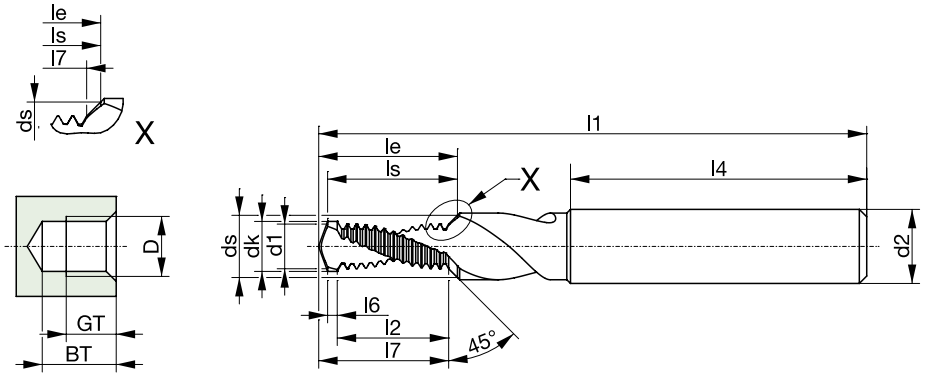


1. Start position: travel to center of machined hole
2. Drilling of core diameter and 90° countersinking
3. Retraction of tool from drilled hole for chip removal
4. Plunge to desired thread depth
5. Approach to radial thread depth with descending loop
6. Thread milling
7. After machining run-out loop back to center
8. End of thread milling process

Solid carbide drill and thread milling cutters BGF

M — ISO Metric coarse thread DIN 13





type	BGF W	BGF W
model	KA	KA FNT
material	VHM	VHM
		
thread length	2xD	2xD
cylindrical shank	DIN 6535 HA	DIN 6535 HA
P		
M		
K	●	●
N	●	●
S		
H		

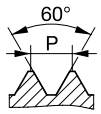
i For detailed cutting speeds please refer to the application table.

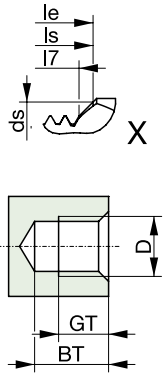
ØD			P	l_1	l_e	l_4	l_6	l_7	Ød_k	Ød_2	Ød_s	Ød_1	z	GT / l_2	BT / l_s	identification number	
M	3	*	0.5	49	7.3	36	0.5	7	2.5	6	3.2	2.45	2	6	6.9	025818	025819
M	4		0.7	49	9.4	36	0.7	9	3.3	6	4.2	3.24	2	8	8.9	025820	025821
M	5		0.8	55	11.7	36	0.8	11	4.2	6	5.3	4.1	2	10	11	025822	025823
M	6		1	62	14.5	36	1	14	5	8	6.3	4.85	2	12	13.7	025824	025825
M	8		1.25	74	19.6	40	1.3	18.6	6.8	10	8.4	6.35	2	16	17.1	025828	025829
M	10		1.5	79	23.4	45	1.5	22	8.5	12	10.5	8.08	2	20	22.2	025831	025832
M	12		1.75	89	27.1	45	1.5	26	10.3	14	12.6	9.74	2	24	25.6	025833	025834
M	14		2	102	32.8	48	1.5	31	12	16	14.7	11.35	2	28	31.1	025835	025836
M	16		2	102	37.1	48	1.5	36	14	18	16.8	13.28	2	32	35.2	025837	025838

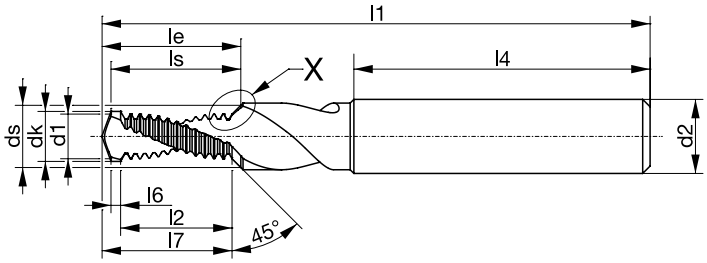
* M 3 without internal coolant

Solid carbide drill and thread milling cutters BGF

MF — ISO Metric fine thread DIN 13







type	BGF W	BGF W
model	KA	KA FNT
material	VHM	VHM

thread length	2xD	2xD
cylindrical shank	DIN 6535 HA	DIN 6535 HA
P		
M		
K	●	●
N	●	●
S		
H		

i For detailed cutting speeds please refer to the application table.

ØD	P	l_1	l_e	l_4	l_6	l_7	Ød$_k$	Ød$_2$	Ød$_s$	Ød$_1$	z	GT / l_2	BT / l_s	identification number	
MF 8 x	1	74	18.8	40	1	18	7	10	8.4	6.79	2	17	17.7	025839	025840
MF 10 x	1	79	23.2	45	1	22	9	12	10.5	8.75	2	21	21.9	025841	025842
MF 12 x	1	89	26.4	45	1	26	11	14	12.6	10.74	2	24	24.9	025843	025844
MF 12 x	1.5	89	28.2	45	1.5	27	10.5	14	12.6	10.06	2	25	26.8	025845	025846
MF 14 x	1.5	102	31.5	48	1.5	30	12.5	16	14.7	12.01	2	28	29.8	025847	
MF 16 x	1.5	102	36.3	48	1.5	35	14.5	18	16.8	13.95	2	33	34.3	025849	

BASS TECHNIK FÜR GEWINDE

THREAD MILLING SYSTEMS

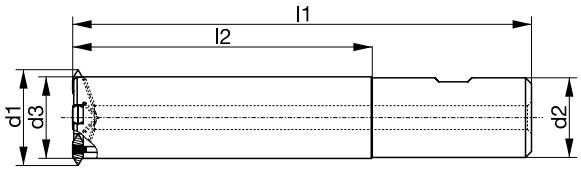
THREAD MILLING SYSTEMS WITH INSERTS

BFW / GFK

BFW for fine threads starting with M20×1.5 and standard threads starting with M24×3
GFK for fine threads starting with M24×1.5 and standard threads starting with M27×3

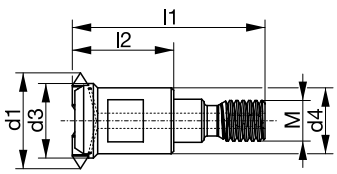
In order to avoid profile damage: **milling cutter diameter max. ⅔×D (¾×D for fine threads)**

Type	**BFW**
BFW holder with solid carbide milling cutter inserts with axial internal coolant.	



type	l1	l2	d1	d2	d3	z	identification number
BFW-017052-G05	102	52	17.5	16	13	3	049748
BFW-017076-G05	126	76	17.5	16	13	3	049749
BFW-020063-G1	113	63	20	20	14.7	2	102094
BFW-020095-G1	145	95	20	20	14.7	2	102095
BFW-030071-G2	127	71	30	25	23.0	2	102096
BFW-030105-G2	161	105	30	25	23.0	2	102097
BFW-033100-G2	161	100	33	32	25.5	3	102098
BFW-033150-G2	210	150	33	32	25.5	3	111816
BFW-042150-G3	230	150	42	40	33	4	047083
BFW-042200-G3	280	200	42	40	33	4	049741
BFW-050150-G3	230	150	50	40	41.0	4	111817
BFW-050200-G3	280	200	50	40	41.0	4	111818

Type	**GFK**
GFK thread milling head with solid carbide milling cutter inserts with axial internal coolant DEPO compatible.	

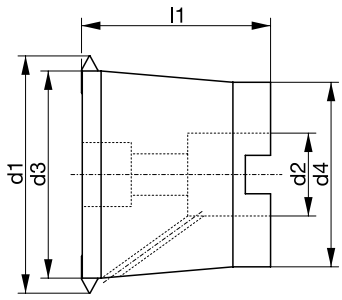


type	l1	l2	d1	d3	d4	M	z	identification number
GFK-02002008-G1	38	20	20	14.7	13	8	2	001971
GFK-03003012-G2	52	30	30	23.0	21	12	2	001972
GFK-03303012-G2	52	30	33	25.5	21	12	3	001973
GFK-04203516-G3	58	35	42	33.0	29	16	4	049742
GFK-05003516-G3	58	35	50	41.5	29	16	4	003380

THREAD MILLING SYSTEMS WITH INSERTS

AFK

In order to avoid profile damage: **milling cutter diameter max. ⅔×D (¾×D for fine threads)**

Type	**AFK**
AFK shell milling head with solid carbide milling cutter inserts with internal radial coolant. For fine threads ≥ 54 mm, coarse threads ≥ 60 mm 	

type	d1	d2	d3	d4	l1	z	screw	identification number
AFK-042040-G1	42	16	37	32	40	5	M 8	007479
AFK-042040-G2	42	16	34	32	40	5	M 8	025924
AFK-042040-G3	42	16	33	32	40	4	M 8	025925
AFK-052040-G2	52	16	44	38	40	5	M 8	001969
AFK-052040-G3	52	16	43	38	40	5	M 8	004938
AFK-063050-G2	63	22	55	49	50	6	M 10	001975
AFK-063050-G3	63	22	52	49	50	6	M 10	004937
AFK-080050-G2	80	27	72	50	50	8	M 12	001970
AFK-080050-G3	80	27	70	50	50	8	M 12	004939
AFK-100050-G3	100	32	90	78	50	10	M 16	001974

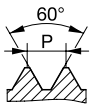
THREAD MILLING SYSTEMS WITH INSERTS

Exchangeable solid carbide milling cutter inserts and accessories

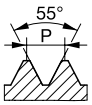
		G0.5 075	G0.5 150	G1 075	G1 150	G1 250	G2 075	G2 150	G2 250	G3 150	G3 300	G1 014	G2 014
60°		•	•	•	•	•	•	•	•	•	•		
55°												•	•
P mm		0.75–1.5	1.5–3	0.75–1.5	1.5–2.5	2.5–4.0	0.75–1.5	1.5–2.5	2.5–5.5	1.5–3.0	3.0–6.0	–	–
P Gg/“ TPI		32–16	16–9	32–16	16–10	10–7	32–16	16–10	10–5	16–9	9–4	14–11	14–11
TIN		049750	049751	–	–	–	–	–	–	–	–	–	–
TIN		–	–	111846	111847	111849	111851	111852	111854	111856	111857	111850	111855
FNT		–	–	025943	025944	013996	025945	007803	007802	025946	018975	025947	007804
		102117					102118			102116		102117	102118
		102119								102120		102119	
BFW-017052-G05	049748	•	•										
BFW-017076-G05	049749	•	•										
BFW-020063-G1	102094			•	•	•						•	
BFW-020095-G1	102095			•	•	•						•	
BFW-030071-G2	102096						•	•	•				•
BFW-030105-G2	102097						•	•	•				•
BFW-033100-G2	102098						•	•	•				•
BFW-033150-G2	111816						•	•	•				•
BFW-042150-G3	047083									•	•		
BFW-042200-G3	049741									•	•		
BFW-050150-G3	111817									•	•		
BFW-050200-G3	111818									•	•		
GFK-02002008-G1	001971			•	•	•						•	
GFK-03003012-G2	001972						•	•	•				•
GFK-03303012-G2	001973						•	•	•				•
GFK-04203516-G3	049742									•	•		
GFK-05003516-G3	003380									•	•		
AFK-042040-G1	007479			•	•	•						•	
AFK-042040-G2	025924						•	•	•				•
AFK-042040-G3	025925									•	•		
AFK-052040-G2	001969						•	•	•				•
AFK-052040-G3	004938									•	•		
AFK-063050-G2	001975						•	•	•				•
AFK-063050-G3	004937									•	•		
AFK-080050-G2	001970						•	•	•				•
AFK-080050-G3	004939									•	•		
AFK-100050-G3	001974									•	•		

General information

2 or 4 cutting edges per insert up to pitch 6 mm



ISO Metric coarse thread and Unified coarse thread ANSI B1.1 – for internal threads



Whitworth threads BS 84 and Whitworth pipe threads DIN EN ISO 228 – for internal threads

FNT For dry machining and cast

Order quantities in lots of 10

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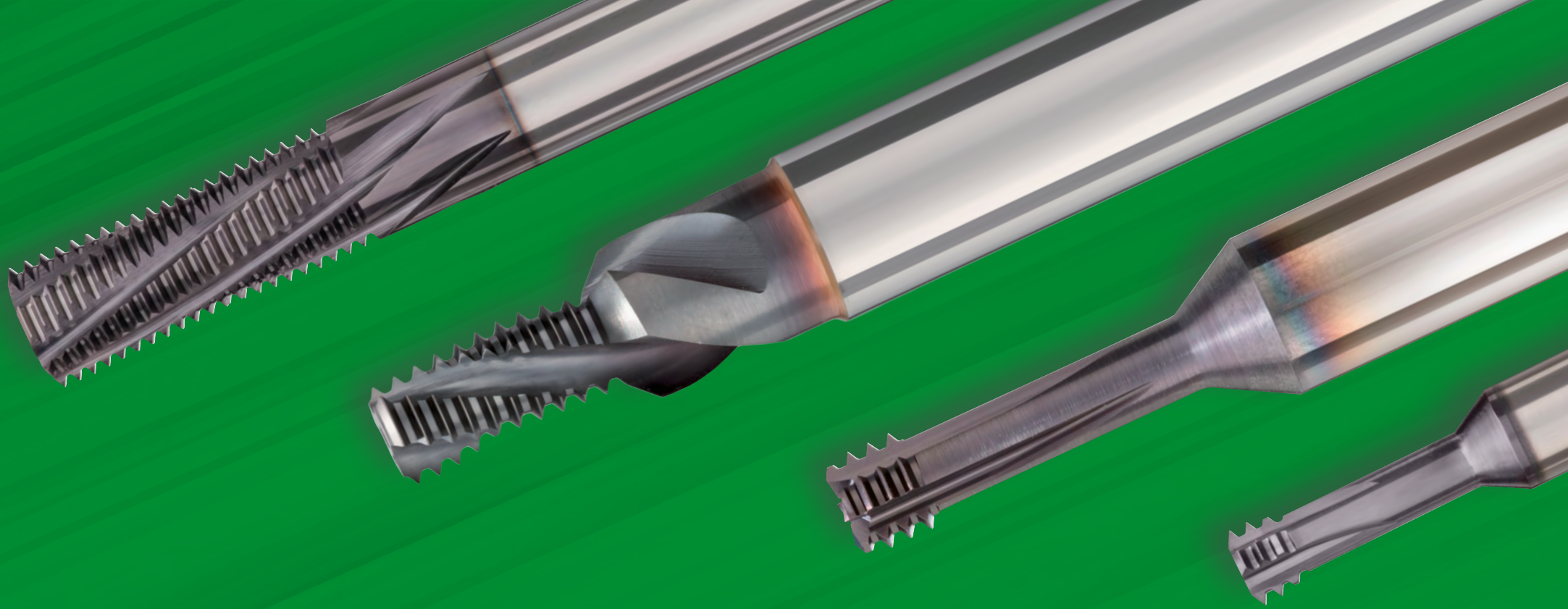


THREAD MILLING

TAP HOLDER

CONTENT

HST SYNCHRO TAP HOLDERS AND ACCESSORIES

HST SYNCHRO TAP HOLDERS AND ACCESSORIES

Scope of delivery

A clamping nut for internal coolant and a coolant tube are included in the delivery.
Wrenches, collet, cooling disk, sealing disk and axial adjustment screw have to be ordered separately.
Are you interested in special models of our tap holders and other accessories or do you seek further information?
Please contact our sales team. We will be glad to assist you.

Glossary

	C = compression
	T = tension
	During the tapping process, contaminants get into the tap holder and can therefore strongly affect its functioning. To counteract this, a regular cleaning is required. Unlike many competitive products which are damaged at temperatures above 60 °C and which are therefore insufficiently washable, the HST SYNCHRO withstands temperatures of up to 80 °C and can be completely cleaned.

Selection table

type	thread range		locking torque recommendation / max.
HST SYNCHRO 10	M1–M3	ER 08	6 Nm / 7.5 Nm
HST SYNCHRO 20	M2–M5	ER 11	16 Nm / 20 Nm
HST SYNCHRO 40 / MMS	M4–M12	ER 20	35 Nm / 44 Nm
HST SYNCHRO 40 QCA	M4–M12	ERM 20	28 Nm / 35 Nm
HST SYNCHRO 60 / MMS	M8–M20	ER 25	104 Nm / 130 Nm
HST SYNCHRO 60 QCA	M8–M16	ERM 20	28 Nm / 35 Nm
HST SYNCHRO 80	M18–M30	ER 40	176 Nm / 220 Nm
HST SYNCHRO 100	M30–M48	ER 50	300 Nm / 375 Nm

i Appropriate accessories for each HST SYNCHRO can be selected according to the size of the collet (ER).

HST SYNCHRO TAP HOLDERS AND ACCESSORIES

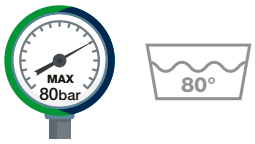
Type

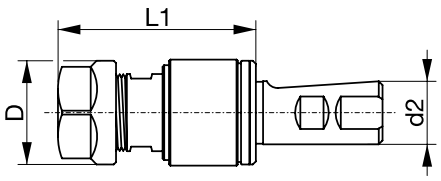
HST SYNCHRO

Our tap holder for standard applications is available in different sizes with straight shank.
Further shank types on request.

Range of dimensions from M2 to M30

Straight shank DIN 1835 B/E





type	for		d2	L1	D	C	T	identification number
HST SYNCHRO 20	M2–M5	ER 11	16	52	19	0.5	0.5	108157
HST SYNCHRO 20	M2–M5	ER 11	20	52	19	0.5	0.5	028012
HST SYNCHRO 20	M2–M5	ER 11	25	52	19	0.5	0.5	026241
HST SYNCHRO 40	M4–M12	ER 20	20	69	34	0.5	0.5	107035
HST SYNCHRO 40	M4–M12	ER 20	25	69	34	0.5	0.5	025116
HST SYNCHRO 60	M8–M20	ER 25	20	88	42	0.5	0.5	107905
HST SYNCHRO 60	M8–M20	ER 25	25	88	42	0.5	0.5	025117
HST SYNCHRO 80	M18–M30	ER 40	25	117	63	0.5	0.5	026242

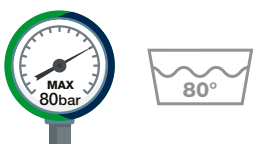
Type

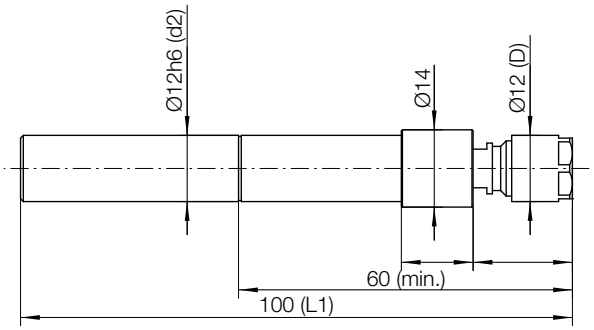
HST SYNCHRO

The special feature of the HST SYNCHRO 10: it can be shortened. The overall length of 100 mm can be adjusted down to 60 mm, so that it will perfectly suit individual applications such as avoiding interfering contours – while using standard thread cutting tools.

Range of dimensions from M1 to M3

Straight shank DIN 1835 B/E





type	for		d2	L1	D	C	T	identification number
HST SYNCHRO 10	M1–M3	ER 08	12	31	12	0.4	0.4	049226

HST SYNCHRO TAP HOLDERS AND ACCESSORIES

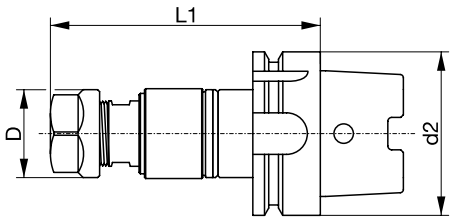
Type

HST SYNCHRO

Our tap holder for standard applications is available in different sizes with HSK shank.
Further shank types on request.

Range of dimensions from M4 to M30

HSK-A DIN 69893 A



type	for		d2	L1	D	C	T	identification number
HST SYNCHRO 40	M4–M12	ER 20	HSK 63A	108	34	0.5	0.5	025118
HST SYNCHRO 40	M4–M12	ER 20	HSK 100A	115	34	0.5	0.5	026243
HST SYNCHRO 60	M8–M20	ER 25	HSK 63A	128	42	0.5	0.5	025119
HST SYNCHRO 60	M8–M20	ER 25	HSK 100A	134	42	0.5	0.5	026244
HST SYNCHRO 80	M18–M30	ER 40	HSK 63A	160	63	0.5	0.5	026245
HST SYNCHRO 80	M18–M30	ER 40	HSK 100A	163	63	0.5	0.5	026246

Type

HST SYNCHRO SL

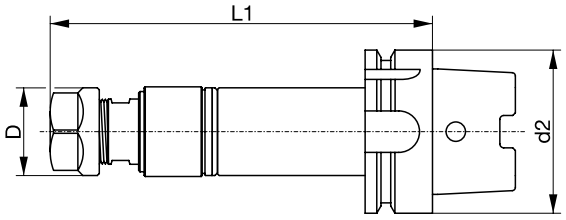
Our tap holder for the machining of parts with interfering edges in serial production. The extended shank allows the use of favorably priced threading tools in standard lengths. The extensions are integrated into standard tap holders.

HSK-A DIN 69893 A

Standard extension lengths: 50, 100, 150, 200 mm

Range of dimensions from M4 to M20

Customer-specific solutions on request



type	for		d2	L1	D	C	T	identification number
HST SYNCHRO 40 SL50	M4–M12	ER 20	HSK 63A	158	34	0.5	0.5	034465
HST SYNCHRO 40 SL100	M4–M12	ER 20	HSK 63A	208	34	0.5	0.5	039890
HST SYNCHRO 40 SL150	M4–M12	ER 20	HSK 63A	258	34	0.5	0.5	039891
HST SYNCHRO 40 SL200	M4–M12	ER 20	HSK 63A	308	34	0.5	0.5	039892
HST SYNCHRO 60 SL50	M8–M20	ER 25	HSK 63A	178	42	0.5	0.5	039893
HST SYNCHRO 60 SL100	M8–M20	ER 25	HSK 63A	228	42	0.5	0.5	039894
HST SYNCHRO 60 SL150	M8–M20	ER 25	HSK 63A	278	42	0.5	0.5	039895
HST SYNCHRO 60 SL200	M8–M20	ER 25	HSK 63A	328	42	0.5	0.5	039896

HST SYNCHRO TAP HOLDERS AND ACCESSORIES

Type

HST SYNCHRO QCA

Our tap holder with quick change system.

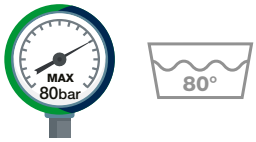
The HST SYNCHRO QCA allows tool change in the machine without using wrenches. Conventional quick change systems have large radial play between tap holder and quick change adapter, which affects the functioning of the tap holder significantly.

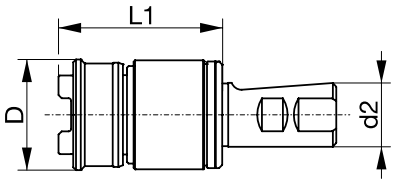
The QCA quick change adapter was especially designed for the use in the HST SYNCHRO tap holder. Reducing the play to a minimum, it guarantees reliable functioning.

Straight shank DIN 1835 B/E

Tool change on the machine without wrench

Range of dimensions from M4 to M16





type	for		d2	L1	D	C	T	identification number
HST SYNCHRO 40 QCA	M4–M12	1	25	56	35	0.5	0.5	037821
HST SYNCHRO 60 QCA	M8–M16	1	25	72	44	0.5	0.5	039847

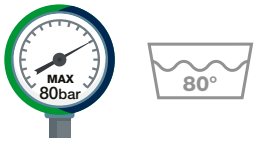
Type

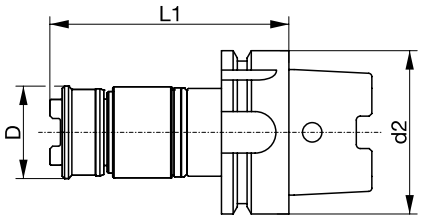
HST SYNCHRO QCA

HSK-A DIN 69893 A

Tool change on the machine without wrench

Range of dimensions from M4 to M16



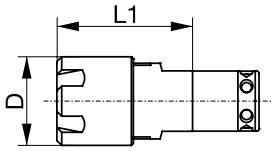


type	for		d2	L1	D	C	T	identification number
HST SYNCHRO 40 QCA	M4–M12	1	HSK 63A	95	35	0.5	0.5	039874
HST SYNCHRO 60 QCA	M8–M16	1	HSK 63A	112	44	0.5	0.5	104171

HST SYNCHRO TAP HOLDERS AND ACCESSORIES

Quick change adapter for ER collets

Specially developed for the HST SYNCHRO QCA – reduces the play to a minimum



size		L1	D	identification number
1	ERM20	40	28	028034

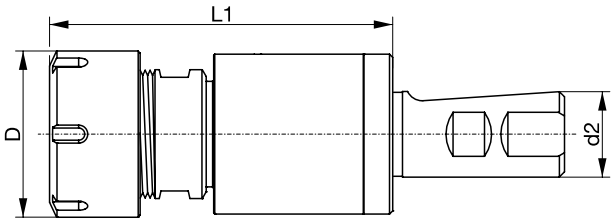
Type

HST SYNCHRO 100

Tap holder for large dimensions. For compensation of axial deviations of ± 1.5 mm.

Range of dimensions from M30 to M48

Straight shank DIN 1835 B/E



type	for		d2	L1	D	C	T	identification number
HST SYNCHRO 100	M30 – M48	ER 50	40	166	78	1.5	1.5	049225

Weldon adapter

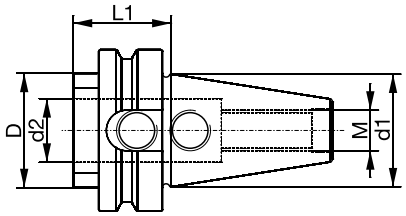
For adaption of HST SYNCHRO tap holders with straight shank.
One adapter for different HST SYNCHRO sizes.

DIN ISO 7388-1 AD for SK 40 and SK 50

MAS-BT for BT 40 and BT 50

DIN 2080 for SK 40 and SK 50

DIN 69893 A for HSK 100A

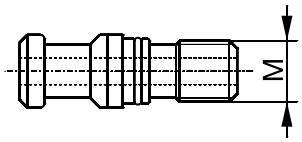


type	d1	L1	D	d2	M	identification number
DIN ISO 7388-1 AD short	SK 40	35	45	25	M16	026255
	SK 50	35	72	25	M24	026256
	SK 50	35	90	40	M24	033584
MAS-BT short	BT 40	35	55	25	M16	104144
	BT 50	40	60	25	M24	027609
DIN 2080 short	SK 40	24	60	25	M16	028903
	SK 50	34	65	25	M24	028904
DIN 69893 A	HSK 100A	120	80	40	–	033583

HST SYNCHRO TAP HOLDERS AND ACCESSORIES

Pull stud DIN 69872 form A shank DIN ISO 7388-1 AD

For the secure holding of SK shanks in the machine



type	M	identification number
SK 40	M16	029034
SK 50	M24	029035

Type

HST SYNCHRO MMS

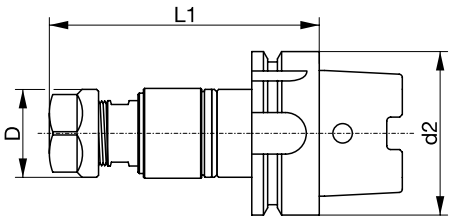
Our tap holder for minimum quantity lubrication, combined with our MQL threading tools, avoids accumulations of the lubricant ensuring that the lubricant reaches the tool operating area. This guarantees high tool life and process security.

HSK-A DIN 69893 A

For 1-channel or 2-channel MQL systems

Scope of delivery for HST SYNCHRO MMS*:
1 pc clamping nut DIN ISO 15488 for internal coolant
1 pc axial adjustment screw (AES) of your choice
1 pc MQL transfer unit of your choice
* Wrench set, collet, sealing disk and adjustment spanner for AES are to be ordered separately.

For further information, see leaflet MMS/MQL



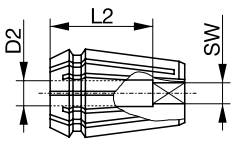
type	for		d2	L1	D	C	T	identification number
HST SYNCHRO 40 MMS	M4–M12	ER 20	HSK 63A	108	34	0.5	0.5	033815
HST SYNCHRO 60 MMS	M8–M20	ER 25	HSK 63A	128	42	0.5	0.5	041774

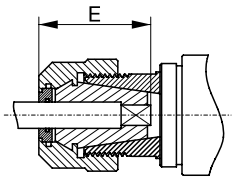
HST SYNCHRO TAP HOLDERS AND ACCESSORIES

Collet with inner square – without length compensation – DIN ISO 15488

For the secure holding of threading tools.

The internal square of the collet and the square at the threading tool's shank create a positive fitting that guarantees torque transmission.





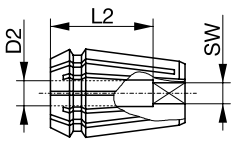
type	D2	SW	L2	E	identification number
ER 11-GB	2.8	2.1	12.0	17.0	026349
ER 11-GB	3.5	2.7	14.0	20.0	026350
ER 11-GB	4.0	3.0	14.0	20.0	026351
ER 11-GB	4.5	3.4	14.0	20.0	026352
ER 11-GB	6.0	4.9	14.0	21.5	027043
ER 16-GB	2.8	2.1	12.0	22.0	059414
ER 16-GB	3.5	2.7	14.0	25.0	051577
ER 16-GB	4.0	3.0	15.0	26.0	053441
ER 16-GB	4.5	3.4	15.0	29.0	069576
ER 16-GB	6.0	4.9	18.0	31.0	031847
ER 16-GB	7.0	5.5	18.0	31.0	042779
ER 16-GB	8.0	6.2	22.0	36.0	113030
ER 16-GB	9.0	7.0	22.0	37.0	044244
ER 20-GB	4.5	3.4	18.0	29.0	025183
ER 20-GB	6.0	4.9	18.0	31.0	025185
ER 20-GB	7.0	5.5	18.0	31.0	025186
ER 20-GB	8.0	6.2	22.0	36.0	025187
ER 20-GB	9.0	7.0	22.0	37.0	025188
ER 20-GB	10.0	8.0	25.0	38.5	025189
ER 20-GB	11.0	9.0	25.0	38.5	031010
ER 20-GB	12.0	9.0	25.0	38.5	039966
ER 25-GB	6.0	4.9	18.0	31.0	028789
ER 25-GB	7.0	5.5	18.0	31.0	045001
ER 25-GB	8.0	6.2	22.0	36.0	025190
ER 25-GB	9.0	7.0	22.0	37.0	025191
ER 25-GB	10.0	8.0	25.0	41.0	025205
ER 25-GB	11.0	9.0	25.0	41.5	025206
ER 25-GB	12.0	9.0	25.0	41.5	025207
ER 25-GB	14.0	11.0	25.0	41.5	025208
ER 25-GB	16.0	12.0	25.0	41.5	025209
ER 32-GB	6.0	4.9	18.0	31.0	066330
ER 32-GB	7.0	5.5	18.0	31.0	036141
ER 32-GB	8.0	6.2	22.0	36.0	804012
ER 32-GB	9.0	7.0	22.0	37.0	010869
ER 32-GB	10.0	8.0	25.0	41.0	109341
ER 32-GB	11.0	9.0	25.0	42.0	023290
ER 32-GB	12.0	9.0	25.0	42.0	050411
ER 32-GB	14.0	11.0	25.0	44.0	067911
ER 32-GB	16.0	12.0	25.0	45.0	040778
ER 32-GB	18.0	14.5	25.0	47.0	051977
ER 32-GB	20.0	16.0	28.0	52.0	083457

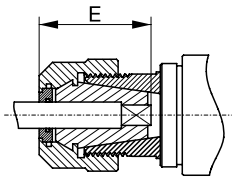
HST SYNCHRO TAP HOLDERS AND ACCESSORIES

Collet with inner square – without length compensation – DIN ISO 15488

For the secure holding of threading tools.

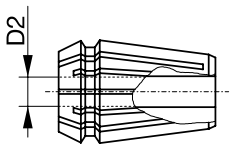
The internal square of the collet and the square at the threading tool's shank create a positive fitting that guarantees torque transmission.





type	D2	SW	L2	E	identification number
ER 40-GB	11.0	9.0	25.0	42.0	026353
ER 40-GB	12.0	9.0	25.0	42.0	026354
ER 40-GB	14.0	11.0	25.0	44.0	026355
ER 40-GB	16.0	12.0	25.0	45.0	026356
ER 40-GB	18.0	14.5	25.0	47.0	026357
ER 40-GB	20.0	16.0	28.0	52.0	026358
ER 40-GB	22.0	18.0	28.0	53.5	026359
ER 50-GB	22.0	18.0	41.0	69.0	034335
ER 50-GB	25.0	20.0	41.0	71.0	034336
ER 50-GB	28.0	22.0	41.0	73.0	034337
ER 50-GB	32.0	24.0	41.0	75.0	034338

Collet – DIN ISO 15488



type	D2	SW	L2	identification number
ER 08	2.5	–	–	053923
ER 08	2.8	–	–	053924
ER 08	3.5	–	–	053925
ER 50	36.0	–	–	034339

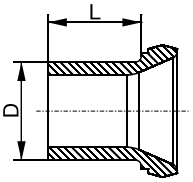
HST SYNCHRO TAP HOLDERS AND ACCESSORIES

Cooling disk for clamping nut DIN ISO 15488 for internal coolant

For improved lubrication along the shank.

When tapping through and blind holes, the process security can be increased by using a blind hole tap with coolant bore combined with a cooling disk.

For simple through hole machining, we recommend to combine the cooling disk with a spiral pointed tap without internal coolant.



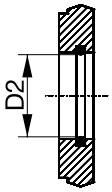
type	D2	L1	D	identification number
ER 11	3.0	5.5	5.6	083445
ER 11	4.0	5.5	6.4	106601
ER 11	5.0	5.5	7.5	104101
ER 11	6.0	5.5	7.5	105496
ER 16	3.0	11	6.4	083446
ER 16	4.0	11	7.4	032889
ER 16	5.0	11	8.4	058417
ER 16	6.0	11	9.4	031848
ER 16	7.0	11	11	048559
ER 16	8.0	2	11	033653
ER 16	9.0	2	11	044245
ER 16	10.0	11	11	039251
ER 20	4.5	11	8.2	774015
ER 20	6.0	11	09.4	774028
ER 20	7.0	11	10.4	040202
ER 20	8.0	11	11.4	109796
ER 20	9.0	11	14.0	104142
ER 20	10.0	11	14.0	705179
ER 20	11.0	11	14.0	039969
ER 20	12.0	11	14.0	039970
ER 25	6.0	11	09.4	028785
ER 25	7.0	11	10.4	048882
ER 25	8.0	11	11.4	028786
ER 25	9.0	11	12.9	028884
ER 25	10.0	11	13.4	028885
ER 25	11.0	11	14.5	028886
ER 25	12.0	11	15.4	434138
ER 25	14.0	11	17.4	028888
ER 25	16.0	11	19.0	028717
ER 32	6.0	11	9.4	039802
ER 32	7.0	11	10.4	049414
ER 32	8.0	11	11.4	036206
ER 32	9.0	11	12.4	024774
ER 32	10.0	11	13.4	037839
ER 32	12.0	11	15.4	031665
ER 32	14.0	11	17.4	045230
ER 32	16.0	11	19.4	058469
ER 32	18.0	11	21.4	052445
ER 32	20.0	11	24.0	083447

D2 = for shank Ø

HST SYNCHRO TAP HOLDERS AND ACCESSORIES

Sealing disk for clamping nut DIN ISO 15488 for internal coolant

Ensures that the lubricant is transferred into the threading tool without loss and prevents pollution of the collet.



type	D2	identification number	type	D2	identification number
ER 11	3.0	083564	ER 32	6.0–5.5	066331
ER 11	4.0	083565	ER 32	7.0–6.5	074915
ER 11	5.0	083566	ER 32	8.0–7.5	443006
ER 11	6.0	083567	ER 32	9.0–8.5	046300
ER 16	3.0–2.5	083449	ER 32	10.0–9.5	109342
ER 16	3.5–3.0	083450	ER 32	11.0–10.5	010870
ER 16	4.0–3.5	083451	ER 32	12.0–11.5	443009
ER 16	4.5–4.0	083452	ER 32	14.0–13.5	067912
ER 16	6.0–5.5	027655	ER 32	16.0–15.5	821003
ER 16	6.5–6.0	045017	ER 32	18.0–17.5	443010
ER 16	7.0–6.5	042782	ER 32	20.0–19.5	083453
ER 16	8.0–7.5	027656	ER 40	14.0–13.5	026311
ER 16	9.0–8.5	060793	ER 40	16.0–15.5	026312
ER 16	10.0–9.5	113031	ER 40	17.0–16.5	026318
ER 20	4.5–4.0	025197	ER 40	18.0–17.5	026319
ER 20	6.0–5.5	025198	ER 40	19.0–18.5	026320
ER 20	7.0–6.5	025199	ER 40	20.0–19.5	026321
ER 20	8.0–7.5	025200	ER 40	21.0–20.5	026322
ER 20	9.0–8.5	025201	ER 40	22.0–21.5	026323
ER 20	10.0–9.5	025202	ER 40	23.0–22.5	026324
ER 20	11.0–10.5	039967	ER 40	24.0–23.5	026325
ER 20	12.0–11.5	039968	ER 40	25.0–24.5	026326
ER 25	6.0–5.5	028787	ER 50	22.0–21.5	034341
ER 25	7.0–6.5	028788	ER 50	25.0–24.5	034342
ER 25	8.0–7.5	025203	ER 50	28.0–27.5	034343
ER 25	9.0–8.5	025204	ER 50	32.0–31.5	034344
ER 25	10.0–9.5	025192	ER 50	36.0–35.5	034345
ER 25	11.0–10.5	025193			
ER 25	12.0–11.5	025194			
ER 25	14.0–13.5	025195			
ER 25	16.0–15.5	025196			

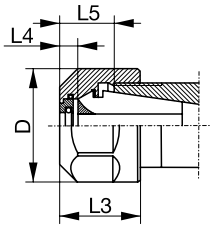
HST SYNCHRO TAP HOLDERS AND ACCESSORIES

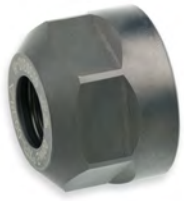
Clamping nut DIN ISO 15488 for internal coolant

For easy assembly of collet and threading tool.

The tightening of the clamping nut pushes the collet into the tapered socket in the HST SYNCHRO. The collet closes, tightly fixing the threading tool. The special internal contour of the clamping nut enables quick and easy disassembly of collet and threading tool.

BASS clamping nuts are suitable for internal coolant and can be used with sealing or cooling disks.

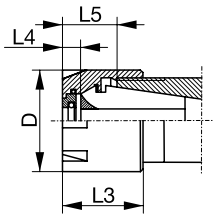




type	D	L3	L4	L5	identification number
ER 08*	12	10.8	–	4.3–6.1	155097
ER 11*	19	11.3	–	4.9–6.6	027088
ERC 11	19	14.6	3.5	8.1–9.8	079418
ERC 16	25	22.5	5.0	12.0–15.5	042896
ERC 20	34	24.0	5.0	13.0–16.5	025210
ERC 25	42	25.0	5.0	13.5–17.0	025211
ERC 32	50	27.5	5.0	14.5–18.0	023292
ERC 40	63	30.5	5.0	16.5–20.0	026267
ERC 50	78	42.5	7.0	21.0–28.0	034340

* without internal coolant

Clamping nut with minimal outer diameter for internal coolant

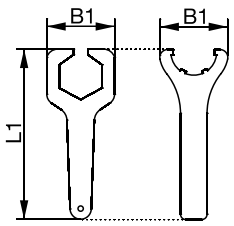


type	D	L3	L4	L5	identification number
ERMC 20	28	24.0	5.0	13.0–16.5	039971

HST SYNCHRO TAP HOLDERS AND ACCESSORIES

Wrenches

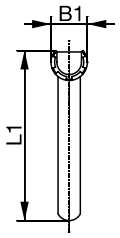
For tightening of the clamping nut



for	L1	B1	identification number
ER 08	77	22	155096
ER 11	95	32	047676
ER 16	145	44	084760
ER 20	170	52	047694
ER 25	210	65	047695
ER 32	253	80	056095
ER 40	290	90	047696
ER 50	350	110	047697

Wrench for clamping nut with minimal outer diameter

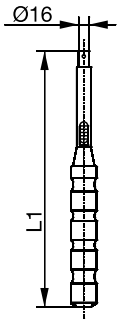
For tightening of the clamping nut



for	L1	B1	identification number
ERM 20	129	29	047773

Torque wrenches

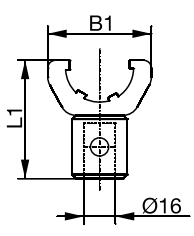
For secure tightening of the clamping nut. By setting the recommended tightening torque, you avoid damages on tap and tap holder. Suitable torque wrench heads to be ordered separately.

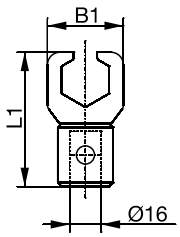


torque range	L1	identification number
5–25 Nm	278	028994
20–100 Nm	376	029013
60–300 Nm	559	039888

HST SYNCHRO TAP HOLDERS AND ACCESSORIES

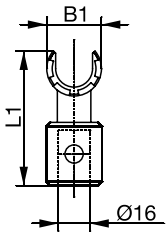
Torque wrench heads





for	L1	B1	identification number
ER 11	61	32	029014
ER 16	70	44	034749
ER 20	81	52	029015
ER 25	75	65	029017
ER 32	80	72	039801
ER 40	82	90	029018
ER 50	94	110	039889

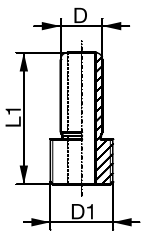
Torque wrench head for clamping nut with minimal outer diameter



for	L1	B1	identification number
ERM 20	68	68	039975

Coolant tubes for HSK shanks

For the secure coolant supply from the machine to the HST SYNCHRO.
Spanner for fastening to be ordered separately.



for	L1	D1	D	identification number
HSK 63A	36.2	M18x1	12	029028
HSK 100A	43.6	M24x1.5	16	029029

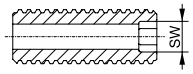
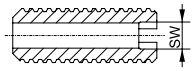
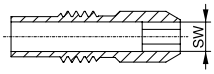
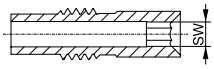
HST SYNCHRO TAP HOLDERS AND ACCESSORIES

Spanners for coolant tubes

for	identification number
HSK 63A	029032
HSK 100A	029033

Axial adjustment screw (AES)

Adjusts the protruding length of the threading tool from the HST SYNCHRO and guarantees a secure transfer of the cooling lubricant.

for shank Ø	for HST SYNCHRO	SW		identification number
KSS – for tools with internal coolant				
4.5 / 6 / 7 / 8 / 9	40 / 60	3		048578
10 / 11 / 12 / 14 / 16	40 / 60	3		040541
KSS – for lubrication along the shank				
4.5 / 6 / 7 / 8 / 9	40 / 60	3		049865
10 / 11 / 12 / 14 / 16	40 / 60	3		050985
MMS / MQL – for external sealing				
6 / 7	40	2.5		043522
8 / 9 / 10 / 11 / 12	40	3		047625
7	60	2.5		043522
8 / 9	60	3		047624
10 / 11 / 12 / 14 / 16	60	3		047625
MMS / MQL – for internal sealing				
6 / 7	40 / 60	2.5		047627
8 / 9	40	2.5		047628
8 / 9	60	2.5		047864
10	40 / 60	3		047629
11 / 12 / 14 / 16	40 / 60	3		047630

HST SYNCHRO TAP HOLDERS AND ACCESSORIES

Adjustment spanner for axial adjustment screw (AES)

Long hexagon socket wrench. for adjustment of the AES also from the shank-side of the HST SYNCHRO MMS.

SW	identification number
2.5	049664
3	043832

MQL transfer unit for HSK shanks

For the secure transfer of the lubricant from the machine to the HST SYNCHRO MMS.

Available for 1-channel and /or 2-channel system and for automatic or manual tool change.
Spanner for assembly to be ordered separately.

channel system	for	identification number
for manual tool change		
1 + 2	HSK63	043521
for automatic tool change		
1	HSK63	047632
2	HSK63	047652

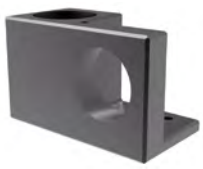
Tool holding fixture for HST SYNCHRO

Holds the HST SYNCHRO so that the clamping nut can be tightened without the help of a second wrench.

for	identification number
20/40/60/80	029071

Tool holding block

Holds the HST SYNCHRO, allowing a tightening of the clamping nut with both hands.



for	identification number
HSK 63A	029025
HSK 100A	029026


BASS
TECHNIK FÜR GEWINDE
HST SYNCHRO
60 - 025117 - KA
BASS
TECHNIK FÜR GEWINDE
HST SYNCHRO
40 - 025118 - KA

TECHNICAL INFORMATION

CONTENT

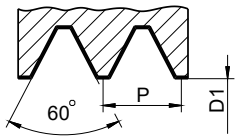
TECHNICAL INFORMATION

Surface treatments and coatings

	Coating type	Application	Properties	Micro hardness HV 0.05
 **BA**	coating individually adapted to tool types	–	–	–
 **BNE**	hard carbon	» non-ferrous metals » polymers	» high hardness » very thin coating » superior coating smoothness	6500
 **BT**	aluminium chrome nitride	» long-chipping materials » steel » stainless steel » copper » long-chipping copper alloys » aluminium » aluminium die casting » steel > 1000 N/mm² » abrasive materials	» very smooth coating surface » even coating thickness on profile edges and corners » high density and hardness of the coating	> 3300
 **BX**	high performance titanium nitride	» steel < 1,400 N/mm²	» high temperature resistance » even coating thickness on profile edges and corners » superior coating smoothness	3000
 **FNT**	nano-structured titanium aluminium nitride	» steel > 1000 N/mm² » abrasive materials	» high temperature resistance » suitable for dry processing in cast iron » high resistance against abrasive wear » high hardness	3300
 **HL HARDLUBE**	titanium aluminium nitride + WC/C tungsten carbide – carbon	» long-chipping materials » steel » stainless steel » copper » long-chipping copper alloys » aluminium » aluminium die casting	» low friction » low adhesion tendency » suitable for minimum quantity lubrication (MQL) » good lubrication properties under disadvantageous conditions » good chip formation	3000
 **TICN**	titanium carbo nitride coated	» non-alloyed and alloyed steel ≥ 800 N/mm² » abrasive materials » cast iron » cast aluminium » bronze » titanium alloys	» high hardness and wear resistance combined with good toughness properties » suitable for high mechanical stress	3000
 **TIN**	titanium nitride coated	» non-alloyed and low-alloyed steel (≤ 1000 N/mm²) and non-ferrous metals	» very versatile all-round coating with good sliding properties » very wear-resistant » protection against adhesion and abrasive wear	2300
 **VAP**	vapoured	» steel ≤ 700 N/mm² or soft and tough materials with low carbon	» vapor deposition of a non-metallic oxide layer (Fe3O4) » reduces cold weldings » improved lubricant adhesion	–

LIMIT OF NUT THREAD CORE Ø AND BORE HOLE Ø

Metric threads

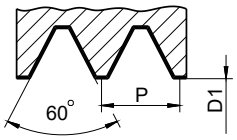


M	ISO metric coarse thread DIN 13 tol. 6H (M1 – 1.4 = 5H acc. DIN ISO 65-1)			
	P	D1 in mm min.	D1 in mm max.	
M 1	0.25	0.729	0.785	0.75
M 1.1	0.25	0.829	0.885	0.85
M 1.2	0.25	0.929	0.985	0.95
M 1.4	0.30	1.075	1.142	1.10
M 1.6	0.35	1.221	1.321	1.25
M 1.8	0.35	1.421	1.521	1.45
M 2	0.40	1.567	1.679	1.60
M 2.2	0.45	1.713	1.838	1.75
M 2.5	0.45	2.013	2.138	2.05
M 3	0.50	2.459	2.599	2.50
M 3.5	0.60	2.850	3.010	2.90
M 4	0.70	3.242	3.422	3.30
M 4.5	0.75	3.688	3.878	3.70
M 5	0.80	4.134	4.334	4.20
M 6	1.00	4.917	5.153	5.00
M 7	1.00	5.917	6.153	6.00
M 8	1.25	6.647	6.912	6.80
M 9	1.25	7.647	7.912	7.80
M 10	1.50	8.376	8.676	8.50
M 11	1.50	9.376	9.676	9.50
M 12	1.75	10.106	10.441	10.20
M 14	2.00	11.835	12.210	12.00
M 16	2.00	13.835	14.210	14.00
M 18	2.50	15.294	15.744	15.50
M 20	2.50	17.294	17.744	17.50
M 22	2.50	19.294	19.744	19.50
M 24	3.00	20.752	21.252	21.00
M 27	3.00	23.752	24.252	24.00
M 30	3.50	26.211	26.771	26.50
M 33	3.50	29.211	29.771	29.50
M 36	4.00	31.670	32.270	32.00
M 39	4.00	34.670	35.270	35.00
M 42	4.50	37.129	37.799	37.50
M 45	4.50	40.129	40.799	40.50
M 48	5.00	42.587	43.297	43.00
M 52	5.00	46.587	47.297	47.00
M 56	5.50	50.046	50.796	50.50
M 60	5.50	54.046	54.796	54.50
M 64	6.00	57.505	58.305	58.00
M 68	6.00	61.505	62.305	62.00

MF	ISO metric fine thread DIN 13 tol. 6H (P 0.25 = 5H acc. DIN ISO 965-1)			
	P	D1 in mm min.	D1 in mm max.	
MF 2	0.25	1.729	1.785	1.75
MF 2.2	0.25	1.929	1.985	1.95
MF 2.5	0.35	2.121	2.221	2.15
MF 3	0.35	2.621	2.721	2.65
MF 3.5	0.35	3.121	3.221	3.15
MF 4	0.50	3.459	3.599	3.50
MF 5	0.50	4.459	4.599	4.50
MF 6	0.50	5.459	5.599	5.50
MF 6	0.75	5.188	5.378	5.20
MF 8	0.75	7.188	7.378	7.20
MF 8	1.00	6.917	7.153	7.00
MF 9	1.00	7.917	8.153	8.00
MF 10	0.75	9.188	9.378	9.20
MF 10	1.00	8.917	9.153	9.00
MF 10	1.25	8.647	8.912	8.80
MF 12	0.75	11.188	11.378	11.20
MF 12	1.00	10.917	11.153	11.00
MF 12	1.25	10.647	10.912	10.80
MF 12	1.50	10.376	10.676	10.50
MF 14	1.00	12.917	13.153	13.00
MF 14	1.25	12.647	12.912	12.80
MF 14	1.50	12.376	12.676	12.50
MF 16	1.00	14.917	15.153	15.00
MF 16	1.50	14.376	14.676	14.50
MF 18	1.00	16.917	17.153	17.00
MF 18	1.50	16.376	16.676	16.50
MF 18	2.00	15.835	16.210	16.00
MF 20	1.00	18.917	19.153	19.00
MF 20	1.50	18.376	18.676	18.50
MF 20	2.00	17.835	18.210	18.00
MF 22	1.00	20.917	21.153	21.00
MF 22	1.50	20.376	20.676	20.50
MF 22	2.00	19.835	20.210	20.00
MF 24	1.00	22.917	23.153	23.00
MF 24	1.50	22.376	22.676	22.50
MF 24	2.00	21.835	22.210	22.00
MF 26	1.00	24.917	25.153	25.00
MF 26	1.50	24.376	24.676	24.50
MF 27	1.50	25.376	25.676	25.50
MF 27	2.00	24.835	25.210	25.00

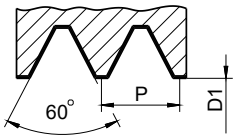
LIMIT OF NUT THREAD CORE Ø AND BORE HOLE Ø

Metric threads



MF	ISO metric fine thread DIN 13 tol. 6H (P 0.25 = 5H acc. DIN ISO 965-1)			
	P	D1 in mm min.	D1 in mm max.	
MF 28	1.50	26.376	26.676	26.50
MF 28	2.00	25.835	26.210	26.00
MF 30	1.50	28.376	28.676	28.50
MF 30	2.00	27.835	28.210	28.00
MF 30	3.00	26.752	27.252	27.00
MF 32	1.50	30.376	30.676	30.50
MF 32	2.00	29.835	30.210	30.00
MF 32	3.00	28.752	29.252	29.00
MF 33	1.50	31.376	31.676	31.50
MF 33	2.00	30.835	31.210	31.00
MF 33	3.00	29.752	30.252	30.00
MF 36	1.50	34.376	34.676	34.50
MF 36	2.00	33.835	34.210	34.00
MF 36	3.00	32.752	33.252	33.00
MF 38	1.50	36.376	36.676	36.50
MF 39	2.00	36.835	37.210	37.00
MF 39	3.00	35.752	36.252	36.00
MF 40	1.50	38.376	38.676	38.50
MF 40	2.00	37.835	38.210	38.00
MF 42	1.50	40.376	40.676	40.50
MF 42	2.00	39.835	40.210	40.00
MF 42	3.00	38.752	39.252	39.00
MF 45	1.50	43.376	43.676	43.50
MF 45	2.00	42.835	43.210	43.00
MF 45	3.00	41.752	42.252	42.00
MF 48	1.50	46.376	46.676	46.50
MF 48	2.00	45.835	46.210	46.00
MF 48	3.00	44.752	45.252	45.00
MF 50	1.50	48.376	48.676	48.50
MF 50	2.00	47.835	48.210	48.00
MF 50	3.00	46.752	47.252	47.00
MF 52	1.50	50.376	50.676	50.50
MF 52	2.00	49.835	50.210	50.00
MF 52	3.00	48.752	49.252	49.00
MF 48	5.00	42.587	43.297	43.00
MF 52	5.00	46.587	47.297	47.00

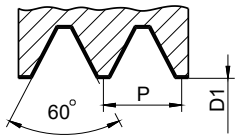
American unified threads



UNC	Unified coarse thread ASME B1.1				
	P	D1 in mm min. 2B/3B	D1 in mm max. 2B	D1 in mm max. 3B	
UNC No1	64	1.425	1.582	1.582	1.55
UNC No2	56	1.694	1.872	1.872	1.85
UNC No3	48	1.941	2.146	2.146	2.10
UNC No4	40	2.156	2.385	2.385	2.35
UNC No5	40	2.487	2.697	2.697	2.65
UNC No6	32	2.642	2.896	2.893	2.85
UNC No8	32	3.302	3.531	3.528	3.50
UNC No10	24	3.683	3.962	3.950	3.90
UNC No12	24	4.343	4.597	4.590	4.50
UNC 1/4"	20	4.978	5.258	5.250	5.10
UNC 5/16"	18	6.401	6.731	6.680	6.60
UNC 3/8"	16	7.798	8.153	8.082	8.00
UNC 7/16"	14	9.144	9.550	9.441	9.40
UNC 1/2"	13	10.592	11.024	10.881	10.80
UNC 9/16"	12	11.989	12.446	12.301	12.20
UNC 5/8"	11	13.386	13.868	13.693	13.50
UNC 3/4"	10	16.307	16.840	16.624	16.50
UNC 7/8"	9	19.177	19.761	19.520	19.50
UNC 1"	8	21.971	22.606	22.344	22.25
UNC 1.1/8"	7	24.638	25.349	25.082	25.00
UNC 1.1/4"	7	27.813	28.524	28.258	28.00
UNC 1.3/8"	6	30.353	31.115	30.851	30.75
UNC 1.1/2"	6	33.528	34.290	34.026	34.00
UNC 1.3/4"	5	38.964	39.827	39.560	39.50
UNC 2"	4.5	44.679	45.593	45.367	45.00
UNC 2.1/4"	4.5	51.029	51.943	51.717	51.50
UNC 2.1/2"	4	56.617	57.582	57.389	57.20
UNC 2.3/4"	4	62.967	63.932	63.739	63.50
UNC 3"	4	69.317	70.282	70.089	69.90

LIMIT OF NUT THREAD CORE Ø AND BORE HOLE Ø

American unified threads



UNF Unified fine thread ASME B1.1

	P	D1 in mm min. 2B/3B	max. 2B	max. 3B	
UNF No0	80	1.181	1.306	1.306	1.25
UNF No1	72	1.473	1.613	1.613	1.55
UNF No2	64	1.755	1.913	1.913	1.85
UNF No3	56	2.024	2.197	2.197	2.15
UNF No4	48	2.271	2.459	2.459	2.40
UNF No5	44	2.550	2.741	2.741	2.70
UNF No6	40	2.819	3.023	3.012	2.95
UNF No8	36	3.404	3.607	3.597	3.50
UNF No10	32	3.962	4.166	4.168	4.10
UNF No12	28	4.496	4.724	4.717	4.60
UNF 1/4"	28	5.359	5.588	5.563	5.50
UNF 5/16"	24	6.782	7.036	6.995	6.90
UNF 3/8"	24	8.382	8.636	8.565	8.50
UNF 7/16"	20	9.728	10.033	9.947	9.90
UNF 1/2"	20	11.328	11.608	11.524	11.50
UNF 9/16"	18	12.751	13.081	12.969	12.90
UNF 5/8"	18	14.351	14.681	14.554	14.50
UNF 3/4"	16	17.323	17.678	17.546	17.50
UNF 7/8"	14	20.269	20.676	20.493	20.40
UNF 1"	12	23.114	23.571	23.363	23.25
UNF 1.1/8"	12	26.289	26.746	26.538	26.50
UNF 1.1/4"	12	29.464	29.921	29.713	29.50
UNF 1.3/8"	12	32.639	33.096	32.888	32.75
UNF 1.1/2"	12	35.814	36.269	36.063	36.00

UNEF Unified extra fine thread ASME B1.1

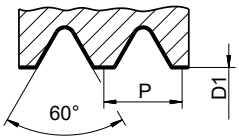
	P	D1 in mm min. 2B/3B	max. 2B	max. 3B	
UNEF No12	32	4.623	4.826	4.813	4.70
UNEF 1/4"	32	5.486	5.690	5.662	5.55
UNEF 5/16"	32	7.087	7.264	7.231	7.10
UNEF 3/8"	32	8.661	8.865	8.811	8.70
UNEF 7/16"	28	10.135	10.338	10.290	10.20
UNEF 1/2"	28	11.709	11.938	11.877	11.80
UNEF 9/16"	24	13.132	13.386	13.320	13.20
UNEF 5/8"	24	14.732	14.986	14.907	14.80
UNEF 11/16"	24	16.307	16.561	16.495	16.40
UNEF 3/4"	20	17.678	17.958	17.874	17.80
UNEF 13/16"	20	19.253	19.558	19.461	19.40
UNEF 7/8"	20	20.853	21.133	21.049	21.00
UNEF 15/16"	20	22.428	22.733	22.636	22.50
UNEF 1"	20	24.028	24.308	24.224	24.15
UNEF 1.1/16"	18	25.451	25.781	25.667	25.60
UNEF 1.1/8"	18	27.051	27.381	27.254	27.20
UNEF 1.1/4"	18	30.226	30.556	30.429	30.35
UNEF 1.5/16"	18	31.801	32.131	32.017	31.95
UNEF 1.3/8"	18	33.401	33.731	33.604	33.50
UNEF 1.1/2"	18	36.576	36.881	36.779	36.70

UN Unified thread ASME B1.1

	P	D1 in mm min. 2B/3B	max. 2B	max. 3B	
UN 1.1/8"	8	25.146	25.781	25.519	25.40
UN 1.1/4"	8	28.321	28.956	28.694	28.50
UN 1.3/8"	8	31.496	32.131	31.869	31.80
UN 1.1/2"	8	34.671	35.306	35.044	35.00
UN 1.5/8"	8	37.846	38.481	38.219	38.10
UN 1.3/4"	8	41.021	41.656	41.394	41.30
UN 1.3/4"	12	42.164	42.621	42.413	42.30
UN 1.7/8"	8	44.196	44.831	44.569	44.50
UN 2"	8	47.371	48.006	47.744	47.70
UN 2"	12	48.514	48.971	48.763	48.70

LIMIT OF NUT THREAD CORE Ø AND BORE HOLE Ø

Aerospace threads



MJ — Metric coarse thread DIN ISO 5855

	P	D1 in mm min.	D1 in mm max.	
MJ 3	0.50	2.513	2.653	2.60
MJ 4	0.70	3.318	3.498	3.40
MJ 5	0.80	4.221	4.421	4.30
MJ 6	1.00	5.026	5.215	5.10
MJ 8	1.25	6.782	6.994	6.90
MJ 10	1.50	8.539	8.779	8.70
MJ 12	1.75	10.295	10.563	10.50

EG MJ — ISO metric coarse thread EG DIN 8140

	P	D1 in mm min.	D1 in mm max.	
EG MJ 3	0.50	3.108	3.220	3.15
EG MJ 4	0.70	4.152	4.292	4.20
EG MJ 5	0.80	5.174	5.344	5.25
EG MJ 6	1.00	6.217	6.407	6.30
EG MJ 8	1.25	8.217	8.483	8.40
EG MJ 10	1.50	10.324	10.560	10.50
EG MJ 12	1.75	12.379	12.644	12.50

UNJC — Unified coarse thread ASME B1.1 and ISO 3161

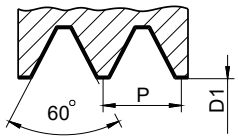
	P	D1 in mm min.	D1 in mm max.	
UNJC No4	40	2.226	2.391	2.30
UNJC No6	32	2.732	2.938	2.80
UNJC No8	32	3.393	3.599	3.50
UNJC No10	24	3.795	4.064	3.90
UNJC 1/4"	20	5.113	5.387	5.20
UNJC 5/16"	18	6.563	6.833	6.70
UNJC 3/8"	16	7.978	8.255	8.10
UNJC 1/2"	13	10.796	11.093	10.90

UNJF — Unified fine thread ASME B1.1 and ISO 3161

	P	D1 in mm min.	D1 in mm max.	
UNJF No4	48	2.329	2.467	2.40
UNJF No6	40	2.886	3.051	2.95
UNJF No8	36	3.479	3.662	3.60
UNJF No10	32	4.053	4.253	4.15
UNJF 1/4"	28	5.466	5.662	5.60
UNJF 5/16"	24	6.907	7.110	7.00
UNJF 3/8"	24	8.494	8.680	8.60
UNJF 1/2"	20	11.463	11.660	11.50

LIMIT OF NUT THREAD CORE Ø AND BORE HOLE Ø

Helical coil threads for inserts



EG M — ISO metric coarse thread EG DIN 8140

	P	D1 in mm min.	D1 in mm max.	
EG M 2	0.40	2.087	2.177	2.10
EG M 2.5	0.45	2.597	2.697	2.65
EG M 3	0.50	3.108	3.220	3.15
EG M 3.5	0.60	3.630	3.755	3.70
EG M 4	0.70	4.152	4.292	4.20
EG M 5	0.80	5.174	5.344	5.25
EG M 6	1.00	6.217	6.407	6.30
EG M 7	1.00	7.217	7.407	7.30
EG M 8	1.25	8.217	8.483	8.40
EG M 9	1.25	9.217	9.483	9.40
EG M 10	1.50	10.324	10.560	10.50
EG M 11	1.50	11.324	11.560	11.50
EG M 12	1.75	12.379	12.644	12.50
EG M 14	2.00	14.433	14.733	14.50
EG M 16	2.00	16.433	16.733	16.50
EG M 18	2.50	18.541	18.986	18.80
EG M 20	2.50	20.541	20.896	20.80

EG UNF — Unified fine thread EG ASME B18.29.1 and BS 3409

	P	D1 in mm min.	D1 in mm max.	
EG UNF No2	64	2.271	2.405	2.30
EG UNF No3	56	2.614	2.758	2.70
EG UNF No4	48	2.962	3.122	3.00
EG UNF No6	40	3.645	3.818	3.70
EG UNF No8	36	4.321	4.498	4.40
EG UNF No10	32	4.999	5.184	5.10
EG UNF 1/4"	28	6.546	6.721	6.60
EG UNF 5/16"	24	8.166	8.352	8.25
EG UNF 3/8"	24	9.754	9.931	9.80
EG UNF 7/16"	20	11.387	11.585	11.50
EG UNF 1/2"	20	12.974	13.172	13.10
EG UNF 9/16"	18	14.592	14.798	14.70
EG UNF 5/8"	18	16.180	16.386	16.25
EG UNF 3/4"	16	19.393	19.609	19.50
EG UNF 7/8"	14	22.619	22.845	22.75
EG UNF 1"	12	25.860	26.114	26.00

EG MF — ISO metric fine thread EG DIN 8140

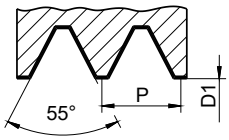
	P	D1 in mm min.	D1 in mm max.	
EG MF 8	1.00	8.217	8.407	8.30
EG MF 10	1.00	10.217	10.407	10.30
EG MF 10	1.25	10.217	10.483	10.40
EG MF 12	1.00	12.217	12.407	12.30
EG MF 12	1.25	12.271	12.483	12.40
EG MF 12	1.50	12.324	12.560	12.50
EG MF 14	1.25	14.271	14.483	14.40
EG MF 14	1.50	14.324	14.560	14.50
EG MF 16	1.50	16.324	16.560	16.50
EG MF 18	1.50	18.324	18.560	18.50
EG MF 20	1.50	20.324	20.560	20.50
EG MF 22	1.50	22.324	22.560	22.50
EG MF 24	1.50	24.324	24.560	24.50

EG UNC — Unified coarse thread EG ASME B18.29.1 and BS 3409

	P	D1 in mm min.	D1 in mm max.	
EG UNC No1	64	1.941	2.090	2.00
EG UNC No2	56	2.283	2.441	2.35
EG UNC No3	48	2.631	2.804	2.70
EG UNC No4	40	2.985	3.180	3.10
EG UNC No5	40	3.315	3.487	3.40
EG UNC No6	32	3.678	3.879	3.80
EG UNC No8	32	4.338	4.524	4.40
EG UNC No10	24	5.055	5.283	5.20
EG UNC No12	24	5.715	5.944	5.80
EG UNC 1/4"	20	6.624	6.868	6.70
EG UNC 5/16"	18	8.242	8.489	8.40
EG UNC 3/8"	16	9.868	10.127	10.00
EG UNC 7/16"	14	11.506	11.783	11.70
EG UNC 1/2"	13	13.122	13.393	13.30
EG UNC 9/16"	12	14.747	15.032	14.90
EG UNC 5/8"	11	16.375	16.673	16.50
EG UNC 3/4"	10	19.599	19.909	19.75
EG UNC 7/8"	9	22.835	23.162	23.10
EG UNC 1"	8	26.088	26.469	26.30

LIMIT OF NUT THREAD CORE Ø AND BORE HOLE Ø

Pipe threads



G — British standard pipe thread DIN EN ISO 228

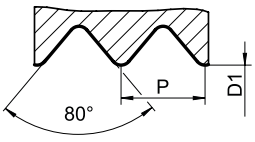
	P	D1 in mm min.	D1 in mm max.	
G 1/8"	28	8.566	8.848	8.80
G 1/4"	19	11.445	11.890	11.80
G 3/8"	19	14.950	15.395	15.25
G 1/2"	14	18.631	19.172	19.00
G 5/8"	14	20.587	21.128	21.00
G 3/4"	14	24.117	24.658	24.50
G 7/8"	14	27.877	28.418	28.25
G 1"	11	30.291	30.931	30.75
G 1.1/8"	11	34.939	35.579	35.50
G 1.1/4"	11	38.952	39.592	39.50
G 1.1/2"	11	44.845	45.485	45.25
G 1.3/4"	11	50.788	51.428	51.00
G 2"	11	56.656	57.296	57.00
G 2.1/4"	11	62.752	63.392	63.00
G 2.1/2"	11	72.226	72.866	72.50
G 2.3/4"	11	78.576	79.216	79.00
G 3"	11	84.926	85.566	85.30
G 3.1/2"	11	97.372	98.012	97.70
G 4"	11	110.072	110.712	110.50

BSF — British standard Whitworth fine thread BS 84

	P	D1 in mm min.	D1 in mm max.	
BSF 3/16"	32	3.745	4.006	3.90
BSF 7/32"	28	4.394	4.677	4.60
BSF 1/4"	26	5.099	5.396	5.30
BSF 5/16"	22	6.459	6.817	6.70
BSF 3/8"	20	7.900	8.331	8.20
BSF 7/16"	18	9.306	9.766	9.60
BSF 1/2"	16	10.667	11.162	11.00
BSF 9/16"	16	12.255	12.750	12.50
BSF 5/8"	14	13.553	14.093	14.00
BSF 3/4"	12	16.340	16.941	16.80
BSF 7/8"	11	19.269	19.909	19.80
BSF 1"	10	22.148	22.834	22.50
BSF 1.1/8"	9	24.962	25.704	25.50
BSF 1.1/4"	9	28.137	28.879	28.50
BSF 1.3/8"	8	30.860	31.673	31.50
BSF 1.1/2"	8	34.035	34.848	34.50
BSF 1.5/8"	8	37.211	38.024	37.50

BSW — British Standard Whitworth thread BS 84

	P	D1 in mm min.	D1 in mm max.	
BSW 1/8"	40	2.360	2.590	2.50
BSW 3/16"	24	3.406	3.740	3.60
BSW 1/4"	20	4.724	5.156	5.10
BSW 5/16"	18	6.121	6.589	6.50
BSW 3/8"	16	7.493	7.988	7.90
BSW 7/16"	14	8.791	9.332	9.10
BSW 1/2"	12	9.987	10.589	10.50
BSW 5/8"	11	12.918	13.559	13.40
BSW 3/4"	10	15.831	16.538	16.40
BSW 7/8"	9	18.613	19.355	19.25
BSW 1"	8	21.336	22.149	22.00
BSW 1.1/8"	7	23.927	24.831	24.50
BSW 1.1/4"	7	27.102	28.006	27.50
BSW 1.3/8"	6	29.558	30.555	30.00
BSW 1.1/2"	6	32.680	33.703	33.20
BSW 1.5/8"	5	34.834	35.921	35.50
BSW 1.3/4"	5	37.943	39.136	39.00
BSW 1.7/8"	4.5	40.468	41.648	41.50
BSW 2"	4.5	43.571	44.877	44.50
BSW 2.1/4"	4	49.017	50.465	50.00
BSW 2.1/2"	4	55.367	56.815	56.00
BSW 2.3/4"	3.5	60.554	62.182	61.50
BSW 3"	3.5	66.904	68.532	68.00

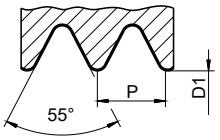


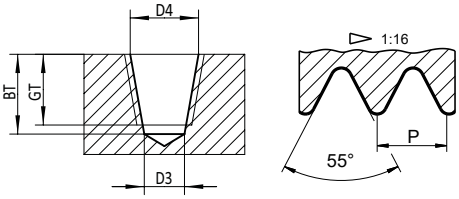
Pg — Steel Conduit Thread DIN 40430

	P	D1 in mm min.	D1 in mm max.	
Pg 7	20	11.280	11.430	11.40
Pg 9	18	13.860	14.010	13.90
Pg 11	18	17.260	17.410	17.30
Pg 13.5	18	19.060	19.210	19.10
Pg 16	18	21.160	21.310	21.25
Pg 21	16	26.780	27.030	27.00
Pg 29	16	35.480	35.730	35.60

LIMIT OF NUT THREAD CORE Ø AND BORE HOLE Ø

Pipe threads

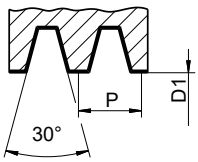




Rp	British standard pipe thread DIN EN 10226-1			
	P	D1 in mm min.	D1 in mm max.	
Rp 1/8"	28	8.495	8.637	8.60
Rp 1/4"	19	11.341	11.549	11.50
Rp 3/8"	19	14.846	15.054	15.00
Rp 1/2"	14	18.489	18.773	18.50
Rp 3/4"	14	23.975	24.259	24.00
Rp 1"	11	30.111	30.471	30.25
Rp 1.1/4"	11	38.772	39.132	39.00
Rp 1.1/2"	11	44.665	45.025	44.85
Rp 2"	11	56.476	56.836	56.50

Rc	Whitworth pipe thread tapered DIN EN 10226-2 and ISO 7/1 tapered 1:16				
	P	mm D3 zyl.	mm D4 kon.	mm GT	mm BT
Rc 1/8"	28	8.30	8.55	8.80	10.20
Rc 1/4"	19	11.10	11.40	13.10	15.70
Rc 3/8"	19	14.50	14.95	13.50	16.00
Rc 1/2"	14	18.00	18.60	17.80	21.50
Rc 3/4"	14	23.50	24.10	19.10	22.80
Rc 1"	11	29.75	30.25	22.70	27.30
Rc 1.1/4"	11	38.25	38.90	25.00	30.00
Rc 1.1/2"	11	44.00	44.80	25.00	30.00
Rc 2"	11	55.56	56.62	29.30	34.00

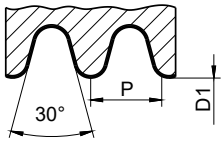
Metric ISO trapezoidal threads



Tr	Metric ISO trapezoidal thread DIN 103 tol. 7H			
	P	D1 in mm min.	D1 in mm max.	
Tr 10	2	8.000	8.236	8.20
Tr 12	3	9.000	9.315	9.20
Tr 14	3	11.000	11.315	11.25
Tr 14[1]	4	10.500	10.875	10.25
Tr 16	4	12.000	12.375	12.25
Tr 18	4	14.000	14.375	14.25
Tr 20	4	16.000	16.375	16.25
Tr 22	5	17.000	17.450	17.25
Tr 24	5	19.000	19.450	19.25
Tr 28	5	23.000	23.450	23.25
Tr 30	6	24.000	24.500	24.25
Tr 32	6	26.000	26.500	26.25
Tr 36	6	30.000	30.500	30.25
Tr 38	7	31.000	31.560	31.30
Tr 44	7	37.000	37.560	37.30
Tr 46	8	38.000	38.630	38.30
Tr 50	8	42.000	42.630	42.30
Tr 55	9	46.000	46.670	46.30
Tr 60	9	51.000	51.670	51.30
Tr 65	10	55.000	55.710	55.50

[1] acc. DIN 103 edition 1924

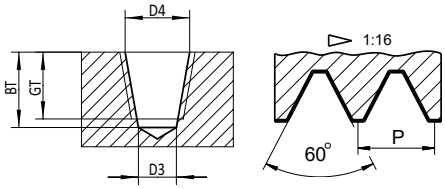
Round threads



Rd	Round thread DIN 405 tol. 7H			
	P	D1 in mm min.	D1 in mm max.	
Rd 8	10	5.714	6.164	6.00
Rd 10	10	7.714	8.164	8.00
Rd 12	10	9.714	10.274	10.00
Rd 14	8	11.142	11.812	11.50
Rd 16	8	13.142	13.812	13.50
Rd 18	8	15.142	15.812	15.50
Rd 20	8	17.142	17.812	17.50
Rd 22	8	19.142	19.812	19.50
Rd 24	8	21.142	21.812	21.50
Rd 28	8	25.142	25.672	25.50

LIMIT OF NUT THREAD CORE Ø AND BORE HOLE Ø

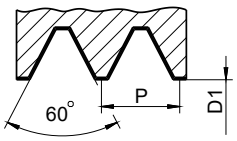
American pipe threads tapered



NPT	American standard taper pipe thread ASME B1.20.1 tapered 1:16				
	P	mm D3 zyl.	D4 kon.	GT	BT
NPT 1/16"	27	6.15	6.39	9.70	12.10
NPT 1/8"	27	8.40	8.74	9.70	12.10
NPT 1/4"	18	11.10	11.36	14.30	17.50
NPT 3/8"	18	14.30	14.80	14.60	17.70
NPT 1/2"	14	17.90	18.32	19.00	23.00
NPT 3/4"	14	23.20	23.67	19.50	23.00
NPT 1"	11.5	29.00	29.69	23.40	27.40
NPT 1.1/4"	11.5	37.70	38.45	23.90	28.00
NPT 1.1/2"	11.5	44.00	44.52	23.90	28.40
NPT 2"	11.5	56.00	56.56	24.30	28.40

NPTF	American standard taper pipe thread ASME B1.20.3 tapered 1:16				
	P	mm D3 zyl.	D4 kon.	GT	BT
NPTF 1/16"	27	6.10	6.41	9.70	12.10
NPTF 1/8"	27	8.40	8.76	9.70	12.10
NPTF 1/4"	18	11.00	11.40	14.30	17.50
NPTF 3/8"	18	14.30	14.84	14.60	17.70
NPTF 1/2"	14	17.60	18.33	19.00	23.00
NPTF 3/4"	14	23.00	23.68	19.50	23.00
NPTF 1"	11.5	29.00	29.73	23.40	27.40
NPTF 1.1/4"	11.5	37.50	38.48	23.90	28.00
NPTF 1.1/2"	11.5	43.50	44.55	23.90	28.40
NPTF 2"	11.5	56.00	56.59	24.30	28.40

American standard straight pipe threads

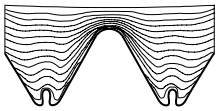


NPSM	American standard straight pipe thread ASME B1.20.1			
	P	D1 in mm min.	max.	
NPSM 1/8"	27	9.093	9.246	9.10
NPSM 1/4"	18	11.887	12.217	12.00
NPSM 3/8"	18	15.316	15.545	15.50
NPSM 1/2"	14	18.974	19.279	19.00
NPSM 3/4"	14	24.333	24.638	24.50
NPSM 1"	11.5	30.505	30.759	30.60
NPSM 1.1/4"	11.5	39.268	39.497	39.40
NPSM 1.1/2"	11.5	45.339	45.568	45.50
NPSM 2"	11.5	57.379	57.607	57.50

NPSF	American standard straight pipe thread ASME B1.20.3			
	P	D1 in mm min.	max.	
NPSF 1/8"	27	8.651	8.830	8.70
NPSF 1/4"	18	11.232	11.452	11.30
NPSF 3/8"	18	14.671	14.889	14.75
NPSF 1/2"	14	18.118	18.375	18.25
NPSF 3/4"	14	23.465	23.772	23.50
NPSF 1"	11.5	29.464	29.758	29.50

LIMIT OF NUT THREAD CORE Ø AND BORE HOLE Ø

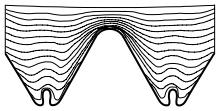
Roll taps



M	ISO metric coarse thread DIN 13, DIN 13/50				
	P	D1 in mm min. 6H/7H	D1 in mm max. 6H	D1 in mm max. 7H	
M 1	0.25	0.729	0.785	0.799	0.88
M 1.1	0.25	0.829	0.885	0.899	0.98
M 1.2	0.25	0.929	0.985	0.999	1.08
M 1.4	0.30	1.075	1.142	1.159	1.26
M 1.6	0.35	1.221	1.321	1.346	1.44
M 1.8	0.35	1.421	1.521	1.546	1.64
M 2	0.40	1.567	1.679	1.707	1.82
M 2.2	0.45	1.713	1.838	1.869	2.00
M 2.5	0.45	2.013	2.138	2.169	2.30
M 3	0.50	2.459	2.599	2.634	2.80
M 3.5	0.60	2.850	3.010	3.050	3.25
M 4	0.70	3.242	3.422	3.467	3.70
M 4.5	0.75	3.688	3.878	3.926	4.15
M 5	0.80	4.134	4.334	4.384	4.65
M 6	1.00	4.917	5.153	5.212	5.55
M 7	1.00	5.917	6.153	6.212	6.55
M 8	1.25	6.647	6.912	6.978	7.45
M 9	1.25	7.647	7.912	7.978	8.45
M 10	1.50	8.376	8.676	8.751	9.35
M 11	1.50	9.376	9.676	9.751	10.35
M 12	1.75	10.106	10.441	10.525	11.20
M 14	2.00	11.835	12.210	12.304	13.10
M 16	2.00	13.835	14.210	14.304	15.10
M 18	2.50	15.294	15.744	15.857	16.80
M 20	2.50	17.294	17.744	17.857	18.80
M 22	2.50	19.294	19.744	19.857	20.80
M 24	3.00	20.752	21.252	21.377	22.60
M 27	3.00	23.752	24.252	24.377	25.60
M 30	3.50	26.211	26.771	26.911	28.30
M 33	3.50	29.211	29.771	29.911	31.30
M 36	4.00	31.670	32.270	32.420	34.10
M 39	4.00	34.670	35.270	35.420	37.10
M 42	4.50	37.129	37.799	37.967	39.80
M 45	4.50	40.129	40.799	40.967	42.80
M 48	5.00	42.587	43.297	43.475	45.60

LIMIT OF NUT THREAD CORE Ø AND BORE HOLE Ø

Roll taps

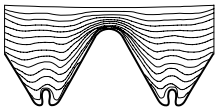


MF	ISO metric fine thread DIN 13, DIN 13/50				
	P	D1 in mm min. 6H/7H	max. 6H	max. 7H	
MF 2	0.25	1.729	1.785	1.799	1.88
MF 2.2	0.25	1.929	1.985	1.999	2.10
MF 2.5	0.35	2.121	2.221	2.246	2.35
MF 3	0.35	2.621	2.721	2.746	2.85
MF 3.5	0.35	3.121	3.221	3.246	3.35
MF 4	0.50	3.459	3.599	3.634	3.80
MF 5	0.50	4.459	4.599	4.634	4.80
MF 6	0.50	5.459	5.599	5.634	5.80
MF 6	0.75	5.188	5.378	5.426	5.65
MF 8	0.75	7.188	7.378	7.426	7.65
MF 8	1.00	6.917	7.153	7.212	7.55
MF 10	0.75	9.188	9.378	9.426	9.65
MF 10	1.00	8.917	9.153	9.212	9.55
MF 10	1.25	8.647	8.912	8.978	9.45
MF 12	0.75	11.188	11.378	11.426	11.65
MF 12	1.00	10.917	11.153	11.212	11.55
MF 12	1.25	10.647	10.912	10.978	11.45
MF 12	1.50	10.376	10.676	10.751	11.35
MF 14	1.00	12.917	13.153	13.212	13.55
MF 14	1.25	12.647	12.912	12.978	13.45
MF 14	1.50	12.376	12.676	12.751	13.35
MF 16	1.00	14.917	15.153	15.212	15.55
MF 16	1.50	14.376	14.676	14.751	15.35
MF 18	1.00	16.917	17.153	17.212	17.55
MF 18	1.50	16.376	16.676	16.751	17.35
MF 18	2.00	15.835	16.210	16.304	17.10
MF 20	1.00	18.917	19.153	19.212	19.55
MF 20	1.50	18.376	18.676	18.751	19.35
MF 20	2.00	17.835	18.210	18.304	19.10
MF 22	1.00	20.917	21.153	21.212	21.55
MF 22	1.50	20.376	20.676	20.751	21.35
MF 22	2.00	19.835	20.210	20.304	21.10
MF 24	1.00	22.917	23.153	23.212	23.55
MF 24	1.50	22.376	22.676	22.751	23.35
MF 24	2.00	21.835	22.210	22.304	23.10

MF	ISO metric fine thread DIN 13, DIN 13/50				
	P	D1 in mm min. 6H/7H	max. 6H	max. 7H	
MF 26	1.00	24.917	25.153	25.212	25.55
MF 26	1.50	24.376	24.676	24.751	25.35
MF 27	1.50	25.376	25.676	25.751	26.35
MF 27	2.00	24.835	25.210	25.304	26.10
MF 28	1.00	26.917	27.153	27.212	27.55
MF 28	1.50	26.376	26.676	26.751	27.35
MF 28	2.00	25.835	26.210	26.304	27.10
MF 30	1.00	28.917	29.153	29.212	29.55
MF 30	1.50	28.376	28.676	28.751	29.35
MF 30	2.00	27.835	28.210	28.304	29.10
MF 30	3.00	26.752	27.252	27.377	28.60
MF 32	1.50	30.376	30.676	30.751	31.35
MF 32	2.00	29.835	30.210	30.304	31.10
MF 33	1.50	31.376	31.676	31.751	32.35
MF 33	2.00	30.835	31.210	31.304	32.10
MF 33	3.00	29.752	30.252	30.377	31.60
MF 36	1.50	34.376	34.676	34.751	35.35
MF 36	2.00	33.835	34.210	34.304	35.10
MF 36	3.00	32.752	33.252	33.377	34.60
MF 38	1.50	36.376	36.676	36.751	37.35
MF 39	2.00	36.835	37.210	37.304	38.10
MF 39	3.00	35.752	36.252	36.377	37.60
MF 40	1.50	38.376	38.676	38.751	39.35
MF 40	2.00	37.835	38.210	38.304	39.10
MF 42	1.50	40.376	40.676	40.751	41.35
MF 42	2.00	39.835	40.210	40.304	41.10
MF 42	3.00	38.752	39.252	39.377	40.60
MF 45	1.50	43.376	43.676	43.751	44.35
MF 45	2.00	42.835	43.210	43.304	44.10
MF 45	3.00	41.752	42.252	42.377	43.60
MF 48	1.50	46.376	46.676	46.751	47.35
MF 48	2.00	45.835	46.210	46.304	47.10
MF 48	3.00	44.752	45.252	45.377	46.60

LIMIT OF NUT THREAD CORE Ø AND BORE HOLE Ø

Roll taps



EG M	ISO metric coarse thread EG DIN 8140		
	P		
EG M 2	0.40	2.32	
EG M 2.5	0.45	2.85	
EG M 3	0.50	3.40	
EG M 3.5	0.60	4.00	
EG M 4	0.70	4.55	
EG M 5	0.80	5.65	
EG M 6	1.00	6.80	
EG M 7	1.00	7.80	
EG M 8	1.25	9.00	
EG M 9	1.25	10.00	
EG M 10	1.50	11.20	
EG M 11	1.50	12.20	
EG M 12	1.75	13.40	
EG M 14	2.00	15.60	
EG M 16	2.00	17.60	
EG M 18	2.50	20.00	
EG M 20	2.50	22.00	

EG MF	ISO metric fine thread EG DIN 8140		
	P		
EG MF 8	1.00	8.80	
EG MF 10	1.00	10.80	
EG MF 10	1.25	11.00	
EG MF 12	1.00	12.80	
EG MF 12	1.25	13.00	
EG MF 12	1.50	13.20	
EG MF 14	1.25	15.00	
EG MF 14	1.50	15.20	
EG MF 16	1.50	17.20	
EG MF 18	1.50	19.20	
EG MF 20	1.50	21.20	
EG MF 22	1.50	23.20	
EG MF 24	1.50	25.20	

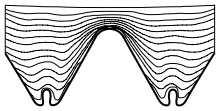
UNC	Unified coarse thread ASME B1.1		
	P		
UNC No1	64	1.68	
UNC No2	56	1.98	
UNC No3	48	2.26	
UNC No4	40	2.55	
UNC No5	40	2.90	
UNC No6	32	3.15	
UNC No8	32	3.80	
UNC No10	24	4.35	
UNC No12	24	5.00	
UNC 1/4"	20	5.80	
UNC 5/16"	18	7.30	
UNC 3/8"	16	8.80	
UNC 7/16"	14	10.30	
UNC 1/2"	13	11.80	
UNC 9/16"	12	13.35	
UNC 5/8"	11	14.85	
UNC 3/4"	10	17.80	
UNC 7/8"	9	20.90	
UNC 1"	8	23.90	
UNC 1.1/8"	7	26.80	
UNC 1.1/4"	7	30.00	
UNC 1.3/8"	6	32.90	
UNC 1.1/2"	6	36.10	

UNF	Unified fine thread ASME B1.1		
	P		
UNF No0	80	1.38	
UNF No1	72	1.70	
UNF No2	64	2.00	
UNF No3	56	2.30	
UNF No4	48	2.60	
UNF No5	44	2.90	
UNF No6	40	3.20	
UNF No8	36	3.85	
UNF No10	32	4.45	
UNF No12	28	5.10	
UNF 1/4"	28	5.90	
UNF 5/16"	24	7.45	
UNF 3/8"	24	9.05	
UNF 7/16"	20	10.55	
UNF 1/2"	20	12.15	
UNF 9/16"	18	13.65	
UNF 5/8"	18	15.25	
UNF 3/4"	16	18.35	
UNF 7/8"	14	21.40	
UNF 1"	12	24.45	
UNF 1.1/8"	12	27.60	
UNF 1.1/4"	12	30.80	
UNF 1.3/8"	12	33.95	
UNF 1.1/2"	12	37.15	

EG MJ	ISO metric coarse thread EG DIN 8140			
	P	D1 in mm min.	D1 in mm max.	
EG MJ 3	0.50	3.108	3.220	3.40
EG MJ 4	0.70	4.152	4.292	4.55
EG MJ 5	0.80	5.174	5.344	5.65
EG MJ 6	1.00	6.217	6.407	6.80
EG MJ 8	1.25	8.217	8.483	9.00
EG MJ 10	1.50	10.324	10.560	11.20
EG MJ 12	1.75	12.379	12.644	13.40

LIMIT OF NUT THREAD CORE Ø AND BORE HOLE Ø

Roll taps



UNEF	Unified extra fine thread ASME B1.1	
	P	
UNEF No12	32	5.10
UNEF 1/4"	32	6.00
UNEF 5/16"	32	7.60
UNEF 3/8"	32	9.20
UNEF 7/16"	28	10.70
UNEF 1/2"	28	12.30
UNEF 9/16"	24	13.80
UNEF 5/8"	24	15.40
UNEF 11/16"	24	17.00
UNEF 3/4"	20	18.50
UNEF 13/16"	20	20.10
UNEF 7/8"	20	21.60
UNEF 15/16"	20	23.20
UNEF 1"	20	24.80
UNEF 1.1/16"	18	26.35
UNEF 1.1/8"	18	27.90
UNEF 1.1/4"	18	31.10
UNEF 1.5/16"	18	32.70
UNEF 1.3/8"	18	34.30
UNEF 1.1/2"	18	37.50

G	British standard pipe thread DIN EN ISO 228	
	P	
G 1/8"	28	9.25
G 1/4"	19	12.50
G 3/8"	19	16.00
G 1/2"	14	20.00
G 5/8"	14	22.00
G 3/4"	14	25.50
G 7/8"	14	29.25
G 1"	11	32.00
G 1.1/8"	11	36.60
G 1.1/4"	11	40.60
G 1.1/2"	11	46.50

BSW	British standard Whitworth thread BS 84	
	P	
BSW 1/8"	40	2.85
BSW 3/16"	24	4.20
BSW 1/4"	20	5.70
BSW 5/16"	18	7.20
BSW 3/8"	16	8.70
BSW 7/16"	14	10.30
BSW 1/2"	12	11.60
BSW 5/8"	11	14.70
BSW 3/4"	10	17.90
BSW 7/8"	9	21.00
BSW 1"	8	23.80
BSW 1.1/8"	7	26.80
BSW 1.1/4"	7	30.00
BSW 1.1/2"	6	36.00

TABLE FOR REVOLUTION SPEED

Ød$_1$ in mm	v_c in m/min																
	2	4	6	8	10	12	14	16	20	25	30	35	40	45	50	55	60
1	637	1273	1910	2546	3183	3820	4456	5093	6366	7958	9549	11141	12732	14324	15915	17507	19099
2	318	637	955	1273	1592	1910	2228	2546	3183	3979	4775	5570	6366	7162	7958	8754	9549
3	212	424	637	849	1061	1273	1485	1698	2122	2653	3183	3714	4244	4775	5305	5836	6366
4	159	318	477	637	796	955	1114	1273	1592	1989	2387	2785	3183	3581	3979	4377	4775
5	127	255	382	509	637	764	891	1019	1273	1592	1910	2228	2546	2865	3183	3501	3820
6	106	212	318	424	531	637	743	849	1061	1326	1592	1857	2122	2387	2653	2918	3183
7	91	182	273	364	455	546	637	728	909	1137	1364	1592	1819	2046	2274	2501	2728
8	80	159	239	318	398	477	557	637	796	995	1194	1393	1592	1790	1989	2188	2387
9	71	141	212	283	354	424	495	566	707	884	1061	1238	1415	1592	1768	1945	2122
10	64	127	191	255	318	382	446	509	637	796	955	1114	1273	1432	1592	1751	1910
12	53	106	159	212	265	318	371	424	531	663	796	928	1061	1194	1326	1459	1592
14	45	91	136	182	227	273	318	364	455	568	682	796	909	1023	1137	1251	1364
16	40	80	119	159	199	239	279	318	398	497	597	696	796	895	995	1094	1194
18	35	71	106	141	177	212	248	283	354	442	531	619	707	796	884	973	1061
20	32	64	95	127	159	191	223	255	318	398	477	557	637	716	796	875	955
22	29	58	87	116	145	174	203	231	289	362	434	506	579	651	723	796	868
24	27	53	80	106	133	159	186	212	265	332	398	464	531	597	663	729	796
27	24	47	71	94	118	141	165	189	236	295	354	413	472	531	589	648	707
30	21	42	64	85	106	127	149	170	212	265	318	371	424	477	531	584	637
33	19	39	58	77	96	116	135	154	193	241	289	338	386	434	482	531	579
36	18	35	53	71	88	106	124	141	177	221	265	309	354	398	442	486	531
39	16	33	49	65	82	98	114	131	163	204	245	286	326	367	408	449	490
42	15	30	45	61	76	91	106	121	152	189	227	265	303	341	379	417	455
45	14	28	42	57	71	85	99	113	141	177	212	248	283	318	354	389	424
48	13	27	40	53	66	80	93	106	133	166	199	232	265	298	332	365	398
52	12	24	37	49	61	73	86	98	122	153	184	214	245	275	306	337	367
54	12	24	35	47	59	71	83	94	118	147	177	206	236	265	295	324	354
56	11	23	34	45	57	68	80	91	114	142	171	199	227	256	284	313	341
60	11	21	32	42	53	64	74	85	106	133	159	186	212	239	265	292	318
64	10	20	30	40	50	60	70	80	99	124	149	174	199	224	249	274	298

Values in rpm

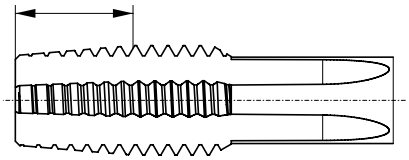
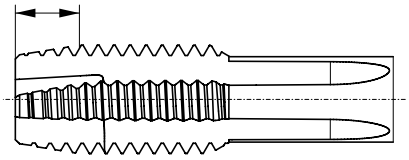
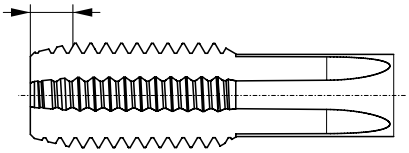
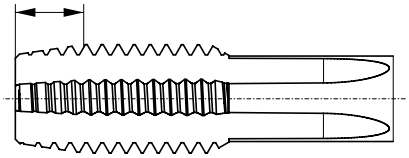
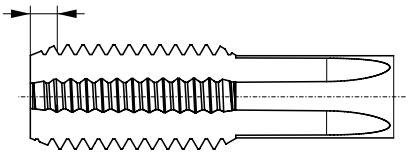
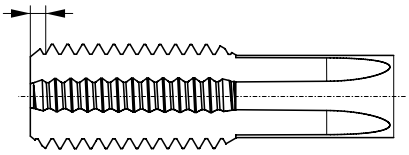
Number of revolutions (rpm)

$$n = \frac{v_C * 1000}{\pi * d_1}$$

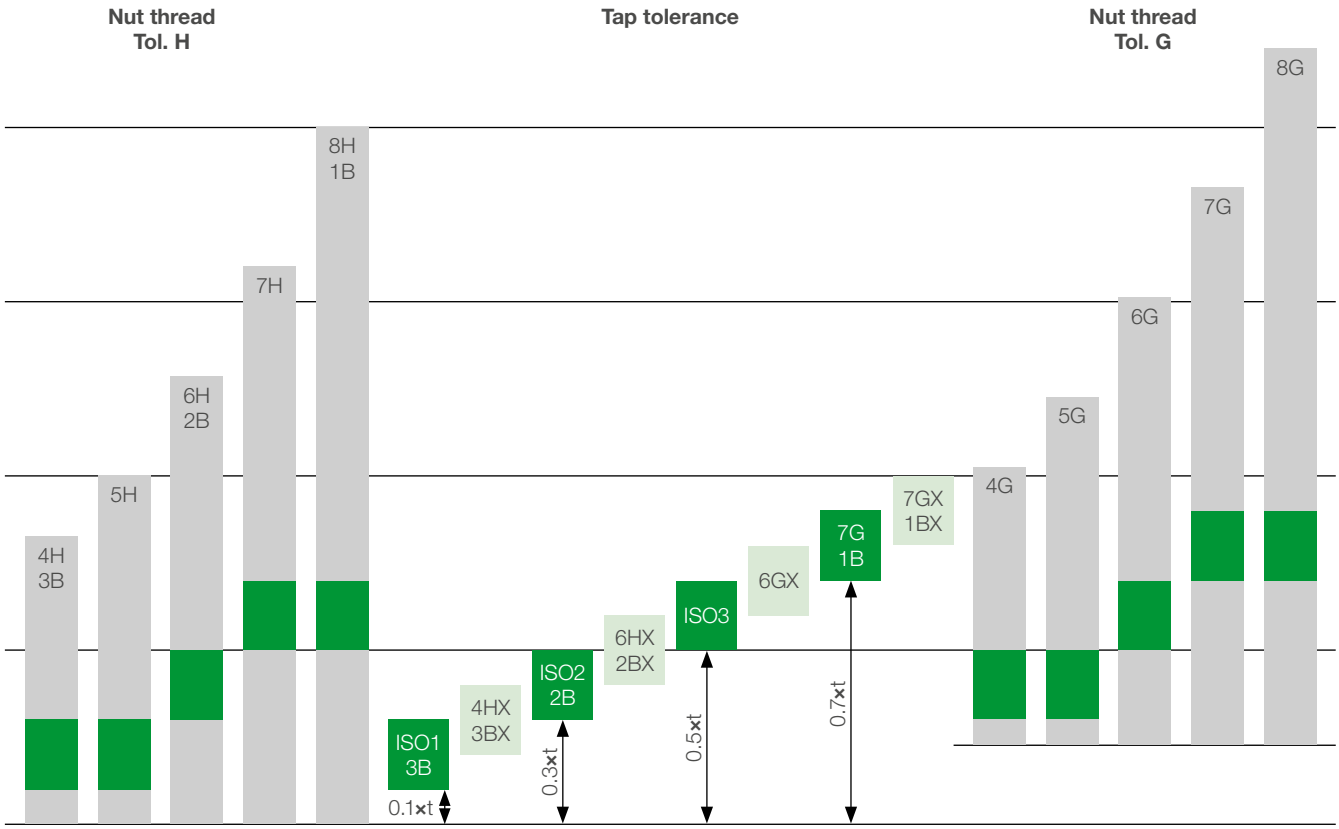
Cutting speed

$$v_C = \frac{n * \pi * d_1}{1000}$$

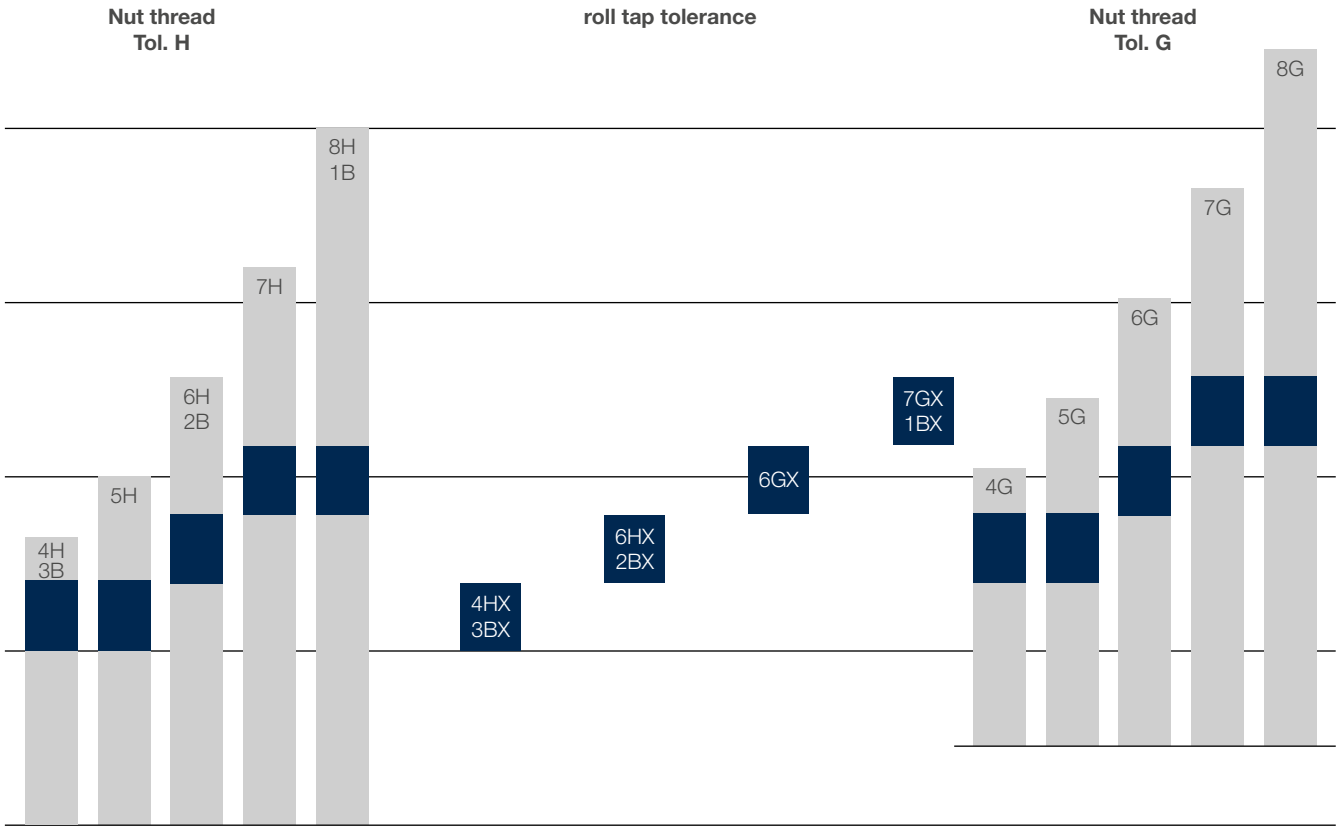
CHAMFER FORMS

Cutting taps, roll taps				
form		no. of chamfer threads	flute type	preferred application
A		6–8	straight flutes	short through hole
B		3–5.5	straight flutes and spiral point	through hole in medium- or long-chipping materials
C		2–3	straight or spiral flutes	blind or through hole in short-chipping materials
D		3–5.5		blind hole with long thread runout or through hole
E		1.5–2		blind hole with very short thread runout
F		≤ 1.5		

TOLERANCE BANDS OF TAPS AND NUT THREADS



Tolerance classes of cutting taps



Tolerance classes of roll taps

FABRICATION TOLERANCES FOR CUTTING TAPS

Limits of fabrication tolerance of the pitch Ø in µm compared to ISO2/6H for cutting taps ISO metric thread; DIN EN 22857; DIN 802-4

Nominal diameter in mm		Pitch P in mm	Limits of the pitch diameter			
over	until		Application classes			7G
			1 (ISO1/4H)	2 (ISO2/6H)	3 (ISO3/6G)	
1	1.4	0.2	0	–	–	–
		0.25	0	–	–	–
		0.3	-12	0	–	–
1.4	2.8	0.35	-14	0	–	–
		0.4	-15	0	–	–
		0.45	-15	0	–	–
2.8	5.6	0.35	-15	0	–	–
		0.5	-16	0	+16	+32
		0.6	-18	0	+18	+36
		0.7	-19	0	+19	+38
		0.75	-19	0	+19	+38
		0.8	-20	0	+20	+40
5.6	11.2	0.75	-21	0	+21	+42
		1	-24	0	+24	+48
		1.25	-25	0	+25	+50
		1.5	-28	0	+28	+56
11.2	22.4	1	-25	0	+25	+50
		1.25	-28	0	+28	+56
		1.5	-30	0	+30	+60
		1.75	-32	0	+32	+64
		2	-34	0	+34	+68
		2.5	-36	0	+36	+72
22.4	45	1	-26	0	+26	+52
		1.5	-32	0	+32	+64
		2	-36	0	+36	+72
		3	-42	0	+42	+84
		3.5	-45	0	+45	+90
		4	-47	0	+47	+94
		4.5	-50	0	+50	+100
45	90	1.5	-34	0	+34	+68
		2	-38	0	+38	+76
		3	-45	0	+45	+90
		4	-50	0	+50	+100
		5	-53	0	+53	+106
		5.5	-56	0	+56	+112
		6	-60	0	+60	+120

CONVERSION TABLE

Thread designation	Nominal Ø		Number of threads per inch (TPI)												
	"	mm	UNC	UNF	UNEF	4-UN	6-UN	8-UN	12-UN	16-UN	20-UN	28-UN	32-UN	BSW	BSF
No0	0.0600	1.524		80										48	
No1	0.0730	1.854	64	72											
No2	0.0860	2.184	56	64											
No3	0.0990	2.515	48	56											
No4	0.1120	2.845	40	48											
No5	0.1250	3.175	40	44											
1/8"	0.1250	3.175												40	
No6	0.1380	3.505	32	40									UNC		
5/32"	0.1563	3.969												32	
No8	0.1640	4.166	32	36									UNC		
3/16"	0.1875	4.763												24	32
No10	0.1900	4.826	24	32									UNF		
No12	0.2160	5.486	24	28	32							UNF	UNEF		
7/32"	0.2185	5.550												24	28
1/4"	0.2500	6.350	20	28	32						UNC	UNF	UNEF	20	26
9/32"	0.2811	7.140													26
5/16"	0.3125	7.938	18	24	32						20	28	UNEF		
3/8"	0.3750	9.525	16	24	32					UNC	20	28	UNEF	16	20
7/16"	0.4375	11.113	14	20	28					16	UNF	UNEF	32	14	18
1/2"	0.5000	12.700	13	20	28					16	UNF	UNEF	32	12	16
9/16"	0.5625	14.288	12	18	24				UNC	16	20	28	32	12	16
5/8"	0.6250	15.875	11	18	24				12	16	20	28	32	11	14
11/16"	0.6875	17.463			24				12	16	20	28	32		14
3/4"	0.7500	19.050	10	16	20				12	UNF	UNEF	28	32	10	12
13/16"	0.8125	20.638			20				12	16	UNEF	28	32		12
7/8"	0.8750	22.225	9	14	20				12	16	UNEF	28	32	9	11
15/16"	0.9375	23.813			20				12	16	UNEF	28	32		
1"	1.0000	25.400	8	12	20			UNC	UNF	16	UNEF	28	32	8	10
1.1/16"	1.0625	26.988			18			8	12	16	20	28			
1.1/8"	1.1250	28.575	7	12	18			8	UNF	16	20	28		7	9
1.3/16"	1.1875	30.163			18			8	12	16	20	28			
1.1/4"	1.2500	31.750	7	12	18			8	UNF	16	20	28		7	9
1.5/16"	1.3125	33.338			18			8	12	16	20	28			
1.3/8"	1.3750	34.925	6	12	18		UNC	8	UNF	16	20	28		6	8
1.7/16"	1.4375	36.513			18		6	8	12	16	20	28			
1.1/2"	1.5000	38.100	6	12	18		UNC	8	UNF	16	20	28		6	8
1.9/16"	1.5625	39.688			18		6	8	12	16	20				
1.5/8"	1.6250	41.275			18		6	8	12	16	20			5	8
1.11/16"	1.6875	42.863			18		6	8	12	16	20				
1.3/4"	1.7500	44.450	5				6	8	12	16	20			5	7
1.13/16"	1.8125	46.038					6	8	12	16	20				
1.7/8"	1.8750	47.625					6	8	12	16	20			4.5	
1.15/16"	1.9375	49.213					6	8	12	16	20				

CONVERSION TABLE

Thread designation	Nominal Ø		Number of threads per inch (TPI)												
	"	mm	UNC	UNF	UNEF	4-UN	6-UN	8-UN	12-UN	16-UN	20-UN	28-UN	32-UN	BSW	BSF
2"	2.0000	50.800	4 1/2				6	8	12	16	20			4.5	7
2.1/8"	2.1250	53.975					6	8	12	16	20				
2.1/4"	2.2500	57.150	4 1/2				6	8	12	16	20			4	6
2.3/8"	2.3750	60.325					6	8	12	16	20				
2.1/2"	2.5000	63.500	4			UNC	6	8	12	16	20			4	6
2.5/8"	2.6250	66.675				4	6	8	12	16	20				
2.3/4"	2.7500	69.850	4			UNC	6	8	12	16	20			3.5	6
2.7/8"	2.8750	73.025				4	6	8	12	16	20				
3"	3.0000	76.200	4			UNC	6	8	12	16	20			3.5	5
3.1/8"	3.1250	79.375				4	6	8	12	16					
3.1/4"	3.2500	82.550	4			UNC	6	8	12	16				3.5	5
3.3/8"	3.3750	85.725				4	6	8	12	16					
3.1/2"	3.5000	88.900	4			UNC	6	8	12	16				3.5	4.5
3.5/8"	3.6250	92.075				4	6	8	12	16					
3.3/4"	3.7500	95.250	4			UNC	6	8	12	16				3	4.5
3.7/8"	3.8750	98.425				4	6	8	12	16					
4"	4.0000	101.600	4			UNC	6	8	12	16				3	4.5

Conversion table for British standard pipe threads

Thread designation	Major Ø		Number of threads per inch (TPI)	Pitch in mm
	"	mm		
1/16"	0.3041	7.723	28	0.907
1/8"	0.3830	9.728	28	0.907
1/4"	0.5180	13.157	19	1.337
3/8"	0.6560	16.662	19	1.337
1/2"	0.8250	20.955	14	1.814
5/8"	0.9020	22.911	14	1.814
3/4"	1.0410	26.441	14	1.814
7/8"	1.1890	30.201	14	1.814
1"	1.3090	33.249	11	2.309
1.1/8"	1.4920	37.897	11	2.309
1.1/4"	1.6500	41.91	11	2.309
1.1/2"	1.8820	47.803	11	2.309
1.3/4"	2.1160	53.746	11	2.309
2"	2.3470	59.614	11	2.309
2.1/4"	2.5870	65.71	11	2.309
2.1/2"	2.9600	75.184	11	2.309
2.3/4"	3.2100	81.534	11	2.309
3"	3.4600	87.884	11	2.309
3.1/2"	3.9500	100.33	11	2.309
4"	4.4500	113.03	11	2.309
4.1/2"	4.9500	125.73	11	2.309
5 "	5.4500	138.43	11	2.309
5.1/2"	5.9500	151.13	11	2.309
6"	6.4500	163.83	11	2.309

CONVERSION TABLE

Dimensions in inches		Inch					
		0	1	2	3	4	5
		mm					
0	0.000000	0.000	25.400	50.800	76.200	101.600	127.000
1/64	0.015625	0.397	25.797	51.197	76.597	101.997	127.397
1/32	0.031250	0.794	26.194	51.594	76.994	102.394	127.794
3/64	0.046875	1.191	26.591	51.991	77.391	102.791	128.191
1/16	0.062500	1.588	26.988	52.388	77.788	103.188	128.588
5/64	0.078125	1.984	27.384	52.784	78.184	103.584	128.984
3/32	0.093750	2.381	27.781	53.181	78.581	103.981	129.381
7/64	0.109375	2.778	28.178	53.578	78.978	104.378	129.778
1/8	0.125000	3.175	28.575	53.975	79.375	104.775	130.175
9/64	0.140625	3.572	28.972	54.372	79.772	105.172	130.572
5/32	0.156250	3.969	29.369	54.769	80.169	105.569	130.969
11/64	0.171875	4.366	29.766	55.166	80.566	105.966	131.366
3/16	0.187500	4.763	30.163	55.563	80.963	106.363	131.763
13/64	0.203125	5.159	30.559	55.959	81.359	106.759	132.159
7/32	0.218750	5.556	30.956	56.356	81.756	107.156	132.556
15/64	0.234375	5.953	31.353	56.753	82.153	107.553	132.953
1/4	0.250000	6.350	31.750	57.150	82.550	107.950	133.350
17/64	0.265625	6.747	32.147	57.547	82.947	108.347	133.747
9/32	0.281250	7.144	32.544	57.944	83.344	108.744	134.144
19/64	0.296875	7.541	32.941	58.341	83.741	109.141	134.541
5/16	0.312500	7.938	33.338	58.738	84.138	109.538	134.938
21/64	0.323077	8.206	33.606	59.006	84.406	109.806	135.206
11/32	0.343750	8.731	34.131	59.531	84.931	110.331	135.731
23/64	0.359375	9.128	34.528	59.928	85.328	110.728	136.128
3/8	0.375000	9.525	34.925	60.325	85.725	111.125	136.525
25/64	0.390625	9.922	35.322	60.722	86.122	111.522	136.922
13/32	0.406250	10.319	35.719	61.119	86.519	111.919	137.319
27/64	0.421875	10.716	36.116	61.516	86.916	112.316	137.716
7/16	0.437500	11.113	36.513	61.913	87.313	112.713	138.113
29/64	0.453125	11.509	36.909	62.309	87.709	113.109	138.509
15/32	0.468750	11.906	37.306	62.706	88.106	113.506	138.906
31/64	0.484375	12.303	37.703	63.103	88.503	113.903	139.303
1/2	0.500000	12.700	38.100	63.500	88.900	114.300	139.700
33/64	0.515625	13.097	38.497	63.897	89.297	114.697	140.097
17/32	0.531250	13.494	38.894	64.294	89.694	115.094	140.494
35/64	0.546875	13.891	39.291	64.691	90.091	115.491	140.891
9/16	0.562500	14.288	39.688	65.088	90.488	115.888	141.288
37/64	0.578125	14.684	40.084	65.484	90.884	116.284	141.684
19/32	0.593750	15.081	40.481	65.881	91.281	116.681	142.081
39/64	0.609375	15.478	40.878	66.278	91.678	117.078	142.478
5/8	0.625000	15.875	41.275	66.675	92.075	117.475	142.875
41/64	0.640625	16.272	41.672	67.072	92.472	117.872	143.272
21/32	0.656250	16.669	42.069	67.469	92.869	118.269	143.669
43/64	0.671875	17.066	42.466	67.866	93.266	118.666	144.066
11/16	0.687500	17.463	42.863	68.263	93.663	119.063	144.463
45/64	0.703125	17.859	43.259	68.659	94.059	119.459	144.859

CONVERSION TABLE

Dimensions in inches		Inch					
		0	1	2	3	4	5
		mm					
23/32	0.718750	18.256	43.656	69.056	94.456	119.856	145.256
47/64	0.734375	18.653	44.053	69.453	94.853	120.253	145.653
3/4	0.750000	19.050	44.450	69.850	95.250	120.650	146.050
49/64	0.765625	19.447	44.847	70.247	95.647	121.047	146.447
25/32	0.781250	19.844	45.244	70.644	96.044	121.444	146.844
51/64	0.796875	20.241	45.641	71.041	96.441	121.841	147.241
13/16	0.812500	20.638	46.038	71.438	96.838	122.238	147.638
53/64	0.828125	21.034	46.434	71.834	97.234	122.634	148.034
27/32	0.843750	21.431	46.831	72.231	97.631	123.031	148.431
55/64	0.859375	21.828	47.228	72.628	98.028	123.428	148.828
7/8	0.875000	22.225	47.625	73.025	98.425	123.825	149.225
57/64	0.890625	22.622	48.022	73.422	98.822	124.222	149.622
29/32	0.906250	23.019	48.419	73.819	99.219	124.619	150.019
59/64	0.921875	23.416	48.816	74.216	99.616	125.016	150.416
15/16	0.937500	23.813	49.213	74.613	100.013	125.413	150.813
61/64	0.953125	24.209	49.609	75.009	100.409	125.809	151.209
31/32	0.968750	24.606	50.006	75.406	100.806	126.206	151.606
63/64	0.984375	25.003	50.403	75.803	101.203	126.603	152.003

HARDNESS COMPARISON TABLE

Comparison table: tensile strength – Rockwell – Vickers – Brinell

Tensile strength (N/mm² / MPa)	Rockwell (HRC)	Vickers (HV 10)	Brinell (HB)
255		80	76
270		85	80.7
285		90	85.5
305		95	90.2
320		100	95
335		105	99.8
350		110	105
370		115	109
385		120	114
400		125	119
415		130	124
430		135	128
450		140	133
465		145	138
480		150	143
495		155	147
510		160	152
530		165	156
545		170	162
560		175	166
575		180	171
595		185	176
610		190	181
625		195	185
640		200	190
660		205	195
675		210	199
690		215	204
705		220	209
720		225	214
740		230	219
755		235	223
770	20.3	240	228
785	21.3	245	233
800	22.2	250	238
820	23.1	255	242
835	24.0	260	247
850	24.8	265	252
865	25.6	270	257
880	26.4	275	261
900	27.1	280	266
915	27.8	285	271
930	28.5	290	276
950	29.2	295	280
965	29.8	300	285
995	31.0	310	295
1030	32.2	320	304
1060	33.3	330	314
1095	34.4	340	323

Tensile strength (N/mm² / MPa)	Rockwell (HRC)	Vickers (HV 10)	Brinell (HB)
1125	35.5	350	333
1155	36.6	360	342
1190	37.7	370	352
1220	38.8	380	361
1255	39.8	390	371
1290	40.8	400	380
1320	41.8	410	390
1350	42.7	420	399
1385	43.6	430	409
1420	44.5	440	418
1455	45.3	450	428
1485	46.1	460	437
1520	46.9	470	447
1555	47.7	480	456
1595	48.4	490	466
1630	49.1	500	475
1665	49.8	510	485
1700	50.5	520	494
1740	51.1	530	504
1775	51.7	540	513
1810	52.3	550	523
1845	53.0	560	532
1880	53.6	570	542
1920	54.1	580	551
1955	54.7	590	561
1995	55.2	600	570
2030	55.7	610	580
2070	56.3	620	589
2105	56.8	630	599
2145	57.3	640	608
2180	57.8	650	618
	58.3	660	
	58.8	670	
	59.2	680	
	59.7	690	
	60.1	700	
	61.0	720	
	61.8	740	
	62.5	760	
	63.3	780	
	64.0	800	
	64.7	820	
	65.3	840	
	65.9	860	
	66.4	880	
	67.0	900	
	67.5	920	
	68.0	940	

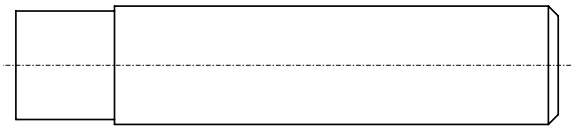
SHANK TYPES

DIN 1835-1 DIN 6535 parallel shanks

Plain parallel shank

DIN 6535 form HA

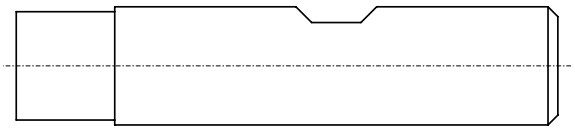
DIN 1835-1 form A



Parallel shank with lateral driving surface

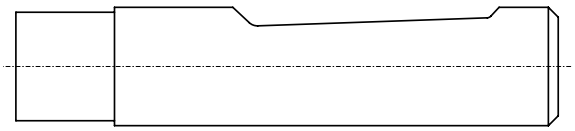
DIN 6535 form HB for d2 = 6 to 20 mm

DIN 1835-1 form B for d2 = 3 to 20 mm



Parallel shank with inclined clamping surface

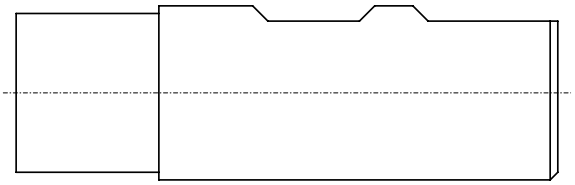
DIN 6535 form HE for d2 = 6 to 20 mm



Parallel shank with two lateral driving surfaces

DIN 6535 form HB for d2 = 25 and 32 mm

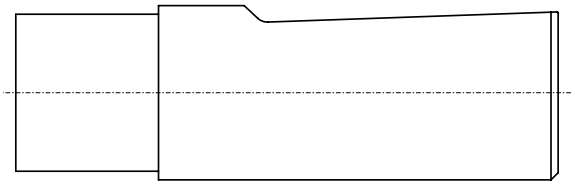
DIN 1835-1 form B for d2 = 25 to 63 mm



Parallel shank with inclined clamping surface

DIN 6535 form HE for d2 = 25 and 32 mm

DIN 1835-1 form E for d2 = 6 to 32 mm



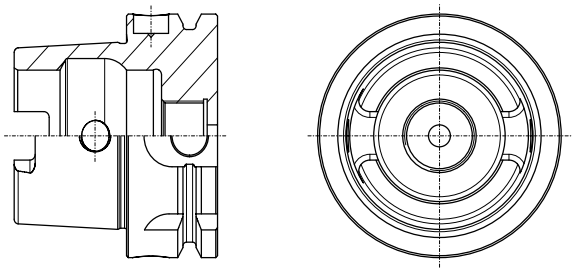
SHANK TYPES

Hollow taper shank with flange contact surface (HSK) for machine tools

Drive keys at the end of HSK taper. Central coolant supply. Use in high speed cutting. Nonpositive torque transmission through taper and flange contact surface or through the drive keys at the end of the HSK taper. High rigidity due to face contact between flange and spindle.

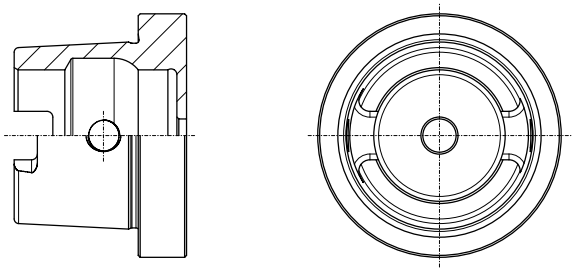
DIN 69893-1 form A

- flange with gripping groove and indexing notch for automatic tool change
- tools are manually exchangable
- mounting space for data media according to DIN 69873
- form A can replace form C



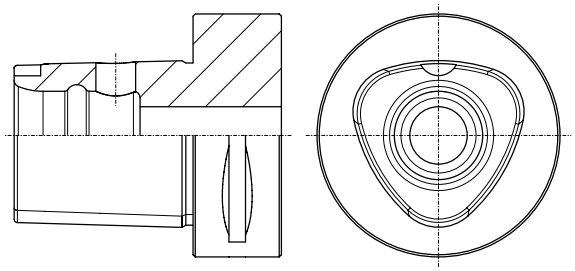
DIN 69893-1 form C

- for manual tool change



Polygonal hollow taper shank with flange contact surface Capto™

- universal use
- tapered polygon coupling for torque transmission
- high concentricity and repeatability

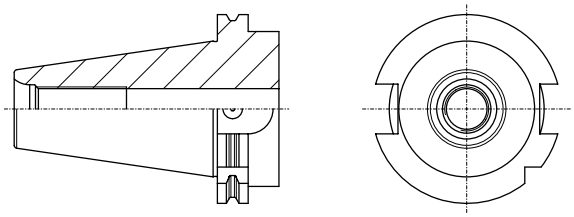


Taper shank (SK)

Positive torque transmission through grooves in the flange. Use in machining centres and CNC machine tools. Not suitable for high speed cutting. No self-locking.

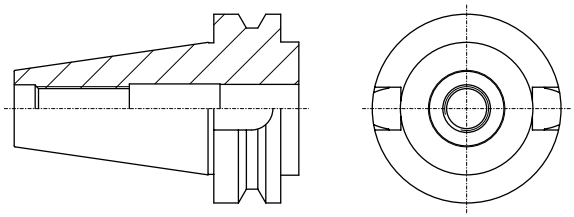
DIN 69871 A/D taper shank

- for automatic tool change
- form AD with trapezoidal groove and through bore for central lubrication supply
- for holding of tools in NC milling and drilling machines as well as for holding and changing of tools in machining centers



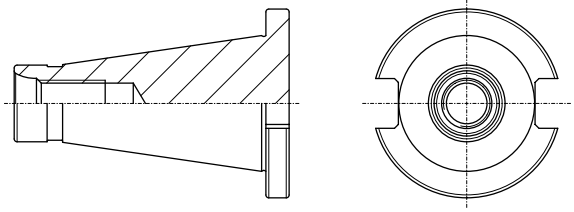
MAS-BT

- for automatic tool change



DIN 2080 taper shank for tools and clamping devices

- not for automatic tool change



FORMULARY

General

Formula for the computation of the cutting speed	$v_c = \frac{n * \pi * d_1}{1000}$
Formula for the computation of the number of revolutions (rpm)	$n = \frac{v_c * 1000}{\pi * d_1}$

Tapping, thread roll forming

Formula for the computation of the feed	$f = n * P * k$
Formula for the computation of the tool life in m	$\text{tool life} = \frac{GT * AG}{1000}$

Cutting force, torque and power supply computation for thread cutting

» The formulas are applicable for single-start cylindrical threads with a profile angle of 55° or 60 as well as for sharp cutting taps; load bearing depth of thread 75 %.

» For trapezoidal, ACME and round threads, the lateral surface area of chip must be derived by using special formulas.

Formula for the computation of the lateral surface area of the chip	$A = 0{,}25 * P^2$
Formula for the computation of the cutting force	$F_c = A * k_c$
Formula for the computation of the torque	$M = \frac{k_c * P^2 * d_1}{8000}$
Formula for the computation of the power requirement for the tap	$P_e = \frac{M * n}{9550}$
Formula for the computation of the power requirement of the machine	$P_1 = \frac{P_e}{\eta}$

FORMULARY

» If tap sets are used, the following factors must be multiplied by P_e:
Set of 2 pieces = 0.7 | Set of 3 pieces = 0.5 | Set of 4 pieces = 0.4
» Guidance value of motor efficiency η = 0.8
» With increasing wear of the tool, an increase in required torque by a factor of 2–3 is to be expected.

Specific cutting force k_c

Application	Examples of materials	k_c
P	**Steel materials**	
	Steel 600 N/mm²	2300 N/mm²
	Steel 600–800 N/mm²	2500 N/mm²
	Steel 800–1000 N/mm²	2600 N/mm²
	Steel 1000–1300 N/mm²	3600 N/mm²
M	**Stainless steel**	
	Stainless steel	3200 N/mm²
K	**Cast iron**	
	GJL – grey cast iron (170 HB)	1600 N/mm²
	GJM hard – malleable cast iron	1250 N/mm²
	GJM soft – malleable cast iron	900 N/mm²
N	**Copper**	
	Copper	1100 N/mm²
	Copper alloy – brass	720 N/mm²
	Special copper alloy – cast bronze	1900 N/mm²
	Aluminium / Magnesium	
	Al-Si alloy	680 N/mm²

Symbol	Explanation	Unit
A	lateral surface area of chip	mm²
AG	number of threads	
d_1	nominal thread diameter	mm
f	feed	mm/min
F_C	cutting force	N
GT	thread depth	mm
k	correction factor for length compensation holders	%
k_C	specific cutting force	N/mm²
M	torque	Nm
n	rotation speed	1/min
P	thread pitch	mm
P_e	effective power consumption	kW
P_1	actual power consumption	kW
v_C	cutting speed	m/min
η	motor efficiency	%

FORMULARY

Thread milling cutter

Calculation of the feed rates

Radial chip thickness	$a_r = \frac{D^2 - D_K^2}{4(D - d_1)}$
Feed per tooth	$f_z = h_m \sqrt{\frac{d_1}{a_r}}$
Average chip thickness	$h_m = f_z \sqrt{\frac{a_r}{d_1}}$
Feed rate at the outer contour of the internal or external thread	$v_{fA} = v_{fAA} = n * f_z * z$
Feed rate at the center path of the internal thread	$v_{fM} = \frac{D - d_1}{D} * v_{fA}$
Feed rate at the outer contour of the internal thread	$v_{fA} = \frac{v_{fM} * D}{D - d_1}$

Feed per tooth derived from the feed rate at the center path of the internal thread	$f_z = \frac{v_{fM}}{n * z * \frac{D - d_1}{D}}$
Feed rate at the outer contour of the external thread	$v_{fAA} = \frac{v_{fMA} * D}{D + d_1}$
Feed rate at the center path of the external thread	$v_{fMA} = \frac{D + d_1}{D} * v_{fAA}$
Feed per tooth derived from the feed rate at the center path of the external thread	$f_z = \frac{v_{fMA}}{n * z * \frac{D + d_1}{D}}$
Machining time for one thread pitch	$t_1 = \frac{D * \pi}{v_{fA}} = \frac{D * \pi}{v_{fAA}}$
Total machining time per thread	$t_{Gew} = \frac{GT}{P} * t_1$

Symbol	Explanation	Unit
a_r	radial chip thickness	mm
d_1	major Ø milling cutter	mm
D	nominal thread Ø	mm
D_K	core Ø or bore hole Ø	mm
f_z	feed per tooth	mm
GT	thread depth	mm
h_m	middle chip thickness	mm
n	spindle rotation	min-1
P	thread pitch	mm
t_1	machining time for one thread pitch	min
$t_{Gew.}$	total machining time per thread	min
v_C	cutting speed	m/min
v_{fA}	feed rate at the outer contour of the internal thread	mm/min
v_{fAA}	feed rate at the outer contour of the external thread	mm/min
v_{fM}	feed rate at the center path of the internal thread	mm/min
v_{fMA}	feed rate at the center path of the external thread	mm/min
z	number of teeth of the milling cutter	

i Milling program upon request

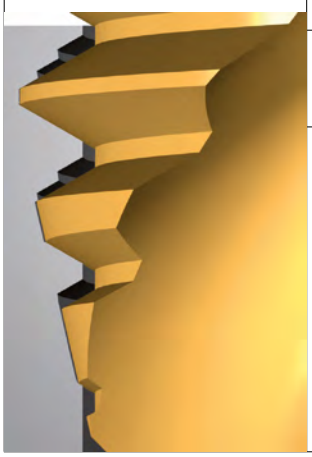
ERROR – CAUSE – HOW TO HELP

Tapping

Internal thread is too big (oversize)

Cause	How to help
Wrong type of tap, cutting geometry is not suitable for the application.	Use taps that are suitable for the application / material group to be machined.
Bore hole is too small.	Consider bore hole Ø according to DIN 336 or respective standard. Chipless threading requires special bore hole diameters. Table on bore hole Ø see page 239 to 250.
Error in angle or position of the bore hole.	**a.** Pay attention to correct workpiece clamping. **b.** Use a tap holder with radial parallel floating.
Axially rough-running machine spindle.	**a.** Cut with automatic feed. **b.** Use a tap holder with length compensation.
Cold weldings or material adhesion on the tap flanks.	**a.** Use a new tap. **b.** Improve lubrication (check lubricant). **c.** Use taps with coating / surface treatment.
Bad lead of the tap due to high clearance angle.	**a.** Cut with pitch control (The tool is guided by the machine spindle). **b.** Use tap with improved guiding characteristics.
Cutting speed is too high.	**a.** Lower cutting speed. **b.** Improve lubrication.
Chip jams.	**a.** Use a tap with a different flute form. **b.** Use a tap with surface treatment / coating. **c.** Interrupt the cutting operation to remove the chips, then finish the thread.
Composition and / or supply of lubricant is not sufficient. There is cold welding or material adhesion.	Make sure that the lubricant supply is suitable and sufficient.
Tolerance of the tap is not identical with tolerances stated on the drawing or gauge.	Use a tap with correct tolerance field.

Threads with axial miscut



Cause	How to help
Tap with high helix angle (type DOMINANT) starts cutting with a too high cutting pressure.	Reduce initial pressure. The tap has to be kept in the tension area of the tap holder from the beginning. Reduce feed value to 95 %.
Spiral pointed tap (type VARIANT) starts cutting with a too low cutting pressure.	Increase initial pressure for taps with spiral point or lefthand spiral flute. The tap has to be kept in the compression area of the tap holder.
Tap holder with length compensation is unsuitable or in the limit range of the spring force.	**a.** Use the next lager tap holder. **b.** Work with pitch control. **c.** Use a cutting tap with improved guiding characteristics.

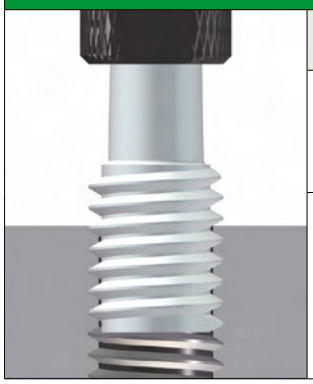
ERROR – CAUSE – HOW TO HELP

Tapping

Internal thread is too tight (undersize)

Cause	How to help
Tolerance of the tap is not identical with tolerances stated on the drawing or gauge.	Use a tap with correct tolerance field.
Wrong type of tap, cutting geometry is not suitable for the application.	Use taps that are suitable for the application / material group to be machined.

Internal thread seems to be too tight

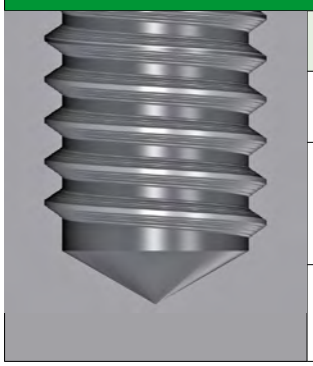


Cause	How to help
The tap does not cut within its own pitch (go-gauge cannot be screwed in completely).	**a.** See „How to help“ “Threads with axial miscut”. **b.** Avoid high axial forces during tapping. **c.** Use a tap holder with length compensation. **d.** Avoid chip jams.

No-go gauge can be entered deeper than allowed

Cause	How to help
Tap starts cutting with the wrong cutting pressure / axially rough-running machine spindle.	**a.** Cut with automatic feed. **b.** Use a tap holder with length compensation.
Error in angle or position of the bore hole.	Pay attention to correct workpiece clamping. Possible use of a tap holder with radial parallel floating.

Rough thread surface

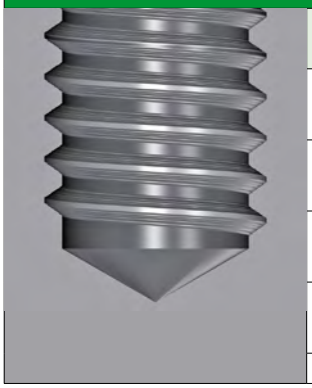


Cause	How to help
Tap geometry does not correspond to the application.	Choose siutable tap for the material group to be machined.
Chip jams.	**a.** Use a tap with a different flute form. **b.** Use a tap with surface treatment / coating. **c.** Interrupt the cutting operation to remove the chips, then finish the thread.
Bore hole diameter is too small.	Consider bore hole Ø according to DIN 336 or respective standard. Chipless threading requires special bore hole diameters. Table on bore hole Ø see page 239 to 250.

ERROR – CAUSE – HOW TO HELP

Tapping

Rough thread surface

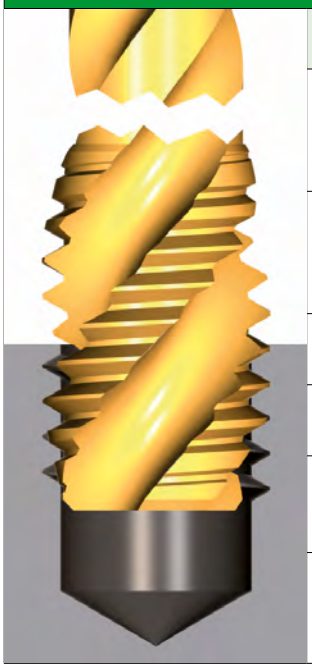


Cause	How to help
Composition and / or supply of lubricant is not sufficient.	Make sure that the lubricant supply is suitable and sufficient.
Cutting speed is too high.	**a.** Lower cutting speed. **b.** Improve lubrication.
Overstress of the tool due to big pitch and / or long-chipping material.	Improve lubrication, if applicable use of cutting oil.
Tap has cold weldings, built-up edges.	**a.** Improve lubricant supply. **b.** Use a tap with surface treatment / coating.

Tool life too low

Cause	How to help
All causes listed under „Rough thread surface“.	Please see „Rough thread surface“.
Compacted wall of the bore hole through used tools.	Re-sharpen and change the boring tool in time.
Heat-treated or hardened components.	If possible carry out heat and surface treatment after tapping.
Material characteristics of the work-piece have changed (toughness, hardness).	Adjust the geometry of the tap to the new machining conditions.
Bore hole is too small.	Consider bore hole Ø according to DIN 336 or respective standard. Bore hole Ø see page 239 to 250.

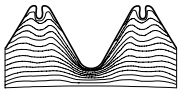
Tooth breakage or breakage of the tap in forward or reverse motion



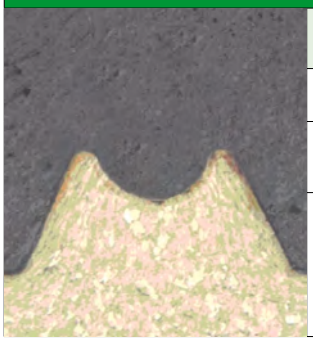
Cause	How to help
Chip jams / clamped chips.	**a.** Use a tap with a different flute form. **b.** Use a tap with surface treatment / coating. **c.** Interrupt the cutting operation to remove the chips, then finish the thread.
Overstress of the chamfer teeth.	**a.** Longer chamfer (pay attention to the hole type: blind / through). **b.** Increase the number of chamfer teeth by increasing the number of flutes.
Error in angle or position of the bore hole.	**a.** Pay attention to correct workpiece clamping. **b.** Use a tap holder with radial parallel floating.
Missing or wrong countersink.	Countersink the bore hole in the correct size (min. 1.05 x nominal diameter).
Tap hitting the bottom of the bore hole.	**a.** Check hole depth. **b.** Choose a tap with shorter chamfer. **c.** Cut with pitch control.
Hardness of tool is not optimal for the application. / Cutting geometry of the tap is not suitable for the application.	Choose a suitable tool.

ERROR – CAUSE – HOW TO HELP

Thread Roll Forming



Internal thread is not formed completely (core Ø too big)

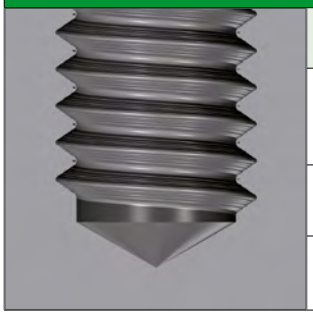


Cause	How to help
Bore hole diameter is too big.	Reduce the bore hole diameter.
Material elongation is in the limit range < 8%.	Reduce the bore hole diameter, use a special roll tap with specific geometry.

Thread is ”over-formed” (core-Ø is too small)

Cause	How to help
Bore hole diameter is too small.	Increase the bore hole diameter.
Error in angle or position of the bore hole.	Optimize the workpiece clamping.

Rough thread surface / Stripped thread



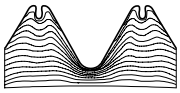
Cause	How to help
Insufficient lubrication.	a. Increase oil content of the lubricant, use cutting oil. b. Use a roll tap with oil grooves. c. Use a roll tap with internal coolant.
Cold welding or material adhesions at the roll tap.	Select suitable coating for the application.
Tool is worn.	Change the roll tap.

Tool life too low

Cause	How to help
Oil content of the lubricant is insuffi-cient.	Increase oil content or use cutting oil.
Lubrication supply is not optimal.	Use a roll tap with oil grooves and / or with internal coolant.
Chamfer length is too short.	Use tools with longer chamfer.
Material is abrasive.	Choose a roll tap with suitable coating.
Tap geometry unsuitable.	Usa a tap with suitable geometry.
Compacted bore hole surface.	a. Re-sharpen the boring tool in time. b. Do not re-sharpen the boring tool too often.
Bore hole diameter is too small.	Increase the bore hole diametre.
Cutting speed is too high.	Adjust the cutting speed.

ERROR – CAUSE – HOW TO HELP

Thread Roll Forming



Chips in the thread		
	**Cause**	**How to help**
	Ridge of the furrow is “over-formed” and breaks open.	Increase the bore hole diameter.
	“Over-forming” makes the oil grooves of the roll tap work as cutting edges.	**a.** Increase the bore hole diameter. **b.** Use roll taps without oil grooves.
	Bore hole surface rough or with over-lap (Bore hole drawn, punched).	Change drawing punch / punching die, optimize drawing clearance.
	Bore hole non-round.	Change drawing punch/punching die, optimize clamping / feeding of workpieces.

TYPES OF WEAR

Thread cutting

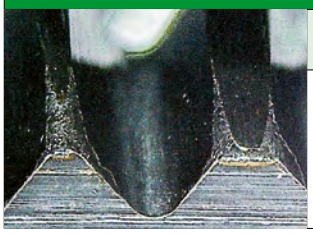
Built-up edges: Material adhesion at the cutting edge

Cause	How to help
Smallest particles of the material are cold-welded layer by layer at the cutting edge.	a. Increase cutting speed b. Adapt coating c. Adapt tool geometry d. Improve cooling (higher oil content, tool with internal coolant)

Breakage: Breakage at the cutting edge

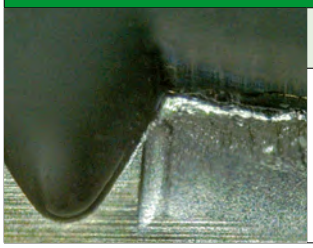
Cause	How to help
Problems with chip forming and chip evacuation.	a. Improve chip forming and chip evacuation b. Use tools with internal coolant c. Choose a tougher base material

Wear of thread relief area: Abrasion of the tool's thread relief area



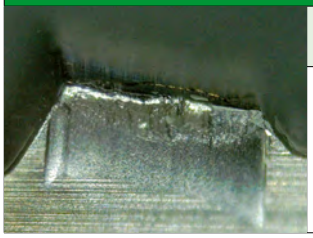
Cause	How to help
Friction between material and the tool's relief area.	a. Improve cooling (higher oil content, tool with internal coolant) b. Reduce cutting speed c. Increase clearance angle d. Choose a more wear-resistant base material or coating

Cold welds: Cold welds at the cutting face or the thread relief area



Cause	How to help
Unsuitable tool surface for material. Unfavourable cooling lubrication.	a. Change coating or surface b. Increase clearance angle c. Choose a smooth surface or coating d. Improve cooling (higher oil content, tool with internal coolant) e. Reduce cutting speed

Crater wear: Leaching, cavities of the cutting faces



Cause	How to help
Abrasion of material at the cutting face.	a. Reduce cutting speed b. Select a more wear-resistant base material c. Select a more wear-resistant coating d. Improve cooling (higher oil content, tool with internal coolant)

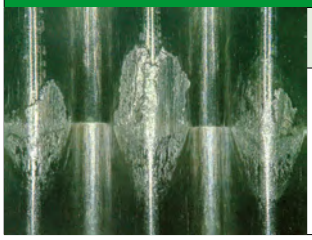
TYPES OF WEAR

Thread Roll Forming

Wear of forming edge: Abrasion of polygonal tips

Cause	How to help
Abrasion between material and polygons.	a. Improve cooling (higher oil content, tool with internal coolant) b. Reduce cutting speed c. Change coating d. Change tool geometry

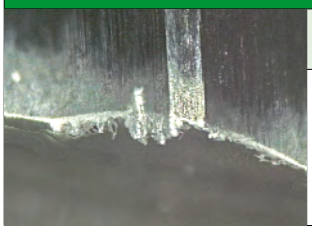
Cold welds: Cold welds on the polygons



Cause	How to help
Unsuitable tool surface for material. Unfavourable cooling lubrication.	a. Improve cooling (higher oil content, tool with internal coolant) b. Reduce cutting speed c. Change coating d. Change tool geometry

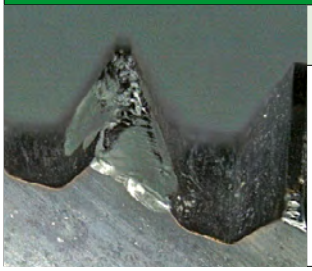
Thread Milling

Built-up edge: Material adhesion at the cutting edge



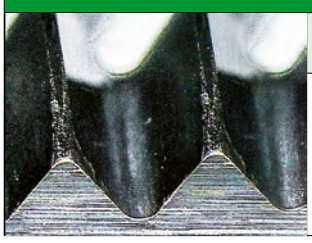
Cause	How to help
Smallest particles of the material are cold-welded layer by layer at the cutting edge.	a. Reduce cutting speed or increase feed b. Adapt coating c. Adapt tool geometry d. Improve cooling (higher oil content, tool with internal coolant)

Breakage: Breakage at the cutting edge



Cause	How to help
Vibrations and chip jam.	a. Improve chip evacuation (tool with internal cooling) b. Reduce vibrations (reduce cutting speed, increase feed, shorten projection length, stable dimensions) c. Reduce pressure on the cutting edge (decrease feed per tooth, radial cut distribution) d. Use a tougher tool material e. Use a more solid tool geometry

Wear of thread relief area: Abrasion of the tool's thread relief area



Cause	How to help
Friction between material and the tool's thread relief area.	a. Improve cooling (higher oil content, tool with internal coolant) b. Reduce cutting speed or increase feed c. Select a more wear-resistant base material

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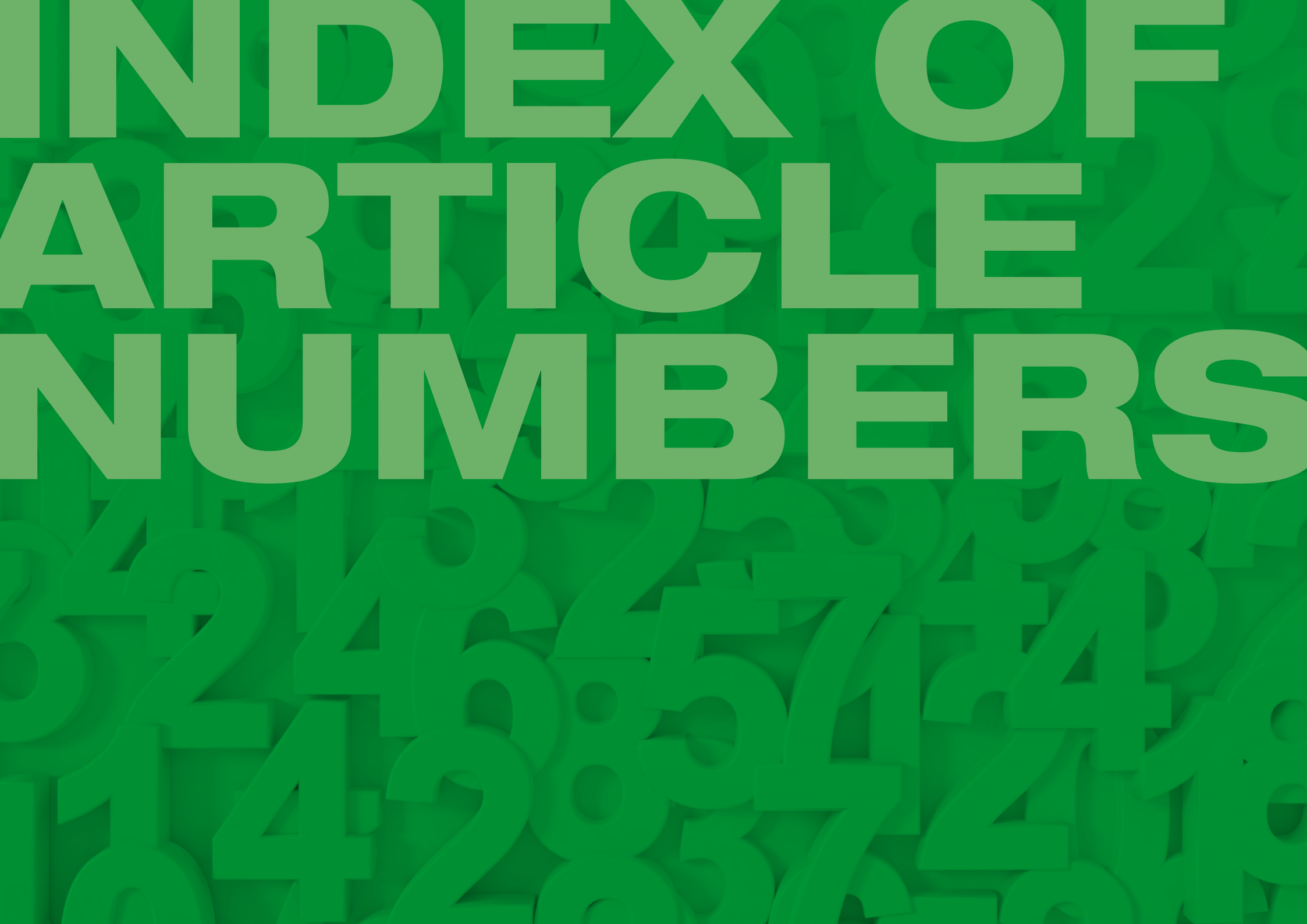

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GENERAL TERMS AND CONDITIONS

GENERAL TERMS AND CONDITIONS

THE LEGALLY BINDING DOCUMENT IS THE GERMAN VERSION OF THE GENERAL TERMS AND CONDITIONS.
This English translation is for informational purpose only.

I. General Information

1. All deliveries and performances are subject to German laws and the following conditions, or any separate contractual agreements. Deviant terms and conditions of purchasing on the part of the buyer will not be accepted by BASS and, even with order taking, will not become subject terms of the contract, unless we explicitly agree with them in written form.

2. Our terms of sale will also apply to all future business with the customer.

3. If any item is not valid, this shall not affect the validity of the other items.

II. Supply and Delivery

1. Our offers are subject to change. Oral agreements with our travelling representatives or authorized agents require our confirmation in writing. If such a confirmation has not been given, our delivery order or delivery note shall be deemed as confirmation of the order. After the order confirmation has been issued, it is normally not possible for the buyer to rescind the contract.

2. We consider ourselves bound to any offers made for a period of 90 days.

3. All measures, drawings, weights, illustrations, descriptions and any other specifications named in our catalogues, brochures, price lists or preliminary estimates and any other documents are only roughly applicable unless they have been specified as binding. The orderer accepts sole responsibility for all documents to be provided by him/her such as drawings, gauges, prototypes or suchlike. The orderer is responsible that all construction drawings provided by him/her do not interfere with any trademark rights of third parties.

4. Prototypes will only be delivered on account.

5. Cost estimates are not binding and subject to charge except as otherwise expressly agreed.

6. Our written order confirmation is the relevant document for the scope of services. We are entitled to partial performances as long as they are reasonable for the buyer. If special tools will be commissioned, the order quantity is allowed to be increased or decreased by approx. 10%, but at least by 2 pieces. The quantity to be invoiced is the quantity delivered.

7. The terms of delivery only apply roughly if they have not been made binding explicitly in written form. If delivery dates are indicated as calendar weeks, the last workday is applicable. The delivery time starts with the posting date of our order confirmation but not before all technical and commercial questions have been clarified and/or not before the provision of advance performances on the part of the buyer e.g. provision of official certificates or approvals and/or prior to a deposit on the part of the buyer. This does not apply if we are responsible for the delay. If we deliver the buyer against prepayment, the specified delivery time only starts when the prepayment amount has been received. If the buyer desires supplementary changes, the delivery time will be interrupted. After the desired changes have been agreed upon the delivery time starts anew.

8. The delivery time shall be deemed as adhered to if the BASS product has left our site prior to the expiration of the delivery time or our readiness for delivery has been announced and the product cannot be sent in due time without being the fault of BASS.

9. Delay in delivery and performances due to an Act of God and due to events whose cause are beyond our sphere of influence entitle us to postpone the delivery and/or the service provision by the duration of the delay plus an appropriate start-up period. This applies also if such events occur with our suppliers or during an already existent delay. If the interference lasts longer than 3 months, both the buyer and we are entitled to withdraw from the contract in terms of the contractual part not fulfilled. We will inform the buyer as soon as possible about start and end of such impediments.

10. The buyer can withdraw from the contract without prior notice if we are not able to provide for the complete delivery prior to the passing of risk. Additionally, the buyer can withdraw from the contract if it is not possible to accomplish one part of the delivery in case of an order and he/she has legitimate interest in denying the partial delivery. If this is not the case, the buyer has to pay the contract price for the partial delivery. If the impossibility or inability of performance occurs during the default of acceptance or the buyer is solely or for the most part responsible for these circumstances, he/she remains obligated to considerations.

11. In case the buyer is late to agreed payments for previous deliveries of the current business relationship, we are entitled to abstain from further deliveries. Costs occurring on the part of the buyer are to be borne by him/her.

12. Unless otherwise noted, orders on call must be called at the latest 12 months after receipt of the order. After the expiration of this time limit we have the right to dispatch the ordered products. If there occurs a default of acceptance on the part of the buyer or he/she violates any other obligations to cooperate, we are entitled to demand damages for any losses occurred to us. Ulterior claims reserved.

III. Price and Payment

1. In absence of particular agreements all prices are in € (Euro) and quoted ex works including shipment ex works, but exclusive of packing, tariff, insurance, forwarding charges and removal. VAT will be added to all prices according to the respective legal amounts.

2. The statutory value-added tax is not included in our price; it will be separately reported in the invoice in the lawful amount on the day of issue of the invoice.

3. Minimum order value is EUR 100.00 per order, unless otherwise agreed. If possible, orders are to be effected collectively. For orders below this amount, we reserve the right to charge a processing fee of 20.00 €.

4. With cost increases or reductions due to increases in material costs and/or wages occurring after the conclusion of the contract we reserve the right to calculate the price valid at the time of delivery if the delivery will be carried out later than 4 months after the date of our order confirmation. On demand, we will verify the changes in costs for the buyer.

5. For each order and specification, the delivery time will be agreed separately.

6. We also reserve the right to recalculate the prices in a reasonable manner for the buyer if the subject of the contract has been provided with technical innovations compared to the time of contract.

7. With quantities below the agreed numbers we are entitled to impose cost-covering surcharges and/or to reduce discounts.

8. Unless otherwise noted, our invoices are payable within a period of 14 days from date of invoice without any deductions.

9. With delay of payment interest will become due annually amounting to 8 percentage points above the respective prime lending rate (§247 BGB (German Civil Code)). The right to proof further damages caused by delay is reserved.

10. The buyer is only entitled to the right to retain payments or to charge up against counterclaims insofar his/her counterclaims have become indisputable or legally binding in written form.

11. We only accept exchanges on the basis of prior agreements in written form. The credit will be performed for processing only. The costs occurring with payment by note will be borne by the buyer.

12. After an appropriate period of grace has expired without results, we are entitled to carry out outstanding and future performances only against prepayment or to make it conditional on the provision of securities if the buyer is behind schedule with agreed payment targets or in case there are circumstances that, by applying normal bank standards, constitute doubts regarding the buyer's solvency. Furthermore, we are entitled to demand our receivables independent of the duration of any exchanges and also to demand securities.

13. So-called guarantee and warranty claims on the part of the buyer to be claimed in advance are excluded.

14. Employees or travelling representatives of our company have no authority to collect unless we have issued an exclusive order in written form.

15. We reserve the right not to pay out credit notes, but instead to credit the client's account.

IV. Postage and Packing

1. Packaging will be carried out according to commercial quality standards and at our discretion. We use disposable packaging and invoice them at low costs. We do not take back any packaging. Reusable packaging systems must be agreed upon by the buyer and us.

2. We are committed to find, from our perspective, the best-possible dispatch type unless a particular dispatch type has been specified. If there will be additional costs due to a dispatch type prescribed by the buyer, they have to be borne by the buyer.

3. Our deliveries take place ex works, exclusive of packing. The costs for the packaging and for the delivery ex works will be borne by the buyer.

4. Provided that the purchaser asks for a transport insurance, we will cover the delivery by a transport insurance, the costs thereof shall be met by the Customer.

V. Passing of Risk

1. The risk will be transferred to the orderer if the delivery item has left the site or storage even if partial deliveries are to be carried out or in case we have taken over additional performances e.g. loading, transport or discharge.

2. If the performance is late due to circumstances on part of the buyer, the price risk passes to the buyer on the day on which the readiness for delivery has been notified. In this case we are entitled to store the product on the buyer's costs and risk on our own discretion and to invoice them as delivered ex works. If demanded by the buyer we insure the respective shipment on his/her costs against theft and pilferage, breakages, transport damages, fire losses and damage by water.

VI. Reservation of Proprietary Rights

1. The delivered product remains our property until all our outstanding accounts related to the business connection have been discharged. This also applies to the fact of granting the account balance acknowledgement.

2. The buyer is entitled to resell the delivered product in the course of any business connections in proper form if he/she transfers the occurring claims against his/her customer already at this point in time to secure the amount of our claims. With the sale of goods of which we have a pro rata proprietorship the assignment applies in advance amounting to the invoice value of our conditional goods. The buyer has to inform us about all matters requested and has to allow us to take insight into all documents.

3. The goods remain our property until they have completely been paid, and in the case of processing or alteration we will become manufacturer and in the case of a connection with other goods we will become co-proprietor on a pro rata basis according to the invoice value of the conditional goods. The new item will be stored for us by the buyer free of charge.

4. If the value of the existing securities exceeds the claims to be secured by more than 20%, we are accordingly obliged to release them if demanded by the buyer.

5. The buyer is not entitled to any disposals of any other types of the conditional goods (pledging, security transfer of title) or other transfers of the claims named in VI 2. and 3. If the conditional goods will be pledged or confiscated; the buyer has to notify our proprietorship and to inform us immediately.

6. If the buyer is late with payments or our claims are endangered due to a deteriorating creditworthiness of the buyer, we are, after the days of graces allowed by us have been passed unsuccessfully, entitled to demand immediate payment or to take back the conditional goods even if we have not withdrawn from the contract. We are also entitled to sell the conditional goods in a single tender action or to sell them at auction. The buyer is liable for our downtime costs.

7. As long as we are proprietor of our deliveries, the buyer is obliged to insure all products delivered to him/her on his/her own costs sufficiently against theft, breakage, fire, water and all other damages. If demanded by us he/she has to verify these insurances.

VII. Warranty Claims

Excluding any further claims BASS is liable for quality defects and defective titles of the delivery – with reservation of paragraph VIII – as follows:

Quality Defects

1. All parts that turn out to be defective due to circumstances prior to the passing of the risk must be repaired or replaced with defect-free parts as desired by the buyer. In case such defects are detective, BASS must immediately be informed in writing.

2. With apparent defects or in the case that the goods are incomplete, we are to be informed in writing about the complaints within a time period of 2 weeks after the goods have arrived at the desired location. Any other faults must be reported to us immediately within one week of the fault being noticed. The letter has to specify the exact error and must contain the invoice

GENERAL TERMS AND CONDITIONS

number. If demanded by us, receipts, prototypes, packing slips and/or the defective goods must be sent back to us. Claims of the buyer due to defectiveness or incompleteness of the performance are excluded if he/she does attend to his/her obligations.

3. In order to realize all subsequent improvements and replacement deliveries which BASS regards as necessary, the buyer is obliged to provide the necessary time and opportunities after having consulted BASS previously. Otherwise, BASS is excluded from any claims that result from that. Only in urgent cases that endanger the operating safety and/or to prevent disproportionately high damages – in such cases it is always necessary to inform BASS – the orderer has the right to remove the damage by himself/herself or by help of third parties, and to demand compensation from the orderer for the necessary expenditures. Replaced parts will become property of BASS.

4. Warranty claims of the buyer presuppose that he/she has met all his/her legal investigation and reproval demands in proper form. If the buyer does not comply with this obligation, he/she is not entitled to any warranty claims against us. Furthermore, the buyer has to provide evidence in appropriate and detailed form, that BASS products are the cause for defective parts produced. We have the right to ask for detailed information concerning the buyer's QM-system. The buyer is obligated to provide the opportunity to examine his/her QM system if demanded by us.

5. We are entitled to decide which form restitution should take. This means that we will decide whether to correct the fault, or to deliver a replacement product. If our first attempt to correct the fault fails, we are entitled to attempt once more to correct the fault. In this case, too, we are entitled to decide as to whether to correct the fault or to supply a replacement product.

6. The customer is only entitled to rescind the contract, or to demand compensatory damages if we have twice failed to correct the fault.

7. Beyond that, the customer is obliged to assure the quality produced by means of BASS tools by appropriate measures according to the QM-standard IATF 16949 or equivalent regulations (VDA 6.1, VDA 6.4). He/she is obliged to check the produced quality regularly by use of calibrated test instruments and, in the case of any deviations, to document it comprehensively and carefully. Without any exceptions, he/she is responsible for the quality of the parts which were produced with BASS tools even if we offer or provide support.

8. We do not assume any liability in the following cases: Inappropriate or improper usage, defective installation and/or start-up by the buyer or by third parties, natural wear, defective or negligent treatment, inappropriate maintenance, improper operating materials, damages caused by force majeure, special external circumstances not foreseen under the terms of the contract, chemical, electro-chemical or electrical effects or non-compliance with buyer's obligations as defined in paragraph VII 4 – as long as BASS is not responsible for them.

9. Minor faults that do not significantly affect the value of neither the goods, nor their suitability for use are excluded from the warranty.

10. If the buyer or any third party carries out any kind of repair works or modifications improperly, BASS is not obliged to assume any warranty claims for any consequences resulting from this. The same applies to modifications of the delivery item that have been carried out without the previous consent of BASS.

11. From all immediate costs that occur due to repair works and/or replacement deliveries we bear – as long as the complaint proves to be valid – the costs of the re placement including shipping.

12. Concerning possible compensation claims and remedy works there is a warranty period of 12 months from delivery date. This period is at least valid until the expiration of the warranty period for our original performance.

13. Claims to recourse against us by the customer shall only exist insofar as the customer has not reached any agreements with its customer which are more far-reaching than statutory claims on account of defects, for instance accommodation agreements.

14. Advertising messages of the buyer towards his/her customers or in his/her advertising material which are not authorized by us do not constitute any claims for damages against us.

Defects of Title

15. All our obligations named in paragraph VII are principally binding with reservation of paragraph IX. 2. for the case of copyright and trademark infringements.

They are only valid if

- the buyer supports us in an appropriate manner to repel any exercised claims and/or enables the implementation of the modification measures according to these conditions,
- all defense measures including extrajudicial regulations are reserved to us,
- the defect of title bases not on the instruction of a buyer and
- the infringement has not been caused by the fact that the buyer changed the delivery item arbitrarily or used it in a non-contractual way.

16. Insofar as nothing else is agreed upon, our obligation is limited to the delivery to the country and place of delivery, free from commercial proprietary rights and copy rights ("proprietary rights") of third parties.

17. We shall not be liable for claims arising from infringement of third party intellectual or industrial property rights or copy rights if the industrial property right is or was owned by the customer or by an enterprise in which the customer holds, directly or indirectly, a majority of the shares or voting rights. Our liability is also excluded if the delivery item or the production of the delivery item was made for the individual customer's needs, e.g. according to the customer's drawings.

18. We bear no liability for claims arising from the infringement of property rights if at least one proprietary right from a family of proprietary rights has been made public either by the European Patent Office or in one of the following states: Federal Republic of Germany, France, United Kingdom, Austria or USA. The proprietary rights shall not be made public later than the time of delivery. Liability shall be excluded if the customer insists on the execution of the purchase order/delivery regardless of the situation relating to property rights and despite having been made aware of certain intellectual property rights on our part.

19. If the use of the delivery item leads to the infringement of third-party property rights we are obliged to provide the purchaser the right to further use or to modify the delivery object in a reasonable manner for the purchaser in such a way that the injury of proprietary right no longer exists. If this is not feasible on commercially reasonable terms or within a reasonable period of time, we are entitled to rescind the contract.

20. The purchaser shall be obliged to notify us immediately and in writing of any such claim asserted by the third party. The customer shall grant us reasonable time to enter into negotiations with the third party to reach an amicable settlement of potential litigation.

VIII. Returns

1. Returns or replacements shall be possible only after prior consultation within 30 days and are subject to a storage fee of 20 %. Returns and replacements can be accepted only for new standard products in their original packing.

2. The cancellation of special tools is only possible by submitting an express statement and upon approval by BASS. The amount of the cancellation fee is determined according to the invoice sum and the date of the receipt of the cancellation declaration.

IX. Buyer's Liability, Exclusion of Liability

1. If the delivery item cannot be used by the buyer in the contractual way due to our fault and due to deferred or defective implementations of proposals and consultations carried out either prior to or after the respective implementation, or due to the violation of other contractual secondary obligations – particularly instructions for the operation, test and maintenance of the workparts to be processed – then the regulations as specified in paragraphs VII. and IX. 2. apply to the exclusion of additional claims of the orderer.

2. We do only assume liability – for whatever causes in law – for damages that did not occur on the delivery item itself

a) if it was intended,

b) if the owner/body or the executive personnel was grossly negligent,

c) if life, body and/or health have been violated culpably,

d) with defects that have been hidden fraudulently,

e) in the course of a guarantee promise,

f) with defects of the delivery item as long as the Product LiabilityAct requires it to be liable for personal injuries or propertydamages on privately used items.

If essential contractual obligations have culpably been violated, we are also liable if non-executive employees have acted grossly negligent and/or with slight negligence. In the latter case it is limited to the contract-related, reasonably predictable damage. Further claims are excluded.

3. Including all causes and amounts the aforementioned limitations of liability also apply in behalf of our legal representatives, employees and other auxiliary persons and assistants.

X. Copyright/Confidentiality

We reserve copyrights in terms of illustrations, patterns and prototypes, cost estimates, drawings and suchlike corporeal and incorporeal information and the right to file applications for industrial property rights such as patents – even in electronical form. It is not allowed to access them to third parties without our authorization and it may only be made available to those persons within the customer`s own operation who necessarily have to be included in the use thereof and who are also committed to secrecy, the information shall remain our property.Without our prior written consent such information may not be duplicated or commercially used. On demand they must be handed out immediately.

XI. Export Control Clause

1. Deliveries and services (contractual performance) shall be subject to the service that there are no obstacles to performance due to national or international export control regulations, in particular embargos or other sanctions. The customer undertakes to provide all information and documentation which is required for export and shipment. Delays due to export examinations or approval procedures render deadlines and delivery dates inapplicable. If necessary approvals are not granted or if the delivery and service are not capable of being approved, the contract shall be considered not concluded with respect to the parts affected.

2. We have the right to terminate the contract without notice if such termination is necessary for us in order to comply with national or international legal provisions. In this case, the customer is excluded from raising a claim for any damage or other rights on account of the termination.

XII. Software Usage

1. As long as our delivery contains software, the buyer is granted a non-exclusive right to use the software including its documentation. It will be left to be used with the delivery item intended for it.It is not allowed to use the software with more than one system.

2. The buyer is allowed to reproduce, revise, and translate the software or to convert its object code into the source code only in line with legal regulations (§§ 69a ff. UrhG (German Copyright Act)).The buyer obliges him/herself not to remove manufacturer information – particularly copyright-notes – or to change them withoutour explicit authorization.

3. All other rights related to the software and the documentationsincluding copies remain with us and/or the software supplier. It isnot allowed to grant concessions.

XIII. Agreement on Applicable Law, Place of Jurisdiction and Place of Fulfillment

1. The site of the plant is the agreed place of jurisdiction for all litigations resulting from the contractual relationship if the buyer isa dealer, a legal person under public law or a separate asset under public law or does not have a general place of jurisdiction at home, even with exchange, court and cheque procedures. However, we are entitled to sue the buyer even at his/her place of general jurisdiction.

2. Without any exceptions the law of the Federal Republic of Germany eligible for the privity of contracts with domestic contractual partners constitutes the only right applicable; the application of the UN Convention on Contracts for the International Sale of Goods(CISG) is thus excluded.

3. Place of fulfillment is the site of the plant.

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You can find the current edition of our catalog and many other brochures available for download on our website.

www.bass-tools.com/en/service/downloads

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VDA AUTOMOTIVE QUALITY 6.4 MANAGEMENT SYSTEMS

ISO QUALITY 9001 MANAGEMENT SYSTEMS

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