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## WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

## WNT \ Standard

Quality tools for standard applications.

The quality tools of the **WNT Standard** product line are high quality, powerful and reliable and enjoy the highest trust of our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

## Symbol explanation

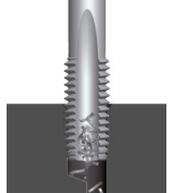
<b>M</b>	Thread type Explanation of the thread types can be found on → <b>Page 6</b>
<b>UNI NCW</b>	Application range Special feature An explanation of the areas of application/ special features can be found on  → <b>Page 7</b>
<b>C</b> 	Chamfer form An explanation of the chamfer forms can be found on → <b>Page 6</b>
<b>ISO 2 6H</b>	Tolerance Explanation of the tolerances can be found on → <b>Page 103</b>
<b>TiN</b>	Coating An explanation of the coatings can be found on → <b>Page 106</b>
	Cooling agent supply



<b>Coloured ring</b> An explanation of the coloured rings can be found on → <b>Page 5</b>
HSS-E      Tool Material An explanation of the cutting materials can be found on → <b>Page 6</b>
FHA 42°      Helix angle
≤ 1100 N/mm <sup>2</sup> Tensile strength
 Through hole thread
 Blind hole thread
 Through hole thread and blind hole thread

 The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type! The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

## Tool types

 	<p><b>Through hole tap type TruTap</b></p> <ul style="list-style-type: none"> <li>▲ For through holes up to 4xD</li> <li>▲ Lead Form B: 3.5–5 cutting leads, with spiral point</li> <li>▲ Straight Flutes</li> <li>▲ Also suitable for synchronised machining, with Weldon flat and with extra long version</li> <li>▲ Due to the special geometry of the flutes, the chips are removed in the direction of cut</li> </ul>	 	<p><b>Through hole tap type TruTap DL</b></p> <ul style="list-style-type: none"> <li>▲ For through holes up to 4xD</li> <li>▲ Lead Form C: 3.5–5 cutting leads, without spiral point</li> <li>▲ 15° left hand helix</li> <li>▲ Suitable for steel, titanium alloys and Inconel 718</li> <li>▲ The chips are discharged in the direction of cut</li> </ul>
 	<p><b>Blind hole tap type CavTap</b></p> <ul style="list-style-type: none"> <li>▲ For blind holes up to 3xD</li> <li>▲ Lead Form C: 2–3 cutting leads, without spiral point</li> <li>▲ Lead Form E: 1.5–2 cutting leads, without spiral point</li> <li>▲ (35°, 42°, 45°, 50°) right hand helix</li> <li>▲ Also suitable for synchronised machining, with Weldon flat, with extra long version and through coolant</li> <li>▲ The high helix angle ensures chips are discharged effectively against the direction of cut</li> </ul>	 	<p><b>Blind hole tap type CavTap SL</b></p> <ul style="list-style-type: none"> <li>▲ For blind holes up to 2xD</li> <li>▲ Lead Form C: 2–3 cutting leads, without spiral point</li> <li>▲ Lead Form E: 1.5–2 cutting leads, without spiral point</li> <li>▲ (15°, 25°, 30°) slow right hand helix</li> <li>▲ For steel, titanium alloys and Inconel 718</li> <li>▲ Also suitable for synchronised machining, with extra long version and through coolant</li> <li>▲ Also suitable for difficult operating conditions such as cross holes</li> </ul>
 	<p><b>Through and blind hole tap Type DuoTap</b></p> <ul style="list-style-type: none"> <li>▲ For blind and through holes up to 2xD</li> <li>▲ Lead Form C: 2–3 cutting leads, without spiral point</li> <li>▲ Lead Form D: 3.5–5 cutting leads, without spiral point</li> <li>▲ Lead Form E: 1.5–2 cutting leads, without spiral point</li> <li>▲ Straight Flutes</li> <li>▲ For steel, short chipping and hardened materials to 55 (62) HRC</li> <li>▲ Also with extra long version and through coolant</li> </ul>	 	<p><b>Thread former type DuoForm</b></p> <ul style="list-style-type: none"> <li>▲ For blind and through holes up to 3xD</li> <li>▲ Lead Form C: 2–3 cutting leads, without spiral point</li> <li>▲ For cold formable materials up to 1400 N/mm<sup>2</sup></li> <li>▲ Suitable for synchronised machining, with lubrication grooves and internal cooling</li> </ul>

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## Coloured rings

 <p><b>ST</b></p> <p>for steel up to 750 N/mm<sup>2</sup></p> <p>ST application area: uncoated taps for steels up to a tensile strength of 750 N/mm<sup>2</sup></p>	 <p><b>VA</b></p> <p>for corrosion and acid-resistant steels</p> <p>VA application area: for stainless steels</p>	 <p><b>HT</b></p> <p>for hardened steels</p> <p>HT application area: for hard machining</p>
 <p><b>ST</b></p> <p>for steel to 1100 N/mm<sup>2</sup></p> <p>ST and VG application area: coated taps for steels up to a tensile strength of 1100 N/mm<sup>2</sup></p>  <p><b>VG</b></p>	 <p><b>Ti</b></p> <p>for heat resistant alloys</p> <p>Ti and Ni application area: for heat-resistant steels, titanium and Inconel</p>  <p><b>Ni</b></p>	 <p><b>NW</b></p> <p>for aluminium and non-ferrous metal</p> <p>NW, Soft, Ms and AMPCO application area: for aluminium, short-chipping brass and soft materials</p>  <p><b>Ms</b></p>  <p><b>Soft</b></p>  <p><b>AMPCO</b></p>
 <p><b>HR</b></p> <p>for steel up to 1400 N/mm<sup>2</sup></p> <p>HR application area: for steels up to a tensile strength of 1400 N/mm<sup>2</sup></p>	 <p><b>GG</b></p> <p>for cast iron materials</p> <p>GG application area: for cast iron materials</p>	 <p><b>UNI</b></p> <p>for universal application up to 1100 N/mm<sup>2</sup></p> <p>UNI application area: for universal application</p>

 → Page 7  
Here you will find a detailed explanation of the areas of application.

## Thread types

<b>M</b>	ISO metric coarse thread DIN 13	
<b>MF</b>	ISO Metric fine thread DIN 13	
<b>G</b>	Whitworth pipe thread DIN EN ISO 228	
<b>UNC</b>	Unified coarse thread ASME B1.15 and ISO 3161	
<b>UNF</b>	Unified fine thread ASME B1.1	
<b>EG M</b>	ISO Metric coarse thread for wire inserts DIN 8140-2	
<b>EG UNC</b>	EG Unified coarse thread for wire inserts ASME B18.29.1	
<b>EG UNF</b>	EG Unified fine thread for wire inserts ASME B18.29.1	
<b>UNJC</b>	Unified coarse thread ASME B1.15 and ISO 3161	
<b>UNJF</b>	Unified extra fine thread ASME B1.15 and ISO 3161	
<b>BSW</b>	Whitworth thread BS84	
<b>NPT</b>	American taper pipe thread with sealing (1:16) ANSI/ASME B1.20.1	
<b>NPTF</b>	American taper pipe thread with sealing (1:16) ANSI/ASME B1.20.3	
<b>Rc</b>	Whitworth taper pipe thread (1:16) DIN EN 10226-2 (ISO7-1)	
<b>Rp</b>	Cylindrical Whitworth coarse thread DIN EN 10226-1 (ISO7-1)	

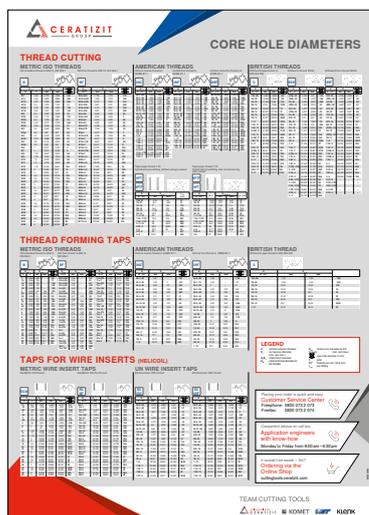
These thread types, as well as hand taps and dies, are available in the online shop.

## Chamfer forms

	Form B (with spiral point, 4–5 thread lead)
	Form C (without spiral point, 2–3 thread lead)
	Form D (without spiral point, 4–5 thread lead)
	Form E (without spiral point, 1.5–2 thread lead)

## Cutting materials

<b>HSS</b>	High-speed steel
<b>HSS-E</b>	High-performance high speed steel
<b>HSS-E / HM</b>	HSS-E base support material cutting/forming medium: HM
<b>HSS-PM</b>	High-performance sintered high-speed steel
<b>Solid carbide</b>	Solid carbide



A must-have for your production processes!

Thread core hole diameters at a glance thanks to the CERATIZIT workshop poster!

To receive a copy in your national language, please contact your sales representative.

## Application areas

WNT \ Performance	
<b>UNI</b>	for universal application up to 1100 N/mm <sup>2</sup>
<b>ST</b>	for good quality free machining steel
<b>FE</b>	Dies for steel
<b>VG</b>	for tempered and heat-resistant steels < 1100 N/mm <sup>2</sup>
<b>HR</b>	for high-tensile steels < 1400 N/mm <sup>2</sup>
<b>VA</b>	for stainless and acid-resistant steels up to 1100 N/mm <sup>2</sup>
<b>GG</b>	for cast iron
<b>NW</b>	For aluminium
<b>Soft</b>	For soft materials
<b>Ms</b>	for short chipping brass
<b>AMPCO</b>	For Ampco alloys 
<b>Ti</b>	For titanium and titanium alloys
<b>Ni</b>	special for Inconel 718
<b>HT</b>	for hardened steel and chilled iron up to 55 HRc
<b>EC</b>	DuoForm thread former for universal use
<b>NEO</b>	DuoForm thread former for heat-resistant alloys
<b>ERGO</b>	Hand Taps for stainless, heat-resistant and heat-treated steels up to 1100 N/mm <sup>2</sup> 
<b>ERGO F.T.</b>	Hand tap for steel up to 1400 N/mm <sup>2</sup> , wolfram, chilled iron 
	Tools for these application areas are available in the online shop.

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## Special Features

<b>AUT</b>	short version for automatic use
<b>AZ</b>	with intermittent teeth, reduces friction
<b>CNC</b>	for synchronised CNC machining with minimum length compensation chuck
<b>DRY</b>	for dry machining or minimum quantity lubrication (MMS)
<b>EL</b>	extra long, with double overall length
<b>ES</b>	extra short
<b>HML</b>	with soldered-in carbide strips for a higher cutting speed
<b>LH</b>	for left hand threads
<b>MMB</b>	Machine taps
<b>NC</b>	for synchronised CNC machining with minimum length compensation chuck
<b>NCW</b>	with Weldon flat for synchronised CNC machining without length compensation chuck
<b>R<sub>z</sub>=1</b>	Lapped Dies
<b>S</b>	with back taper, for deep threads
<b>SN</b>	Thread formers with lubrication grooves
<b>TS</b>	for high-speed machining, up to 100 m/min.

# Toolfinder

		Mechining	Application range	WNT \ Standard				
				M	MF	G	UNC	UNF
<b>Thread formers</b>								
UNI	for cold-formable materials		UNI	54	72			
<b>HSS taps</b>								
UNI	for universal use up to 1000 N/mm <sup>2</sup> <b>WNT Standard</b> up to 1100 N/mm <sup>2</sup> <b>WNT Performance</b>		UNI	26+27	59+60	74	81	89
			UNI	42+43	65	77	83	92
P	for steels up to 850 N/mm <sup>2</sup> <b>WNT Standard</b> up to 1100 N/mm <sup>2</sup> <b>WNT Performance</b>		FE	27	60			
			FE	43	66			23 282... 23 283... 
								
P	for high-strength steels up to 1100 N/mm <sup>2</sup> <b>WNT Standard</b> up to 1400 N/mm <sup>2</sup> <b>WNT Performance</b>		FE-HF	27			81	
			FE-HF	43			83	
								
M	for corrosion and acid-resistant steels		VA	28	60		81	
			VA	43+44	67		83	92
K	for cast iron materials		GG	50				
N	for aluminium and non-ferrous metal		AL	28				
			AL	44				
								
S	for heat-resistant materials							
								
H	Hard materials							

 → Page 10–15  
Here you will find the taps overview with tools for other applications.

 This article can be found in our online shop at [cuttingtools.ceratizit.com](http://cuttingtools.ceratizit.com)

		WNT \ Performance														
Tool type	Application range	M	EG M	MF	G	UNC	EG UNC	UNJC	UNF	EG UNF	UNJF	BSW	NPT	NPTF	Rp	Rc
DuoForm	EC	51+52		71	79	84			93							
TruTap	UNI	16-18	55	57+58	73	80	85		88	94						22 626... 22 627... 
CavTap	UNI	29-31	56	61+62	75+76	82	86		90	95						22 628... 22 629... 
TruTap	ST	19+20		58												
CavTap	ST	32+33			76											
DuoTap	ST	45+46											98			22 367... 22 382... 
																22 381... 
																22 389... 
TruTap	HR	20														
CavTap	HR	34														
DuoTap	HR	45+46		68+69	78											
TruTap	VA	21			73	80										
CavTap	VA	35			76	82			90				96			
DuoTap	GG	47		22 173... 												
TruTap	NW															
CavTap	NW	36														
DuoTap	AMPCO	22 030... 														
TruTap	Ti	22				80										22 167... 
CavTap SL	Ti	37				22 262... 		87	91							22 168... 
DuoTap	HT	48														

→ Page 99  
Here you will find shank extensions for taps.

Thread-cutting oils can be found in our online shop at [cuttingtools.ceratizit.com](http://cuttingtools.ceratizit.com)

# Taps Overview

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated <input checked="" type="checkbox"/> uncoated <input type="checkbox"/>	Coolant	WNT \ Performance	WNT \ Standard
<b>M</b>	<b>Metric ISO standard thread</b>							
	<b>UNI – Through hole thread</b>							
UNI	TruTap	B 4-5	ISO 2 6H ISO 3 6G 7G	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16+17	
UNI CNC	TruTap	B 4-5	ISO 2X 6HX ISO 3X 6GX 7GX	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18	
UNI NCW	TruTap	B 4-5	ISO 2 6H	HSS-PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18	
UNI EL	TruTap	B 4-5	ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	24	
UNI		B 4-5	ISO 2 6H	HSS-E HSS-PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	26	
UNI NC		B 4-5	ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	27	
UNI NCW		B 4-5	ISO 2 6H	HSS-PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	27	
	<b>UNI – Blind hole thread</b>							
UNI	CavTap	C 2-3	ISO 2 6H 7G	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	29	
UNI	CavTap	E 1,5-2	ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	30	
UNI		C 2-3	ISO 2 6H	HSS-E HSS-PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	42	
UNI NC		C 2-3	ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	42	
UNI NCW	CavTap	C 2-3	ISO 2 6H	HSS-PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	30	
UNI NCW		C 2-3	ISO 2 6H	HSS-PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	43	
UNI CNC	CavTap	C 2-3	ISO 2X 6HX ISO 2 6H 7G	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	31	
UNI CNC	CavTap	E 1,5-2	ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	31	
UNI CNC	CavTap	C 2-3	ISO 3 6G	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 588..., 22 589...	
UNI	CavTap	C 2-3	ISO 1 4H	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 528...	
UNI	CavTap	E 1,5-2	ISO 3 6G	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 530...	
UNI S	CavTap	C 2-3	ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 536..., 22 537...	
UNI ES	CavTap	E 1,5-2	ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	38	
UNI EL	CavTap	C 2-3	ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	40	
UNI	CavTap SL	C 2-3	ISO 2 6H	HSS-E	<input type="checkbox"/>	<input type="checkbox"/>	22 516...	

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated <input checked="" type="checkbox"/> uncoated <input type="checkbox"/>	Coolant	WNT \ Performance	WNT \ Standard
<b>M</b>	<b>Metric ISO standard thread</b>							
	<b>P – Through hole thread</b>							
ST	TruTap	B 4-5	ISO 2 6H	HSS-E	<input type="checkbox"/>	<input type="checkbox"/>	19	
ST LH	TruTap	B 4-5	ISO 2 6H	HSS-E	<input type="checkbox"/>	<input type="checkbox"/>	19	
ST	TruTap	B 4-5	ISO 1 4H	HSS-E	<input type="checkbox"/>	<input type="checkbox"/>	22 002..., 22 003...	
ST	TruTap	B 4-5	ISO 3 6G	HSS-E	<input type="checkbox"/>	<input type="checkbox"/>	22 004...	
ST TS	TruTap	B 4-5	ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20	
HR	TruTap	B 4-5	ISO 2X 6HX	HSS-PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20	
VG	TruTap	B 4-5	ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20	
ST EL	TruTap	B 4-5	ISO 2 6H	HSS-E	<input type="checkbox"/>	<input type="checkbox"/>	24	
ST MMB		$\approx 20$	ISO 2 6H	HSS-E	<input type="checkbox"/>	<input type="checkbox"/>	25	
FE		B 4-5	ISO 2 6H	HSS-E	<input type="checkbox"/>	<input type="checkbox"/>	27	
FE-HF		B 4-5	ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	27	
	<b>P – Blind hole thread</b>							
ST	CavTap	C 2-3	ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	33	
ST	CavTap	C 2-3	ISO 3 6G	HSS-E	<input type="checkbox"/>	<input type="checkbox"/>	22 134..., 22 135...	
ST CNC	CavTap SL	C 2-3	ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	32	
ST ES	CavTap SL	C 2-3	ISO 2 6H	HSS-E	<input type="checkbox"/>	<input type="checkbox"/>	39	
ST EL	CavTap	C 2-3	ISO 2 6H	HSS-E	<input type="checkbox"/>	<input type="checkbox"/>	40	
ST EL	CavTap SL	E 1,5-2	ISO 2 6H	HSS-E	<input type="checkbox"/>	<input type="checkbox"/>	41	
HR	CavTap SL	C 2-3	ISO 2 6H	HSS-PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	32	
HR	CavTap	C 2-3	ISO 2 6H	HSS-PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	34	

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# Taps Overview

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated uncoated	Coolant	WNT \ Performance	WNT \ Standard
<b>M</b>	<b>Metric ISO standard thread</b>							
FE			ISO 2 6H	HSS-E	<input type="checkbox"/>			43
FE-HF			ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>			43
	<b>P – Through hole thread and blind hole thread</b>							
ST	DuoTap		ISO 2X 6HX	HSS-E	<input type="checkbox"/>			45+46
ST AZ	DuoTap		ISO 2X 6HX	HSS-E	<input type="checkbox"/>			22 111..., 22 113...
HR	DuoTap		ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>			45+46
HR EL	DuoTap		ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>			49
	<b>M – Through hole thread</b>							
VA	TruTap		ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>			21
VA			ISO 2 6H	HSS-PM HSS-E	<input checked="" type="checkbox"/>			28
	<b>M – Blind hole thread</b>							
VA	CavTap		ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>			35
VA	CavTap		ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>			35
VA			ISO 2 6H	HSS-E HSS-PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>		43+44
	<b>K – Through hole thread and blind hole thread</b>							
GG	DuoTap		ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>			47
GG			ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>			50
	<b>N – Through hole thread</b>							
Soft	TruTap		ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>			22 305...
AL			ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>		28
	<b>N – Blind hole thread</b>							
Soft	CavTap		ISO 2 6H	HSS-E	<input type="checkbox"/>			36
NW	CavTap		ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>			36
AL			ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>		44

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated uncoated	Coolant	WNT \ Performance	WNT \ Standard
<b>M</b>	<b>Metric ISO standard thread</b>							
	<b>N – Through hole thread and blind hole thread</b>							
AMPCO	DuoTap		ISO 2X 6HX	HSS-PM	<input type="checkbox"/>			22 030...
Ms	DuoTap		ISO 2X 6HX	HSS-E	<input type="checkbox"/>			22 119...
	<b>S – Through hole thread</b>							
Ti	TruTap		ISO 1X 4HX ISO 2X 6HX	HSS-PM	<input checked="" type="checkbox"/>			22
Ti	TruTap DL		ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>			23
Ni	TruTap DL		ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>			23
	<b>S – Blind hole thread</b>							
Ti	CavTap SL		ISO 2X 6HX	HSS-PM	<input checked="" type="checkbox"/>			37
Ni	CavTap SL		ISO 2X 6HX	HSS-PM	<input checked="" type="checkbox"/>			37
	<b>H – Through hole thread and blind hole thread</b>							
HT	DuoTap		ISO 2X 6HX	VHM	<input checked="" type="checkbox"/>			48
HT	DuoTap		ISO 2X 6HX	HSS-PM	<input checked="" type="checkbox"/>			48
	<b>Machine thread formers</b>							
EC	DuoForm		ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>			51
EC SN	DuoForm		ISO 2X 6HX ISO 3X 6GX	HSS-E	<input checked="" type="checkbox"/>			52
NW HML	DuoForm		ISO 2X 6HX	HSS-E	<input type="checkbox"/>			51
NEO SN	DuoForm		ISO 2X 6HX	HSS-PM	<input checked="" type="checkbox"/>			53
UNI			ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>			54
UNI SN			ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>			54
	<b>Hand taps</b>							
ST			ISO 2X 6HX	VHM	<input type="checkbox"/>			22 800...
ST			ISO 2X 6HX	HSS-E	<input type="checkbox"/>			22 010...
ERGO			ISO 2X 6HX	HSS-E	<input type="checkbox"/>			22 012...
ERGO F.T.			ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>			22 013...

# Taps Overview

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated uncoated	Coolant	WNT \ Performance	WNT \ Standard
<b>M</b>	<b>Metric ISO standard thread</b>							
	<b>Dies</b>							
FE		ISO 6g ISO 6e	HSS	<input type="checkbox"/>	22 700..., 22 701...			
FE		ISO 6g	HSS	<input type="checkbox"/>	23 910...			
FE LH		ISO 6g	HSS	<input type="checkbox"/>	22 702...			
VA		ISO 6g	HSS-E	<input type="checkbox"/>	22 704...			
VA R <sub>z</sub> =1		ISO 6g	HSS-E	<input type="checkbox"/>	22 705...			

<b>EG M</b>	<b>ISO metric coarse thread for wire inserts</b>							
	<b>UNI - Through hole thread</b>							
UNI	TruTap		6H mod	HSS-E	<input checked="" type="checkbox"/>	55		
	<b>UNI - Blind hole thread</b>							
UNI	CavTap		6H mod	HSS-E	<input checked="" type="checkbox"/>	56		

<b>MF</b>	<b>Metric ISO fine thread</b>							
	<b>UNI - Through hole thread</b>							
UNI	TruTap		ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	57+58		
UNI	TruTap		ISO 3 6G	HSS-E	<input checked="" type="checkbox"/>	22 599...		
UNI			ISO 2 6H	HSS-PM HSS-E	<input checked="" type="checkbox"/>	59+60		
	<b>UNI - Blind hole thread</b>							
UNI	CavTap		ISO 2 6H ISO 3 6G	HSS-E	<input checked="" type="checkbox"/>	61		
UNI	CavTap		ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	62		
UNI			ISO 2 6H	HSS-PM HSS-E	<input checked="" type="checkbox"/>	65+66		

<b>MF</b>	<b>Metric ISO fine thread</b>							
UNI CNC	CavTap		ISO 3 6G	HSS-E	<input checked="" type="checkbox"/>	22 561...		
UNI CNC	CavTap		ISO 2 6H 7G	HSS-E	<input checked="" type="checkbox"/>	62		
UNI NC			ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	66		
	<b>P - Through hole thread</b>							
ST TS	TruTap		ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>	58		
FE			ISO 2 6H	HSS-E	<input type="checkbox"/>	60		
	<b>P - Blind hole thread</b>							
ST TS	CavTap		ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	22 216...		
ST	CavTap SL		ISO 2 6H	HSS-E	<input type="checkbox"/>	63		
FE			ISO 2 6H	HSS-E	<input type="checkbox"/>	66		
	<b>P - Through hole thread and blind hole thread</b>							
ST	DuoTap		ISO 2X 6HX	HSS-E	<input type="checkbox"/>	22 171...		
ST ES	DuoTap		ISO 2X 6HX	HSS-E	<input type="checkbox"/>	70		
ST LH/ES	DuoTap		ISO 2X 6HX	HSS-E	<input type="checkbox"/>	70		
HR	DuoTap		ISO 2X 6HX	HSS-E	<input checked="" type="checkbox"/>	68+69		
	<b>M - Through hole thread</b>							
VA			ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	60		
	<b>M - Blind hole thread</b>							
VA	CavTap		ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	64		
VA			ISO 2 6H	HSS-E	<input checked="" type="checkbox"/>	67		

# Taps Overview

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated uncoated	Coolant	WNT \ Performance	WNT \ Standard
<b>MF</b>	<b>Metric ISO fine thread</b>							
	<b>Machine thread formers</b>							
<b>EC SN</b>	DuoForm		ISO 2X 6HX	HSS-E	■		71	
<b>EC HML</b>	DuoForm		ISO 2X 6HX	HSS-E	■	☑	71	
<b>UNI SN</b>			ISO 2X 6HX	HSS-E	■			72
	<b>Dies</b>							
<b>FE</b>			ISO 6g	HSS	□		22 711...	
<b>VA</b>			ISO 6g	HSS-E	□		22 714...	

<b>G</b>	<b>Whitworth pipe thread</b>							
	<b>UNI - Through hole thread</b>							
<b>UNI</b>	TruTap		ISO 228	HSS-E	■		73	
<b>UNI</b>			ISO 228	HSS-E	■			74
	<b>UNI - Blind hole thread</b>							
<b>UNI</b>	CavTap		ISO 228	HSS-E	■		75	
<b>UNI</b>	CavTap		ISO 228, ISO 228 +0,05	HSS-E	■		75	
<b>UNI CNC</b>	CavTap		ISO 228	HSS-E	■		76	
<b>UNI</b>			ISO 228	HSS-E	■			77

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated uncoated	Coolant	WNT \ Performance	WNT \ Standard
<b>G</b>	<b>Whitworth pipe thread</b>							
	<b>P - Through hole thread</b>							
<b>FE</b>			ISO 228	HSS-E	□		23 260...	
	<b>P - Blind hole thread</b>							
<b>ST</b>	CavTap		ISO 228	HSS-E	□		76	
<b>ST</b>	CavTap SL		ISO 228	HSS-E	□		22 353...	
<b>FE</b>			ISO 228	HSS-E	□		23 261...	
	<b>P - Through hole thread and blind hole thread</b>							
<b>HR</b>	DuoTap		ISO 228X	HSS-E	■		78	
	<b>M - Through hole thread</b>							
<b>VA</b>	TruTap		ISO 228	HSS-E	■		73	
	<b>M - Blind hole thread</b>							
<b>VA</b>	CavTap		ISO 228	HSS-E	■		76	
	<b>K - Through hole thread and blind hole thread</b>							
<b>GG</b>	DuoTap		ISO 228X	HSS-E	■		22 348...	
	<b>Machine thread formers</b>							
<b>EC SN</b>	DuoForm		ISO 228	HSS-E	■		79	
	<b>Dies</b>							
<b>FE</b>			ISO 228A	HSS	□		22 741...	

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# Taps Overview

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated <input checked="" type="checkbox"/> uncoated <input type="checkbox"/>	Coolant	WNT \ Performance	WNT \ Standard
<b>UNC</b>	<b>Unified coarse thread</b>							
	<b>UNI – Through hole thread</b>							
<b>UNI</b>	TruTap		2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>80</b>	
<b>UNI</b>			2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>81</b>	
	<b>UNI – Blind hole thread</b>							
<b>UNI</b>	CavTap		2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>82</b>	
<b>UNI</b>			2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>83</b>	
	<b>P – Through hole thread</b>							
<b>FE-HF</b>			2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>81</b>	
	<b>P – Blind hole thread</b>							
<b>ST</b>	CavTap		2B	HSS-E	<input type="checkbox"/>	<input checked="" type="checkbox"/>	22 264...	
<b>FE-HF</b>			2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>83</b>	
	<b>M – Through hole thread</b>							
<b>VA</b>	TruTap		2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>80</b>	
<b>VA</b>			2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>81</b>	
	<b>M – Blind hole thread</b>							
<b>VA</b>	CavTap		2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>82</b>	
<b>VA</b>			2B	HSS-E	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>83</b>	
	<b>S – Through hole thread</b>							
<b>Ti</b>	TruTap		2BX	HSS-PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>80</b>	
	<b>S – Blind hole thread</b>							
<b>TI</b>	CavTap SL		2BX	HSS-PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 262...	
	<b>Machine thread formers</b>							
<b>EC</b>	DuoForm		2BX	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 270...	
<b>EC SN</b>	DuoForm		2BX	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>84</b>	

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated <input checked="" type="checkbox"/> uncoated <input type="checkbox"/>	Coolant	WNT \ Performance	WNT \ Standard
<b>UNC</b>	<b>Unified coarse thread</b>							
	<b>Dies</b>							
<b>FE</b>			2A	HSS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	22 721...	

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated <input checked="" type="checkbox"/> uncoated <input type="checkbox"/>	Coolant	WNT \ Performance	WNT \ Standard
<b>EG UNC</b>	<b>Unified coarse thread for wire inserts</b>							
	<b>UNI – Through hole thread</b>							
<b>UNI</b>	TruTap		2B mod	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>85</b>	
	<b>UNI – Blind hole thread</b>							
<b>UNI</b>	CavTap		2B mod	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>86</b>	

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated <input checked="" type="checkbox"/> uncoated <input type="checkbox"/>	Coolant	WNT \ Performance	WNT \ Standard
<b>UNJC</b>	<b>Unified coarse thread</b>							
	<b>S – Blind hole thread</b>							
<b>Ti</b>	CavTap SL		3BX	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>87</b>	

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated <input checked="" type="checkbox"/> uncoated <input type="checkbox"/>	Coolant	WNT \ Performance	WNT \ Standard
<b>UNF</b>	<b>Unified fine thread</b>							
	<b>UNI – Through hole thread</b>							
<b>UNI</b>	TruTap		2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>88</b>	
<b>UNI</b>			2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>89</b>	
	<b>UNI – Blind hole thread</b>							
<b>UNI</b>	CavTap		2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>90</b>	
<b>UNI</b>	CavTap		2B +0,05	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>90</b>	
<b>UNI</b>			2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>92</b>	
	<b>M – Blind hole thread</b>							
<b>VA</b>	CavTap		2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>90</b>	
<b>VA</b>			2B	HSS-E	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>92</b>	

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# Taps Overview

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated uncoated	Coolant	WNT \ Performance	WNT \ Standard
<b>UNF</b>	<b>Unified fine thread</b>							
	<b>S – Blind hole thread</b>							
Ti	CavTap SL	C 2-3	2BX 3BX	HSS-PM	■		91	
	<b>Thread formers</b>							
EC SN	DuoForm	C 2-3	2BX	HSS-E	■		93	

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated uncoated	Coolant	WNT \ Performance	WNT \ Standard
<b>EG UNF</b>	<b>Unified Fine Thread for wire inserts</b>							
	<b>UNI – Through hole thread</b>							
UNI	TruTap	B 4-5	2B	HSS-E	■		94	
	<b>UNI – Blind hole thread</b>							
UNI	CavTap	E 1,5-2	2B	HSS-E	■		95	

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated uncoated	Coolant	WNT \ Performance	WNT \ Standard
<b>UNJF</b>	<b>Unified extra-fine thread</b>							
	<b>S – Through hole thread</b>							
Ti	TruTap DL	D 4-5	3BX	HSS-E	■		22 167...	
	<b>S – Blind hole thread</b>							
Ti	CavTap SL	C 2-3	3BX	HSS-E	■		22 168...	

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated uncoated	Coolant	WNT \ Performance	WNT \ Standard
<b>BSW</b>	<b>Whitworth thread</b>							
	<b>UNI – Through hole thread</b>							
UNI	TruTap	B 4-5	med.	HSS-E	■		22 626..., 22 627...	
	<b>UNI – Blind hole thread</b>							
UNI	CavTap	C 2-3	med.	HSS-E	■		22 628..., 22 629...	

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated uncoated	Coolant	WNT \ Performance	WNT \ Standard
<b>NPT</b>	<b>American taper pipe thread</b>							
	<b>P – Through hole thread and blind hole thread</b>							
ST ES	DuoTap	C 2-3		HSS-E	□		98	
VG	DuoTap	C 2-3		HSS-E	□		97	
VG AZ	DuoTap	C 2-3		HSS-E	□		22 377..., 22 378...	
	<b>M – Blind hole thread</b>							
VA	CavTap	C 2-3		HSS-E	■		96	
VA	CavTap	E 1,5-2		HSS-E	■		96	

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated uncoated	Coolant	WNT \ Performance	WNT \ Standard
<b>NPTF</b>	<b>American taper pipe thread</b>							
	<b>P – Through hole thread and blind hole thread</b>							
ST	DuoTap	C 2-3		HSS-E	□		22 382...	
VG	DuoTap	C 2-3		HSS-E	□		22 380...	
ST ES	DuoTap	C 2-3		HSS-E	□		22 367...	

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated uncoated	Coolant	WNT \ Performance	WNT \ Standard
<b>Rp</b>	<b>Cylindrical Whitworth thread</b>							
	<b>P – Through hole thread and blind hole thread</b>							
ST	DuoTap	C 2-3	X	HSS-E	□		22 381...	

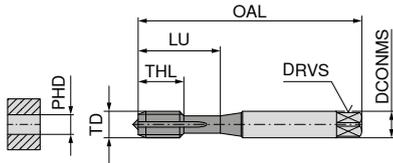
Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated uncoated	Coolant	WNT \ Performance	WNT \ Standard
<b>Rc</b>	<b>Tapered Whitworth thread</b>							
	<b>P – Through hole thread and blind hole thread</b>							
ST	DuoTap	C 2-3		HSS-E	□		22 389...	

## Accessories

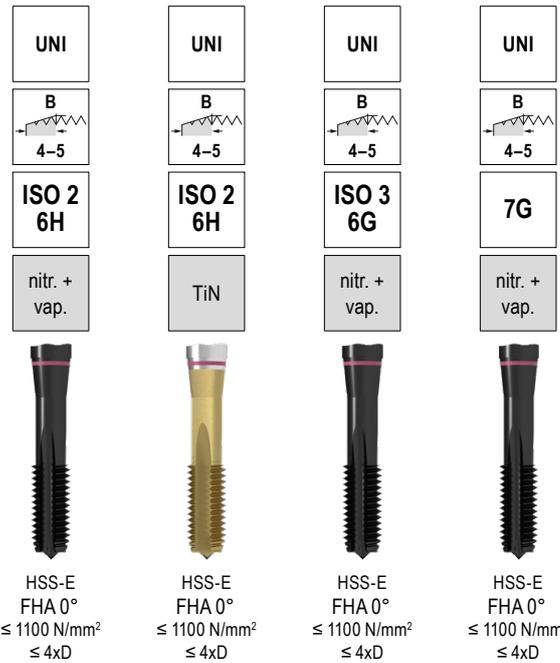
Shank extensions for taps	99
Thread cutting oil, chlorine free	22 950...
Thread cutting paste, chlorine free	

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# Through hole – Machine taps, right hand



DIN 371 with reinforced shank



TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M1	0,25	40	2,5	2,1	0,75	5	5	2
M1,2	0,25	40	2,5	2,1	0,95	5	5	2
M1,4	0,30	40	2,5	2,1	1,10	7	7	3
M1,6	0,35	40	2,5	2,1	1,25	8	11	3
M1,7	0,35	40	2,5	2,1	1,35	6	11	2
M1,8	0,35	40	2,5	2,1	1,45	6	11	2
M2	0,40	45	2,8	2,1	1,60	7	12	2
M2	0,40	45	2,8	2,1	1,60	7	12	3
M2,2	0,45	45	2,8	2,1	1,75	7	12	2
M2,5	0,45	50	2,8	2,1	2,05	9	14	2
M3	0,50	56	3,5	2,7	2,50	11	18	3
M3,5	0,60	56	4,0	3,0	2,90	12	20	3
M4	0,70	63	4,5	3,4	3,30	13	21	3
M5	0,80	70	6,0	4,9	4,20	15	25	3
M6	1,00	80	6,0	4,9	5,00	17	30	3
M7	1,00	80	7,0	5,5	6,00	17	30	3
M8	1,25	90	8,0	6,2	6,80	20	35	3
M10	1,50	100	10,0	8,0	8,50	22	39	3
M12	1,75	110	12,0	9,0	10,20	24	44	3

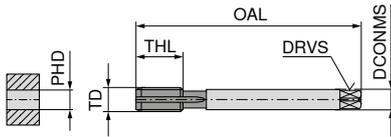
22 501 ...	22 503 ...	22 508 ...	22 510 ...
010 <sup>1)</sup>			
012 <sup>1)</sup>			
014 <sup>1)</sup>			
016			
017			
018			
020	020		020
022			
025		025	025
030	030	030	030
035			
040	040	040	040
050	050	050	050
060	060	060	060
070			
080	080	080	080
100	100	100	100
120			
12	15	12	12
7	9	7	7
12	18	12	12
	12		

1) Tol. ISO 14H ≤ M1.4

Cutting speed v<sub>c</sub> (m/min.)

DIN 376 can be found on the next page

# Through hole – Machine taps, right hand



DIN 376 with reduced shank

UNI	UNI	UNI	UNI
B 4-5	B 4-5	B 4-5	B 4-5
ISO 2 6H	ISO 2 6H	ISO 3 6G	7G
nitr. + vap.	TiN	nitr. + vap.	nitr. + vap.



HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD			
--	--	--	--

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M3	0,50	56	2,2		2,5	11	3
M4	0,70	63	2,8	2,1	3,3	13	3
M5	0,80	70	3,5	2,7	4,2	15	3
M6	1,00	80	4,5	3,4	5,0	17	3
M8	1,25	90	6,0	4,9	6,8	20	3
M10	1,50	100	7,0	5,5	8,5	22	3
M12	1,75	110	9,0	7,0	10,2	24	3
M14	2,00	110	11,0	9,0	12,0	26	3
M16	2,00	110	12,0	9,0	14,0	27	3
M18	2,50	125	14,0	11,0	15,5	30	3
M20	2,50	140	16,0	12,0	17,5	32	3
M22	2,50	140	18,0	14,5	19,5	32	3
M24	3,00	160	18,0	14,5	21,0	34	3
M27	3,00	160	20,0	16,0	24,0	36	3
M30	3,50	180	22,0	18,0	26,5	40	4

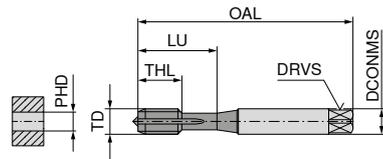
22 502 ...	22 504 ...	22 509 ...	22 511 ...
030			
040			
050			
060			
080			
100			
120			
140	120	120	120
160	140	160	160
180	160	160	160
200	180	200	
220	200		
240	220		
240	240		
270			
300			
P	12	15	12
M	7	9	7
K	12	18	12
N		12	
S			
H			
O			

Cutting speed v<sub>c</sub> (m/min.)

# Through hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck



DIN 371 with reinforced shank

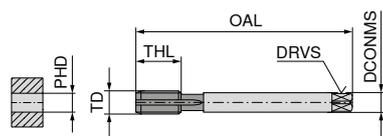
UNI NCW	UNI CNC	UNI CNC	UNI CNC
B 4-5	B 4-5	B 4-5	B 4-5
ISO 2 6H	ISO 2X 6HX	ISO 3X 6GX	7GX
TiN	TiN GS	TiN GS	TiN GS



HSS-PM FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD
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TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M3	0,50	56	3,5	2,7	2,5	6	18	3
M3	0,50	70	6,0	4,9	2,5	6	18	3
M4	0,70	63	4,5	3,4	3,3	7	21	3
M4	0,70	70	6,0	4,9	3,3	7	21	3
M5	0,80	70	6,0	4,9	4,2	8	25	3
M6	1,00	80	6,0	4,9	5,0	10	30	3
M8	1,25	90	8,0	6,2	6,8	14	35	3
M8	1,25	90	8,0	6,2	6,8	14	35	4
M10	1,50	100	10,0	8,0	8,5	16	39	3
M10	1,50	100	10,0	8,0	8,5	16	39	4
M12	1,75	110	10,0	8,0	10,2	18	41	3
M16	2,00	110	12,0	9,0	14,0	22	44	3

22 148 ...	22 542 ...	22 596 ...	22 592 ...
	030		
030		040	040
040	040	050	050
050	050	060	060
060	060	080	080
080	080	100	100
100	100		
120			
160			



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M12	1,75	110	9	7	10,2	18	4
M14	2,00	110	11	9	12,0	20	4
M16	2,00	110	12	9	14,0	22	4
M20	2,50	140	16	12	17,5	25	4

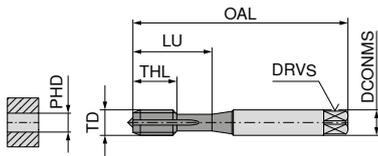
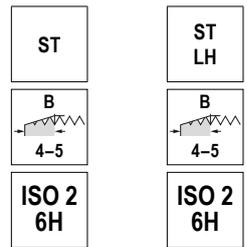
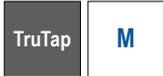
22 543 ...	22 593 ...
120	120
140	
160	
200	

P	15	15	15	15
M	8	9	9	9
K	15	18	18	18
N	22	12	12	12
S				
H				
O				

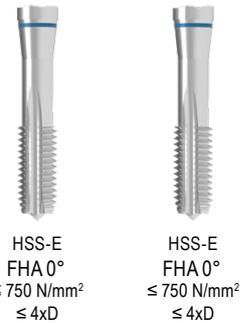
Cutting speed v<sub>c</sub> (m/min.)

# Through hole – Machine taps

▲ LH = for left hand threads

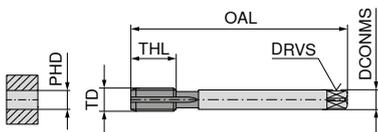


DIN 371 with reinforced shank



TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M2	0,40	45	2,8	2,1	1,60	7	12	2
M2,3	0,40	45	2,8	2,1	1,90	7	12	2
M2,5	0,45	50	2,8	2,1	2,05	9	14	2
M2,6	0,45	50	2,8	2,1	2,15	9	14	2
M3	0,50	56	3,5	2,7	2,50	11	18	3
M3,5	0,60	56	4,0	3,0	2,90	12	20	3
M4	0,70	63	4,5	3,4	3,30	13	21	3
M5	0,80	70	6,0	4,9	4,20	15	25	3
M6	1,00	80	6,0	4,9	5,00	17	30	3
M8	1,25	90	8,0	6,2	6,80	20	35	3
M10	1,50	100	10,0	8,0	8,50	22	39	3

22 020 ...	22 127 ...
020	
023	
025	
026	
030	030
035	
040	040
050	050
060	060
080	080
100	100



DIN 376 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
M5	0,80	70	3,5	2,7	4,2	15	3
M6	1,00	80	4,5	3,4	5,0	17	3
M8	1,25	90	6,0	4,9	6,8	20	3
M10	1,50	100	7,0	5,5	8,5	22	3
M12	1,75	110	9,0	7,0	10,2	24	3
M14	2,00	110	11,0	9,0	12,0	26	3
M16	2,00	110	12,0	9,0	14,0	27	3
M18	2,50	125	14,0	11,0	15,5	30	3
M20	2,50	140	16,0	12,0	17,5	32	3

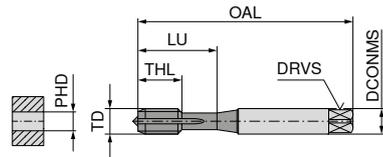
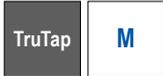
22 021 ...	22 147 ...
050	
060	
080	
100	
120	120
140	
160	160
180	
200	200

P	12	12
M		
K	12	12
N	12	22
S		
H		
O		

Cutting speed  $v_c$  (m/min.)

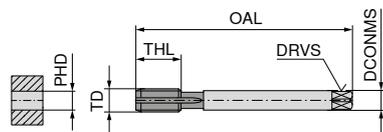
# Through hole – Machine taps, right hand

▲ TS = for high-speed machining, up to 100 m/min.



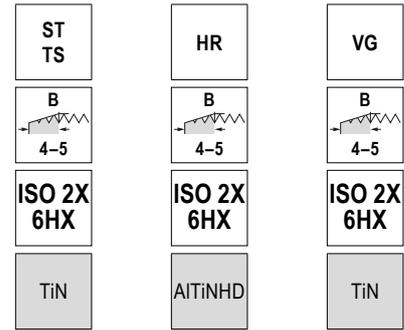
DIN 371 with reinforced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M2	0,40	45	2,8	2,1	1,60	7	12	2
M2	0,40	45	2,8	2,1	1,60	4	12	2
M2,5	0,45	50	2,8	2,1	2,05	9	14	2
M2,5	0,45	50	2,8	2,1	2,05	5	15	2
M3	0,50	56	3,5	2,7	2,50	11	18	2
M3	0,50	56	3,5	2,7	2,50	6	18	3
M4	0,70	63	4,5	3,4	3,30	13	21	2
M4	0,70	63	4,5	3,4	3,30	7	21	3
M5	0,80	70	6,0	4,9	4,20	15	25	2
M5	0,80	70	6,0	4,9	4,20	8	25	3
M6	1,00	80	6,0	4,9	5,00	17	30	3
M6	1,00	80	6,0	4,9	5,00	10	30	3
M8	1,25	90	8,0	6,2	6,80	20	35	3
M8	1,25	90	8,0	6,2	6,80	14	35	4
M10	1,50	100	10,0	8,0	8,50	22	39	3
M10	1,50	100	10,0	8,0	8,50	16	39	4



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M12	1,75	110	9	7	10,2	18	4
M16	2,00	110	12	9	14,0	22	4
M20	2,50	140	16	12	17,5	25	4



**ST TS**  
 HSS-E  
 FHA 0°  
 ≤ 1100 N/mm<sup>2</sup>  
 ≤ 4xD

**HR**  
 HSS-PM  
 FHA 0°  
 ≤ 1400 N/mm<sup>2</sup>  
 ≤ 4xD

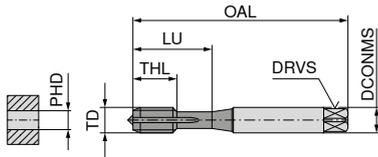
**VG**  
 HSS-E  
 FHA 0°  
 ≤ 1100 N/mm<sup>2</sup>  
 ≤ 4xD

22 092 ...	22 468 ...	22 120 ...
	02000	
020	02500	020
025	03000	025
030	04000	030
040	05000	040
050	06000	050
060	08000	060
080	10000	080
100		100

22 093 ...	22 121 ...	
120	120	
160	160	
200	200	
P	8	10
M	8	8
K	65	
N	75	22
S	4	
H		
O		

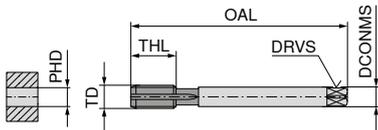
Cutting speed v<sub>c</sub> (m/min.)

# Through hole – Machine taps, right hand



DIN 371 with reinforced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M1,6	0,35	40	2,5	2,1	1,25	6	11	2
M2	0,40	45	2,8	2,1	1,60	7	12	2
M2,5	0,45	50	2,8	2,1	2,05	9	14	2
M3	0,50	56	3,5	2,7	2,50	11	18	3
M3,5	0,60	56	4,0	3,0	2,90	12	20	3
M4	0,70	63	4,5	3,4	3,30	13	21	3
M5	0,80	70	6,0	4,9	4,20	15	25	3
M6	1,00	80	6,0	4,9	5,00	17	30	3
M8	1,25	90	8,0	6,2	6,80	20	35	3
M10	1,50	100	10,0	8,0	8,50	22	39	3



DIN 376 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
M12	1,75	110	9	7	10,2	24	3
M14	2,00	110	11	9	12,0	26	3
M16	2,00	110	12	9	14,0	27	3
M18	2,50	125	14	11	15,5	30	3
M20	2,50	140	16	12	17,5	32	3

P	8	10
M	6	8
K		
N		
S		
H		
O		

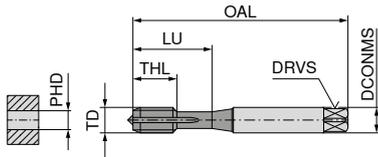
Cutting speed  $v_c$  (m/min.)

VA	VA
B 4-5	B 4-5
ISO 2 6H	ISO 2 6H
nit.	TiN GS
HSS-E FHA 0° ≤ 900 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 900 N/mm² ≤ 4xD

22 056 ...	22 038 ...
	016
020	020
025	025
030	030
035	
040	040
050	050
060	060
080	080
100	100

22 057 ...	22 039 ...
120	120
140	140
160	160
180	
200	200

# Through hole – Machine taps, right hand



DIN 371 with reinforced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M1,6	0,35	40	2,5	2,1	1,25	8	9,5	3
M2	0,40	45	2,8	2,1	1,60	8	9,5	3
M2,5	0,45	50	2,8	2,1	2,05	9	14,0	3
M3	0,50	56	3,5	2,7	2,50	11	18,0	3
M3,5	0,60	56	4,0	3,0	2,90	12	20,0	3
M4	0,70	63	4,5	3,4	3,30	13	21,0	3
M5	0,80	70	6,0	4,9	4,20	15	25,0	3
M6	1,00	80	6,0	4,9	5,00	17	30,0	3
M8	1,25	90	8,0	6,2	6,80	20	35,0	3
M10	1,50	100	10,0	8,0	8,50	22	39,0	3

Ti	Ti	Ti
B 4-5	B 4-5	B 4-5
ISO 1X 4HX	ISO 2X 6HX	ISO 2X 6HX
TiN	vap.	TiN

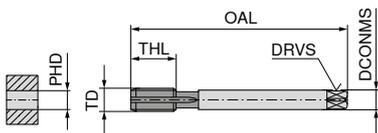


HSS-PM  
FHA 0°  
≤ 44 HRC  
≤ 4xD

HSS-PM  
FHA 0°  
≤ 1400 N/mm<sup>2</sup>  
≤ 4xD

HSS-PM  
FHA 0°  
≤ 44 HRC  
≤ 4xD

22 081 ...	22 075 ...	22 077 ...
020	016	
	020	
	025	
030	030	030
	035	
040	040	040
050	050	050
060	060	060
080	080	080
	100	100



DIN 376 with reduced shank

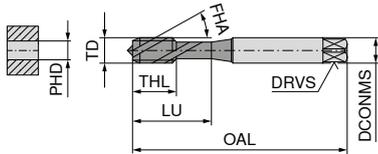
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M12	1,75	110	9	7	10,2	24	3

22 142 ...

							120	
P						7	5	7
M						7	5	7
K								
N								
S						5	3	5
H								
O								

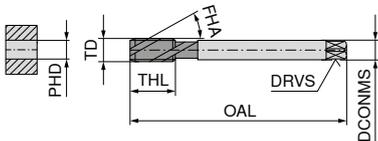
Cutting speed v<sub>c</sub> (m/min.)

# Through hole – Machine taps, right hand



DIN 371 with reinforced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M3	0,50	56	3,5	2,7	2,5	11	18	2
M4	0,70	63	4,5	3,4	3,3	13	21	3
M5	0,80	70	6,0	4,9	4,2	15	25	3
M6	1,00	80	6,0	4,9	5,0	17	30	3
M8	1,25	90	8,0	6,2	6,8	20	35	3
M10	1,50	100	10,0	8,0	8,5	22	39	3



DIN 376 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
M12	1,75	110	9	7	10,2	24	3
M16	2,00	110	12	9	14,0	27	3

	22 159 ...	22 297 ...
M3	030	030
M4	040	040
M5	050	050
M6	060	060
M8	080	080
M10	100	100
M12	120	120
M16	160	160
P	7	
M	7	
K		
N	22	22
S	5	2
H		
O		

Cutting speed  $v_c$  (m/min.)

Ti

D  
4-5

ISO 2X 6HX

TiCN

HSS-E  
FHA 15°  
≤ 1200 N/mm<sup>2</sup>  
≤ 4xD

Ni

D  
4-5

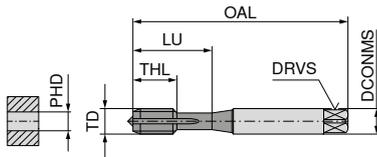
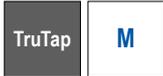
ISO 2X 6HX

TiCN

HSS-E  
FHA 15°  
≤ 1600 N/mm<sup>2</sup>  
≤ 4xD

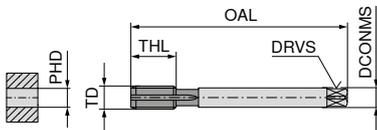
# Through hole – Machine taps, right hand

▲ EL = extra long, with double overall length



DIN 371 with reinforced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M3	0,50	100	3,5	2,7	2,5	11	18	3
M4	0,70	125	4,5	3,4	3,3	13	21	3
M5	0,80	140	6,0	4,9	4,2	15	25	3
M6	1,00	160	6,0	4,9	5,0	17	30	3
M8	1,25	180	8,0	6,2	6,8	20	35	3

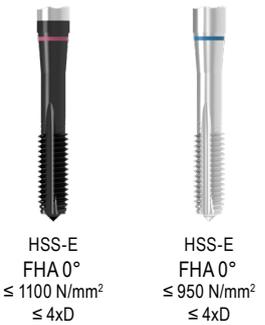
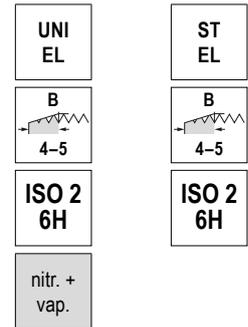


DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M6	1,00	160	4,5	3,4	5,0	17	3
M8	1,25	180	6,0	4,9	6,8	20	3
M10	1,50	200	7,0	5,5	8,5	22	3
M12	1,75	224	9,0	7,0	10,2	24	3
M14	2,00	224	11,0	9,0	12,0	26	3
M16	2,00	224	12,0	9,0	14,0	27	3
M18	2,50	250	14,0	11,0	15,5	30	3
M20	2,50	280	16,0	12,0	17,5	32	3

P	12	12
M	7	
K	12	12
N		22
S		
H		
O		

Cutting speed  $v_c$  (m/min.)

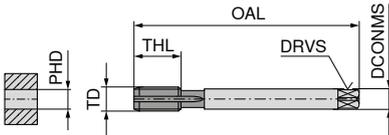


22 514 ...	22 233 ...
030	030
040	040
050	050
060	060
080	080

22 515 ...	22 234 ...
060	060
080	080
100	100
120	120
140	140
160	160
180	180
200	200

# Through hole – Machine taps, right hand

▲ MMB = Nut taps



DIN 357 with reduced shank



HSS-E  
FHA 0°  
≤ 850 N/mm²  
≤ 1xD

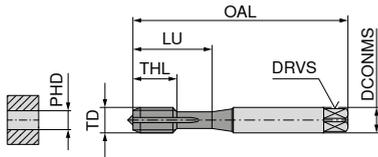
6

22 098 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M3	0,50	70	2,2	2,5	16	3		030
M4	0,70	90	2,8	2,1	3,3	22	3	040
M5	0,80	100	3,5	2,7	4,2	24	3	050
M6	1,00	110	4,5	3,4	5,0	30	3	060
M8	1,25	125	6,0	4,9	6,8	38	3	080
M10	1,50	140	7,0	5,5	8,5	45	3	100
M12	1,75	180	9,0	7,0	10,2	50	3	120
M16	2,00	200	12,0	9,0	14,0	63	3	160
P								15
M								
K								
N								
S								
H								
O								

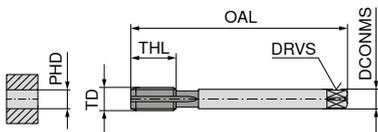
Cutting speed v<sub>c</sub> (m/min.)

# Through hole – Machine taps, right hand



DIN 371 with reinforced shank

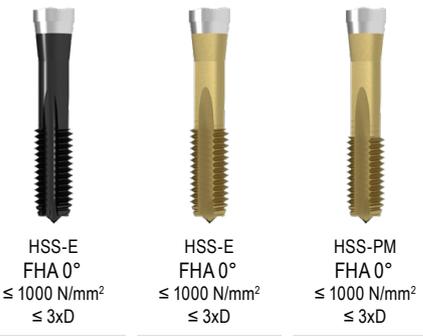
TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M2	0,40	45	2,8	2,1	1,60	4	13,5	2
M2	0,40	45	2,8	2,1	1,60	7	12,0	2
M2,5	0,45	50	2,8	2,1	2,05	9	14,0	2
M3	0,50	56	3,5	2,7	2,50	11	18,0	3
M4	0,70	63	4,5	3,4	3,30	13	21,0	3
M5	0,80	70	6,0	4,9	4,20	15	25,0	3
M6	1,00	80	6,0	4,9	5,00	17	30,0	3
M8	1,25	90	8,0	6,2	6,80	20	35,0	3
M10	1,50	100	10,0	8,0	8,50	22	39,0	3



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M3	0,50	56	2,2		2,5	11	3
M4	0,70	63	2,8	2,1	3,3	13	3
M5	0,80	70	3,5	2,7	4,2	15	3
M6	1,00	80	4,5	3,4	5,0	17	3
M8	1,25	90	6,0	4,9	6,8	20	3
M10	1,50	100	7,0	5,5	8,5	22	3
M12	1,75	110	9,0	7,0	10,2	24	3
M14	2,00	110	11,0	9,0	12,0	20	4
M14	2,00	110	11,0	9,0	12,0	26	3
M16	2,00	110	12,0	9,0	14,0	27	3
M18	2,50	125	14,0	11,0	15,5	25	4
M18	2,50	125	14,0	11,0	15,5	30	3
M20	2,50	140	16,0	12,0	17,5	32	3
M22	2,50	140	18,0	14,5	19,5	32	3
M24	3,00	160	18,0	14,5	21,0	34	3
M27	3,00	160	20,0	16,0	24,0	36	3
M30	3,50	180	22,0	18,0	26,5	40	4
M33	3,50	180	25,0	20,0	29,5	40	4
M36	4,00	200	28,0	22,0	32,0	50	4

UNI	UNI	UNI
B 4-5	B 4-5	B 4-5
ISO 2 6H	ISO 2 6H	ISO 2 6H
nitr. + vap.	TiN	TiN



23 110 ...	23 112 ...	23 010 ...
		020
020	020	
025	025	
030	030	030
040	040	040
050	050	050
060	060	060
080	080	080
100	100	100

23 111 ...	23 113 ...	23 021 ...
030		
040		
050		
060		
080		
100		
120	120	120
140		140
160	14000	160
	160	180
	18000	
200	200	200
	22000	
	240	
	27000	
	30000	
	33000	
	36000	

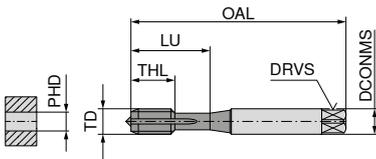
P	12	15	15
M	7	9	9
K	12	18	18
N		12	12
S			
H			
O			

Cutting speed v<sub>c</sub> (m/min.)

# Through hole – Machine taps, right hand

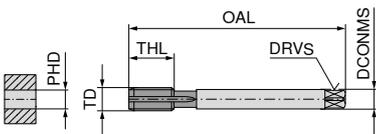
▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

▲ NC = for synchronised CNC machining with minimum length compensation chuck



DIN 371 with reinforced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M1,6	0,35	40	2,5	2,1	1,25	6	11	2
M2	0,40	45	2,8	2,1	1,60	7	12	2
M2,5	0,45	50	2,8	2,1	2,05	9	14	2
M3	0,50	56	3,5	2,7	2,50	11	18	3
M3	0,50	70	6,0	4,9	2,50	6	18	3
M3,5	0,60	56	4,0	3,0	2,90	12	20	3
M4	0,70	63	4,5	3,4	3,30	13	21	3
M4	0,70	70	6,0	4,9	3,30	7	21	3
M5	0,80	70	6,0	4,9	4,20	8	25	3
M5	0,80	70	6,0	4,9	4,20	15	25	3
M6	1,00	80	6,0	4,9	5,00	10	30	3
M6	1,00	80	6,0	4,9	5,00	17	30	3
M8	1,25	90	8,0	6,2	6,80	14	35	3
M8	1,25	90	8,0	6,2	6,80	20	35	3
M10	1,50	100	10,0	8,0	8,50	16	39	3
M10	1,50	100	10,0	8,0	8,50	22	39	3



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M12	1,75	110	9	7	10,2	24	3
M12	1,75	110	10	8	10,2	18	3
M14	2,00	110	11	9	12,0	26	3
M16	2,00	110	12	9	14,0	22	3
M16	2,00	110	12	9	14,0	27	3
M20	2,50	140	16	12	17,5	32	3

P	15	15	12	15
M	9	8		
K	18	15	12	15
N	12	22	12	15
S				
H				
O				

Cutting speed  $v_c$  (m/min.)

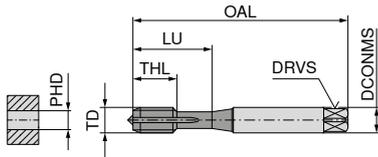
UNI NC	UNI NCW	FE	FE-HF
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
TiN GS	TiCN		TiCN
HSS-E FHA 0° ≤ 1000 N/mm² ≤ 3xD	HSS-PM FHA 0° ≤ 1000 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 850 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 3xD

23 114 ...	23 116 ...	23 212 ...	23 310 ...
		016	
		020	
		025	
030		030	030
	030		
		035	
040		040	040
	040		
		050	
050		050	050
	050		
		060	
060		060	060
	060		
		080	
080		080	080
	080		
		100	
100		100	100
	100		

23 115 ...	23 117 ...	23 213 ...	23 311 ...
		120	
			120
	120		
		140	
	160		
160		160	160
	160		
		200	
200		200	200
	200		

# Through hole – Machine taps, right hand

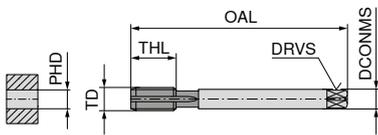
M



DIN 371 with reinforced shank

VA	VA	VA	AL	AL
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
TiN	nitr.	nitr.		CrN
HSS-E FHA 0° ≤ 1200 N/mm <sup>2</sup> ≤ 3xD	HSS-PM FHA 0° ≤ 1200 N/mm <sup>2</sup> ≤ 3xD	HSS-E FHA 0° ≤ 1200 N/mm <sup>2</sup> ≤ 3xD	HSS-E FHA 0° ≤ 500 N/mm <sup>2</sup> ≤ 3xD	HSS-E FHA 0° ≤ 500 N/mm <sup>2</sup> ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	23 412 ...	23 450 ...	23 410 ...	23 610 ...	23 612 ...
mm	mm	mm	mm	mm	mm	mm	mm						
M2	0,40	45	2,8	2,1	1,60	7	12	2	020				
M2,5	0,45	50	2,8	2,1	2,05	9	14	2	025				
M3	0,50	56	3,5	2,7	2,50	11	18	3	030	030			
M4	0,70	63	4,5	3,4	3,30	13	21	3	040	040			
M5	0,80	70	6,0	4,9	4,20	15	25	3	050	050			
M6	1,00	80	6,0	4,9	5,00	17	30	3	060	060			
M8	1,25	90	8,0	6,2	6,80	20	35	3	080	080			
M10	1,50	100	10,0	8,0	8,50	22	39	3	100	100			



DIN 376 with reduced shank

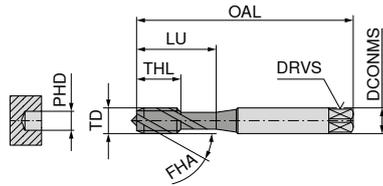
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	23 413 ...	23 451 ...	23 411 ...
mm	mm	mm	mm	mm	mm	mm				
M12	1,75	110	9	7,0	10,2	24	3	120	120	120
M14	2,00	110	11	9,0	12,0	26	3		140	
M16	2,00	110	12	9,0	14,0	27	3	160	160	160
M20	2,50	140	16	12,0	17,5	32	3	200	200	200
M24	3,00	160	18	14,5	21,0	34	3			240

P	10	8	8		
M	8	6	6		
K					
N	24	22	22	15	20
S					
H					
O					

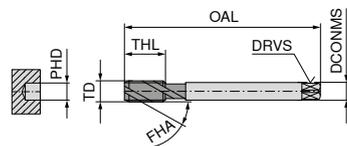
Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand



DIN 371 with reinforced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M2	0,40	45	2,8	2,1	1,60	4	12	2
M2,5	0,45	50	2,8	2,1	2,05	5	15	2
M3	0,50	56	3,5	2,7	2,50	6	18	3
M4	0,70	63	4,5	3,4	3,30	7	21	3
M5	0,80	70	6,0	4,9	4,20	8	25	3
M6	1,00	80	6,0	4,9	5,00	10	30	3
M8	1,25	90	8,0	6,2	6,80	14	35	3
M10	1,50	100	10,0	8,0	8,50	16	39	3



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M12	1,75	110	9	7,0	10,2	18	3
M14	2,00	110	11	9,0	12,0	20	3
M16	2,00	110	12	9,0	14,0	22	3
M18	2,50	125	14	11,0	15,5	25	3
M20	2,50	140	16	12,0	17,5	25	3
M22	2,50	140	18	14,5	19,5	27	4
M24	3,00	160	18	14,5	21,0	30	4
M30	3,50	180	22	18,0	26,5	35	4
M33	3,50	180	25	20,0	29,5	35	4
M36	4,00	200	28	22,0	32,0	40	4

UNI	UNI	UNI
C 2-3	C 2-3	C 2-3
ISO 2 6H	ISO 2 6H	ISO 2 6H
vap.	TiN	TiCN



HSS-E  
FHA 42°  
≤ 1100 N/mm²  
≤ 3xD

HSS-E  
FHA 42°  
≤ 1100 N/mm²  
≤ 3xD

HSS-E  
FHA 42°  
≤ 1100 N/mm²  
≤ 3xD

22 518 ...	22 520 ...	22 522 ...
020	020	
025		
030	030	030
040	040	040
050	050	050
060	060	060
080	080	080
100	100	100

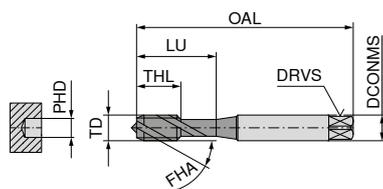
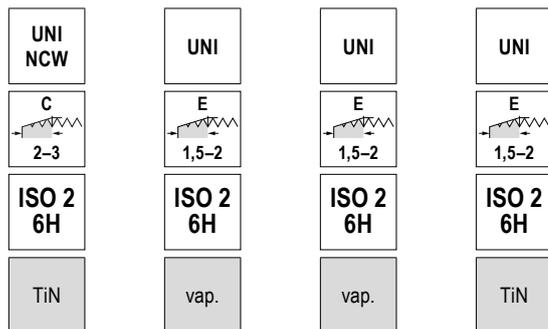
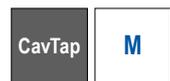
22 519 ...	22 521 ...
120	120
140	140
160	160
180	180
200	200
220	220
240	240
300	
330	
360	

P	12	15	15
M	7	9	9
K	12	18	18
N		12	12
S			
H			
O			

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

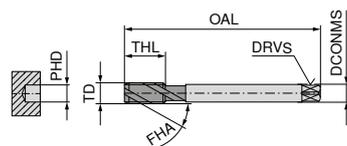


DIN 371 with reinforced shank



TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M3	0,50	56	3,5	2,7	2,5	6	18	3
M3	0,50	70	6,0	4,9	2,5	6	18	3
M4	0,70	63	4,5	3,4	3,3	7	21	3
M4	0,70	70	6,0	4,9	3,3	7	21	3
M5	0,80	70	6,0	4,9	4,2	8	25	3
M6	1,00	80	6,0	4,9	5,0	10	30	3
M8	1,25	90	8,0	6,2	6,8	14	35	3
M10	1,50	100	10,0	8,0	8,5	16	39	3

22 149 ...	22 524 ...	22 534 ...	22 526 ...
	030		030
	040		040
	050	050	050
	060	060	060
	080	080	080
	100	100	100



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M12	1,75	110	9	7,0	10,2	18	4
M12	1,75	110	10	8,0	10,2	18	3
M14	2,00	110	11	9,0	12,0	20	4
M16	2,00	110	12	9,0	14,0	22	3
M16	2,00	110	12	9,0	14,0	22	4
M18	2,50	125	14	11,0	15,5	25	4
M20	2,50	140	16	12,0	17,5	25	4
M22	2,50	140	18	14,5	19,5	27	5
M24	3,00	160	18	14,5	21,0	30	5

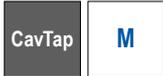
22 149 ...	22 525 ...	22 535 ...	22 527 ...
	120	120	120
	140	140	
	160	160	160
		180	
		200	200
		220	
		240	

P	15	12	12	15
M	8	7	7	9
K	15	12	12	18
N	22			12
S				
H				
O				

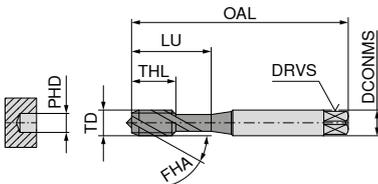
Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck



UNI CNC	UNI CNC	UNI CNC	UNI CNC
C 2-3	C 2-3	E 1,5-2	C 2-3
ISO 2X 6HX	ISO 2 6H	ISO 2 6H	7G
TiN	TiN GS	TiN GS	TiN GS



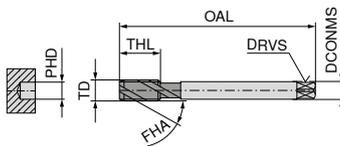
DIN 371 with reinforced shank



HSS-E FHA 50° ≤ 1100 N/mm² ≤ 3xD  
 HSS-E FHA 45° ≤ 1100 N/mm² ≤ 3xD  
 HSS-E FHA 45° ≤ 1100 N/mm² ≤ 3xD  
 HSS-E FHA 45° ≤ 1100 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M3	0,50	56	3,5	2,7	2,5	6	18	3
M4	0,70	63	4,5	3,4	3,3	7	21	3
M5	0,80	70	6,0	4,9	4,2	8	25	3
M6	1,00	80	6,0	4,9	5,0	10	30	3
M8	1,25	90	8,0	6,2	6,8	14	35	3
M10	1,50	100	10,0	8,0	8,5	16	39	3

22 416 ...	22 544 ...	22 546 ...	22 594 ...
030	030		030
040	040		040
050	050	050	050
060	060	060	060
080	080	080	080
100	100	100	100



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M12	1,75	110	9	7	10,2	18	3
M12	1,75	110	9	7	10,2	18	4
M14	2,00	110	11	9	12,0	20	3
M14	2,00	110	11	9	12,0	20	4
M16	2,00	110	12	9	14,0	22	3
M16	2,00	110	12	9	14,0	22	4
M20	2,50	140	16	12	17,5	25	3
M20	2,50	140	16	12	17,5	25	4

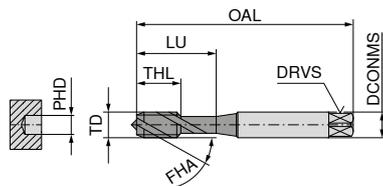
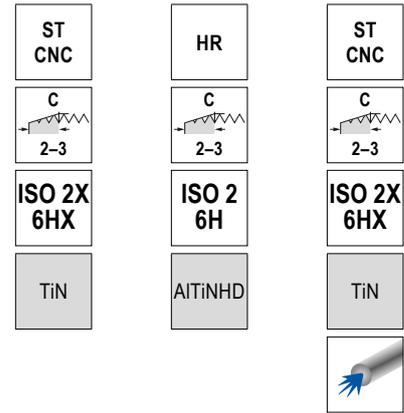
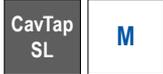
22 417 ...	22 545 ...	22 595 ...
120		
140	120	120
160	140	140
200	160	160
	200	200

P	15	15	15	15
M	9	9	9	9
K	18	18	18	18
N	22	12	12	12
S				
H				
O				

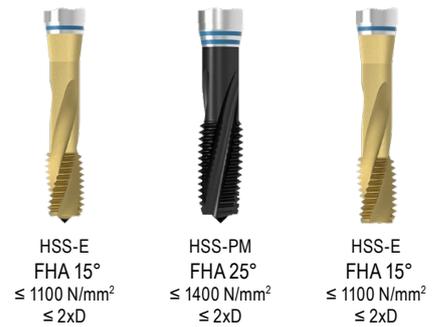
Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck

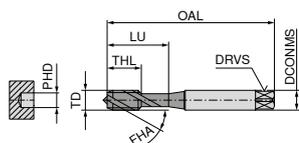


DIN 371 with reinforced shank



22 328 ...	22 469 ...	22 443 ...
030	03000	
040	04000	
050	05000	050
060	06000	060
080	08000	080
100	10000	100
	12000	

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M3	0,50	56	3,5	2,7	2,5	6	18	2
M3	0,50	56	3,5	2,7	2,5	11	18	3
M4	0,70	63	4,5	3,4	3,3	7	21	3
M4	0,70	63	4,5	3,4	3,3	13	21	3
M5	0,80	70	6,0	4,9	4,2	8	25	3
M5	0,80	70	6,0	4,9	4,2	15	25	3
M6	1,00	80	6,0	4,9	5,0	10	30	3
M6	1,00	80	6,0	4,9	5,0	17	30	3
M8	1,25	90	8,0	6,2	6,8	14	35	3
M8	1,25	90	8,0	6,2	6,8	20	35	3
M10	1,50	100	10,0	8,0	8,5	16	39	3
M10	1,50	100	10,0	8,0	8,5	22	39	3
M12	1,75	110	12,0	9,0	10,2	24	44	3



DIN 376 with reduced shank

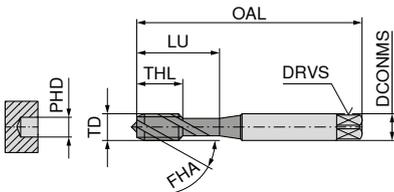
22 329 ...			
120			
160			
200			
P	12	8	12
M	8	8	8
K	20		20
N	22	10	22
S		4	
H			
O			

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M12	1,75	110	9	7	10,2	18	3
M16	2,00	110	12	9	14,0	22	3
M20	2,50	140	16	12	17,5	25	3

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps

CavTap M



DIN 371 with reinforced shank

ST	ST
C 2-3	C 2-3
ISO 2 6H	ISO 2 6H
	TiN



HSS-E  
FHA 42°  
≤ 750 N/mm<sup>2</sup>  
≤ 3xD

HSS-E  
FHA 42°  
≤ 750 N/mm<sup>2</sup>  
≤ 3xD

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M2	0,40	45	2,8	2,1	1,60	4	12	2
M2,5	0,45	50	2,8	2,1	2,05	5	15	2
M3	0,50	56	3,5	2,7	2,50	6	18	3
M4	0,70	63	4,5	3,4	3,30	7	21	3
M5	0,80	70	6,0	4,9	4,20	8	25	3
M6	1,00	80	6,0	4,9	5,00	10	30	3
M8	1,25	90	8,0	6,2	6,80	14	35	3
M10	1,50	100	10,0	8,0	8,50	16	39	3

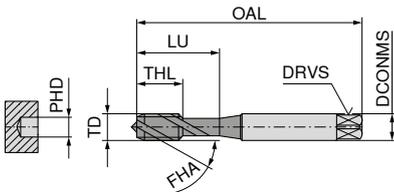
22 082 ...	22 084 ...
020	020
025	
030	030
040	040
050	050
060	060
080	080
100	100

P	12	15
M		
K	12	15
N	12	15
S		
H		
O		

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

CavTap **M**



DIN 371 with reinforced shank

HR	HR
C 2-3	C 2-3
ISO 2 6H	ISO 2 6H
	OSM



HSS-PM  
FHA 42°  
≤ 1400 N/mm<sup>2</sup>  
≤ 3xD



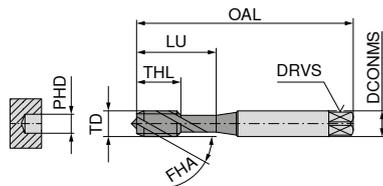
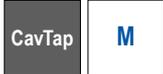
HSS-PM  
FHA 42°  
≤ 1400 N/mm<sup>2</sup>  
≤ 3xD

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M3	0,50	56	3,5	2,7	2,5	6	18	3
M4	0,70	63	4,5	3,4	3,3	7	21	3
M5	0,80	70	6,0	4,9	4,2	8	25	3
M6	1,00	80	6,0	4,9	5,0	10	30	3
M8	1,25	90	8,0	6,2	6,8	14	35	3
M10	1,50	100	10,0	8,0	8,5	16	39	3

22 498 ...	22 499 ...
030	030
040	040
050	050
060	060
080	080
100	100
P	8
M	8
K	
N	12
S	
H	
O	

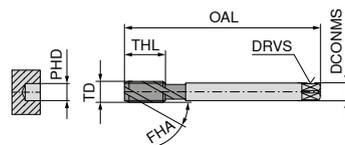
Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand



DIN 371 with reinforced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M1,6	0,35	40	2,5	2,1	1,25	4	11	2
M2	0,40	45	2,8	2,1	1,60	4	12	2
M2,5	0,45	50	2,8	2,1	2,05	5	15	2
M2,5	0,45	50	2,8	2,1	2,05	5	15	3
M3	0,50	56	3,5	2,7	2,50	6	18	3
M4	0,70	63	4,5	3,4	3,30	7	21	3
M5	0,80	70	6,0	4,9	4,20	8	25	3
M6	1,00	80	6,0	4,9	5,00	10	30	3
M8	1,25	90	8,0	6,2	6,80	14	35	3
M10	1,50	100	10,0	8,0	8,50	16	39	3



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M12	1,75	110	9	7,0	10,2	18	4
M14	2,00	110	11	9,0	12,0	20	4
M16	2,00	110	12	9,0	14,0	22	4
M20	2,50	140	16	12,0	17,5	25	4
M22	2,50	140	18	14,5	19,5	27	5
M24	3,00	160	18	14,5	21,0	30	5
M30	3,50	180	22	18,0	26,5	35	5

P	8	10	10
M	6	8	8
K			
N			
S			
H			
O			

VA	VA	VA
C 2-3	E 1,5-2	C 2-3
ISO 2 6H	ISO 2 6H	ISO 2 6H
vap.	TiN GS	TiN GS

HSS-E FHA 42° ≤ 900 N/mm² ≤ 3xD	HSS-E FHA 45° ≤ 900 N/mm² ≤ 3xD	HSS-E FHA 45° ≤ 900 N/mm² ≤ 3xD
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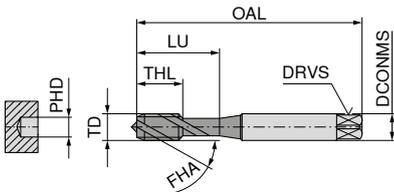
22 090 ...	22 042 ...	22 040 ...
		016
020		020
025		
		025
030		030
040		040
050	050	050
060	060	060
080	080	080
100	100	100

22 091 ...	22 041 ...
120	120
140	140
160	160
200	200
220	
240	
300	

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

CavTap M



DIN 371 with reinforced shank

Soft	NW
ISO 2 6H	ISO 2 6H
	vap.



HSS-E  
FHA 42°  
≤ 500 N/mm<sup>2</sup>  
≤ 3xD



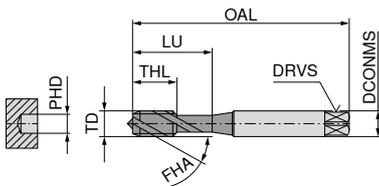
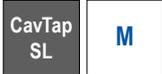
HSS-E  
FHA 38°  
≤ 500 N/mm<sup>2</sup>  
≤ 3xD

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M2	0,40	45	2,8	2,1	1,60	4	12	2
M2,5	0,45	50	2,8	2,1	2,05	5	15	2
M3	0,50	56	3,5	2,7	2,50	6	18	2
M3	0,50	56	3,5	2,7	2,50	6	18	3
M4	0,70	63	4,5	3,4	3,30	7	21	2
M4	0,70	63	4,5	3,4	3,30	7	21	3
M5	0,80	70	6,0	4,9	4,20	8	25	2
M5	0,80	70	6,0	4,9	4,20	8	25	3
M6	1,00	80	6,0	4,9	5,00	10	30	2
M6	1,00	80	6,0	4,9	5,00	10	30	3
M8	1,25	90	8,0	6,2	6,80	14	35	2
M8	1,25	90	8,0	6,2	6,80	14	35	3
M10	1,50	100	10,0	8,0	8,50	16	39	2
M10	1,50	100	10,0	8,0	8,50	16	39	3

22 326 ...	22 086 ...
	020
	025
	030
	040
	050
	060
	080
	100
P	15
M	
K	
N	22
S	
H	
O	

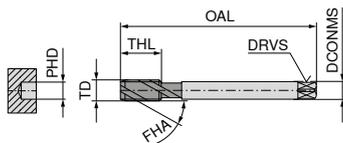
Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand



DIN 371 with reinforced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M3	0,50	56	3,5	2,7	2,5	11	18	2
M3	0,50	56	3,5	2,7	2,5	6	18	3
M3,5	0,60	56	4,0	3,0	2,9	12	20	3
M4	0,70	63	4,5	3,4	3,3	7	21	3
M4	0,70	63	4,5	3,4	3,3	13	21	3
M5	0,80	70	6,0	4,9	4,2	8	25	3
M5	0,80	70	6,0	4,9	4,2	15	25	3
M6	1,00	80	6,0	4,9	5,0	10	30	3
M6	1,00	80	6,0	4,9	5,0	17	30	3
M8	1,25	90	8,0	6,2	6,8	14	35	3
M8	1,25	90	8,0	6,2	6,8	20	35	3
M10	1,50	100	10,0	8,0	8,5	16	39	3
M10	1,50	100	10,0	8,0	8,5	22	39	3
M12	1,75	110	12,0	9,0	10,2	18	44	3



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M12	1,75	110	9	7,0	10,2	24	3
M14	2,00	110	11	9,0	12,0	26	3
M16	2,00	110	12	9,0	14,0	27	3
M20	2,50	140	16	12,0	17,5	32	3
M24	3,00	160	18	14,5	21,0	34	3

P	7	7
M	7	7
K		
N	22	22
S	5	5
H		
O		

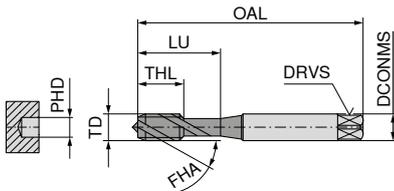
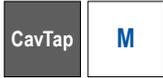
Cutting speed  $v_c$  (m/min.)

Ti	Ti	Ni
C 2-3	C 2-3	C 2-3
ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX
TiN	TiCN	TiCN
HSS-PM FHA 30° ≤ 1400 N/mm <sup>2</sup> ≤ 1,5xD	HSS-PM FHA 15° ≤ 1200 N/mm <sup>2</sup> ≤ 2xD	HSS-PM FHA 15° ≤ 1600 N/mm <sup>2</sup> ≤ 2xD

22 076 ...	22 163 ...	22 424 ...
	030	030
030		
	035	
040		
	040	040
050		
	050	050
060		
	060	060
080		
	080	080
100		
	100	100
120		

# Blind hole – Machine taps, right hand

▲ ES = extra short



DIN 352 with reinforced shank



HSS-E  
FHA 42°  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

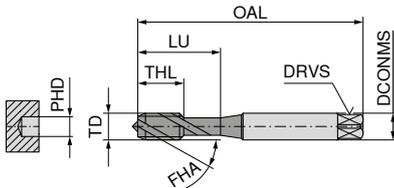
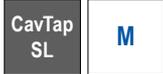
22 500 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	
mm	mm	mm	mm	mm	mm	mm	mm		
M3	0,50	40	3,5	2,7	2,5	6	18	3	030
M4	0,70	45	4,5	3,4	3,3	7	22	3	040
M5	0,80	50	6,0	4,9	4,2	9	25	3	050
M6	1,00	56	6,0	4,9	5,0	10	28	3	060
M8	1,25	63	6,0	4,9	6,8	14		3	080
M10	1,50	70	7,0	5,5	8,5	16		3	100
M12	1,75	75	9,0	7,0	10,2	18		4	120
M16	2,00	80	12,0	9,0	14,0	22		4	160
P									12
M									7
K									12
N									
S									
H									
O									

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

▲ ES = extra short



DIN 352 with reinforced shank



HSS-E  
FHA 15°  
≤ 750 N/mm<sup>2</sup>  
≤ 2xD

6

22 016 ...

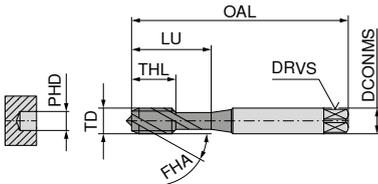
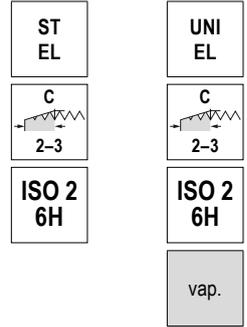
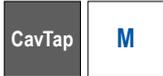
TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M3	0,50	40	3,5	2,7	2,5	10	18	2
M4	0,70	45	4,5	3,4	3,3	12	22	3
M5	0,80	50	6,0	4,9	4,2	14	25	3
M6	1,00	56	6,0	4,9	5,0	16	28	3
M8	1,25	63	6,0	4,9	6,8	20		3
M10	1,50	70	7,0	5,5	8,5	22		3
M12	1,75	75	9,0	7,0	10,2	24		3

P	12
M	
K	12
N	12
S	
H	
O	

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

▲ EL = extra long, with double overall length

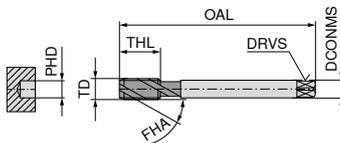


DIN 371 with reinforced shank



TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M3	0,50	100	3,5	2,7	2,5	6	18	3
M4	0,70	125	4,5	3,4	3,3	7	21	3
M5	0,80	140	6,0	4,9	4,2	8	25	3
M6	1,00	160	6,0	4,9	5,0	10	30	3
M8	1,25	180	8,0	6,2	6,8	14	35	3

22 422 ...	22 538 ...
030	030
040	040
050	050
060	060
080	080



DIN 376 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
M6	1,00	160	4,5	3,4	5,0	10	3
M8	1,25	180	6,0	4,9	6,8	14	3
M10	1,50	200	7,0	5,5	8,5	16	3
M12	1,75	224	9,0	7,0	10,2	18	3
M14	2,00	224	11,0	9,0	12,0	20	3
M16	2,00	224	12,0	9,0	14,0	22	3
M18	2,50	250	14,0	11,0	15,5	25	3
M20	2,50	280	16,0	12,0	17,5	25	3

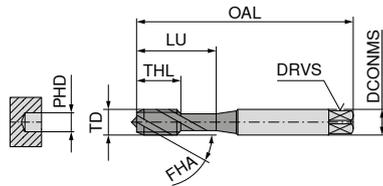
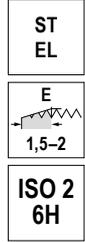
22 539 ...
060
080
100
120
140
160
180
200

P	12	12
M		7
K	12	12
N	22	
S		
H		
O		

Cutting speed  $v_c$  (m/min.)

# Blind hole – Machine taps, right hand

▲ EL = extra long, with double overall length



DIN 371 with reinforced shank

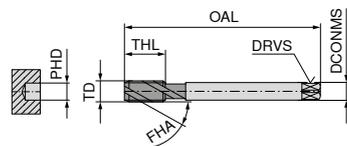


HSS-E  
FHA 15°  
≤ 750 N/mm<sup>2</sup>  
≤ 2xD

22 078 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M3	0,50	100	3,5	2,7	2,5	11	18	2
M4	0,70	125	4,5	3,4	3,3	13	21	3
M5	0,80	140	6,0	4,9	4,2	15	25	3
M6	1,00	160	6,0	4,9	5,0	17	30	3
M8	1,25	180	8,0	6,2	6,8	20	35	3

030  
040  
050  
060  
080



DIN 376 with reduced shank

22 080 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M6	1,00	160	4,5	3,4	5,0	17	3
M8	1,25	180	6,0	4,9	6,8	20	3
M10	1,50	200	7,0	5,5	8,5	22	3
M12	1,75	224	9,0	7,0	10,2	24	3
M14	2,00	224	11,0	9,0	12,0	26	3
M16	2,00	224	12,0	9,0	14,0	27	3
M20	2,50	280	16,0	12,0	17,5	32	3

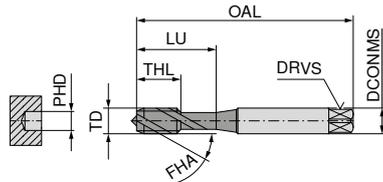
060  
080  
100  
120  
140  
160  
200

P	12
M	
K	12
N	12
S	
H	
O	

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

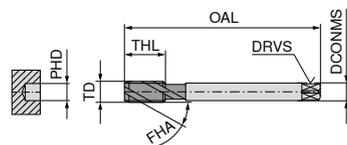
▲ NC = for synchronised CNC machining with minimum length compensation chuck



DIN 371 with reinforced shank

UNI	UNI	UNI	UNI	UNI NC
C 2-3	C 2-3	C 2-3	C 2-3	C 2-3
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
vap.	TiN	TiN	TiCN	TiN GS
HSS-E FHA 35° ≤ 1000 N/mm² ≤ 2,5xD	HSS-E FHA 35° ≤ 1000 N/mm² ≤ 2,5xD	HSS-PM FHA 50° ≤ 1000 N/mm² ≤ 2,5xD	HSS-E FHA 45° ≤ 1000 N/mm² ≤ 3xD	HSS-E FHA 45° ≤ 1000 N/mm² ≤ 3xD
23 118 ...	23 120 ...	23 026 ...	23 122 ...	23 124 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes					
mm	mm	mm	mm	mm	mm	mm	mm						
M2	0,40	45	2,8	2,1	1,60	4	12	2		020			
M2,5	0,45	50	2,8	2,1	2,05	5	14	2		025			
M3	0,50	56	3,5	2,7	2,50	6	18	3		030			
M4	0,70	63	4,5	3,4	3,30	7	21	3		040			
M5	0,80	70	6,0	4,9	4,20	8	25	3		050			
M6	1,00	80	6,0	4,9	5,00	10	30	3		060			
M8	1,25	90	8,0	6,2	6,80	14	35	3		080			
M10	1,50	100	10,0	8,0	8,50	16	39	3		100			



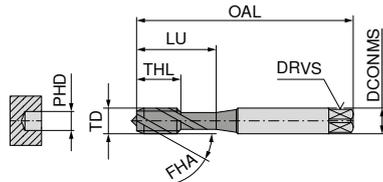
DIN 376 with reduced shank

									23 119 ...	23 121 ...	23 027 ...	23 123 ...	23 125 ...
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes						
mm	mm	mm	mm	mm	mm	mm							
M3	0,50	56	2,2		2,5	6	3		030				
M4	0,70	63	2,8	2,1	3,3	7	3		040				
M5	0,80	70	3,5	2,7	4,2	8	3		050				
M6	1,00	80	4,5	3,4	5,0	10	3		060				
M8	1,25	90	6,0	4,9	6,8	14	3		080				
M10	1,50	100	7,0	5,5	8,5	16	3		100				
M12	1,75	110	9,0	7,0	10,2	18	3		120				
M12	1,75	110	9,0	7,0	10,2	18	4						
M14	2,00	110	11,0	9,0	12,0	20	3			14000			
M14	2,00	110	11,0	9,0	12,0	20	4				120		120
M16	2,00	110	12,0	9,0	14,0	22	3		160				
M16	2,00	110	12,0	9,0	14,0	22	4			160			
M18	2,50	125	14,0	11,0	15,5	25	3				160		160
M20	2,50	140	16,0	12,0	17,5	25	3		200				
M20	2,50	140	16,0	12,0	17,5	25	4				200		
M22	2,50	140	18,0	14,5	19,5	27	4						
M24	3,00	160	18,0	14,5	21,0	34	4			22000			
M27	3,00	160	20,0	16,0	24,0	30	4			240			
M30	3,50	180	22,0	18,0	26,5	35	4			27000			
M33	3,50	180	25,0	20,0	29,5	35	4			30000			
M36	4,00	200	28,0	22,0	32,0	40	4			33000			
										36000			
P									12	15	15	15	15
M									7	9	9	9	9
K									12	18	18	18	18
N										12	12	12	12
S													
H													
O													

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck



DIN 371 with reinforced shank

UNI NCW	FE	FE-HF	VA
C 2-3	C 2-3	C 2-3	C 2-3
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
TiCN		TiCN	



HSS-PM  
FHA 35°  
≤ 1000 N/mm<sup>2</sup>  
≤ 2,5xD

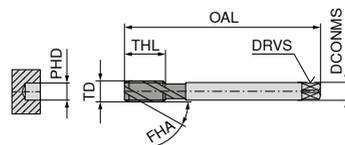
HSS-E  
FHA 35°  
≤ 850 N/mm<sup>2</sup>  
≤ 2,5xD

HSS-E  
FHA 35°  
≤ 1100 N/mm<sup>2</sup>  
≤ 2,5xD

HSS-E  
FHA 35°  
≤ 1200 N/mm<sup>2</sup>  
≤ 2,5xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M2	0,40	45	2,8	2,1	1,60	4	12	2
M2,5	0,45	50	2,8	2,1	2,05	5	14	2
M3	0,50	56	3,5	2,7	2,50	6	18	3
M3	0,50	70	6,0	4,9	2,50	6	18	3
M4	0,70	63	4,5	3,4	3,30	7	21	3
M4	0,70	70	6,0	4,9	3,30	7	21	3
M5	0,80	70	6,0	4,9	4,20	8	25	3
M6	1,00	80	6,0	4,9	5,00	10	30	3
M8	1,25	90	8,0	6,2	6,80	14	35	3
M10	1,50	100	10,0	8,0	8,50	16	39	3

23 126 ...	23 216 ...	23 312 ...	23 414 ...
			020
			025
			030
	030		030
	040		040
	050		050
	060		060
	080		080
	100		100



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M12	1,75	110	10	8,0	10,2	18	3
M12	1,75	110	9	7,0	10,2	18	3
M14	2,00	110	11	9,0	12,0	20	3
M16	2,00	110	12	9,0	14,0	22	3
M20	2,50	140	16	12,0	17,5	25	3
M24	3,00	160	18	14,5	21,0	30	4

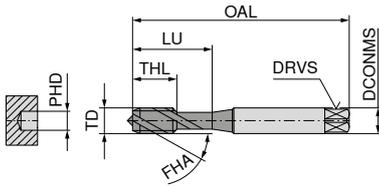
23 127 ...	23 217 ...	23 313 ...	23 415 ...
			120
			120
			140
	160		160
	160		160
	200		200
	200		200
			240

P	15	12	15	8
M	8			6
K	15	12	15	
N	22	22	24	22
S				
H				
O				

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

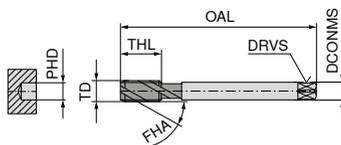
M



DIN 371 with reinforced shank

VA	VA	VA	AL	AL
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
TiN		TiN		CrN
HSS-E FHA 45° ≤ 1200 N/mm² ≤ 3xD	HSS-PM FHA 40° ≤ 1200 N/mm² ≤ 2,5xD	HSS-PM FHA 40° ≤ 1200 N/mm² ≤ 2,5xD	HSS-E FHA 35° ≤ 500 N/mm² ≤ 2,5xD	HSS-E FHA 35° ≤ 500 N/mm² ≤ 2,5xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	23 416 ...	23 426 ...	23 456 ...	23 616 ...	23 614 ...
mm	mm	mm	mm	mm	mm	mm	mm						
M2	0,40	45	2,8	2,1	1,60	4	12	2	020				
M2,5	0,45	50	2,8	2,1	2,05	5	14	2	025				
M3	0,50	56	3,5	2,7	2,50	6	18	3	030	030			030
M4	0,70	63	4,5	3,4	3,30	7	21	3	040	040	040	040	040
M5	0,80	70	6,0	4,9	4,20	8	25	3	050	050	050	050	050
M6	1,00	80	6,0	4,9	5,00	10	30	3	060	060	060	060	060
M8	1,25	90	8,0	6,2	6,80	14	35	3	080	080	080	080	080
M10	1,50	100	10,0	8,0	8,50	16	39	3	100	100	100	100	100



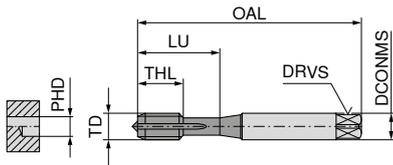
DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	23 417 ...	23 427 ...	23 457 ...	23 615 ...
mm	mm	mm	mm	mm	mm	mm					
M12	1,75	110	9	7,0	10,2	18	3			120	120
M12	1,75	110	9	7,0	10,2	18	4	120			
M14	2,00	110	11	9,0	12,0	20	4			140	
M16	2,00	110	12	9,0	14,0	22	3			160	
M16	2,00	110	12	9,0	14,0	22	4	160			
M20	2,50	140	16	12,0	17,5	25	3			200	
M20	2,50	140	16	12,0	17,5	25	4	200			
M24	3,00	160	18	14,5	21,0	30	4			240	

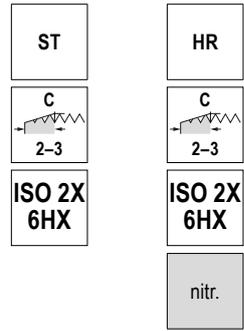
P	10	8	10		
M	8	6	8		
K					
N	24	22	24	15	20
S					
H					
O					

Cutting speed  $v_c$  (m/min.)

# Through hole / Blind hole – Machine taps, right hand



DIN 371 with reinforced shank



22 028 ...	22 006 ...
012 <sup>1)</sup>	
014 <sup>1)</sup>	
016	
017	
018	
020	
022	
023	
025	
026	
030	030
035	
040	040
050	050
060	060
070	
080	080
100	100
P	12
M	6
K	12
N	16
S	12
H	
O	

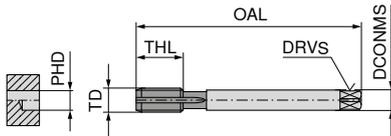
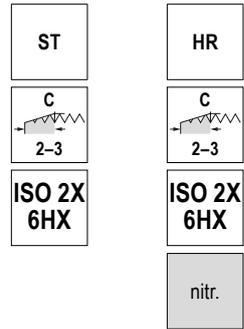
TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M1,2	0,25	40	2,5	2,1	0,95	5	5	2
M1,4	0,30	40	2,5	2,1	1,10	6	6	2
M1,6	0,35	40	2,5	2,1	1,25	6	11	2
M1,7	0,35	40	2,5	2,1	1,35	6	11	2
M1,8	0,35	40	2,5	2,1	1,45	6	11	2
M2	0,40	45	2,8	2,1	1,60	7	12	3
M2,2	0,45	45	2,8	2,1	1,75	7	12	3
M2,3	0,40	45	2,8	2,1	1,90	7	12	3
M2,5	0,45	50	2,8	2,1	2,05	9	14	3
M2,6	0,45	50	2,8	2,1	2,15	9	14	3
M3	0,50	56	3,5	2,7	2,50	11	18	3
M3,5	0,60	56	4,0	3,0	2,90	12	20	3
M4	0,70	63	4,5	3,4	3,30	13	21	3
M5	0,80	70	6,0	4,9	4,20	15	25	3
M6	1,00	80	6,0	4,9	5,00	17	30	3
M7	1,00	80	7,0	5,5	6,00	17	30	3
M8	1,25	90	8,0	6,2	6,80	20	35	3
M10	1,50	100	10,0	8,0	8,50	22	39	3

1) Tol. 4H/5H ≤ M1.4

Cutting speed v<sub>c</sub> (m/min.)

DIN 376 can be found on the next page

# Through hole / Blind hole – Machine taps, right hand



DIN 376 with reduced shank



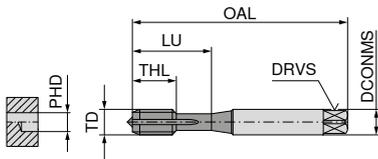
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
M4	0,70	63	2,8	2,1	3,3	13	3
M5	0,80	70	3,5	2,7	4,2	15	3
M6	1,00	80	4,5	3,4	5,0	17	3
M8	1,25	90	6,0	4,9	6,8	20	3
M10	1,50	100	7,0	5,5	8,5	22	3
M12	1,75	110	9,0	7,0	10,2	24	3
M14	2,00	110	11,0	9,0	12,0	26	3
M16	2,00	110	12,0	9,0	14,0	27	3

22 029 ...	22 007 ...
040	
050	
060	
080	
100	
120	120
140	
160	160

P	12	6
M		
K	12	16
N		12
S		
H		
O		

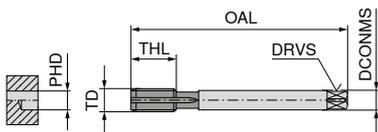
Cutting speed  $v_c$  (m/min.)

# Through hole / Blind hole – Machine taps, right hand



DIN 371 with reinforced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M2	0,40	45	2,8	2,1	1,60	7	12	3
M2,5	0,45	50	2,8	2,1	2,05	9	14	3
M3	0,50	56	3,5	2,7	2,50	11	18	3
M3,5	0,60	56	4,0	3,0	2,90	12	20	3
M4	0,70	63	4,5	3,4	3,30	13	21	3
M5	0,80	70	6,0	4,9	4,20	15	25	3
M6	1,00	80	6,0	4,9	5,00	17	30	3
M8	1,25	90	8,0	6,2	6,80	20	35	3
M10	1,50	100	10,0	8,0	8,50	22	39	3



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M6	1,00	80	4,5	3,4	5,0	17	3
M8	1,25	90	6,0	4,9	6,8	20	3
M10	1,50	100	7,0	5,5	8,5	22	3
M12	1,75	110	9,0	7,0	10,2	24	3
M14	2,00	110	11,0	9,0	12,0	26	3
M16	2,00	110	12,0	9,0	14,0	27	3

	22 036 ...	22 032 ...
P		
M		
K	16	16
N	12	12
S		
H		
O		

Cutting speed  $v_c$  (m/min.)

GG

ISO 2X 6HX

nitr.

HSS-E  
FHA 0°  
≤ 1050 N/mm²  
≤ 2xD

22 036 ...

GG

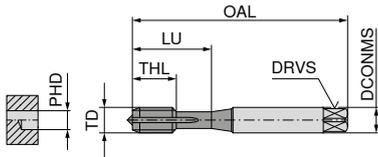
ISO 2X 6HX

nitr.

HSS-E  
FHA 0°  
≤ 1050 N/mm²  
≤ 2xD

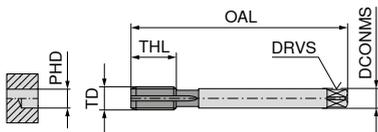
22 032 ...

# Through hole / Blind hole – Machine taps, right hand



DIN 371 with reinforced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M3	0,50	63	4,5	3,4	2,55	6	18	4
M4	0,70	63	4,5	3,4	3,40	8	20	4
M5	0,80	70	6,0	4,9	4,30	10	26	4
M6	1,00	80	6,0	4,9	5,00	10	30	4
M6	1,00	80	6,0	4,9	5,10	12	28	4
M8	1,25	90	8,0	6,2	6,80	14	35	5
M8	1,25	90	8,0	6,2	6,90	15	35	5
M10	1,50	100	10,0	8,0	8,50	18	38	5
M10	1,50	100	10,0	8,0	8,50	16	39	5
M12	1,75	110	12,0	9,0	10,40	21	41	5
M16	2,00	110	16,0	12,0	14,20	24	44	6

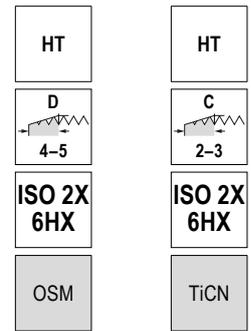


DIN 376 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
M12	1,75	110	9	7	10,4	18	5
M16	2,00	110	12	9	14,2	22	6

P		
M		
K		
N		22
S		
H	2	2
O		

Cutting speed  $v_c$  (m/min.)



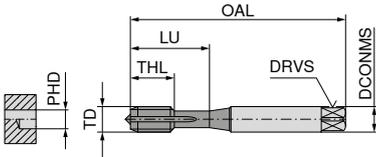
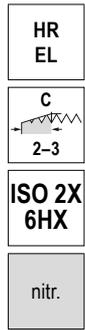
Solid carbide  
FHA 0°  
≤ 63 HRC  
≤ 1,5xD

HSS-PM  
FHA 0°  
44 - 52 HRC  
≤ 1,5xD

22 806 ...	22 227 ...
030	
040	
050	
060	060
080	080
100	100
120	
160	

# Through hole / Blind hole – Machine taps, right hand

▲ EL = extra long, with double overall length



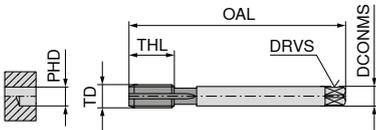
DIN 371 with reinforced shank



22 122 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M3	0,50	100	3,5	2,7	2,5	11	18	3
M4	0,70	125	4,5	3,4	3,3	13	21	3
M5	0,80	140	6,0	4,9	4,2	15	25	3
M6	1,00	160	6,0	4,9	5,0	17	30	3
M8	1,25	180	8,0	6,2	6,8	20	35	3

030  
040  
050  
060  
080



DIN 376 with reduced shank

22 123 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M10	1,50	200	7	5,5	8,5	22	3
M12	1,75	224	9	7,0	10,2	24	3
M16	2,00	224	12	9,0	14,0	27	3
M20	2,50	280	16	12,0	17,5	32	4

100  
120  
160  
200

P	6
M	
K	16
N	22
S	
H	
O	

Cutting speed  $v_c$  (m/min.)

# Through hole / Blind hole – Machine taps, right hand

M

GG

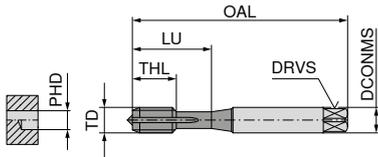
C  
2-3

ISO 2X  
6HX

TiCN



HSS-E  
FHA 0°  
≤ 900 N/mm²  
≤ 2xD

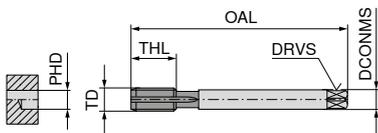


DIN 371 with reinforced shank

23 512 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M5	0,80	70	6	4,9	4,2	15	25	3
M6	1,00	80	6	4,9	5,0	17	30	3
M8	1,25	90	8	6,2	6,8	20	35	3
M10	1,50	100	10	8,0	8,5	22	39	3

050  
060  
080  
100



DIN 376 with reduced shank

23 513 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
M12	1,75	110	9	7	10,2	24	3

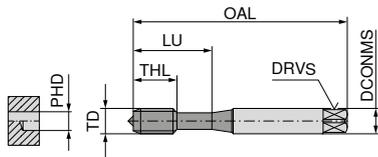
120

P	
M	
K	20
N	24
S	
H	
O	

Cutting speed  $v_c$  (m/min.)

# Through hole / Blind hole – Machine thread formers, right hand

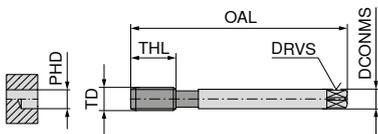
▲ HML = with soldered-in carbide strips for a higher cutting speed



DIN 2174 with reinforced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU
mm	mm	mm	mm	mm	mm	mm	mm
M1	0,25	40	2,5	2,1	0,90	5	6,5
M1,2	0,25	40	2,5	2,1	1,10	5	6,5
M1,4	0,30	40	2,5	2,1	1,28	6	9,0
M1,6	0,35	40	2,5	2,1	1,47	6	9,0
M1,7	0,35	40	2,5	2,1	1,57	6	9,0
M2	0,40	45	2,8	2,1	1,85	7	10,0
M2,5	0,45	50	2,8	2,1	2,33	9	14,0
M2,6	0,45	50	2,8	2,1	2,43	9	14,0
M3	0,50	56	3,5	2,7	2,80	11	18,0
M3,5	0,60	56	4,0	3,0	3,25	12	20,0
M4	0,70	63	4,5	3,4	3,70	13	21,0
M5	0,80	70	6,0	4,9	4,65	15	25,0
M6	1,00	80	6,0	5,0	5,60	18	30,0
M6	1,00	80	6,0	4,9	5,60	17	30,0
M8	1,25	90	8,0	6,2	7,40	20	35,0
M8	1,25	90	8,0	6,0	7,45	18	35,0
M10	1,50	100	10,0	8,0	9,35	22	39,0

1) Tol. ISO 1X 4HX ≤ M1.4



DIN 2174 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL
mm	mm	mm	mm	mm	mm	mm
M12	1,75	110	9	7	11,25	24
M16	2,00	110	12	9	15,10	27

P	18	
M	10	
K	10	
N	30	22
S		
H		
O		

Cutting speed  $v_c$  (m/min.)

NW HML	EC
C 2-3	C 2-3
ISO 2X 6HX	ISO 2X 6HX
	TiN



HSS-E / HM  
≤ 880 N/mm<sup>2</sup>  
≤ 3xD



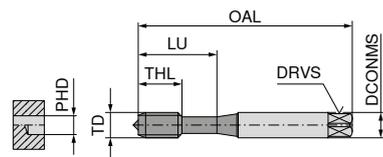
HSS-E  
≤ 1100 N/mm<sup>2</sup>  
≤ 1,5xD

22 473 ...	22 100 ...
	010 <sup>1)</sup>
	012 <sup>1)</sup>
	014 <sup>1)</sup>
	016
	017
	020
	025
	026
	030
	035
	040
	050
06000	060
	080
08000	100

22 101 ...
120
160

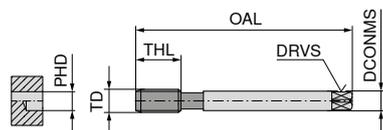
# Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves



DIN 2174 with reinforced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M2	0,40	45	2,8	2,1	1,85	7	10	3
M2,5	0,45	50	2,8	2,1	2,33	9	14	3
M3	0,50	56	3,5	2,7	2,80	11	18	3
M3,5	0,60	56	4,0	3,0	3,25	12	20	3
M4	0,70	63	4,5	3,4	3,70	13	21	4
M5	0,80	70	6,0	4,9	4,65	15	25	4
M5	0,80	70	6,0	4,9	4,65	15	25	4
M6	1,00	80	6,0	4,9	5,60	17	30	4
M8	1,25	90	8,0	6,2	7,45	20	35	5
M10	1,50	100	10,0	8,0	9,35	22	39	6



DIN 2174 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
M12	1,75	110	9	7	11,25	24	6
M14	2,00	110	11	9	13,10	26	5
M16	2,00	110	12	9	15,10	27	7

	22 104 ...	22 108 ...	22 154 ...	22 105 ...
P	12	18	18	18
M		10	10	10
K	8	10	10	10
N	12	22	22	22
S				
H				
O				

Cutting speed  $v_c$  (m/min.)

EC SN	EC SN	EC SN	EC SN
C 2-3	C 2-3	C 2-3	C 2-3
ISO 2X 6HX	ISO 3X 6GX	ISO 2X 6HX	ISO 2X 6HX
nit.	TiN	TiN GS	TiN



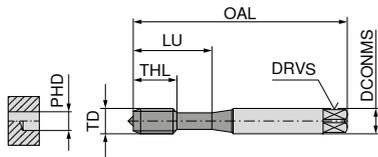
HSS-E  $\leq 1100 \text{ N/mm}^2 \leq 3xD$

22 104 ...	22 108 ...	22 154 ...	22 105 ...
			020
			025
030	030	030	030
			035
040	040	040	040
050	050	050	
			050
060	060	060	060
080	080	080	080
100	100	100	100

22 106 ...
120
140
160

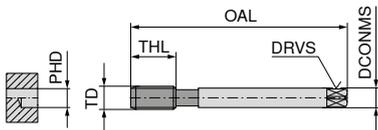
# Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves



DIN 2174 with reinforced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M3	0,50	56	3,5	2,7	2,80	11	18	4
M4	0,70	63	4,5	3,4	3,70	13	21	4
M5	0,80	70	6,0	4,9	4,65	15	25	4
M6	1,00	80	6,0	4,9	5,60	17	30	5
M8	1,25	90	8,0	6,2	7,45	20	35	5
M10	1,50	100	10,0	8,0	9,35	22	39	5

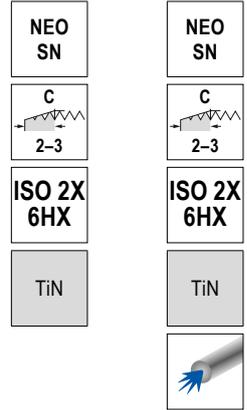


DIN 2174 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
M12	1,75	110	9	7	11,25	24	6
M16	2,00	110	12	9	15,10	27	6

	22 452 ...	22 453 ...
P	18	18
M	10	10
K	10	10
N	22	22
S		
H		
O		

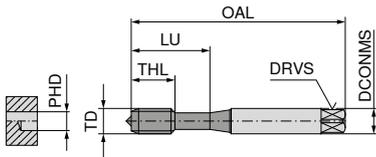
Cutting speed  $v_c$  (m/min.)



22 452 ...	22 453 ...
030	
040	
050	050
060	060
080	080
100	100

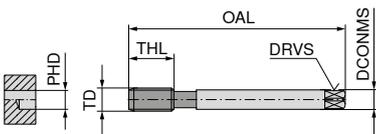
# Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves



DIN 2174 with reinforced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M2	0,40	45	2,8	2,1	1,85	7	12	
M2	0,40	45	2,8	2,1	1,85	7	12	3
M2,5	0,45	50	2,8	2,1	2,33	9	14	
M2,5	0,45	50	2,8	2,1	2,33	9	14	3
M3	0,50	56	3,5	2,7	2,80	11	18	
M3	0,50	56	3,5	2,7	2,80	11	18	3
M4	0,70	63	4,5	3,4	3,70	13	21	
M4	0,70	63	4,5	3,4	3,70	13	21	4
M5	0,80	70	6,0	4,9	4,65	15	25	
M5	0,80	70	6,0	4,9	4,65	15	25	4
M6	1,00	80	6,0	4,9	5,60	17	30	
M6	1,00	80	6,0	4,9	5,60	17	30	4
M8	1,25	90	8,0	6,2	7,45	20	35	
M8	1,25	90	8,0	6,2	7,45	20	35	5
M10	1,50	100	10,0	8,0	9,35	22	39	
M10	1,50	100	10,0	8,0	9,35	22	39	5



DIN 2174 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
M12	1,75	110	9	7,0	11,25	24	
M12	1,75	110	9	7,0	11,25	24	5
M16	2,00	110	12	9,0	15,10	27	
M16	2,00	110	12	9,0	15,10	27	6
M18	2,50	125	14	11,0	16,80	30	6
M20	2,50	140	16	12,0	18,80	32	6
M24	3,00	160	18	14,5	22,60	34	6

UNI	UNI	UNI SN	UNI SN
C 2-3	C 2-3	C 2-3	C 2-3
ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX
TiN	CrN	TiN	CrN



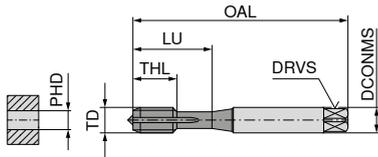
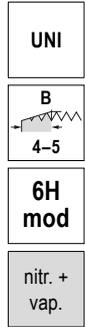
23 810 ...	23 812 ...	23 814 ...	23 816 ...
020	020	020	020
025	025	025	025
030	030	030	030
040	040	040	040
050	050	050	050
060	060	060	060
080	080	080	080
100	100	100	100

23 811 ...	23 813 ...	23 815 ...	23 817 ...
120	120	120	120
160	160	160	160
		18000	
		20000	
		24000	

P	18	18	18	18
M	10	10	10	10
K	10	10	10	10
N	22	18	22	18
S				
H				
O				

Cutting speed v<sub>c</sub> (m/min.)

# Through hole – machine taps for wire thread inserts, right hand



DIN 40435 with reinforced shank

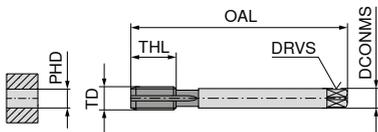


HSS-E  
FHA 0°  
≤ 1100 N/mm²  
≤ 4xD

22 662 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
EG-M2,5	0,45	56	3,5	2,7	2,65	11	18	3
EG-M3	0,50	63	4,5	3,4	3,15	10	21	3
EG-M4	0,70	70	6,0	4,9	4,20	12	25	3
EG-M5	0,80	80	6,0	4,9	5,25	13	30	3
EG-M6	1,00	90	8,0	6,2	6,30	17	35	3
EG-M8	1,25	100	10,0	8,0	8,40	18	39	3

025  
030  
040  
050  
060  
080



DIN 40435 with reduced shank

22 663 ...

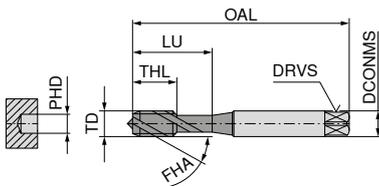
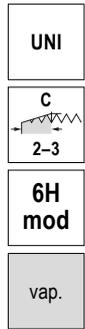
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
EG-M10	1,50	100	9	7,0	10,50	22	3
EG-M12	1,75	110	11	9,0	12,50	26	3
EG-M16	2,00	125	14	11,0	16,50	27	3
EG-M20	2,50	160	18	14,5	20,75	34	3

100  
120  
160  
200

P	12
M	7
K	12
N	
S	
H	
O	

Cutting speed  $v_c$  (m/min.)

# Blind hole – machine taps for wire thread inserts, right hand



DIN 40435 with reinforced shank

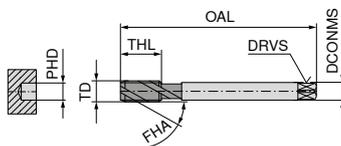


HSS-E  
FHA 42°  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

22 664 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
EG-M2,5	0,45	56	3,5	2,7	2,65	5	18	3
EG-M3	0,50	63	4,5	3,4	3,15	5	21	3
EG-M4	0,70	70	6,0	4,9	4,20	8	25	3
EG-M5	0,80	80	6,0	4,9	5,25	8	30	3
EG-M6	1,00	90	8,0	6,2	6,30	10	35	3
EG-M8	1,25	100	10,0	8,0	8,40	16	39	3

025  
030  
040  
050  
060  
080



DIN 40435 with reduced shank

22 665 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
EG-M10	1,50	100	9	7,0	10,50	15	5
EG-M12	1,75	110	11	9,0	12,50	20	4
EG-M16	2,00	125	14	11,0	16,50	20	5
EG-M20	2,50	160	18	14,5	20,75	30	4

100  
120  
160  
200

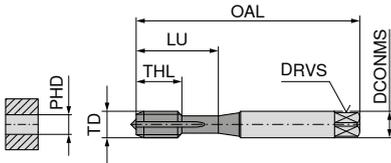
P	12
M	7
K	12
N	
S	
H	
O	

Cutting speed v<sub>c</sub> (m/min.)

# Through hole – Machine taps, right hand

TruTap MF

UNI  
B  
4-5  
ISO 2  
6H  
TiN



DIN 371 with reinforced shank



HSS-E  
FHA 0°  
≤ 1100 N/mm²  
≤ 4xD

22 550 ...

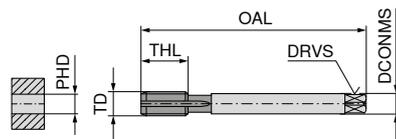
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M5x0,5	0,50	70	6	4,9	4,5	11	25	3	050
M6x0,5	0,50	80	6	4,9	5,5	13	30	3	060
M6x0,75	0,75	80	6	4,9	5,2	13	30	3	062
M8x1	1,00	90	8	6,2	7,0	17	35	3	080
M10x1	1,00	90	10	8,0	9,0	18	35	4	100
P									15
M									9
K									18
N									12
S									
H									
O									

Cutting speed  $v_c$  (m/min.)

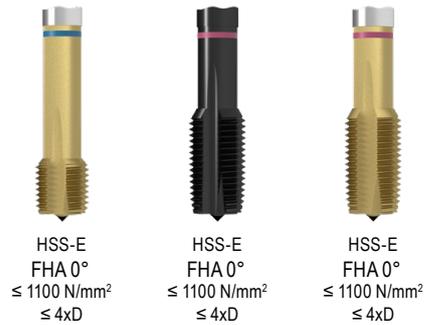
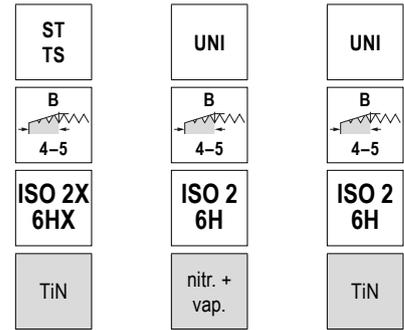
DIN 374 can be found on the next page

# Through hole – Machine taps, right hand

▲ TS = for high-speed machining, up to 100 m/min.



DIN 374 with reduced shank



HSS-E  
FHA 0°  
≤ 1100 N/mm<sup>2</sup>  
≤ 4xD

HSS-E  
FHA 0°  
≤ 1100 N/mm<sup>2</sup>  
≤ 4xD

HSS-E  
FHA 0°  
≤ 1100 N/mm<sup>2</sup>  
≤ 4xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M8x0,75	0,75	80	6	4,9	7,2	14	3
M8x1	1,00	90	6	4,9	7,0	10	4
M8x1	1,00	90	6	4,9	7,0	17	3
M10x0,75	0,75	90	7	5,5	9,2	18	4
M10x1	1,00	90	7	5,5	9,0	10	4
M10x1	1,00	90	7	5,5	9,0	18	4
M10x1,25	1,25	100	7	5,5	8,8	22	3
M12x1	1,00	100	9	7,0	11,0	18	4
M12x1,25	1,25	100	9	7,0	10,8	22	3
M12x1,5	1,50	100	9	7,0	10,5	15	4
M12x1,5	1,50	100	9	7,0	10,5	22	3
M14x1	1,00	100	11	9,0	13,0	18	4
M14x1,5	1,50	100	11	9,0	12,5	15	4
M14x1,5	1,50	100	11	9,0	12,5	22	3
M16x1,5	1,50	100	12	9,0	14,5	15	4
M16x1,5	1,50	100	12	9,0	14,5	22	3
M18x1	1,00	110	14	11,0	17,0	20	5
M18x1,5	1,50	110	14	11,0	16,5	25	4
M18x2	2,00	125	14	11,0	16,0	26	3
M20x1	1,00	125	16	12,0	19,0	20	5
M20x1,5	1,50	125	16	12,0	18,5	25	4
M22x1,5	1,50	125	18	14,5	20,5	25	4
M24x1,5	1,50	140	18	14,5	22,5	27	4
M24x2	2,00	140	18	14,5	22,0	27	4
M25x1,5	1,50	140	18	14,5	23,5	28	4
M26x1,5	1,50	140	18	14,5	24,5	28	4
M27x2	2,00	140	20	16,0	25,0	28	4
M28x1,5	1,50	140	20	16,0	26,5	28	5
M30x1,5	1,50	150	22	18,0	28,5	28	5

22 193 ...	22 551 ...	22 552 ...	
	080		
		082	
		084	
		100	
	100		
		102	
		104	
		120	
		121	
	120		
		122	
		120	
	120		
		124	
		140	
	140		
		144	
		140	
	160		
		162	
		180	
		182	
		184	
		200	
		202	
		220	
		222	
		242	
		244	
		250	
		260	
		272	
		280	
		302	
P	65	12	15
M		7	9
K	65	12	18
N	22		12
S			
H			
O			

Cutting speed v<sub>c</sub> (m/min.)

# Through hole – Machine taps, right hand

MF

UNI

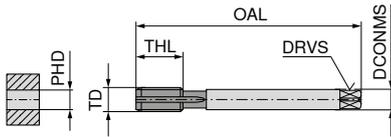


ISO 2  
6H

TiN



HSS-PM  
FHA 0°  
≤ 1000 N/mm²  
≤ 3xD



DIN 374 with reduced shank

6

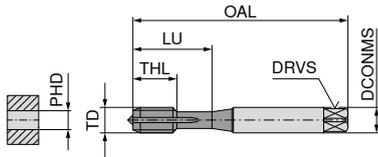
23 041 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M8x1	1,00	90	6	4,9	7,0	17	3	081
M10x1	1,00	90	7	5,5	9,0	18	4	102
M10x1,25	1,25	100	7	5,5	8,8	22	3	104
M12x1	1,00	100	9	7,0	11,0	18	4	120
M12x1,25	1,25	100	9	7,0	10,8	22	3	122
M12x1,5	1,50	100	9	7,0	10,5	22	3	121
M14x1,25	1,25	100	11	9,0	12,8	22	3	142
M14x1,5	1,50	100	11	9,0	12,5	22	3	144
M16x1,5	1,50	100	12	9,0	14,5	22	3	162
M18x1,5	1,50	110	14	11,0	16,5	17	4	182
M20x1,5	1,50	125	16	12,0	18,5	17	4	202
M22x1,5	1,50	125	18	14,5	20,5	25	4	222
M24x1,5	1,50	140	18	14,5	22,5	27	4	242
M24x2	2,00	140	18	14,5	22,0	27	4	244
P								15
M								9
K								18
N								12
S								
H								
O								

Cutting speed  $v_c$  (m/min.)

# Through hole – Machine taps, right hand

MF



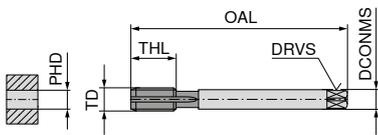
DIN 371 with reinforced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M4x0,5	0,50	63	4,5	3,4	3,5	10	21	3
M5x0,5	0,50	70	6,0	4,9	4,5	11	25	3
M6x0,75	0,75	80	6,0	4,9	5,2	13	30	3
M6x0,5	0,50	80	6,0	4,9	5,5	13	30	3

UNI	UNI	FE	VA
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
nitr. + vap.	TiN		TiN

HSS-E FHA 0° ≤ 1000 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1000 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 850 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1200 N/mm² ≤ 4xD

23 140 ...	23 142 ...	23 440 ...
040	040	
050	050	050
062	062	062
060	060	



DIN 374 with reduced shank

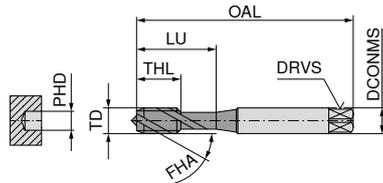
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M8x0,5	0,50	80	6	4,9	7,5	14	3
M8x0,75	0,75	80	6	4,9	7,2	14	3
M8x1	1,00	90	6	4,9	7,0	17	3
M8x1	1,00	90	6	4,9	7,0	17	4
M10x0,75	0,75	90	7	5,5	9,2	18	4
M10x1	1,00	90	7	5,5	9,0	18	4
M10x1,25	1,25	100	7	5,5	8,8	22	3
M12x1	1,00	100	9	7,0	11,0	18	4
M12x1,25	1,25	100	9	7,0	10,8	22	3
M12x1,5	1,50	100	9	7,0	10,5	22	3
M14x1	1,00	100	11	9,0	13,0	18	4
M14x1,5	1,50	100	11	9,0	12,5	22	3
M16x1	1,00	100	12	9,0	15,0	18	4
M16x1,5	1,50	100	12	9,0	14,5	22	3
M18x1	1,00	110	14	11,0	17,0	20	5
M18x1,5	1,50	110	14	11,0	16,5	25	4
M20x1	1,00	125	16	12,0	19,0	20	5
M20x1,5	1,50	125	16	12,0	18,5	25	4
M22x1,5	1,50	125	18	14,5	20,5	25	4
M24x1,5	1,50	140	18	14,5	22,5	27	4
M26x1,5	1,50	140	18	14,5	24,5	28	4
M28x1,5	1,50	140	20	16,0	26,5	28	5
M30x1,5	1,50	150	22	18,0	28,5	28	5

23 141 ...	23 143 ...	23 241 ...	23 441 ...
		080	
082	082	082	082
084		084	084
	084		
100	100	100	
102	102	102	102
104	104	104	
120	120	120	120
122	122	122	
124	124	124	124
140	140	140	
144	144	144	144
160	160	160	
162	162	162	162
		180	
182	182	182	
		200	
202	202	202	
222	222	222	
242	242	242	
		260	
		280	
		300	

P	12	15	12	10
M	7	9		8
K	12	18	12	
N		12	12	24
S				
H				
O				

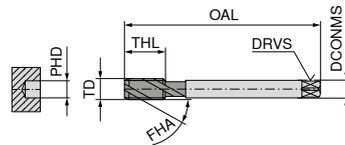
Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand



DIN 371 with reinforced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M4x0,5	0,50	63	4,5	3,4	3,50	5	21	3
M6x0,75	0,75	80	6,0	4,9	5,25	8	30	3
M5x0,5	0,50	70	6,0	4,9	4,50	5	25	3



DIN 374 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
M8x1	1,0	90	6	4,9	7,0	10	3
M10x1	1,0	90	7	5,5	9,0	10	4
M12x1,5	1,5	100	9	7,0	10,5	15	5
M14x1,5	1,5	100	11	9,0	12,5	15	5
M16x1,5	1,5	100	12	9,0	14,5	15	5
M18x1,5	1,5	110	14	11,0	16,5	17	5
M20x1,5	1,5	125	16	12,0	18,5	17	5

UNI	UNI	UNI
E 1,5-2	E 1,5-2	E 1,5-2
ISO 2 6H	ISO 2 6H	ISO 3 6G
vap.	TiN	vap.
HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD

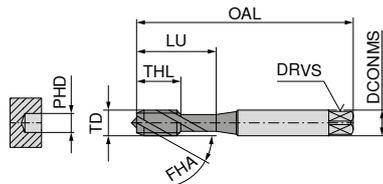
22 441 ...
040
062
050

	22 555 ...	22 556 ...	22 490 ...
M8x1	080	080	080
M10x1	100	100	100
M12x1,5	120	120	120
M14x1,5	140	140	140
M16x1,5	160	160	160
M18x1,5			180
M20x1,5			200
P	12	15	12
M	7	9	7
K	12	18	12
N		12	
S			
H			
O			

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck



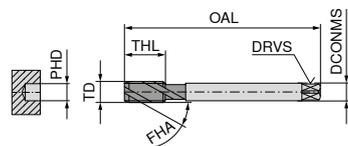
DIN 371 with reinforced shank

UNI	UNI	UNI CNC	UNI CNC
C 2-3	C 2-3	E 1,5-2	E 1,5-2
ISO 2 6H	ISO 2 6H	7G	ISO 2 6H
vap.	TiN	TiN GS	TiN GS
HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 45° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 45° ≤ 1100 N/mm² ≤ 3xD

22 548 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M5x0,5	0,50	70	6	4,9	4,5	5	25	3
M6x0,5	0,50	80	6	4,9	5,5	5	30	3
M6x0,75	0,75	80	6	4,9	5,2	8	30	3

050  
060  
062



DIN 374 with reduced shank

	22 553 ...	22 554 ...	22 563 ...	22 549 ...
M8x0,75				082
M8x1	082	080	084	084
M10x1	100	100	102	102
M10x1	120	121	124	120
M12x1	124	120		124
M12x1,5			124	124
M14x1,5	140	140	144	144
M14x1,5	160	160	162	162
M16x1,5	180	182		182
M18x1,5	200	202		202
M20x1,5	220		202	
M22x1,5	240			
M24x1,5				
P	12	15	15	15
M	7	9	9	9
K	12	18	18	18
N		12	12	12
S				
H				
O				

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

CavTap  
SL

MF

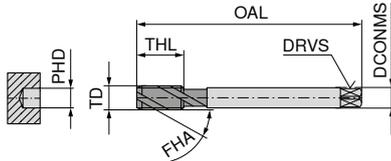
ST



ISO 2  
6H



HSS-E  
FHA 15°  
≤ 750 N/mm<sup>2</sup>  
≤ 2xD



DIN 374 with reduced shank

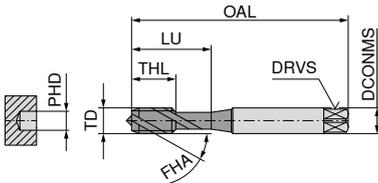
22 182 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M6x0,75	0,75	80	4,5	3,4	5,2	13	3	062
M8x0,75	0,75	80	6,0	4,9	7,2	14	3	082
M8x1	1,00	90	6,0	4,9	7,0	17	3	084
M9x1	1,00	90	7,0	5,5	8,0	17	3	090
M10x1	1,00	90	7,0	5,5	9,0	18	3	102
M10x1,25	1,25	100	7,0	5,5	8,8	22	3	104
M11x1	1,00	90	8,0	6,2	10,0	18	3	110
M12x1	1,00	100	9,0	7,0	11,0	18	3	120
M12x1,25	1,25	100	9,0	7,0	10,8	22	3	122
M12x1,5	1,50	100	9,0	7,0	10,5	22	3	124
M14x1	1,00	100	11,0	9,0	13,0	18	4	140
M14x1,5	1,50	100	11,0	9,0	12,5	22	3	144
M15x1	1,00	100	12,0	9,0	14,0	18	4	150
M16x1	1,00	100	12,0	9,0	15,0	18	4	160
M16x1,5	1,50	100	12,0	9,0	14,5	22	3	162
M18x1	1,00	110	14,0	11,0	17,0	20	4	180
P								12
M								
K								12
N								22
S								
H								
O								

Cutting speed v<sub>c</sub> (m/min.)

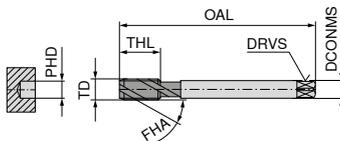
# Blind hole – Machine taps, right hand

CavTap MF



DIN 371 with reinforced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M4x0,5	0,50	63	4,5	3,4	3,5	5	21	3
M5x0,5	0,50	70	6,0	4,9	4,5	5	25	3
M6x0,5	0,50	80	6,0	4,9	5,5	5	30	3
M6x0,75	0,75	80	6,0	4,9	5,2	8	30	3



DIN 374 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M8x0,75	0,75	80	6	4,9	7,2	8	3
M8x1	1,00	90	6	4,9	7,0	10	3
M10x1	1,00	90	7	5,5	9,0	10	4
M12x1	1,00	100	9	7,0	11,0	11	4
M12x1,5	1,50	100	9	7,0	10,5	15	5
M14x1,5	1,50	100	11	9,0	12,5	15	5
M16x1,5	1,50	100	12	9,0	14,5	15	5
M20x1,5	1,50	125	16	12,0	18,5	17	5
M26x1,5	1,50	140	18	14,5	24,5	20	6
M28x1,5	1,50	140	20	16,0	26,5	20	6
M30x1,5	1,50	150	22	18,0	28,5	22	6

P	8	10
M	6	8
K		
N	22	22
S		
H		
O		

Cutting speed  $v_c$  (m/min.)

VA	VA
E 1,5-2	E 1,5-2
ISO 2 6H	ISO 2 6H
vap.	TiN GS
HSS-E FHA 42° ≤ 750 N/mm <sup>2</sup> ≤ 3xD	HSS-E FHA 45° ≤ 900 N/mm <sup>2</sup> ≤ 3xD

22 176 ...

040  
050  
060  
062

22 189 ...

22 177 ...

082  
100  
102  
121  
120  
124  
140  
144  
160  
162  
200  
260  
280  
300

# Blind hole – Machine taps, right hand

MF

UNI

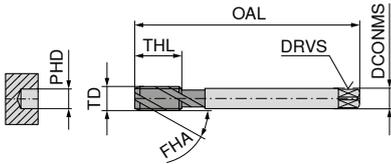


ISO 2  
6H

TiN



HSS-PM  
FHA 40°  
≤ 1000 N/mm²  
≤ 2,5xD



DIN 374 with reduced shank

6

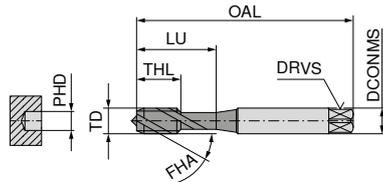
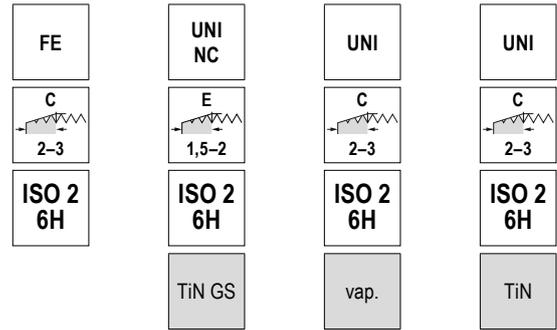
23 047 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M8x1	1,00	90	6	4,9	7,0	10	35	3	081
M10x1	1,00	90	7	5,5	9,0	10	35	4	102
M10x1,25	1,25	100	7	5,5	8,8	16	39	4	104
M12x1	1,00	100	9	7,0	11,0	11	40	4	120
M12x1,25	1,25	100	9	7,0	10,8	15	40	5	122
M12x1,5	1,50	100	9	7,0	10,5	15	40	5	121
M14x1	1,00	100	11	9,0	12,8	11	40	4	140
M14x1,5	1,50	100	11	9,0	12,5	15	40	5	144
M16x1,5	1,50	100	12	9,0	14,5	15	44	5	162
M18x1,5	1,50	110	14	11,0	16,5	17	44	5	182
M20x1,5	1,50	125	16	12,0	18,5	17	44	5	202
M22x1,5	1,50	125	18	14,5	20,5	17	44	5	222
M24x1,5	1,50	140	18	14,5	22,5	20	48	5	242
M24x2	2,00	140	18	14,5	22,0	20	48	5	244
P									15
M									9
K									18
N									12
S									
H									
O									

Cutting speed  $v_c$  (m/min.)

# Blind hole – Machine taps, right hand

▲ NC = for synchronised CNC machining with minimum length compensation chuck

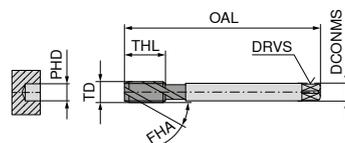


DIN 371 with reinforced shank



TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M4x0,5	0,50	63	4,5	3,4	3,5	5	21	3
M5x0,5	0,50	70	6,0	4,9	4,5	5	25	3
M6x0,5	0,50	80	6,0	4,9	5,5	5	30	3
M6x0,75	0,75	80	6,0	4,9	5,2	8	30	3

23 144 ...	23 146 ...
040	040
050	050
060	060
062	062



DIN 374 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M4x0,5	0,50	63	2,8	2,1	3,5	5	3
M5x0,5	0,50	70	3,5	2,7	4,5	5	3
M6x0,75	0,75	80	4,5	3,4	5,2	8	3
M8x0,5	0,50	80	6,0	8,0	7,5	6	3
M8x0,75	0,75	80	6,0	4,9	7,2	8	3
M8x1	1,00	90	6,0	4,9	7,0	10	3
M10x0,75	0,75	90	7,0	5,5	9,2	10	4
M10x1	1,00	90	7,0	5,5	9,0	10	3
M10x1	1,00	90	7,0	5,5	9,0	10	4
M10x1,25	1,25	100	7,0	5,5	8,8	16	3
M12x1	1,00	100	9,0	7,0	11,0	11	4
M12x1,25	1,25	100	9,0	7,0	10,8	15	4
M12x1,5	1,50	100	9,0	7,0	10,5	15	4
M12x1,5	1,50	100	9,0	7,0	10,5	15	5
M14x1	1,00	100	11,0	9,0	13,0	11	4
M14x1,5	1,50	100	11,0	9,0	12,5	15	4
M14x1,5	1,50	100	11,0	9,0	12,5	15	5
M16x1	1,00	100	12,0	9,0	15,0	12	4
M16x1,5	1,50	100	12,0	9,0	14,5	15	4
M16x1,5	1,50	100	12,0	9,0	14,5	15	5
M18x1,5	1,50	110	14,0	11,0	16,5	17	4
M18x1,5	1,50	110	14,0	11,0	16,5	17	5
M20x1,5	1,50	125	16,0	12,0	18,5	17	4
M20x1,5	1,50	125	16,0	12,0	18,5	17	5
M22x1,5	1,50	125	18,0	14,5	20,5	17	4
M24x1,5	1,50	140	18,0	14,5	22,5	20	5

23 243 ...	23 149 ...	23 145 ...	23 147 ...
		040	
		050	
		062	
080			
082	082	082	082
084	084	084	084
100		100	100
102		102	102
	102		
104		104	104
120	120	120	120
122		122	122
124		124	124
	124		
140		140	140
144		144	144
	144		
160		160	160
162		162	162
	162		
182		182	182
	182		
202		202	202
	202		
222		222	222
242		242	242

P	12	15	12	15
M		9	7	9
K	12	18	12	18
N	22	12		12
S				
H				
O				

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

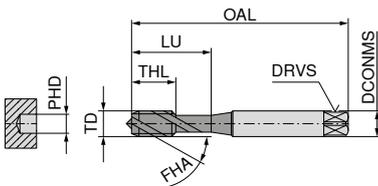
MF

VA

E  
1,5-2

ISO 2  
6H

TiN



DIN 371 with reinforced shank

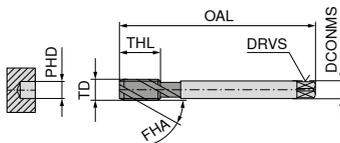


HSS-E  
FHA 45°  
≤ 1200 N/mm<sup>2</sup>  
≤ 3xD

23 442 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M5x0,5	0,50	70	6	4,9	4,5	5	25	3
M6x0,75	0,75	80	6	4,9	5,2	8	30	3

050  
062



DIN 374 with reduced shank

23 443 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
M8x0,75	0,75	80	6	4,9	7,2	8	3
M8x1	1,00	90	6	4,9	7,0	10	3
M10x1	1,00	90	7	5,5	9,0	10	4
M12x1	1,00	100	9	7,0	11,0	11	4
M12x1,5	1,50	100	9	7,0	10,5	15	5
M14x1,5	1,50	100	11	9,0	12,5	15	5
M16x1,5	1,50	100	12	9,0	14,5	15	5

082  
084  
102  
120  
124  
144  
162

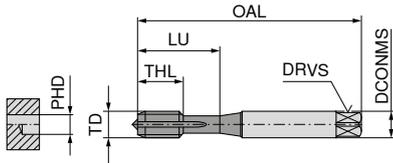
P	10
M	8
K	
N	24
S	
H	
O	

Cutting speed v<sub>c</sub> (m/min.)

# Through hole / Blind hole – Machine taps, right hand

DuoTap MF

HR  
C  
2-3  
ISO 2X  
6HX  
nitr.



DIN 371 with reinforced shank



HSS-E  
FHA 0°  
≤ 1400 N/mm²  
≤ 2xD

22 146 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M4x0,5	0,50	63	4,5	3,4	3,5	10	21	3	040
M5x0,5	0,50	70	6,0	4,9	4,5	11	25	3	050
M6x0,5	0,50	80	6,0	4,9	5,5	13	30	3	060
M6x0,75	0,75	80	6,0	4,9	5,2	13	30	3	062
P									6
M									
K									16
N									22
S									
H									
O									

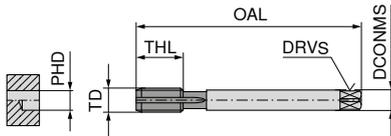
Cutting speed  $v_c$  (m/min.)

DIN 374 can be found on the next page

# Through hole / Blind hole – Machine taps, right hand

DuoTap MF

HR  
C  
2-3  
ISO 2X  
6HX  
nitr.



DIN 374 with reduced shank



HSS-E  
FHA 0°  
≤ 1400 N/mm²  
≤ 2xD

22 209 ...

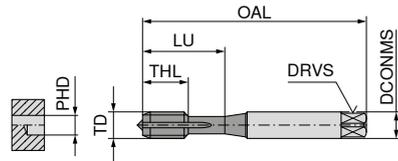
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M8x1	1,0	90	6	4,9	7,0	17	3	082
M10x1	1,0	90	7	5,5	9,0	18	4	100
M12x1,5	1,5	100	9	7,0	10,5	22	4	120
M14x1,5	1,5	100	11	9,0	12,5	22	4	140
M16x1,5	1,5	100	12	9,0	14,5	22	4	160
M18x1,5	1,5	110	14	11,0	16,5	25	4	180
M20x1,5	1,5	125	16	12,0	18,5	25	4	200
P								6
M								
K								16
N								22
S								
H								
O								

Cutting speed v<sub>c</sub> (m/min.)

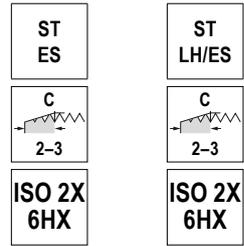
# Through Hole / Blind Hole – Machine taps

▲ ES = extra short

▲ LH = for left hand threads; ES = extra short



DIN 2181 with reinforced shank



TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M3x0,35	0,35	40	3,5	2,7	2,65	8	18	3
M4x0,35	0,35	45	4,5	3,4	3,65	9	22	3
M4x0,5	0,50	45	4,5	3,4	3,50	9	22	3
M4,5x0,5	0,50	50	6,0	4,9	4,00	10	24	3
M5x0,5	0,50	50	6,0	4,9	4,50	11	25	3
M6x0,5	0,50	56	6,0	4,9	5,50	12	27	3
M6x0,75	0,75	56	6,0	4,9	5,20	12	27	3
M7x0,75	0,75	56	6,0	4,9	6,20	14		3
M8x0,5	0,50	56	6,0	4,9	7,50	14		4
M8x0,75	0,75	56	6,0	4,9	7,20	14		3
M8x1	1,00	63	6,0	4,9	7,00	17		3
M9x1	1,00	63	7,0	5,5	8,00	17		4
M10x0,75	0,75	63	7,0	5,5	9,20	18		4
M10x1	1,00	63	7,0	5,5	9,00	18		4
M10x1,25	1,25	70	7,0	5,5	8,80	22		3
M11x1	1,00	63	8,0	6,2	10,00	18		4
M12x1	1,00	70	9,0	7,0	11,00	18		4
M12x1,25	1,25	70	9,0	7,0	10,80	20		4
M12x1,5	1,50	70	9,0	7,0	10,50	20		4
M13x1	1,00	70	11,0	9,0	12,00	18		4
M14x1	1,00	70	11,0	9,0	13,00	18		4
M14x1,25	1,25	70	11,0	9,0	12,80	20		4
M14x1,5	1,50	70	11,0	9,0	12,50	20		4
M15x1	1,00	70	12,0	9,0	14,00	18		5
M16x1	1,00	70	12,0	9,0	15,00	18		5
M16x1,5	1,50	70	12,0	9,0	14,50	20		4
M18x1	1,00	80	14,0	11,0	17,00	18		5
M18x1,5	1,50	80	14,0	11,0	16,50	22		4
M18x2	2,00	80	14,0	11,0	16,00	22		4
M20x1,5	1,50	80	16,0	12,0	18,50	22		4
M20x2	2,00	80	16,0	12,0	18,00	22		4

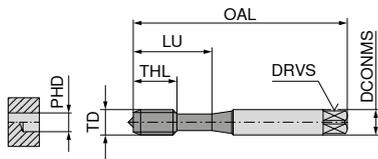
22 179 ...	22 200 ...	
030		
040		
042		
045		
050		
060		
062	062	
070		
080		
082		
084	084	
090		
100		
102	102	
104		
110		
120	120	
122		
124	124	
130		
140		
142		
144	144	
150		
160		
162	162	
180		
182	182	
184		
202	202	
204		
P	12	12
M		
K	12	12
N	22	22
S		
H		
O		

Cutting speed v<sub>c</sub> (m/min.)

# Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

▲ HML = with soldered-in carbide strips for a higher cutting speed

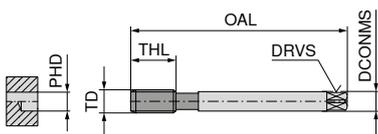


DIN 2174 with reinforced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M4x0,5	0,50	63	4,5	3,4	3,8	10	21	4
M5x0,5	0,50	70	6,0	4,9	4,8	11	25	4
M6x0,5	0,50	80	6,0	4,9	5,8	13	30	5
M6x0,75	0,75	80	6,0	4,9	5,7	13	30	4
M8x0,75	0,75	80	8,0	6,2	7,7	14	30	5
M8x1	1,00	90	8,0	6,2	7,6	17	35	5
M10x1	1,00	90	10,0	8,0	9,6	18	35	5

22 205 ...

040  
050  
060  
062  
080  
082  
100



DIN 2174 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
M12x1	1,0	100	9	7	11,60	18	6
M12x1,5	1,5	100	9	7	11,35	13	
M12x1,5	1,5	100	9	7	11,35	22	6
M14x1,5	1,5	100	11	9	13,35	22	6
M16x1,5	1,5	100	12	9	15,35	18	
M16x1,5	1,5	100	12	9	15,35	22	6
M20x1,5	1,5	125	16	12	19,35	25	6

	22 474 ...	22 474 ...	22 197 ...
		12000	120
	16100	16000	124
			140
			160
			200
P	30	30	18
M	20	20	10
K	30	30	10
N	40	40	22
S			
H			
O			

Cutting speed v<sub>c</sub> (m/min.)

# Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

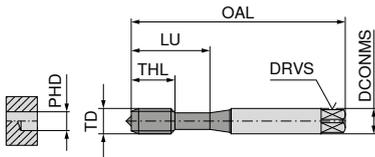
MF

UNI  
SN

C  
2-3

ISO 2X  
6HX

TiN



DIN 2174 with reinforced shank

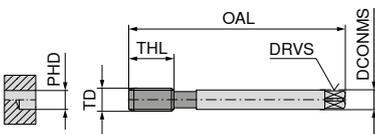


HSS-E  
≤ 850 N/mm<sup>2</sup>  
≤ 3xD

23 842 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M4x0,5	0,50	63	4,5	3,4	3,80	10	21	4
M5x0,5	0,50	70	6,0	4,9	4,80	11	25	4
M6x0,5	0,50	80	6,0	4,9	5,80	13	30	5
M8x1	1,00	90	8,0	6,2	7,60	17	35	5
M10x1	1,00	90	10,0	8,0	9,60	18	35	5
M10x1,25	1,25	100	10,0	8,0	9,45	18	39	5

040  
050  
060  
084  
102  
104



DIN 2174 with reduced shank

23 843 ...

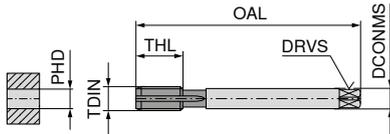
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
M12x1,25	1,25	100	9	7	11,45	22	6
M12x1,5	1,50	100	9	7	11,35	22	6
M14x1,5	1,50	100	11	9	13,35	22	6
M16x1,5	1,50	100	12	9	15,35	22	6

122  
124  
144  
162

P	18
M	10
K	10
N	22
S	
H	
O	

Cutting speed v<sub>c</sub> (m/min.)

# Through hole – Machine taps, right hand



DIN 5156 with reduced shank

UNI	VA
B 4-5	B 4-5
ISO 228	ISO 228
TiN	nitr.



HSS-E  
FHA 0°  
≤ 1100 N/mm<sup>2</sup>  
≤ 4xD

HSS-E  
FHA 0°  
≤ 900 N/mm<sup>2</sup>  
≤ 4xD

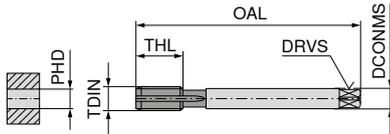
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
	mm	mm	mm	mm	mm	mm	
1/8-28	0,907	90	7	5,5	8,80	18	3
1/4-19	1,337	100	11	9,0	11,80	22	3
3/8-19	1,337	100	12	9,0	15,25	22	3
1/2-14	1,814	125	16	12,0	19,00	25	4
3/4-14	1,814	140	20	16,0	24,50	28	4
1-11	2,309	160	25	20,0	30,75	30	4

22 630 ...	22 352 ...	
012	012	
025	025	
037	037	
050	050	
	075	
	100	
P	15	8
M	9	6
K	18	
N	12	22
S		
H		
O		

Cutting speed v<sub>c</sub> (m/min.)

# Through hole – Machine taps, right hand

G



DIN 5156 with reduced shank

UNI	UNI
B 4-5	B 4-5
ISO 228	ISO 228
nit. + vap.	TiN

HSS-E FHA 0° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 3xD

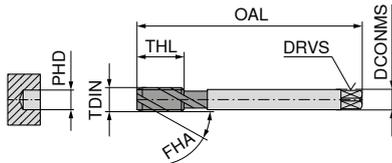
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
	mm	mm	mm	mm	mm	mm	
1/8-28	0,907	90	7	5,5	8,80	18	3
1/4-19	1,337	100	11	9,0	11,80	22	3
3/8-19	1,337	100	12	9,0	15,25	22	3
1/2-14	1,814	125	16	12,0	19,00	25	4
3/4-14	1,814	140	20	16,0	24,50	28	4
1-11	2,309	160	25	20,0	30,75	30	4

23 161 ...	23 160 ...
012	012
025	025
037	037
050	050
075	075
100	100

P	12	15
M	7	9
K	12	18
N		12
S		
H		
O		

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand



DIN 5156 with reduced shank

UNI	UNI	UNI	UNI	UNI
C 2-3	C 2-3	E 1,5-2	E 1,5-2	E 1,5-2
ISO 228	ISO 228	ISO 228	ISO 228	ISO 228 +0,05
vap.	TiN	vap.	TiN	vap.
HSS-E FHA 42° ≤ 1100 N/mm <sup>2</sup> ≤ 3xD				

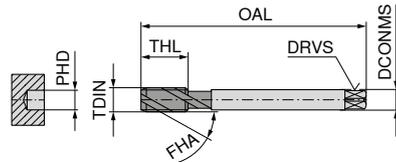
6

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	22 633 ...	22 634 ...	22 635 ...	22 636 ...	22 639 ...
								012	012	012	012	012
1/8-28	0,907	90	7	5,5	8,80	10	3					
1/8-28	0,907	90	7	5,5	8,80	10	4			012	012	012
1/4-19	1,337	100	11	9,0	11,80	15	4	025	025			
1/4-19	1,337	100	11	9,0	11,80	15	5			025	025	025
3/8-19	1,337	100	12	9,0	15,25	15	4	037	037			
3/8-19	1,337	100	12	9,0	15,25	15	5			037	037	037
1/2-14	1,814	125	16	12,0	19,00	17	4	050	050			
1/2-14	1,814	125	16	12,0	19,00	17	5			050	050	050
3/4-14	1,814	140	20	16,0	24,50	20	4	075				
3/4-14	1,814	140	20	16,0	24,50	20	5					075
1-11	2,309	160	25	20,0	30,75	24	6					100
P								12	15	12	15	12
M								7	9	7	9	7
K								12	18	12	18	12
N									12		12	
S												
H												
O												

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck



DIN 5156 with reduced shank

UNI CNC	ST	VA	VA
E 1,5-2	C 2-3	E 1,5-2	E 1,5-2
ISO 228	ISO 228	ISO 228	ISO 228
TiN GS		vap.	TiN GS



HSS-E FHA 45° ≤ 1100 N/mm <sup>2</sup> ≤ 3xD	HSS-E FHA 42° ≤ 750 N/mm <sup>2</sup> ≤ 3xD	HSS-E FHA 42° ≤ 900 N/mm <sup>2</sup> ≤ 3xD	HSS-E FHA 45° ≤ 900 N/mm <sup>2</sup> ≤ 3xD
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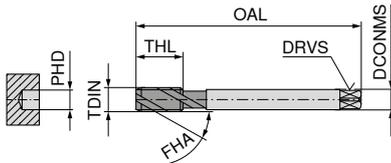
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
1/8-28	0,907	90	7	5,5	8,80	10	3
1/8-28	0,907	90	7	5,5	8,80	10	4
1/4-19	1,337	100	11	9,0	11,80	15	4
1/4-19	1,337	100	11	9,0	11,80	15	5
3/8-19	1,337	100	12	9,0	15,25	15	4
3/8-19	1,337	100	12	9,0	15,25	15	5
1/2-14	1,814	125	16	12,0	19,00	17	4
1/2-14	1,814	125	16	12,0	19,00	17	5
5/8-14	1,814	125	18	14,5	21,00	17	5
3/4-14	1,814	140	20	16,0	24,50	20	4
3/4-14	1,814	140	20	16,0	24,50	20	5
1-11	2,309	160	25	20,0	30,75	24	5
1-11	2,309	160	25	20,0	30,75	24	6

22 624 ...	22 354 ...	22 355 ...	22 358 ...	
	012		012	
012	025	012	025	
025	037	025	037	
037	050	037	050	
050	075	050	062	
	100	075		
		100		
P	15	12	8	10
M	9		6	8
K	18	12		
N	12	22	22	22
S				
H				
O				

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

G



DIN 5156 with reduced shank

UNI	UNI
C 2-3	C 2-3
ISO 228	ISO 228
vap.	TiN



HSS-E  
FHA 35°  
≤ 1100 N/mm<sup>2</sup>  
≤ 2,5xD

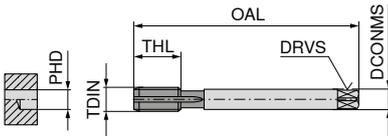
HSS-E  
FHA 35°  
≤ 1100 N/mm<sup>2</sup>  
≤ 2,5xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
	mm	mm	mm	mm	mm	mm	
1/8-28	0,907	90	7	5,5	8,80	10	3
1/4-19	1,337	100	11	9,0	11,80	15	4
3/8-19	1,337	100	12	9,0	15,25	15	4
1/2-14	1,814	125	16	12,0	19,00	17	4
3/4-14	1,814	140	20	16,0	24,50	20	4
1-11	2,309	160	25	20,0	30,75	24	5

23 163 ...	23 162 ...	
012	012	
025	025	
037	037	
050	050	
075	075	
100	100	
P	12	15
M	7	9
K	12	18
N		12
S		
H		
O		

Cutting speed v<sub>c</sub> (m/min.)

# Through hole / Blind hole – Machine taps, right hand



DIN 5156 with reduced shank



HSS-E  
FHA 0°  
≤ 1400 N/mm²  
≤ 2xD

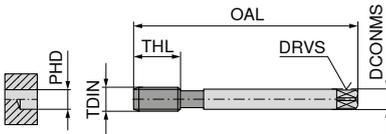
**22 339 ...**

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
1/8-28	0,907	90	7	5,5	8,80	18	4	012
1/4-19	1,337	100	11	9,0	11,80	22	4	025
3/8-19	1,337	100	12	9,0	15,25	22	4	037
1/2-14	1,814	125	16	12,0	19,00	25	4	050
P								6
M								
K								16
N								22
S								
H								
O								

Cutting speed  $v_c$  (m/min.)

# Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves



DIN 2189 with reduced shank



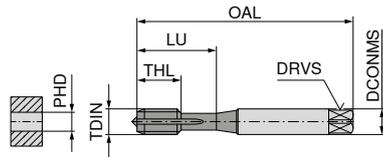
HSS-E  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

22 359 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
1/8-28	0,907	90	7	5,5	9,25	18	5	012
1/4-19	1,337	100	11	9,0	12,55	22	6	025
3/8-19	1,337	100	12	9,0	16,05	22	6	037
1/2-14	1,814	125	16	12,0	20,10	25	6	050
P								18
M								10
K								10
N								22
S								
H								
O								

Cutting speed v<sub>c</sub> (m/min.)

# Through hole – Machine taps, right hand



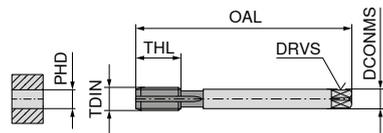
DIN 371 with reinforced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
Nr. 2-56	0,454	45	2,8	2,1	1,85	7	12	2
Nr. 4-40	0,635	56	3,5	2,7	2,35	11	18	2
Nr. 4-40	0,635	56	3,5	2,7	2,35	11	18	3
Nr. 6-32	0,794	56	4,0	3,0	2,85	12	20	3
Nr. 8-32	0,794	63	4,5	3,4	3,50	13	21	3
Nr. 10-24	1,058	70	6,0	4,9	3,90	15	25	3
Nr. 12-24	1,058	80	6,0	4,9	4,50	16	30	3
1/4-20	1,270	80	7,0	5,5	5,10	17	30	3
5/16-18	1,411	90	8,0	6,2	6,60	20	35	3
3/8-16	1,588	100	10,0	8,0	8,00	22	39	3

VA	Ti	UNI
2B	2BX	2B
nitr.	TiN	nitr. + vap.

HSS-E FHA 0° ≤ 900 N/mm² ≤ 4xD	HSS-PM FHA 0° ≤ 44 HRC ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD

22 250 ...	22 269 ...	22 572 ...
		002
		004
	006	006
006	008	008
008	010	010
010		012
	025	025
025	031	031
031	037	037



DIN 376 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
1/2-13	1,954	110	9	7,0	10,80	25	3
5/8-11	2,309	110	12	9,0	13,50	27	3
3/4-10	2,540	125	14	11,0	16,50	30	3
7/8-9	2,822	140	18	14,5	19,50	32	3
1-8	3,175	160	18	14,5	22,25	36	3

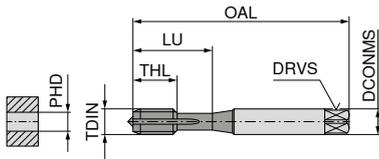
22 573 ...
050
062
075
087
100

P	8	7	12
M	6	7	7
K			12
N	22		
S		5	
H			
O			

Cutting speed v<sub>c</sub> (m/min.)

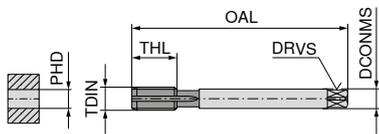
# Through hole – Machine taps, right hand

UNC



DIN 371 with reinforced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
Nr. 4-40	0,635	56	3,5	2,7	2,30	11	18	2
Nr. 6-32	0,794	56	4,0	3,0	2,85	12	20	3
Nr. 8-32	0,794	63	4,5	3,4	3,50	13	21	3
Nr. 10-24	1,058	70	6,0	4,9	3,90	15	25	3
1/4-20	1,270	80	7,0	5,5	5,10	17	30	3
5/16-18	1,411	90	8,0	6,2	6,60	20	35	3
3/8-16	1,588	100	10,0	8,0	8,00	22	39	3



DIN 376 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
7/16-14	1,814	100	8	6,2	9,40	22	3
1/2-13	1,954	110	9	7,0	10,75	25	3
5/8-11	2,309	110	12	9,0	13,50	27	3
3/4-10	2,540	125	14	11,0	16,50	30	3

UNI	FE-HF	VA
4-5	4-5	4-5
2B	2B	2B
TiN	TiCN	nitr.

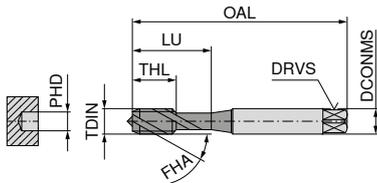
HSS-E FHA 0° ≤ 1000 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1000 N/mm² ≤ 3xD

23 170 ...	23 370 ...	23 470 ...
004	004	004
006	006	006
008	008	008
010	010	010
025	025	025
031	031	031
037	037	037

23 171 ...			
043			
050			
062			
075			
P	15	15	8
M	9		6
K	18	15	
N	12	15	22
S			
H			
O			

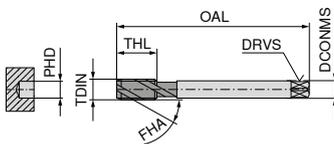
Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand



DIN 371 with reinforced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
Nr. 4-40	0,635	56	3,5	2,7	2,35	6	18	2
Nr. 6-32	0,794	56	4,0	3,0	2,85	7	20	3
Nr. 8-32	0,794	63	4,5	3,4	3,50	8	21	3
Nr. 10-24	1,058	70	6,0	4,9	3,90	10	25	3
1/4-20	1,270	80	7,0	5,5	5,10	13	30	3
5/16-18	1,411	90	8,0	6,2	6,60	14	35	3
3/8-16	1,588	100	10,0	8,0	8,00	16	39	3

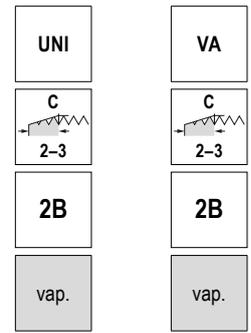


DIN 376 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
7/16-14	1,814	100	8	6,2	9,40	18	3
7/16-14	1,814	100	8	6,2	9,40	18	4
1/2-13	1,954	110	9	7,0	10,80	20	3
1/2-13	1,954	110	9	7,0	10,80	20	4
9/16-12	2,117	110	11	9,0	12,25	20	3
5/8-11	2,309	110	12	9,0	13,50	22	3
5/8-11	2,309	110	12	9,0	13,50	22	4
3/4-10	2,540	125	14	11,0	16,50	25	3
3/4-10	2,540	125	14	11,0	16,50	25	4
1-8	3,175	160	18	14,5	22,25	30	4
1-8	3,175	160	18	14,5	22,25	30	5

P	12	8
M	7	6
K	12	
N		22
S		
H		
O		

Cutting speed  $v_c$  (m/min.)



HSS-E  
FHA 42°  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

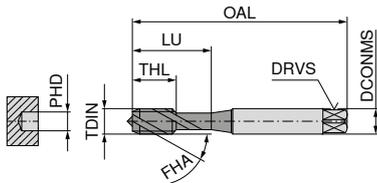
HSS-E  
FHA 42°  
≤ 900 N/mm<sup>2</sup>  
≤ 3xD

22 582 ...	22 266 ...
004	
006	006
008	008
010	010
025	025
031	031
037	037

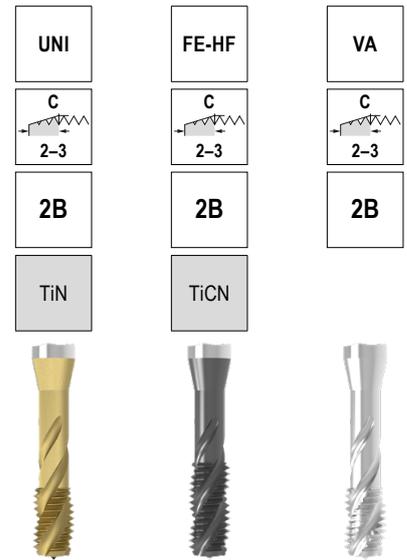
22 583 ...	22 267 ...
043	
050	043
056	050
062	056
075	062
100	075
	100

# Blind hole – Machine taps, right hand

UNC



DIN 371 with reinforced shank



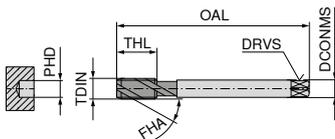
HSS-E  
FHA 35°  
≤ 1000 N/mm<sup>2</sup>  
≤ 2,5xD

HSS-E  
FHA 35°  
≤ 1100 N/mm<sup>2</sup>  
≤ 2,5xD

HSS-E  
FHA 35°  
≤ 1000 N/mm<sup>2</sup>  
≤ 2,5xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
Nr. 4-40	0,635	56	3,5	2,7	2,30	6	18	2
Nr. 4-40	0,635	56	3,5	2,7	2,30	11	18	2
Nr. 6-32	0,794	56	4,0	3,0	2,85	7	20	3
Nr. 6-32	0,794	56	4,0	3,0	2,85	12	20	3
Nr. 8-32	0,794	63	4,5	3,4	3,50	8	21	3
Nr. 8-32	0,794	63	4,5	3,4	3,50	13	21	3
Nr. 10-24	1,058	70	6,0	4,9	3,90	10	25	3
Nr. 10-24	1,058	70	6,0	4,9	3,90	15	25	3
1/4-20	1,270	80	7,0	5,5	5,20	13	30	3
1/4-20	1,270	80	7,0	5,5	5,20	17	30	3
5/16-18	1,411	90	8,0	6,2	6,60	14	35	3
5/16-18	1,411	90	8,0	6,2	6,60	20	35	3
3/8-16	1,588	100	10,0	8,0	8,00	16	39	3
3/8-16	1,588	100	10,0	8,0	8,00	22	39	3

23 172 ...	23 372 ...	23 472 ...
004		004
006	004	006
008	006	008
010	008	010
025	010	025
031	025	031
037	031	037



DIN 376 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
7/16-14	1,814	100	8	6,2	9,40	18	3
1/2-13	1,954	110	9	7,0	10,75	20	3
5/8-11	2,309	110	12	9,0	13,50	22	3
3/4-10	2,540	125	14	11,0	16,50	25	3

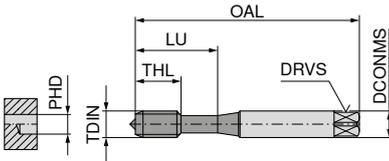
23 173 ...
043
050
062
075

P	15	15	8
M	9		6
K	18	15	
N	12	24	22
S			
H			
O			

Cutting speed v<sub>c</sub> (m/min.)

# Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves



DIN 2174 with reinforced shank



HSS-E  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

22 271 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
Nr. 4-40	0,635	56	3,5	2,7	2,55	11	18	3
Nr. 6-32	0,794	56	4,0	3,0	3,15	12	20	3
Nr. 8-32	0,794	63	4,5	3,4	3,80	13	21	4
Nr. 10-24	1,058	70	6,0	4,9	4,35	15	25	4
1/4-20	1,270	80	7,0	5,5	5,75	17	30	4
5/16-18	1,411	90	8,0	6,2	7,30	20	35	5
3/8-16	1,588	100	10,0	8,0	8,80	22	39	5

P	18
M	10
K	10
N	22
S	
H	
O	

Cutting speed v<sub>c</sub> (m/min.)

# Through hole – machine taps for wire thread inserts, right hand

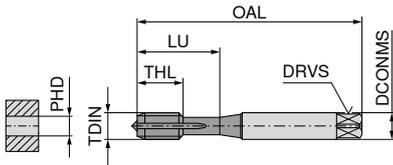


UNI

B  
4-5

2B  
mod

nit. +  
vap.



DIN 371 with reinforced shank



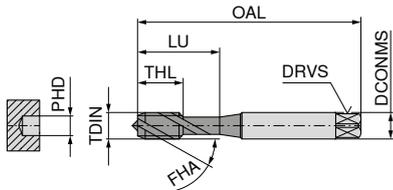
HSS-E  
FHA 0°  
≤ 1100 N/mm²  
≤ 4xD

22 668 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
EG Nr. 4-40	0,635	63	4,5	3,4	3,1	13	21	3	004
EG Nr. 6-32	0,794	70	6,0	4,9	3,8	14	25	3	006
EG Nr. 8-32	0,794	80	6,0	4,9	4,4	16	30	3	008
EG Nr. 10-24	1,058	80	7,0	5,5	5,2	17	30	3	010
P									12
M									7
K									12
N									
S									
H									
O									

Cutting speed  $v_c$  (m/min.)

# Blind hole – machine taps for wire thread inserts, right hand



DIN 371 with reinforced shank



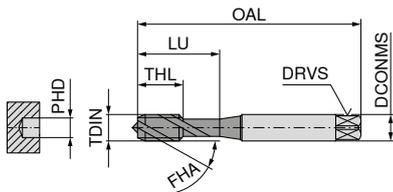
HSS-E  
FHA 42°  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

**22 672 ...**

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	
mm	mm	mm	mm	mm	mm	mm	mm		
EG Nr. 4-40	0,635	63	4,5	3,4	3,1	7	21	3	004
EG Nr. 6-32	0,794	70	6,0	4,9	3,8	8	25	3	006
EG Nr. 8-32	0,794	80	6,0	4,9	4,4	8	30	3	008
EG Nr. 10-24	1,058	80	7,0	5,5	5,2	10	30	3	010
P									12
M									7
K									12
N									
S									
H									
O									

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand



DIN 371 with reinforced shank



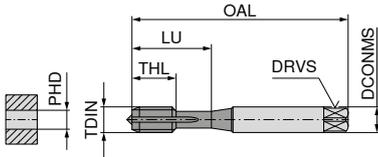
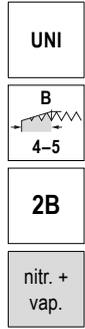
HSS-E  
FHA 15°  
≤ 1200 N/mm<sup>2</sup>  
≤ 2xD

**22 166 ...**

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
Nr. 4-40	0,635	56	3,5	2,7	2,30	11	18	2	004
Nr. 6-32	0,794	56	4,0	3,0	2,85	12	20	3	006
Nr. 8-32	0,794	63	4,5	3,4	3,50	13	21	3	008
Nr. 10-24	1,058	70	6,0	4,9	3,90	15	25	3	010
1/4-20	1,270	80	7,0	5,5	5,25	17	30	3	025
3/8-16	1,588	100	10,0	8,0	8,10	22	39	3	037
P									7
M									7
K									
N									22
S									5
H									
O									

Cutting speed v<sub>c</sub> (m/min.)

# Through hole – Machine taps, right hand



DIN 371 with reinforced shank

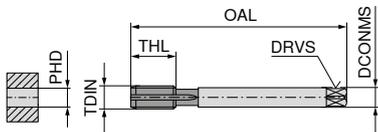


HSS-E  
FHA 0°  
≤ 1100 N/mm²  
≤ 4xD

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
Nr. 4-48	0,529	56	3,5	2,7	2,40	11	18	2
Nr. 6-40	0,635	56	4,0	3,0	2,95	12	20	3
Nr. 8-36	0,706	63	4,5	3,4	3,50	13	21	3
Nr. 10-32	0,794	70	6,0	4,9	4,10	15	25	3
1/4-28	0,907	80	7,0	5,5	5,50	17	30	3
5/16-24	1,058	90	8,0	6,2	6,90	17	35	3

22 602 ...

004  
006  
008  
010  
025  
031



DIN 374 with reduced shank

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
7/16-20	1,270	100	8	6,2	9,90	22	3
1/2-20	1,270	100	9	7,0	11,50	22	3
9/16-18	1,411	100	11	9,0	12,90	22	3
5/8-18	1,411	100	12	9,0	14,50	22	3
3/4-16	1,588	110	14	11,0	17,50	25	4
7/8-14	1,814	125	18	14,5	20,50	25	4
1-12	2,117	140	18	14,5	23,25	28	4
1 1/8-12	2,117	150	22	18,0	26,50	28	4
1 1/4-12	2,117	150	22	18,0	29,75	28	4
1 3/8-12	2,117	170	28	22,0	33,00	30	5

22 603 ...

043  
050  
056  
062  
075  
087  
100  
112  
125  
137

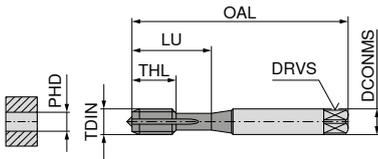
P	12
M	7
K	12
N	
S	
H	
O	

Cutting speed  $v_c$  (m/min.)

# Through hole – Machine taps, right hand

UNF

- UNI
- B  
  
4-5
- 2B
- TiN



DIN 371 with reinforced shank

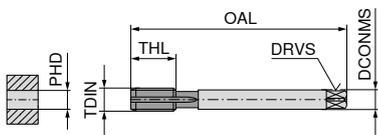


HSS-E  
FHA 0°  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

23 180 ...

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
Nr. 10-32	0,794	70	6	4,9	4,1	15	25	3
1/4-28	0,907	80	7	5,5	5,5	17	30	3
5/16-24	1,058	90	8	6,2	6,9	17	35	3
3/8-24	1,058	90	10	8,0	8,5	18	35	4

010  
025  
031  
037



DIN 374 with reduced shank

23 181 ...

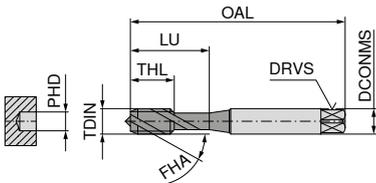
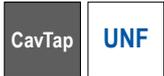
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
7/16-20	1,270	100	8	6,2	9,9	22	3
1/2-20	1,270	100	9	7,0	11,5	22	3
9/16-18	1,411	100	11	9,0	12,9	22	3
5/8-18	1,411	100	12	9,0	14,5	22	3
3/4-16	1,588	110	14	11,0	17,5	25	4

043  
050  
056  
062  
075

P	15
M	9
K	18
N	12
S	
H	
O	

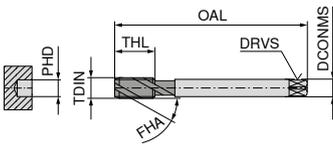
Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand



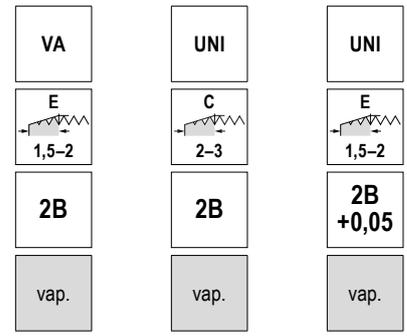
DIN 371 with reinforced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
Nr. 2-64	0,397	45	2,8	2,1	1,85	4,5	12	2
Nr. 4-48	0,529	56	3,5	2,7	2,40	6,0	18	2
Nr. 6-40	0,635	56	4,0	3,0	2,95	7,0	20	3
Nr. 6-40	0,635	56	4,0	3,0	3,00	7,0	20	3
Nr. 8-36	0,706	63	4,5	3,4	3,50	8,0	21	3
Nr. 10-32	0,794	70	6,0	4,9	4,10	10,0	25	3
Nr. 10-32	0,794	70	6,0	4,9	4,15	10,0	25	3
1/4-28	0,907	80	7,0	5,5	5,50	10,0	30	3
1/4-28	0,907	80	7,0	5,5	5,55	10,0	30	3
5/16-24	1,058	90	8,0	6,2	6,90	10,0	35	3
5/16-24	1,058	90	8,0	6,2	6,95	10,0	35	3
3/8-24	1,058	90	10,0	8,0	8,50	10,0	35	3
3/8-24	1,058	90	10,0	8,0	8,55	10,0	35	3



DIN 374 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
7/16-20	1,270	100	8	6,2	9,90	13	3
7/16-20	1,270	100	8	6,2	9,95	13	4
1/2-20	1,270	100	9	7,0	11,50	13	4
1/2-20	1,270	100	9	7,0	11,55	13	5
9/16-18	1,411	100	11	9,0	12,90	15	4
9/16-18	1,411	100	11	9,0	12,95	15	5
5/8-18	1,411	100	12	9,0	14,50	15	4
5/8-18	1,411	100	12	9,0	14,55	15	5
3/4-16	1,588	110	14	11,0	17,50	17	4
3/4-16	1,588	110	14	11,0	17,55	17	5
1-12	2,117	140	18	14,5	23,30	20	5



HSS-E  
FHA 42°  
≤ 900 N/mm<sup>2</sup>  
≤ 3xD

HSS-E  
FHA 42°  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

HSS-E  
FHA 42°  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

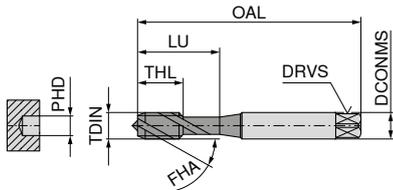
22 308 ...	22 606 ...	22 307 ...
002		
004		
006		
		006
008		
010	010	
		010
025	025	
		025
031	031	
		031
037		
		037

22 607 ...	22 409 ...
	043
	043
	050
	050
	056
	056
	062
	062
	075
	075
	100

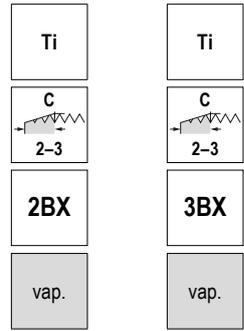
P	8	12	12
M	6	7	7
K		12	12
N	22		22
S			
H			
O			

Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand



DIN 371 with reinforced shank



HSS-PM  
FHA 30°  
≤ 1400 N/mm<sup>2</sup>  
≤ 1,5xD

HSS-PM  
FHA 30°  
≤ 1400 N/mm<sup>2</sup>  
≤ 1,5xD

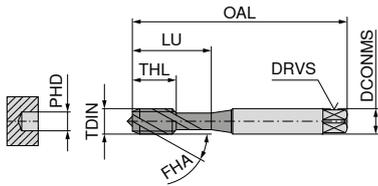
	22 302 ...	22 303 ...
	010	010
	025	025
	031	031
	037	037
P	5	5
M	5	5
K		
N	22	22
S	3	3
H		
O		

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
Nr. 10-32	0,794	70	6	4,9	4,1	10	25	3
1/4-28	0,907	80	7	5,5	5,5	10	30	3
5/16-24	1,058	90	8	6,2	6,9	10	35	3
3/8-24	1,058	90	10	8,0	8,5	10	35	3

Cutting speed v<sub>c</sub> (m/min.)

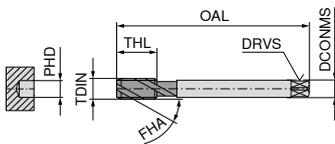
# Blind hole – Machine taps, right hand

UNF



DIN 371 with reinforced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
Nr. 10-32	0,794	70	6	4,9	4,1	10	25	3
1/4-28	0,907	80	7	5,5	5,5	10	30	3
5/16-24	1,058	90	8	6,2	6,9	10	35	3
3/8-24	1,058	90	10	8,0	8,5	10	35	3



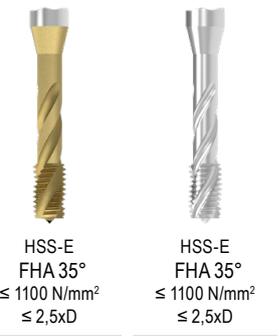
DIN 374 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
7/16-20	1,270	100	8	6,2	9,9	13	3
1/2-20	1,270	100	9	7,0	11,5	13	4
9/16-18	1,411	100	11	9,0	12,9	15	4
5/8-18	1,411	100	12	9,0	14,5	15	4
3/4-16	1,588	110	14	11,0	17,5	17	4

P	15	8
M	9	6
K	18	
N	12	22
S		
H		
O		

Cutting speed  $v_c$  (m/min.)

UNI	VA
2B	2B
TiN	

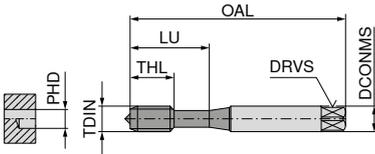


23 182 ...	23 482 ...
010	010
025	025
031	031
037	037

23 183 ...	23 483 ...
043	043
050	050
056	056
062	062
075	075

# Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves



DIN 2174 with reinforced shank

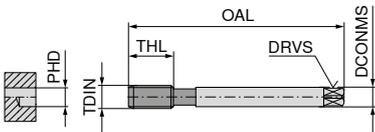


HSS-E  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

22 312 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
Nr. 4-48	0,529	56	3,5	2,7	2,62	11	18	3
Nr. 6-40	0,635	56	4,0	3,0	3,22	12	20	3
Nr. 8-36	0,706	63	4,5	3,4	3,85	13	21	4
Nr. 10-32	0,794	70	6,0	4,9	4,45	15	25	4
1/4-28	0,907	80	7,0	5,5	5,95	17	30	4

004  
006  
008  
010  
025



DIN 2174 with reduced shank

22 313 ...

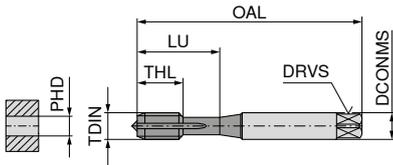
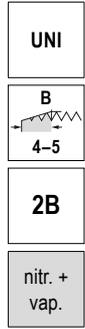
TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes
7/16-20	1,27	100	8	6,2	10,55	22	6
1/2-20	1,27	100	9	7,0	12,15	22	6

043  
050

P	18
M	10
K	10
N	22
S	
H	
O	

Cutting speed  $v_c$  (m/min.)

# Through hole – machine taps for wire thread inserts, right hand



DIN 371 with reinforced shank



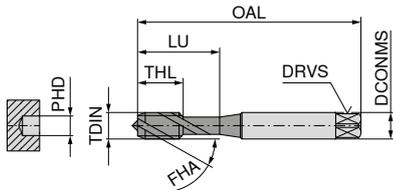
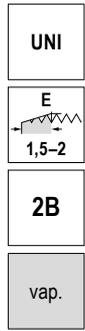
HSS-E  
FHA 0°  
≤ 1100 N/mm²  
≤ 4xD

22 676 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
EG Nr. 4-48	0,529	56	4	3,0	3,0	9	20	3	004
EG Nr. 6-40	0,635	70	6	4,9	3,7	11	25	3	006
EG Nr. 8-36	0,706	80	6	4,9	4,4	13	30	3	008
EG Nr. 10-32	0,794	80	6	4,9	5,1	13	30	3	010
EG 1/4-28	0,907	90	8	6,2	6,6	17	35	3	025
P									12
M									7
K									12
N									
S									
H									
O									

Cutting speed  $v_c$  (m/min.)

# Blind hole – machine taps for wire thread inserts, right hand



DIN 371 with reinforced shank



HSS-E  
FHA 42°  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

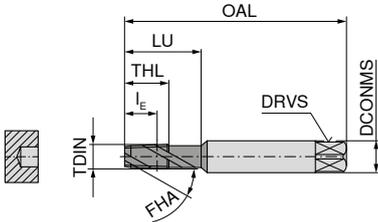
22 680 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
EG Nr. 4-48	0,529	56	4	3,0	3,0	7	20	3	004
EG Nr. 6-40	0,635	70	6	4,9	3,7	8	25	3	006
EG Nr. 8-36	0,706	80	6	4,9	4,4	8	30	3	008
EG Nr. 10-32	0,794	80	6	4,9	5,1	8	30	3	010
EG 1/4-28	0,907	90	8	6,2	6,6	10	35	3	025
P									12
M									7
K									12
N									
S									
H									
O									

Cutting speed v<sub>c</sub> (m/min.)

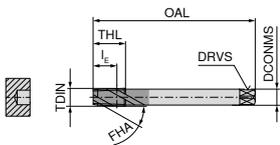
6

# Blind hole – Machine taps, right hand



DIN 371 with reinforced shank

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	IE mm	THL mm	LU mm	Flutes
1/16-27	0,941	90	8	6,2	9,24	13,0	26,0	3
1/8-27	0,941	90	10	8,0	9,28	13,0	26,0	3
1/8-27	0,941	90	10	8,0	9,28	12,0	26,0	4
1/4-18	1,411	100	14	11,0	13,55	19,5	34,5	3
1/4-18	1,411	100	14	11,0	13,55	18,0	34,5	4



DIN 374 with reduced shank

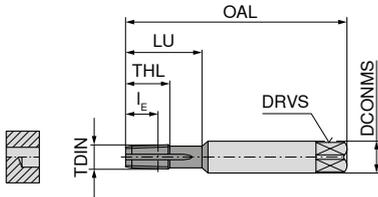
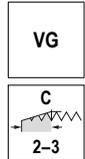
TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	IE mm	THL mm	Flutes
3/8-18	1,411	110	14	11	13,86	18,0	5
3/8-18	1,411	110	14	11	13,86	19,5	3
1/2-14	1,814	140	16	12	18,11	23,0	5
1/2-14	1,814	140	16	12	18,11	25,0	5
3/4-14	1,814	150	20	16	18,59	26,0	5

P	4	5
M	3	4
K		
N	22	22
S		
H		
O		

Cutting speed  $v_c$  (m/min.)

VA	VA
C 2-3	E 1,5-2
vap.	TiN
HSS-E FHA 35° ≤ 900 N/mm²	HSS-E FHA 42° ≤ 1100 N/mm²
<b>22 364 ...</b>	<b>22 365 ...</b>
006	
012	012
025	025

# Through hole / Blind hole – Machine taps, right hand



DIN 371 with reinforced shank

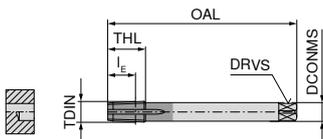


HSS-E  
FHA 0°  
≤ 1100 N/mm²

22 374 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	I <sub>E</sub> mm	THL mm	LU mm	Flutes
1/16-27	0,941	90	8	6,2	9,24	13,0	26,0	3
1/8-27	0,941	90	10	8,0	9,28	13,0	26,0	3
1/4-18	1,411	100	14	11,0	13,55	19,5	34,5	3

006  
012  
025



DIN 374 with reduced shank

22 375 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	I <sub>E</sub> mm	THL mm	Flutes
3/8-18	1,411	110	14	11	13,86	19,5	3
1/2-14	1,814	140	16	12	18,11	25,0	5
3/4-14	1,814	150	20	16	18,59	26,0	5
1-11,5	2,209	170	25	20	22,31	30,0	5

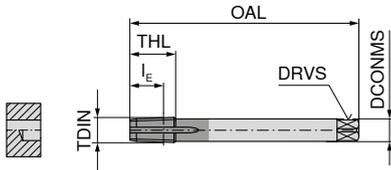
037  
050  
075  
100

P	4
M	
K	6
N	22
S	
H	
O	

Cutting speed v<sub>c</sub> (m/min.)

# Through hole / Blind hole – Machine taps, right hand

▲ ES = extra short



DIN 2181 with reduced shank



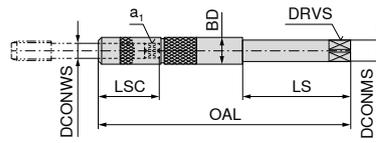
HSS-E  
FHA 0°  
≤ 750 N/mm²

22 361 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	IE mm	THL mm	Flutes	
1/16-27	0,941	63	6	4,9	9,24	13,0	4	006
1/8-27	0,941	63	7	5,5	9,28	13,0	5	012
1/4-18	1,411	63	11	9,0	13,55	19,5	5	025
3/8-18	1,411	70	12	9,0	13,86	19,5	5	037
1/2-14	1,814	80	16	12,0	18,11	23,0	5	050
3/4-14	1,814	100	20	16,0	18,59	26,0	6	075
1-11,5	2,209	110	25	20,0	22,31	32,0	6	100
P								6
M								
K								6
N								22
S								
H								
O								

Cutting speed v<sub>c</sub> (m/min.)

# Shank extensions for taps



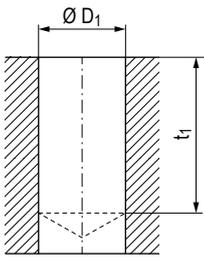
20 450 ...

DIN 371	DIN 374 / 376	DCONWS	$a_i$	LSC	BD	LS	OAL	DRVS	DCONMS	
		mm	mm	mm	mm	mm	mm	mm	mm	
M3	M4,5 - M5	3,5	2,7	23	7,5	60	130	4,9	6	020
M3,5	M5,5	4,0	3,0	23	8,4	60	130	4,9	6	030
M4	M6	4,5	3,4	23	8,4	60	130	4,9	6	040
M4,5 - M6	M8	6,0	4,9	26	12,1	60	130	5,5	7	050
M7	M9 - M10	7,0	5,5	26	12,1	60	130	5,5	7	060
M8	M11	8,0	6,2	30	13,0	60	130	6,2	8	070
M9	M12	9,0	7,0	31	15,0	60	130	7,0	9	080
M10		10,0	8,0	33	15,0	60	130	8,0	10	090
	M14	11,0	9,0	36	18,0	90	180	9,0	11	100
(M12)	M16	12,0	9,0	36	18,0	90	180	9,0	12	110

6

## Core hole diameters for taper threads (taper 1:16)

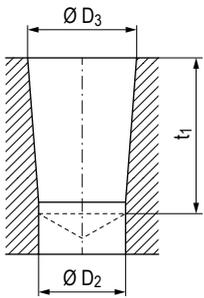
### Pre-drilling of cylindrical holes without reamer



Ø D inch	P Gg/1"	NPT		NPTF		Ø D inch	P Gg/1"	Rc	
		Ø D <sub>1</sub> mm	t <sub>1</sub> min. mm	Ø D <sub>1</sub> mm	t <sub>1</sub> min. mm			Ø D <sub>1</sub> mm	t <sub>1</sub> min. mm
1/16	27	6,15	12	6,1	12	1/16	28	6,2	11,9
1/8	27	8,5	12	8,45	12	1/8	28	8,2	11,9
1/4	18	11	17,5	10,9	17,5	1/4	19	10,85	16,3
3/8	18	14,5	17,6	14,3	17,6	3/8	19	14,5	18,1
1/2	14	17,85	22,9	17,6	22,9	1/2	14	18	24
3/4	14	23,2	23	23	23	3/4	14	23,5	25,3
1	11½	29,5	27,4	28,75	27,4	1	11	29,5	30,6
1¼	11½	37,8	28,1	37,5	28,1				
1½	11½	44	28,4	43,75	28,4				
2	11½	56	28,4	55,75	28,4				

P = Pitch

### Pre-drilling of cylindrical holes and conical boring with reamer



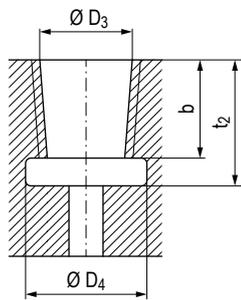
Taper 1:16

Ø D inch	P Gg/1"	NPT			NPTF		
		Ø D <sub>2</sub> mm	Ø D <sub>3</sub> mm	t <sub>1</sub> min. mm	Ø D <sub>2</sub> mm	Ø D <sub>3</sub> mm	t <sub>1</sub> min. mm
1/16	27	5,95	6,39	12	5,95	6,41	12
1/8	27	8,25	8,74	12	8,25	8,76	12
1/4	18	10,75	11,36	17,5	10,75	11,4	17,5
3/8	18	14,1	14,8	17,6	14,1	14,84	17,6
1/2	14	17,5	18,32	22,9	17,5	18,33	22,9
3/4	14	22,7	23,67	23	22,7	23,68	23
1	11½	28,6	29,69	27,4	28,6	29,72	27,4
1¼	11½	37,3	38,45	28,1	37,3	38,48	28,1
1½	11½	43,4	44,52	28,4	43,4	44,5	28,4
2	11½	55,5	56,56	28,4	55,5	56,59	28,4

Ø D inch	P Gg/1"	Rc		
		Ø D <sub>2</sub> mm	Ø D <sub>3</sub> mm	t <sub>1</sub> min. mm
1/16	28	6,1	6,56	11,9
1/8	28	8,1	8,57	11,9
1/4	19	10,75	11,45	17,7
3/8	19	14,25	14,95	18,1
1/2	14	17,75	18,63	24
3/4	14	23	24,12	25,3
1	11	29	30,29	30,6

P = Pitch

### Recommendation for the pre-drilling of blind hole threads



Taper 1:16

Ø D inch	P Gg/1"	NPT				NPTF			
		Ø D <sub>3</sub> mm	b mm	t <sub>2</sub> min. mm	Ø D <sub>4</sub> min. mm	Ø D <sub>3</sub> mm	b mm	t <sub>2</sub> min. mm	Ø D <sub>4</sub> min. mm
1/16	27	6,39	7	10	7,6	6,41	8	11	7,4
1/8	27	8,74	7	10	10	8,76	8	11	9,8
1/4	18	11,36	10,2	14,5	13,1	11,4	11,6	15,5	12,9
3/8	18	14,8	10,6	15	16,5	14,84	12	16	16,3
1/2	14	18,32	13,8	19	20,5	18,33	15,6	20,5	20,3
3/4	14	23,67	14,2	20	25,8	23,68	16	21,5	25,6
1	11½	29,69	17	24	32,2	29,72	19,2	26	32
1¼	11½	38,45	17,5	24,5	41	38,48	19,7	26,5	40,8
1½	11½	44,52	17,5	24,5	47,2	44,5	19,7	26,5	47
2	11½	56,56	18	25	59,2	56,59	20,2	27	59

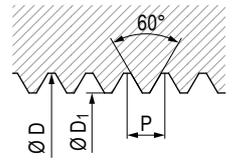
Ø D inch	P Gg/1"	Rc			
		Ø D <sub>3</sub> mm	b mm	t <sub>2</sub> min. mm	Ø D <sub>4</sub> min. mm
1/16	28	6,56	5,6	9,5	7,6
1/8	28	8,57	5,6	9,5	9,6
1/4	19	11,45	8,4	14	13
3/8	19	14,95	8,8	14,4	16,5
1/2	14	18,63	11,4	19	20,6
3/4	14	24,12	12,7	20,3	26
1	11	30,29	14,5	24,3	32,8

P = Pitch

## Tapped hole pilot diameter

**M** ISO metric coarse threads 6H to DIN 13 and DIN ISO 965-1 ( M1-M1,4 = 5H )

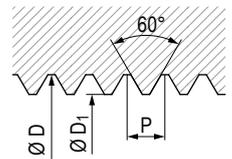
Thread nominal Ø		Ø D <sub>1</sub>		Core hole	Thread nominal Ø		Ø D <sub>1</sub>		Core hole
D	P	min.	max.		D	P	min.	max.	
M1	0,25	0,729	0,785	0,75	M12	1,75	10,106	10,441	10,2
M1,1	0,25	0,829	0,885	0,85	M14	2	11,835	12,210	12
M1,2	0,25	0,929	0,985	0,95	M16	2	13,835	14,210	14
M1,4	0,3	1,075	1,142	1,1	M18	2,5	15,294	15,744	15,5
M1,6	0,35	1,221	1,321	1,25	M20	2,5	17,294	17,744	17,5
M1,8	0,35	1,421	1,521	1,45	M22	2,5	19,294	19,744	19,5
M2	0,4	1,567	1,679	1,6	M24	3	20,752	21,252	21
M2,2	0,45	1,713	1,838	1,75	M27	3	23,752	24,252	24
M2,5	0,45	2,013	2,138	2,05	M30	3,5	26,211	26,771	26,5
M3	0,5	2,459	2,599	2,5	M33	3,5	29,211	29,771	29,5
M3,5	0,6	2,850	3,01	2,9	M36	4	31,67	32,270	32
M4	0,7	3,242	3,422	3,3	M39	4	34,67	35,270	35
M4,5	0,75	3,688	3,878	3,7	M42	4,5	37,129	37,799	37,5
M5	0,8	4,134	4,334	4,2	M45	4,5	40,129	40,799	40,5
M6	1	4,917	5,153	5	M48	5	42,587	43,297	43
M7	1	5,917	6,153	6	M52	5	46,587	47,297	47
M8	1,25	6,647	6,912	6,8	M56	5,5	50,046	50,796	50,5
M9	1,25	7,647	7,912	7,8	M60	5,5	54,046	54,796	54,5
M10	1,5	8,376	8,676	8,5	M64	6	57,505	58,305	58
M11	1,5	9,376	9,676	9,5	M68	6	61,505	62,305	62



6

**MF** ISO metric fine threads 6H to DIN 13 and DIN ISO 965-1

Thread nominal Ø			Ø D <sub>1</sub>		Core hole	Thread nominal Ø			Ø D <sub>1</sub>		Core hole
D	x	P	min.	max.		D	x	P	min.	max.	
M2	x	0,25	1,729	1,774	1,75	M20	x	1,0	18,917	19,153	19
M2,2	x	0,25	1,929	1,974	1,95	M20	x	1,5	18,376	18,676	18,5
M2,5	x	0,35	2,121	2,221	2,15	M20	x	2,0	17,835	18,210	18
M3	x	0,35	2,621	2,721	2,65	M24	x	1,5	22,376	22,676	22,5
M3,5	x	0,35	3,121	3,221	3,15	M30	x	2,0	27,835	28,210	28
M4	x	0,35	3,621	3,721	3,65	M36	x	1,5	34,376	34,676	34,5
M4	x	0,5	3,459	3,599	3,5	M36	x	3,0	32,752	33,252	33
M4,5	x	0,5	3,959	4,099	4	M42	x	2,0	39,835	40,210	40
M5	x	0,5	4,459	4,599	4,5	M48	x	1,5	46,376	46,676	46,5
M6	x	0,5	5,459	5,599	5,5	M48	x	3,0	44,752	45,252	45
M6	x	0,75	5,188	5,378	5,2	M48	x	4,0	43,67	44,270	44
M8	x	0,75	7,188	7,378	7,2	M56	x	1,5	54,376	54,676	54,5
M8	x	1,0	6,917	7,153	7	M56	x	2,0	53,835	54,210	54
M10	x	0,75	9,188	9,378	9,2	M56	x	3,0	52,752	53,252	53
M10	x	1,0	8,917	9,153	9	M56	x	4,0	51,670	52,270	52
M10	x	1,25	8,647	8,912	8,8	M64	x	3,0	60,752	61,252	61
M12	x	1,0	10,917	11,153	11	M64	x	4,0	59,670	60,270	60
M12	x	1,5	10,376	10,676	10,5	M72	x	4,0	67,670	68,270	68
M14	x	1,25	12,647	12,912	12,8	M80	x	6,0	73,505	74,305	74
M16	x	1,0	14,917	15,153	15	M95	x	6,0	88,505	89,305	89
M16	x	1,5	14,376	14,676	14,5	M110	x	6,0	103,505	104,305	104

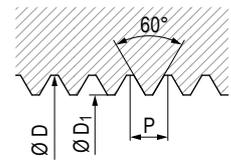


Dimensions in mm; P=Pitch

## Thread former pilot hole diameter

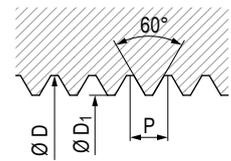
**M** ISO metric coarse threads 6H to DIN 13 and DIN ISO 965-1 ( M1-M1,4 = 5H )

Thread nominal Ø		Ø D <sub>1</sub>		Core hole	Thread nominal Ø		Ø D <sub>1</sub>		Core hole
D	P	min.	max.		D	P	min.	max.	
M1	0,25	0,89		0,9	M6	1	5,51	5,59	5,6
M1,2	0,25	1,09		1,1	M7	1	6,51	6,59	6,6
M1,4	0,3	1,26		1,28	M8	1,25	7,39	7,48	7,45
M1,6	0,35	1,45		1,47	M9	1,25	8,39	8,48	8,45
M1,8	0,35	1,65		1,67	M10	1,5	9,25	9,35	9,35
M2	0,4	1,83	1,86	1,85	M11	1,5	10,25	10,35	10,35
M2,2	0,45	2	2,04	2,03	M12	1,75	11,12	11,25	11,25
M2,5	0,45	2,3	2,34	2,33	M14	2	13	13,15	13,1
M3	0,5	2,77	2,82	2,8	M16	2	15	15,15	15,1
M3,5	0,6	3,23	3,28	3,25	M18	2,5	16,72	16,9	16,85
M4	0,7	3,68	3,73	3,7	M20	2,5	18,72	18,9	18,85
M4,5	0,75	4,15	4,21	4,2	M22	2,5	20,72	20,9	20,85
M5	0,8	4,63	4,68	4,65	M24	3	22,46	22,7	22,65



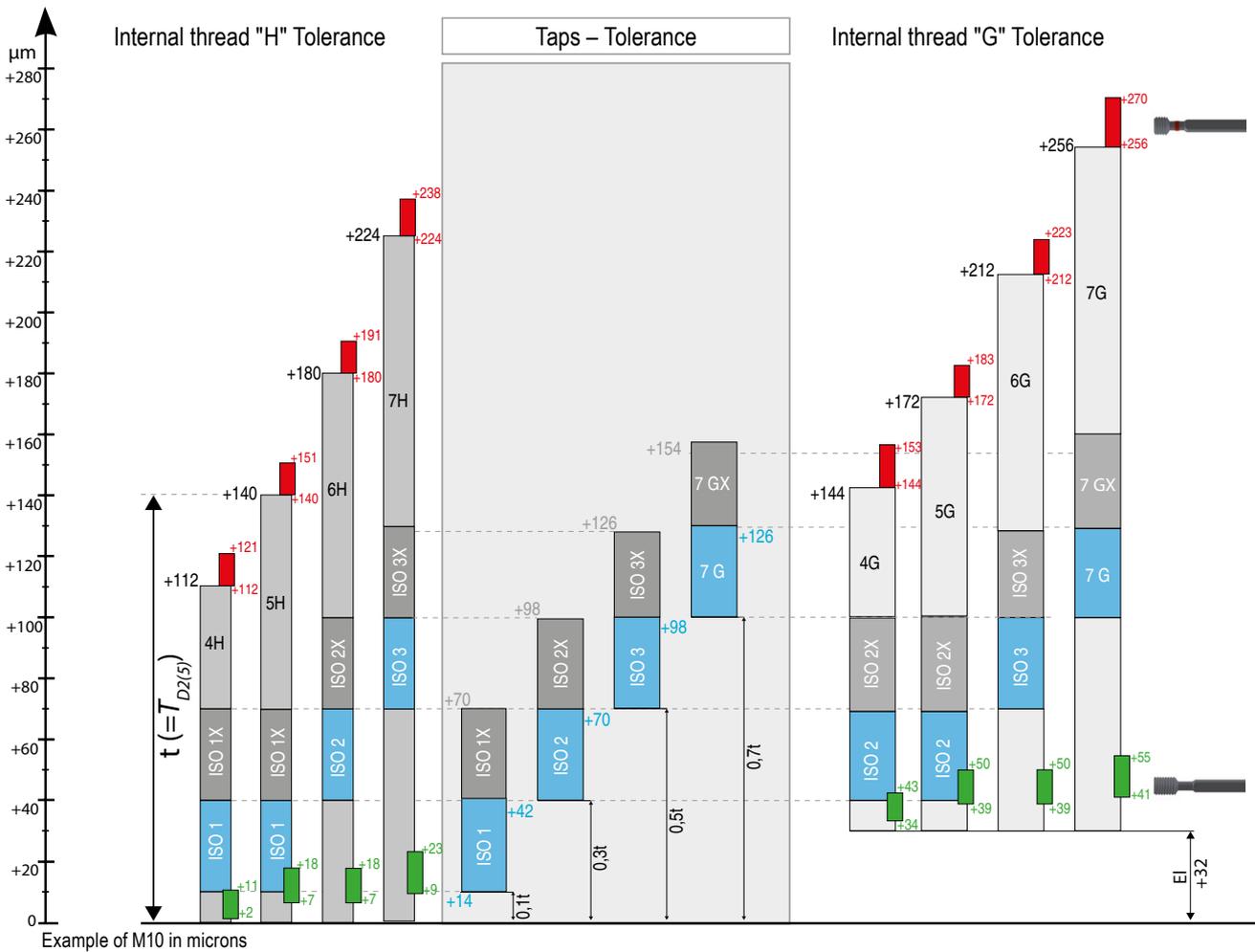
**MF** ISO metric fine threads 6H to DIN 13 and DIN ISO 965-1

Thread nominal Ø			Ø D <sub>1</sub>		Core hole	Thread nominal Ø			Ø D <sub>1</sub>		Core hole
D	x	P	min.	max.		D	x	P	min.	max.	
M2	x	0,25	1,89		1,9	M12	x	1,0	11,52	11,6	11,6
M2,2	x	0,25	2,09		2,1	M12	x	1,25	11,4	11,49	11,45
M2,5	x	0,25	2,39		2,4	M12	x	1,5	11,26	11,36	11,35
M2,5	x	0,35	2,35		2,37	M13	x	0,75	12,66	12,72	12,7
M3	x	0,25	2,89		2,9	M13	x	1,0	12,52	12,6	12,6
M3	x	0,35	2,85		2,88	M13	x	1,5	12,26	12,36	12,35
M3,5	x	0,35	3,35		3,38	M14	x	0,75	13,66	13,72	13,7
M3,5	x	0,5	3,27	3,32	3,3	M14	x	1,0	13,52	13,6	13,6
M4	x	0,35	3,85		3,88	M14	x	1,25	13,4	13,49	13,45
M4	x	0,5	3,77	3,82	3,8	M14	x	1,5	13,26	13,36	13,35
M4,5	x	0,5	4,27	4,32	4,3	M15	x	0,75	14,66	14,72	14,7
M5	x	0,5	4,77	4,82	4,8	M15	x	1,0	14,52	14,6	14,6
M5	x	0,75	4,65	4,71	4,7	M15	x	1,5	14,26	14,36	14,35
M5,5	x	0,5	5,27	5,32	5,3	M16	x	0,75	15,66	15,72	15,7
M6	x	0,5	5,78	5,83	5,8	M16	x	1,0	15,52	15,6	15,6
M6	x	0,75	5,65	5,71	5,7	M16	x	1,5	15,26	15,36	15,35
M7	x	0,5	6,78	6,83	6,8	M18	x	1,0	17,52	17,6	17,6
M7	x	0,75	6,65	6,71	6,7	M18	x	1,5	17,26	17,36	17,35
M8	x	0,5	7,78	7,83	7,8	M18	x	2,0	17	17,15	17,1
M8	x	0,75	7,65	7,71	7,7	M20	x	1,0	19,52	19,6	19,6
M8	x	1,0	7,51	7,59	7,6	M20	x	1,5	19,26	19,36	19,35
M9	x	0,5	8,78	8,83	8,8	M20	x	2,0	19	19,15	19,1
M9	x	0,75	8,65	8,71	8,7	M22	x	1,5	21,26	21,36	21,35
M9	x	1,0	8,51	8,59	8,6	M22	x	2,0	21	21,15	21,1
M10	x	0,5	9,78	9,83	9,8	M24	x	1,5	23,26	23,38	23,35
M10	x	0,75	9,65	9,71	9,7	M24	x	2,0	23,01	23,16	23,1
M10	x	1,0	9,51	9,59	9,6	M25	x	1,5	24,26	24,38	24,35
M10	x	1,25	9,39	9,48	9,45	M26	x	1,5	25,26	25,38	25,35
M11	x	0,75	10,65	10,71	10,7	M27	x	2,0	26,01	26,16	26,1
M11	x	1,0	10,51	10,59	10,6	M28	x	1,5	27,26	27,38	27,35
M12	x	0,75	11,66	11,72	11,7	M30	x	1,5	29,26	29,38	29,35
						M30	x	2,0	29,01	29,16	29,1



Dimensions in mm; P=Pitch

# Thread tolerances and recommended manufacturing tolerances

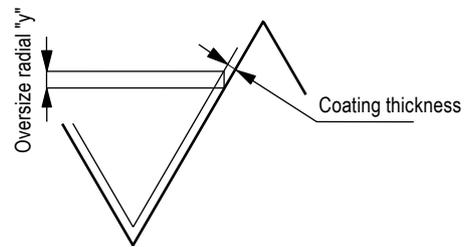


6

Workpieces to be plated require oversize taps.  
The interference depends on the coating thickness and the flank angle.

at

60° Flank angle	Oversize = 4 x coating thickness
55° Flank angle	Oversize = 4.331 x coating thickness
30° Flank angle	Oversize = 7.727 x coating thickness

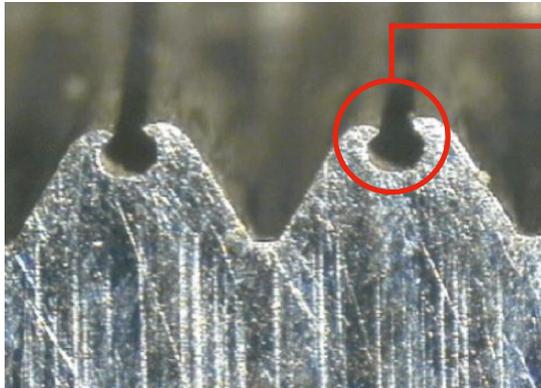


Application class of the tap Designation according to		Tolerance class of the internal thread to be cut					
DIN	ISO	4H	5H	6H	7H	8H	
4H	ISO1	4G	5G	6H	7H	8H	
6H	ISO2	-	(4E)	6G	7H	8H	
6G	ISO3	-	-	(6E)	7G	8G	
7G	-	-	-	-	-	-	

**1** For special applications, e.g. abrasive cast iron materials or plastics other dimensions have to be chosen which are determined on previous experience. In such cases an „X“ is added to the short designation of the tolerance, e.g. ISO 2X, however the tolerance zone assignment may be limited (6HX for tolerance zone 6H and 5G). In addition it should be taken into account that the dimensions of the internal thread do not only depend on the dimensions of the tap but on the material to be machined and all production conditions. For first taps and intermediate taps no thread dimensions are determined.

## Thread formers

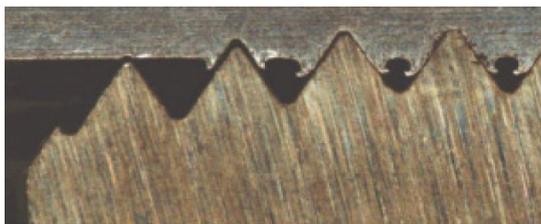
DuoForm thread forming taps for cold-formable materials up to 1400 N/mm<sup>2</sup> or at least 5 % elongation. The thread is produced by plastic deformation. The molded thread has very high strength.



### » Important

Prior to forming a thread, you should ensure that a molded thread is acceptable. In certain sectors, the forming of a thread is **not** permitted. Dirt or bacteria can settle in the formed crown.

## Incremental pressure forming



← Workpiece

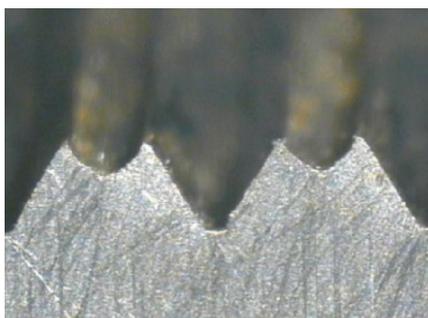
← Thread formers



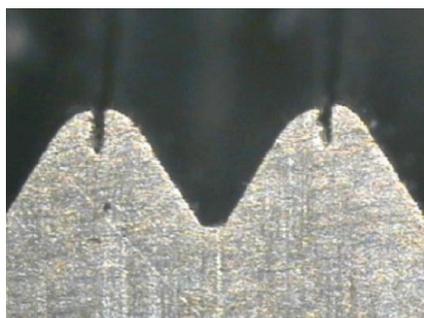
The thread profile is pressed gradually into the material via the start (leading edge) of the tap.

## Properties

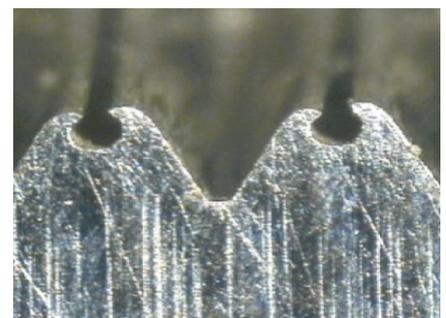
- ▲ One type can be used in different materials
- ▲ For through and blind holes
- ▲ Very good thread surface quality
- ▲ High static and dynamic strength thread
- ▲ Secure machining of deep and counterbored threads
- ▲ Short machining times
- ▲ No chip problems
- ▲ No swarf
- ▲ High process security
- ▲ HSS-E and HSS-PM taps for materials up to 33 HRC with a minimum elongation of 5 %



Underformed – core hole too large



Overformed – core hole too small



Perfect form – Core hole correct

## Troubleshooting

### Poor tool life

#### Cause

- ▲ Overload fractures of the cutting edge on the lead
- ▲ Hardness or tool material not suitable for the application
- ▲ Core hole too small, or work hardened
- ▲ Insufficient lubrication or incorrect application parameters

#### Remedy

- ▲ A longer lead or more flutes for the same lead length, giving a greater number of cutting teeth
- ▲ In reground tools the hardness can be reduced, apply correct parameters for regrinding
- ▲ Increase frequency of changes or regrinding of the drill
- ▲ Use the correct operating parameters for drilling
- ▲ Select the correct lubricant and ensure adequate supply

### Axial thread error

#### Cause

- ▲ Selected geometry is not suitable
- ▲ Spindle speed is wrong compared with feed (synchronisation error)
- ▲ Blind hole taps are used with high feed pressure
- ▲ Through hole taps are used with low feed pressure

#### Remedy

- ▲ Check programming and pitch control or machine synchronisation
- ▲ Use tapping chuck with length compensation
- ▲ Increase retraction feed pressure
- ▲ Increase feed pressure

### Oversize thread

#### Cause

- ▲ Thread tolerances of tool and thread gauge do not match
- ▲ Burred tool edges after regrinding
- ▲ Cold pressure welding

#### Remedy

- ▲ Check the correct tolerances for tool and thread gauge
- ▲ Carefully deburr
- ▲ Use appropriate (positive) geometry
- ▲ Reduce cutting speed
- ▲ Use different surface treatment or coating
- ▲ Use tapping chuck with length compensation
- ▲ Use appropriate lubricant

### Broken tool

#### Cause

- ▲ Tool is worn
- ▲ Tool has hit the bottom of the hole
- ▲ Weld deposits
- ▲ Core hole too small
- ▲ Chip trapping
- ▲ Incorrect cutting speed
- ▲ Chip trapping in the flute
- ▲ Insufficient cooling / lubrication

#### Remedy

- ▲ Employ set taps
- ▲ Use a tool with lower helix
- ▲ Use tools with a shorter / longer lead
- ▲ Check the pre-drilling depth and the thread depth
- ▲ Drill core hole deeper
- ▲ Correct cutting speed
- ▲ Use a different coating or surface treatment
- ▲ Use tool holder with length compensation
- ▲ Use suitable lubricant
- ▲ Use correct core hole
- ▲ Change geometry and / or flute type
- ▲ Note chip shape and chip formation

## Coatings

vap.	<ul style="list-style-type: none"> <li>▲ Vaporised</li> <li>▲ Vaporisation (vapour-deposition) prevents cold welds from forming on the tool and increases the surface hardness and thus the wear resistance</li> </ul>	Ti200	<ul style="list-style-type: none"> <li>▲ TiN coating</li> <li>▲ Well suited for high cutting speeds during thread forming</li> <li>▲ Maximum application temperature: 450 °C</li> </ul>
nitr.	<ul style="list-style-type: none"> <li>▲ Nitrided</li> <li>▲ Nitriding increases wear resistance and offers low friction properties</li> </ul>	OSM	<ul style="list-style-type: none"> <li>▲ Hard material layer and anti-friction layer</li> <li>▲ For use in high-strength steels</li> </ul>
vap. + nitr.	<ul style="list-style-type: none"> <li>▲ Vaporized + Nitrated</li> <li>▲ Combination of increased surface hardness and lubricant carrier</li> </ul>	CH	<ul style="list-style-type: none"> <li>▲ Amorphous carbon layer</li> <li>▲ For use in non-ferrous metals or aluminum</li> <li>▲ Reduces the material adhesion</li> </ul>
TiN	<ul style="list-style-type: none"> <li>▲ TiN coating</li> <li>▲ Maximum application temperature: 450 °C</li> </ul>	HCr	<ul style="list-style-type: none"> <li>▲ Hard chromed</li> <li>▲ For use in non-ferrous metals or aluminum</li> <li>▲ Very low surface roughness</li> </ul>
TiN GS	<ul style="list-style-type: none"> <li>▲ Titanium nitride low friction layer</li> <li>▲ High wear resistance with low friction properties</li> <li>▲ Maximum application temperature: 450 °C</li> </ul>	CrN	<ul style="list-style-type: none"> <li>▲ Chromium-nitrogen coating</li> <li>▲ Very wear-resistant coating</li> <li>▲ Especially suitable for use in aluminum, but also for P, M and S materials</li> </ul>
TiCN	<ul style="list-style-type: none"> <li>▲ TiCN multilayer coating</li> <li>▲ Maximum application temperature: 450 °C</li> </ul>	AlTiN- HD	<ul style="list-style-type: none"> <li>▲ AlTiN-based nanolayer hard material coating</li> <li>▲ Maximum application temperature: 500 °C</li> </ul>
DLC	<ul style="list-style-type: none"> <li>▲ Diamond-like carbon coating</li> <li>▲ Specifically for machining non-ferrous metals</li> <li>▲ Maximum application temperature: 400 °C</li> </ul>		

