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Threading

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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.

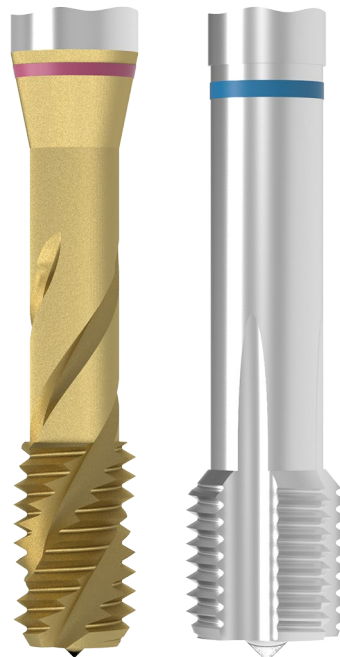
## WNT \ Standard




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




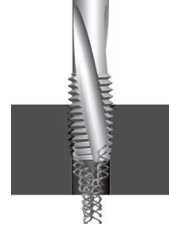



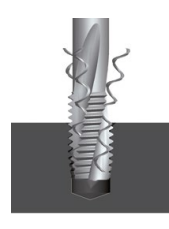

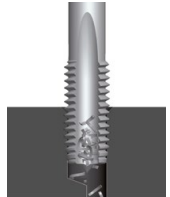




<b>Coloured ring</b> An explanation of the coloured rings can be found on → <b>Page 5</b>
HSS-E      Tool Material An explanation of the cutting materials can be found on → <b>Page 6</b>
FHA 42°      Helix angle
≤ 1100 N/mm <sup>2</sup> Tensile strength
 Through hole thread
 Blind hole thread
 Through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

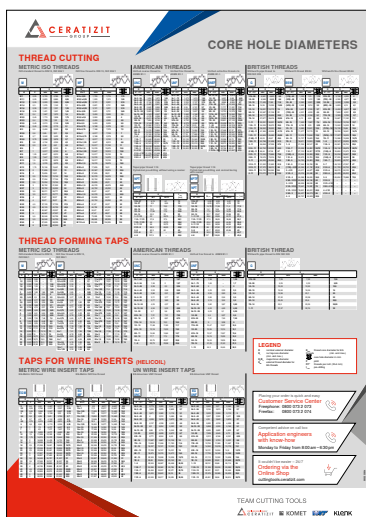
 These thread types, as well as hand taps and dies, are available in the online shop.

## 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>MMB</b>	Machine taps
<b>AZ</b>	with intermittent teeth, reduces friction	<b>NC</b>	for synchronised CNC machining with minimum length compensation chuck
<b>CNC</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>DRY</b>	for dry machining or minimum quantity lubrication (MMS)	<b>R<sub>z</sub>=1</b>	Lapped Dies
<b>EL</b>	extra long, with double overall length	<b>S</b>	with back taper, for deep threads
<b>ES</b>	extra short	<b>SN</b>	Thread formers with lubrication grooves
<b>HML</b>	with soldered-in carbide strips for a higher cutting speed	<b>TS</b>	for high-speed machining, up to 100 m/min.
<b>LH</b>	for left hand threads		

# Toolfinder

		Mechining	Application range	WNT \ Standard				
				M	MF	G	UNC	UNF
Thread formers								
UNI	for cold-formable materials		UNI	54	72			
HSS taps								
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](https://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	

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>							
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	C 2-3	ISO 2X 6HX	HSS-E	■		71	
<b>EC HML</b>	DuoForm	C 2-3	ISO 2X 6HX	HSS-E	■	☑	71	
<b>UNI SN</b>		C 2-3	ISO 2X 6HX	HSS-E	■			72
	<b>Dies</b>							
<b>FE</b>		1,5-2	ISO 6g	HSS	□		22 711...	
<b>VA</b>		2	ISO 6g	HSS-E	□		22 714...	

<b>G</b>	<b>Whitworth pipe thread</b>							
	<b>UNI - Through hole thread</b>							
<b>UNI</b>	TruTap	B 4-5	ISO 228	HSS-E	■		73	
<b>UNI</b>		B 4-5	ISO 228	HSS-E	■			74
	<b>UNI - Blind hole thread</b>							
<b>UNI</b>	CavTap	C 2-3	ISO 228	HSS-E	■		75	
<b>UNI</b>	CavTap	E 1,5-2	ISO 228, ISO 228 +0,05	HSS-E	■		75	
<b>UNI CNC</b>	CavTap	E 1,5-2	ISO 228	HSS-E	■		76	
<b>UNI</b>		C 2-3	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>		B 4-5	ISO 228	HSS-E	□		23 260...	
	<b>P - Blind hole thread</b>							
<b>ST</b>	CavTap	C 2-3	ISO 228	HSS-E	□		76	
<b>ST</b>	CavTap SL	C 2-3	ISO 228	HSS-E	□		22 353...	
<b>FE</b>		C 2-3	ISO 228	HSS-E	□		23 261...	
	<b>P - Through hole thread and blind hole thread</b>							
<b>HR</b>	DuoTap	C 2-3	ISO 228X	HSS-E	■		78	
	<b>M - Through hole thread</b>							
<b>VA</b>	TruTap	B 4-5	ISO 228	HSS-E	■		73	
	<b>M - Blind hole thread</b>							
<b>VA</b>	CavTap	E 1,5-2	ISO 228	HSS-E	■		76	
	<b>K - Through hole thread and blind hole thread</b>							
<b>GG</b>	DuoTap	C 2-3	ISO 228X	HSS-E	■		22 348...	
	<b>Machine thread formers</b>							
<b>EC SN</b>	DuoForm	C 2-3	ISO 228	HSS-E	■		79	
	<b>Dies</b>							
<b>FE</b>		1,5-2	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 checked="" 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 <input checked="" type="checkbox"/> uncoated <input type="checkbox"/>	Coolant	WNT \ Performance	WNT \ Standard
<b>UNF</b>	<b>Unified fine thread</b>							
	<b>S – Blind hole thread</b>							
<b>Ti</b>	CavTap SL	2-3	2BX 3BX	HSS-PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>91</b>	
	<b>Thread formers</b>							
<b>EC SN</b>	DuoForm	2-3	2BX	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>93</b>	

<b>EG UNF</b>	<b>Unified Fine Thread for wire inserts</b>							
	<b>UNI – Through hole thread</b>							
<b>UNI</b>	TruTap	4-5	2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>94</b>	
	<b>UNI – Blind hole thread</b>							
<b>UNI</b>	CavTap	1,5-2	2B	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>95</b>	

<b>UNJF</b>	<b>Unified extra-fine thread</b>							
	<b>S – Through hole thread</b>							
<b>Ti</b>	TruTap DL	4-5	3BX	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 167...	
	<b>S – Blind hole thread</b>							
<b>Ti</b>	CavTap SL	2-3	3BX	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 168...	

<b>BSW</b>	<b>Whitworth thread</b>							
	<b>UNI – Through hole thread</b>							
<b>UNI</b>	TruTap	4-5	med.	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 626..., 22 627...	
	<b>UNI – Blind hole thread</b>							
<b>UNI</b>	CavTap	2-3	med.	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 628..., 22 629...	

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>NPT</b>	<b>American taper pipe thread</b>							
	<b>P – Through hole thread and blind hole thread</b>							
<b>ST ES</b>	DuoTap	2-3		HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>98</b>	
<b>VG</b>	DuoTap	2-3		HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>97</b>	
<b>VG AZ</b>	DuoTap	2-3		HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 377..., 22 378...	
	<b>M – Blind hole thread</b>							
<b>VA</b>	CavTap	2-3		HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>96</b>	
<b>VA</b>	CavTap	1,5-2		HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>96</b>	

<b>NPTF</b>	<b>American taper pipe thread</b>							
	<b>P – Through hole thread and blind hole thread</b>							
<b>ST</b>	DuoTap	2-3		HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 382...	
<b>VG</b>	DuoTap	2-3		HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 380...	
<b>ST ES</b>	DuoTap	2-3		HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 367...	

<b>Rp</b>	<b>Cylindrical Whitworth thread</b>							
	<b>P – Through hole thread and blind hole thread</b>							
<b>ST</b>	DuoTap	2-3	X	HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 381...	

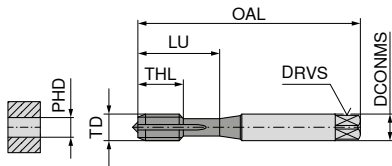
<b>Rc</b>	<b>Tapered Whitworth thread</b>							
	<b>P – Through hole thread and blind hole thread</b>							
<b>ST</b>	DuoTap	2-3		HSS-E	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22 389...	

## Accessories

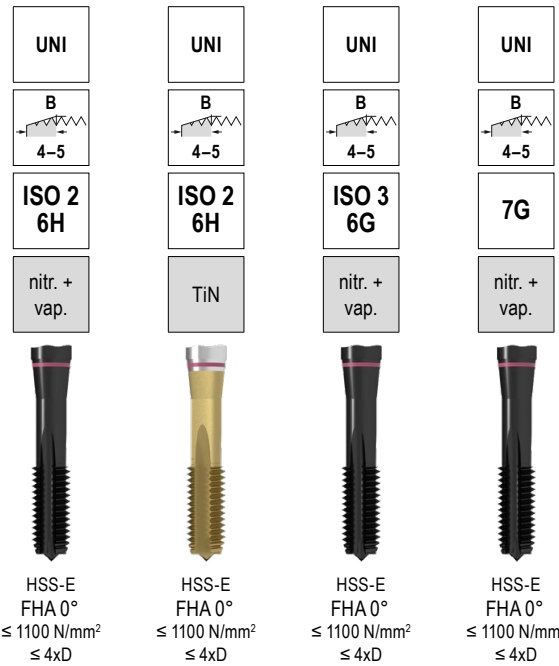
Shank extensions for taps	<b>99</b>
Tapping Oil, Chlorine Free	22 950...
Thread-cutting paste, chlorine-free	

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# Through hole – Machine taps, right hand



DIN 371 with reinforced shank



	22 501 ...	22 503 ...	22 508 ...	22 510 ...
	£ U0	£ U0	£ U0	£ U0
M1	140.82			
M1,2	135.60			
M1,4	120.67			
M1,6	85.57			
M1,7	131.07			
M1,8	181.71			
M2		61.50		75.70
M2	62.96			
M2,2	65.21			
M2,5	61.43			
M3	40.83			
M3,5	50.32			
M4	36.01			
M5	37.75			
M6	37.75			
M7	60.84			
M8	44.70			
M10	53.61			
M12	74.36			
			60.40	72.98
			48.86	56.22
				56.22
			51.74	57.83
			49.79	59.22
				65.91
			57.12	79.97
			69.57	
P	12	15	12	12
M	7	9	7	7
K	12	18	12	12
N		12		
S				
H				
O				

1) Tol. ISO 14H ≤ M1.4

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

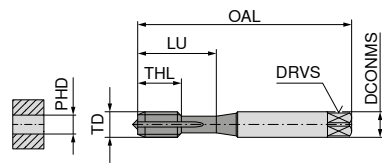
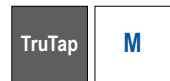
DIN 376 can be found on the next page



# Through hole – Machine taps, right hand

▲ 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



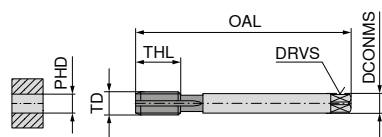
HSS-E  
FHA 0°  
≤ 1100 N/mm²  
≤ 4xD



HSS-E  
FHA 0°  
≤ 1100 N/mm²  
≤ 4xD

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 ...
£ U0	£ U0	£ U0	£ U0
030	58.67 030		
040	61.89 040	69.51 040	75.19 040
050	90.59 050	70.65 050	78.17 050
060	113.00 060	88.63 060	99.86 060
080	124.63 080		
100	150.35 100	96.76 080	109.52 080
120	184.60 120	119.19 100	130.45 100
160	259.13 160		



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

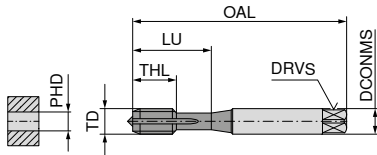
22 543 ...	22 593 ...
£ U0	£ U0
120	157.13 120
140	
160	
200	

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.)

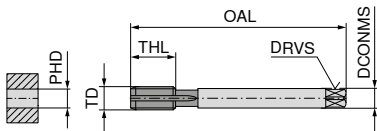
# Through hole – Machine taps

▲ 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

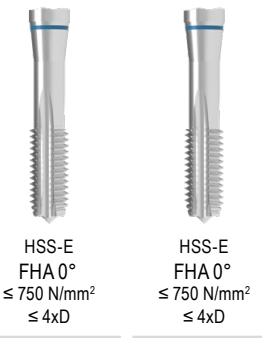
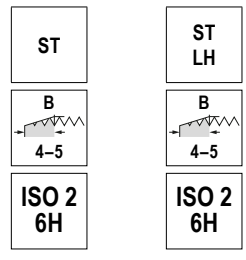


DIN 376 with reduced shank

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

	22 020 ...	22 127 ...
	£ U0	£ U0
M2	42.03 020	
M2,3	47.22 023	
M2,5	42.61 025	
M2,6	47.22 026	
M3	34.84 030	62.53 030
M3,5	37.54 035	
M4	35.61 040	64.38 040
M5	37.54 050	66.83 050
M6	37.54 060	66.83 060
M8	44.48 080	75.70 080
M10	52.23 100	96.76 100
P	12	12
M		
K	12	12
N	12	22
S		
H		
O		

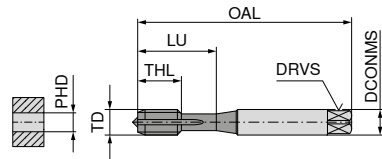
Cutting speed  $v_c$  (m/min.)



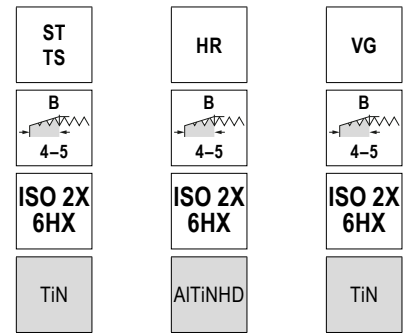


# Through hole – Machine taps, right hand

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



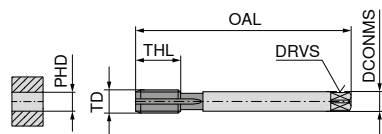
DIN 371 with reinforced shank



HSS-E FHA 0° ≤ 1100 N/mm <sup>2</sup> ≤ 4xD	HSS-PM FHA 0° ≤ 1400 N/mm <sup>2</sup> ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm <sup>2</sup> ≤ 4xD
--	---	--

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

22 092 ...	22 468 ...	22 120 ...
£ U0	£ U0	£ U0
82.03	92.51	72.98
82.03	92.51	72.98
64.38	60.16	54.40
75.00	62.77	58.85
78.79	64.78	61.37
101.99	73.41	75.10
107.99	80.65	79.33
146.29	113.59	113.41



DIN 376 with reduced shank

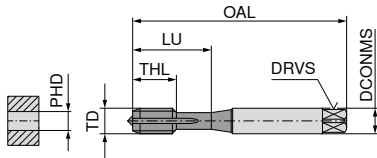
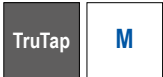
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
M12	1.75	110	9	7	10.2	18	4
M16	2.00	110	12	9	14.0	22	4
M20	2.50	140	16	12	17.5	25	4

22 093 ...	22 121 ...
£ U0	£ U0
159.06	134.90
235.53	184.60
338.83	313.89

P	65	8	10
M		8	8
K	65		
N	75	10	22
S		4	
H			
O			

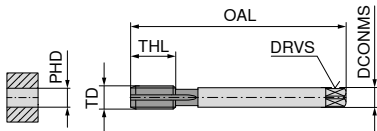
Cutting speed v<sub>c</sub> (m/min.)

# 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

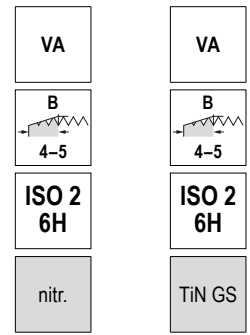


DIN 376 with reduced shank

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

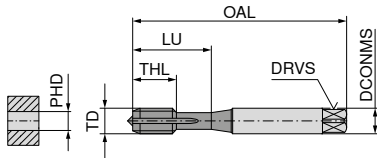
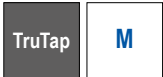
P	8	10
M	6	8
K		
N		
S		
H		
O		

Cutting speed  $v_c$  (m/min.)



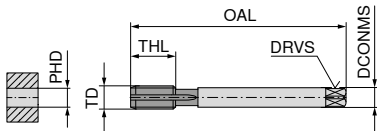
22 056 ...	22 038 ...
£ U0	£ U0
48.56	92.49
46.69	76.07
38.38	59.82
53.82	
40.26	64.65
42.61	66.00
44.48	83.21
48.42	90.59
59.23	112.22

# 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	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



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

	22 081 ...	22 075 ...	22 077 ...
	£ U0	£ U0	£ U0
	020	016	
	030	020	
	040	025	
	050	030	113.52 030
	060	035	
	080	040	115.74 040
		050	118.70 050
		060	118.70 060
		080	136.76 080
		100	160.34 100
P	7	5	7
M	7	5	7
K			
N			
S	5	3	5
H			
O			

Cutting speed  $v_c$  (m/min.)

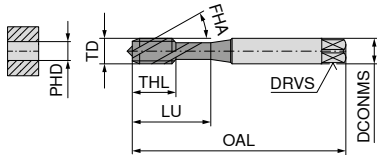
Ti	Ti	Ti
B 4-5	B 4-5	B 4-5
ISO 1X 4HX	ISO 2X 6HX	ISO 2X 6HX
TiN	vap.	TiN
HSS-PM FHA 0° ≤ 44 HRC ≤ 4xD	HSS-PM FHA 0° ≤ 1400 N/mm² ≤ 4xD	HSS-PM FHA 0° ≤ 44 HRC ≤ 4xD

22 081 ...	22 075 ...	22 077 ...
£ U0	£ U0	£ U0
187.44	125.90 016	
113.52	160.83 020	
115.74	153.16 025	
118.70	106.90 030	113.52 030
118.70	79.25 035	
136.76	115.35 040	115.74 040
	113.52 050	118.70 050
	113.52 060	118.70 060
	131.95 080	136.76 080
	159.05 100	160.34 100

# Through hole – Machine taps, right hand

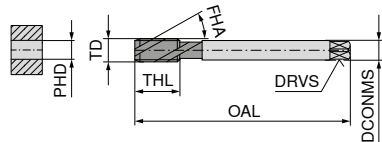
TruTap  
DL

M



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

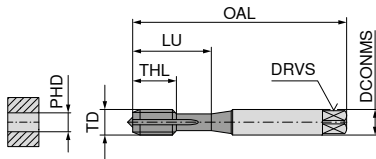
	22 159 ...	22 297 ...
	£ U0	£ U0
M3	67.16 030	86.47 030
M4	72.98 040	90.04 040
M5	73.74 050	92.35 050
M6	96.62 060	116.85 060
M8	106.11 080	129.67 080
M10	132.94 100	162.35 100
M12	153.47 120	186.97 120
M16	216.14 160	262.15 160
P	7	
M	7	
K		
N	22	22
S	5	2
H		
O		

Cutting speed  $v_c$  (m/min.)

Ti	Ni
4-5	4-5
ISO 2X 6HX	ISO 2X 6HX
TiCN	TiCN
HSS-E FHA 15° ≤ 1200 N/mm² ≤ 4xD	HSS-E FHA 15° ≤ 1600 N/mm² ≤ 4xD

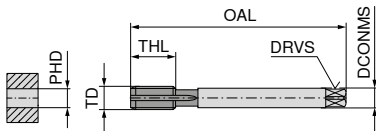
# Through hole – Machine taps, right hand

▲ 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

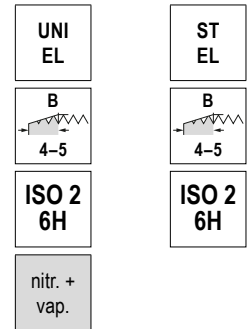


DIN 376 with reduced shank

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.)

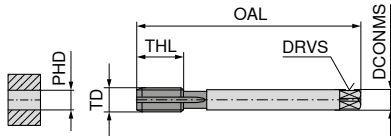


22 514 ...		22 233 ...	
£		£	
U0		U0	
90.18	030	94.07	030
90.18	040	90.04	040
101.00	050	98.25	050
109.91	060	102.82	060
118.06	080	122.74	080



# Through hole – Machine taps, right hand

▲ MMB = Nut taps



DIN 357 with reduced shank



HSS-E  
FHA 0°  
≤ 850 N/mm<sup>2</sup>  
≤ 1xD

6

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	
M4	0.70	90	2.8	2.1	3.3	22	3
M5	0.80	100	3.5	2.7	4.2	24	3
M6	1.00	110	4.5	3.4	5.0	30	3
M8	1.25	125	6.0	4.9	6.8	38	3
M10	1.50	140	7.0	5.5	8.5	45	3
M12	1.75	180	9.0	7.0	10.2	50	3
M16	2.00	200	12.0	9.0	14.0	63	3

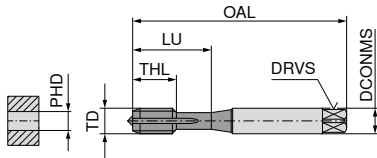
22 098 ...

£	
U0	
67.16	030
67.16	040
70.27	050
70.27	060
86.73	080
98.50	100
132.37	120
189.85	160

P	15
M	
K	
N	
S	
H	
O	

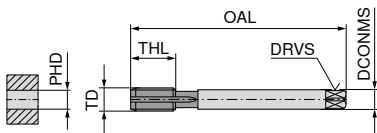
Cutting speed v<sub>c</sub> (m/min.)

# Through hole – Machine taps, right hand



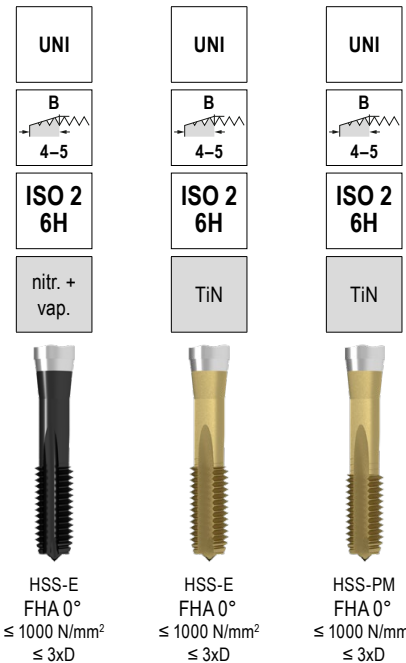
DIN 371 with reinforced shank

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	13	3	
M5	0.80	70	3.5	2.7	15	3	
M6	1.00	80	4.5	3.4	17	3	
M8	1.25	90	6.0	4.9	20	3	
M10	1.50	100	7.0	5.5	22	3	
M12	1.75	110	9.0	7.0	24	3	
M14	2.00	110	11.0	9.0	20	4	
M14	2.00	110	11.0	9.0	26	3	
M16	2.00	110	12.0	9.0	27	3	
M18	2.50	125	14.0	11.0	25	4	
M18	2.50	125	14.0	11.0	30	3	
M20	2.50	140	16.0	12.0	32	3	
M22	2.50	140	18.0	14.5	32	3	
M24	3.00	160	18.0	14.5	34	3	
M27	3.00	160	20.0	16.0	36	3	
M30	3.50	180	22.0	18.0	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



23 110 ...	23 112 ...	23 010 ...
£ T9	£ T9	£ T9
		12.23 020
36.39 020	42.61 020	
35.12 025	41.24 025	
27.71 030	34.55 030	15.37 030
28.31 040	39.31 040	14.01 040
28.87 050	39.67 050	15.67 050
29.06 060	50.14 060	18.79 060
33.24 080	53.82 080	20.85 080
40.26 100	73.56 100	27.59 100

23 111 ...	23 113 ...	23 021 ...
£ T9	£ T9	£ T9
10.90 030		
10.71 040		
10.71 050		
11.17 060		
13.12 080		
15.21 100		
18.20 120		
	81.29 120	32.95 120
		49.94 140
26.39 140	52.76 14000	
26.96 160	106.47 160	46.38 160
		81.23 180
	83.72 18000	
42.93 200	189.08 200	83.93 200
	123.99 22000	
	200.87 240	
	155.04 27000	
	173.90 30000	
	228.11 33000	
	279.39 36000	

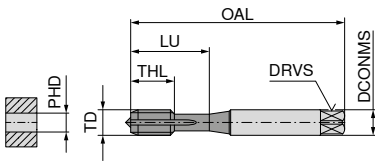
P	12	15	15
M	7	9	9
K	12	18	18
N		12	12
S			
H			
O			

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

# Through hole – Machine taps, right hand

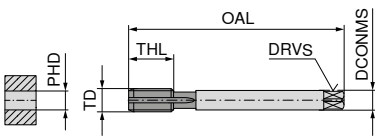
▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

▲ 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

UNI NC	UNI NCW	FE	FE-HF
B 4-5	B 4-5	B 4-5	B 4-5
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
TiN GS	TiCN		TiCN



HSS-E FH A 0° ≤ 1000 N/mm² ≤ 3xD	HSS-PM FH A 0° ≤ 1000 N/mm² ≤ 3xD	HSS-E FH A 0° ≤ 850 N/mm² ≤ 3xD	HSS-E FH A 0° ≤ 1100 N/mm² ≤ 3xD
---	--	--	---

23 114 ...	23 116 ...	23 212 ...	23 310 ...
£ T9	£ T9	£ T9	£ T9
		36.98 016	
		24.49 020	
		21.29 025	
36.98 030		16.88 030	34.84 030
	44.14 030		
		18.79 035	
39.11 040		16.88 040	36.47 040
	50.54 040		
	50.32 050		
40.26 050		16.93 050	37.54 050
	50.32 060		
57.92 060		16.93 060	50.32 060
	63.60 080		
62.53 080		22.03 080	54.31 080
	76.90 100		
78.56 100		26.40 100	68.16 100

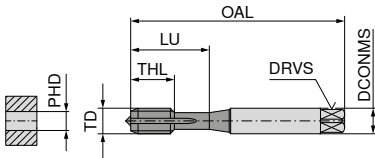
23 115 ...	23 117 ...	23 213 ...	23 311 ...
£ T9	£ T9	£ T9	£ T9
90.59 120		35.61 120	80.52 120
	97.55 120		
		43.17 140	
	192.40 160		
120.54 160		54.20 160	111.67 160
223.51 200		84.59 200	197.20 200

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

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

# Through hole – Machine taps, right hand

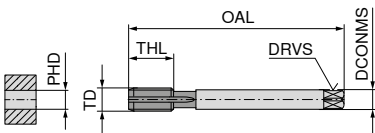
M



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/mm² ≤ 3xD	HSS-PM FHA 0° ≤ 1200 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1200 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 500 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 500 N/mm² ≤ 3xD

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	23 412 ...		23 450 ...		23 410 ...		23 610 ...		23 612 ...	
									£ T9		£ T9		£ T9		£ T9		£ T9	
M2	0.40	45	2.8	2.1	1.60	7	12	2	43.61	020			27.48	020				
M2,5	0.45	50	2.8	2.1	2.05	9	14	2	36.90	025			35.12	025				
M3	0.50	56	3.5	2.7	2.50	11	18	3	34.55	030	14.32	030	18.43	030	16.88	030	31.75	030
M4	0.70	63	4.5	3.4	3.30	13	21	3	39.31	040	14.46	040	18.43	040	16.88	040	32.91	040
M5	0.80	70	6.0	4.9	4.20	15	25	3	39.67	050	15.67	050	19.18	050	16.93	050	33.66	050
M6	1.00	80	6.0	4.9	5.00	17	30	3	51.67	060	15.79	060	19.18	060	16.93	060	33.66	060
M8	1.25	90	8.0	6.2	6.80	20	35	3	55.43	080	17.75	080	24.40	080	22.03	080	37.81	080
M10	1.50	100	10.0	8.0	8.50	22	39	3	75.77	100	20.13	100	29.41	100	26.40	100	47.22	100



DIN 376 with reduced shank

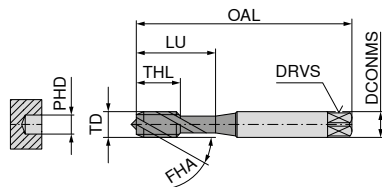
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	23 413 ...		23 451 ...		23 411 ...	
								£ T9		£ T9		£ T9	
M12	1.75	110	9	7.0	10.2	24	3	85.35	120	35.94	120	39.31	120
M14	2.00	110	11	9.0	12.0	26	3			47.56	140		
M16	2.00	110	12	9.0	14.0	27	3	106.47	160	50.26	160	60.01	160
M20	2.50	140	16	12.0	17.5	32	3	185.38	200	75.13	200	91.33	200
M24	3.00	160	18	14.5	21.0	34	3					120.78	240

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

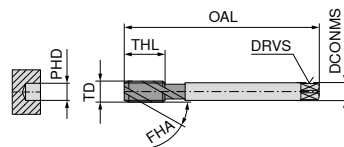
Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand



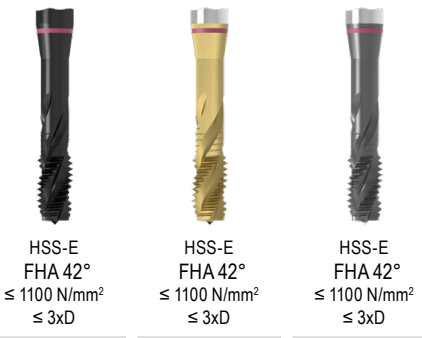
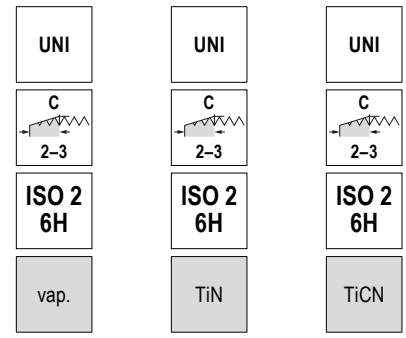
DIN 371 with reinforced shank

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



22 518 ...		22 520 ...		22 522 ...	
£		£		£	
U0		U0		U0	
49.12	020	71.83	020		
46.07	025				
42.03	030	51.29	030	50.91	030
42.79	040	54.79	040	54.79	040
42.72	050	56.13	050	55.72	050
44.48	060	66.00	060	66.00	060
50.53	080	72.98	080	72.52	080
61.92	100	87.31	100	87.31	100

22 519 ...		22 521 ...	
£		£	
U0		U0	
77.62	120	101.57	120
99.47	140	198.18	140
109.52	160	150.35	160
158.30	180	311.39	180
164.11	200	255.44	200
235.53	220	458.04	220
207.60	240	398.64	240
350.07	300		
687.91	330		
569.30	360		

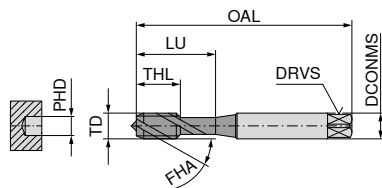
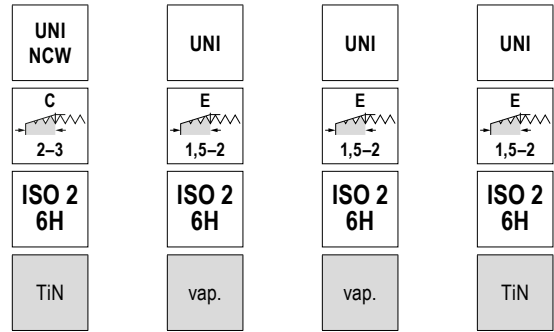
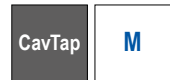
P	12	15	15
M	7	9	9
K	12	18	18
N		12	12
S			
H			
O			

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

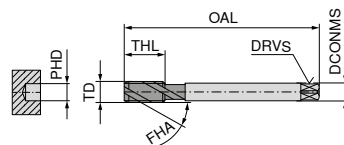


DIN 371 with reinforced shank



TD 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
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 ...
£ U0	£ U0	£ U0	£ U0
030	42.98		50.32
040	87.31	43.93	54.79
050	94.85	45.11	56.13
060	96.62	45.69	66.00
080	119.81	52.23	72.98
100	136.03	63.67	87.31
	165.86	92.09	



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	7.0	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 ...
£ U0	£ U0	£ U0	£ U0
120	196.81	79.57	103.55
160	269.00	150.35	
180		113.00	
200		153.66	150.35
220		239.18	255.44
240		168.72	
		328.54	
		286.62	

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

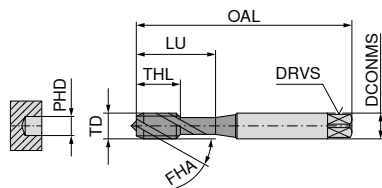
Cutting speed v<sub>c</sub> (m/min.)

# 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



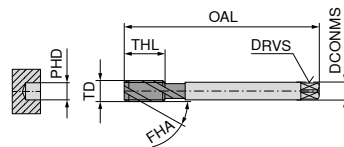
DIN 371 with reinforced shank



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 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

22 416 ...	22 544 ...	22 546 ...	22 594 ...
£ U0	£ U0	£ U0	£ U0
77.69 030	68.29 030		81.88 030
81.29 040	69.69 040		83.21 040
83.58 050	71.41 050	101.57 050	86.30 050
101.00 060	74.89 060	102.89 060	92.88 060
112.22 080	94.42 080	132.76 080	113.41 080
139.04 100	107.78 100	153.47 100	127.32 100



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	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

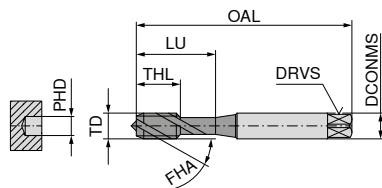
22 417 ...	22 545 ...	22 595 ...
£ U0	£ U0	£ U0
163.68 120		
	144.77 120	172.06 120
233.69 140		
	174.33 140	203.01 140
455.21 160		
	193.12 160	224.30 160
390.15 200		
	277.48 200	321.45 200

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.)

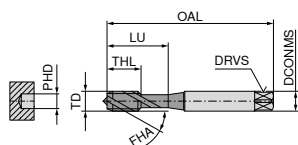
# Blind hole – Machine taps, right hand

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



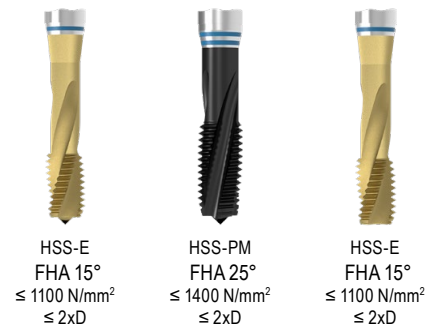
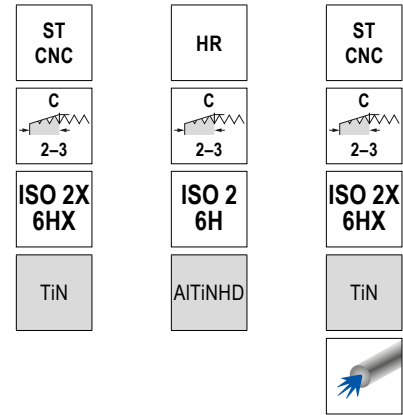
DIN 371 with reinforced shank

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

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



22 328 ...	22 469 ...	22 443 ...
£ U0	£ U0	£ U0
66.73	030	
69.57	040	
72.36	050	106.36 050
89.49	060	123.78 060
101.00	080	135.54 080
123.78	100	164.67 100
		80.09 10000
		95.61 12000

## 22 329 ...

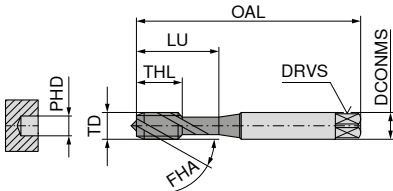
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	£ U0
mm	mm	mm	mm	mm	mm	mm		
M12	1.75	110	9	7	10.2	18	3	144.94 120
M16	2.00	110	12	9	14.0	22	3	209.37 160
M20	2.50	140	16	12	17.5	25	3	345.47 200

P	12	8	12
M	8	8	8
K	20		20
N	22	10	22
S		4	
H			
O			

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

6

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

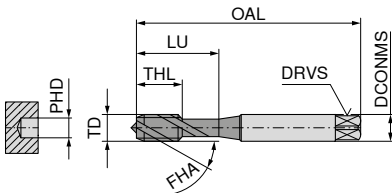
22 082 ...		22 084 ...	
£		£	
U0		U0	
47.05	020	68.16	020
44.65	025		
39.49	030	47.99	030
39.49	040	51.10	040
40.26	050	51.69	050
42.03	060	63.47	060
49.92	080	69.30	080
57.35	100	95.32	100

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

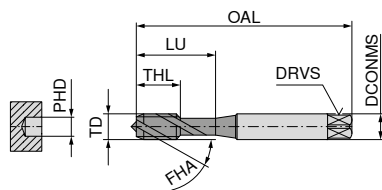
HSS-PM  
FHA 42°  
≤ 1400 N/mm<sup>2</sup>  
≤ 3xD

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 ...	
£		£	
U0		U0	
46.07	030	57.92	030
43.17	040	57.92	040
44.48	050	61.71	050
44.65	060	64.65	060
53.55	080	80.12	080
64.05	100	91.53	100
P	6		8
M	6		8
K			
N	8		12
S			
H			
O			

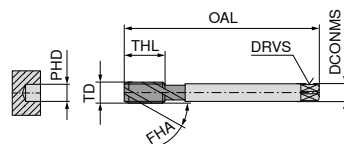
Cutting speed v<sub>c</sub> (m/min.)

# 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

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

22 090 ...	22 042 ...	22 040 ...
£ U0	£ U0	£ U0
		119.81 016
73.83 020		66.57 020
59.44 025		
		63.79 025
44.48 030		69.69 030
46.07 040		69.30 040
46.65 050	102.89 050	72.52 050
46.53 060	106.05 060	75.70 060
54.31 080	133.74 080	95.57 080
66.37 100	155.21 100	109.16 100

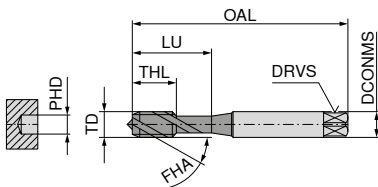
22 091 ...	22 041 ...
£ U0	£ U0
82.05 120	147.67 120
120.78 140	177.25 140
116.31 160	196.81 160
173.78 200	282.14 200
372.66 220	
220.60 240	
466.74 300	

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

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

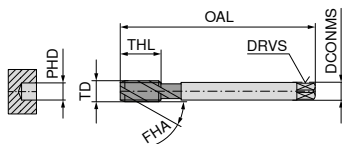


# Blind hole – Machine taps, right hand



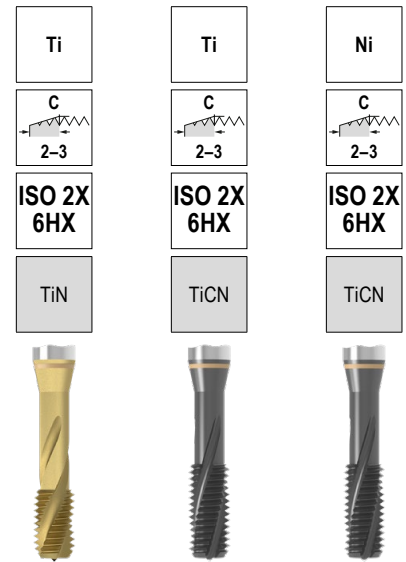
DIN 371 with reinforced shank

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



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 ...	
£ U0	£ U0	£ U0	
64.38	030	90.04	030
67.16	040	71.83	040
67.72	050	72.39	050
73.14	060	96.76	060
79.95	080	105.28	080
111.45	100	129.67	100
125.78	120	134.36	080
		168.27	100

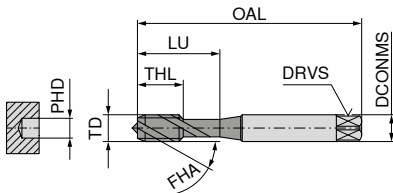
	22 164 ...	22 425 ...		
	£ U0	£ U0		
M12	147.07	120	195.07	120
M14	206.30	160	286.61	140
M16	354.12	200	268.24	160
M20	408.09	240	467.34	200
P	7	7		
M	7	7		
K				
N		22	22	
S	5	5	2	
H				
O				

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 42°  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

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
M4	0.70	45	4.5	3.4	3.3	7	22	3
M5	0.80	50	6.0	4.9	4.2	9	25	3
M6	1.00	56	6.0	4.9	5.0	10	28	3
M8	1.25	63	6.0	4.9	6.8	14		3
M10	1.50	70	7.0	5.5	8.5	16		3
M12	1.75	75	9.0	7.0	10.2	18		4
M16	2.00	80	12.0	9.0	14.0	22		4

22 500 ...

£

U0

030

37.54

040

38.11

050

37.54

060

41.24

080

47.22

100

54.20

120

70.04

160

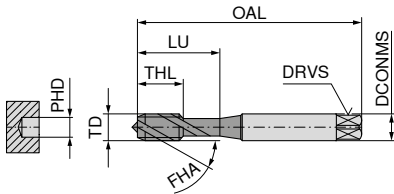
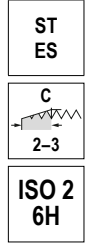
111.07

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

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
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

22 016 ...

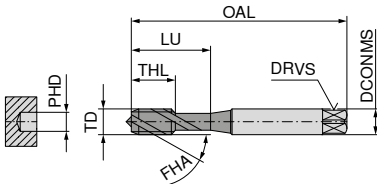
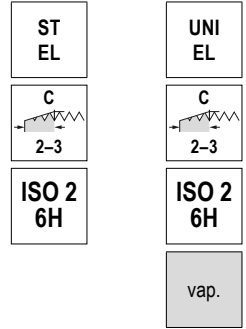
£	U0
33.66	030
33.42	040
34.55	050
35.31	060
40.26	080
51.69	100
65.70	120

P	12
M	
K	12
N	12
S	
H	
O	

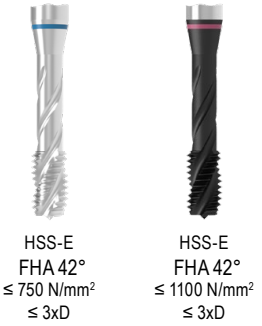
Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand

▲ EL = extra long, with double overall length

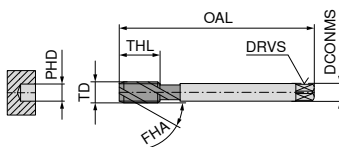


DIN 371 with reinforced shank



TD	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	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 ...	
£		£	
U0		U0	
95.74	030	76.43	030
93.54	040	76.30	040
104.51	050	85.81	050
108.73	060	90.18	060
130.92	080	102.77	080



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	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

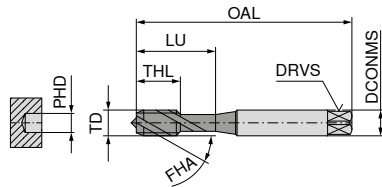
22 539 ...	
£	
U0	
114.74	060
138.56	080
119.81	100
148.83	120
259.13	140
218.50	160
405.80	180
346.37	200

P	12	12
M		7
K	12	12
N	22	
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

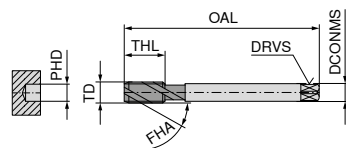


HSS-E  
FHA 15°  
≤ 750 N/mm<sup>2</sup>  
≤ 2xD

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

£	
U0	
73.08	030
73.08	040
84.00	050
88.24	060
103.49	080



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
M20	2.50	280	16.0	12.0	17.5	32	3

22 080 ...

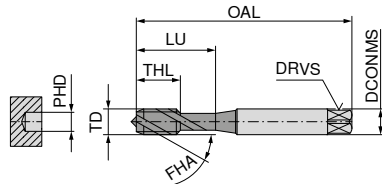
£	
U0	
90.18	060
107.99	080
115.73	100
147.07	120
213.08	140
212.65	160
294.50	200

P	12
M	
K	12
N	12
S	
H	
O	

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

# Blind hole – Machine taps, right hand

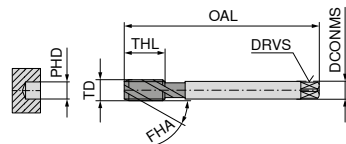
▲ NC = for synchronised CNC machining with minimum length compensation chuck



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

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	23 118 ...		23 120 ...		23 026 ...		23 122 ...		23 124 ...	
									£	T9	£	T9	£	T9	£	T9	£	T9
M2	0.40	45	2.8	2.1	1.60	4	12	2	38.11	020	43.49	020						
M2,5	0.45	50	2.8	2.1	2.05	5	14	2	36.64	025	42.79	025						
M3	0.50	56	3.5	2.7	2.50	6	18	3	29.06	030	36.47	030	17.43	030	38.38	030	41.24	030
M4	0.70	63	4.5	3.4	3.30	7	21	3	30.21	040	40.83	040	17.43	040	41.24	040	42.72	040
M5	0.80	70	6.0	4.9	4.20	8	25	3	31.17	050	42.18	050	18.79	050	42.79	050	45.86	050
M6	1.00	80	6.0	4.9	5.00	10	30	3	32.91	060	52.53	060	21.76	060	54.31	060	61.92	060
M8	1.25	90	8.0	6.2	6.80	14	35	3	37.24	080	57.35	080	25.82	080	59.44	080	66.57	080
M10	1.50	100	10.0	8.0	8.50	16	39	3	42.61	100	76.87	100	32.51	100	75.10	100	84.59	100



DIN 376 with reduced shank

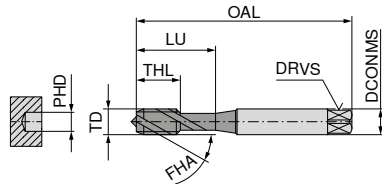
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	23 119 ...		23 121 ...		23 027 ...		23 123 ...		23 125 ...	
								£	T9	£	T9	£	T9	£	T9	£	T9
M3	0.50	56	2.2	2.1	2.5	6	3	12.67	030								
M4	0.70	63	2.8	2.1	3.3	7	3	11.49	040								
M5	0.80	70	3.5	2.7	4.2	8	3	11.17	050								
M6	1.00	80	4.5	3.4	5.0	10	3	11.02	060								
M8	1.25	90	6.0	4.9	6.8	14	3	11.62	080								
M10	1.50	100	7.0	5.5	8.5	16	3	15.67	100								
M12	1.75	110	9.0	7.0	10.2	18	3	17.75	120	83.51	120						
M12	1.75	110	9.0	7.0	10.2	18	4					38.46	120	89.02	120	98.33	120
M14	2.00	110	11.0	9.0	12.0	20	3			57.23	14000						
M14	2.00	110	11.0	9.0	12.0	20	4					55.31	140				
M16	2.00	110	12.0	9.0	14.0	22	3	26.09	160	106.67	160						
M16	2.00	110	12.0	9.0	14.0	22	4					55.31	160	118.80	160	130.82	160
M18	2.50	125	14.0	11.0	15.5	25	3			90.51	18000						
M20	2.50	140	16.0	12.0	17.5	25	3	39.36	200	207.33	200	63.37	200				
M20	2.50	140	16.0	12.0	17.5	25	4							215.38	200	239.76	200
M22	2.50	140	18.0	14.5	19.5	27	4			132.67	22000						
M24	3.00	160	18.0	14.5	21.0	34	4			200.87	240						
M27	3.00	160	20.0	16.0	24.0	30	4			165.94	27000						
M30	3.50	180	22.0	18.0	26.5	35	4			184.27	30000						
M33	3.50	180	25.0	20.0	29.5	35	4			265.70	33000						
M36	4.00	200	28.0	22.0	32.0	40	4			288.70	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



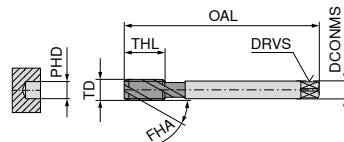
DIN 371 with reinforced shank

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/mm² ≤ 2,5xD	HSS-E FHA 35° ≤ 850 N/mm² ≤ 2,5xD	HSS-E FHA 35° ≤ 1100 N/mm² ≤ 2,5xD	HSS-E FHA 35° ≤ 1200 N/mm² ≤ 2,5xD

6

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 ...
£	£	£	£
T9	T9	T9	T9
	16.69		27.69
	33.66		36.64
	16.88	35.12	18.43
44.14	16.88	38.38	18.43
50.54	16.93	39.49	19.18
50.32	16.93	54.40	19.18
50.32	16.93	59.44	24.40
63.60	22.03	74.12	29.41
76.90	26.40		



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

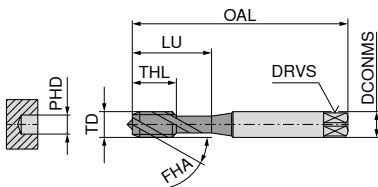
23 127 ...	23 217 ...	23 313 ...	23 415 ...
£	£	£	£
T9	T9	T9	T9
97.55	35.61	85.76	39.31
	43.17		
192.40	54.20	115.73	60.01
	85.16	207.27	91.33
			124.63

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

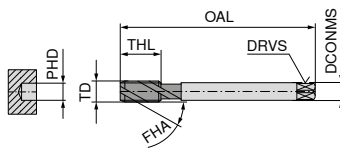
M



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/mm <sup>2</sup> ≤ 3xD	HSS-PM FHA 40° ≤ 1200 N/mm <sup>2</sup> ≤ 2,5xD	HSS-PM FHA 40° ≤ 1200 N/mm <sup>2</sup> ≤ 2,5xD	HSS-E FHA 35° ≤ 500 N/mm <sup>2</sup> ≤ 2,5xD	HSS-E FHA 35° ≤ 500 N/mm <sup>2</sup> ≤ 2,5xD

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	23 416 ...		23 426 ...		23 456 ...		23 616 ...		23 614 ...		
									£ T9		£ T9		£ T9		£ T9		£ T9		
M2	0.40	45	2.8	2.1	1.60	4	12	2	44.70										
M2,5	0.45	50	2.8	2.1	2.05	5	14	2	42.79										
M3	0.50	56	3.5	2.7	2.50	6	18	3	36.47	15.67	030	17.43	030	16.88	030	35.87	030		
M4	0.70	63	4.5	3.4	3.30	7	21	3	40.83	15.79	040	19.08	040	16.88	040	35.87	040		
M5	0.80	70	6.0	4.9	4.20	8	25	3	42.18	16.25	050	19.39	050	16.93	050	37.24	050		
M6	1.00	80	6.0	4.9	5.00	10	30	3	54.11	16.54	060	24.89	060	16.93	060	37.24	060		
M8	1.25	90	8.0	6.2	6.80	14	35	3	57.35	19.39	080	26.69	080	22.03	080	43.93	080		
M10	1.50	100	10.0	8.0	8.50	16	39	3	80.68	23.26	100	36.81	100	26.40	100	53.80	100		

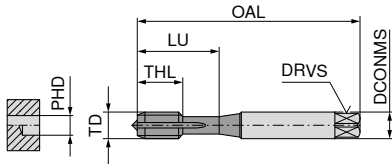
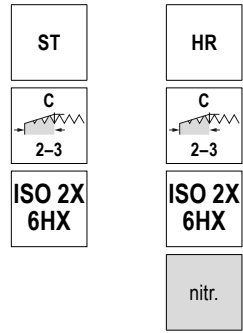


DIN 376 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	23 417 ...		23 427 ...		23 457 ...		23 615 ...	
								£ T9		£ T9		£ T9		£ T9	
M12	1.75	110	9	7.0	10.2	18	3		38.46	120	52.78	120		66.57	120
M12	1.75	110	9	7.0	10.2	18	4	87.69							
M14	2.00	110	11	9.0	12.0	20	4		50.70	140					
M16	2.00	110	12	9.0	14.0	22	3		55.16	160	66.33	160			
M16	2.00	110	12	9.0	14.0	22	4	106.67							
M20	2.50	140	16	12.0	17.5	25	3		82.15	200	131.76	200			
M20	2.50	140	16	12.0	17.5	25	4	167.98							
M24	3.00	160	18	14.5	21.0	30	4		103.90	240					
P									10		8		10		
M									8		6		8		
K															
N									24		22		24	15	20
S															
H															
O															

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

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



DIN 371 with reinforced shank



6

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

22 028 ...		22 006 ...	
£		£	
U0		U0	
64.38	012 <sup>1)</sup>		
52.23	014 <sup>1)</sup>		
46.69	016		
51.69	017		
47.99	018		
40.26	020		
41.02	022		
46.65	023		
39.49	025		
42.61	026		
32.91	030	46.69	030
33.66	035		
32.83	040	47.86	040
33.66	050	51.10	050
33.42	060	50.53	060
48.40	070		
37.81	080	55.43	080
48.42	100	70.27	100

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

1) Tol. 4H/5H ≤ M1.4

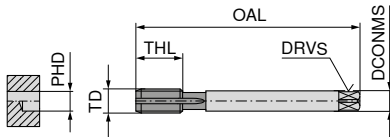
Cutting speed v<sub>c</sub> (m/min.)

DIN 376 can be found on the next page



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

DuoTap **M**



DIN 376 with reduced shank

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



HSS-E  
FHA 0°  
≤ 750 N/mm<sup>2</sup>  
≤ 2xD



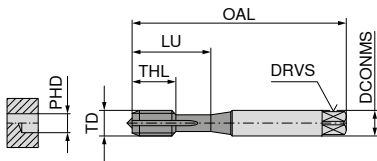
HSS-E  
FHA 0°  
≤ 1400 N/mm<sup>2</sup>  
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
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

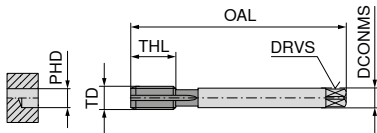
22 029 ...		22 007 ...	
£		£	
U0		U0	
42.79	040		
43.17	050		
43.17	060		
54.40	080		
61.50	100		
62.53	120	87.71	120
86.52	140		
92.31	160	127.76	160
P	12		6
M			
K	12		16
N			12
S			
H			
O			

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

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



DIN 371 with reinforced shank



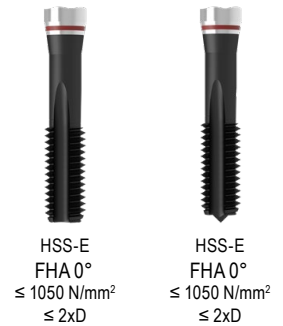
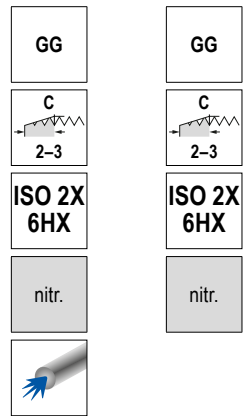
DIN 376 with reduced shank

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

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

P		
M		
K	16	16
N	12	12
S		
H		
O		

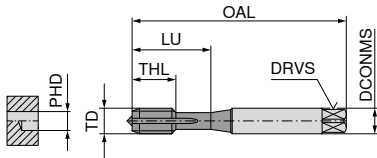
Cutting speed  $v_c$  (m/min.)



22 036 ...		22 032 ...	
£		£	
U0		42.03	020
		43.17	025
		36.21	030
		39.49	035
		37.02	040
58.26	050	39.49	050
58.10	060	39.49	060
65.43	080	45.40	080
77.99	100	54.31	100

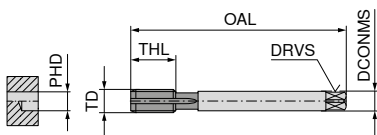
22 033 ...	
£	
U0	
46.53	060
50.91	080
57.64	100
69.69	120
85.81	140
99.29	160

# 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	
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	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
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.)

HT	HT
D 4-5	C 2-3
ISO 2X 6HX	ISO 2X 6HX
OSM	TiCN



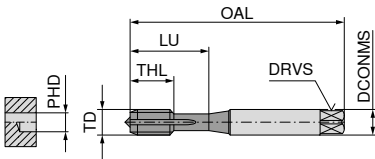
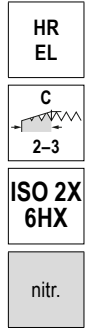
Solid carbide  
FHA 0°  
≤ 63 HRC  
≤ 1,5xD

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

22 806 ...	22 227 ...
£ U0	£ U0
232.98	
232.98	
267.43	
	202.00
281.57	
	217.47
322.58	
409.06	
	272.30
756.80	
1,075.10	

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

▲ EL = extra long, with double overall length



DIN 371 with reinforced shank

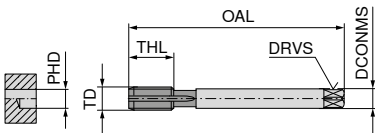


6

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

22 122 ...

£	
U0	
92.09	030
92.09	040
99.29	050
104.10	060
119.98	080



DIN 376 with reduced shank

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

22 123 ...

£	
U0	
138.56	100
164.47	120
256.81	160
353.54	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

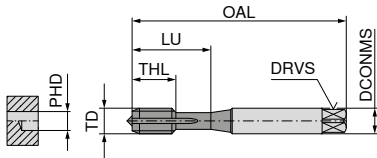


ISO 2X  
6HX

TiCN



HSS-E  
FHA 0°  
≤ 900 N/mm²  
≤ 2xD

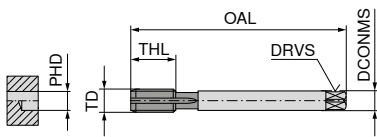


DIN 371 with reinforced shank

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

£	
T9	
39.67	050
51.67	060
55.43	080
75.77	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

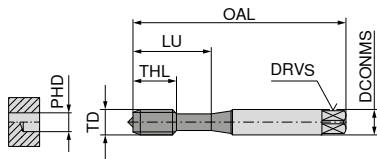
£	
T9	
85.35	120

P	
M	
K	20
N	24
S	
H	
O	

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

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

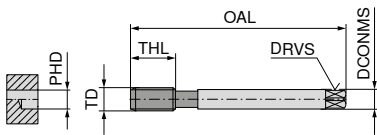
▲ HML = with soldered-in carbide strips for a higher cutting speed



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

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

Cutting speed v<sub>c</sub> (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

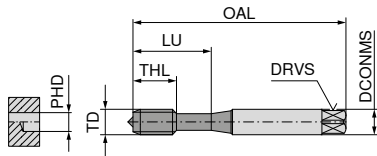


HSS-E  
≤ 1100 N/mm<sup>2</sup>  
≤ 1,5xD

22 473 ...	22 100 ...
£	£
U0/4G	U0
	010 <sup>1)</sup>
	012 <sup>1)</sup>
	014 <sup>1)</sup>
	016
	017
	020
	025
	026
	030
	035
	040
	050
338.91	06000
	060
	080
389.82	08000
	100

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

▲ SN = Thread formers with lubrication grooves



DIN 2174 with reinforced shank

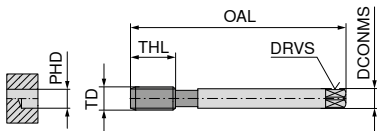
EC SN	EC SN	EC SN	EC SN
C 2-3	C 2-3	C 2-3	C 2-3
ISO 2X 6HX	ISO 3X 6GX	ISO 2X 6HX	ISO 2X 6HX
nitr.	TiN	TiN GS	TiN



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

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	1.85	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

22 104 ...	22 108 ...	22 154 ...	22 105 ...
£ U0	£ U0	£ U0	£ U0
			70.27 020
			65.50 025
42.98 030	57.50 030	86.37 030	60.58 030
			65.50 035
50.91 040	61.71 040	90.59 040	62.91 040
52.42 050	65.50 050	94.04 050	
			65.02 050
53.55 060	73.56 060	103.70 060	74.31 060
64.38 080	84.00 080	112.44 080	82.05 080
83.41 100	101.99 100	136.82 100	102.38 100



DIN 2174 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
mm	mm	mm	mm	mm	mm	mm	
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

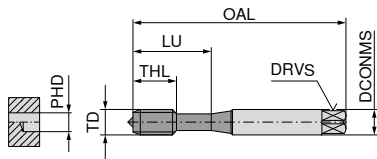
22 106 ...
£ U0
141.08 120
246.16 140
206.68 160

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.)

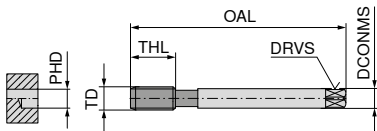
# Through hole / Blind hole – Machine thread formers, right hand

▲ 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

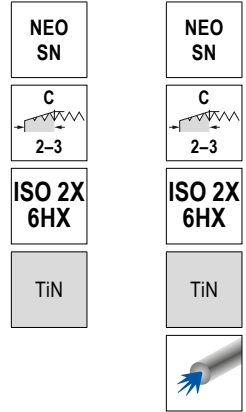


DIN 2174 with reduced shank

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

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

Cutting speed  $v_c$  (m/min.)

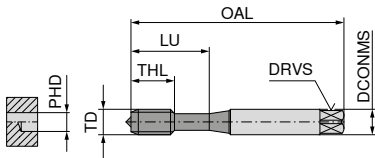


22 452 ...		22 453 ...	
£		£	
U0		U0	
95.10	030		
97.78	040		
104.02	050	130.11	050
131.15	060	158.50	060
146.99	080	177.64	080
190.19	100	227.58	100



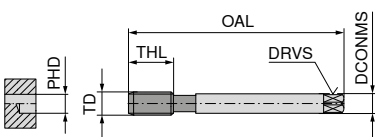
# Through hole / Blind hole – Machine thread formers, right hand

▲ 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

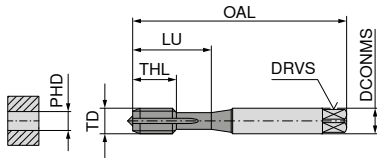
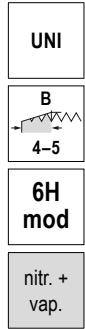
UNI	UNI	UNI SN	UNI SN
C 2-3	C 2-3	C 2-3	C 2-3
ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX
TiN	CrN	TiN	CrN
HSS-E ≤ 850 N/mm <sup>2</sup> ≤ 3xD	HSS-E ≤ 850 N/mm <sup>2</sup> ≤ 3xD	HSS-E ≤ 850 N/mm <sup>2</sup> ≤ 3xD	HSS-E ≤ 850 N/mm <sup>2</sup> ≤ 3xD

23 810 ...	23 812 ...	23 814 ...	23 816 ...
£ T9	£ T9	£ T9	£ T9
52.82 020	59.23 020	60.01 020	67.60 020
47.05 025	52.26 025	54.40 025	59.23 025
34.25 030	38.11 030	36.47 030	42.89 030
34.74 040	38.92 040	78.14 040	42.89 040
37.24 050	40.26 050	82.40 050	46.44 050
44.70 060	40.26 060	94.58 060	46.44 060
49.92 080	45.97 080	98.79 080	54.97 080
66.57 100	59.23 100	63.75 100	68.73 100

23 811 ...	23 813 ...	23 815 ...	23 817 ...
£ T9	£ T9	£ T9	£ T9
76.07 120	74.12 120	83.35 120	83.35 120
143.02 160	145.20 160	159.06 160	169.92 160
		184.53 18000	
		171.63 20000	
		229.31 24000	
P	18	18	18
M	10	10	10
K	10	10	10
N	22	18	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

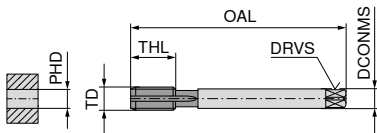


HSS-E  
FHA 0°  
≤ 1100 N/mm²  
≤ 4xD

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

£	
U0	
67.39	025
56.79	030
59.50	040
57.26	050
58.39	060
68.49	080



DIN 40435 with reduced shank

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

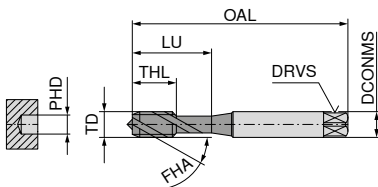
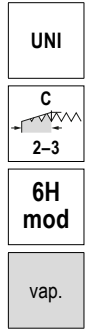
22 663 ...

£	
U0	
92.68	100
108.62	120
153.26	160
216.49	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

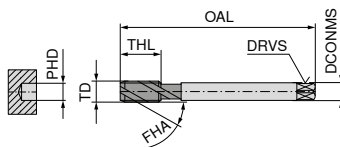


HSS-E  
FHA 42°  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

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

22 664 ...

£	
U0	
64.65	025
57.87	030
59.04	040
55.72	050
61.50	060
67.71	080



DIN 40435 with reduced shank

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

22 665 ...

£	
U0	
90.36	100
110.90	120
155.80	160
225.83	200

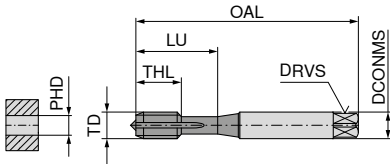
P	12
M	7
K	12
N	
S	
H	
O	

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

6

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
M6x0,5	0.50	80	6	4.9	5.5	13	30	3
M6x0,75	0.75	80	6	4.9	5.2	13	30	3
M8x1	1.00	90	8	6.2	7.0	17	35	3
M10x1	1.00	90	10	8.0	9.0	18	35	4

22 550 ...	£	
U0	96.76	050
	119.81	060
	119.81	062
	114.87	080
	131.03	100

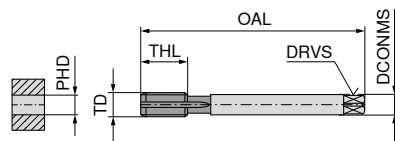
P	15
M	9
K	18
N	12
S	
H	
O	

Cutting speed  $v_c$  (m/min.)

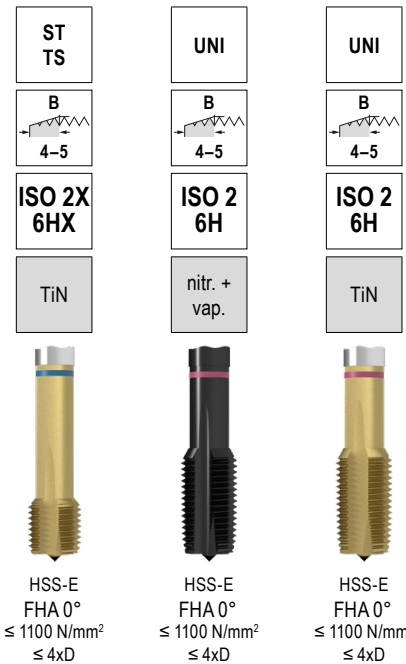
DIN 374 can be found on the next page

# Through hole – Machine taps, right hand

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



DIN 374 with reduced shank



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 ...
£ U0	£ U0	£ U0
	66.96	082
131.03	63.10	084
	92.72	100
140.87	63.86	102
	139.55	104
	75.70	120
	101.39	122
162.55	71.04	124
	194.07	140
226.68	99.29	144
229.32	112.64	162
	307.09	180
	137.21	182
	255.84	184
	342.10	200
	150.19	202
	156.74	222
	180.73	242
	327.45	244
	552.29	250
	234.90	260
	579.18	272
	264.16	280
	285.45	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

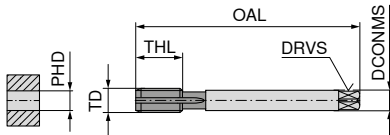


ISO 2  
6H

TiN



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



DIN 374 with reduced shank

6

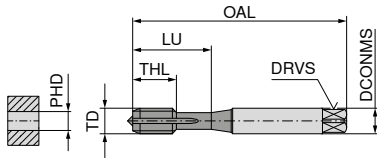
23 041 ...

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	T9	081
M10x1	1.00	90	7	5.5	9.0	18	4	27.28	102
M10x1,25	1.25	100	7	5.5	8.8	22	3	31.16	104
M12x1	1.00	100	9	7.0	11.0	18	4	33.39	120
M12x1,25	1.25	100	9	7.0	10.8	22	3	38.46	122
M12x1,5	1.50	100	9	7.0	10.5	22	3	40.11	121
M14x1,25	1.25	100	11	9.0	12.8	22	3	35.77	142
M14x1,5	1.50	100	11	9.0	12.5	22	3	46.38	144
M16x1,5	1.50	100	12	9.0	14.5	22	3	44.14	162
M18x1,5	1.50	110	14	11.0	16.5	17	4	49.94	182
M20x1,5	1.50	125	16	12.0	18.5	17	4	66.05	202
M22x1,5	1.50	125	18	14.5	20.5	25	4	89.15	222
M24x1,5	1.50	140	18	14.5	22.5	27	4	83.93	242
M24x2	2.00	140	18	14.5	22.0	27	4	96.33	244
P									15
M									9
K									18
N									12
S									
H									
O									

Cutting speed  $v_c$  (m/min.)

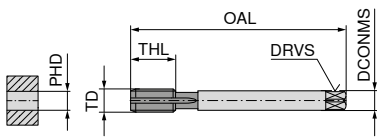
# Through hole – Machine taps, right hand

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



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

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

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 ...

£	
T9	
46.65	040
47.05	050
49.76	062
49.76	060

23 142 ...

£	
T9	
52.97	040
54.40	050
65.70	062
65.70	060

23 440 ...

£	
T9	
54.40	050
66.37	062

23 141 ...

£	
T9	
52.42	082
47.86	084
75.10	100
49.76	102
63.60	104
57.35	120
64.38	122
54.40	124
77.99	140
72.39	144
87.69	160
87.69	162
115.73	202
122.46	222
143.98	242

23 143 ...

£	
T9	
68.73	082
66.00	084
93.48	100
70.63	102
86.37	104
82.63	120
87.71	122
75.00	124
99.29	140
99.67	144
115.73	160
115.73	162
181.13	202
188.10	222
197.20	242

23 241 ...

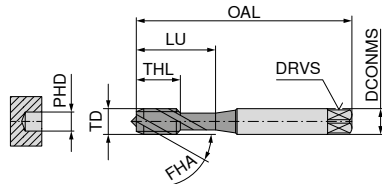
£	
T9	
36.98	080
31.37	082
29.63	084
43.93	100
35.05	102
36.21	104
39.67	120
42.18	122
38.72	124
49.76	140
47.83	144
66.00	160
60.58	162
86.52	180
78.79	182
93.28	200
87.31	202
100.24	222
116.87	242
149.98	260
170.28	280
191.79	300

23 441 ...

£	
T9	
73.27	082
70.27	084
75.00	102
86.37	120
80.12	124
107.99	144
123.50	162

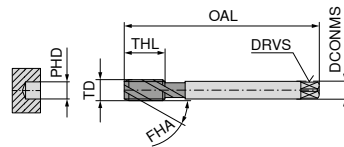
Cutting speed v<sub>c</sub> (m/min.)

# 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

6

<b>22 441 ...</b>
£ U0
91.16 040
91.16 062
82.47 050

22 555 ...		22 556 ...		22 490 ...	
£ U0		£ U0		£ U0	
68.14	080	92.88	080	91.16	080
77.99	100	119.58	100	99.29	100
87.71	120	135.45	120	109.52	120
108.96	140	170.69	140	140.85	140
133.15	160	182.11	160	172.06	160
				195.82	180
				229.32	200
	12		15		12
	7		9		7
	12		18		12
			12		

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

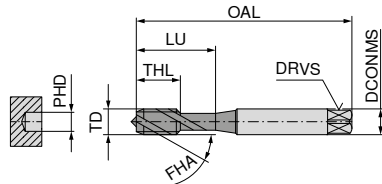


# Blind hole – Machine taps, right hand

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



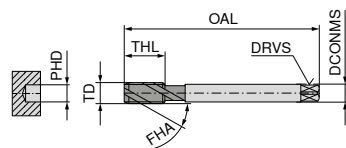
UNI	UNI	UNI CNC	UNI CNC
C 2-3	C 2-3	E 1,5-2	E 1,5-2
ISO 2 6H	ISO 2 6H	7G	ISO 2 6H
vap.	TiN	TiN GS	TiN GS
HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 45° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 45° ≤ 1100 N/mm² ≤ 3xD



DIN 371 with reinforced shank

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

<b>22 548 ...</b>
£
U0
96.97 050
96.97 060
96.97 062



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	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	4
M12x1,5	1.50	100	9	7.0	10.5	15	5
M14x1,5	1.50	100	11	9.0	12.5	15	4
M14x1,5	1.50	100	11	9.0	12.5	15	5
M16x1,5	1.50	100	12	9.0	14.5	15	4
M16x1,5	1.50	100	12	9.0	14.5	15	5
M18x1,5	1.50	110	14	11.0	16.5	17	4
M18x1,5	1.50	110	14	11.0	16.5	17	5
M20x1,5	1.50	125	16	12.0	18.5	17	4
M20x1,5	1.50	125	16	12.0	18.5	17	5
M22x1,5	1.50	125	18	14.5	20.5	17	4
M22x1,5	1.50	125	18	14.5	20.5	17	5
M24x1,5	1.50	140	18	14.5	22.5	20	5

22 553 ...	22 554 ...	22 563 ...	22 549 ...
£	£	£	£
U0	U0	U0	U0
66.83 082	92.88 080	140.85 084	101.99 082
71.41 100	119.58 100	156.62 102	119.98 084
92.88 120	158.30 121	183.27 124	138.76 102
87.71 124	135.45 120	228.14 144	162.35 120
108.96 140	158.50 140	261.62 162	155.21 124
133.15 160	182.11 160	277.48 182	198.18 144
162.96 180	266.65 182	391.08 202	229.32 162
221.20 200	338.83 202		277.48 182
215.77 220			341.74 202
238.02 240			
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

CavTap  
SL

MF

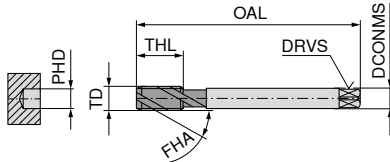
ST



ISO 2  
6H



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



DIN 374 with reduced shank

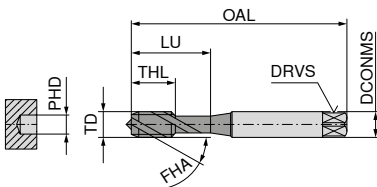
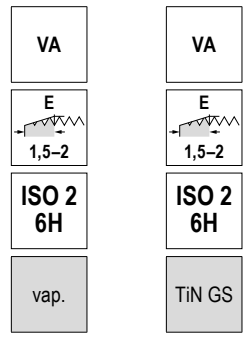
6

22 182 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	£ U0	
M6x0,75	0.75	80	4.5	3.4	5.2	13	3	72.39	062
M8x0,75	0.75	80	6.0	4.9	7.2	14	3	72.98	082
M8x1	1.00	90	6.0	4.9	7.0	17	3	65.70	084
M9x1	1.00	90	7.0	5.5	8.0	17	3	99.86	090
M10x1	1.00	90	7.0	5.5	9.0	18	3	70.27	102
M10x1,25	1.25	100	7.0	5.5	8.8	22	3	101.24	104
M11x1	1.00	90	8.0	6.2	10.0	18	3	109.17	110
M12x1	1.00	100	9.0	7.0	11.0	18	3	86.30	120
M12x1,25	1.25	100	9.0	7.0	10.8	22	3	111.45	122
M12x1,5	1.50	100	9.0	7.0	10.5	22	3	82.05	124
M14x1	1.00	100	11.0	9.0	13.0	18	4	113.62	140
M14x1,5	1.50	100	11.0	9.0	12.5	22	3	110.31	144
M15x1	1.00	100	12.0	9.0	14.0	18	4	147.07	150
M16x1	1.00	100	12.0	9.0	15.0	18	4	133.15	160
M16x1,5	1.50	100	12.0	9.0	14.5	22	3	130.45	162
M18x1	1.00	110	14.0	11.0	17.0	20	4	183.27	180
P									12
M									
K									12
N									22
S									
H									
O									

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

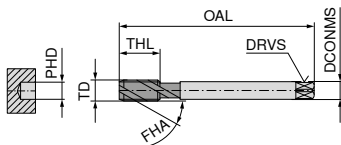
# Blind hole – Machine taps, right hand



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

<b>22 176 ...</b>	
£	
U0	
118.80	040
98.11	050
98.11	060
98.11	062



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

<b>22 189 ...</b>		<b>22 177 ...</b>	
£		£	
U0		U0	
71.04	082	103.16	082
83.41	100	123.50	084
83.41	100	137.63	102
109.16	121	164.68	120
92.88	120	157.33	124
114.19	140	200.67	144
138.76	160	232.83	162
193.50	200		
460.55	260		
542.73	280		
533.73	300		

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

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

# Blind hole – Machine taps, right hand

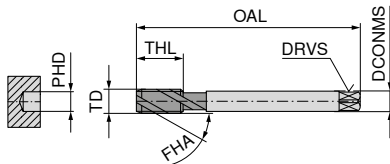
MF

UNI



ISO 2  
6H

TiN



DIN 374 with reduced shank



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

6

23 047 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
mm	mm	mm	mm	mm	mm	mm	mm	
M8x1	1.00	90	6	4.9	7.0	10	35	3
M10x1	1.00	90	7	5.5	9.0	10	35	4
M10x1,25	1.25	100	7	5.5	8.8	16	39	4
M12x1	1.00	100	9	7.0	11.0	11	40	4
M12x1,25	1.25	100	9	7.0	10.8	15	40	5
M12x1,5	1.50	100	9	7.0	10.5	15	40	5
M14x1	1.00	100	11	9.0	12.8	11	40	4
M14x1,5	1.50	100	11	9.0	12.5	15	40	5
M16x1,5	1.50	100	12	9.0	14.5	15	44	5
M18x1,5	1.50	110	14	11.0	16.5	17	44	5
M20x1,5	1.50	125	16	12.0	18.5	17	44	5
M22x1,5	1.50	125	18	14.5	20.5	17	44	5
M24x1,5	1.50	140	18	14.5	22.5	20	48	5
M24x2	2.00	140	18	14.5	22.0	20	48	5

£  
T9

081  
102  
104  
120  
122  
121  
140  
144  
162  
182  
202  
222  
242  
244

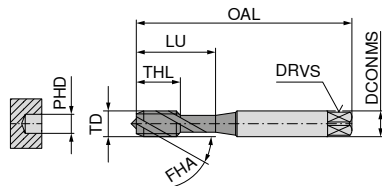
P	15
M	9
K	18
N	12
S	
H	
O	

Cutting speed  $v_c$  (m/min.)

# Blind hole – Machine taps, right hand

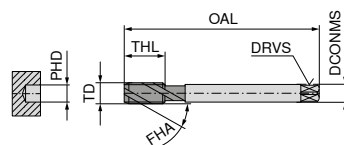
▲ NC = for synchronised CNC machining with minimum length compensation chuck

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	
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

FE	UNI NC	UNI	UNI
C 2-3	E 1,5-2	C 2-3	C 2-3
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
	TiN GS	vap.	TiN
HSS-E FHA 35° ≤ 850 N/mm² ≤ 2,5xD	HSS-E FHA 45° ≤ 1000 N/mm² ≤ 3xD	HSS-E FHA 35° ≤ 1000 N/mm² ≤ 2,5xD	HSS-E FHA 35° ≤ 1000 N/mm² ≤ 2,5xD

23 144 ...		23 146 ...	
£		£	
T9		T9	
50.91	040	58.08	040
50.91	050	58.08	050
50.91	060	66.28	060
50.91	062	66.28	062

23 243 ...		23 149 ...		23 145 ...		23 147 ...	
£		£		£		£	
T9		T9		T9		T9	
				18.79	040		
				18.79	050		
				19.98	062		
71.04	080						
33.42	082	86.30	082	22.66	082	70.63	082
31.51	084	80.89	084	16.54	084	66.28	084
78.17	100			36.53	100	109.52	100
36.64	102			17.30	102	75.47	102
		93.41	102				
67.35	104			19.23	104	95.57	104
43.17	120	106.11	120	23.26	120	88.63	120
75.47	122			27.42	122	107.78	122
40.83	124			20.56	124	85.76	124
		102.77	124				
75.47	140			30.70	140	115.73	140
50.91	144			27.87	144	107.78	144
		131.79	144				
87.13	160			32.95	160	126.93	160
64.43	162			31.90	162	126.93	162
		147.07	162				
83.61	182			44.29	182	145.20	182
		186.17	182				
93.28	202			40.70	202	188.10	202
107.99	222	243.81	202				
125.78	242			60.39	222	209.39	222
				65.90	242	223.51	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



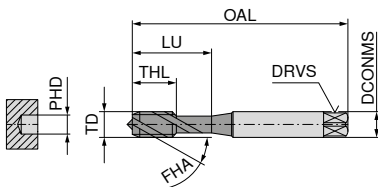
ISO 2  
6H

TiN



HSS-E  
FHA 45°  
≤ 1200 N/mm²  
≤ 3xD

6



DIN 371 with reinforced shank

23 442 ...

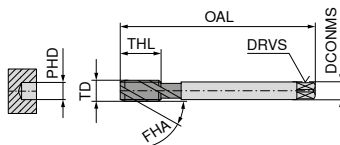
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M5x0,5	0.50	70	6	4.9	4.5	5	25	3
M6x0,75	0.75	80	6	4.9	5.2	8	30	3

£

T9

57.50 050

66.28 062



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

£

T9

70.63 082

66.28 084

76.07 102

89.02 120

85.76 124

108.60 144

122.46 162

P	10
M	8
K	
N	24
S	
H	
O	

Cutting speed  $v_c$  (m/min.)

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

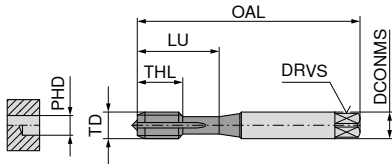
DuoTap MF

HR



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
M5x0,5	0.50	70	6.0	4.9	4.5	11	25	3
M6x0,5	0.50	80	6.0	4.9	5.5	13	30	3
M6x0,75	0.75	80	6.0	4.9	5.2	13	30	3

£

U0

78.17 040

78.17 050

78.17 060

78.17 062

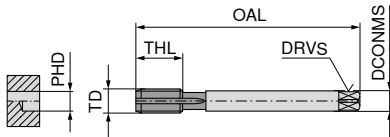
P	6
M	
K	16
N	22
S	
H	
O	

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



DIN 374 with reduced shank

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



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
M10x1	1.0	90	7	5.5	9.0	18	4
M12x1,5	1.5	100	9	7.0	10.5	22	4
M14x1,5	1.5	100	11	9.0	12.5	22	4
M16x1,5	1.5	100	12	9.0	14.5	22	4
M18x1,5	1.5	110	14	11.0	16.5	25	4
M20x1,5	1.5	125	16	12.0	18.5	25	4

£	
U0	
78.17	082
78.17	100
92.09	120
119.81	140
131.03	160
152.82	180
195.82	200

P	6
M	
K	16
N	22
S	
H	
O	

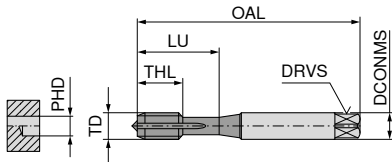
Cutting speed  $v_c$  (m/min.)



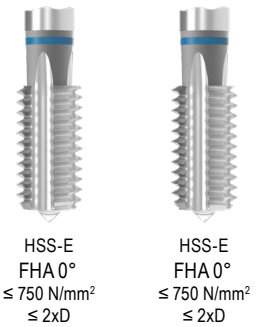
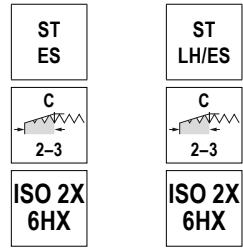
# Through Hole / Blind Hole – Machine taps

▲ 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

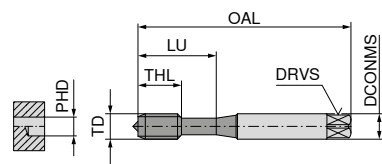
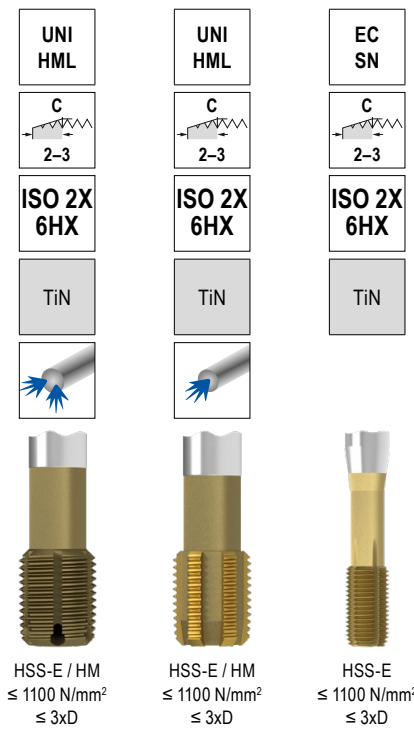
22 179 ...		22 200 ...	
£		£	
U0		U0	
66.83	030		
96.76	040		
66.83	042		
112.22	045		
66.83	050		
69.30	060		
66.83	062	92.09	062
75.70	070		
92.09	080		
75.70	082		
66.83	084	92.09	084
92.09	090		
99.29	100		
69.30	102	96.76	102
91.16	104		
109.52	110		
82.03	120	114.87	120
92.09	122		
79.57	124	112.22	124
119.98	130		
109.52	140		
109.52	142		
104.10	144	148.22	144
133.37	150		
124.63	160		
114.87	162	162.16	162
162.16	180		
136.03	182	186.98	182
162.16	184		
158.30	202	219.04	202
172.06	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

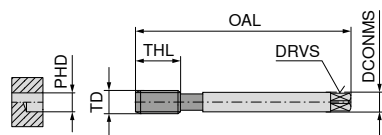
▲ HML = with soldered-in carbide strips for a higher cutting speed



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 ...	
£	
U0	
167.01	040
148.22	050
167.01	060
133.37	062
148.22	080
158.30	082
145.95	100



DIN 2174 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	22 474 ...		22 474 ...		22 197 ...	
								£ U0/4G		£ U0/4G		£ U0	
M12x1	1.0	100	9	7	11.60	18	6					130.95	120
M12x1,5	1.5	100	9	7	11.35	13				515.01	12000	138.18	124
M12x1,5	1.5	100	9	7	11.35	22	6					193.12	140
M14x1,5	1.5	100	11	9	13.35	22	6						
M16x1,5	1.5	100	12	9	15.35	18		736.00	16100	587.73	16000	206.88	160
M16x1,5	1.5	100	12	9	15.35	22	6					283.90	200
M20x1,5	1.5	125	16	12	19.35	25	6						
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

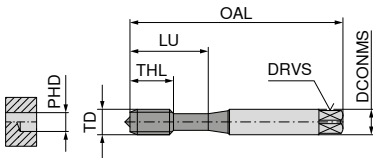
MF

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

£

T9

040

92.49

050

82.03

060

93.12

084

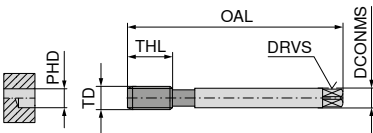
88.63

102

98.33

104

119.81



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

£

T9

122

130.82

124

116.71

144

144.94

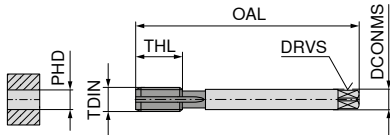
162

168.96

P	18
M	10
K	10
N	22
S	
H	
O	

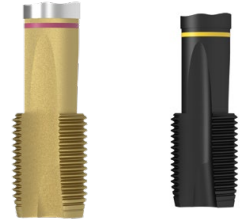
Cutting speed v<sub>c</sub> (m/min.)

# 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

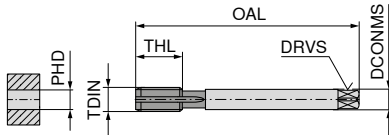
22 630 ...		22 352 ...	
£		£	
U0		U0	
136.03	012	82.58	012
179.60	025	108.62	025
208.03	037	137.21	037
321.45	050	180.73	050
		268.01	075
		414.10	100

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/mm<sup>2</sup>  
≤ 3xD

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

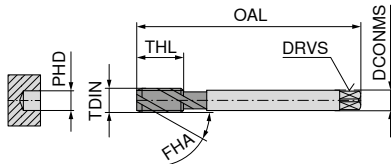
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
	mm	mm	mm	mm	mm	mm	
1/8-28	0.907	90	7	5.5	8.80	18	3
1/4-19	1.337	100	11	9.0	11.80	22	3
3/8-19	1.337	100	12	9.0	15.25	22	3
1/2-14	1.814	125	16	12.0	19.00	25	4
3/4-14	1.814	140	20	16.0	24.50	28	4
1-11	2.309	160	25	20.0	30.75	30	4

23 161 ...		23 160 ...	
£		£	
T9		T9	
51.09	012	75.10	012
68.73	025	99.29	025
87.69	037	116.71	037
114.87	050	179.19	050
187.73	075	233.75	075
256.02	100	432.89	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	HSS-E FHA 42° ≤ 1100 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	HSS-E FHA 42° ≤ 1100 N/mm <sup>2</sup> ≤ 3xD

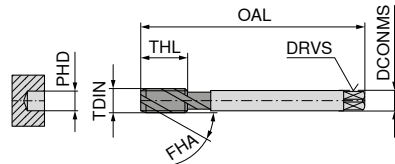
6

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	22 633 ...		22 634 ...		22 635 ...		22 636 ...		22 639 ...	
								£ U0		£ U0		£ U0		£ U0		£ U0	
1/8-28	0.907	90	7	5.5	8.80	10	3	82.29	012	121.89	012	84.57	012	121.89	012	133.37	012
1/4-19	1.337	100	11	9.0	11.80	15	4	117.98	025	154.80	025	113.51	025	154.80	025	173.72	025
3/8-19	1.337	100	12	9.0	15.25	15	4	143.27	037	216.52	037	139.49	037	216.52	037	215.38	037
1/2-14	1.814	125	16	12.0	19.00	17	4	189.35	050	306.92	050	180.73	050	306.92	050	281.57	050
3/4-14	1.814	140	20	16.0	24.50	20	4	293.75	075							420.89	075
1-11	2.309	160	25	20.0	30.75	24	6									642.43	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

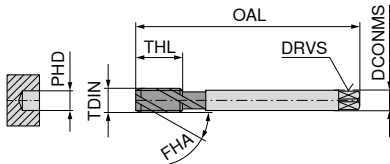
UNI CNC	ST	VA	VA
E 1,5-2	C 2-3	E 1,5-2	E 1,5-2
ISO 228	ISO 228	ISO 228	ISO 228
TiN GS		vap.	TiN GS
HSS-E FHA 45° ≤ 1100 N/mm <sup>2</sup> ≤ 3xD	HSS-E FHA 42° ≤ 750 N/mm <sup>2</sup> ≤ 3xD	HSS-E FHA 42° ≤ 900 N/mm <sup>2</sup> ≤ 3xD	HSS-E FHA 45° ≤ 900 N/mm <sup>2</sup> ≤ 3xD

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	22 624 ...		22 354 ...		22 355 ...		22 358 ...	
								£ U0		£ U0		£ U0		£ U0	
1/8-28	0.907	90	7	5.5	8.80	10	3			75.70	012	85.16	012	149.77	012
1/8-28	0.907	90	7	5.5	8.80	10	4	147.67	012	103.91	025	115.55	025	196.81	025
1/4-19	1.337	100	11	9.0	11.80	15	4	194.29	025	127.54	037	138.76	037	232.83	037
3/8-19	1.337	100	12	9.0	15.25	15	4	229.32	037	163.72	050	188.45	050	348.92	050
3/8-19	1.337	100	12	9.0	15.25	15	5	344.04	050			259.13	062		
1/2-14	1.814	125	16	12.0	19.00	17	4			261.24	075	290.86	075		
1/2-14	1.814	125	16	12.0	19.00	17	5			404.07	100	448.75	100		
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								
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

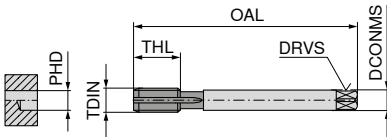
23 163 ...		23 162 ...	
£		£	
T9		T9	
57.64	012	78.17	012
75.77	025	107.78	025
96.76	037	126.93	037
120.54	050	191.00	050
200.29	075	245.93	075
302.87	100	475.44	100

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

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
1/4-19	1.337	100	11	9.0	11.80	22	4
3/8-19	1.337	100	12	9.0	15.25	22	4
1/2-14	1.814	125	16	12.0	19.00	25	4

22 339 ...

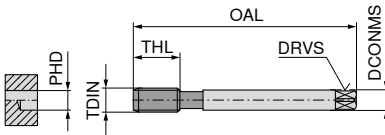
£	
U0	
82.03	012
112.22	025
140.87	037
193.12	050

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



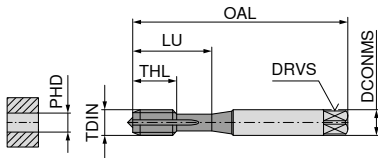
HSS-E  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

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	
1/4-19	1.337	100	11	9.0	12.55	22	6	£ 137.59 012
3/8-19	1.337	100	12	9.0	16.05	22	6	£ 175.73 025
1/2-14	1.814	125	16	12.0	20.10	25	6	£ 235.28 037
								£ 316.58 050
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



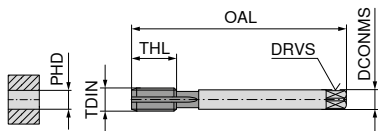
DIN 371 with reinforced shank

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 ...
£ U0	£ U0	£ U0
		110.68 002
		60.96 004
	137.67 004	
52.97 006	123.51 006	51.72 006
52.45 008	123.51 008	52.23 008
52.23 010	131.95 010	56.49 010
		68.28 012
66.28 025	137.67 025	59.58 025
67.92 031	148.36 031	71.01 031
69.09 037	174.55 037	78.36 037



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

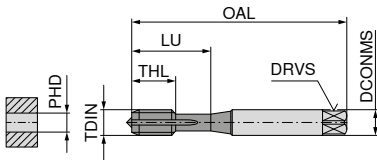
22 573 ...
£ U0
96.11 050
130.95 062
160.97 075
206.99 087
265.97 100

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

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

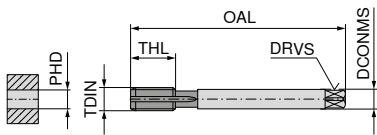
# Through hole – Machine taps, right hand

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
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

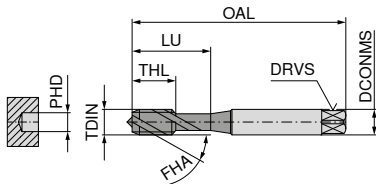
23 170 ...		23 370 ...		23 470 ...	
£		£		£	
T9		T9		T9	
40.26	004	43.17	004	38.92	004
38.92	006	41.01	006	35.31	006
38.92	008	41.01	008	34.55	008
40.26	010	43.36	010	38.92	010
52.82	025	60.01	025	40.83	025
58.08	031	64.38	031	46.53	031
67.60	037	77.62	037	53.80	037

23 171 ...	
£	
T9	
80.12	043
87.71	050
111.67	062
168.96	075

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

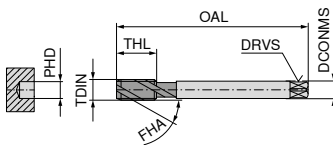
Cutting speed v<sub>c</sub> (m/min.)

# 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

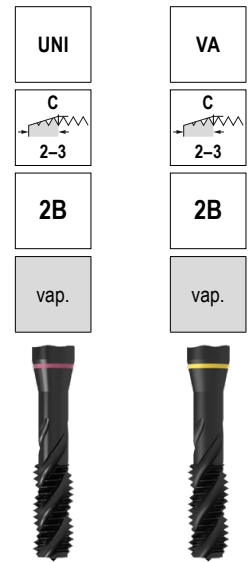


DIN 376 with reduced shank

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

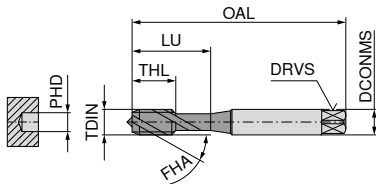
HSS-E  
FHA 42°  
≤ 900 N/mm<sup>2</sup>  
≤ 3xD

22 582 ...		22 266 ...	
£		£	
U0		U0	
54.20	004		
49.76	006	52.45	006
51.29	008	55.95	008
54.57	010	61.71	010
59.23	025	62.14	025
62.45	031	71.41	031
69.09	037	73.83	037

22 583 ...		22 267 ...	
£		£	
U0		U0	
131.95	043		
		155.76	043
96.97	050		
		108.62	050
139.91	056		
126.93	062		
		137.85	062
164.11	075		
		171.84	075
265.49	100		
		290.86	100

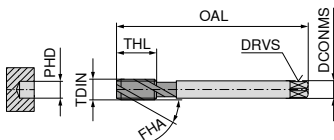
# Blind hole – Machine taps, right hand

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	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



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

UNI	FE-HF	VA
C 2-3	C 2-3	C 2-3
2B	2B	2B
TiN	TiCN	

HSS-E FHA 35° ≤ 1000 N/mm² ≤ 2,5xD	HSS-E FHA 35° ≤ 1100 N/mm² ≤ 2,5xD	HSS-E FHA 35° ≤ 1000 N/mm² ≤ 2,5xD

23 172 ...	23 372 ...	23 472 ...
£	£	£
T9	T9	T9
42.72		40.83
004		004
40.06	44.81	38.38
006	006	006
43.17	43.36	39.67
008	008	008
44.48	45.86	42.18
010	010	010
57.50	46.53	47.22
025	025	025
57.50	63.86	49.92
031	031	031
70.43	66.57	55.72
037	037	037
	77.67	
	037	

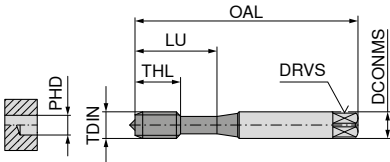
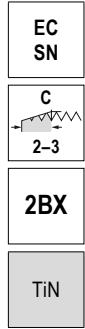
23 173 ...	
£	
T9	
89.02	043
94.27	050
115.73	062
171.82	075

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 ...**

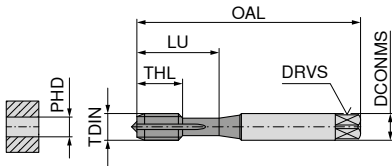
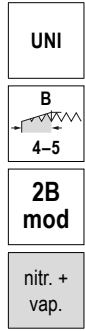
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
	mm	mm	mm	mm	mm	mm	mm	
Nr. 4-40	0.635	56	3.5	2.7	2.55	11	18	3
Nr. 6-32	0.794	56	4.0	3.0	3.15	12	20	3
Nr. 8-32	0.794	63	4.5	3.4	3.80	13	21	4
Nr. 10-24	1.058	70	6.0	4.9	4.35	15	25	4
1/4-20	1.270	80	7.0	5.5	5.75	17	30	4
5/16-18	1.411	90	8.0	6.2	7.30	20	35	5
3/8-16	1.588	100	10.0	8.0	8.80	22	39	5

£	
U0	
82.47	004
76.43	006
76.43	008
84.59	010
97.93	025
105.21	031
123.07	037

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



DIN 371 with reinforced shank



HSS-E  
FHA 0°  
≤ 1100 N/mm²  
≤ 4xD

6

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
EG Nr. 6-32	0.794	70	6.0	4.9	3.8	14	25	3
EG Nr. 8-32	0.794	80	6.0	4.9	4.4	16	30	3
EG Nr. 10-24	1.058	80	7.0	5.5	5.2	17	30	3

22 668 ...

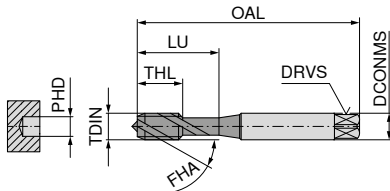
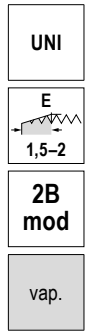
£	
U0	
78.94	004
82.73	006
81.44	008
87.69	010

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



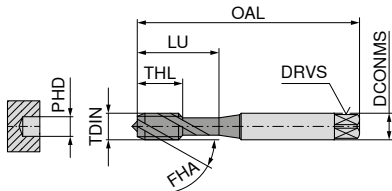
HSS-E  
FHA 42°  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

**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	£ 79.57 004
EG Nr. 6-32	0.794	70	6.0	4.9	3.8	8	25	3	£ 78.94 006
EG Nr. 8-32	0.794	80	6.0	4.9	4.4	8	30	3	£ 81.44 008
EG Nr. 10-24	1.058	80	7.0	5.5	5.2	10	30	3	£ 87.69 010
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 ...**

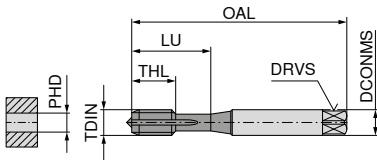
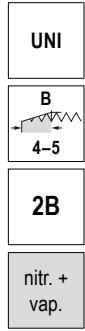
TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
Nr. 4-40	0.635	56	3.5	2.7	2.30	11	18	2
Nr. 6-32	0.794	56	4.0	3.0	2.85	12	20	3
Nr. 8-32	0.794	63	4.5	3.4	3.50	13	21	3
Nr. 10-24	1.058	70	6.0	4.9	3.90	15	25	3
1/4-20	1.270	80	7.0	5.5	5.25	17	30	3
3/8-16	1.588	100	10.0	8.0	8.10	22	39	3

£	
U0	
107.78	004
109.77	006
106.67	008
114.35	010
146.29	025
176.68	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

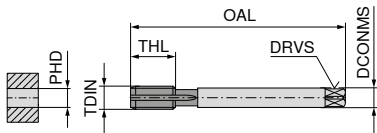


DIN 371 with reinforced shank



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 ...	
£	
U0	
72.07	004
64.62	006
62.96	008
64.66	010
73.64	025
88.63	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 ...	
£	
U0	
99.35	043
96.11	050
144.37	056
133.18	062
165.96	075
216.49	087
282.89	100
731.45	112
816.15	125
900.77	137

P	12
M	7
K	12
N	
S	
H	
O	

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

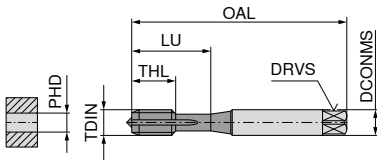
# Through hole – Machine taps, right hand

UNF

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



HSS-E  
FHA 0°  
≤ 1100 N/mm²  
≤ 3xD

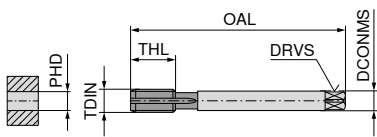


DIN 371 with reinforced shank

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	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

23 180 ...

£	
T9	
46.65	010
59.44	025
66.00	031
70.63	037



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	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

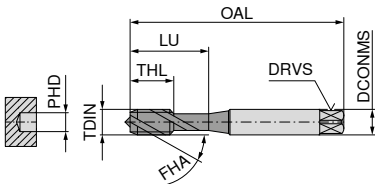
23 181 ...

£	
T9	
86.73	043
87.71	050
121.75	056
110.48	062
171.06	075

P	15
M	9
K	18
N	12
S	
H	
O	

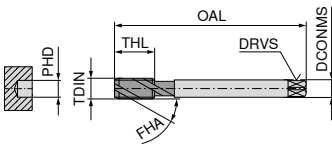
Cutting speed  $v_c$  (m/min.)

# Blind hole – Machine taps, right hand



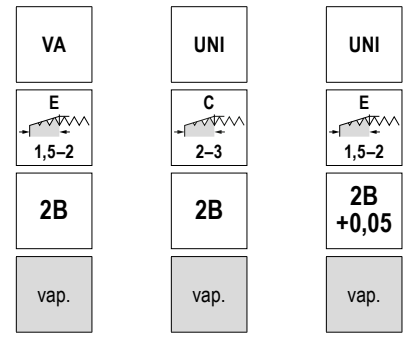
DIN 371 with reinforced shank

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

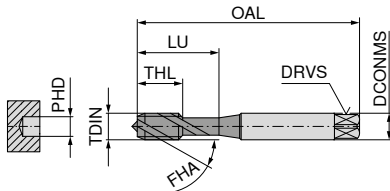
HSS-E  
FHA 42°  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

22 308 ...	22 606 ...	22 307 ...
£ U0	£ U0	£ U0
116.85		
79.57		
78.17		
		109.52
97.15		
82.03	62.45	
		114.87
86.30	66.37	
		119.81
95.43	91.16	
		138.56
98.50		138.56

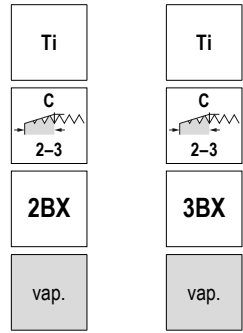
	8	12	12
P			
M			
K			
N			
S			
H			
O			

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

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

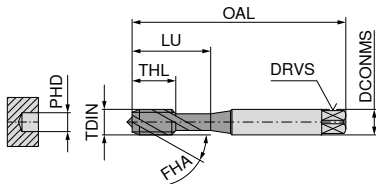
22 302 ...		22 303 ...	
£		£	
U0		U0	
131.19	010	131.19	010
143.42	025	143.42	025
163.20	031	152.82	031
167.98	037	167.98	037

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

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

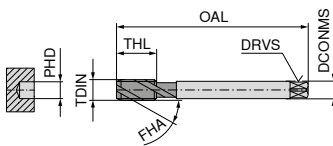
# Blind hole – Machine taps, right hand

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



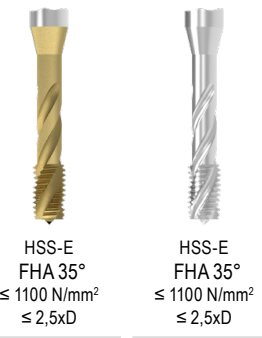
DIN 374 with reduced shank

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
C 2-3	C 2-3
2B	2B
TiN	

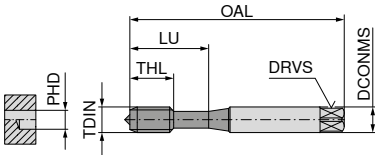
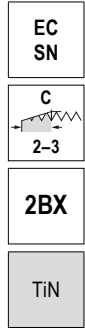


23 182 ...		23 482 ...	
£		£	
T9		T9	
49.12	010	48.57	010
61.71	025	53.80	025
66.57	031	56.18	031
74.12	037	62.14	037

23 183 ...		23 483 ...	
£		£	
T9		T9	
89.02	043	77.01	043
94.27	050	77.99	050
126.93	056	108.96	056
114.74	062	93.99	062
182.11	075	129.48	075

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

▲ SN = Thread formers with lubrication grooves



DIN 2174 with reinforced shank

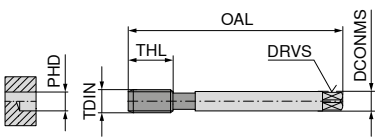


HSS-E  
≤ 1100 N/mm<sup>2</sup>  
≤ 3xD

22 312 ...

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
	mm	mm	mm	mm	mm	mm	mm	
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

£	
U0	
91.56	004
85.35	006
88.24	008
94.27	010
110.51	025



DIN 2174 with reduced shank

22 313 ...

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
	mm	mm	mm	mm	mm	mm	
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

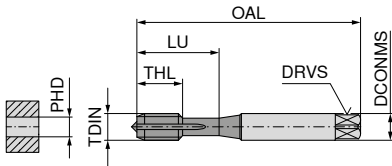
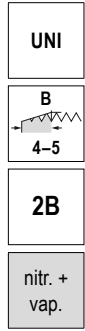
£	
U0	
164.68	043
169.34	050

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



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
EG Nr. 4-48	0.529	56	4	3.0	3.0	9	20	3
EG Nr. 6-40	0.635	70	6	4.9	3.7	11	25	3
EG Nr. 8-36	0.706	80	6	4.9	4.4	13	30	3
EG Nr. 10-32	0.794	80	6	4.9	5.1	13	30	3
EG 1/4-28	0.907	90	8	6.2	6.6	17	35	3

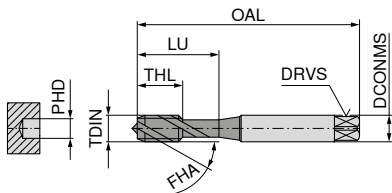
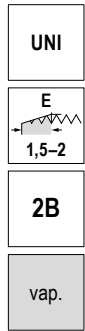
22 676 ...

£	
U0	
100.76	004
99.35	006
97.12	008
103.55	010
110.48	025

P	12
M	7
K	12
N	
S	
H	
O	

Cutting speed v<sub>c</sub> (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

6

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
EG Nr. 6-40	0.635	70	6	4.9	3.7	8	25	3
EG Nr. 8-36	0.706	80	6	4.9	4.4	8	30	3
EG Nr. 10-32	0.794	80	6	4.9	5.1	8	30	3
EG 1/4-28	0.907	90	8	6.2	6.6	10	35	3

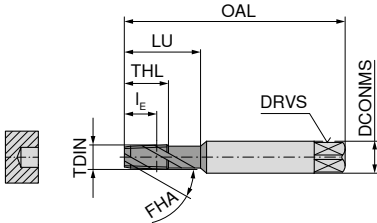
22 680 ...

£	
U0	
101.99	004
99.10	006
101.57	008
109.52	010
120.78	025

P	12
M	7
K	12
N	
S	
H	
O	

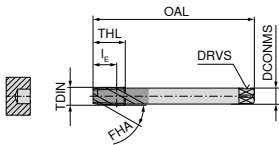
Cutting speed v<sub>c</sub> (m/min.)

# Blind hole – Machine taps, right hand



DIN 371 with reinforced shank

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	l <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
1/8-27	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

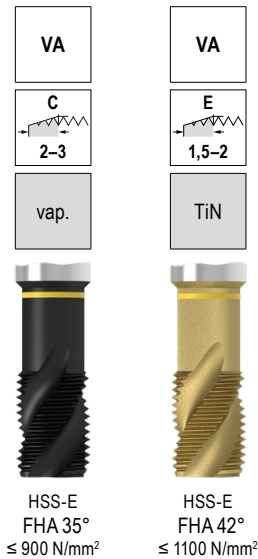


DIN 374 with reduced shank

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	l <sub>E</sub> 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

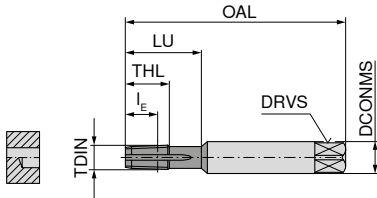
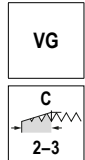
P	4	5
M	3	4
K		
N	22	22
S		
H		
O		

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



22 364 ...		22 365 ...	
£		£	
U0		U0	
131.17	006		
151.70	012	204.93	012
		210.90	025
177.20	025		

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



DIN 371 with reinforced shank

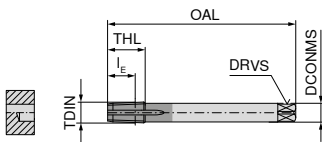


HSS-E  
FHA 0°  
≤ 1100 N/mm²

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
1/4-18	1.411	100	14	11.0	13.55	19.5	34.5	3

22 374 ...

£	
U0	
114.74	006
147.27	012
152.82	025



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	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

22 375 ...

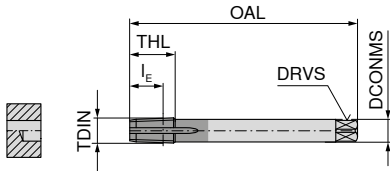
£	
U0	
191.98	037
259.13	050
336.13	075
468.11	100

P	4
M	
K	6
N	22
S	
H	
O	

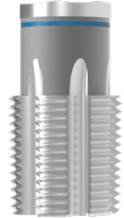
Cutting speed  $v_c$  (m/min.)

# 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
1/8-27	0.941	63	7	5.5	9.28	13.0	5
1/4-18	1.411	63	11	9.0	13.55	19.5	5
3/8-18	1.411	70	12	9.0	13.86	19.5	5
1/2-14	1.814	80	16	12.0	18.11	23.0	5
3/4-14	1.814	100	20	16.0	18.59	26.0	6
1-11,5	2.209	110	25	20.0	22.31	32.0	6

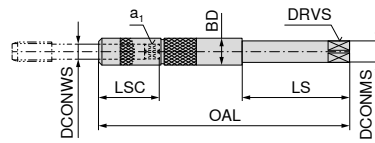
£  
U0

006  
012  
025  
037  
050  
075  
100

P	6
M	
K	6
N	22
S	
H	
O	

Cutting speed  $v_c$  (m/min.)

# Shank extensions for taps



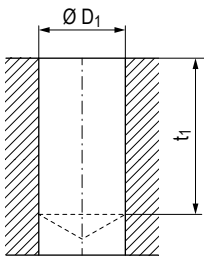
20 450 ...

DIN 371	DIN 374 / 376	DCONWS	a <sub>i</sub>	LSC	BD	LS	OAL	DRVS	DCONMS	£	
		mm	mm	mm	mm	mm	mm	mm	mm	U0	
M3	M4,5 - M5	3.5	2.7	23	7.5	60	130	4.9	6	411.62	020
M3,5	M5,5	4.0	3.0	23	8.4	60	130	4.9	6	458.33	030
M4	M6	4.5	3.4	23	8.4	60	130	4.9	6	458.33	040
M4,5 - M6	M8	6.0	4.9	26	12.1	60	130	5.5	7	463.57	050
M7	M9 - M10	7.0	5.5	26	12.1	60	130	5.5	7	521.62	060
M8	M11	8.0	6.2	30	13.0	60	130	6.2	8	513.37	070
M9	M12	9.0	7.0	31	15.0	60	130	7.0	9	513.37	080
M10		10.0	8.0	33	15.0	60	130	8.0	10	526.63	090
	M14	11.0	9.0	36	18.0	90	180	9.0	11	705.44	100
(M12)	M16	12.0	9.0	36	18.0	90	180	9.0	12	705.44	110

6

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

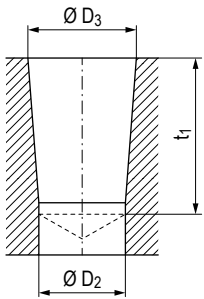
## Pre-drilling of cylindrical holes without reamer



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



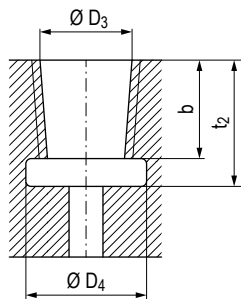
Taper 1:16

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

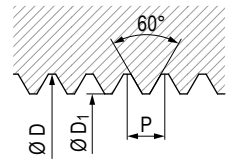
Ø D inch	P Gg/1"	Rc			
		Ø D <sub>3</sub> mm	b mm	t <sub>2</sub> min. mm	Ø D <sub>4</sub> min. mm
1/16	28	6,56	5,6	9,5	7,6
1/8	28	8,57	5,6	9,5	9,6
1/4	19	11,45	8,4	14	13
3/8	19	14,95	8,8	14,4	16,5
1/2	14	18,63	11,4	19	20,6
3/4	14	24,12	12,7	20,3	26
1	11	30,29	14,5	24,3	32,8

P = Pitch

## Tapped hole pilot diameter

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

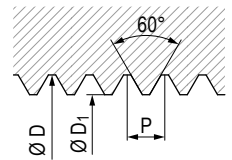
Thread nominal Ø		Ø D <sub>1</sub>		Core hole	Thread nominal Ø		Ø D <sub>1</sub>		Core hole
D	P	min.	max.		D	P	min.	max.	
M1	0,25	0,729	0,785	0,75	M12	1,75	10,106	10,441	10,2
M1,1	0,25	0,829	0,885	0,85	M14	2	11,835	12,210	12
M1,2	0,25	0,929	0,985	0,95	M16	2	13,835	14,210	14
M1,4	0,3	1,075	1,142	1,1	M18	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



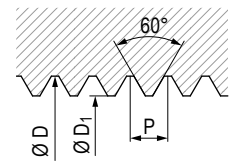
Dimensions in mm; P=Pitch



## Thread former pilot hole diameter

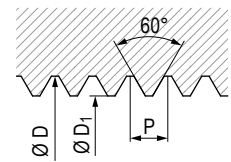
**M** ISO metric coarse threads 6H to DIN 13 and DIN ISO 965-1 ( M1-M1,4 = 5H )

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



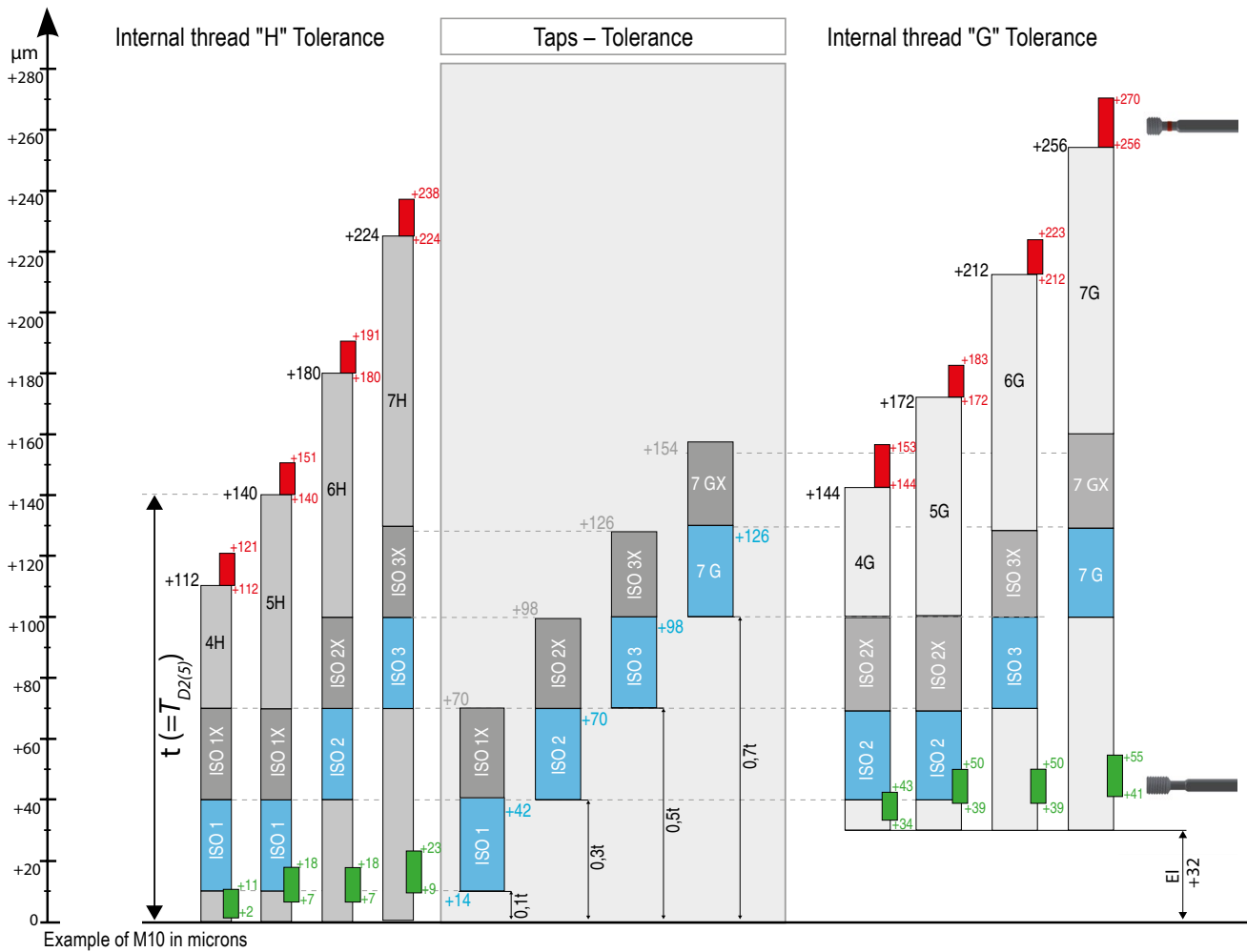
**MF** ISO metric fine threads 6H to DIN 13 and DIN ISO 965-1

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

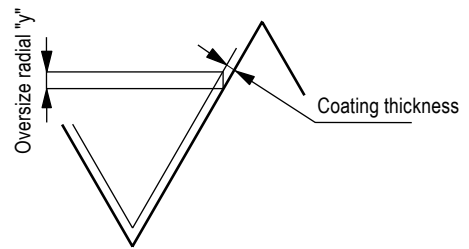


6

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

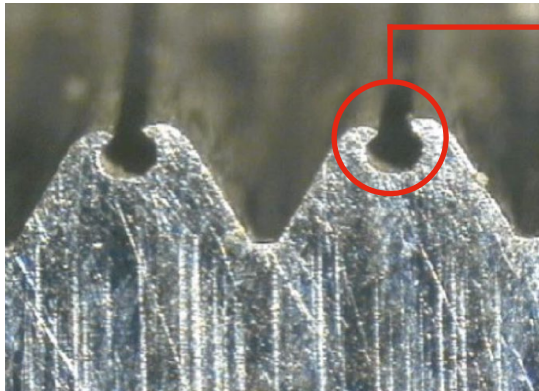


Application class of the tap Designation according to		Tolerance class of the internal thread to be cut					
DIN	ISO	4H	5H	6H	7H	8H	
4H	ISO1	4G	5G	6H	7H	8H	
6H	ISO2	-	(4E)	6G	7G	8G	
6G	ISO3	-	-	(6E)	-	-	
7G	-	-	-	-	-	-	

**i** 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

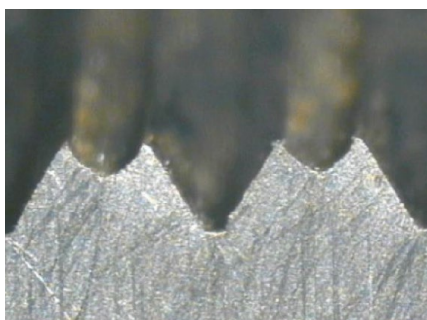
← Thread formers



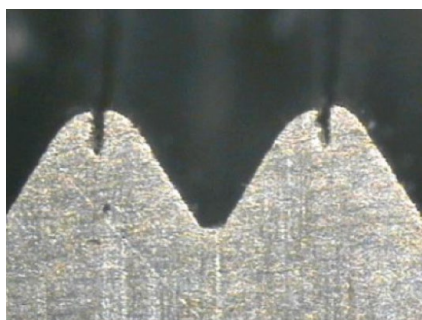
The thread profile is pressed gradually into the material via the start (leading edge) of the tap.

## Properties

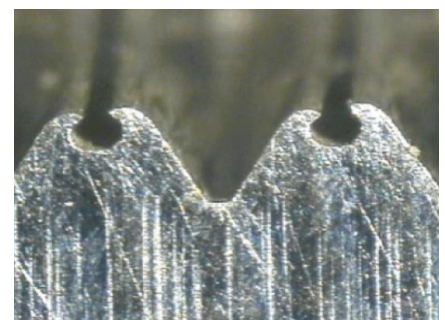
- ▲ One type can be used in different materials
- ▲ For through and blind holes
- ▲ Very good thread surface quality
- ▲ High static and dynamic strength thread
- ▲ Secure machining of deep and counterbored threads
- ▲ Short machining times
- ▲ No chip problems
- ▲ No swarf
- ▲ High process security
- ▲ 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>		

