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fraisa

Hartmetallbohrer | Gewindewerkzeuge

Hartmetallbohrer XDrill®

- **Hochleistungs-Hartmetallbohrer für die Bearbeitung von Stahlwerkstoffen**
  Hervorragende Eignung für Stähle bis zu Rm 1500 N/mm^2
- **Deutlich höhere Standzeit bei erhöhten Vorschubwerten und höherer Schnittgeschwindigkeit**
  Dank besonders stabiler Scheidengeometrie, Ultrafeinstkorn-Hartmetall und hochharter Beschichtung
- **Verschleissfeste Nano-Multilayer-Hartstoffschicht DURO-X**
  Hohe Prozesssicherheit durch die speziell für die Hochleistungs-bearbeitung gewählte, temperaturbeständige Beschichtung
- **Reduktion der Bearbeitungszeit um mehr als 50 %**

XDRILL®

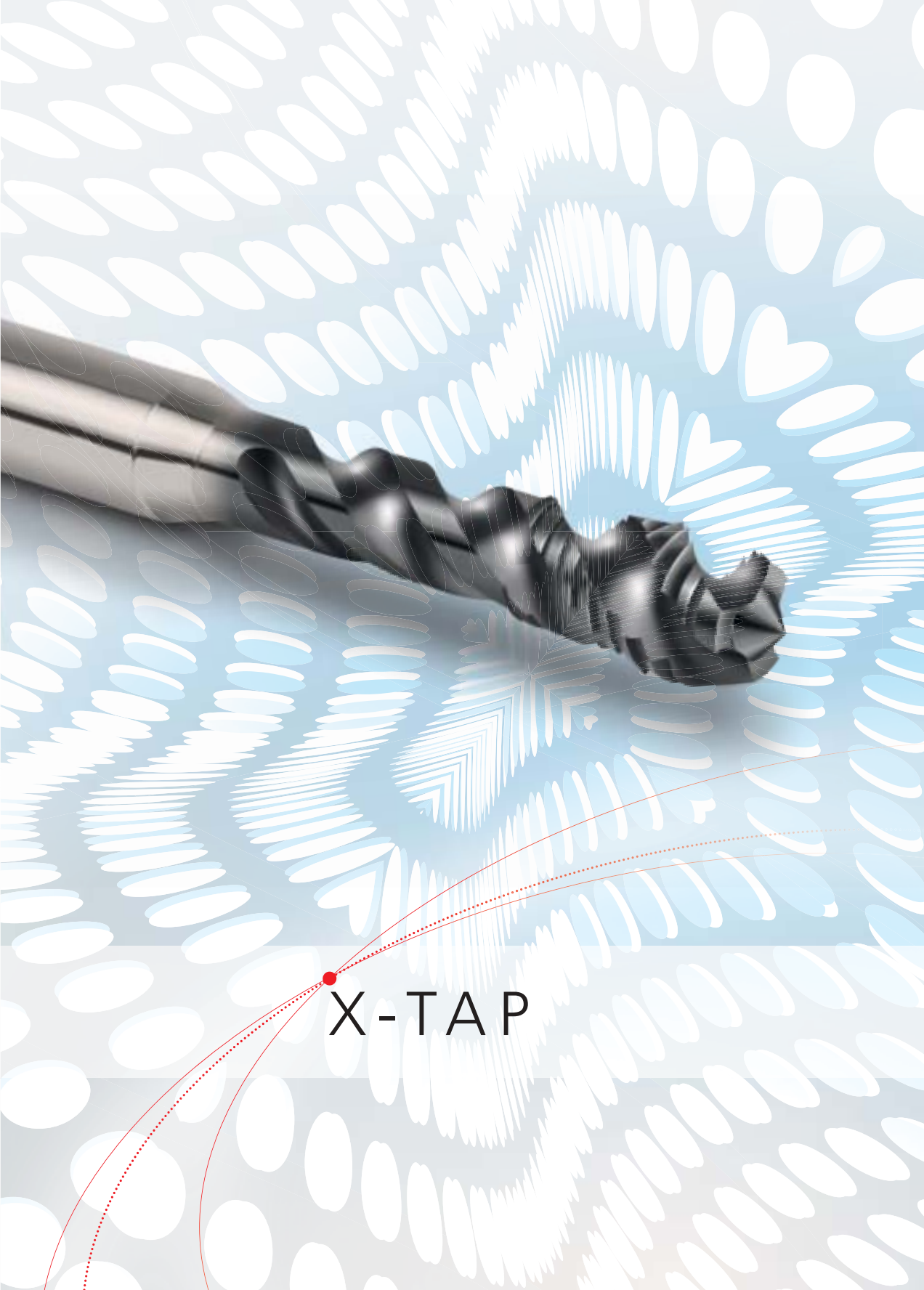
Hartmetallbohrer Supradrill® U

- **Universelle Bearbeitung von Stahlwerkstoffen**
  Prozesssicheres Bohren in Stahl und rostfreiem Stahl
- **Umfangreiches Sortiment für ein breites Bauteile- und Anwendungsspektrum**
  Basissortiment umfasst 3xD IKZ, 5xD IKZ sowie 5xD ohne IKZ
- **Hochleistungsschicht Nano-U²**
  Die leistungsfähigste Beschichtung für das universelle Bohren in Stahl
- **Höhere Prozesssicherheit, höhere Standzeit und Reduktion der Produktionskosten**
  Dank des eigens entwickelten Schichtkonzepts und dimensionsspezifischer Gestaltung der Schneidkante

SUPRADRILL® U

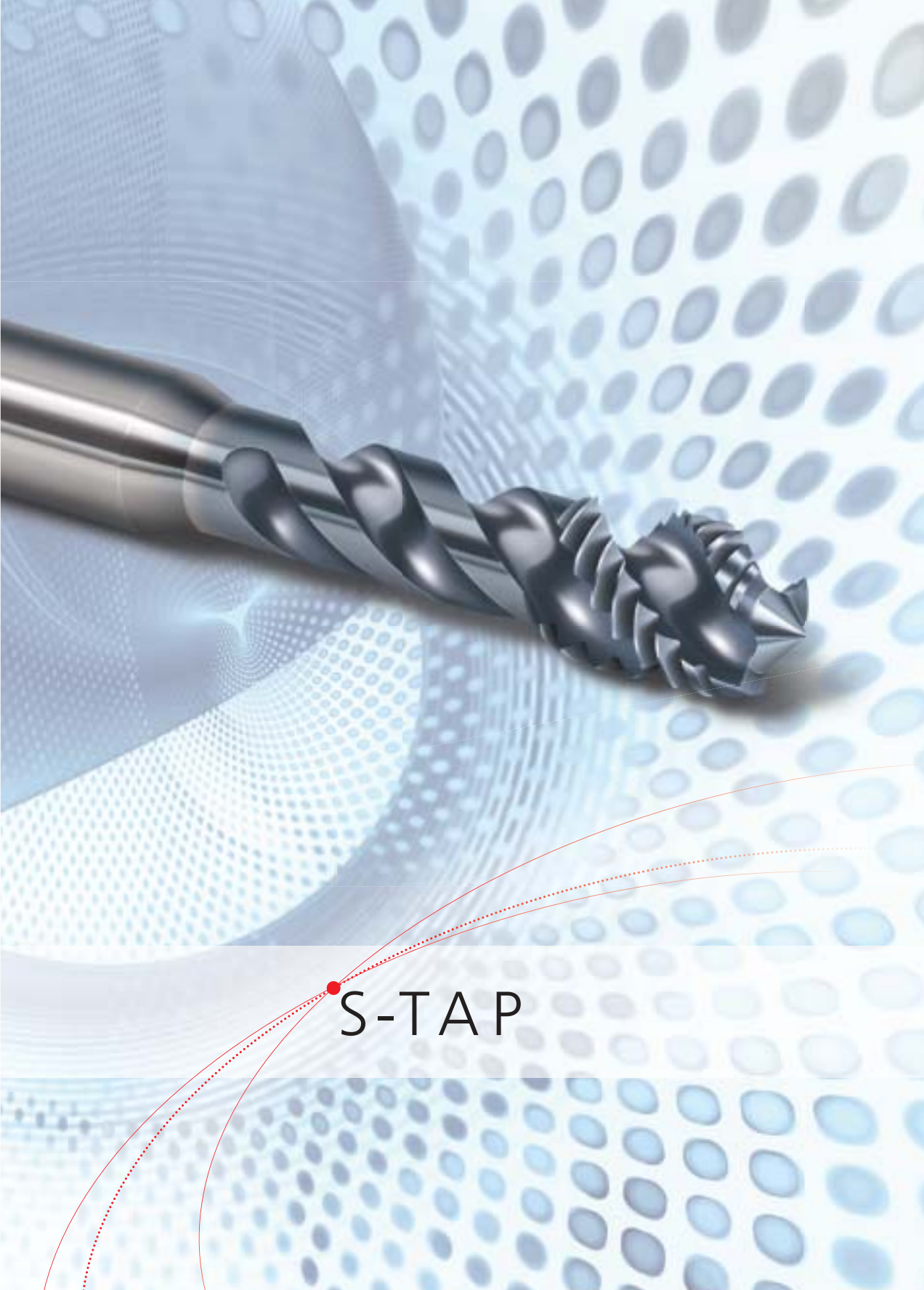
Gewindebohrer x-tap

- **Gewindebohrer für die Hochleistungsbearbeitung von Stahl und rostfreiem Stahl**
- **Hohe Prozesssicherheit bei geringem Drehmoment und hohen Standzeiten**
- **Vielzahl von unterschiedlichen Gewindearten verfügbar für ein breites Anwendungsspektrum**
  Mit einem Codierungssystem zur sicheren Auswahl der Werkzeuge und Einsatzdaten
- **Hartstoffschicht TRIBO**
  Zur prozesssicheren Bearbeitung von rostfreiem Stahl


X-TAP

Gewindebohrer s-tap

- **Die neue Leistungsreferenz im universellen Gewindeschneiden von Stahl**
- **Hohe Prozesssicherheit, hohe Standzeit, sichere Automatisierbarkeit**
  Dank neuem Substrat, Entgratungsverfahren, dimensionsspezifischer Schneidkantenkonditionierung und Hochleistungsschicht TiCN
- **Umfangreiches metrisches Basissortiment sowie Gasgewinde**
  Für die Stahlbearbeitung auch im unteren Festigkeitsbereich
- **Rigid tapping und Längenausgleich**



S-TAP

Gewindebohrer u-tap

- **Gewindebohrer für den universellen Einsatz**
- **Bearbeitung der verschiedensten Werkstoffe dank Implementierung neuester Technologien**
  Geeignet für Stahl, AI-Knetlegierungen, nichtrostenden Stahl
- **Hohe Prozesssicherheit und Reduktion der Herstellkosten**
  Durch ideale Schneidkantengestaltung und universelle Einsetzbarkeit

U-TAP

Ersetzt den Katalog
Hartmetallbohrer/Gewindewerkzeuge
2017/18

www.fraisa.com

Preise inklusive Rohstoffzuschlag.

Hartmetallbohrer

Bohrwerkzeuge für Stahl, Aluminium, Inox, Titan, CFK, CFK / Metall-Verbund

NC-Anbohrer, Senker

15 – 135

Gewindewerkzeuge

Metrisches Regelgewinde
M / MJ
137 – 243
M

Metrisches Feingewinde
MF
245 – 269
MF

Whitworth-Rohrgewinde
zylindrisch G
271 – 301
G

Amerikanische Gewinde
UNC / UNJC / UNF / UNJF
303 – 335
UN

Amerikanische Rohrgewinde
kegelig NPT / NPTF
337 – 343
NPT NPTF

Gewinde für Drahteinsätze
EG M
345 – 349
EG

Gewindeformer / Cold Forming
M / MF / EG M
351 – 385
CF

Gewindefräser / Thread Milling
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Bohrwerkzeuge für Stahl, Aluminium, Inox und Titan

Spiralbohrer

5xd

N° B72015 XDrill®

HM MGX		Rm <850-1500			21

N° B62015 / B63015 Supradrill® U

HM MG10		Rm <850-1100	Inox Stainless		37

N° B62014 / B63014 Supradrill® U

HM MG10		Rm <850-1100			55

3xd

N° B72011 XDrill®

HM MGX		Rm <850-1500			65

N° B52111 / B53111 Supradrill® HX

HM XA		HRC 48 - >60			75

N° B62011 / B63011 Supradrill® U

HM MG10		Rm <850-1100	Inox Stainless		81

8xd

N° B72020 XDrill®

HM MGX		Rm <850-1300			85

N° B52020 / B53020 Supradrill® N

HM MG10		Rm <850-1100			95

Bohrwerkzeuge für Stahl, Aluminium, Inox und Titan

Tieflochbohrer

15xd

N° B52915

HM MGD²

Rm <850-1100

99

20xd

N° B52920

HM MGD²

Rm <850-1100

101

25xd

N° B52925

HM MGD²

Rm <850-1100

103

30xd

N° B52930

HM MGD²

Rm <850-1100

105

Bohrwerkzeuge für Stahl, Aluminium, Inox und Titan

Mikrobohrer

5xd

N° B57014 Microdrill NX

HM MG10		Rm <850-1100			107

N° B57015 Microdrill NX

HM MG10		Rm <850-1100	Inox Stainless		113

8xd

N° B57020 Microdrill NX

HM MG10		Rm <850-1100			117

Stufenbohrer

3xd, für Gewindebohrerkernloch

N° B52801

HM		Rm <850-1100			121

Bohrwerkzeuge für CFK, CFK/Metall-Verbund

Spiralbohrer

3xd

N° B52710

HM XA | CFK | 123

5xd

N° B52724

HM MG10 | CFK/Ti | CFK/Al | 125

Mikrobohrer

3xd

N° B57710

HM XA | CFK | 127

NC-Anbohrer, Senker

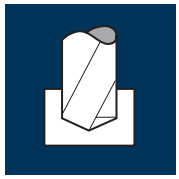
NC-Anbohrer

N° B92040	HM MG10	90°	Rm <850-1100			129
N° B92020	HM MG10	120°	Rm <850-1100			131
N° B92008	HM MG10	144°	Rm <850-1100			133

Senker

N° B92360	HM	90°	Rm <850-1100			134
N° B92310 / B92300	HSS	90°	Rm <850-1100			135

Anwendung



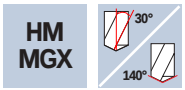
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	3.00	180	0.135	19100	2580	18.0	0.5
	3.30	180	0.145	17360	2515	21.5	0.5
	3.50	180	0.155	16370	2535	24.5	0.5
	3.80	180	0.170	15080	2565	29.0	0.6
	4.00	180	0.185	14325	2650	33.5	0.6
	4.20	180	0.200	13640	2730	38.0	0.6
	4.50	180	0.230	12730	2930	46.5	0.5
	4.80	180	0.245	11935	2925	53.0	0.7
	5.00	180	0.255	11460	2920	57.5	0.7
Stahl 500 - 850 N/mm²	3.00	160	0.115	16975	1950	14.0	0.6
	3.30	160	0.125	15435	1930	16.5	0.6
	3.50	160	0.135	14550	1965	19.0	0.6
	3.80	160	0.145	13405	1945	22.0	0.8
	4.00	160	0.160	12730	2035	25.5	0.8
	4.20	160	0.170	12125	2060	28.5	0.8
	4.50	160	0.195	11320	2205	35.0	0.7
	4.80	160	0.210	10610	2230	40.5	0.9
	5.00	160	0.215	10185	2190	43.0	1.0
Stahl 850 - 1100 N/mm²	3.00	140	0.105	14855	1560	11.0	0.8
	3.30	140	0.115	13505	1555	13.5	0.8
	3.50	140	0.125	12730	1590	15.5	0.7
	3.80	140	0.135	11725	1585	18.0	1.0
	4.00	140	0.145	11140	1615	20.5	1.0
	4.20	140	0.155	10610	1645	23.0	1.0
	4.50	140	0.180	9905	1785	28.5	0.9
	4.80	140	0.190	9285	1765	32.0	1.2
	5.00	140	0.200	8915	1785	35.0	1.2
Stahl 1100 - 1300 N/mm²	3.00	100	0.080	10610	850	6.0	1.4
	3.30	100	0.090	9645	870	7.5	1.4
	3.50	100	0.095	9095	865	8.5	1.4
	3.80	100	0.100	8375	840	9.5	2.0
	4.00	100	0.110	7960	875	11.0	1.8
	4.20	100	0.120	7580	910	12.5	1.8
	4.50	100	0.135	7075	955	15.0	1.7
	4.80	100	0.145	6630	960	17.5	2.1
	5.00	100	0.150	6365	955	19.0	2.2

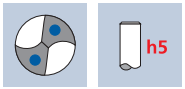
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	3.00	55	0.060	5835	350	2.5	3.5
	3.30	55	0.070	5305	370	3.0	3.2
	3.50	55	0.070	5000	350	3.5	3.4
	3.80	55	0.080	4605	370	4.0	4.4
	4.00	55	0.085	4375	370	4.5	4.4
	4.20	55	0.090	4170	375	5.0	4.3
	4.50	55	0.105	3890	410	6.5	3.9
	4.80	55	0.110	3645	400	7.0	5.1
	5.00	55	0.115	3500	405	8.0	5.1
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	3.00	70	0.060	7425	445	3.0	2.7
	3.30	70	0.070	6750	475	4.0	2.5
	3.50	70	0.070	6365	445	4.5	2.7
	3.80	70	0.080	5865	470	5.5	3.5
	4.00	70	0.085	5570	475	6.0	3.4
	4.20	70	0.090	5305	475	6.5	3.4
	4.50	70	0.105	4950	520	8.5	3.1
	4.80	70	0.110	4640	510	9.0	4.0
	5.00	70	0.115	4455	510	10.0	4.1
Titanlegierungen >300 HB [Ti6Al4V]	3.00	40	0.060	4245	255	2.0	4.8
	3.30	40	0.070	3860	270	2.5	4.4
	3.50	40	0.070	3640	255	2.5	4.6
	3.80	40	0.080	3350	270	3.0	6.1
	4.00	40	0.085	3185	270	3.5	6.0
	4.20	40	0.090	3030	275	4.0	5.8
	4.50	40	0.105	2830	295	4.5	5.4
	4.80	40	0.110	2655	290	5.0	7.1
	5.00	40	0.115	2545	295	6.0	7.1
Gusseisen GG(G)	3.00	240	0.120	25465	3055	21.5	0.4
	3.30	240	0.135	23150	3125	26.5	0.4
	3.50	240	0.140	21825	3055	29.5	0.4
	3.80	240	0.155	20105	3115	35.5	0.5
	4.00	240	0.165	19100	3150	39.5	0.5
	4.20	240	0.180	18190	3275	45.5	0.5
	4.50	240	0.205	16975	3480	55.5	0.5
	4.80	240	0.220	15915	3500	63.5	0.6
	5.00	240	0.230	15280	3515	69.0	0.6

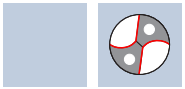
Spiralbohrer XDrill®

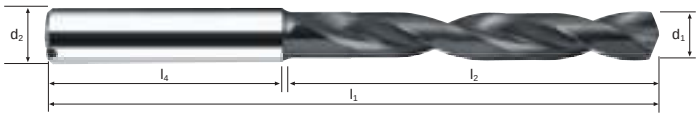
5xd

HM MGX







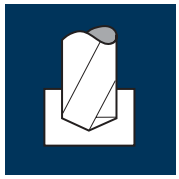


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72015** ø-Code **.0300**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		DURO-X B72015
.0300	3.0	6	66	28	36	20.2		●
.0310	3.1	6	66	28	36	20.2		●
.0320	3.2	6	66	28	36	20.0		●
.0330	3.3	6	66	28	36	20.0		●
.0340	3.4	6	66	28	36	19.8		●
.0350	3.5	6	66	28	36	19.8		●
.0360	3.6	6	66	28	36	19.6		●
.0370	3.7	6	66	28	36	19.6		●
.0380	3.8	6	74	36	36	27.4		●
.0390	3.9	6	74	36	36	27.3		●
.0400	4.0	6	74	36	36	26.9		●
.0410	4.1	6	74	36	36	26.8		●
.0420	4.2	6	74	36	36	26.7		●
.0430	4.3	6	74	36	36	26.7		●
.0440	4.4	6	74	36	36	26.6		●
.0450	4.5	6	74	36	36	26.6		●
.0460	4.6	6	74	36	36	26.5		●
.0470	4.7	6	74	36	36	26.5		●
.0480	4.8	6	82	44	36	34.3		●
.0490	4.9	6	82	44	36	34.3		●
.0500	5.0	6	82	44	36	34.7		●
.0510	5.1	6	82	44	36	34.7		●
.0520	5.2	6	82	44	36	34.6		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	5.50	180	0.280	10415	2915	69.5	0.7
	5.80	180	0.295	9880	2915	77.0	0.7
	6.00	180	0.315	9550	3010	85.0	0.7
	6.20	180	0.335	9240	3095	93.5	0.8
	6.50	180	0.350	8815	3085	102.5	0.8
	6.80	180	0.365	8425	3075	111.5	0.8
	7.00	180	0.380	8185	3110	119.5	0.8
	7.20	180	0.390	7960	3105	126.5	0.8
	7.50	180	0.405	7640	3095	136.5	0.8
Stahl 500 - 850 N/mm²	5.50	160	0.240	9260	2220	52.5	0.9
	5.80	160	0.250	8780	2195	58.0	0.9
	6.00	160	0.270	8490	2290	64.5	0.9
	6.20	160	0.285	8215	2340	70.5	1.1
	6.50	160	0.300	7835	2350	78.0	1.0
	6.80	160	0.315	7490	2360	85.5	1.0
	7.00	160	0.325	7275	2365	91.0	1.0
	7.20	160	0.335	7075	2370	96.5	1.0
	7.50	160	0.345	6790	2345	103.5	1.0
Stahl 850 - 1100 N/mm²	5.50	140	0.220	8100	1780	42.5	1.2
	5.80	140	0.230	7685	1770	47.0	1.2
	6.00	140	0.250	7425	1855	52.5	1.1
	6.20	140	0.265	7190	1905	57.5	1.3
	6.50	140	0.275	6855	1885	62.5	1.3
	6.80	140	0.290	6555	1900	69.0	1.3
	7.00	140	0.300	6365	1910	73.5	1.3
	7.20	140	0.305	6190	1890	77.0	1.3
	7.50	140	0.320	5940	1900	84.0	1.3
Stahl 1100 - 1300 N/mm²	5.50	100	0.165	5785	955	22.5	2.2
	5.80	100	0.175	5490	960	25.5	2.1
	6.00	100	0.190	5305	1010	28.5	2.0
	6.20	100	0.200	5135	1025	31.0	2.4
	6.50	100	0.210	4895	1030	34.0	2.4
	6.80	100	0.220	4680	1030	37.5	2.4
	7.00	100	0.225	4545	1025	39.5	2.4
	7.20	100	0.235	4420	1040	42.5	2.3
	7.50	100	0.245	4245	1040	46.0	2.3

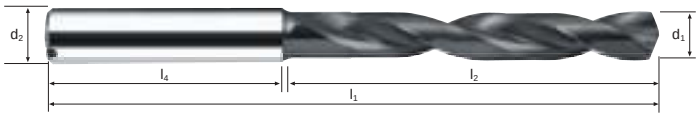
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	5.50	55	0.130	3185	415	10.0	5.0
	5.80	55	0.135	3020	410	11.0	5.0
	6.00	55	0.145	2920	425	12.0	4.8
	6.20	55	0.155	2825	440	13.5	5.6
	6.50	55	0.160	2695	430	14.5	5.7
	6.80	55	0.170	2575	440	16.0	5.6
	7.00	55	0.175	2500	440	17.0	5.6
	7.20	55	0.180	2430	435	17.5	5.6
	7.50	55	0.185	2335	430	19.0	5.6
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	5.50	70	0.130	4050	525	12.5	3.9
	5.80	70	0.135	3840	520	13.5	4.0
	6.00	70	0.145	3715	540	15.5	3.8
	6.20	70	0.155	3595	555	17.0	4.5
	6.50	70	0.160	3430	550	18.5	4.5
	6.80	70	0.170	3275	555	20.0	4.4
	7.00	70	0.175	3185	555	21.5	4.4
	7.20	70	0.180	3095	555	22.5	4.4
	7.50	70	0.185	2970	550	24.5	4.4
Titanlegierungen >300 HB [Ti6Al4V]	5.50	40	0.130	2315	300	7.0	6.9
	5.80	40	0.135	2195	295	8.0	7.0
	6.00	40	0.145	2120	305	8.5	6.7
	6.20	40	0.155	2055	320	9.5	7.7
	6.50	40	0.160	1960	315	10.5	7.8
	6.80	40	0.170	1870	320	11.5	7.7
	7.00	40	0.175	1820	320	12.5	7.6
	7.20	40	0.180	1770	320	13.0	7.6
	7.50	40	0.185	1700	315	14.0	7.7
Gusseisen GG(G)	5.50	240	0.255	13890	3540	84.0	0.6
	5.80	240	0.265	13170	3490	92.0	0.6
	6.00	240	0.285	12730	3630	102.5	0.6
	6.20	240	0.305	12320	3760	113.5	0.7
	6.50	240	0.320	11755	3760	125.0	0.7
	6.80	240	0.335	11235	3765	136.5	0.7
	7.00	240	0.345	10915	3765	145.0	0.6
	7.20	240	0.355	10610	3765	153.5	0.6
	7.50	240	0.370	10185	3770	166.5	0.6

Spiralbohrer XDrill®

5xd

HM MGX

h5

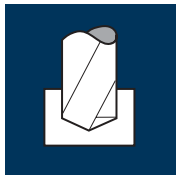


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72015** ø-Code **.0530**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		DURO-X B72015
.0530	5.3	6	82	44	36	34.6		●
.0540	5.4	6	82	44	36	34.5		●
.0550	5.5	6	82	44	36	34.4		●
.0560	5.6	6	82	44	36	34.3		●
.0570	5.7	6	82	44	36	34.4		●
.0580	5.8	6	82	44	36	34.3		●
.0590	5.9	6	82	44	36	34.3		●
.0600	6.0	6	82	44	36	34.3		●
.0610	6.1	8	91	53	36	41.3		●
.0620	6.2	8	91	53	36	41.2		●
.0630	6.3	8	91	53	36	41.2		●
.0640	6.4	8	91	53	36	41.1		●
.0650	6.5	8	91	53	36	41.0		●
.0660	6.6	8	91	53	36	40.9		●
.0670	6.7	8	91	53	36	40.9		●
.0680	6.8	8	91	53	36	40.8		●
.0690	6.9	8	91	53	36	40.8		●
.0700	7.0	8	91	53	36	40.7		●
.0710	7.1	8	91	53	36	40.7		●
.0720	7.2	8	91	53	36	40.6		●
.0730	7.3	8	91	53	36	40.5		●
.0740	7.4	8	91	53	36	40.4		●
.0750	7.5	8	91	53	36	40.4		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	7.60	180	0.410	7540	3090	140.0	0.8
	8.00	180	0.430	7160	3080	155.0	0.8
	8.20	180	0.445	6985	3110	164.0	0.9
	8.50	180	0.460	6740	3100	176.0	0.9
	8.80	180	0.475	6510	3090	188.0	0.9
	9.00	180	0.485	6365	3085	196.5	0.9
	9.20	180	0.495	6230	3085	205.0	0.9
	9.50	180	0.515	6030	3105	220.0	0.9
	9.80	180	0.530	5845	3100	234.0	0.9
Stahl 500 - 850 N/mm²	7.60	160	0.350	6700	2345	106.5	1.0
	8.00	160	0.370	6365	2355	118.5	1.0
	8.20	160	0.380	6210	2360	124.5	1.2
	8.50	160	0.395	5990	2365	134.0	1.2
	8.80	160	0.405	5785	2345	142.5	1.2
	9.00	160	0.415	5660	2350	149.5	1.2
	9.20	160	0.425	5535	2350	156.0	1.2
	9.50	160	0.440	5360	2360	167.5	1.2
	9.80	160	0.455	5195	2365	178.5	1.1
Stahl 850 - 1100 N/mm²	7.60	140	0.325	5865	1905	86.5	1.3
	8.00	140	0.340	5570	1895	95.5	1.3
	8.20	140	0.350	5435	1900	100.5	1.5
	8.50	140	0.360	5245	1890	107.0	1.5
	8.80	140	0.375	5065	1900	115.5	1.4
	9.00	140	0.385	4950	1905	121.0	1.4
	9.20	140	0.390	4845	1890	125.5	1.4
	9.50	140	0.405	4690	1900	134.5	1.4
	9.80	140	0.420	4545	1910	144.0	1.4
Stahl 1100 - 1300 N/mm²	7.60	100	0.245	4190	1025	46.5	2.4
	8.00	100	0.260	3980	1035	52.0	2.3
	8.20	100	0.265	3880	1030	54.5	2.7
	8.50	100	0.275	3745	1030	58.5	2.7
	8.80	100	0.285	3615	1030	62.5	2.7
	9.00	100	0.290	3535	1025	65.0	2.7
	9.20	100	0.300	3460	1040	69.0	2.6
	9.50	100	0.310	3350	1040	73.5	2.6
	9.80	100	0.320	3250	1040	78.5	2.6

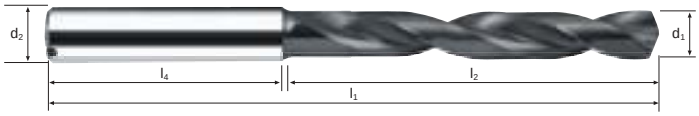
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	7.60	55	0.190	2305	440	20.0	5.5
	8.00	55	0.200	2190	440	22.0	5.5
	8.20	55	0.205	2135	440	23.0	6.3
	8.50	55	0.210	2060	435	24.5	6.3
	8.80	55	0.220	1990	440	27.0	6.2
	9.00	55	0.225	1945	440	28.0	6.2
	9.20	55	0.230	1905	440	29.0	6.2
	9.50	55	0.235	1845	435	31.0	6.3
	9.80	55	0.245	1785	435	33.0	6.2
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	7.60	70	0.190	2930	555	25.0	4.4
	8.00	70	0.200	2785	555	28.0	4.4
	8.20	70	0.205	2715	555	29.5	5.0
	8.50	70	0.210	2620	550	31.0	5.0
	8.80	70	0.220	2530	555	34.0	5.0
	9.00	70	0.225	2475	555	35.5	4.9
	9.20	70	0.230	2420	555	37.0	4.9
	9.50	70	0.235	2345	550	39.0	4.9
	9.80	70	0.245	2275	555	42.0	4.9
Titanlegierungen >300 HB [Ti6Al4V]	7.60	40	0.190	1675	320	14.5	7.6
	8.00	40	0.200	1590	320	16.0	7.6
	8.20	40	0.205	1555	320	17.0	8.7
	8.50	40	0.210	1500	315	18.0	8.8
	8.80	40	0.220	1445	320	19.5	8.6
	9.00	40	0.225	1415	320	20.5	8.6
	9.20	40	0.230	1385	320	21.5	8.5
	9.50	40	0.235	1340	315	22.5	8.6
	9.80	40	0.245	1300	320	24.0	8.5
Gusseisen GG(G)	7.60	240	0.375	10050	3770	171.0	0.6
	8.00	240	0.395	9550	3770	189.5	0.6
	8.20	240	0.405	9315	3775	199.5	0.7
	8.50	240	0.415	8990	3730	211.5	0.7
	8.80	240	0.430	8680	3730	227.0	0.7
	9.00	240	0.440	8490	3735	237.5	0.7
	9.20	240	0.450	8305	3735	248.5	0.7
	9.50	240	0.465	8040	3740	265.0	0.7
	9.80	240	0.480	7795	3740	282.0	0.7

Spiralbohrer XDrill®

5xd

HM MGX

h5

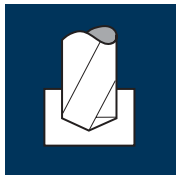


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72015** ø-Code **.0760**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		DURO-X B72015
.0760	7.6	8	91	53	36	40.3		●
.0770	7.7	8	91	53	36	40.3		●
.0780	7.8	8	91	53	36	40.3		●
.0790	7.9	8	91	53	36	40.3		●
.0800	8.0	8	91	53	36	40.3		●
.0810	8.1	10	103	61	40	46.3		●
.0820	8.2	10	103	61	40	46.2		●
.0830	8.3	10	103	61	40	46.2		●
.0840	8.4	10	103	61	40	46.0		●
.0850	8.5	10	103	61	40	46.0		●
.0860	8.6	10	103	61	40	45.9		●
.0870	8.7	10	103	61	40	45.9		●
.0880	8.8	10	103	61	40	45.8		●
.0890	8.9	10	103	61	40	45.8		●
.0900	9.0	10	103	61	40	45.7		●
.0910	9.1	10	103	61	40	45.6		●
.0920	9.2	10	103	61	40	45.5		●
.0930	9.3	10	103	61	40	45.5		●
.0940	9.4	10	103	61	40	45.4		●
.0950	9.5	10	103	61	40	45.4		●
.0960	9.6	10	103	61	40	45.3		●
.0970	9.7	10	103	61	40	45.3		●
.0980	9.8	10	103	61	40	45.2		●

Anwendung



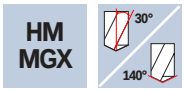
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	10.00	180	0.540	5730	3095	243.0	0.9
	10.20	180	0.545	5615	3060	250.0	1.0
	10.50	180	0.565	5455	3080	266.5	1.0
	10.80	180	0.575	5305	3050	279.5	1.0
	11.00	180	0.585	5210	3050	290.0	1.0
	11.20	180	0.585	5115	2990	294.5	1.1
	11.50	180	0.590	4980	2940	305.5	1.1
	11.80	180	0.600	4855	2915	319.0	1.1
	12.00	180	0.610	4775	2915	329.5	1.1
Stahl 500 - 850 N/mm²	10.00	160	0.465	5095	2370	186.0	1.1
	10.20	160	0.470	4995	2350	192.0	1.4
	10.50	160	0.485	4850	2350	203.5	1.4
	10.80	160	0.495	4715	2335	214.0	1.4
	11.00	160	0.500	4630	2315	220.0	1.4
	11.20	160	0.500	4545	2275	224.0	1.4
	11.50	160	0.505	4430	2235	232.0	1.4
	11.80	160	0.510	4315	2200	240.5	1.4
	12.00	160	0.520	4245	2205	249.5	1.4
Stahl 850 - 1100 N/mm²	10.00	140	0.425	4455	1895	149.0	1.4
	10.20	140	0.430	4370	1880	153.5	1.7
	10.50	140	0.445	4245	1890	163.5	1.7
	10.80	140	0.455	4125	1875	172.0	1.7
	11.00	140	0.460	4050	1865	177.0	1.7
	11.20	140	0.465	3980	1850	182.5	1.7
	11.50	140	0.465	3875	1800	187.0	1.7
	11.80	140	0.470	3775	1775	194.0	1.8
	12.00	140	0.480	3715	1785	202.0	1.8
Stahl 1100 - 1300 N/mm²	10.00	100	0.325	3185	1035	81.5	2.6
	10.20	100	0.330	3120	1030	84.0	3.1
	10.50	100	0.340	3030	1030	89.0	3.1
	10.80	100	0.345	2945	1015	93.0	3.1
	11.00	100	0.350	2895	1015	96.5	3.1
	11.20	100	0.350	2840	995	98.0	3.2
	11.50	100	0.355	2770	985	102.5	3.2
	11.80	100	0.360	2700	970	106.0	3.2
	12.00	100	0.365	2655	970	109.5	3.2

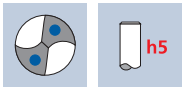
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	10.00	55	0.250	1750	440	34.5	6.2
	10.20	55	0.255	1715	435	35.5	7.3
	10.50	55	0.260	1665	435	37.5	7.3
	10.80	55	0.265	1620	430	39.5	7.4
	11.00	55	0.270	1590	430	41.0	7.3
	11.20	55	0.270	1565	425	42.0	7.4
	11.50	55	0.270	1520	410	42.5	7.7
	11.80	55	0.275	1485	410	45.0	7.6
	12.00	55	0.280	1460	410	46.5	7.6
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	10.00	70	0.250	2230	560	44.0	4.8
	10.20	70	0.255	2185	555	45.5	5.7
	10.50	70	0.260	2120	550	47.5	5.8
	10.80	70	0.265	2065	545	50.0	5.8
	11.00	70	0.270	2025	545	52.0	5.8
	11.20	70	0.270	1990	535	52.5	5.9
	11.50	70	0.270	1940	525	54.5	6.0
	11.80	70	0.275	1890	520	57.0	6.0
	12.00	70	0.280	1855	520	59.0	6.0
Titanlegierungen >300 HB [Ti6Al4V]	10.00	40	0.250	1275	320	25.0	8.5
	10.20	40	0.255	1250	320	26.0	10.0
	10.50	40	0.260	1215	315	27.5	10.1
	10.80	40	0.265	1180	315	29.0	10.1
	11.00	40	0.270	1155	310	29.5	10.2
	11.20	40	0.270	1135	305	30.0	10.3
	11.50	40	0.270	1105	300	31.0	10.5
	11.80	40	0.275	1080	295	32.5	10.6
	12.00	40	0.280	1060	295	33.5	10.6
Gusseisen GG(G)	10.00	240	0.490	7640	3745	294.0	0.7
	10.20	240	0.500	7490	3745	306.0	0.9
	10.50	240	0.510	7275	3710	321.0	0.9
	10.80	240	0.525	7075	3715	340.5	0.9
	11.00	240	0.530	6945	3680	349.5	0.9
	11.20	240	0.535	6820	3650	359.5	0.9
	11.50	240	0.535	6645	3555	369.5	0.9
	11.80	240	0.545	6475	3530	386.0	0.9
	12.00	240	0.555	6365	3535	400.0	0.9

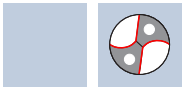
Spiralbohrer XDrill®

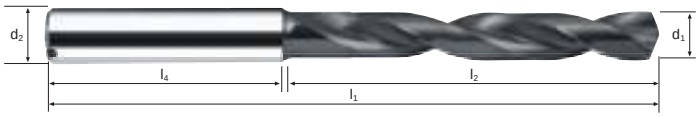
5xd

HM MGX







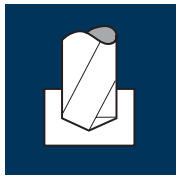


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72015** ø-Code **.0990**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		DURO-X B72015
.0990	9.9	10	103	61	40	45.3		●
.1000	10.0	10	103	61	40	45.2		●
.1010	10.1	12	118	71	45	53.2		●
.1020	10.2	12	118	71	45	53.1		●
.1030	10.3	12	118	71	45	53.1		●
.1040	10.4	12	118	71	45	53.0		●
.1050	10.5	12	118	71	45	53.0		●
.1060	10.6	12	118	71	45	52.9		●
.1070	10.7	12	118	71	45	52.9		●
.1080	10.8	12	118	71	45	52.8		●
.1090	10.9	12	118	71	45	52.7		●
.1100	11.0	12	118	71	45	52.6		●
.1110	11.1	12	118	71	45	52.6		●
.1120	11.2	12	118	71	45	52.5		●
.1130	11.3	12	118	71	45	52.5		●
.1140	11.4	12	118	71	45	52.4		●
.1150	11.5	12	118	71	45	52.4		●
.1160	11.6	12	118	71	45	52.3		●
.1170	11.7	12	118	71	45	52.3		●
.1180	11.8	12	118	71	45	52.2		●
.1190	11.9	12	118	71	45	52.2		●
.1200	12.0	12	118	71	45	52.2		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	12.20	180	0.620	4695	2910	340.0	1.2
	12.50	180	0.635	4585	2910	357.0	1.2
	12.60	180	0.640	4545	2910	363.0	1.2
	12.80	180	0.650	4475	2910	374.5	1.1
	13.00	180	0.660	4405	2905	385.5	1.1
	13.20	180	0.670	4340	2910	398.0	1.1
	13.50	180	0.675	4245	2865	410.0	1.2
	13.80	180	0.675	4150	2800	419.0	1.2
	14.00	180	0.680	4095	2785	428.5	1.2
Stahl 500 - 850 N/mm²	12.20	160	0.530	4175	2215	259.0	1.5
	12.50	160	0.545	4075	2220	272.5	1.5
	12.60	160	0.545	4040	2200	274.5	1.5
	12.80	160	0.555	3980	2210	284.5	1.5
	13.00	160	0.565	3920	2215	294.0	1.5
	13.20	160	0.575	3860	2220	304.0	1.5
	13.50	160	0.580	3775	2190	313.5	1.5
	13.80	160	0.580	3690	2140	320.0	1.5
	14.00	160	0.585	3640	2130	328.0	1.6
Stahl 850 - 1100 N/mm²	12.20	140	0.490	3655	1790	209.0	1.9
	12.50	140	0.500	3565	1785	219.0	1.9
	12.60	140	0.505	3535	1785	222.5	1.9
	12.80	140	0.510	3480	1775	228.5	1.9
	13.00	140	0.520	3430	1785	237.0	1.9
	13.20	140	0.530	3375	1790	245.0	1.9
	13.50	140	0.535	3300	1765	252.5	1.9
	13.80	140	0.535	3230	1730	259.0	1.9
	14.00	140	0.540	3185	1720	265.0	1.9
Stahl 1100 - 1300 N/mm²	12.20	100	0.370	2610	965	113.0	3.5
	12.50	100	0.380	2545	965	118.5	3.5
	12.60	100	0.385	2525	970	121.0	3.5
	12.80	100	0.390	2485	970	125.0	3.4
	13.00	100	0.395	2450	970	129.0	3.4
	13.20	100	0.400	2410	965	132.0	3.5
	13.50	100	0.405	2360	955	136.5	3.5
	13.80	100	0.405	2305	935	140.0	3.5
	14.00	100	0.410	2275	935	144.0	3.5

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	12.20	55	0.285	1435	410	48.0	8.2
	12.50	55	0.290	1400	405	49.5	8.3
	12.60	55	0.295	1390	410	51.0	8.2
	12.80	55	0.300	1370	410	53.0	8.2
	13.00	55	0.305	1345	410	54.5	8.1
	13.20	55	0.310	1325	410	56.0	8.1
	13.50	55	0.310	1295	400	57.5	8.3
	13.80	55	0.310	1270	395	59.0	8.4
	14.00	55	0.315	1250	395	61.0	8.4
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	12.20	70	0.285	1825	520	61.0	6.5
	12.50	70	0.290	1785	520	64.0	6.5
	12.60	70	0.295	1770	520	65.0	6.5
	12.80	70	0.300	1740	520	67.0	6.4
	13.00	70	0.305	1715	525	69.5	6.4
	13.20	70	0.310	1690	525	72.0	6.3
	13.50	70	0.310	1650	510	73.0	6.5
	13.80	70	0.310	1615	500	75.0	6.6
	14.00	70	0.315	1590	500	77.0	6.6
Titanlegierungen >300 HB [Ti6Al4V]	12.20	40	0.285	1045	300	35.0	11.2
	12.50	40	0.290	1020	295	36.0	11.4
	12.60	40	0.295	1010	300	37.5	11.2
	12.80	40	0.300	995	300	38.5	11.1
	13.00	40	0.305	980	300	40.0	11.1
	13.20	40	0.310	965	300	41.0	11.1
	13.50	40	0.310	945	295	42.0	11.2
	13.80	40	0.310	925	285	42.5	11.6
	14.00	40	0.315	910	285	44.0	11.6
Gusseisen GG(G)	12.20	240	0.560	6260	3505	409.5	1.0
	12.50	240	0.575	6110	3515	431.5	1.0
	12.60	240	0.580	6065	3520	439.0	1.0
	12.80	240	0.590	5970	3520	453.0	0.9
	13.00	240	0.600	5875	3525	468.0	0.9
	13.20	240	0.610	5785	3530	483.0	0.9
	13.50	240	0.615	5660	3480	498.0	1.0
	13.80	240	0.615	5535	3405	509.5	1.0
	14.00	240	0.620	5455	3380	520.5	1.0

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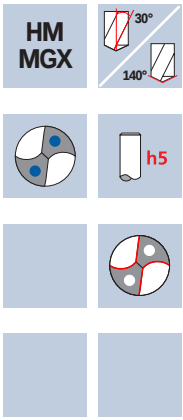
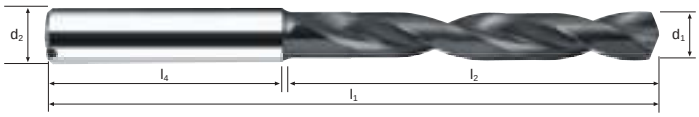


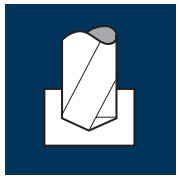


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72015** ø-Code **.1210**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		DURO-X B72015
.1210	12.1	14	124	77	45	56.2		●
.1220	12.2	14	124	77	45	56.1		●
.1230	12.3	14	124	77	45	56.1		●
.1240	12.4	14	124	77	45	56.0		●
.1250	12.5	14	124	77	45	56.0		●
.1260	12.6	14	124	77	45	55.9		●
.1270	12.7	14	124	77	45	55.8		●
.1280	12.8	14	124	77	45	55.7		●
.1290	12.9	14	124	77	45	55.7		●
.1300	13.0	14	124	77	45	55.6		●
.1310	13.1	14	124	77	45	55.6		●
.1320	13.2	14	124	77	45	55.5		●
.1330	13.3	14	124	77	45	55.5		●
.1340	13.4	14	124	77	45	55.4		●
.1350	13.5	14	124	77	45	55.3		●
.1360	13.6	14	124	77	45	55.2		●
.1370	13.7	14	124	77	45	55.2		●
.1380	13.8	14	124	77	45	55.1		●
.1390	13.9	14	124	77	45	55.2		●
.1400	14.0	14	124	77	45	55.1		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	14.20	180	0.685	4035	2765	438.0	1.3
	14.50	180	0.690	3950	2725	450.0	1.3
	14.80	180	0.700	3870	2710	466.0	1.3
	15.00	180	0.710	3820	2710	479.0	1.3
	15.20	180	0.720	3770	2715	492.5	1.3
	15.50	180	0.725	3695	2680	505.5	1.3
	15.70	180	0.725	3650	2645	512.0	1.3
	15.80	180	0.730	3625	2645	518.5	1.3
	16.00	180	0.735	3580	2630	529.0	1.3
Stahl 500 - 850 N/mm²	14.20	160	0.590	3585	2115	335.0	1.7
	14.50	160	0.590	3510	2070	342.0	1.7
	14.80	160	0.600	3440	2065	355.0	1.7
	15.00	160	0.610	3395	2070	366.0	1.7
	15.20	160	0.615	3350	2060	374.0	1.7
	15.50	160	0.620	3285	2035	384.0	1.7
	15.70	160	0.625	3245	2030	393.0	1.7
	15.80	160	0.625	3225	2015	395.0	1.7
	16.00	160	0.630	3185	2005	403.0	1.7
Stahl 850 - 1100 N/mm²	14.20	140	0.540	3140	1695	268.5	2.1
	14.50	140	0.545	3075	1675	276.5	2.1
	14.80	140	0.555	3010	1670	287.5	2.1
	15.00	140	0.560	2970	1665	294.0	2.1
	15.20	140	0.570	2930	1670	303.0	2.1
	15.50	140	0.570	2875	1640	309.5	2.1
	15.70	140	0.575	2840	1635	316.5	2.1
	15.80	140	0.580	2820	1635	320.5	2.1
	16.00	140	0.580	2785	1615	324.5	2.2
Stahl 1100 - 1300 N/mm²	14.20	100	0.410	2240	920	145.5	3.9
	14.50	100	0.415	2195	910	150.5	3.9
	14.80	100	0.420	2150	905	155.5	3.9
	15.00	100	0.425	2120	900	159.0	3.9
	15.20	100	0.430	2095	900	163.5	3.9
	15.50	100	0.435	2055	895	169.0	3.9
	15.70	100	0.435	2025	880	170.5	4.0
	15.80	100	0.440	2015	885	173.5	3.9
	16.00	100	0.440	1990	875	176.0	4.0

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	14.20	55	0.315	1235	390	62.0	9.1
	14.50	55	0.320	1205	385	63.5	9.2
	14.80	55	0.325	1185	385	66.0	9.1
	15.00	55	0.330	1165	385	68.0	9.1
	15.20	55	0.330	1150	380	69.0	9.2
	15.50	55	0.335	1130	380	71.5	9.2
	15.70	55	0.335	1115	375	72.5	9.3
	15.80	55	0.340	1110	375	73.5	9.3
	16.00	55	0.340	1095	370	74.5	9.4
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	14.20	70	0.315	1570	495	78.5	7.2
	14.50	70	0.320	1535	490	81.0	7.2
	14.80	70	0.325	1505	490	84.5	7.2
	15.00	70	0.330	1485	490	86.5	7.2
	15.20	70	0.330	1465	485	88.0	7.2
	15.50	70	0.335	1440	480	90.5	7.3
	15.70	70	0.335	1420	475	92.0	7.3
	15.80	70	0.340	1410	480	94.0	7.3
	16.00	70	0.340	1395	475	95.5	7.3
Titanlegierungen >300 HB [Ti6Al4V]	14.20	40	0.315	895	280	44.5	12.7
	14.50	40	0.320	880	280	46.0	12.6
	14.80	40	0.325	860	280	48.0	12.6
	15.00	40	0.330	850	280	49.5	12.6
	15.20	40	0.330	840	275	50.0	12.8
	15.50	40	0.335	820	275	52.0	12.7
	15.70	40	0.335	810	270	52.5	12.9
	15.80	40	0.340	805	275	54.0	12.7
	16.00	40	0.340	795	270	54.5	12.9
Gusseisen GG(G)	14.20	240	0.625	5380	3365	533.0	1.1
	14.50	240	0.630	5270	3320	548.0	1.1
	14.80	240	0.635	5160	3275	563.5	1.1
	15.00	240	0.645	5095	3285	580.5	1.1
	15.20	240	0.655	5025	3290	597.0	1.1
	15.50	240	0.660	4930	3255	614.0	1.1
	15.70	240	0.660	4865	3210	621.5	1.1
	15.80	240	0.665	4835	3215	630.5	1.1
	16.00	240	0.670	4775	3200	643.5	1.1

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HM MGX

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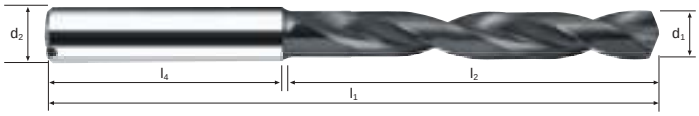
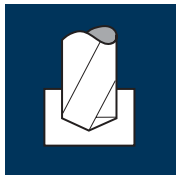


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72015** ø-Code **.1410**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		DURO-X B72015
.1410	14.1	16	133	83	48	59.2		●
.1420	14.2	16	133	83	48	59.1		●
.1430	14.3	16	133	83	48	59.1		●
.1440	14.4	16	133	83	48	59.0		●
.1450	14.5	16	133	83	48	59.0		●
.1460	14.6	16	133	83	48	58.8		●
.1470	14.7	16	133	83	48	58.8		●
.1480	14.8	16	133	83	48	58.7		●
.1490	14.9	16	133	83	48	58.7		●
.1500	15.0	16	133	83	48	58.6		●
.1510	15.1	16	133	83	48	58.6		●
.1520	15.2	16	133	83	48	58.5		●
.1530	15.3	16	133	83	48	58.5		●
.1540	15.4	16	133	83	48	58.3		●
.1550	15.5	16	133	83	48	58.3		●
.1560	15.6	16	133	83	48	58.2		●
.1570	15.7	16	133	83	48	58.2		●
.1580	15.8	16	133	83	48	58.1		●
.1590	15.9	16	133	83	48	58.1		●
.1600	16.0	16	133	83	48	58.1		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	16.20	180	0.740	3535	2615	539.0	1.5
	16.40	180	0.750	3495	2620	553.5	1.5
	16.50	180	0.755	3470	2620	560.0	1.5
	16.80	180	0.755	3410	2575	571.0	1.5
	17.00	180	0.760	3370	2560	581.0	1.5
	17.20	180	0.765	3330	2545	591.5	1.5
	17.50	180	0.770	3275	2520	606.0	1.6
	17.70	180	0.775	3235	2505	616.5	1.6
	18.00	180	0.780	3185	2485	632.5	1.6
Stahl 500 - 850 N/mm²	16.20	160	0.635	3145	1995	411.0	2.0
	16.40	160	0.640	3105	1985	419.5	2.0
	16.50	160	0.645	3085	1990	425.5	2.0
	16.80	160	0.650	3030	1970	436.5	2.0
	17.00	160	0.650	2995	1945	441.5	2.0
	17.20	160	0.655	2960	1940	451.0	2.0
	17.50	160	0.660	2910	1920	462.0	2.0
	17.70	160	0.660	2875	1900	467.5	2.1
	18.00	160	0.670	2830	1895	482.0	2.1
Stahl 850 - 1100 N/mm²	16.20	140	0.585	2750	1610	332.0	2.5
	16.40	140	0.590	2715	1600	338.0	2.5
	16.50	140	0.595	2700	1605	343.0	2.5
	16.80	140	0.595	2655	1580	350.0	2.5
	17.00	140	0.600	2620	1570	356.5	2.5
	17.20	140	0.600	2590	1555	361.5	2.5
	17.50	140	0.610	2545	1550	373.0	2.5
	17.70	140	0.610	2520	1535	377.5	2.5
	18.00	140	0.615	2475	1520	387.0	2.6
Stahl 1100 - 1300 N/mm²	16.20	100	0.445	1965	875	180.5	4.5
	16.40	100	0.450	1940	875	185.0	4.5
	16.50	100	0.450	1930	870	186.0	4.5
	16.80	100	0.455	1895	860	190.5	4.6
	17.00	100	0.455	1870	850	193.0	4.6
	17.20	100	0.460	1850	850	197.5	4.6
	17.50	100	0.460	1820	835	201.0	4.7
	17.70	100	0.465	1800	835	205.5	4.7
	18.00	100	0.470	1770	830	211.0	4.7

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	16.20	55	0.340	1080	365	75.0	10.9
	16.40	55	0.345	1070	370	78.0	10.7
	16.50	55	0.350	1060	370	79.0	10.7
	16.80	55	0.350	1040	365	81.0	10.8
	17.00	55	0.350	1030	360	81.5	10.9
	17.20	55	0.350	1020	355	82.5	11.1
	17.50	55	0.355	1000	355	85.5	11.0
	17.70	55	0.355	990	350	86.0	11.2
	18.00	55	0.360	975	350	89.0	11.1
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	16.20	70	0.340	1375	470	97.0	8.4
	16.40	70	0.345	1360	470	99.5	8.4
	16.50	70	0.350	1350	475	101.5	8.3
	16.80	70	0.350	1325	465	103.0	8.5
	17.00	70	0.350	1310	460	104.5	8.6
	17.20	70	0.350	1295	455	105.5	8.6
	17.50	70	0.355	1275	455	109.5	8.6
	17.70	70	0.355	1260	445	109.5	8.8
	18.00	70	0.360	1240	445	113.0	8.8
Titanlegierungen >300 HB [Ti6Al4V]	16.20	40	0.340	785	265	54.5	15.0
	16.40	40	0.345	775	265	56.0	14.9
	16.50	40	0.350	770	270	57.5	14.6
	16.80	40	0.350	760	265	58.5	14.9
	17.00	40	0.350	750	265	60.0	14.9
	17.20	40	0.350	740	260	60.5	15.1
	17.50	40	0.355	730	260	62.5	15.1
	17.70	40	0.355	720	255	62.5	15.3
	18.00	40	0.360	705	255	65.0	15.3
Gusseisen GG(G)	16.20	240	0.675	4715	3185	656.5	1.2
	16.40	240	0.680	4660	3170	669.5	1.2
	16.50	240	0.685	4630	3170	678.0	1.2
	16.80	240	0.685	4545	3115	690.5	1.3
	17.00	240	0.690	4495	3100	703.5	1.3
	17.20	240	0.695	4440	3085	717.0	1.3
	17.50	240	0.700	4365	3055	735.0	1.3
	17.70	240	0.705	4315	3040	748.0	1.3
	18.00	240	0.710	4245	3015	767.0	1.3

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HM MGX

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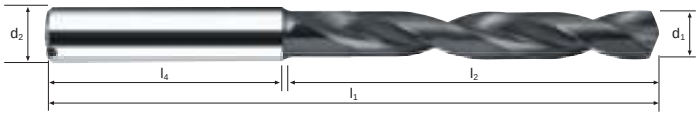
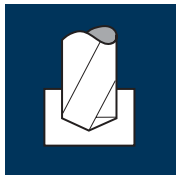


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72015** ø-Code **.1610**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		DURO-X B72015
.1610	16.1	18	143	93	48	66.2		●
.1620	16.2	18	143	93	48	66.1		●
.1630	16.3	18	143	93	48	66.1		●
.1640	16.4	18	143	93	48	65.9		●
.1650	16.5	18	143	93	48	65.9		●
.1660	16.6	18	143	93	48	65.8		●
.1670	16.7	18	143	93	48	65.8		●
.1680	16.8	18	143	93	48	65.7		●
.1690	16.9	18	143	93	48	65.7		●
.1700	17.0	18	143	93	48	65.6		●
.1710	17.1	18	143	93	48	65.5		●
.1720	17.2	18	143	93	48	65.4		●
.1730	17.3	18	143	93	48	65.4		●
.1740	17.4	18	143	93	48	65.3		●
.1750	17.5	18	143	93	48	65.3		●
.1760	17.6	18	143	93	48	65.2		●
.1770	17.7	18	143	93	48	65.2		●
.1780	17.8	18	143	93	48	65.1		●
.1790	17.9	18	143	93	48	65.1		●
.1800	18.0	18	143	93	48	65.0		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	18.50	180	0.785	3095	2430	653.0	1.7
	18.70	180	0.785	3065	2405	660.5	1.8
	19.00	180	0.790	3015	2380	675.0	1.8
	19.20	180	0.795	2985	2375	687.5	1.8
	19.30	180	0.800	2970	2375	695.0	1.8
	19.50	180	0.805	2940	2365	706.5	1.8
	19.70	180	0.810	2910	2355	718.0	1.8
	19.80	180	0.810	2895	2345	722.0	1.8
	20.00	180	0.820	2865	2350	738.5	1.8
Stahl 500 - 850 N/mm²	18.50	160	0.670	2755	1845	496.0	2.3
	18.70	160	0.675	2725	1840	505.5	2.3
	19.00	160	0.680	2680	1820	516.0	2.3
	19.20	160	0.680	2655	1805	522.5	2.3
	19.30	160	0.685	2640	1810	529.5	2.3
	19.50	160	0.690	2610	1800	537.5	2.3
	19.70	160	0.690	2585	1785	544.0	2.4
	19.80	160	0.695	2570	1785	549.5	2.4
	20.00	160	0.705	2545	1795	564.0	2.3
Stahl 850 - 1100 N/mm²	18.50	140	0.620	2410	1495	402.0	2.8
	18.70	140	0.620	2385	1480	406.5	2.9
	19.00	140	0.625	2345	1465	415.5	2.9
	19.20	140	0.625	2320	1450	420.0	2.9
	19.30	140	0.630	2310	1455	425.5	2.9
	19.50	140	0.635	2285	1450	433.0	2.9
	19.70	140	0.640	2260	1445	440.5	2.9
	19.80	140	0.640	2250	1440	443.5	2.9
	20.00	140	0.645	2230	1440	452.5	2.9
Stahl 1100 - 1300 N/mm²	18.50	100	0.470	1720	810	217.5	5.2
	18.70	100	0.470	1700	800	219.5	5.3
	19.00	100	0.475	1675	795	225.5	5.3
	19.20	100	0.475	1660	790	228.5	5.3
	19.30	100	0.480	1650	790	231.0	5.3
	19.50	100	0.485	1630	790	236.0	5.3
	19.70	100	0.485	1615	785	239.5	5.4
	19.80	100	0.485	1610	780	240.0	5.4
	20.00	100	0.490	1590	780	245.0	5.4

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	18.50	55	0.360	945	340	91.5	12.5
	18.70	55	0.360	935	335	92.0	12.7
	19.00	55	0.365	920	335	95.0	12.6
	19.20	55	0.365	910	330	95.5	12.8
	19.30	55	0.370	905	335	98.0	12.6
	19.50	55	0.370	900	335	100.0	12.6
	19.70	55	0.375	890	335	102.0	12.6
	19.80	55	0.375	885	330	101.5	12.7
	20.00	55	0.380	875	335	105.0	12.5
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	18.50	70	0.360	1205	435	117.0	9.8
	18.70	70	0.360	1190	430	118.0	9.9
	19.00	70	0.365	1175	430	122.0	9.8
	19.20	70	0.365	1160	425	123.0	9.9
	19.30	70	0.370	1155	425	124.5	9.9
	19.50	70	0.370	1145	425	127.0	9.9
	19.70	70	0.375	1130	425	129.5	9.9
	19.80	70	0.375	1125	420	129.5	10.0
	20.00	70	0.380	1115	425	133.5	9.9
Titanlegierungen >300 HB [Ti6Al4V]	18.50	40	0.360	690	250	67.0	17.0
	18.70	40	0.360	680	245	67.5	17.3
	19.00	40	0.365	670	245	69.5	17.3
	19.20	40	0.365	665	245	71.0	17.2
	19.30	40	0.370	660	245	71.5	17.2
	19.50	40	0.370	655	240	71.5	17.6
	19.70	40	0.375	645	240	73.0	17.5
	19.80	40	0.375	645	240	74.0	17.5
	20.00	40	0.380	635	240	75.5	17.5
Gusseisen GG(G)	18.50	240	0.710	4130	2930	787.5	1.5
	18.70	240	0.715	4085	2920	802.0	1.5
	19.00	240	0.720	4020	2895	821.0	1.5
	19.20	240	0.720	3980	2865	829.5	1.5
	19.30	240	0.725	3960	2870	839.5	1.5
	19.50	240	0.735	3920	2880	860.0	1.5
	19.70	240	0.735	3880	2850	868.5	1.5
	19.80	240	0.740	3860	2855	879.0	1.5
	20.00	240	0.745	3820	2845	894.0	1.5

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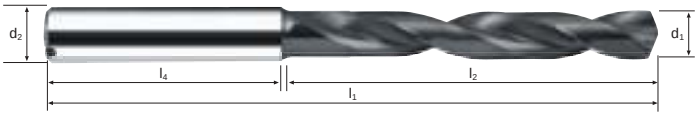
HM MGX

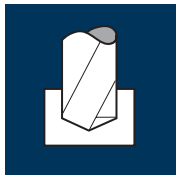


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72015** ø-Code **.1850**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}	DURO-X B72015
.1850	18.5	20	153	101	50	70.9	●
.1870	18.7	20	153	101	50	70.8	●
.1900	19.0	20	153	101	50	70.5	●
.1910	19.1	20	153	101	50	70.5	●
.1920	19.2	20	153	101	50	70.4	●
.1930	19.3	20	153	101	50	70.4	●
.1950	19.5	20	153	101	50	70.3	●
.1970	19.7	20	153	101	50	70.2	●
.1980	19.8	20	153	101	50	70.1	●
.2000	20.0	20	153	101	50	70.0	●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	2.50	140	0.060	17825	1070	5.5	1.2
	2.60	140	0.060	17140	1030	5.5	1.2
	2.80	140	0.065	15915	1035	6.5	1.2
	2.90	140	0.070	15365	1075	7.0	1.1
	3.00	170	0.080	18040	1445	10.0	0.8
	3.30	170	0.085	16400	1395	12.0	0.9
	3.50	170	0.090	15460	1390	13.5	0.9
	3.70	170	0.095	14625	1390	15.0	0.8
	3.80	170	0.100	14240	1425	16.0	1.2
Stahl 500 - 850 N/mm²	2.50	110	0.060	14005	840	4.0	1.5
	2.60	110	0.060	13465	810	4.5	1.5
	2.80	110	0.065	12505	815	5.0	1.5
	2.90	110	0.070	12075	845	5.5	1.4
	3.00	130	0.080	13795	1105	8.0	1.1
	3.30	130	0.085	12540	1065	9.0	1.1
	3.50	130	0.090	11825	1065	10.0	1.1
	3.70	130	0.095	11185	1065	11.5	1.1
	3.80	130	0.100	10890	1090	12.5	1.5
Stahl 850 - 1100 N/mm²	2.50	80	0.045	10185	460	2.5	2.7
	2.60	80	0.045	9795	440	2.5	2.8
	2.80	80	0.050	9095	455	3.0	2.7
	2.90	80	0.050	8780	440	3.0	2.8
	3.00	110	0.060	11670	700	5.0	1.7
	3.30	110	0.065	10610	690	6.0	1.7
	3.50	110	0.070	10005	700	6.5	1.7
	3.70	110	0.075	9465	710	7.5	1.7
	3.80	110	0.075	9215	690	8.0	2.4
Stahl 1100 - 1300 N/mm²	2.50	55	0.040	7005	280	1.5	4.4
	2.60	55	0.040	6735	270	1.5	4.6
	2.80	55	0.040	6255	250	1.5	4.9
	2.90	55	0.045	6035	270	2.0	4.5
	3.00	70	0.050	7425	370	2.5	3.3
	3.30	70	0.055	6750	370	3.0	3.2
	3.50	70	0.060	6365	380	3.5	3.1
	3.70	70	0.060	6020	360	4.0	3.3
	3.80	70	0.065	5865	380	4.5	4.3

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	2.50	25	0.025	3185	80	0.5	15.6
	2.60	25	0.025	3060	75	0.5	16.5
	2.80	25	0.030	2840	85	0.5	14.4
	2.90	25	0.030	2745	80	0.5	15.3
	3.00	40	0.040	4245	170	1.0	7.1
	3.30	40	0.045	3860	175	1.5	6.8
	3.50	40	0.045	3640	165	1.5	7.2
	3.70	40	0.050	3440	170	2.0	6.9
	3.80	40	0.050	3350	170	2.0	9.7
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	2.50	50	0.030	6365	190	1.0	6.6
	2.60	50	0.035	6120	215	1.0	5.7
	2.80	50	0.035	5685	200	1.0	6.1
	2.90	50	0.035	5490	190	1.5	6.4
	3.00	60	0.045	6365	285	2.0	4.3
	3.30	60	0.050	5785	290	2.5	4.1
	3.50	60	0.055	5455	300	3.0	3.9
	3.70	60	0.055	5160	285	3.0	4.1
	3.80	60	0.060	5025	300	3.5	5.5
Gusseisen GG(G)	2.50	160	0.065	20370	1325	6.5	0.9
	2.60	160	0.065	19590	1275	7.0	1.0
	2.80	160	0.070	18190	1275	8.0	1.0
	2.90	160	0.075	17560	1315	8.5	0.9
	3.00	220	0.085	23345	1985	14.0	0.6
	3.30	220	0.095	21220	2015	17.0	0.6
	3.50	220	0.100	20010	2000	19.0	0.6
	3.70	220	0.105	18925	1985	21.5	0.6
	3.80	220	0.110	18430	2025	23.0	0.8
Al-Knetlegierung Si < 6%	2.50	220	0.050	28010	1400	7.0	0.9
	2.60	220	0.050	26935	1345	7.0	0.9
	2.80	220	0.055	25010	1375	8.5	0.9
	2.90	220	0.060	24150	1450	9.5	0.8
	3.00	250	0.065	26525	1725	12.0	0.7
	3.30	250	0.075	24115	1810	15.5	0.7
	3.50	250	0.080	22735	1820	17.5	0.7
	3.70	250	0.080	21505	1720	18.5	0.7
	3.80	250	0.085	20940	1780	20.0	0.9

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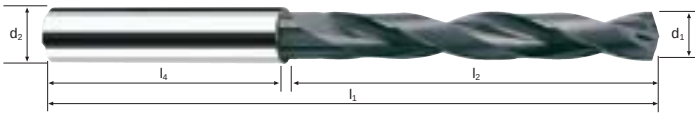
HM MG10

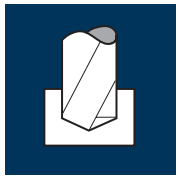


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless		GG(G) Aluminium

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62015** ø-Code **.0250**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		NANO-U²
								B62015
								B63015
.0250*	2.50	6	66	28	36	20.8		●
.0255*	2.55	6	66	28	36	20.7		●
.0260*	2.60	6	66	28	36	20.6		●
.0265*	2.65	6	66	28	36	20.6		●
.0270*	2.70	6	66	28	36	20.6		●
.0280*	2.80	6	66	28	36	20.4		●
.0285*	2.85	6	66	28	36	20.4		●
.0290*	2.90	6	66	28	36	20.4		●
.0295*	2.95	6	66	28	36	20.3		●
.0300	3.00	6	66	28	36	20.2		●
.0305	3.05	6	66	28	36	20.2		●
.0310	3.10	6	66	28	36	20.2		●
.0315	3.15	6	66	28	36	20.1		●
.0320	3.20	6	66	28	36	20.0		●
.0330	3.30	6	66	28	36	20.0		●
.0340	3.40	6	66	28	36	19.8		●
.0350	3.50	6	66	28	36	19.8		●
.0360	3.60	6	66	28	36	19.6		●
.0370	3.70	6	66	28	36	19.6		●
.0375	3.75	6	66	28	36	19.5		●
.0380	3.80	6	74	36	36	27.4		●
.0385	3.85	6	74	36	36	27.3		●
	* ohne innere Kühlmittelzuführung							

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	4.00	170	0.105	13530	1420	18.0	1.1
	4.20	170	0.110	12885	1415	19.5	1.1
	4.40	170	0.115	12300	1415	21.5	1.1
	4.50	170	0.120	12025	1445	23.0	1.1
	4.80	170	0.125	11275	1410	25.5	1.5
	5.00	170	0.130	10825	1405	27.5	1.5
	5.20	170	0.135	10405	1405	30.0	1.5
	5.30	170	0.140	10210	1430	31.5	1.4
	5.50	170	0.145	9840	1425	34.0	1.5
Stahl 500 - 850 N/mm²	4.00	130	0.105	10345	1085	13.5	1.5
	4.20	130	0.110	9850	1085	15.0	1.5
	4.40	130	0.115	9405	1080	16.5	1.5
	4.50	130	0.120	9195	1105	17.5	1.4
	4.80	130	0.125	8620	1080	19.5	1.9
	5.00	130	0.130	8275	1075	21.0	1.9
	5.20	130	0.135	7960	1075	23.0	1.9
	5.30	130	0.140	7810	1095	24.0	1.9
	5.50	130	0.145	7525	1090	26.0	1.9
Stahl 850 - 1100 N/mm²	4.00	110	0.080	8755	700	9.0	2.3
	4.20	110	0.085	8335	710	10.0	2.3
	4.40	110	0.090	7960	715	11.0	2.2
	4.50	110	0.090	7780	700	11.0	2.3
	4.80	110	0.095	7295	695	12.5	3.0
	5.00	110	0.100	7005	700	13.5	3.0
	5.20	110	0.105	6735	705	15.0	2.9
	5.30	110	0.105	6605	695	15.5	3.0
	5.50	110	0.110	6365	700	16.5	3.0
Stahl 1100 - 1300 N/mm²	4.00	70	0.065	5570	360	4.5	4.5
	4.20	70	0.070	5305	370	5.0	4.3
	4.40	70	0.075	5065	380	6.0	4.2
	4.50	70	0.075	4950	370	6.0	4.3
	4.80	70	0.080	4640	370	6.5	5.6
	5.00	70	0.085	4455	380	7.5	5.5
	5.20	70	0.085	4285	365	8.0	5.7
	5.30	70	0.090	4205	380	8.5	5.5
	5.50	70	0.090	4050	365	8.5	5.7

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	4.00	40	0.055	3185	175	2.0	9.2
	4.20	40	0.055	3030	165	2.5	9.7
	4.40	40	0.060	2895	175	2.5	9.1
	4.50	40	0.060	2830	170	2.5	9.4
	4.80	40	0.065	2655	175	3.0	11.8
	5.00	40	0.065	2545	165	3.0	12.7
	5.20	40	0.070	2450	170	3.5	12.2
	5.30	40	0.070	2400	170	4.0	12.2
	5.50	40	0.075	2315	175	4.0	11.8
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	4.00	60	0.060	4775	285	3.5	5.7
	4.20	60	0.065	4545	295	4.0	5.5
	4.40	60	0.070	4340	305	4.5	5.2
	4.50	60	0.070	4245	295	4.5	5.4
	4.80	60	0.075	3980	300	5.5	6.9
	5.00	60	0.075	3820	285	5.5	7.3
	5.20	60	0.080	3675	295	6.5	7.0
	5.30	60	0.080	3605	290	6.5	7.1
	5.50	60	0.085	3470	295	7.0	7.0
Gusseisen GG(G)	4.00	220	0.115	17505	2015	25.5	0.8
	4.20	220	0.120	16675	2000	27.5	0.8
	4.40	220	0.125	15915	1990	30.5	0.8
	4.50	220	0.130	15560	2025	32.0	0.8
	4.80	220	0.135	14590	1970	35.5	1.0
	5.00	220	0.145	14005	2030	40.0	1.0
	5.20	220	0.150	13465	2020	43.0	1.0
	5.30	220	0.150	13215	1980	43.5	1.0
	5.50	220	0.155	12730	1975	47.0	1.0
Al-Knetlegierung Si < 6%	4.00	250	0.090	19895	1790	22.5	0.9
	4.20	250	0.095	18945	1800	25.0	0.9
	4.40	250	0.100	18085	1810	27.5	0.9
	4.50	250	0.100	17685	1770	28.0	0.9
	4.80	250	0.105	16580	1740	31.5	1.2
	5.00	250	0.110	15915	1750	34.5	1.2
	5.20	250	0.115	15305	1760	37.5	1.2
	5.30	250	0.120	15015	1800	39.5	1.2
	5.50	250	0.120	14470	1735	41.0	1.2

Spiralbohrer Supradrill® U

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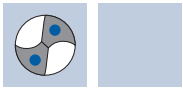
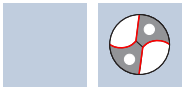
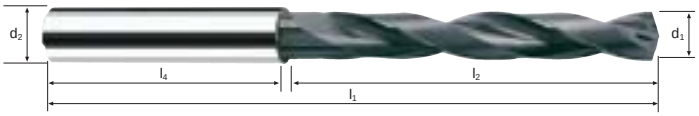
HM MG10





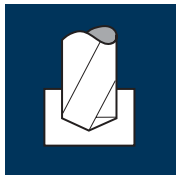


Rm < 850	**Rm** 850-1100	**Rm** 1100-1300	**Rm** 1300-1500				**Inox** Stainless		**GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62015** ø-Code **.0390**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		NANO-U² B62015	B63015
.0390	3.90	6	74	36	36	27.4		●	
.0400	4.00	6	74	36	36	26.9		●	
.0410	4.10	6	74	36	36	26.9		●	
.0420	4.20	6	74	36	36	26.8		●	
.0430	4.30	6	74	36	36	26.8		●	
.0440	4.40	6	74	36	36	26.6		●	
.0445	4.45	6	74	36	36	26.6		●	
.0450	4.50	6	74	36	36	26.6		●	
.0460	4.60	6	74	36	36	26.5		●	
new! **.0465**	4.65	6	74	36	36	26.5		●	
.0470	4.70	6	74	36	36	26.5		●	
.0480	4.80	6	82	44	36	34.4		●	
.0490	4.90	6	82	44	36	34.4		●	
.0495	4.95	6	82	44	36	34.3		●	
.0500	5.00	6	82	44	36	34.8		●	
.0505	5.05	6	82	44	36	34.7		●	
.0510	5.10	6	82	44	36	34.7		●	
.0520	5.20	6	82	44	36	34.6		●	
.0525	5.25	6	82	44	36	34.6		●	
.0530	5.30	6	82	44	36	34.6		●	
.0540	5.40	6	82	44	36	34.5		●	
.0550	5.50	6	82	44	36	34.5		●	
new! **.0555**	5.55	6	82	44	36	34.4		●	

Anwendung



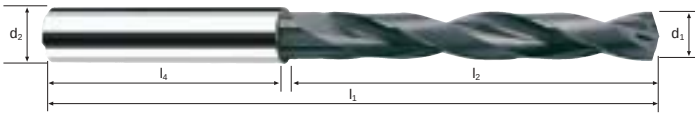
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	5.80	170	0.155	9330	1445	38.0	1.4
	6.00	170	0.160	9020	1445	41.0	1.4
	6.20	170	0.165	8730	1440	43.5	1.7
	6.50	170	0.170	8325	1415	47.0	1.7
	6.80	170	0.180	7960	1435	52.0	1.7
	7.00	170	0.185	7730	1430	55.0	1.7
	7.20	170	0.190	7515	1430	58.0	1.7
	7.40	170	0.195	7315	1425	61.5	1.7
	7.50	170	0.195	7215	1405	62.0	1.7
Stahl 500 - 850 N/mm²	5.80	130	0.155	7135	1105	29.0	1.9
	6.00	130	0.160	6895	1105	31.0	1.9
	6.20	130	0.165	6675	1100	33.0	2.2
	6.50	130	0.170	6365	1080	36.0	2.3
	6.80	130	0.180	6085	1095	40.0	2.2
	7.00	130	0.185	5910	1095	42.0	2.2
	7.20	130	0.190	5745	1090	44.5	2.2
	7.40	130	0.195	5590	1090	47.0	2.2
	7.50	130	0.195	5515	1075	47.5	2.3
Stahl 850 - 1100 N/mm²	5.80	110	0.115	6035	695	18.5	3.0
	6.00	110	0.120	5835	700	20.0	3.0
	6.20	110	0.125	5645	705	21.5	3.5
	6.50	110	0.130	5385	700	23.0	3.5
	6.80	110	0.135	5150	695	25.0	3.5
	7.00	110	0.140	5000	700	27.0	3.5
	7.20	110	0.145	4865	705	28.5	3.5
	7.40	110	0.150	4730	710	30.5	3.4
	7.50	110	0.150	4670	700	31.0	3.5
Stahl 1100 - 1300 N/mm²	5.80	70	0.095	3840	365	9.5	5.7
	6.00	70	0.100	3715	370	10.5	5.6
	6.20	70	0.105	3595	375	11.5	6.6
	6.50	70	0.110	3430	375	12.5	6.6
	6.80	70	0.115	3275	375	13.5	6.5
	7.00	70	0.115	3185	365	14.0	6.7
	7.20	70	0.120	3095	370	15.0	6.6
	7.40	70	0.125	3010	375	16.0	6.5
	7.50	70	0.125	2970	370	16.5	6.6

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	5.80	40	0.075	2195	165	4.5	12.5
	6.00	40	0.080	2120	170	5.0	12.2
	6.20	40	0.085	2055	175	5.5	14.1
	6.50	40	0.085	1960	165	5.5	14.9
	6.80	40	0.090	1870	170	6.0	14.4
	7.00	40	0.095	1820	175	6.5	14.0
	7.20	40	0.095	1770	170	7.0	14.3
	7.40	40	0.100	1720	170	7.5	14.3
	7.50	40	0.100	1700	170	7.5	14.3
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	5.80	60	0.090	3295	295	8.0	7.0
	6.00	60	0.090	3185	285	8.0	7.3
	6.20	60	0.095	3080	295	9.0	8.4
	6.50	60	0.100	2940	295	10.0	8.3
	6.80	60	0.105	2810	295	10.5	8.3
	7.00	60	0.110	2730	300	11.5	8.1
	7.20	60	0.110	2655	290	12.0	8.4
	7.40	60	0.115	2580	295	12.5	8.2
	7.50	60	0.115	2545	295	13.0	8.2
Gusseisen GG(G)	5.80	220	0.165	12075	1990	52.5	1.0
	6.00	220	0.170	11670	1985	56.0	1.0
	6.20	220	0.175	11295	1975	59.5	1.3
	6.50	220	0.185	10775	1995	66.0	1.2
	6.80	220	0.195	10300	2010	73.0	1.2
	7.00	220	0.200	10005	2000	77.0	1.2
	7.20	220	0.205	9725	1995	81.0	1.2
	7.40	220	0.210	9465	1990	85.5	1.2
	7.50	220	0.215	9335	2005	88.5	1.2
Al-Knetlegierung Si < 6%	5.80	250	0.130	13720	1785	47.0	1.2
	6.00	250	0.135	13265	1790	50.5	1.2
	6.20	250	0.140	12835	1795	54.0	1.4
	6.50	250	0.145	12245	1775	59.0	1.4
	6.80	250	0.150	11705	1755	63.5	1.4
	7.00	250	0.155	11370	1760	67.5	1.4
	7.20	250	0.160	11050	1770	72.0	1.4
	7.40	250	0.165	10755	1775	76.5	1.4
	7.50	250	0.165	10610	1750	77.5	1.4

Spiralbohrer Supradrill® U

5xd

HM MG10

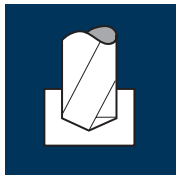


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **Rm** 1300-1500 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62015** ø-Code **.0560**

ø Code	d1 m7	d2 h5	l1	l2	l4	Lmax	NANO-U² B62015	NANO-U² B63015
.0560	5.60	6	82	44	36	34.4		●
.0565	5.65	6	82	44	36	34.4		●
.0570	5.70	6	82	44	36	34.4		●
.0575	5.75	6	82	44	36	34.5		●
.0580	5.80	6	82	44	36	34.5		●
.0590	5.90	6	82	44	36	34.5		●
.0600	6.00	6	82	44	36	34.5		●
.0610	6.10	8	91	53	36	41.4		●
.0620	6.20	8	91	53	36	41.2		●
.0630	6.30	8	91	53	36	41.2		●
.0640	6.40	8	91	53	36	41.1		●
.0650	6.50	8	91	53	36	41.1		●
.0660	6.60	8	91	53	36	41.0		●
.0670	6.70	8	91	53	36	41.0		●
.0680	6.80	8	91	53	36	40.9		●
.0690	6.90	8	91	53	36	40.9		●
.0700	7.00	8	91	53	36	40.7		●
.0710	7.10	8	91	53	36	40.7		●
.0720	7.20	8	91	53	36	40.6		●
.0725	7.25	8	91	53	36	40.6		●
.0730	7.30	8	91	53	36	40.6		●
.0740	7.40	8	91	53	36	40.5		●
.0745	7.45	8	91	53	36	40.4		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	7.60	170	0.200	7120	1425	64.5	1.7
	7.80	170	0.205	6940	1425	68.0	1.7
	8.00	170	0.210	6765	1420	71.5	1.7
	8.20	170	0.215	6600	1420	75.0	2.0
	8.50	170	0.225	6365	1430	81.0	1.9
	8.80	170	0.230	6150	1415	86.0	1.9
	9.00	170	0.235	6015	1415	90.0	1.9
	9.20	170	0.240	5880	1410	93.5	1.9
	9.40	170	0.245	5755	1410	98.0	1.9
Stahl 500 - 850 N/mm²	7.60	130	0.200	5445	1090	49.5	2.2
	7.80	130	0.205	5305	1090	52.0	2.2
	8.00	130	0.210	5175	1085	54.5	2.2
	8.20	130	0.215	5045	1085	57.5	2.6
	8.50	130	0.225	4870	1095	62.0	2.5
	8.80	130	0.230	4700	1080	65.5	2.6
	9.00	130	0.235	4600	1080	68.5	2.5
	9.20	130	0.240	4500	1080	72.0	2.5
	9.40	130	0.245	4400	1080	75.0	2.5
Stahl 850 - 1100 N/mm²	7.60	110	0.150	4605	690	31.5	3.5
	7.80	110	0.155	4490	695	33.0	3.5
	8.00	110	0.160	4375	700	35.0	3.5
	8.20	110	0.165	4270	705	37.0	3.9
	8.50	110	0.170	4120	700	39.5	3.9
	8.80	110	0.175	3980	695	42.5	4.0
	9.00	110	0.180	3890	700	44.5	3.9
	9.20	110	0.185	3805	705	47.0	3.9
	9.40	110	0.190	3725	710	49.5	3.8
Stahl 1100 - 1300 N/mm²	7.60	70	0.125	2930	365	16.5	6.6
	7.80	70	0.130	2855	370	17.5	6.6
	8.00	70	0.135	2785	375	19.0	6.5
	8.20	70	0.135	2715	365	19.5	7.6
	8.50	70	0.140	2620	365	20.5	7.6
	8.80	70	0.145	2530	365	22.0	7.5
	9.00	70	0.150	2475	370	23.5	7.4
	9.20	70	0.155	2420	375	25.0	7.3
	9.40	70	0.155	2370	365	25.5	7.5

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	7.60	40	0.100	1675	170	7.5	14.3
	7.80	40	0.105	1630	170	8.0	14.3
	8.00	40	0.105	1590	165	8.5	14.7
	8.20	40	0.110	1555	170	9.0	16.3
	8.50	40	0.115	1500	175	10.0	15.8
	8.80	40	0.115	1445	165	10.0	16.7
	9.00	40	0.120	1415	170	11.0	16.1
	9.20	40	0.125	1385	175	11.5	15.6
	9.40	40	0.125	1355	170	12.0	16.1
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	7.60	60	0.115	2515	290	13.0	8.4
	7.80	60	0.120	2450	295	14.0	8.2
	8.00	60	0.125	2385	300	15.0	8.1
	8.20	60	0.125	2330	290	15.5	9.6
	8.50	60	0.130	2245	290	16.5	9.5
	8.80	60	0.135	2170	295	18.0	9.3
	9.00	60	0.140	2120	295	19.0	9.3
	9.20	60	0.140	2075	290	19.5	9.4
	9.40	60	0.145	2030	295	20.5	9.3
Gusseisen GG(G)	7.60	220	0.215	9215	1980	90.0	1.2
	7.80	220	0.225	8980	2020	96.5	1.2
	8.00	220	0.230	8755	2015	101.5	1.2
	8.20	220	0.235	8540	2005	106.0	1.4
	8.50	220	0.245	8240	2020	114.5	1.4
	8.80	220	0.250	7960	1990	121.0	1.4
	9.00	220	0.255	7780	1985	126.5	1.4
	9.20	220	0.265	7610	2015	134.0	1.4
	9.40	220	0.270	7450	2010	139.5	1.4
Al-Knetlegierung Si < 6%	7.60	250	0.170	10470	1780	80.5	1.4
	7.80	250	0.175	10200	1785	85.5	1.4
	8.00	250	0.180	9945	1790	90.0	1.4
	8.20	250	0.180	9705	1745	92.0	1.6
	8.50	250	0.190	9360	1780	101.0	1.6
	8.80	250	0.195	9045	1765	107.5	1.6
	9.00	250	0.200	8840	1770	112.5	1.5
	9.20	250	0.205	8650	1775	118.0	1.5
	9.40	250	0.210	8465	1780	123.5	1.5

Spiralbohrer Supradrill® U

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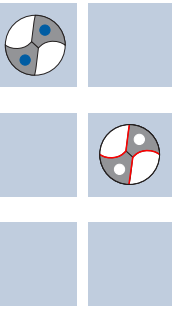
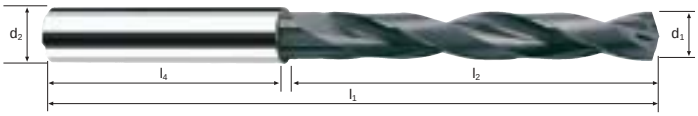
HM MG10



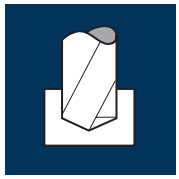


Rm < 850	**Rm** 850-1100	**Rm** 1100-1300	**Rm** 1300-1500				**Inox** Stainless		**GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62015** ø-Code **.0750**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		NANO-U² B62015	NANO-U² B63015
.0750	7.50	8	91	53	36	40.5		●	
.0755	7.55	8	91	53	36	40.4		●	
.0760	7.60	8	91	53	36	40.4		●	
.0765	7.65	8	91	53	36	40.4		●	
.0770	7.70	8	91	53	36	40.4		●	
.0780	7.80	8	91	53	36	40.4		●	
.0790	7.90	8	91	53	36	40.4		●	
.0800	8.00	8	91	53	36	40.4		●	
.0810	8.10	10	103	61	40	46.3		●	
.0820	8.20	10	103	61	40	46.2		●	
.0830	8.30	10	103	61	40	46.2		●	
.0840	8.40	10	103	61	40	46.1		●	
.0850	8.50	10	103	61	40	46.1		●	
.0860	8.60	10	103	61	40	46.0		●	
.0870	8.70	10	103	61	40	46.0		●	
.0875	8.75	10	103	61	40	45.9		●	
.0880	8.80	10	103	61	40	45.9		●	
.0885	8.85	10	103	61	40	45.8		●	
.0890	8.90	10	103	61	40	45.8		●	
.0900	9.00	10	103	61	40	45.7		●	
.0910	9.10	10	103	61	40	45.7		●	
.0920	9.20	10	103	61	40	45.6		●	
.0925	9.25	10	103	61	40	45.5		●	

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	9.50	170	0.250	5695	1425	101.0	1.9
	9.60	170	0.255	5635	1435	104.0	1.9
	9.80	170	0.260	5520	1435	108.0	1.9
	10.00	170	0.265	5410	1435	112.5	1.9
	10.20	170	0.270	5305	1430	117.0	2.2
	10.50	170	0.275	5155	1420	123.0	2.2
	10.80	170	0.285	5010	1430	131.0	2.2
	11.00	170	0.290	4920	1425	135.5	2.2
	11.50	170	0.305	4705	1435	149.0	2.2
Stahl 500 - 850 N/mm²	9.50	130	0.250	4355	1090	77.5	2.5
	9.60	130	0.255	4310	1100	79.5	2.5
	9.80	130	0.260	4220	1095	82.5	2.5
	10.00	130	0.265	4140	1095	86.0	2.5
	10.20	130	0.270	4055	1095	89.5	2.9
	10.50	130	0.275	3940	1085	94.0	2.9
	10.80	130	0.285	3830	1090	100.0	2.9
	11.00	130	0.290	3760	1090	103.5	2.9
	11.50	130	0.305	3600	1100	114.5	2.9
Stahl 850 - 1100 N/mm²	9.50	110	0.190	3685	700	49.5	3.9
	9.60	110	0.190	3645	695	50.5	3.9
	9.80	110	0.195	3575	695	52.5	3.9
	10.00	110	0.200	3500	700	55.0	3.9
	10.20	110	0.205	3435	705	57.5	4.5
	10.50	110	0.210	3335	700	60.5	4.5
	10.80	110	0.215	3240	695	63.5	4.6
	11.00	110	0.220	3185	700	66.5	4.5
	11.50	110	0.230	3045	700	72.5	4.5
Stahl 1100 - 1300 N/mm²	9.50	70	0.160	2345	375	26.5	7.3
	9.60	70	0.160	2320	370	27.0	7.4
	9.80	70	0.165	2275	375	28.5	7.2
	10.00	70	0.165	2230	370	29.0	7.4
	10.20	70	0.170	2185	370	30.0	8.6
	10.50	70	0.175	2120	370	32.0	8.6
	10.80	70	0.180	2065	370	34.0	8.6
	11.00	70	0.185	2025	375	35.5	8.4
	11.50	70	0.190	1940	370	38.5	8.5

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	9.50	40	0.125	1340	170	12.0	16.0
	9.60	40	0.130	1325	170	12.5	16.0
	9.80	40	0.130	1300	170	13.0	16.0
	10.00	40	0.135	1275	170	13.5	16.0
	10.20	40	0.135	1250	170	14.0	18.8
	10.50	40	0.140	1215	170	14.5	18.7
	10.80	40	0.145	1180	170	15.5	18.6
	11.00	40	0.145	1155	165	15.5	19.2
	11.50	40	0.155	1105	170	17.5	18.5
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	9.50	60	0.145	2010	290	20.5	9.4
	9.60	60	0.150	1990	300	21.5	9.1
	9.80	60	0.150	1950	295	22.5	9.2
	10.00	60	0.155	1910	295	23.0	9.2
	10.20	60	0.155	1870	290	23.5	11.0
	10.50	60	0.160	1820	290	25.0	11.0
	10.80	60	0.165	1770	290	26.5	10.9
	11.00	60	0.170	1735	295	28.0	10.7
	11.50	60	0.175	1660	290	30.0	10.8
Gusseisen GG(G)	9.50	220	0.270	7370	1990	141.0	1.4
	9.60	220	0.275	7295	2005	145.0	1.4
	9.80	220	0.280	7145	2000	151.0	1.4
	10.00	220	0.285	7005	1995	156.5	1.4
	10.20	220	0.290	6865	1990	162.5	1.6
	10.50	220	0.300	6670	2000	173.0	1.6
	10.80	220	0.310	6485	2010	184.0	1.6
	11.00	220	0.315	6365	2005	190.5	1.6
	11.50	220	0.330	6090	2010	209.0	1.6
Al-Knetlegierung Si < 6%	9.50	250	0.210	8375	1760	125.0	1.5
	9.60	250	0.215	8290	1780	129.0	1.5
	9.80	250	0.220	8120	1785	134.5	1.5
	10.00	250	0.220	7960	1750	137.5	1.6
	10.20	250	0.225	7800	1755	143.5	1.8
	10.50	250	0.235	7580	1780	154.0	1.8
	10.80	250	0.240	7370	1770	162.0	1.8
	11.00	250	0.245	7235	1775	168.5	1.8
	11.50	250	0.255	6920	1765	183.5	1.8

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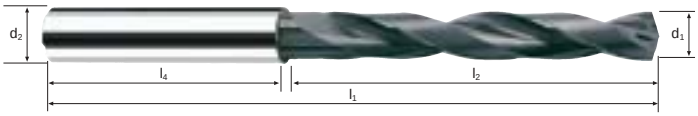
HM MG10

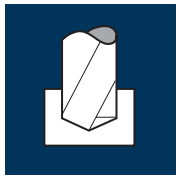


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **Rm** 1300-1500 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62015** ø-Code **.0930**

ø Code	d1 m7	d2 h5	l1	l2	l4	Lmax		NANO-U² B62015	B63015
.0930	9.30	10	103	61	40	45.6		●	
.0940	9.40	10	103	61	40	45.5		●	
.0950	9.50	10	103	61	40	45.5		●	
.0955	9.55	10	103	61	40	45.4		●	
.0960	9.60	10	103	61	40	45.4		●	
.0965	9.65	10	103	61	40	45.3		●	
.0970	9.70	10	103	61	40	45.4		●	
.0980	9.80	10	103	61	40	45.3		●	
.0990	9.90	10	103	61	40	45.4		●	
.1000	10.00	10	103	61	40	45.4		●	
.1010	10.10	12	118	71	45	53.3		●	
.1020	10.20	12	118	71	45	53.2		●	
.1030	10.30	12	118	71	45	53.2		●	
.1040	10.40	12	118	71	45	53.1		●	
.1050	10.50	12	118	71	45	53.1		●	
.1060	10.60	12	118	71	45	53.0		●	
.1070	10.70	12	118	71	45	52.9		●	
.1080	10.80	12	118	71	45	52.8		●	
.1090	10.90	12	118	71	45	52.8		●	
.1100	11.00	12	118	71	45	52.7		●	
.1110	11.10	12	118	71	45	52.7		●	
.1120	11.20	12	118	71	45	52.6		●	
.1130	11.30	12	118	71	45	52.6		●	

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	11.80	170	0.310	4585	1420	155.5	2.2
	12.00	170	0.315	4510	1420	160.5	2.2
	12.20	170	0.320	4435	1420	166.0	2.4
	12.50	170	0.330	4330	1430	175.5	2.4
	12.80	170	0.335	4230	1415	182.0	2.4
	13.00	170	0.340	4165	1415	188.0	2.4
	13.20	170	0.345	4100	1415	193.5	2.4
	13.50	170	0.355	4010	1425	204.0	2.3
	13.80	170	0.365	3920	1430	214.0	2.3
Stahl 500 - 850 N/mm²	11.80	130	0.310	3505	1085	118.5	2.9
	12.00	130	0.315	3450	1085	122.5	2.9
	12.20	130	0.320	3390	1085	127.0	3.1
	12.50	130	0.330	3310	1090	134.0	3.1
	12.80	130	0.335	3235	1085	139.5	3.1
	13.00	130	0.340	3185	1085	144.0	3.1
	13.20	130	0.345	3135	1080	148.0	3.1
	13.50	130	0.355	3065	1090	156.0	3.0
	13.80	130	0.365	3000	1095	164.0	3.0
Stahl 850 - 1100 N/mm²	11.80	110	0.235	2965	695	76.0	4.5
	12.00	110	0.240	2920	700	79.0	4.5
	12.20	110	0.245	2870	705	82.5	4.8
	12.50	110	0.250	2800	700	86.0	4.8
	12.80	110	0.255	2735	695	89.5	4.8
	13.00	110	0.260	2695	700	93.0	4.8
	13.20	110	0.265	2655	705	96.5	4.7
	13.50	110	0.270	2595	700	100.0	4.7
	13.80	110	0.275	2535	695	104.0	4.8
Stahl 1100 - 1300 N/mm²	11.80	70	0.195	1890	370	40.5	8.5
	12.00	70	0.200	1855	370	42.0	8.5
	12.20	70	0.205	1825	375	44.0	9.0
	12.50	70	0.210	1785	375	46.0	9.0
	12.80	70	0.215	1740	375	48.5	8.9
	13.00	70	0.215	1715	370	49.0	9.0
	13.20	70	0.220	1690	370	50.5	9.0
	13.50	70	0.225	1650	370	53.0	9.0
	13.80	70	0.230	1615	370	55.5	9.0

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	11.80	40	0.155	1080	165	18.0	19.0
	12.00	40	0.160	1060	170	19.0	18.5
	12.20	40	0.165	1045	170	20.0	19.8
	12.50	40	0.165	1020	170	21.0	19.8
	12.80	40	0.170	995	170	22.0	19.7
	13.00	40	0.175	980	170	22.5	19.7
	13.20	40	0.175	965	170	23.5	19.6
	13.50	40	0.180	945	170	24.5	19.5
	13.80	40	0.185	925	170	25.5	19.5
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	11.80	60	0.180	1620	290	31.5	10.8
	12.00	60	0.185	1590	295	33.5	10.6
	12.20	60	0.190	1565	295	34.5	11.4
	12.50	60	0.190	1530	290	35.5	11.6
	12.80	60	0.195	1490	290	37.5	11.5
	13.00	60	0.200	1470	295	39.0	11.3
	13.20	60	0.205	1445	295	40.5	11.3
	13.50	60	0.210	1415	295	42.0	11.3
	13.80	60	0.210	1385	290	43.5	11.4
Gusseisen GG(G)	11.80	220	0.335	5935	1990	217.5	1.6
	12.00	220	0.345	5835	2015	228.0	1.6
	12.20	220	0.350	5740	2010	235.0	1.7
	12.50	220	0.355	5600	1990	244.0	1.7
	12.80	220	0.365	5470	1995	256.5	1.7
	13.00	220	0.370	5385	1990	264.0	1.7
	13.20	220	0.375	5305	1990	272.5	1.7
	13.50	220	0.385	5185	1995	285.5	1.7
	13.80	220	0.395	5075	2005	300.0	1.7
Al-Knetlegierung Si < 6%	11.80	250	0.260	6745	1755	192.0	1.8
	12.00	250	0.265	6630	1755	198.5	1.8
	12.20	250	0.270	6525	1760	205.5	1.9
	12.50	250	0.280	6365	1780	218.5	1.9
	12.80	250	0.285	6215	1770	228.0	1.9
	13.00	250	0.290	6120	1775	235.5	1.9
	13.20	250	0.295	6030	1780	243.5	1.9
	13.50	250	0.300	5895	1770	253.5	1.9
	13.80	250	0.305	5765	1760	263.0	1.9

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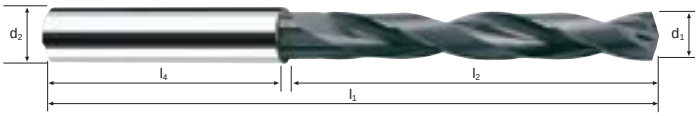
HM MG10

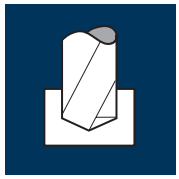


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **Rm** 1300-1500 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62015** ø-Code **.1140**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}	NANO-U² B62015	B63015
.1140	11.40	12	118	71	45	52.5		●
.1150	11.50	12	118	71	45	52.4		●
.1160	11.60	12	118	71	45	52.4		●
.1170	11.70	12	118	71	45	52.4		●
.1180	11.80	12	118	71	45	52.3		●
.1190	11.90	12	118	71	45	52.4		●
.1200	12.00	12	118	71	45	52.3		●
.1210	12.10	14	124	77	45	56.3		●
.1220	12.20	14	124	77	45	56.2		●
.1230	12.30	14	124	77	45	56.2		●
.1240	12.40	14	124	77	45	56.1		●
.1250	12.50	14	124	77	45	56.1		●
.1260	12.60	14	124	77	45	56.0		●
.1270	12.70	14	124	77	45	55.9		●
.1280	12.80	14	124	77	45	55.8		●
.1290	12.90	14	124	77	45	55.8		●
.1300	13.00	14	124	77	45	55.7		●
.1310	13.10	14	124	77	45	55.7		●
.1320	13.20	14	124	77	45	55.6		●
.1330	13.30	14	124	77	45	55.6		●
.1340	13.40	14	124	77	45	55.4		●
.1350	13.50	14	124	77	45	55.4		●
.1360	13.60	14	124	77	45	55.3		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	14.00	170	0.370	3865	1430	220.0	2.3
	14.20	170	0.375	3810	1430	226.5	2.5
	14.50	170	0.380	3730	1415	233.5	2.5
	14.80	170	0.390	3655	1425	245.0	2.5
	15.00	170	0.395	3610	1425	252.0	2.5
	15.20	170	0.400	3560	1425	258.5	2.5
	15.50	170	0.410	3490	1430	270.0	2.4
	15.80	170	0.415	3425	1420	278.5	2.5
	16.00	170	0.420	3380	1420	285.5	2.5
Stahl 500 - 850 N/mm²	14.00	130	0.370	2955	1095	168.5	3.0
	14.20	130	0.375	2915	1095	173.5	3.2
	14.50	130	0.380	2855	1085	179.0	3.3
	14.80	130	0.390	2795	1090	187.5	3.2
	15.00	130	0.395	2760	1090	192.5	3.2
	15.20	130	0.400	2720	1090	198.0	3.2
	15.50	130	0.410	2670	1095	206.5	3.2
	15.80	130	0.415	2620	1085	212.5	3.2
	16.00	130	0.420	2585	1085	218.0	3.2
Stahl 850 - 1100 N/mm²	14.00	110	0.280	2500	700	108.0	4.7
	14.20	110	0.285	2465	705	111.5	5.0
	14.50	110	0.290	2415	700	115.5	5.1
	14.80	110	0.295	2365	700	120.5	5.0
	15.00	110	0.300	2335	700	123.5	5.0
	15.20	110	0.305	2305	705	128.0	5.0
	15.50	110	0.310	2260	700	132.0	5.0
	15.80	110	0.315	2215	700	137.0	5.0
	16.00	110	0.320	2190	700	140.5	5.0
Stahl 1100 - 1300 N/mm²	14.00	70	0.235	1590	375	57.5	8.8
	14.20	70	0.235	1570	370	58.5	9.6
	14.50	70	0.240	1535	370	61.0	9.6
	14.80	70	0.245	1505	370	63.5	9.5
	15.00	70	0.250	1485	370	65.5	9.5
	15.20	70	0.255	1465	375	68.0	9.4
	15.50	70	0.260	1440	375	71.0	9.3
	15.80	70	0.265	1410	375	73.5	9.3
	16.00	70	0.265	1395	370	74.5	9.5

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	14.00	40	0.185	910	170	26.0	19.5
	14.20	40	0.190	895	170	27.0	20.9
	14.50	40	0.195	880	170	28.0	20.8
	14.80	40	0.195	860	170	29.0	20.8
	15.00	40	0.200	850	170	30.0	20.7
	15.20	40	0.205	840	170	31.0	20.7
	15.50	40	0.205	820	170	32.0	20.6
	15.80	40	0.210	805	170	33.5	20.6
	16.00	40	0.215	795	170	34.0	20.6
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	14.00	60	0.215	1365	295	45.5	11.2
	14.20	60	0.220	1345	295	46.5	12.0
	14.50	60	0.225	1315	295	48.5	12.0
	14.80	60	0.230	1290	295	50.5	12.0
	15.00	60	0.230	1275	295	52.0	11.9
	15.20	60	0.235	1255	295	53.5	11.9
	15.50	60	0.240	1230	295	55.5	11.9
	15.80	60	0.245	1210	295	58.0	11.9
	16.00	60	0.245	1195	295	59.5	11.9
Gusseisen GG(G)	14.00	220	0.400	5000	2000	308.0	1.7
	14.20	220	0.405	4930	1995	316.0	1.8
	14.50	220	0.415	4830	2005	331.0	1.8
	14.80	220	0.425	4730	2010	346.0	1.8
	15.00	220	0.430	4670	2010	355.0	1.8
	15.20	220	0.435	4605	2005	364.0	1.8
	15.50	220	0.445	4520	2010	379.5	1.7
	15.80	220	0.450	4430	1995	391.0	1.8
	16.00	220	0.455	4375	1990	400.0	1.8
Al-Knetlegierung Si < 6%	14.00	250	0.310	5685	1760	271.0	1.9
	14.20	250	0.315	5605	1765	279.5	2.0
	14.50	250	0.320	5490	1755	290.0	2.0
	14.80	250	0.330	5375	1775	305.5	2.0
	15.00	250	0.335	5305	1775	313.5	2.0
	15.20	250	0.340	5235	1780	323.0	2.0
	15.50	250	0.345	5135	1770	334.0	2.0
	15.80	250	0.350	5035	1760	345.0	2.0
	16.00	250	0.355	4975	1765	355.0	2.0

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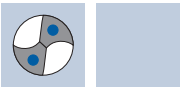
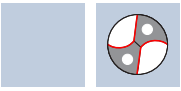
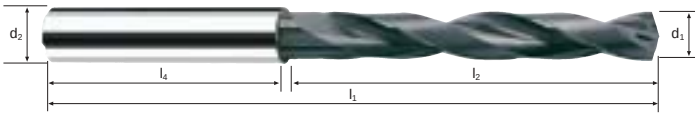
HM MG10





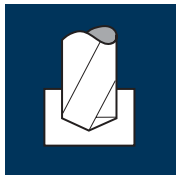


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **Rm** 1300-1500 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62015** ø-Code **.1370**

ø Code	d1 m7	d2 h5	l1	l2	l4	Lmax	NANO-U² B62015	B63015
.1370	13.70	14	124	77	45	55.4		●
.1380	13.80	14	124	77	45	55.3		●
.1390	13.90	14	124	77	45	55.3		●
.1400	14.00	14	124	77	45	55.3		●
.1410	14.10	16	133	83	48	59.3		●
.1420	14.20	16	133	83	48	59.2		●
.1430	14.30	16	133	83	48	59.2		●
.1440	14.40	16	133	83	48	59.1		●
.1450	14.50	16	133	83	48	59.1		●
.1460	14.60	16	133	83	48	58.9		●
.1470	14.70	16	133	83	48	58.9		●
.1480	14.80	16	133	83	48	58.8		●
.1490	14.90	16	133	83	48	58.8		●
.1500	15.00	16	133	83	48	58.7		●
.1510	15.10	16	133	83	48	58.7		●
.1520	15.20	16	133	83	48	58.6		●
.1530	15.30	16	133	83	48	58.5		●
.1540	15.40	16	133	83	48	58.4		●
.1550	15.50	16	133	83	48	58.4		●
.1560	15.60	16	133	83	48	58.3		●
.1570	15.70	16	133	83	48	58.3		●
.1580	15.80	16	133	83	48	58.3		●
.1590	15.90	16	133	83	48	58.3		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	16.20	170	0.425	3340	1420	292.5	2.8
	16.50	170	0.435	3280	1425	304.5	2.8
	16.60	170	0.435	3260	1420	307.5	2.8
	16.80	170	0.440	3220	1415	313.5	2.8
	17.00	170	0.445	3185	1415	321.0	2.8
	17.20	170	0.455	3145	1430	332.5	2.7
	17.50	170	0.460	3090	1420	341.5	2.8
	17.80	170	0.470	3040	1430	356.0	2.7
	18.00	170	0.475	3005	1425	362.5	2.7
Stahl 500 - 850 N/mm²	16.20	130	0.425	2555	1085	223.5	3.7
	16.50	130	0.435	2510	1090	233.0	3.6
	16.60	130	0.435	2495	1085	235.0	3.6
	16.80	130	0.440	2465	1085	240.5	3.6
	17.00	130	0.445	2435	1085	246.5	3.6
	17.20	130	0.455	2405	1095	254.5	3.6
	17.50	130	0.460	2365	1090	262.0	3.6
	17.80	130	0.470	2325	1095	272.5	3.6
	18.00	130	0.475	2300	1095	278.5	3.6
Stahl 850 - 1100 N/mm²	16.20	110	0.325	2160	700	144.5	5.7
	16.50	110	0.330	2120	700	149.5	5.7
	16.60	110	0.330	2110	695	150.5	5.7
	16.80	110	0.335	2085	700	155.0	5.6
	17.00	110	0.340	2060	700	159.0	5.6
	17.20	110	0.345	2035	700	162.5	5.6
	17.50	110	0.350	2000	700	168.5	5.6
	17.80	110	0.355	1965	700	174.0	5.6
	18.00	110	0.360	1945	700	178.0	5.6
Stahl 1100 - 1300 N/mm²	16.20	70	0.270	1375	370	76.5	10.7
	16.50	70	0.275	1350	370	79.0	10.7
	16.60	70	0.275	1340	370	80.0	10.7
	16.80	70	0.280	1325	370	82.0	10.7
	17.00	70	0.285	1310	375	85.0	10.5
	17.20	70	0.285	1295	370	86.0	10.6
	17.50	70	0.290	1275	370	89.0	10.6
	17.80	70	0.295	1250	370	92.0	10.6
	18.00	70	0.300	1240	370	94.0	10.6

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	16.20	40	0.215	785	170	35.0	23.4
	16.50	40	0.220	770	170	36.5	23.3
	16.60	40	0.220	765	170	37.0	23.3
	16.80	40	0.225	760	170	37.5	23.2
	17.00	40	0.225	750	170	38.5	23.2
	17.20	40	0.230	740	170	39.5	23.1
	17.50	40	0.235	730	170	41.0	23.1
	17.80	40	0.235	715	170	42.5	23.0
	18.00	40	0.240	705	170	43.5	23.0
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	16.20	60	0.250	1180	295	61.0	13.5
	16.50	60	0.255	1155	295	63.0	13.4
	16.60	60	0.255	1150	295	64.0	13.4
	16.80	60	0.260	1135	295	65.5	13.4
	17.00	60	0.260	1125	295	67.0	13.4
	17.20	60	0.265	1110	295	68.5	13.3
	17.50	60	0.270	1090	295	71.0	13.3
	17.80	60	0.275	1075	295	73.5	13.3
	18.00	60	0.275	1060	290	74.0	13.5
Gusseisen GG(G)	16.20	220	0.465	4325	2010	414.5	2.0
	16.50	220	0.470	4245	1995	426.5	2.0
	16.60	220	0.475	4220	2005	434.0	2.0
	16.80	220	0.480	4170	2000	443.5	2.0
	17.00	220	0.485	4120	2000	454.0	2.0
	17.20	220	0.490	4070	1995	463.5	2.0
	17.50	220	0.500	4000	2000	481.0	2.0
	17.80	220	0.510	3935	2005	499.0	2.0
	18.00	220	0.515	3890	2005	510.0	2.0
Al-Knetlegierung Si < 6%	16.20	250	0.360	4910	1770	365.0	2.2
	16.50	250	0.365	4825	1760	376.5	2.2
	16.60	250	0.370	4795	1775	384.0	2.2
	16.80	250	0.375	4735	1775	393.5	2.2
	17.00	250	0.380	4680	1780	404.0	2.2
	17.20	250	0.380	4625	1760	409.0	2.2
	17.50	250	0.390	4545	1775	427.0	2.2
	17.80	250	0.395	4470	1765	439.0	2.2
	18.00	250	0.400	4420	1770	450.5	2.2

Spiralbohrer Supradrill® U

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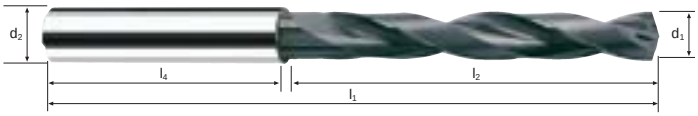
HM MG10

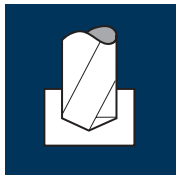


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless		GG(G) Aluminium

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62015** ø-Code **.1600**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		NANO-U²
								B62015
								B63015
.1600	16.00	16	133	83	48	58.3		●
.1610	16.10	18	143	93	48	66.3		●
.1620	16.20	18	143	93	48	66.2		●
.1630	16.30	18	143	93	48	66.2		●
.1640	16.40	18	143	93	48	66.1		●
.1650	16.50	18	143	93	48	66.0		●
.1660	16.60	18	143	93	48	65.9		●
.1670	16.70	18	143	93	48	65.9		●
.1680	16.80	18	143	93	48	65.8		●
.1690	16.90	18	143	93	48	65.8		●
.1700	17.00	18	143	93	48	65.7		●
.1710	17.10	18	143	93	48	65.7		●
.1720	17.20	18	143	93	48	65.5		●
.1730	17.30	18	143	93	48	65.5		●
.1740	17.40	18	143	93	48	65.4		●
.1750	17.50	18	143	93	48	65.4		●
.1760	17.60	18	143	93	48	65.3		●
.1770	17.70	18	143	93	48	65.3		●
.1780	17.80	18	143	93	48	65.2		●
.1790	17.90	18	143	93	48	65.3		●
.1800	18.00	18	143	93	48	65.3		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	18.50	170	0.485	2925	1420	381.5	3.0
	18.70	170	0.490	2895	1420	390.0	3.0
	19.00	170	0.500	2850	1425	404.0	3.0
	19.20	170	0.505	2820	1425	412.5	3.0
	19.30	170	0.510	2805	1430	418.5	3.0
	19.50	170	0.515	2775	1430	427.0	3.0
	19.70	170	0.520	2745	1425	434.5	3.0
	19.80	170	0.520	2735	1420	437.0	3.0
	20.00	170	0.525	2705	1420	446.0	3.0
Stahl 500 - 850 N/mm²	18.50	130	0.485	2235	1085	291.5	3.9
	18.70	130	0.490	2215	1085	298.0	3.9
	19.00	130	0.500	2180	1090	309.0	3.9
	19.20	130	0.505	2155	1090	315.5	3.9
	19.30	130	0.510	2145	1095	320.5	3.9
	19.50	130	0.515	2120	1090	325.5	3.9
	19.70	130	0.520	2100	1090	332.0	3.9
	19.80	130	0.520	2090	1085	334.0	3.9
	20.00	130	0.525	2070	1085	341.0	3.9
Stahl 850 - 1100 N/mm²	18.50	110	0.370	1895	700	188.0	6.1
	18.70	110	0.375	1870	700	192.5	6.1
	19.00	110	0.380	1845	700	198.5	6.1
	19.20	110	0.385	1825	705	204.0	6.0
	19.30	110	0.385	1815	700	205.0	6.0
	19.50	110	0.390	1795	700	209.0	6.0
	19.70	110	0.395	1775	700	213.5	6.0
	19.80	110	0.395	1770	700	215.5	6.0
	20.00	110	0.400	1750	700	220.0	6.0
Stahl 1100 - 1300 N/mm²	18.50	70	0.310	1205	375	101.0	11.4
	18.70	70	0.310	1190	370	101.5	11.5
	19.00	70	0.315	1175	370	105.0	11.5
	19.20	70	0.320	1160	370	107.0	11.4
	19.30	70	0.320	1155	370	108.0	11.4
	19.50	70	0.325	1145	370	110.5	11.4
	19.70	70	0.330	1130	375	114.5	11.2
	19.80	70	0.330	1125	370	114.0	11.4
	20.00	70	0.335	1115	375	118.0	11.2

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	18.50	40	0.245	690	170	45.5	25.0
	18.70	40	0.250	680	170	46.5	25.0
	19.00	40	0.255	670	170	48.0	25.0
	19.20	40	0.255	665	170	49.0	24.9
	19.30	40	0.255	660	170	49.5	24.9
	19.50	40	0.260	655	170	51.0	24.8
	19.70	40	0.265	645	170	52.0	24.8
	19.80	40	0.265	645	170	52.5	24.8
	20.00	40	0.265	635	170	53.5	24.8
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	18.50	60	0.285	1030	295	79.5	14.4
	18.70	60	0.290	1020	295	81.0	14.4
	19.00	60	0.290	1005	290	82.0	14.6
	19.20	60	0.295	995	295	85.5	14.3
	19.30	60	0.295	990	290	85.0	14.6
	19.50	60	0.300	980	295	88.0	14.3
	19.70	60	0.305	970	295	90.0	14.3
	19.80	60	0.305	965	295	91.0	14.3
	20.00	60	0.310	955	295	92.5	14.3
Gusseisen GG(G)	18.50	220	0.530	3785	2005	539.0	2.1
	18.70	220	0.535	3745	2005	550.5	2.1
	19.00	220	0.545	3685	2010	570.0	2.1
	19.20	220	0.550	3645	2005	580.5	2.1
	19.30	220	0.550	3630	1995	583.5	2.1
	19.50	220	0.555	3590	1990	594.5	2.1
	19.70	220	0.565	3555	2010	612.5	2.1
	19.80	220	0.565	3535	1995	614.5	2.1
	20.00	220	0.570	3500	1995	626.5	2.1
Al-Knetlegierung Si < 6%	18.50	250	0.410	4300	1765	474.5	2.4
	18.70	250	0.415	4255	1765	484.5	2.4
	19.00	250	0.420	4190	1760	499.0	2.4
	19.20	250	0.425	4145	1760	509.5	2.4
	19.30	250	0.430	4125	1775	519.5	2.4
	19.50	250	0.435	4080	1775	530.0	2.4
	19.70	250	0.440	4040	1780	542.5	2.4
	19.80	250	0.440	4020	1770	545.0	2.4
	20.00	250	0.445	3980	1770	556.0	2.4

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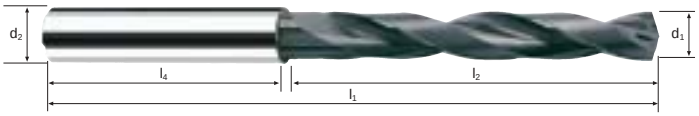
HM MG10

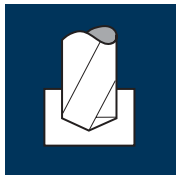


Rm < 850	**Rm** 850-1100	**Rm** 1100-1300	**Rm** 1300-1500				**Inox** Stainless		**GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62015** ø-Code **.1850**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		NANO-U² B62015	NANO-U² B63015
.1850	18.50	20	153	101	50	71.0			●
.1870	18.70	20	153	101	50	70.9			●
.1900	19.00	20	153	101	50	70.7			●
.1910	19.10	20	153	101	50	70.6			●
.1920	19.20	20	153	101	50	70.5			●
.1930	19.30	20	153	101	50	70.5			●
.1950	19.50	20	153	101	50	70.4			●
.1970	19.70	20	153	101	50	70.3			●
.1980	19.80	20	153	101	50	70.2			●
.2000	20.00	20	153	101	50	70.2			●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	2.50	140	0.060	17825	1070	5.5	1.2
	2.70	140	0.065	16505	1075	6.0	1.1
	2.90	140	0.070	15365	1075	7.0	1.1
	3.00	140	0.070	14855	1040	7.5	1.2
	3.30	140	0.080	13505	1080	9.0	1.1
	3.50	140	0.085	12730	1080	10.5	1.1
	3.80	140	0.090	11725	1055	12.0	1.6
	4.00	140	0.095	11140	1060	13.5	1.5
	4.20	140	0.100	10610	1060	14.5	1.5
Stahl 500 - 850 N/mm²	2.50	110	0.060	14005	840	4.0	1.5
	2.70	110	0.065	12970	845	5.0	1.5
	2.90	110	0.070	12075	845	5.5	1.4
	3.00	110	0.070	11670	815	6.0	1.5
	3.30	110	0.080	10610	850	7.5	1.4
	3.50	110	0.085	10005	850	8.0	1.4
	3.80	110	0.090	9215	830	9.5	2.0
	4.00	110	0.095	8755	830	10.5	1.9
	4.20	110	0.100	8335	835	11.5	1.9
Stahl 850 - 1100 N/mm²	2.50	80	0.045	10185	460	2.5	2.7
	2.70	80	0.050	9430	470	2.5	2.6
	2.90	80	0.050	8780	440	3.0	2.8
	3.00	80	0.055	8490	465	3.5	2.6
	3.30	80	0.060	7715	465	4.0	2.6
	3.50	80	0.065	7275	475	4.5	2.5
	3.80	80	0.070	6700	470	5.5	3.5
	4.00	80	0.070	6365	445	5.5	3.6
	4.20	80	0.075	6065	455	6.5	3.5
Stahl 1100 - 1300 N/mm²	2.50	55	0.040	7005	280	1.5	4.4
	2.70	55	0.040	6485	260	1.5	4.7
	2.90	55	0.045	6035	270	2.0	4.5
	3.00	55	0.045	5835	265	2.0	4.6
	3.30	55	0.050	5305	265	2.5	4.5
	3.50	55	0.055	5000	275	2.5	4.3
	3.80	55	0.055	4605	255	3.0	6.4
	4.00	55	0.060	4375	265	3.5	6.1
	4.20	55	0.065	4170	270	3.5	6.0

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	2.50	25	0.025	3185	80	0.5	15.6
	2.70	25	0.025	2945	75	0.5	16.4
	2.90	25	0.030	2745	80	0.5	15.3
	3.00	25	0.030	2655	80	0.5	15.2
	3.30	25	0.035	2410	85	0.5	14.1
	3.50	25	0.035	2275	80	1.0	14.8
	3.80	25	0.040	2095	85	1.0	19.3
	4.00	25	0.040	1990	80	1.0	20.2
	4.20	25	0.040	1895	75	1.0	21.4
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379]	2.50	50	0.030	6365	190	1.0	6.6
	2.70	50	0.035	5895	205	1.0	6.0
	2.90	50	0.035	5490	190	1.5	6.4
	3.00	50	0.040	5305	210	1.5	5.8
	3.30	50	0.040	4825	195	1.5	6.1
	3.50	50	0.045	4545	205	2.0	5.8
	3.80	50	0.050	4190	210	2.5	7.8
	4.00	50	0.050	3980	200	2.5	8.1
	4.20	50	0.055	3790	210	3.0	7.7
Gusseisen GG(G)	2.50	160	0.065	20370	1325	6.5	0.9
	2.70	160	0.070	18865	1320	7.5	0.9
	2.90	160	0.075	17560	1315	8.5	0.9
	3.00	160	0.075	16975	1275	9.0	1.0
	3.30	160	0.085	15435	1310	11.0	0.9
	3.50	160	0.090	14550	1310	12.5	0.9
	3.80	160	0.100	13405	1340	15.0	1.2
	4.00	160	0.105	12730	1335	17.0	1.2
	4.20	160	0.110	12125	1335	18.5	1.2
Al-Knetlegierung Si < 6%	2.50	220	0.050	28010	1400	7.0	0.9
	2.70	220	0.055	25935	1425	8.0	0.9
	2.90	220	0.060	24150	1450	9.5	0.8
	3.00	220	0.060	23345	1400	10.0	0.9
	3.30	220	0.065	21220	1380	12.0	0.9
	3.50	220	0.070	20010	1400	13.5	0.8
	3.80	220	0.075	18430	1380	15.5	1.2
	4.00	220	0.080	17505	1400	17.5	1.2
	4.20	220	0.085	16675	1415	19.5	1.1

Spiralbohrer Supradrill® U

5xd

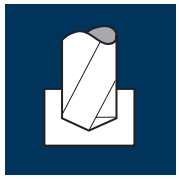
HM MG10

Rm < 850	**Rm** 850-1100	**Rm** 1100-1300	**Rm** 1300-1500						**GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62014** ø-Code **.0250**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		NANO-U² B62014	B63014
.0250	2.50	6	66	28	36	20.8			●
.0255	2.55	6	66	28	36	20.7			●
.0260	2.60	6	66	28	36	20.6			●
.0265	2.65	6	66	28	36	20.6			●
.0270	2.70	6	66	28	36	20.6			●
.0280	2.80	6	66	28	36	20.4			●
.0285	2.85	6	66	28	36	20.4			●
.0290	2.90	6	66	28	36	20.4			●
.0295	2.95	6	66	28	36	20.3			●
.0300	3.00	6	66	28	36	20.2			●
.0310	3.10	6	66	28	36	20.2			●
.0320	3.20	6	66	28	36	20.0			●
.0330	3.30	6	66	28	36	20.0			●
.0340	3.40	6	66	28	36	19.8			●
.0350	3.50	6	66	28	36	19.8			●
.0360	3.60	6	66	28	36	19.6			●
.0370	3.70	6	66	28	36	19.6			●
.0380	3.80	6	74	36	36	27.4			●
.0390	3.90	6	74	36	36	27.4			●
.0400	4.00	6	74	36	36	26.9			●
.0410	4.10	6	74	36	36	26.9			●
.0420	4.20	6	74	36	36	26.8			●
.0430	4.30	6	74	36	36	26.8			●

Anwendung



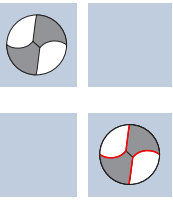
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	4.50	140	0.105	9905	1040	16.5	1.5
	4.80	140	0.115	9285	1070	19.5	1.9
	5.00	140	0.120	8915	1070	21.0	2.0
	5.10	140	0.120	8740	1050	21.5	2.0
	5.50	140	0.130	8100	1055	25.0	2.0
	5.80	140	0.135	7685	1035	27.5	2.0
	6.00	140	0.140	7425	1040	29.5	2.0
	6.10	140	0.145	7305	1060	31.0	2.3
	6.50	140	0.155	6855	1065	35.5	2.3
Stahl 500 - 850 N/mm²	4.50	110	0.105	7780	815	13.0	2.0
	4.80	110	0.115	7295	840	15.0	2.5
	5.00	110	0.120	7005	840	16.5	2.5
	5.10	110	0.120	6865	825	17.0	2.5
	5.50	110	0.130	6365	825	19.5	2.5
	5.80	110	0.135	6035	815	21.5	2.5
	6.00	110	0.140	5835	815	23.0	2.5
	6.10	110	0.145	5740	830	24.5	3.0
	6.50	110	0.155	5385	835	27.5	2.9
Stahl 850 - 1100 N/mm²	4.50	80	0.080	5660	455	7.0	3.5
	4.80	80	0.085	5305	450	8.0	4.6
	5.00	80	0.090	5095	460	9.0	4.5
	5.10	80	0.090	4995	450	9.0	4.6
	5.50	80	0.100	4630	465	11.0	4.4
	5.80	80	0.105	4390	460	12.0	4.5
	6.00	80	0.110	4245	465	13.0	4.5
	6.10	80	0.110	4175	460	13.5	5.4
	6.50	80	0.115	3920	450	15.0	5.5
Stahl 1100 - 1300 N/mm²	4.50	55	0.070	3890	270	4.5	5.9
	4.80	55	0.070	3645	255	4.5	8.1
	5.00	55	0.075	3500	265	5.0	7.9
	5.10	55	0.075	3435	260	5.5	8.0
	5.50	55	0.085	3185	270	6.5	7.7
	5.80	55	0.085	3020	255	6.5	8.1
	6.00	55	0.090	2920	265	7.5	7.8
	6.10	55	0.090	2870	260	7.5	9.5
	6.50	55	0.100	2695	270	9.0	9.1

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	4.50	25	0.045	1770	80	1.5	19.9
	4.80	25	0.050	1660	85	1.5	24.3
	5.00	25	0.050	1590	80	1.5	26.1
	5.10	25	0.050	1560	80	1.5	26.0
	5.50	25	0.055	1445	80	2.0	25.8
	5.80	25	0.060	1370	80	2.0	25.8
	6.00	25	0.060	1325	80	2.5	25.9
	6.10	25	0.060	1305	80	2.5	31.0
	6.50	25	0.065	1225	80	2.5	30.8
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379]	4.50	50	0.060	3535	210	3.5	7.6
	4.80	50	0.060	3315	200	3.5	10.3
	5.00	50	0.065	3185	205	4.0	10.2
	5.10	50	0.065	3120	205	4.0	10.1
	5.50	50	0.070	2895	205	5.0	10.1
	5.80	50	0.075	2745	205	5.5	10.1
	6.00	50	0.075	2655	200	5.5	10.3
	6.10	50	0.080	2610	210	6.0	11.8
	6.50	50	0.085	2450	210	7.0	11.7
Gusseisen GG(G)	4.50	160	0.115	11320	1300	20.5	1.2
	4.80	160	0.125	10610	1325	24.0	1.6
	5.00	160	0.130	10185	1325	26.0	1.6
	5.10	160	0.130	9985	1300	26.5	1.6
	5.50	160	0.140	9260	1295	31.0	1.6
	5.80	160	0.150	8780	1315	34.5	1.6
	6.00	160	0.155	8490	1315	37.0	1.6
	6.10	160	0.155	8350	1295	38.0	1.9
	6.50	160	0.165	7835	1295	43.0	1.9
Al-Knetlegierung Si < 6%	4.50	220	0.090	15560	1400	22.5	1.1
	4.80	220	0.095	14590	1385	25.0	1.5
	5.00	220	0.100	14005	1400	27.5	1.5
	5.10	220	0.100	13730	1375	28.0	1.5
	5.50	220	0.110	12730	1400	33.5	1.5
	5.80	220	0.115	12075	1390	36.5	1.5
	6.00	220	0.120	11670	1400	39.5	1.5
	6.10	220	0.120	11480	1380	40.5	1.8
	6.50	220	0.130	10775	1400	46.5	1.8

Spiralbohrer Supradrill® U

5xd

HM MG10

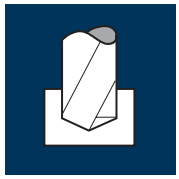


Rm < 850	**Rm** 850-1100	**Rm** 1100-1300	**Rm** 1300-1500						**GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62014** ø-Code **.0440**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		NANO-U² B62014	B63014
.0440	4.40	6	74	36	36	26.6			●
.0450	4.50	6	74	36	36	26.6			●
.0460	4.60	6	74	36	36	26.5			●
.0470	4.70	6	74	36	36	26.5			●
.0480	4.80	6	82	44	36	34.4			●
.0490	4.90	6	82	44	36	34.4			●
.0500	5.00	6	82	44	36	34.8			●
.0510	5.10	6	82	44	36	34.7			●
.0520	5.20	6	82	44	36	34.6			●
.0530	5.30	6	82	44	36	34.6			●
.0540	5.40	6	82	44	36	34.5			●
.0550	5.50	6	82	44	36	34.5			●
.0560	5.60	6	82	44	36	34.4			●
.0570	5.70	6	82	44	36	34.4			●
.0580	5.80	6	82	44	36	34.4			●
.0590	5.90	6	82	44	36	34.5			●
.0600	6.00	6	82	44	36	34.5			●
.0610	6.10	8	91	53	36	41.4			●
.0620	6.20	8	91	53	36	41.2			●
.0630	6.30	8	91	53	36	41.2			●
.0640	6.40	8	91	53	36	41.1			●
.0650	6.50	8	91	53	36	41.1			●
.0660	6.60	8	91	53	36	41.0			●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	6.80	140	0.160	6555	1050	38.0	2.3
	6.90	140	0.165	6460	1065	40.0	2.3
	7.00	140	0.165	6365	1050	40.5	2.3
	7.50	140	0.180	5940	1070	47.5	2.3
	7.80	140	0.185	5715	1055	50.5	2.3
	8.00	140	0.190	5570	1060	53.5	2.3
	8.20	140	0.195	5435	1060	56.0	2.6
	8.50	140	0.200	5245	1050	59.5	2.6
	8.60	140	0.205	5180	1060	61.5	2.6
Stahl 500 - 850 N/mm²	6.80	110	0.160	5150	825	30.0	3.0
	6.90	110	0.165	5075	835	31.0	2.9
	7.00	110	0.165	5000	825	31.5	3.0
	7.50	110	0.180	4670	840	37.0	2.9
	7.80	110	0.185	4490	830	39.5	2.9
	8.00	110	0.190	4375	830	41.5	2.9
	8.20	110	0.195	4270	835	44.0	3.3
	8.50	110	0.200	4120	825	47.0	3.3
	8.60	110	0.205	4070	835	48.5	3.3
Stahl 850 - 1100 N/mm²	6.80	80	0.120	3745	450	16.5	5.5
	6.90	80	0.125	3690	460	17.0	5.3
	7.00	80	0.125	3640	455	17.5	5.4
	7.50	80	0.135	3395	460	20.5	5.3
	7.80	80	0.140	3265	455	21.5	5.3
	8.00	80	0.145	3185	460	23.0	5.3
	8.20	80	0.150	3105	465	24.5	6.0
	8.50	80	0.155	2995	465	26.5	5.9
	8.60	80	0.155	2960	460	26.5	6.0
Stahl 1100 - 1300 N/mm²	6.80	55	0.100	2575	260	9.5	9.4
	6.90	55	0.105	2535	265	10.0	9.2
	7.00	55	0.105	2500	265	10.0	9.2
	7.50	55	0.115	2335	270	12.0	9.0
	7.80	55	0.115	2245	260	12.5	9.3
	8.00	55	0.120	2190	265	13.5	9.1
	8.20	55	0.125	2135	265	14.0	10.5
	8.50	55	0.130	2060	270	15.5	10.2
	8.60	55	0.130	2035	265	15.5	10.4

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	6.80	25	0.070	1170	80	3.0	30.7
	6.90	25	0.070	1155	80	3.0	30.6
	7.00	25	0.070	1135	80	3.0	30.5
	7.50	25	0.075	1060	80	3.5	30.3
	7.80	25	0.080	1020	80	4.0	30.3
	8.00	25	0.080	995	80	4.0	30.3
	8.20	25	0.080	970	80	4.0	34.6
	8.50	25	0.085	935	80	4.5	34.5
	8.60	25	0.085	925	80	4.5	34.5
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379]	6.80	50	0.085	2340	200	7.5	12.3
	6.90	50	0.090	2305	205	7.5	12.0
	7.00	50	0.090	2275	205	8.0	11.9
	7.50	50	0.095	2120	200	9.0	12.1
	7.80	50	0.100	2040	205	10.0	11.8
	8.00	50	0.105	1990	210	10.5	11.5
	8.20	50	0.105	1940	205	11.0	13.5
	8.50	50	0.110	1870	205	11.5	13.5
	8.60	50	0.110	1850	205	12.0	13.5
Gusseisen GG(G)	6.80	160	0.175	7490	1310	47.5	1.9
	6.90	160	0.175	7380	1290	48.0	1.9
	7.00	160	0.180	7275	1310	50.5	1.9
	7.50	160	0.195	6790	1325	58.5	1.8
	7.80	160	0.200	6530	1305	62.5	1.9
	8.00	160	0.205	6365	1305	65.5	1.9
	8.20	160	0.210	6210	1305	69.0	2.1
	8.50	160	0.220	5990	1320	75.0	2.1
	8.60	160	0.220	5920	1300	75.5	2.1
Al-Knetlegierung Si < 6%	6.80	220	0.135	10300	1390	50.5	1.8
	6.90	220	0.140	10150	1420	53.0	1.7
	7.00	220	0.140	10005	1400	54.0	1.7
	7.50	220	0.150	9335	1400	62.0	1.7
	7.80	220	0.155	8980	1390	66.5	1.7
	8.00	220	0.160	8755	1400	70.5	1.7
	8.20	220	0.165	8540	1410	74.5	2.0
	8.50	220	0.170	8240	1400	79.5	2.0
	8.60	220	0.170	8145	1385	80.5	2.0

Spiralbohrer Supradrill® U

5xd

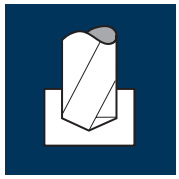
HM MG10

Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **Rm** 1300-1500 | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62014** ø-Code **.0670**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}	NANO-U² B62014	B63014
.0670	6.70	8	91	53	36	41.0		●
.0680	6.80	8	91	53	36	40.9		●
.0690	6.90	8	91	53	36	40.9		●
.0700	7.00	8	91	53	36	40.7		●
.0710	7.10	8	91	53	36	40.7		●
.0720	7.20	8	91	53	36	40.6		●
.0730	7.30	8	91	53	36	40.6		●
.0740	7.40	8	91	53	36	40.5		●
.0750	7.50	8	91	53	36	40.5		●
.0760	7.60	8	91	53	36	40.4		●
.0770	7.70	8	91	53	36	40.4		●
.0780	7.80	8	91	53	36	40.4		●
.0790	7.90	8	91	53	36	40.4		●
.0800	8.00	8	91	53	36	40.4		●
.0810	8.10	10	103	61	40	46.3		●
.0820	8.20	10	103	61	40	46.2		●
.0830	8.30	10	103	61	40	46.2		●
.0840	8.40	10	103	61	40	46.1		●
.0850	8.50	10	103	61	40	46.1		●
.0860	8.60	10	103	61	40	46.0		●
.0870	8.70	10	103	61	40	46.0		●
.0880	8.80	10	103	61	40	45.9		●
.0890	8.90	10	103	61	40	45.8		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	9.00	140	0.215	4950	1065	68.0	2.6
	9.50	140	0.225	4690	1055	75.0	2.6
	9.80	140	0.230	4545	1045	79.0	2.6
	10.00	140	0.235	4455	1045	82.0	2.6
	10.20	140	0.240	4370	1050	86.0	3.0
	10.40	140	0.245	4285	1050	89.0	3.0
	10.50	140	0.250	4245	1060	92.0	3.0
	10.80	140	0.255	4125	1050	96.0	3.0
	11.00	140	0.260	4050	1055	100.5	3.0
Stahl 500 - 850 N/mm²	9.00	110	0.215	3890	835	53.0	3.3
	9.50	110	0.225	3685	830	59.0	3.3
	9.80	110	0.230	3575	820	62.0	3.3
	10.00	110	0.235	3500	825	65.0	3.3
	10.20	110	0.240	3435	825	67.5	3.9
	10.40	110	0.245	3365	825	70.0	3.9
	10.50	110	0.250	3335	835	72.5	3.8
	10.80	110	0.255	3240	825	75.5	3.8
	11.00	110	0.260	3185	830	79.0	3.8
Stahl 850 - 1100 N/mm²	9.00	80	0.160	2830	455	29.0	6.0
	9.50	80	0.170	2680	455	32.5	6.0
	9.80	80	0.175	2600	455	34.5	6.0
	10.00	80	0.180	2545	460	36.0	5.9
	10.20	80	0.185	2495	460	37.5	6.9
	10.40	80	0.185	2450	455	38.5	7.0
	10.50	80	0.190	2425	460	40.0	6.9
	10.80	80	0.195	2360	460	42.0	6.9
	11.00	80	0.200	2315	465	44.0	6.8
Stahl 1100 - 1300 N/mm²	9.00	55	0.135	1945	265	17.0	10.3
	9.50	55	0.145	1845	270	19.0	10.1
	9.80	55	0.145	1785	260	19.5	10.5
	10.00	55	0.150	1750	265	21.0	10.3
	10.20	55	0.155	1715	265	21.5	12.0
	10.40	55	0.155	1685	260	22.0	12.3
	10.50	55	0.160	1665	265	23.0	12.0
	10.80	55	0.160	1620	260	24.0	12.2
	11.00	55	0.165	1590	260	24.5	12.2

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	9.00	25	0.090	885	80	5.0	34.3
	9.50	25	0.095	840	80	5.5	34.1
	9.80	25	0.100	810	80	6.0	34.0
	10.00	25	0.100	795	80	6.5	34.0
	10.20	25	0.100	780	80	6.5	39.9
	10.40	25	0.105	765	80	7.0	39.8
	10.50	25	0.105	760	80	7.0	39.8
	10.80	25	0.110	735	80	7.5	39.6
	11.00	25	0.110	725	80	7.5	39.5
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379]	9.00	50	0.115	1770	205	13.0	13.4
	9.50	50	0.120	1675	200	14.0	13.6
	9.80	50	0.125	1625	205	15.5	13.3
	10.00	50	0.130	1590	205	16.0	13.3
	10.20	50	0.130	1560	205	17.0	15.6
	10.40	50	0.135	1530	205	17.5	15.5
	10.50	50	0.135	1515	205	18.0	15.5
	10.80	50	0.140	1475	205	19.0	15.5
	11.00	50	0.140	1445	200	19.0	15.8
Gusseisen GG(G)	9.00	160	0.230	5660	1300	82.5	2.1
	9.50	160	0.245	5360	1315	93.0	2.1
	9.80	160	0.250	5195	1300	98.0	2.1
	10.00	160	0.255	5095	1300	102.0	2.1
	10.20	160	0.260	4995	1300	106.0	2.5
	10.40	160	0.265	4895	1295	110.0	2.5
	10.50	160	0.270	4850	1310	113.5	2.4
	10.80	160	0.280	4715	1320	121.0	2.4
	11.00	160	0.285	4630	1320	125.5	2.4
Al-Knetlegierung Si < 6%	9.00	220	0.180	7780	1400	89.0	2.0
	9.50	220	0.190	7370	1400	99.0	1.9
	9.80	220	0.195	7145	1395	105.0	1.9
	10.00	220	0.200	7005	1400	110.0	1.9
	10.20	220	0.205	6865	1405	115.0	2.3
	10.40	220	0.210	6735	1415	120.0	2.3
	10.50	220	0.210	6670	1400	121.0	2.3
	10.80	220	0.215	6485	1395	128.0	2.3
	11.00	220	0.220	6365	1400	133.0	2.3

Spiralbohrer Supradrill® U

5xd

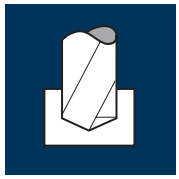
HM MG10

Rm < 850	**Rm** 850-1100	**Rm** 1100-1300	**Rm** 1300-1500						**GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62014** ø-Code **.0900**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		NANO-U²
								B62014
								B63014
.0900	9.00	10	103	61	40	45.7		●
.0910	9.10	10	103	61	40	45.7		●
.0920	9.20	10	103	61	40	45.6		●
.0930	9.30	10	103	61	40	45.6		●
.0940	9.40	10	103	61	40	45.5		●
.0950	9.50	10	103	61	40	45.5		●
.0960	9.60	10	103	61	40	45.4		●
.0970	9.70	10	103	61	40	45.4		●
.0980	9.80	10	103	61	40	45.3		●
.0990	9.90	10	103	61	40	45.4		●
.1000	10.00	10	103	61	40	45.4		●
.1010	10.10	12	118	71	45	53.3		●
.1020	10.20	12	118	71	45	53.2		●
.1030	10.30	12	118	71	45	53.2		●
.1040	10.40	12	118	71	45	53.1		●
.1050	10.50	12	118	71	45	53.1		●
.1060	10.60	12	118	71	45	53.0		●
.1070	10.70	12	118	71	45	52.9		●
.1080	10.80	12	118	71	45	52.8		●
.1090	10.90	12	118	71	45	52.8		●
.1100	11.00	12	118	71	45	52.7		●
.1110	11.10	12	118	71	45	52.7		●
.1120	11.20	12	118	71	45	52.6		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	11.50	140	0.270	3875	1045	108.5	3.0
	11.70	140	0.275	3810	1050	113.0	3.0
	12.00	140	0.285	3715	1060	120.0	3.0
	12.50	140	0.295	3565	1050	129.0	3.2
	13.00	140	0.310	3430	1065	141.5	3.1
	14.00	140	0.330	3185	1050	161.5	3.2
	15.00	140	0.355	2970	1055	186.5	3.3
	15.50	140	0.365	2875	1050	198.0	3.3
	16.00	140	0.380	2785	1060	213.0	3.3
Stahl 500 - 850 N/mm²	11.50	110	0.270	3045	820	85.0	3.8
	11.70	110	0.275	2995	825	88.5	3.8
	12.00	110	0.285	2920	830	94.0	3.8
	12.50	110	0.295	2800	825	101.0	4.1
	13.00	110	0.310	2695	835	111.0	4.0
	14.00	110	0.330	2500	825	127.0	4.0
	15.00	110	0.355	2335	830	146.5	4.2
	15.50	110	0.365	2260	825	155.5	4.2
	16.00	110	0.380	2190	830	167.0	4.2
Stahl 850 - 1100 N/mm²	11.50	80	0.205	2215	455	47.5	6.9
	11.70	80	0.210	2175	455	49.0	6.9
	12.00	80	0.215	2120	455	51.5	6.9
	12.50	80	0.225	2035	460	56.5	7.3
	13.00	80	0.235	1960	460	61.0	7.3
	14.00	80	0.250	1820	455	70.0	7.3
	15.00	80	0.270	1700	460	81.5	7.7
	15.50	80	0.280	1645	460	87.0	7.6
	16.00	80	0.290	1590	460	92.5	7.6
Stahl 1100 - 1300 N/mm²	11.50	55	0.175	1520	265	27.5	11.9
	11.70	55	0.175	1495	260	28.0	12.1
	12.00	55	0.180	1460	265	30.0	11.8
	12.50	55	0.190	1400	265	32.5	12.7
	13.00	55	0.195	1345	260	34.5	12.9
	14.00	55	0.210	1250	265	41.0	12.5
	15.00	55	0.225	1165	260	46.0	13.5
	15.50	55	0.235	1130	265	50.0	13.2
	16.00	55	0.240	1095	265	53.5	13.2

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	11.50	25	0.115	690	80	8.5	39.3
	11.70	25	0.115	680	80	8.5	39.3
	12.00	25	0.120	665	80	9.0	39.2
	12.50	25	0.125	635	80	10.0	42.0
	13.00	25	0.130	610	80	10.5	41.8
	14.00	25	0.140	570	80	12.5	41.5
	15.00	25	0.150	530	80	14.0	44.0
	15.50	25	0.155	515	80	15.0	43.8
	16.00	25	0.160	495	80	16.0	43.7
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379]	11.50	50	0.150	1385	210	22.0	15.0
	11.70	50	0.150	1360	205	22.0	15.3
	12.00	50	0.155	1325	205	23.0	15.3
	12.50	50	0.160	1275	205	25.0	16.4
	13.00	50	0.165	1225	200	26.5	16.7
	14.00	50	0.180	1135	205	31.5	16.2
	15.00	50	0.195	1060	205	36.0	17.2
	15.50	50	0.200	1025	205	38.5	17.1
	16.00	50	0.205	995	205	41.0	17.1
Gusseisen GG(G)	11.50	160	0.295	4430	1305	135.5	2.4
	11.70	160	0.300	4355	1305	140.5	2.4
	12.00	160	0.310	4245	1315	148.5	2.4
	12.50	160	0.320	4075	1305	160.0	2.6
	13.00	160	0.335	3920	1315	174.5	2.5
	14.00	160	0.360	3640	1310	201.5	2.5
	15.00	160	0.385	3395	1305	230.5	2.7
	15.50	160	0.400	3285	1315	248.0	2.7
	16.00	160	0.410	3185	1305	262.5	2.7
Al-Knetlegierung Si < 6%	11.50	220	0.230	6090	1400	145.5	2.2
	11.70	220	0.235	5985	1405	151.0	2.2
	12.00	220	0.240	5835	1400	158.5	2.2
	12.50	220	0.250	5600	1400	172.0	2.4
	13.00	220	0.260	5385	1400	186.0	2.4
	14.00	220	0.280	5000	1400	215.5	2.4
	15.00	220	0.300	4670	1400	247.5	2.5
	15.50	220	0.310	4520	1400	264.0	2.5
	16.00	220	0.320	4375	1400	281.5	2.5

Spiralbohrer Supradrill® U

5xd

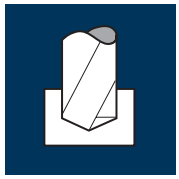
HM MG10

Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **Rm** 1300-1500 | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62014** ø-Code **.1130**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}	NANO-U² B62014	B63014
.1130	11.30	12	118	71	45	52.6		●
.1140	11.40	12	118	71	45	52.5		●
.1150	11.50	12	118	71	45	52.4		●
.1160	11.60	12	118	71	45	52.4		●
.1170	11.70	12	118	71	45	52.4		●
.1180	11.80	12	118	71	45	52.3		●
.1190	11.90	12	118	71	45	52.4		●
.1200	12.00	12	118	71	45	52.3		●
.1250	12.50	14	124	77	45	56.1		●
.1280	12.80	14	124	77	45	55.8		●
.1300	13.00	14	124	77	45	55.7		●
.1350	13.50	14	124	77	45	55.4		●
.1380	13.80	14	124	77	45	55.3		●
.1400	14.00	14	124	77	45	55.3		●
.1450	14.50	16	133	83	48	59.1		●
.1480	14.80	16	133	83	48	58.8		●
.1500	15.00	16	133	83	48	58.7		●
.1550	15.50	16	133	83	48	58.4		●
.1580	15.80	16	133	83	48	58.3		●
.1600	16.00	16	133	83	48	58.3		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	3.00	180	0.140	19100	2675	19.0	0.4
	3.30	180	0.155	17360	2690	23.0	0.4
	3.50	180	0.165	16370	2700	26.0	0.4
	3.80	180	0.175	15080	2640	30.0	0.4
	4.00	180	0.195	14325	2795	35.0	0.4
	4.20	180	0.210	13640	2865	39.5	0.4
	4.50	180	0.240	12730	3055	48.5	0.4
	4.80	180	0.255	11935	3045	55.0	0.4
	5.00	180	0.265	11460	3035	59.5	0.4
Stahl 500 - 850 N/mm²	3.00	160	0.120	16975	2035	14.5	0.5
	3.30	160	0.130	15435	2005	17.0	0.5
	3.50	160	0.140	14550	2035	19.5	0.5
	3.80	160	0.150	13405	2010	23.0	0.6
	4.00	160	0.165	12730	2100	26.5	0.5
	4.20	160	0.180	12125	2185	30.5	0.5
	4.50	160	0.205	11320	2320	37.0	0.5
	4.80	160	0.220	10610	2335	42.5	0.5
	5.00	160	0.230	10185	2345	46.0	0.5
Stahl 850 - 1100 N/mm²	3.00	140	0.110	14855	1635	11.5	0.6
	3.30	140	0.120	13505	1620	14.0	0.6
	3.50	140	0.130	12730	1655	16.0	0.6
	3.80	140	0.140	11725	1640	18.5	0.7
	4.00	140	0.155	11140	1725	21.5	0.7
	4.20	140	0.165	10610	1750	24.0	0.6
	4.50	140	0.190	9905	1880	30.0	0.6
	4.80	140	0.200	9285	1855	33.5	0.6
	5.00	140	0.210	8915	1870	36.5	0.6
Stahl 1100 - 1300 N/mm²	3.00	100	0.085	10610	900	6.5	1.1
	3.30	100	0.090	9645	870	7.5	1.1
	3.50	100	0.100	9095	910	9.0	1.0
	3.80	100	0.105	8375	880	10.0	1.3
	4.00	100	0.115	7960	915	11.5	1.2
	4.20	100	0.125	7580	950	13.0	1.2
	4.50	100	0.145	7075	1025	16.5	1.1
	4.80	100	0.155	6630	1030	18.5	1.1
	5.00	100	0.160	6365	1020	20.0	1.1

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	3.00	55	0.065	5835	380	2.5	2.6
	3.30	55	0.070	5305	370	3.0	2.6
	3.50	55	0.075	5000	375	3.5	2.5
	3.80	55	0.080	4605	370	4.0	3.1
	4.00	55	0.090	4375	395	5.0	2.9
	4.20	55	0.095	4170	395	5.5	2.9
	4.50	55	0.110	3890	430	7.0	2.6
	4.80	55	0.120	3645	435	8.0	2.5
	5.00	55	0.125	3500	440	8.5	2.6
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	3.00	70	0.065	7425	485	3.5	2.0
	3.30	70	0.070	6750	475	4.0	2.0
	3.50	70	0.075	6365	475	4.5	2.0
	3.80	70	0.080	5865	470	5.5	2.5
	4.00	70	0.090	5570	500	6.5	2.3
	4.20	70	0.095	5305	505	7.0	2.2
	4.50	70	0.110	4950	545	8.5	2.0
	4.80	70	0.120	4640	555	10.0	2.0
	5.00	70	0.125	4455	555	11.0	2.0
Titanlegierungen >300 HB [Ti6Al4V]	3.00	40	0.065	4245	275	2.0	3.5
	3.30	40	0.070	3860	270	2.5	3.5
	3.50	40	0.075	3640	275	2.5	3.4
	3.80	40	0.080	3350	270	3.0	4.3
	4.00	40	0.090	3185	285	3.5	4.0
	4.20	40	0.095	3030	290	4.0	3.9
	4.50	40	0.110	2830	310	5.0	3.6
	4.80	40	0.120	2655	320	6.0	3.5
	5.00	40	0.125	2545	320	6.5	3.5
Gusseisen GG(G)	3.00	240	0.125	25465	3185	22.5	0.3
	3.30	240	0.140	23150	3240	27.5	0.3
	3.50	240	0.150	21825	3275	31.5	0.3
	3.80	240	0.160	20105	3215	36.5	0.4
	4.00	240	0.175	19100	3345	42.0	0.3
	4.20	240	0.190	18190	3455	48.0	0.3
	4.50	240	0.220	16975	3735	59.5	0.3
	4.80	240	0.235	15915	3740	67.5	0.3
	5.00	240	0.240	15280	3665	72.0	0.3

Spiralbohrer XDrill®

3xd

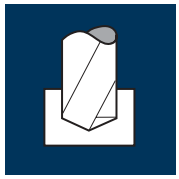
HM MGX

Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72011** ø-Code **.0300**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		DURO-X B72011
.0300	3.0	6	62	20	36	16.2		●
.0310	3.1	6	62	20	36	16.2		●
.0320	3.2	6	62	20	36	16.0		●
.0330	3.3	6	62	20	36	16.0		●
.0340	3.4	6	62	20	36	15.8		●
.0350	3.5	6	62	20	36	15.8		●
.0360	3.6	6	62	20	36	15.6		●
.0370	3.7	6	62	20	36	15.6		●
.0380	3.8	6	66	24	36	19.4		●
.0390	3.9	6	66	24	36	19.4		●
.0400	4.0	6	66	24	36	18.9		●
.0410	4.1	6	66	24	36	18.9		●
.0420	4.2	6	66	24	36	18.8		●
.0430	4.3	6	66	24	36	18.7		●
.0440	4.4	6	66	24	36	18.6		●
.0450	4.5	6	66	24	36	18.6		●
.0460	4.6	6	66	24	36	18.5		●
.0470	4.7	6	66	24	36	18.5		●
.0480	4.8	6	66	28	36	18.4		●
.0490	4.9	6	66	28	36	18.4		●
.0500	5.0	6	66	28	36	18.7		●
.0510	5.1	6	66	28	36	18.7		●
.0520	5.2	6	66	28	36	18.6		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	5.50	180	0.295	10415	3070	73.0	0.4
	5.80	180	0.310	9880	3065	81.0	0.4
	6.00	180	0.330	9550	3150	89.0	0.4
	6.20	180	0.350	9240	3235	97.5	0.5
	6.50	180	0.370	8815	3260	108.0	0.5
	6.80	180	0.385	8425	3245	118.0	0.5
	7.00	180	0.395	8185	3235	124.5	0.5
	7.20	180	0.410	7960	3265	133.0	0.5
	7.50	180	0.425	7640	3245	143.5	0.5
Stahl 500 - 850 N/mm²	5.50	160	0.250	9260	2315	55.0	0.5
	5.80	160	0.265	8780	2325	61.5	0.5
	6.00	160	0.285	8490	2420	68.5	0.5
	6.20	160	0.300	8215	2465	74.5	0.7
	6.50	160	0.315	7835	2470	82.0	0.7
	6.80	160	0.330	7490	2470	89.5	0.7
	7.00	160	0.340	7275	2475	95.0	0.7
	7.20	160	0.350	7075	2475	101.0	0.7
	7.50	160	0.365	6790	2480	109.5	0.7
Stahl 850 - 1100 N/mm²	5.50	140	0.230	8100	1865	44.5	0.6
	5.80	140	0.245	7685	1885	50.0	0.6
	6.00	140	0.260	7425	1930	54.5	0.6
	6.20	140	0.275	7190	1975	59.5	0.9
	6.50	140	0.290	6855	1990	66.0	0.9
	6.80	140	0.305	6555	2000	72.5	0.9
	7.00	140	0.315	6365	2005	77.0	0.9
	7.20	140	0.320	6190	1980	80.5	0.9
	7.50	140	0.335	5940	1990	88.0	0.9
Stahl 1100 - 1300 N/mm²	5.50	100	0.175	5785	1010	24.0	1.1
	5.80	100	0.185	5490	1015	27.0	1.1
	6.00	100	0.200	5305	1060	30.0	1.0
	6.20	100	0.210	5135	1080	32.5	1.6
	6.50	100	0.220	4895	1075	35.5	1.6
	6.80	100	0.230	4680	1075	39.0	1.6
	7.00	100	0.240	4545	1090	42.0	1.6
	7.20	100	0.245	4420	1085	44.0	1.6
	7.50	100	0.255	4245	1080	47.5	1.6

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	5.50	55	0.135	3185	430	10.0	2.6
	5.80	55	0.145	3020	440	11.5	2.5
	6.00	55	0.150	2920	440	12.5	2.5
	6.20	55	0.160	2825	450	13.5	3.9
	6.50	55	0.170	2695	460	15.5	3.8
	6.80	55	0.180	2575	465	17.0	3.7
	7.00	55	0.185	2500	465	18.0	3.7
	7.20	55	0.190	2430	460	18.5	3.7
	7.50	55	0.195	2335	455	20.0	3.8
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	5.50	70	0.135	4050	545	13.0	2.0
	5.80	70	0.145	3840	555	14.5	2.0
	6.00	70	0.150	3715	555	15.5	2.0
	6.20	70	0.160	3595	575	17.5	3.0
	6.50	70	0.170	3430	585	19.5	3.0
	6.80	70	0.180	3275	590	21.5	2.9
	7.00	70	0.185	3185	590	22.5	2.9
	7.20	70	0.190	3095	590	24.0	2.9
	7.50	70	0.195	2970	580	25.5	2.9
Titanlegierungen >300 HB [Ti6Al4V]	5.50	40	0.135	2315	315	7.5	3.5
	5.80	40	0.145	2195	320	8.5	3.5
	6.00	40	0.150	2120	320	9.0	3.5
	6.20	40	0.160	2055	330	10.0	5.3
	6.50	40	0.170	1960	335	11.0	5.2
	6.80	40	0.180	1870	335	12.0	5.2
	7.00	40	0.185	1820	335	13.0	5.1
	7.20	40	0.190	1770	335	13.5	5.1
	7.50	40	0.195	1700	330	14.5	5.2
Gusseisen GG(G)	5.50	240	0.265	13890	3680	87.5	0.3
	5.80	240	0.280	13170	3690	97.5	0.3
	6.00	240	0.300	12730	3820	108.0	0.3
	6.20	240	0.320	12320	3940	119.0	0.4
	6.50	240	0.335	11755	3940	130.5	0.4
	6.80	240	0.350	11235	3930	142.5	0.4
	7.00	240	0.360	10915	3930	151.0	0.4
	7.20	240	0.370	10610	3925	160.0	0.4
	7.50	240	0.385	10185	3920	173.0	0.4

Spiralbohrer XDrill®

3xd

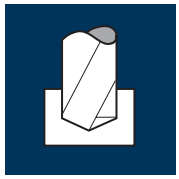
HM MGX

Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72011** ø-Code **.0530**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		DURO-X B72011
.0530	5.3	6	66	28	36	18.6		●
.0540	5.4	6	66	28	36	18.5		●
.0550	5.5	6	66	28	36	18.5		●
.0560	5.6	6	66	28	36	18.4		●
.0570	5.7	6	66	28	36	18.4		●
.0580	5.8	6	66	28	36	18.4		●
.0590	5.9	6	66	28	36	18.4		●
.0600	6.0	6	66	28	36	18.5		●
.0610	6.1	8	79	34	36	29.3		●
.0620	6.2	8	79	34	36	29.2		●
.0630	6.3	8	79	34	36	29.2		●
.0640	6.4	8	79	34	36	29.1		●
.0650	6.5	8	79	34	36	29.1		●
.0660	6.6	8	79	34	36	29.0		●
.0670	6.7	8	79	34	36	29.0		●
.0680	6.8	8	79	34	36	28.8		●
.0690	6.9	8	79	34	36	28.8		●
.0700	7.0	8	79	34	36	28.7		●
.0710	7.1	8	79	41	36	28.7		●
.0720	7.2	8	79	41	36	28.6		●
.0730	7.3	8	79	41	36	28.6		●
.0740	7.4	8	79	41	36	28.5		●
.0750	7.5	8	79	41	36	28.5		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	7.60	180	0.430	7540	3240	147.0	0.5
	8.00	180	0.455	7160	3260	164.0	0.5
	8.20	180	0.465	6985	3250	171.5	0.6
	8.50	180	0.480	6740	3235	183.5	0.6
	8.80	180	0.500	6510	3255	198.0	0.6
	9.00	180	0.510	6365	3245	206.5	0.6
	9.20	180	0.520	6230	3240	215.5	0.6
	9.50	180	0.540	6030	3255	230.5	0.6
	9.80	180	0.555	5845	3245	245.0	0.6
Stahl 500 - 850 N/mm²	7.60	160	0.370	6700	2480	112.5	0.7
	8.00	160	0.390	6365	2480	124.5	0.7
	8.20	160	0.400	6210	2485	131.0	0.8
	8.50	160	0.415	5990	2485	141.0	0.8
	8.80	160	0.425	5785	2460	149.5	0.8
	9.00	160	0.435	5660	2460	156.5	0.8
	9.20	160	0.445	5535	2465	164.0	0.8
	9.50	160	0.460	5360	2465	174.5	0.8
	9.80	160	0.475	5195	2470	186.5	0.8
Stahl 850 - 1100 N/mm²	7.60	140	0.340	5865	1995	90.5	0.9
	8.00	140	0.360	5570	2005	101.0	0.8
	8.20	140	0.365	5435	1985	105.0	1.0
	8.50	140	0.380	5245	1995	113.0	1.0
	8.80	140	0.395	5065	2000	121.5	1.0
	9.00	140	0.405	4950	2005	127.5	0.9
	9.20	140	0.410	4845	1985	132.0	1.0
	9.50	140	0.425	4690	1995	141.5	0.9
	9.80	140	0.440	4545	2000	151.0	0.9
Stahl 1100 - 1300 N/mm²	7.60	100	0.260	4190	1090	49.5	1.6
	8.00	100	0.270	3980	1075	54.0	1.6
	8.20	100	0.280	3880	1085	57.5	1.8
	8.50	100	0.290	3745	1085	61.5	1.8
	8.80	100	0.300	3615	1085	66.0	1.8
	9.00	100	0.305	3535	1080	68.5	1.8
	9.20	100	0.315	3460	1090	72.5	1.7
	9.50	100	0.325	3350	1090	77.5	1.7
	9.80	100	0.335	3250	1090	82.0	1.7

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	7.60	55	0.200	2305	460	21.0	3.7
	8.00	55	0.210	2190	460	23.0	3.7
	8.20	55	0.215	2135	460	24.5	4.2
	8.50	55	0.220	2060	455	26.0	4.2
	8.80	55	0.230	1990	460	28.0	4.1
	9.00	55	0.235	1945	455	29.0	4.2
	9.20	55	0.240	1905	455	30.0	4.2
	9.50	55	0.250	1845	460	32.5	4.1
	9.80	55	0.255	1785	455	34.5	4.1
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	7.60	70	0.200	2930	585	26.5	2.9
	8.00	70	0.210	2785	585	29.5	2.9
	8.20	70	0.215	2715	585	31.0	3.3
	8.50	70	0.220	2620	575	32.5	3.3
	8.80	70	0.230	2530	580	35.5	3.3
	9.00	70	0.235	2475	580	37.0	3.3
	9.20	70	0.240	2420	580	38.5	3.3
	9.50	70	0.250	2345	585	41.5	3.2
	9.80	70	0.255	2275	580	43.5	3.2
Titanlegierungen >300 HB [Ti6Al4V]	7.60	40	0.200	1675	335	15.0	5.1
	8.00	40	0.210	1590	335	17.0	5.1
	8.20	40	0.215	1555	335	17.5	5.8
	8.50	40	0.220	1500	330	18.5	5.8
	8.80	40	0.230	1445	330	20.0	5.8
	9.00	40	0.235	1415	335	21.5	5.7
	9.20	40	0.240	1385	330	22.0	5.7
	9.50	40	0.250	1340	335	23.5	5.6
	9.80	40	0.255	1300	330	25.0	5.7
Gusseisen GG(G)	7.60	240	0.390	10050	3920	178.0	0.4
	8.00	240	0.410	9550	3915	197.0	0.4
	8.20	240	0.420	9315	3910	206.5	0.5
	8.50	240	0.440	8990	3955	224.5	0.5
	8.80	240	0.455	8680	3950	240.0	0.5
	9.00	240	0.465	8490	3950	251.5	0.5
	9.20	240	0.475	8305	3945	262.0	0.5
	9.50	240	0.490	8040	3940	279.5	0.5
	9.80	240	0.505	7795	3935	297.0	0.5

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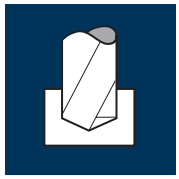
HM MGX

Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72011** ø-Code **.0760**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		DURO-X B72011
.0760	7.6	8	79	41	36	28.4		●
.0770	7.7	8	79	41	36	28.4		●
.0780	7.8	8	79	41	36	28.3		●
.0790	7.9	8	79	41	36	28.4		●
.0800	8.0	8	79	41	36	28.4		●
.0810	8.1	10	89	47	40	32.3		●
.0820	8.2	10	89	47	40	32.2		●
.0830	8.3	10	89	47	40	32.2		●
.0840	8.4	10	89	47	40	32.1		●
.0850	8.5	10	89	47	40	32.1		●
.0860	8.6	10	89	47	40	31.9		●
.0870	8.7	10	89	47	40	31.9		●
.0880	8.8	10	89	47	40	31.8		●
.0890	8.9	10	89	47	40	31.8		●
.0900	9.0	10	89	47	40	31.7		●
.0910	9.1	10	89	47	40	31.7		●
.0920	9.2	10	89	47	40	31.6		●
.0930	9.3	10	89	47	40	31.6		●
.0940	9.4	10	89	47	40	31.4		●
.0950	9.5	10	89	47	40	31.4		●
.0960	9.6	10	89	47	40	31.3		●
.0970	9.7	10	89	47	40	31.3		●
.0980	9.8	10	89	47	40	31.3		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	10.00	180	0.565	5730	3235	254.0	0.6
	10.20	180	0.575	5615	3230	264.0	0.7
	10.50	180	0.590	5455	3220	279.0	0.7
	10.80	180	0.605	5305	3210	294.0	0.7
	11.00	180	0.610	5210	3180	302.0	0.7
	11.20	180	0.615	5115	3145	310.0	0.7
	11.50	180	0.620	4980	3090	321.0	0.7
	11.80	180	0.630	4855	3060	334.5	0.7
	12.00	180	0.640	4775	3055	345.5	0.7
Stahl 500 - 850 N/mm²	10.00	160	0.485	5095	2470	194.0	0.8
	10.20	160	0.495	4995	2475	202.0	0.9
	10.50	160	0.505	4850	2450	212.0	0.9
	10.80	160	0.520	4715	2450	224.5	0.9
	11.00	160	0.525	4630	2430	231.0	0.9
	11.20	160	0.530	4545	2410	237.5	0.9
	11.50	160	0.530	4430	2350	244.0	0.9
	11.80	160	0.540	4315	2330	255.0	0.9
	12.00	160	0.550	4245	2335	264.0	0.9
Stahl 850 - 1100 N/mm²	10.00	140	0.445	4455	1980	155.5	0.9
	10.20	140	0.455	4370	1990	162.5	1.1
	10.50	140	0.465	4245	1975	171.0	1.1
	10.80	140	0.475	4125	1960	179.5	1.1
	11.00	140	0.485	4050	1965	186.5	1.1
	11.20	140	0.485	3980	1930	190.0	1.1
	11.50	140	0.490	3875	1900	197.5	1.1
	11.80	140	0.495	3775	1870	204.5	1.2
	12.00	140	0.505	3715	1875	212.0	1.2
Stahl 1100 - 1300 N/mm²	10.00	100	0.340	3185	1085	85.0	1.7
	10.20	100	0.345	3120	1075	88.0	2.1
	10.50	100	0.355	3030	1075	93.0	2.1
	10.80	100	0.365	2945	1075	98.5	2.1
	11.00	100	0.365	2895	1055	100.5	2.1
	11.20	100	0.370	2840	1050	103.5	2.1
	11.50	100	0.375	2770	1040	108.0	2.1
	11.80	100	0.380	2700	1025	112.0	2.1
	12.00	100	0.385	2655	1020	115.5	2.1

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	10.00	55	0.260	1750	455	35.5	4.1
	10.20	55	0.265	1715	455	37.0	4.9
	10.50	55	0.275	1665	460	40.0	4.8
	10.80	55	0.280	1620	455	41.5	4.9
	11.00	55	0.285	1590	455	43.0	4.8
	11.20	55	0.285	1565	445	44.0	4.9
	11.50	55	0.285	1520	435	45.0	5.0
	11.80	55	0.290	1485	430	47.0	5.1
	12.00	55	0.295	1460	430	48.5	5.1
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	10.00	70	0.260	2230	580	45.5	3.2
	10.20	70	0.265	2185	580	47.5	3.8
	10.50	70	0.275	2120	585	50.5	3.8
	10.80	70	0.280	2065	580	53.0	3.8
	11.00	70	0.285	2025	575	54.5	3.8
	11.20	70	0.285	1990	565	55.5	3.9
	11.50	70	0.285	1940	555	57.5	3.9
	11.80	70	0.290	1890	550	60.0	3.9
	12.00	70	0.295	1855	545	61.5	4.0
Titanlegierungen >300 HB [Ti6Al4V]	10.00	40	0.260	1275	330	26.0	5.7
	10.20	40	0.265	1250	330	27.0	6.8
	10.50	40	0.275	1215	335	29.0	6.6
	10.80	40	0.280	1180	330	30.0	6.7
	11.00	40	0.285	1155	330	31.5	6.7
	11.20	40	0.285	1135	325	32.0	6.7
	11.50	40	0.285	1105	315	32.5	6.9
	11.80	40	0.290	1080	315	34.5	6.9
	12.00	40	0.295	1060	315	35.5	6.9
Gusseisen GG(G)	10.00	240	0.515	7640	3935	309.0	0.5
	10.20	240	0.520	7490	3895	318.5	0.6
	10.50	240	0.540	7275	3930	340.5	0.6
	10.80	240	0.550	7075	3890	356.5	0.6
	11.00	240	0.555	6945	3855	366.5	0.6
	11.20	240	0.560	6820	3820	376.5	0.6
	11.50	240	0.565	6645	3755	390.0	0.6
	11.80	240	0.570	6475	3690	403.5	0.6
	12.00	240	0.580	6365	3690	417.5	0.6

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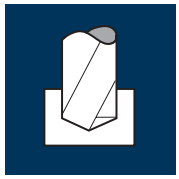
HM MGX

Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72011** ø-Code **.0990**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		DURO-X B72011
.0990	9.9	10	89	47	40	31.3		●
.1000	10.0	10	89	47	40	31.3		●
.1010	10.1	12	102	55	45	37.3		●
.1020	10.2	12	102	55	45	37.2		●
.1030	10.3	12	102	55	45	37.2		●
.1040	10.4	12	102	55	45	37.1		●
.1050	10.5	12	102	55	45	37.0		●
.1060	10.6	12	102	55	45	36.9		●
.1070	10.7	12	102	55	45	36.9		●
.1080	10.8	12	102	55	45	36.8		●
.1090	10.9	12	102	55	45	36.8		●
.1100	11.0	12	102	55	45	36.7		●
.1110	11.1	12	102	55	45	36.7		●
.1120	11.2	12	102	55	45	36.5		●
.1130	11.3	12	102	55	45	36.5		●
.1140	11.4	12	102	55	45	36.4		●
.1150	11.5	12	102	55	45	36.4		●
.1160	11.6	12	102	55	45	36.3		●
.1170	11.7	12	102	55	45	36.3		●
.1180	11.8	12	102	55	45	36.2		●
.1190	11.9	12	102	55	45	36.3		●
.1200	12.0	12	102	55	45	36.3		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	12.50	180	0.665	4585	3050	374.5	0.8
	13.00	180	0.695	4405	3060	406.0	0.8
	13.50	180	0.705	4340	3060	419.0	0.8
	14.00	180	0.715	4095	2930	451.0	0.8
	14.50	180	0.725	3950	2865	473.0	0.9
	15.00	180	0.745	3820	2845	503.0	0.9
	15.50	180	0.760	3695	2810	530.0	0.9
	15.80	180	0.770	3625	2790	547.0	0.9
	16.00	180	0.775	3580	2775	558.0	0.9
Stahl 500 - 850 N/mm²	12.50	160	0.570	4075	2325	285.5	1.0
	13.00	160	0.595	3920	2330	309.5	1.0
	13.50	160	0.605	3860	2335	319.5	1.0
	14.00	160	0.610	3640	2220	341.5	1.0
	14.50	160	0.620	3510	2175	359.0	1.1
	15.00	160	0.640	3395	2175	384.5	1.1
	15.50	160	0.650	3285	2135	403.0	1.1
	15.80	160	0.660	3225	2130	417.5	1.1
	16.00	160	0.665	3185	2120	426.5	1.1
Stahl 850 - 1100 N/mm²	12.50	140	0.525	3565	1870	229.5	1.2
	13.00	140	0.545	3430	1870	248.0	1.2
	13.50	140	0.555	3375	1875	256.5	1.2
	14.00	140	0.565	3185	1800	277.0	1.3
	14.50	140	0.570	3075	1755	290.0	1.4
	15.00	140	0.590	2970	1750	309.5	1.4
	15.50	140	0.600	2875	1725	325.5	1.4
	15.80	140	0.605	2820	1705	334.5	1.4
	16.00	140	0.610	2785	1700	342.0	1.4
Stahl 1100 - 1300 N/mm²	12.50	100	0.400	2545	1020	125.0	2.3
	13.00	100	0.415	2450	1015	134.5	2.3
	13.50	100	0.420	2410	1010	138.0	2.3
	14.00	100	0.430	2275	980	151.0	2.3
	14.50	100	0.435	2195	955	157.5	2.6
	15.00	100	0.445	2120	945	167.0	2.6
	15.50	100	0.455	2055	935	176.5	2.6
	15.80	100	0.460	2015	925	181.5	2.6
	16.00	100	0.465	1990	925	186.0	2.6

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	12.50	55	0.310	1400	435	53.5	5.4
	13.00	55	0.320	1345	430	57.0	5.4
	13.50	55	0.325	1325	430	59.0	5.4
	14.00	55	0.330	1250	415	64.0	5.5
	14.50	55	0.335	1205	405	67.0	6.1
	15.00	55	0.345	1165	400	70.5	6.1
	15.50	55	0.350	1130	395	74.5	6.1
	15.80	55	0.355	1110	395	77.5	6.1
	16.00	55	0.355	1095	390	78.5	6.2
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	12.50	70	0.310	1785	555	68.0	4.2
	13.00	70	0.320	1715	550	73.0	4.2
	13.50	70	0.325	1690	550	75.5	4.2
	14.00	70	0.330	1590	525	81.0	4.4
	14.50	70	0.335	1535	515	85.0	4.8
	15.00	70	0.345	1485	510	90.0	4.8
	15.50	70	0.350	1440	505	95.5	4.8
	15.80	70	0.355	1410	500	98.0	4.8
	16.00	70	0.355	1395	495	99.5	4.9
Titanlegierungen >300 HB [Ti6Al4V]	12.50	40	0.310	1020	315	38.5	7.4
	13.00	40	0.320	980	315	42.0	7.4
	13.50	40	0.325	965	315	43.0	7.3
	14.00	40	0.330	910	300	46.0	7.6
	14.50	40	0.335	880	295	48.5	8.3
	15.00	40	0.345	850	295	52.0	8.3
	15.50	40	0.350	820	285	54.0	8.5
	15.80	40	0.355	805	285	56.0	8.5
	16.00	40	0.355	795	280	56.5	8.6
Gusseisen GG(G)	12.50	240	0.605	6110	3695	453.5	0.6
	13.00	240	0.630	5875	3700	491.0	0.6
	13.50	240	0.640	5785	3700	506.5	0.6
	14.00	240	0.650	5455	3545	545.5	0.6
	14.50	240	0.660	5270	3480	574.5	0.7
	15.00	240	0.675	5095	3440	608.0	0.7
	15.50	240	0.690	4930	3400	641.5	0.7
	15.80	240	0.700	4835	3385	663.5	0.7
	16.00	240	0.705	4775	3365	676.5	0.7

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HM MGX

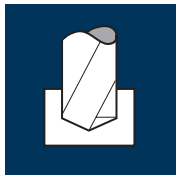
h5

Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72011** ø-Code **.1250**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		DURO-X B72011
.1250	12.5	14	107	60	45	39.0		●
.1280	12.8	14	107	60	45	38.8		●
.1300	13.0	14	107	60	45	38.7		●
.1350	13.5	14	107	60	45	38.4		●
.1380	13.8	14	107	60	45	38.2		●
.1400	14.0	14	107	60	45	38.2		●
.1450	14.5	16	115	65	48	41.0		●
.1480	14.8	16	115	65	48	40.8		●
.1500	15.0	16	115	65	48	40.6		●
.1550	15.5	16	115	65	48	40.4		●
.1580	15.8	16	115	65	48	40.2		●
.1600	16.0	16	115	65	48	40.2		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Werkzeugstahl gehärtet 42 - 48 HRC	3.00	35	0.060	3715	225	1.5	4.3
	4.00	35	0.080	2785	225	3.0	5.0
	4.30	35	0.085	2590	220	3.0	5.1
	5.00	35	0.100	2230	225	4.5	5.0
	5.50	35	0.110	2025	225	5.5	4.9
	6.00	35	0.120	1855	225	6.5	5.0
	6.50	35	0.130	1715	225	7.5	7.7
	6.90	35	0.135	1615	220	8.0	7.9
	8.00	35	0.155	1395	215	11.0	8.0
Werkzeugstahl gehärtet 48 - 52 HRC	3.00	30	0.050	3185	160	1.0	6.1
	4.00	30	0.065	2385	155	2.0	7.3
	4.30	30	0.070	2220	155	2.5	7.3
	5.00	30	0.085	1910	160	3.0	7.1
	5.50	30	0.090	1735	155	3.5	7.1
	6.00	30	0.100	1590	160	4.5	7.0
	6.50	30	0.110	1470	160	5.5	10.9
	6.90	30	0.115	1385	160	6.0	10.8
	8.00	30	0.130	1195	155	8.0	11.0
Werkzeugstahl gehärtet 52 - 56 HRC	3.00	20	0.045	2120	95	0.5	10.2
	4.00	20	0.055	1590	85	1.0	13.3
	4.30	20	0.060	1480	90	1.5	12.5
	5.00	20	0.070	1275	90	2.0	12.5
	5.50	20	0.080	1155	90	2.0	12.3
	6.00	20	0.085	1060	90	2.5	12.4
	6.50	20	0.095	980	95	3.0	18.3
	6.90	20	0.080	925	75	3.0	23.1
	8.00	20	0.085	795	70	3.5	24.4
Werkzeugstahl gehärtet 56 - 60 HRC	3.00	15	0.020	1590	30	0.0	32.4
	4.00	15	0.025	1195	30	0.5	37.8
	4.30	15	0.025	1110	30	0.5	37.5
	5.00	15	0.030	955	30	0.5	37.6
	5.50	15	0.035	870	30	0.5	36.9
	6.00	15	0.040	795	30	1.0	37.2
	6.50	15	0.040	735	30	1.0	58.1
	6.90	15	0.040	690	30	1.0	57.7
	8.00	15	0.050	595	30	1.5	57.0

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Werkzeugstahl gehärtet > 60 HRC	3.00	10	0.015	1060	15	0.0	64.8
	4.00	10	0.020	795	15	0.0	75.6
	4.30	10	0.025	740	20	0.5	56.3
	5.00	10	0.030	635	20	0.5	56.4
	5.50	10	0.030	580	15	0.5	73.8
	6.00	10	0.035	530	20	0.5	55.8
	6.50	10	0.035	490	15	0.5	116.2
	6.90	10	0.040	460	20	0.5	86.6
	8.00	10	0.045	400	20	1.0	85.5

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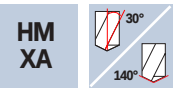
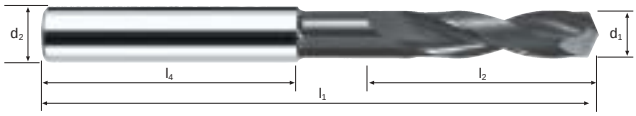


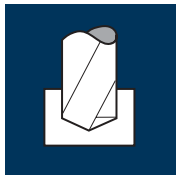


			Rm 1300-1500	HRC 48-56	HRC 56-60	HRC > 60			HSS GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B52111** ø-Code **.0260**

ø Code	d_1 m7	d_2 h6	l_1	l_2	l_4	L_{max}		DURO-SD B52111	DURO-SD B53111
.0260	2.60	6	62	20	36	14.8			●
.0300	3.00	6	62	20	36	16.2			●
.0340	3.40	6	62	20	36	15.8			●
.0350	3.50	6	62	20	36	15.8			●
.0400	4.00	6	66	24	36	18.9			●
.0420	4.20	6	66	24	36	18.8			●
.0430	4.30	6	66	24	36	18.8			●
.0450	4.50	6	66	24	36	18.6			●
.0500	5.00	6	66	28	36	18.8			●
.0510	5.10	6	66	28	36	18.8			●
.0520	5.20	6	66	28	36	18.7			●
.0550	5.50	6	66	28	36	18.5			●
.0560	5.60	6	66	28	36	18.5			●
.0600	6.00	6	66	28	36	18.6			●
.0650	6.50	8	79	34	36	29.1			●
.0670	6.70	8	79	34	36	29.0			●
.0690	6.90	8	79	34	36	28.9			●
.0700	7.00	8	79	34	36	28.8			●
.0710	7.10	8	79	41	36	28.7			●
.0750	7.50	8	79	41	36	28.5			●
.0800	8.00	8	79	41	36	28.5			●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Werkzeugstahl gehärtet 42 - 48 HRC	8.60	35	0.160	1295	205	12.0	9.4
	9.00	35	0.170	1240	210	13.5	9.1
	10.00	35	0.185	1115	205	16.0	9.2
	10.40	35	0.190	1070	205	17.5	10.9
	11.00	35	0.195	1015	200	19.0	11.0
	12.00	35	0.210	930	195	22.0	11.2
	12.20	35	0.210	915	190	22.0	12.4
	13.00	35	0.220	855	190	25.0	12.2
	14.00	35	0.235	795	185	28.5	12.5
Werkzeugstahl gehärtet 48 - 52 HRC	8.60	30	0.135	1110	150	8.5	12.8
	9.00	30	0.140	1060	150	9.5	12.7
	10.00	30	0.155	955	150	12.0	12.6
	10.40	30	0.155	920	145	12.5	15.4
	11.00	30	0.165	870	145	14.0	15.2
	12.00	30	0.175	795	140	16.0	15.6
	12.20	30	0.175	785	135	16.0	17.4
	13.00	30	0.185	735	135	18.0	17.2
	14.00	30	0.195	680	135	21.0	17.1
Werkzeugstahl gehärtet 52 - 56 HRC	8.60	20	0.090	740	65	4.0	29.5
	9.00	20	0.095	705	65	4.0	29.3
	10.00	20	0.100	635	65	5.0	29.1
	10.40	20	0.100	610	60	5.0	37.1
	11.00	20	0.105	580	60	5.5	36.7
	12.00	20	0.110	530	60	7.0	36.4
	12.20	20	0.110	520	55	6.5	42.8
	13.00	20	0.115	490	55	7.5	42.2
	14.00	20	0.125	455	55	8.5	41.9
Werkzeugstahl gehärtet 56 - 60 HRC	8.60	15	0.050	555	30	1.5	64.0
	9.00	15	0.050	530	25	1.5	76.1
	10.00	15	0.055	475	25	2.0	75.6
	10.40	15	0.060	460	30	2.5	74.2
	11.00	15	0.060	435	25	2.5	88.1
	12.00	15	0.065	400	25	3.0	87.4
	12.20	15	0.065	390	25	3.0	94.1
	13.00	15	0.070	365	25	3.5	92.9
	14.00	15	0.075	340	25	4.0	92.2

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Werkzeugstahl gehärtet > 60 HRC	8.60	10	0.045	370	15	1.0	128.0
	9.00	10	0.045	355	15	1.0	126.8
	10.00	10	0.050	320	15	1.0	126.0
	10.40	10	0.050	305	15	1.5	148.4
	11.00	10	0.055	290	15	1.5	146.8
	12.00	10	0.060	265	15	1.5	145.6
	12.20	10	0.060	260	15	2.0	156.8
	13.00	10	0.060	245	15	2.0	154.8
	14.00	10	0.065	225	15	2.5	153.6

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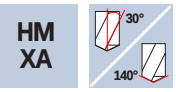
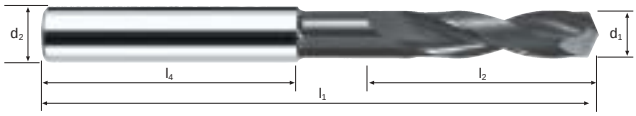


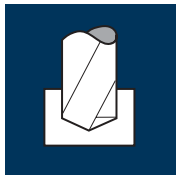


			Rm 1300-1500	HRC 48-56	HRC 56-60	HRC > 60			HSS GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B52111** ø-Code **.0810**

ø Code	d_1 m7	d_2 h6	l_1	l_2	l_4	L_{max}		DURO-SD B52111	DURO-SD B53111
.0810	8.10	10	89	47	40	32.4		●	
.0850	8.50	10	89	47	40	32.1		●	
.0860	8.60	10	89	47	40	32.0		●	
.0885	8.85	10	89	47	40	31.8		●	
.0900	9.00	10	89	47	40	31.7		●	
.0910	9.10	10	89	47	40	31.7		●	
.0950	9.50	10	89	47	40	31.5		●	
.1000	10.00	10	89	47	40	31.5		●	
.1030	10.30	12	102	55	45	37.2		●	
.1040	10.40	12	102	55	45	37.1		●	
.1050	10.50	12	102	55	45	37.1		●	
.1070	10.70	12	102	55	45	37.0		●	
.1100	11.00	12	102	55	45	36.7		●	
.1150	11.50	12	102	55	45	36.5		●	
.1160	11.60	12	102	55	45	36.4		●	
.1190	11.90	12	102	55	45	36.4		●	
.1200	12.00	12	102	55	45	36.4		●	
.1210	12.10	14	107	60	45	39.3		●	
.1220	12.20	14	107	60	45	39.2		●	
.1250	12.50	14	107	60	45	39.1		●	
.1270	12.70	14	107	60	45	39.0		●	
.1300	13.00	14	107	60	45	38.7		●	
.1400	14.00	14	107	60	45	38.4		●	

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Werkzeugstahl gehärtet 42 - 48 HRC	14.10	35	0.235	790	185	29.0	13.4
	14.20	35	0.235	785	185	29.5	13.4
	14.70	35	0.245	760	185	31.5	13.3
	15.00	35	0.245	745	185	32.5	13.2
	15.40	35	0.250	725	180	33.5	13.5
	16.00	35	0.260	695	180	36.0	13.5
	19.20	35	0.310	580	180	52.0	16.2
Werkzeugstahl gehärtet 48 - 52 HRC	14.10	30	0.195	675	130	20.5	19.0
	14.20	30	0.195	670	130	20.5	19.0
	14.70	30	0.205	650	135	23.0	18.2
	15.00	30	0.205	635	130	23.0	18.8
	15.40	30	0.210	620	130	24.0	18.7
	16.00	30	0.215	595	130	26.0	18.6
	19.20	30	0.260	495	130	37.5	22.4
Werkzeugstahl gehärtet 52 - 56 HRC	14.10	20	0.125	450	55	8.5	45.0
	14.20	20	0.125	450	55	8.5	44.9
	14.70	20	0.130	435	55	9.5	44.7
	15.00	20	0.130	425	55	9.5	44.4
	15.40	20	0.135	415	55	10.0	44.2
	16.00	20	0.135	400	55	11.0	44.1
	19.20	20	0.165	330	55	16.0	53.0
Werkzeugstahl gehärtet 56 - 60 HRC	14.10	15	0.075	340	25	4.0	99.0
	14.20	15	0.075	335	25	4.0	98.9
	14.70	15	0.075	325	25	4.0	98.3
	15.00	15	0.075	320	25	4.5	97.7
	15.40	15	0.080	310	25	4.5	97.2
	16.00	15	0.080	300	25	5.0	97.0
	19.20	15	0.095	250	25	7.0	116.6

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Werkzeugstahl gehärtet > 60 HRC	14.10	10	0.065	225	15	2.5	165.0
	14.20	10	0.065	225	15	2.5	164.8
	14.70	10	0.070	215	15	2.5	163.8
	15.00	10	0.070	210	15	2.5	162.8
	15.40	10	0.070	205	15	3.0	162.0
	16.00	10	0.070	200	15	3.0	161.6
	19.20	10	0.085	165	15	4.5	194.4

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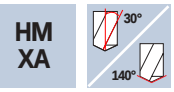
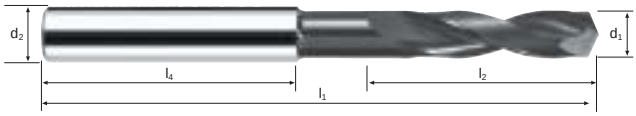
XA



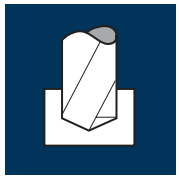


			Rm 1300-1500	HRC 48-56	HRC 56-60	HRC > 60			HSS GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B52111** ø-Code **.1410**

ø Code	d_1 m7	d_2 h6	l_1	l_2	l_4	L_{max}		DURO-SD
								B52111
								B53111
.1410	14.10	16	115	65	48	41.3		●
.1420	14.20	16	115	65	48	41.2		●
.1470	14.70	16	115	65	48	41.0		●
.1500	15.00	16	115	65	48	40.7		●
.1540	15.40	16	115	65	48	40.5		●
.1600	16.00	16	115	65	48	40.4		●
.1920	19.20	20	131	79	50	48.6		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	3.00	170	0.085	18040	1535	11.0	0.6
	3.30	170	0.095	16400	1560	13.5	0.6
	3.50	170	0.100	15460	1545	15.0	0.6
	4.00	170	0.115	13530	1555	19.5	0.7
	4.20	170	0.120	12885	1545	21.5	0.7
	5.00	170	0.145	10825	1570	31.0	0.7
	6.00	170	0.170	9020	1535	43.5	0.7
	6.80	170	0.195	7960	1550	56.5	1.1
	8.50	170	0.245	6365	1560	88.5	1.2
Stahl 500 - 850 N/mm²	3.00	130	0.085	13795	1175	8.5	0.8
	3.30	130	0.095	12540	1190	10.0	0.8
	3.50	130	0.100	11825	1185	11.5	0.8
	4.00	130	0.115	10345	1190	15.0	1.0
	4.20	130	0.120	9850	1180	16.5	1.0
	5.00	130	0.145	8275	1200	23.5	0.9
	6.00	130	0.170	6895	1170	33.0	1.0
	6.80	130	0.195	6085	1185	43.0	1.5
	8.50	130	0.245	4870	1195	68.0	1.6
Stahl 850 - 1100 N/mm²	3.00	110	0.065	11670	760	5.5	1.3
	3.30	110	0.075	10610	795	7.0	1.2
	3.50	110	0.080	10005	800	7.5	1.2
	4.00	110	0.090	8755	790	10.0	1.4
	4.20	110	0.095	8335	790	11.0	1.4
	5.00	110	0.110	7005	770	15.0	1.5
	6.00	110	0.135	5835	790	22.5	1.4
	6.80	110	0.150	5150	775	28.0	2.2
	8.50	110	0.190	4120	785	44.5	2.4
Stahl 1100 - 1300 N/mm²	3.00	70	0.055	7425	410	3.0	2.4
	3.30	70	0.060	6750	405	3.5	2.4
	3.50	70	0.060	6365	380	3.5	2.5
	4.00	70	0.070	5570	390	5.0	2.9
	4.20	70	0.075	5305	400	5.5	2.8
	5.00	70	0.090	4455	400	8.0	2.8
	6.00	70	0.105	3715	390	11.0	2.9
	6.80	70	0.120	3275	395	14.5	4.4
	8.50	70	0.150	2620	395	22.5	4.9

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	3.00	40	0.045	4245	190	1.5	5.1
	3.30	40	0.045	3860	175	1.5	5.5
	3.50	40	0.050	3640	180	1.5	5.3
	4.00	40	0.055	3185	175	2.0	6.5
	4.20	40	0.060	3030	180	2.5	6.3
	5.00	40	0.070	2545	180	3.5	6.3
	6.00	40	0.085	2120	180	5.0	6.2
	6.80	40	0.095	1870	180	6.5	9.6
	8.50	40	0.120	1500	180	10.0	10.7
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	3.00	60	0.045	6365	285	2.0	3.4
	3.30	60	0.050	5785	290	2.5	3.3
	3.50	60	0.050	5455	275	2.5	3.4
	4.00	60	0.060	4775	285	3.5	4.0
	4.20	60	0.065	4545	295	4.0	3.8
	5.00	60	0.075	3820	285	5.5	4.0
	6.00	60	0.090	3185	285	8.0	3.9
	6.80	60	0.100	2810	280	10.0	6.2
	8.50	60	0.125	2245	280	16.0	6.9
Gusseisen GG(G)	3.00	220	0.095	23345	2220	15.5	0.4
	3.30	220	0.105	21220	2230	19.0	0.4
	3.50	220	0.110	20010	2200	21.0	0.4
	4.00	220	0.125	17505	2190	27.5	0.5
	4.20	220	0.130	16675	2170	30.0	0.5
	5.00	220	0.155	14005	2170	42.5	0.5
	6.00	220	0.190	11670	2215	62.5	0.5
	6.80	220	0.215	10300	2215	80.5	0.8
	8.50	220	0.265	8240	2185	124.0	0.9
Al-Knetlegierung Si < 6%	3.00	250	0.085	26525	2255	16.0	0.4
	3.30	250	0.095	24115	2290	19.5	0.4
	3.50	250	0.100	22735	2275	22.0	0.4
	4.00	250	0.115	19895	2290	29.0	0.5
	4.20	250	0.120	18945	2275	31.5	0.5
	5.00	250	0.145	15915	2310	45.5	0.5
	6.00	250	0.170	13265	2255	64.0	0.5
	6.80	250	0.195	11705	2280	83.0	0.8
	8.50	250	0.245	9360	2295	130.0	0.8

Spiralbohrer Supradrill® U

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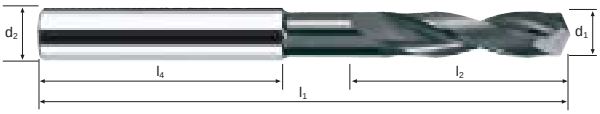
HM MG10

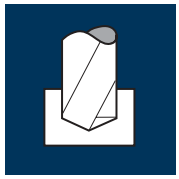


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **Rm** 1300-1500 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62011** ø-Code **.0300**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		NANO-U² B62011	NANO-U² B63011
.0300	3.0	6	62	20	36	16.2		●	
.0330	3.3	6	62	20	36	16.0		●	
.0340	3.4	6	62	20	36	15.8		●	
.0350	3.5	6	62	20	36	15.8		●	
.0370	3.7	6	62	20	36	15.6		●	
.0380	3.8	6	66	24	36	19.4		●	
.0400	4.0	6	66	24	36	18.9		●	
.0420	4.2	6	66	24	36	18.8		●	
.0450	4.5	6	66	24	36	18.6		●	
.0480	4.8	6	66	28	36	18.4		●	
.0500	5.0	6	66	28	36	18.8		●	
.0550	5.5	6	66	28	36	18.5		●	
.0580	5.8	6	66	28	36	18.4		●	
.0600	6.0	6	66	28	36	18.6		●	
.0650	6.5	8	79	34	36	29.1		●	
.0680	6.8	8	79	34	36	28.9		●	
.0700	7.0	8	79	34	36	28.8		●	
.0750	7.5	8	79	41	36	28.5		●	
.0780	7.8	8	79	41	36	28.4		●	
.0800	8.0	8	79	41	36	28.5		●	
.0850	8.5	10	89	47	40	32.1		●	
.0880	8.8	10	89	47	40	31.9		●	
.0900	9.0	10	89	47	40	31.7		●	

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	10.00	170	0.285	5410	1540	121.0	1.2
	10.20	170	0.290	5305	1540	126.0	1.4
	11.00	170	0.315	4920	1550	147.5	1.4
	12.00	170	0.345	4510	1555	176.0	1.4
	13.00	170	0.370	4165	1540	204.5	1.5
	14.00	170	0.400	3865	1545	238.0	1.5
	15.00	170	0.430	3610	1550	274.0	1.6
	15.50	170	0.445	3490	1555	293.5	1.6
	16.00	170	0.455	3380	1540	309.5	1.6
Stahl 500 - 850 N/mm²	10.00	130	0.285	4140	1180	92.5	1.6
	10.20	130	0.290	4055	1175	96.0	1.9
	11.00	130	0.315	3760	1185	112.5	1.9
	12.00	130	0.345	3450	1190	134.5	1.8
	13.00	130	0.370	3185	1180	156.5	2.0
	14.00	130	0.400	2955	1180	181.5	2.0
	15.00	130	0.430	2760	1185	209.5	2.1
	15.50	130	0.445	2670	1190	224.5	2.0
	16.00	130	0.455	2585	1175	236.0	2.1
Stahl 850 - 1100 N/mm²	10.00	110	0.220	3500	770	60.5	2.5
	10.20	110	0.225	3435	775	63.5	2.9
	11.00	110	0.245	3185	780	74.0	2.8
	12.00	110	0.265	2920	775	87.5	2.8
	13.00	110	0.290	2695	780	103.5	3.0
	14.00	110	0.310	2500	775	119.5	3.0
	15.00	110	0.335	2335	780	138.0	3.1
	15.50	110	0.345	2260	780	147.0	3.1
	16.00	110	0.355	2190	775	156.0	3.1
Stahl 1100 - 1300 N/mm²	10.00	70	0.175	2230	390	30.5	4.8
	10.20	70	0.180	2185	395	32.5	5.7
	11.00	70	0.195	2025	395	37.5	5.6
	12.00	70	0.210	1855	390	44.0	5.6
	13.00	70	0.230	1715	395	52.5	5.9
	14.00	70	0.245	1590	390	60.0	5.9
	15.00	70	0.265	1485	395	70.0	6.2
	15.50	70	0.270	1440	390	73.5	6.2
	16.00	70	0.280	1395	390	78.5	6.2

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	10.00	40	0.145	1275	185	14.5	10.2
	10.20	40	0.145	1250	180	14.5	12.4
	11.00	40	0.155	1155	180	17.0	12.2
	12.00	40	0.170	1060	180	20.5	12.1
	13.00	40	0.185	980	180	24.0	12.9
	14.00	40	0.200	910	180	27.5	12.8
	15.00	40	0.215	850	185	32.5	13.2
	15.50	40	0.220	820	180	34.0	13.5
	16.00	40	0.230	795	185	37.0	13.1
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	10.00	60	0.150	1910	285	22.5	6.6
	10.20	60	0.150	1870	280	23.0	8.0
	11.00	60	0.165	1735	285	27.0	7.7
	12.00	60	0.180	1590	285	32.0	7.7
	13.00	60	0.195	1470	285	38.0	8.1
	14.00	60	0.210	1365	285	44.0	8.1
	15.00	60	0.225	1275	285	50.5	8.6
	15.50	60	0.230	1230	285	54.0	8.5
	16.00	60	0.240	1195	285	57.5	8.5
Gusseisen GG(G)	10.00	220	0.315	7005	2205	173.0	0.9
	10.20	220	0.320	6865	2195	179.5	1.0
	11.00	220	0.345	6365	2195	208.5	1.0
	12.00	220	0.375	5835	2190	247.5	1.0
	13.00	220	0.405	5385	2180	289.5	1.1
	14.00	220	0.440	5000	2200	338.5	1.0
	15.00	220	0.470	4670	2195	388.0	1.1
	15.50	220	0.485	4520	2190	413.0	1.1
	16.00	220	0.500	4375	2190	440.5	1.1
Al-Knetlegierung Si < 6%	10.00	250	0.285	7960	2270	178.5	0.8
	10.20	250	0.290	7800	2260	184.5	1.0
	11.00	250	0.315	7235	2280	216.5	1.0
	12.00	250	0.345	6630	2285	258.5	1.0
	13.00	250	0.370	6120	2265	300.5	1.0
	14.00	250	0.400	5685	2275	350.0	1.0
	15.00	250	0.430	5305	2280	403.0	1.1
	15.50	250	0.445	5135	2285	431.0	1.1
	16.00	250	0.455	4975	2265	455.5	1.1

Spiralbohrer Supradrill® U

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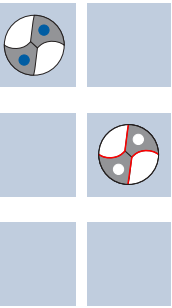
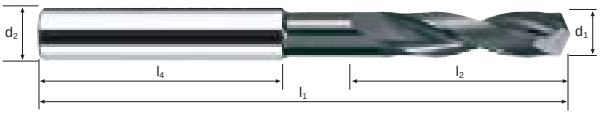
HM MG10



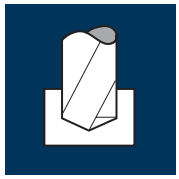


Rm < 850	**Rm** 850-1100	**Rm** 1100-1300	**Rm** 1300-1500				**Inox** Stainless		**GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B62011** ø-Code **.0950**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		NANO-U² B62011	NANO-U² B63011
.0950	9.5	10	89	47	40	31.5			●
.0980	9.8	10	89	47	40	31.4			●
.1000	10.0	10	89	47	40	31.5			●
.1020	10.2	12	102	55	45	37.2			●
.1050	10.5	12	102	55	45	37.1			●
.1080	10.8	12	102	55	45	36.9			●
.1100	11.0	12	102	55	45	36.7			●
.1150	11.5	12	102	55	45	36.5			●
.1180	11.8	12	102	55	45	36.3			●
.1200	12.0	12	102	55	45	36.4			●
.1250	12.5	14	107	60	45	39.1			●
.1280	12.8	14	107	60	45	38.9			●
.1300	13.0	14	107	60	45	38.7			●
.1350	13.5	14	107	60	45	38.5			●
.1380	13.8	14	107	60	45	38.3			●
.1400	14.0	14	107	60	45	38.4			●
.1450	14.5	16	115	65	48	41.1			●
.1480	14.8	16	115	65	48	40.8			●
.1500	15.0	16	115	65	48	40.7			●
.1550	15.5	16	115	65	48	40.5			●
.1580	15.8	16	115	65	48	40.3			●
.1600	16.0	16	115	65	48	40.4			●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	3.00	150	0.080	15915	1275	9.0	1.3
	3.30	150	0.090	14470	1300	11.0	1.2
	3.50	150	0.095	13640	1295	12.5	1.2
	3.80	150	0.105	12565	1320	15.0	1.6
	4.00	150	0.110	11935	1315	16.5	1.6
	4.20	150	0.120	11370	1365	19.0	1.5
	4.50	150	0.140	10610	1485	23.5	1.4
	4.80	150	0.145	9945	1440	26.0	2.0
	5.00	150	0.155	9550	1480	29.0	1.9
Stahl 500 - 850 N/mm²	3.00	120	0.070	12730	890	6.5	1.8
	3.30	120	0.075	11575	870	7.5	1.9
	3.50	120	0.080	10915	875	8.5	1.8
	3.80	120	0.090	10050	905	10.5	2.3
	4.00	120	0.095	9550	905	11.5	2.3
	4.20	120	0.105	9095	955	13.0	2.2
	4.50	120	0.120	8490	1020	16.0	2.0
	4.80	120	0.125	7960	995	18.0	2.9
	5.00	120	0.130	7640	995	19.5	2.9
Stahl 850 - 1100 N/mm²	3.00	100	0.065	10610	690	5.0	2.4
	3.30	100	0.070	9645	675	6.0	2.4
	3.50	100	0.075	9095	680	6.5	2.4
	3.80	100	0.080	8375	670	7.5	3.2
	4.00	100	0.090	7960	715	9.0	2.9
	4.20	100	0.095	7580	720	10.0	2.9
	4.50	100	0.110	7075	780	12.5	2.7
	4.80	100	0.115	6630	760	14.0	3.7
	5.00	100	0.120	6365	765	15.0	3.7
Stahl 1100 - 1300 N/mm²	3.00	70	0.050	7425	370	2.5	4.4
	3.30	70	0.055	6750	370	3.0	4.4
	3.50	70	0.055	6365	350	3.5	4.6
	3.80	70	0.060	5865	350	4.0	6.1
	4.00	70	0.065	5570	360	4.5	5.8
	4.20	70	0.070	5305	370	5.0	5.6
	4.50	70	0.085	4950	420	6.5	4.9
	4.80	70	0.090	4640	420	7.5	6.8
	5.00	70	0.090	4455	400	8.0	7.2

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	3.00	40	0.035	4245	150	1.0	10.9
	3.30	40	0.040	3860	155	1.5	10.4
	3.50	40	0.045	3640	165	1.5	9.7
	3.80	40	0.045	3350	150	1.5	14.2
	4.00	40	0.050	3185	160	2.0	13.1
	4.20	40	0.055	3030	165	2.5	12.7
	4.50	40	0.065	2830	185	3.0	11.2
	4.80	40	0.070	2655	185	3.5	15.4
	5.00	40	0.070	2545	180	3.5	15.9
Nichtrostender Stahl [Cr-Ni/1.4301]	3.00	60	0.035	6365	225	1.5	7.3
	3.30	60	0.040	5785	230	2.0	7.0
	3.50	60	0.045	5455	245	2.5	6.6
	3.80	60	0.045	5025	225	2.5	9.4
	4.00	60	0.050	4775	240	3.0	8.7
	4.20	60	0.055	4545	250	3.5	8.4
	4.50	60	0.065	4245	275	4.5	7.5
	4.80	60	0.070	3980	280	5.0	10.2
	5.00	60	0.070	3820	265	5.0	10.8
Titanlegierungen >300 HB [Ti6Al4V]	3.00	35	0.035	3715	130	1.0	12.6
	3.30	35	0.040	3375	135	1.0	12.0
	3.50	35	0.045	3185	145	1.5	11.1
	3.80	35	0.045	2930	130	1.5	16.3
	4.00	35	0.050	2785	140	2.0	15.0
	4.20	35	0.055	2655	145	2.0	14.4
	4.50	35	0.065	2475	160	2.5	13.0
	4.80	35	0.070	2320	160	3.0	17.8
	5.00	35	0.070	2230	155	3.0	18.5
Gusseisen GG(G)	3.00	220	0.075	23345	1750	12.5	0.9
	3.30	220	0.080	21220	1700	14.5	1.0
	3.50	220	0.085	20010	1700	16.5	0.9
	3.80	220	0.095	18430	1750	20.0	1.2
	4.00	220	0.100	17505	1750	22.0	1.2
	4.20	220	0.110	16675	1835	25.5	1.1
	4.50	220	0.125	15560	1945	31.0	1.1
	4.80	220	0.135	14590	1970	35.5	1.4
	5.00	220	0.140	14005	1960	38.5	1.5

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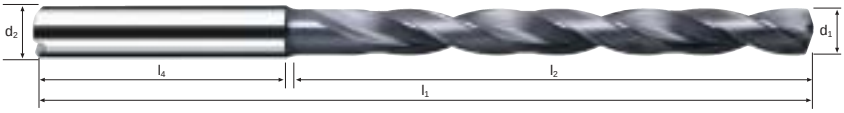
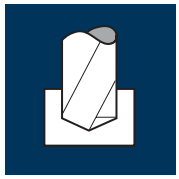


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72020** ø-Code **.0300**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}	DURO-X B72020
.0300	3.0	6	73	34	36	27.2	●
.0310	3.1	6	73	34	36	27.2	●
.0320	3.2	6	73	34	36	27.0	●
.0330	3.3	6	73	34	36	27.0	●
.0340	3.4	6	73	34	36	26.8	●
.0350	3.5	6	73	34	36	26.8	●
.0360	3.6	6	73	34	36	26.6	●
.0370	3.7	6	73	34	36	26.6	●
.0380	3.8	6	82	43	36	35.4	●
.0390	3.9	6	82	43	36	35.4	●
.0400	4.0	6	82	43	36	34.9	●
.0410	4.1	6	82	43	36	34.9	●
.0420	4.2	6	82	43	36	34.8	●
.0430	4.3	6	82	43	36	34.7	●
.0440	4.4	6	82	43	36	34.6	●
.0450	4.5	6	82	43	36	34.6	●
.0460	4.6	6	82	43	36	34.5	●
.0470	4.7	6	82	43	36	34.5	●
.0480	4.8	6	95	56	36	47.4	●
.0490	4.9	6	95	56	36	47.3	●
.0500	5.0	6	95	56	36	47.7	●
.0510	5.1	6	95	56	36	47.7	●
.0520	5.2	6	95	56	36	47.6	●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	5.50	150	0.170	8680	1475	35.0	1.9
	5.80	150	0.180	8230	1480	39.0	1.9
	6.00	150	0.190	7960	1510	42.5	1.9
	6.20	150	0.205	7700	1580	47.5	2.1
	6.50	150	0.210	7345	1540	51.0	2.1
	6.80	150	0.220	7020	1545	56.0	2.1
	7.00	150	0.230	6820	1570	60.5	2.1
	7.20	150	0.235	6630	1560	63.5	2.5
	7.50	150	0.245	6365	1560	69.0	2.5
Stahl 500 - 850 N/mm²	5.50	120	0.145	6945	1005	24.0	2.8
	5.80	120	0.150	6585	990	26.0	2.9
	6.00	120	0.165	6365	1050	29.5	2.7
	6.20	120	0.175	6160	1080	32.5	3.1
	6.50	120	0.180	5875	1060	35.0	3.1
	6.80	120	0.190	5615	1065	38.5	3.1
	7.00	120	0.195	5455	1065	41.0	3.1
	7.20	120	0.200	5305	1060	43.0	3.7
	7.50	120	0.210	5095	1070	47.5	3.6
Stahl 850 - 1100 N/mm²	5.50	100	0.135	5785	780	18.5	3.7
	5.80	100	0.140	5490	770	20.5	3.7
	6.00	100	0.150	5305	795	22.5	3.6
	6.20	100	0.160	5135	820	25.0	4.0
	6.50	100	0.170	4895	830	27.5	4.0
	6.80	100	0.175	4680	820	30.0	4.0
	7.00	100	0.180	4545	820	31.5	4.0
	7.20	100	0.185	4420	820	33.5	4.7
	7.50	100	0.195	4245	830	36.5	4.7
Stahl 1100 - 1300 N/mm²	5.50	70	0.100	4050	405	9.5	7.0
	5.80	70	0.105	3840	405	10.5	7.0
	6.00	70	0.115	3715	425	12.0	6.7
	6.20	70	0.120	3595	430	13.0	7.7
	6.50	70	0.125	3430	430	14.5	7.7
	6.80	70	0.135	3275	440	16.0	7.5
	7.00	70	0.135	3185	430	16.5	7.6
	7.20	70	0.140	3095	435	17.5	8.9
	7.50	70	0.145	2970	430	19.0	9.0

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	5.50	40	0.080	2315	185	4.5	15.4
	5.80	40	0.080	2195	175	4.5	16.2
	6.00	40	0.090	2120	190	5.5	14.9
	6.20	40	0.095	2055	195	6.0	17.0
	6.50	40	0.100	1960	195	6.5	16.9
	6.80	40	0.105	1870	195	7.0	16.9
	7.00	40	0.105	1820	190	7.5	17.3
	7.20	40	0.110	1770	195	8.0	19.9
	7.50	40	0.115	1700	195	8.5	19.8
Nichtrostender Stahl [Cr-Ni/1.4301]	5.50	60	0.080	3470	280	6.5	10.2
	5.80	60	0.080	3295	265	7.0	10.7
	6.00	60	0.090	3185	285	8.0	9.9
	6.20	60	0.095	3080	295	9.0	11.2
	6.50	60	0.100	2940	295	10.0	11.2
	6.80	60	0.105	2810	295	10.5	11.1
	7.00	60	0.105	2730	285	11.0	11.5
	7.20	60	0.110	2655	290	12.0	13.4
	7.50	60	0.115	2545	295	13.0	13.1
Titanlegierungen >300 HB [Ti6Al4V]	5.50	35	0.080	2025	160	4.0	17.8
	5.80	35	0.080	1920	155	4.0	18.3
	6.00	35	0.090	1855	165	4.5	17.2
	6.20	35	0.095	1795	170	5.0	19.5
	6.50	35	0.100	1715	170	5.5	19.4
	6.80	35	0.105	1640	170	6.0	19.3
	7.00	35	0.105	1590	165	6.5	19.9
	7.20	35	0.110	1545	170	7.0	22.8
	7.50	35	0.115	1485	170	7.5	22.7
Gusseisen GG(G)	5.50	220	0.155	12730	1975	47.0	1.4
	5.80	220	0.160	12075	1930	51.0	1.5
	6.00	220	0.175	11670	2040	57.5	1.4
	6.20	220	0.185	11295	2090	63.0	1.6
	6.50	220	0.195	10775	2100	69.5	1.6
	6.80	220	0.200	10300	2060	75.0	1.6
	7.00	220	0.210	10005	2100	81.0	1.6
	7.20	220	0.215	9725	2090	85.0	1.9
	7.50	220	0.225	9335	2100	93.0	1.8

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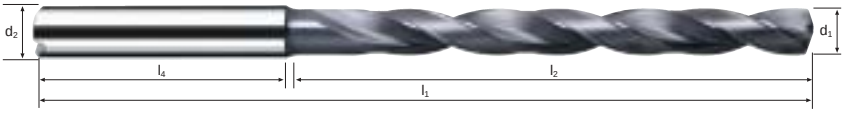
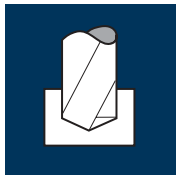


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72020** ø-Code **.0530**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		DURO-X B72020
.0530	5.3	6	95	56	36	47.6		●
.0540	5.4	6	95	56	36	47.5		●
.0550	5.5	6	95	56	36	47.5		●
.0560	5.6	6	95	56	36	47.4		●
.0570	5.7	6	95	56	36	47.4		●
.0580	5.8	6	95	56	36	47.3		●
.0590	5.9	6	95	56	36	47.4		●
.0600	6.0	6	95	56	36	47.2		●
.0610	6.1	8	105	66	36	55.3		●
.0620	6.2	8	105	66	36	55.2		●
.0630	6.3	8	105	66	36	55.2		●
.0640	6.4	8	105	66	36	55.1		●
.0650	6.5	8	105	66	36	55.1		●
.0660	6.6	8	105	66	36	55.0		●
.0670	6.7	8	105	66	36	55.0		●
.0680	6.8	8	105	66	36	54.8		●
.0690	6.9	8	105	66	36	54.8		●
.0700	7.0	8	105	66	36	54.7		●
.0710	7.1	8	115	76	36	64.7		●
.0720	7.2	8	115	76	36	64.6		●
.0730	7.3	8	115	76	36	64.6		●
.0740	7.4	8	115	76	36	64.4		●
.0750	7.5	8	115	76	36	64.4		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	7.60	150	0.250	6280	1570	71.0	2.5
	8.00	150	0.260	5970	1550	78.0	2.5
	8.20	150	0.270	5825	1575	83.0	2.8
	8.50	150	0.280	5615	1570	89.0	2.7
	8.80	150	0.285	5425	1545	94.0	2.8
	9.00	150	0.295	5305	1565	99.5	2.7
	9.20	150	0.300	5190	1555	103.5	3.1
	9.50	150	0.310	5025	1560	110.5	3.1
	9.80	150	0.320	4870	1560	117.5	3.1
Stahl 500 - 850 N/mm²	7.60	120	0.215	5025	1080	49.0	3.6
	8.00	120	0.225	4775	1075	54.0	3.6
	8.20	120	0.230	4660	1070	56.5	4.0
	8.50	120	0.240	4495	1080	61.5	4.0
	8.80	120	0.245	4340	1065	65.0	4.0
	9.00	120	0.250	4245	1060	67.5	4.1
	9.20	120	0.260	4150	1080	72.0	4.5
	9.50	120	0.265	4020	1065	75.5	4.5
	9.80	120	0.275	3900	1075	81.0	4.5
Stahl 850 - 1100 N/mm²	7.60	100	0.195	4190	815	37.0	4.7
	8.00	100	0.205	3980	815	41.0	4.7
	8.20	100	0.210	3880	815	43.0	5.3
	8.50	100	0.220	3745	825	47.0	5.2
	8.80	100	0.225	3615	815	49.5	5.3
	9.00	100	0.230	3535	815	52.0	5.3
	9.20	100	0.235	3460	815	54.0	5.9
	9.50	100	0.245	3350	820	58.0	5.9
	9.80	100	0.255	3250	830	62.5	5.8
Stahl 1100 - 1300 N/mm²	7.60	70	0.150	2930	440	20.0	8.8
	8.00	70	0.155	2785	430	21.5	8.9
	8.20	70	0.160	2715	435	23.0	10.0
	8.50	70	0.165	2620	430	24.5	10.0
	8.80	70	0.170	2530	430	26.0	10.0
	9.00	70	0.175	2475	435	27.5	9.9
	9.20	70	0.180	2420	435	29.0	11.1
	9.50	70	0.185	2345	435	31.0	11.1
	9.80	70	0.190	2275	430	32.5	11.2

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	7.60	40	0.115	1675	195	9.0	19.8
	8.00	40	0.120	1590	190	9.5	20.2
	8.20	40	0.125	1555	195	10.5	22.2
	8.50	40	0.130	1500	195	11.0	22.1
	8.80	40	0.135	1445	195	12.0	22.1
	9.00	40	0.135	1415	190	12.0	22.6
	9.20	40	0.140	1385	195	13.0	24.8
	9.50	40	0.145	1340	195	14.0	24.7
	9.80	40	0.150	1300	195	14.5	24.7
Nichtrostender Stahl [Cr-Ni/1.4301]	7.60	60	0.115	2515	290	13.0	13.3
	8.00	60	0.120	2385	285	14.5	13.5
	8.20	60	0.125	2330	290	15.5	14.9
	8.50	60	0.130	2245	290	16.5	14.9
	8.80	60	0.135	2170	295	18.0	14.6
	9.00	60	0.135	2120	285	18.0	15.1
	9.20	60	0.140	2075	290	19.5	16.7
	9.50	60	0.145	2010	290	20.5	16.6
	9.80	60	0.150	1950	295	22.5	16.3
Titanlegierungen >300 HB [Ti6Al4V]	7.60	35	0.115	1465	170	7.5	22.7
	8.00	35	0.120	1395	165	8.5	23.3
	8.20	35	0.125	1360	170	9.0	25.5
	8.50	35	0.130	1310	170	9.5	25.4
	8.80	35	0.135	1265	170	10.5	25.3
	9.00	35	0.135	1240	165	10.5	26.1
	9.20	35	0.140	1210	170	11.5	28.4
	9.50	35	0.145	1175	170	12.0	28.4
	9.80	35	0.150	1135	170	13.0	28.3
Gusseisen GG(G)	7.60	220	0.225	9215	2075	94.0	1.9
	8.00	220	0.240	8755	2100	105.5	1.8
	8.20	220	0.245	8540	2090	110.5	2.1
	8.50	220	0.250	8240	2060	117.0	2.1
	8.80	220	0.260	7960	2070	126.0	2.1
	9.00	220	0.265	7780	2060	131.0	2.1
	9.20	220	0.275	7610	2095	139.5	2.3
	9.50	220	0.280	7370	2065	146.5	2.3
	9.80	220	0.290	7145	2070	156.0	2.3

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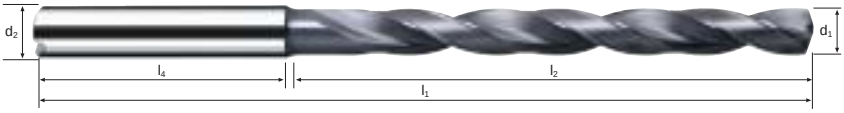
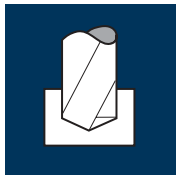


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72020** ø-Code **.0760**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}	DURO-X B72020
.0760	7.6	8	115	76	36	64.3	●
.0770	7.7	8	115	76	36	64.4	●
.0780	7.8	8	115	76	36	64.3	●
.0790	7.9	8	115	76	36	64.3	●
.0800	8.0	8	115	76	36	64.1	●
.0810	8.1	10	129	86	40	72.3	●
.0820	8.2	10	129	86	40	72.2	●
.0830	8.3	10	129	86	40	72.2	●
.0840	8.4	10	129	86	40	72.1	●
.0850	8.5	10	129	86	40	72.0	●
.0860	8.6	10	129	86	40	71.9	●
.0870	8.7	10	129	86	40	71.9	●
.0880	8.8	10	129	86	40	71.8	●
.0890	8.9	10	129	86	40	71.8	●
.0900	9.0	10	129	86	40	71.7	●
.0910	9.1	10	138	95	40	80.7	●
.0920	9.2	10	138	95	40	80.5	●
.0930	9.3	10	138	95	40	80.5	●
.0940	9.4	10	138	95	40	80.4	●
.0950	9.5	10	138	95	40	80.4	●
.0960	9.6	10	138	95	40	80.3	●
.0970	9.7	10	138	95	40	80.3	●
.0980	9.8	10	138	95	40	80.2	●

Anwendung



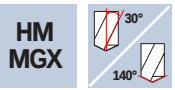
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	10.00	150	0.325	4775	1550	121.5	3.1
	10.20	150	0.335	4680	1570	128.5	3.4
	10.50	150	0.345	4545	1570	136.0	3.4
	10.80	150	0.350	4420	1545	141.5	3.4
	11.00	150	0.355	4340	1540	146.5	3.4
	11.50	150	0.360	4150	1495	155.5	3.9
	11.80	150	0.360	4045	1455	159.0	4.0
	12.00	150	0.370	3980	1475	167.0	3.9
	12.50	150	0.385	3820	1470	180.5	4.6
Stahl 500 - 850 N/mm²	10.00	120	0.280	3820	1070	84.0	4.5
	10.20	120	0.285	3745	1065	87.0	5.0
	10.50	120	0.295	3640	1075	93.0	4.9
	10.80	120	0.300	3535	1060	97.0	5.0
	11.00	120	0.305	3470	1060	100.5	5.0
	11.50	120	0.310	3320	1030	107.0	5.6
	11.80	120	0.310	3235	1005	110.0	5.7
	12.00	120	0.315	3185	1005	113.5	5.7
	12.50	120	0.330	3055	1010	124.0	6.7
Stahl 850 - 1100 N/mm²	10.00	100	0.260	3185	830	65.0	5.8
	10.20	100	0.265	3120	825	67.5	6.4
	10.50	100	0.270	3030	820	71.0	6.4
	10.80	100	0.275	2945	810	74.0	6.5
	11.00	100	0.280	2895	810	77.0	6.5
	11.50	100	0.285	2770	790	82.0	7.3
	11.80	100	0.285	2700	770	84.0	7.5
	12.00	100	0.290	2655	770	87.0	7.5
	12.50	100	0.305	2545	775	95.0	8.7
Stahl 1100 - 1300 N/mm²	10.00	70	0.195	2230	435	34.0	11.0
	10.20	70	0.200	2185	435	35.5	12.2
	10.50	70	0.205	2120	435	37.5	12.1
	10.80	70	0.210	2065	435	40.0	12.1
	11.00	70	0.215	2025	435	41.5	12.1
	11.50	70	0.215	1940	415	43.0	13.9
	11.80	70	0.215	1890	405	44.5	14.3
	12.00	70	0.220	1855	410	46.5	14.0
	12.50	70	0.230	1785	410	50.5	16.5

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	10.00	40	0.150	1275	190	15.0	25.3
	10.20	40	0.155	1250	195	16.0	27.1
	10.50	40	0.160	1215	195	17.0	27.1
	10.80	40	0.160	1180	190	17.5	27.7
	11.00	40	0.165	1155	190	18.0	27.7
	11.50	40	0.165	1105	180	18.5	32.1
	11.80	40	0.165	1080	180	19.5	32.1
	12.00	40	0.170	1060	180	20.5	32.0
	12.50	40	0.175	1020	180	22.0	37.6
Nichtrostender Stahl [Cr-Ni/1.4301]	10.00	60	0.150	1910	285	22.5	16.8
	10.20	60	0.155	1870	290	23.5	18.2
	10.50	60	0.160	1820	290	25.0	18.2
	10.80	60	0.160	1770	285	26.0	18.5
	11.00	60	0.165	1735	285	27.0	18.4
	11.50	60	0.165	1660	275	28.5	21.0
	11.80	60	0.165	1620	265	29.0	21.8
	12.00	60	0.170	1590	270	30.5	21.3
	12.50	60	0.175	1530	270	33.0	25.1
Titanlegierungen >300 HB [Ti6Al4V]	10.00	35	0.150	1115	165	13.0	29.1
	10.20	35	0.155	1090	170	14.0	31.1
	10.50	35	0.160	1060	170	14.5	31.0
	10.80	35	0.160	1030	165	15.0	31.9
	11.00	35	0.165	1015	165	15.5	31.9
	11.50	35	0.165	970	160	16.5	36.1
	11.80	35	0.165	945	155	17.0	37.2
	12.00	35	0.170	930	160	18.0	36.0
	12.50	35	0.175	890	155	19.0	43.7
Gusseisen GG(G)	10.00	220	0.295	7005	2065	162.0	2.3
	10.20	220	0.305	6865	2095	171.0	2.5
	10.50	220	0.310	6670	2070	179.0	2.5
	10.80	220	0.315	6485	2045	187.5	2.6
	11.00	220	0.325	6365	2070	196.5	2.5
	11.50	220	0.330	6090	2010	209.0	2.9
	11.80	220	0.330	5935	1960	214.5	2.9
	12.00	220	0.335	5835	1955	221.0	2.9
	12.50	220	0.350	5600	1960	240.5	3.5

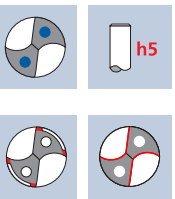
Spiralbohrer XDrill®

8xd

HM MGX



h5

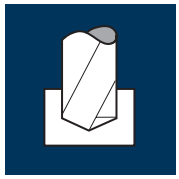


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72020** ø-Code **.0990**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}		DURO-X B72020
.0990	9.9	10	138	95	40	80.3		●
.1000	10.0	10	138	95	40	80.0		●
.1010	10.1	12	153	105	45	88.3		●
.1020	10.2	12	153	105	45	88.2		●
.1030	10.3	12	153	105	45	88.1		●
.1040	10.4	12	153	105	45	88.0		●
.1050	10.5	12	153	105	45	88.0		●
.1060	10.6	12	153	105	45	87.9		●
.1070	10.7	12	153	105	45	87.9		●
.1080	10.8	12	153	105	45	87.8		●
.1090	10.9	12	153	105	45	87.8		●
.1100	11.0	12	153	105	45	87.6		●
.1110	11.1	12	162	114	45	96.6		●
.1120	11.2	12	162	114	45	96.5		●
.1130	11.3	12	162	114	45	96.5		●
.1140	11.4	12	162	114	45	96.4		●
.1150	11.5	12	162	114	45	96.4		●
.1160	11.6	12	162	114	45	96.3		●
.1170	11.7	12	162	114	45	96.3		●
.1180	11.8	12	162	114	45	96.2		●
.1190	11.9	12	162	114	45	96.2		●
.1200	12.0	12	162	114	45	95.9		●
.1250	12.5	14	181	133	45	113.0		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	12.80	150	0.395	3730	1475	190.0	4.6
	13.00	150	0.400	3675	1470	195.0	4.6
	13.50	150	0.405	3615	1465	200.5	4.6
	14.00	150	0.410	3410	1400	215.5	4.8
	14.50	150	0.420	3295	1385	228.5	5.6
	14.80	150	0.425	3225	1370	235.5	5.6
	15.00	150	0.430	3185	1370	242.0	5.6
	15.50	150	0.440	3080	1355	255.5	5.7
	16.00	150	0.450	2985	1345	270.5	5.7
Stahl 500 - 850 N/mm²	12.80	120	0.335	2985	1000	128.5	6.8
	13.00	120	0.340	2940	1000	132.5	6.8
	13.50	120	0.345	2895	1000	137.0	6.7
	14.00	120	0.350	2730	955	147.0	7.0
	14.50	120	0.360	2635	950	157.0	8.1
	14.80	120	0.365	2580	940	161.5	8.2
	15.00	120	0.370	2545	940	166.0	8.2
	15.50	120	0.375	2465	925	174.5	8.3
	16.00	120	0.385	2385	920	185.0	8.3
Stahl 850 - 1100 N/mm²	12.80	100	0.310	2485	770	99.0	8.8
	13.00	100	0.315	2450	770	102.0	8.8
	13.50	100	0.320	2410	770	105.5	8.7
	14.00	100	0.325	2275	740	114.0	9.1
	14.50	100	0.330	2195	725	119.5	10.7
	14.80	100	0.335	2150	720	124.0	10.7
	15.00	100	0.340	2120	720	127.0	10.7
	15.50	100	0.345	2055	710	134.0	10.8
	16.00	100	0.355	1990	705	141.5	10.9
Stahl 1100 - 1300 N/mm²	12.80	70	0.235	1740	410	53.0	16.5
	13.00	70	0.240	1715	410	54.5	16.5
	13.50	70	0.245	1690	415	57.0	16.2
	14.00	70	0.245	1590	390	60.0	17.2
	14.50	70	0.250	1535	385	63.5	20.1
	14.80	70	0.255	1505	385	66.0	20.1
	15.00	70	0.260	1485	385	68.0	20.0
	15.50	70	0.265	1440	380	71.5	20.3
	16.00	70	0.270	1395	375	75.5	20.4

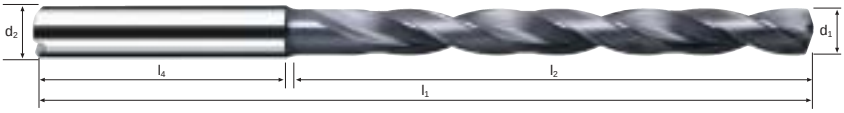
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl 1300 - 1500 N/mm²	12.80	40	0.180	995	180	23.0	37.6
	13.00	40	0.185	980	180	24.0	37.5
	13.50	40	0.185	965	180	24.5	37.4
	14.00	40	0.190	910	175	27.0	38.4
	14.50	40	0.195	880	170	28.0	45.5
	14.80	40	0.195	860	170	29.0	45.4
	15.00	40	0.200	850	170	30.0	45.4
	15.50	40	0.205	820	170	32.0	45.3
	16.00	40	0.205	795	165	33.0	46.5
Nichtrostender Stahl [Cr-Ni/1.4301]	12.80	60	0.180	1490	270	34.5	25.0
	13.00	60	0.185	1470	270	36.0	25.0
	13.50	60	0.185	1445	265	36.5	25.4
	14.00	60	0.190	1365	260	40.0	25.8
	14.50	60	0.195	1315	255	42.0	30.3
	14.80	60	0.195	1290	250	43.0	30.9
	15.00	60	0.200	1275	255	45.0	30.3
	15.50	60	0.205	1230	250	47.0	30.8
	16.00	60	0.205	1195	245	49.5	31.3
Titanlegierungen >300 HB [Ti6Al4V]	12.80	35	0.180	870	155	20.0	43.6
	13.00	35	0.185	855	160	21.0	42.2
	13.50	35	0.185	845	155	21.0	43.5
	14.00	35	0.190	795	150	23.0	44.8
	14.50	35	0.195	770	150	25.0	51.5
	14.80	35	0.195	755	145	25.0	53.3
	15.00	35	0.200	745	150	26.5	51.4
	15.50	35	0.205	720	150	28.5	51.3
	16.00	35	0.205	695	140	28.0	54.8
Gusseisen GG(G)	12.80	220	0.355	5470	1940	249.5	3.5
	13.00	220	0.360	5385	1940	257.5	3.5
	13.50	220	0.370	5305	1965	269.0	3.4
	14.00	220	0.375	5000	1875	288.5	3.6
	14.50	220	0.380	4830	1835	303.0	4.2
	14.80	220	0.385	4730	1820	313.0	4.2
	15.00	220	0.390	4670	1820	321.5	4.2
	15.50	220	0.400	4520	1810	341.5	4.3
	16.00	220	0.405	4375	1770	356.0	4.3

Spiralbohrer XDrill®

8xd

HM
MGX

h5

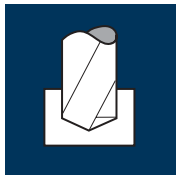


Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless	Ti Titanium	GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **B72020** ø-Code **.1280**

ø Code	d_1 m7	d_2 h5	l_1	l_2	l_4	L_{max}	DURO-X B72020
.1280	12.8	14	181	133	45	112.7	●
.1300	13.0	14	181	133	45	112.6	●
.1350	13.5	14	181	133	45	112.3	●
.1380	13.8	14	181	133	45	112.1	●
.1400	14.0	14	181	133	45	111.9	●
.1450	14.5	16	203	152	48	128.9	●
.1480	14.8	16	203	152	48	128.7	●
.1500	15.0	16	203	152	48	128.6	●
.1550	15.5	16	203	152	48	128.3	●
.1580	15.8	16	203	152	48	128.1	●
.1600	16.0	16	203	152	48	127.8	●

Anwendung



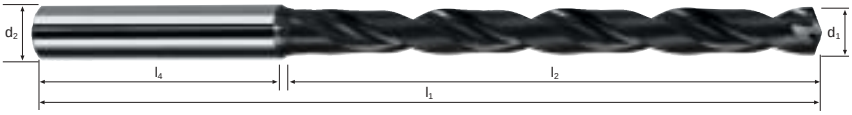
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	4.00	130	0.085	10345	880	11.0	2.4
	5.00	130	0.105	8275	870	17.0	3.3
	6.00	130	0.125	6895	860	24.5	3.3
	7.00	130	0.145	5910	855	33.0	4.5
	8.00	130	0.170	5175	880	44.0	4.3
	9.00	130	0.190	4600	875	55.5	5.5
	10.00	130	0.210	4140	870	68.5	5.5
	11.00	130	0.230	3760	865	82.0	6.7
	12.00	130	0.255	3450	880	99.5	6.6
Stahl 500 - 850 N/mm²	4.00	100	0.085	7960	675	8.5	3.1
	5.00	100	0.105	6365	670	13.0	4.3
	6.00	100	0.125	5305	665	19.0	4.3
	7.00	100	0.145	4545	660	25.5	5.8
	8.00	100	0.170	3980	675	34.0	5.6
	9.00	100	0.190	3535	670	42.5	7.2
	10.00	100	0.210	3185	670	52.5	7.2
	11.00	100	0.230	2895	665	63.0	8.7
	12.00	100	0.255	2655	675	76.5	8.6
Stahl 850 - 1100 N/mm²	4.00	70	0.065	5570	360	4.5	5.8
	5.00	70	0.080	4455	355	7.0	8.1
	6.00	70	0.095	3715	355	10.0	8.0
	7.00	70	0.110	3185	350	13.5	10.9
	8.00	70	0.130	2785	360	18.0	10.5
	9.00	70	0.145	2475	360	23.0	13.5
	10.00	70	0.160	2230	355	28.0	13.6
	11.00	70	0.175	2025	355	33.5	16.3
	12.00	70	0.190	1855	350	39.5	16.5
Stahl 1100 - 1300 N/mm²	4.00	50	0.055	3980	220	3.0	9.5
	5.00	50	0.065	3185	205	4.0	14.0
	6.00	50	0.080	2655	210	6.0	13.5
	7.00	50	0.095	2275	215	8.5	17.8
	8.00	50	0.105	1990	210	10.5	18.1
	9.00	50	0.120	1770	210	13.5	23.1
	10.00	50	0.135	1590	215	17.0	22.4
	11.00	50	0.145	1445	210	20.0	27.6
	12.00	50	0.160	1325	210	24.0	27.5

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	4.00	50	0.045	3980	180	2.5	11.6
	5.00	50	0.055	3185	175	3.5	16.4
	6.00	50	0.070	2655	185	5.0	15.4
	7.00	50	0.080	2275	180	7.0	21.2
	8.00	50	0.090	1990	180	9.0	21.1
	9.00	50	0.105	1770	185	12.0	26.2
	10.00	50	0.115	1590	185	14.5	26.0
	11.00	50	0.125	1445	180	17.0	32.2
	12.00	50	0.135	1325	180	20.5	32.1
Gusseisen GG(G)	4.00	150	0.090	11935	1075	13.5	1.9
	5.00	150	0.115	9550	1100	21.5	2.6
	6.00	150	0.135	7960	1075	30.5	2.6
	7.00	150	0.160	6820	1090	42.0	3.5
	8.00	150	0.185	5970	1105	55.5	3.4
	9.00	150	0.205	5305	1090	69.5	4.4
	10.00	150	0.230	4775	1100	86.5	4.4
	11.00	150	0.250	4340	1085	103.0	5.3
	12.00	150	0.275	3980	1095	124.0	5.3
Al-Knetlegierung Si < 6%	4.00	200	0.080	15915	1275	16.0	1.6
	5.00	200	0.100	12730	1275	25.0	2.2
	6.00	200	0.120	10610	1275	36.0	2.2
	7.00	200	0.140	9095	1275	49.0	3.0
	8.00	200	0.160	7960	1275	64.0	3.0
	9.00	200	0.180	7075	1275	81.0	3.8
	10.00	200	0.200	6365	1275	100.0	3.8
	11.00	200	0.220	5785	1275	121.0	4.5
	12.00	200	0.240	5305	1275	144.0	4.5

Spiralbohrer Supradrill® N

8xd

HM MG10

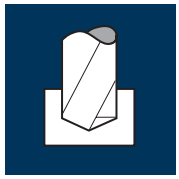


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B52020** ø-Code **.0400**

ø Code	d_1 m7	d_2 h6	l_1	l_2	l_4	L_{max}	DURO-SD B52020	DURO-SD B53020
.0400	4.0	6	82	44	36	34.9		●
.0420	4.2	6	82	44	36	34.8		●
.0450	4.5	6	82	44	36	34.6		●
.0480	4.8	6	82	44	36	34.4		●
.0500	5.0	6	95	57	36	47.7		●
.0550	5.5	6	95	57	36	47.5		●
.0580	5.8	6	95	57	36	47.3		●
.0600	6.0	6	95	57	36	47.4		●
.0650	6.5	8	115	76	36	65.0		●
.0680	6.8	8	115	76	36	64.8		●
.0700	7.0	8	115	76	36	64.7		●
.0750	7.5	8	115	76	36	64.4		●
.0780	7.8	8	115	76	36	64.3		●
.0800	8.0	8	115	76	36	64.3		●
.0850	8.5	10	138	95	40	81.0		●
.0900	9.0	10	138	95	40	80.7		●
.0950	9.5	10	138	95	40	80.4		●
.1000	10.0	10	138	95	40	80.2		●
.1050	10.5	12	162	114	45	97.0		●
.1100	11.0	12	162	114	45	96.6		●
.1150	11.5	12	162	114	45	96.4		●
.1200	12.0	12	162	114	45	96.2		●

Anwendung



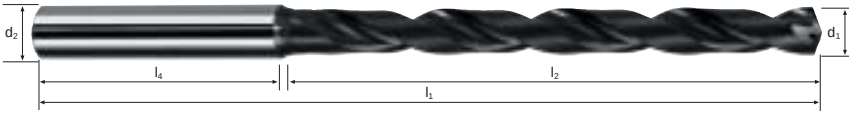
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl **< 500 N/mm²**	12.50	130	0.265	3310	875	107.5	7.7
	13.00	130	0.275	3185	875	116.0	7.7
	13.50	130	0.285	3065	875	125.0	7.7
	14.00	130	0.295	2955	870	134.0	7.7
	14.50	130	0.305	2855	870	143.5	8.9
	15.00	130	0.315	2760	870	153.5	8.9
	16.00	130	0.335	2585	865	174.0	8.9
Stahl **500 - 850 N/mm²**	12.50	100	0.265	2545	675	83.0	10.0
	13.00	100	0.275	2450	675	89.5	10.0
	13.50	100	0.285	2360	675	96.5	10.0
	14.00	100	0.295	2275	670	103.0	10.0
	14.50	100	0.305	2195	670	110.5	11.5
	15.00	100	0.315	2120	670	118.5	11.5
	16.00	100	0.335	1990	665	133.5	11.5
Stahl **850 - 1100 N/mm²**	12.50	70	0.200	1785	355	43.5	19.1
	13.00	70	0.210	1715	360	48.0	18.8
	13.50	70	0.215	1650	355	51.0	19.0
	14.00	70	0.225	1590	360	55.5	18.7
	14.50	70	0.230	1535	355	58.5	21.8
	15.00	70	0.240	1485	355	62.5	21.7
	16.00	70	0.255	1395	355	71.5	21.6
Stahl **1100 - 1300 N/mm²**	12.50	50	0.165	1275	210	26.0	32.3
	13.00	50	0.175	1225	215	28.5	31.4
	13.50	50	0.180	1180	210	30.0	32.1
	14.00	50	0.185	1135	210	32.5	32.0
	14.50	50	0.195	1100	215	35.5	36.0
	15.00	50	0.200	1060	210	37.0	36.7
	16.00	50	0.215	995	215	43.0	35.7

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Kaltarbeitsstahl **(12% Cr)** **hoch legiert** **[1.2379]** **Nichtrostender Stahl** **[Cr-Ni/1.4301]**	12.50	50	0.145	1275	185	22.5	36.6
	13.00	50	0.150	1225	185	24.5	36.5
	13.50	50	0.155	1180	185	26.5	36.4
	14.00	50	0.160	1135	180	27.5	37.4
	14.50	50	0.165	1100	180	29.5	43.0
	15.00	50	0.170	1060	180	32.0	42.9
	16.00	50	0.185	995	185	37.0	41.5
Gusseisen **GG(G)**	12.50	150	0.285	3820	1090	134.0	6.2
	13.00	150	0.295	3675	1085	144.0	6.2
	13.50	150	0.310	3535	1095	156.5	6.2
	14.00	150	0.320	3410	1090	168.0	6.2
	14.50	150	0.330	3295	1085	179.0	7.1
	15.00	150	0.345	3185	1100	194.5	7.0
	16.00	150	0.365	2985	1090	219.0	7.0
Al-Knetlegierung **Si < 6%**	12.50	200	0.250	5095	1275	156.5	5.3
	13.00	200	0.260	4895	1275	169.0	5.3
	13.50	200	0.270	4715	1275	182.5	5.3
	14.00	200	0.280	4545	1275	196.5	5.3
	14.50	200	0.290	4390	1275	210.5	6.1
	15.00	200	0.300	4245	1275	225.5	6.1
	16.00	200	0.320	3980	1275	256.5	6.0

Spiralbohrer Supradrill® N

8xd

HM MG10

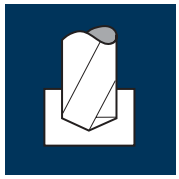


Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium

Beispiel: **Bestell-Nr.** Artikel-Nr. **B52020** ø-Code **.1250**

ø Code	d_1 m7	d_2 h6	l_1	l_2	l_4	L_{max}		DURO-SD B52020	DURO-SD B53020
.1250	12.5	14	181	133	45	113.0		●	
.1300	13.0	14	181	133	45	112.6		●	
.1350	13.5	14	181	133	45	112.3		●	
.1400	14.0	14	181	133	45	112.1		●	
.1450	14.5	16	203	152	48	128.9		●	
.1500	15.0	16	203	152	48	128.6		●	
.1600	16.0	16	203	152	48	128.0		●	

Anwendung



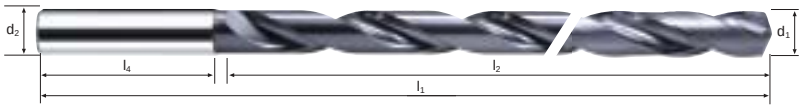
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	3.00	100	0.120	10610	1275	9.0	2.4
	4.00	100	0.120	7960	955	12.0	3.8
	5.00	100	0.120	6365	765	15.0	6.0
	6.00	100	0.150	5305	795	22.5	7.0
	8.00	100	0.150	3980	595	30.0	12.2
	10.00	100	0.200	3185	635	50.0	14.5
	12.00	100	0.200	2655	530	60.0	20.9
	14.00	100	0.240	2275	545	84.0	23.3
	16.00	100	0.240	1990	480	96.5	30.5
Stahl 500 - 850 N/mm²	3.00	75	0.115	7960	915	6.5	3.4
	4.00	75	0.115	5970	685	8.5	5.3
	5.00	75	0.115	4775	550	11.0	8.3
	6.00	75	0.145	3980	575	16.5	9.7
	8.00	75	0.145	2985	435	22.0	16.7
	10.00	75	0.190	2385	455	35.5	20.2
	12.00	75	0.190	1990	380	43.0	29.2
	14.00	75	0.230	1705	390	60.0	32.6
	16.00	75	0.230	1490	345	69.5	42.4
Stahl 850 - 1100 N/mm²	3.00	50	0.100	5305	530	3.5	5.8
	4.00	50	0.100	3980	400	5.0	9.0
	5.00	50	0.100	3185	320	6.5	14.3
	6.00	50	0.140	2655	370	10.5	15.1
	8.00	50	0.140	1990	280	14.0	25.9
	10.00	50	0.180	1590	285	22.5	32.2
	12.00	50	0.180	1325	240	27.0	46.3
	14.00	50	0.220	1135	250	38.5	50.9
	16.00	50	0.220	995	220	44.0	66.5
Stahl 1100 - 1300 N/mm²	3.00	35	0.090	3715	335	2.5	9.2
	4.00	35	0.090	2785	250	3.0	14.4
	5.00	35	0.090	2230	200	4.0	22.9
	6.00	35	0.125	1855	230	6.5	24.3
	8.00	35	0.125	1395	175	9.0	41.5
	10.00	35	0.160	1115	180	14.0	51.0
	12.00	35	0.160	930	150	17.0	74.0
	14.00	35	0.200	795	160	24.5	79.5
	16.00	35	0.200	695	140	28.0	104.6

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379]	3.00	40	0.100	4245	425	3.0	7.3
	4.00	40	0.100	3185	320	4.0	11.3
	5.00	40	0.100	2545	255	5.0	18.0
	6.00	40	0.140	2120	295	8.5	18.9
	8.00	40	0.140	1590	225	11.5	32.3
	10.00	40	0.180	1275	230	18.0	39.9
	12.00	40	0.180	1060	190	21.5	58.4
	14.00	40	0.220	910	200	31.0	63.6
	16.00	40	0.220	795	175	35.0	83.7
Gusseisen GG(G)	3.00	80	0.160	8490	1360	9.5	2.3
	4.00	80	0.160	6365	1020	13.0	3.5
	5.00	80	0.160	5095	815	16.0	5.6
	6.00	80	0.210	4245	890	25.0	6.3
	8.00	80	0.210	3185	670	33.5	10.8
	10.00	80	0.260	2545	660	52.0	13.9
	12.00	80	0.260	2120	550	62.0	20.2
	14.00	80	0.320	1820	580	89.5	21.9
	16.00	80	0.320	1590	510	102.5	28.7

Tieflochbohrer

15xd

HM
MGD²



Rm < 850	Rm 850-1100	Rm 1100-1300							GG(G)

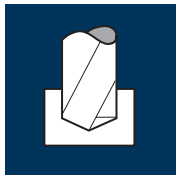
Beispiel: **Bestell-Nr.** Artikel-Nr. **B52915** ø-Code **.0300**

ø Code	d_1 h7	d_2 h6	l_1	l_2	l_4	L_{max}	DURO-D² B52915
.0300	3.0	4	90	56	32	51.5	●
.0350	3.5	4	100	66	32	61.0	●
.0400	4.0	4	100	66	32	60.0	●
.0450	4.5	5	110	74	34	67.5	●
.0500	5.0	5	120	84	34	76.5	●
.0550	5.5	6	130	92	36	84.0	●
.0600	6.0	6	140	102	36	93.0	●
.0700	7.0	7	155	115	38	104.5	●
.0800	8.0	8	175	133	40	121.0	●
.0900	9.0	9	190	148	40	134.5	●
.1000	10.0	10	210	168	40	153.0	●
.1100	11.0	11	230	183	45	166.5	●
.1200	12.0	12	250	203	45	185.0	●
.1300	13.0	13	265	218	45	198.5	●
.1400	14.0	14	285	233	50	212.0	●
.1500	15.0	15	305	253	50	230.5	●
.1600	16.0	16	320	268	50	244.0	●

Anwendungstechnische Hinweise Seite 428

Pilotbohrung notwendig!

Anwendung



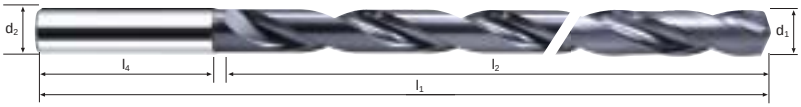
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	3.00	100	0.120	10610	1275	9.0	3.3
	4.00	100	0.120	7960	955	12.0	5.0
	5.00	100	0.120	6365	765	15.0	8.0
	6.00	100	0.150	5305	795	22.5	9.1
	8.00	100	0.150	3980	595	30.0	16.2
	10.00	100	0.200	3185	635	50.0	19.2
	12.00	100	0.200	2655	530	60.0	27.2
	14.00	100	0.240	2275	545	84.0	31.0
	16.00	100	0.240	1990	480	96.5	40.5
Stahl 500 - 850 N/mm²	3.00	75	0.115	7960	915	6.5	4.6
	4.00	75	0.115	5970	685	8.5	7.0
	5.00	75	0.115	4775	550	11.0	11.1
	6.00	75	0.145	3980	575	16.5	12.6
	8.00	75	0.145	2985	435	22.0	22.2
	10.00	75	0.190	2385	455	35.5	26.8
	12.00	75	0.190	1990	380	43.0	37.9
	14.00	75	0.230	1705	390	60.0	43.4
	16.00	75	0.230	1490	345	69.5	56.3
Stahl 850 - 1100 N/mm²	3.00	50	0.100	5305	530	3.5	7.9
	4.00	50	0.100	3980	400	5.0	12.0
	5.00	50	0.100	3185	320	6.5	19.0
	6.00	50	0.140	2655	370	10.5	19.6
	8.00	50	0.140	1990	280	14.0	34.5
	10.00	50	0.180	1590	285	22.5	42.7
	12.00	50	0.180	1325	240	27.0	60.0
	14.00	50	0.220	1135	250	38.5	67.7
	16.00	50	0.220	995	220	44.0	88.4
Stahl 1100 - 1300 N/mm²	3.00	35	0.090	3715	335	2.5	12.4
	4.00	35	0.090	2785	250	3.0	19.2
	5.00	35	0.090	2230	200	4.0	30.4
	6.00	35	0.125	1855	230	6.5	31.6
	8.00	35	0.125	1395	175	9.0	55.2
	10.00	35	0.160	1115	180	14.0	67.7
	12.00	35	0.160	930	150	17.0	96.0
	14.00	35	0.200	795	160	24.5	105.8
	16.00	35	0.200	695	140	28.0	138.9

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379]	3.00	40	0.100	4245	425	3.0	9.8
	4.00	40	0.100	3185	320	4.0	15.0
	5.00	40	0.100	2545	255	5.0	23.9
	6.00	40	0.140	2120	295	8.5	24.6
	8.00	40	0.140	1590	225	11.5	42.9
	10.00	40	0.180	1275	230	18.0	53.0
	12.00	40	0.180	1060	190	21.5	75.8
	14.00	40	0.220	910	200	31.0	84.6
	16.00	40	0.220	795	175	35.0	111.1
Gusseisen GG(G)	3.00	80	0.160	8490	1360	9.5	3.1
	4.00	80	0.160	6365	1020	13.0	4.7
	5.00	80	0.160	5095	815	16.0	7.5
	6.00	80	0.210	4245	890	25.0	8.2
	8.00	80	0.210	3185	670	33.5	14.4
	10.00	80	0.260	2545	660	52.0	18.5
	12.00	80	0.260	2120	550	62.0	26.2
	14.00	80	0.320	1820	580	89.5	29.2
	16.00	80	0.320	1590	510	102.5	38.1

Tieflochbohrer

20xd

HM
MGD²



Rm < 850	Rm 850-1100	Rm 1100-1300							GG(G)

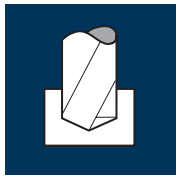
Beispiel: **Bestell-Nr.** Artikel-Nr. **B52920** ø-Code **.0300**

ø Code	d_1 h7	d_2 h6	l_1	l_2	l_4	L_{max}	DURO-D² B52920
.0300	3.0	4	110	74	32	69.5	●
.0350	3.5	4	120	86	32	81.0	●
.0400	4.0	4	120	86	32	80.0	●
.0450	4.5	5	135	98	34	91.5	●
.0500	5.0	5	145	109	34	101.5	●
.0550	5.5	6	160	120	36	112.0	●
.0600	6.0	6	170	130	36	121.0	●
.0700	7.0	7	190	150	38	139.5	●
.0800	8.0	8	215	173	40	161.0	●
.0900	9.0	9	240	196	40	182.5	●
.1000	10.0	10	260	218	40	203.0	●
.1100	11.0	11	285	238	45	221.5	●
.1200	12.0	12	305	258	45	240.0	●
.1300	13.0	13	330	283	45	263.5	●
.1400	14.0	14	355	303	50	282.0	●
.1500	15.0	15	375	323	50	300.5	●
.1600	16.0	16	400	348	50	324.0	●

Anwendungstechnische Hinweise Seite 428

Pilotbohrung notwendig!

Anwendung



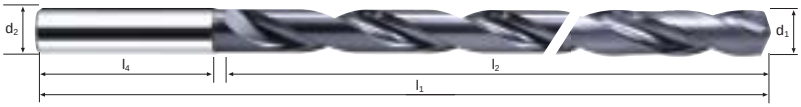
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	3.00	90	0.120	9550	1145	8.0	4.5
	4.00	90	0.120	7160	860	11.0	7.0
	5.00	90	0.120	5730	690	13.5	11.0
	6.00	90	0.150	4775	715	20.0	12.7
	8.00	90	0.150	3580	535	27.0	22.5
	9.00	90	0.200	3185	635	40.5	21.2
	10.00	90	0.200	2865	575	45.0	26.4
	12.00	90	0.200	2385	475	53.5	37.9
	14.00	90	0.240	2045	490	75.5	43.1
Stahl 500 - 850 N/mm²	3.00	70	0.115	7425	855	6.0	6.1
	4.00	70	0.115	5570	640	8.0	9.4
	5.00	70	0.115	4455	510	10.0	14.9
	6.00	70	0.145	3715	540	15.5	16.8
	8.00	70	0.145	2785	405	20.5	29.8
	9.00	70	0.190	2475	470	30.0	28.7
	10.00	70	0.190	2230	425	33.5	35.7
	12.00	70	0.190	1855	350	39.5	51.4
	14.00	70	0.230	1590	365	56.0	57.9
Stahl 850 - 1100 N/mm²	3.00	45	0.100	4775	480	3.5	10.8
	4.00	45	0.100	3580	360	4.5	16.7
	5.00	45	0.100	2865	285	5.5	26.6
	6.00	45	0.140	2385	335	9.5	27.0
	8.00	45	0.140	1790	250	12.5	48.2
	9.00	45	0.180	1590	285	18.0	47.3
	10.00	45	0.180	1430	255	20.0	59.5
	12.00	45	0.180	1195	215	24.5	83.7
	14.00	45	0.220	1025	225	34.5	93.9
Stahl 1100 - 1300 N/mm²	3.00	30	0.090	3185	285	2.0	18.2
	4.00	30	0.090	2385	215	2.5	27.9
	5.00	30	0.090	1910	170	3.5	44.6
	6.00	30	0.125	1590	200	5.5	45.3
	8.00	30	0.125	1195	150	7.5	80.4
	9.00	30	0.160	1060	170	11.0	79.2
	10.00	30	0.160	955	155	12.0	97.9
	12.00	30	0.160	795	125	14.0	144.0
	14.00	30	0.200	680	135	21.0	156.4

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379]	3.00	35	0.100	3715	370	2.5	14.0
	4.00	35	0.100	2785	280	3.5	21.4
	5.00	35	0.100	2230	225	4.5	33.7
	6.00	35	0.140	1855	260	7.5	34.8
	8.00	35	0.140	1395	195	10.0	61.8
	9.00	35	0.180	1240	225	14.5	59.9
	10.00	35	0.180	1115	200	15.5	75.9
	12.00	35	0.180	930	165	18.5	109.1
	14.00	35	0.220	795	175	27.0	120.7
Gusseisen GG(G)	3.00	70	0.160	7425	1190	8.5	4.4
	4.00	70	0.160	5570	890	11.0	6.7
	5.00	70	0.160	4455	715	14.0	10.6
	6.00	70	0.210	3715	780	22.0	11.6
	8.00	70	0.210	2785	585	29.5	20.6
	9.00	70	0.260	2475	645	41.0	20.9
	10.00	70	0.260	2230	580	45.5	26.2
	12.00	70	0.260	1855	480	54.5	37.5
	14.00	70	0.320	1590	510	78.5	41.4

Tieflochbohrer

25xd

HM MGD²



Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **GG(G)**

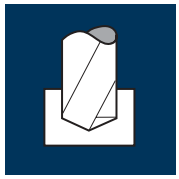
Beispiel: **Bestell-Nr.** Artikel-Nr. **B52925** ø-Code **.0300**

ø Code	d1 h7	d2 h6	l1	l2	l4	Lmax		DURO-D² B52925
.0300	3.0	4	125	91	32	86.5		●
.0350	3.5	4	140	106	32	101.0		●
.0400	4.0	4	140	106	32	100.0		●
.0450	4.5	5	155	119	34	112.5		●
.0500	5.0	5	170	134	34	126.5		●
.0550	5.5	6	185	147	36	139.0		●
.0600	6.0	6	200	160	36	151.0		●
.0700	7.0	7	225	185	38	174.5		●
.0800	8.0	8	255	213	40	201.0		●
.0900	9.0	9	280	238	40	224.5		●
.1000	10.0	10	310	268	40	253.0		●
.1100	11.0	11	340	293	45	276.5		●
.1200	12.0	12	365	318	45	300.0		●
.1300	13.0	13	390	343	45	323.5		●
.1400	14.0	14	425	373	50	352.0		●

Anwendungstechnische Hinweise Seite 428

Pilotbohrung notwendig!

Anwendung



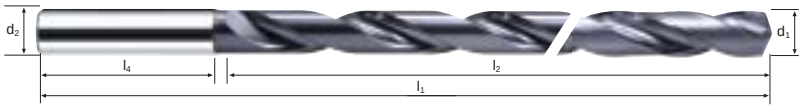
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	3.00	90	0.120	9550	1145	8.0	5.5
	4.00	90	0.120	7160	860	11.0	8.4
	5.00	90	0.120	5730	690	13.5	13.2
	6.00	90	0.150	4775	715	20.0	15.4
	7.00	90	0.150	4095	615	23.5	20.4
	8.00	90	0.150	3580	535	27.0	27.0
	9.00	90	0.200	3185	635	40.5	25.5
	10.00	90	0.200	2865	575	45.0	31.6
	12.00	90	0.200	2385	475	53.5	46.1
Stahl 500 - 850 N/mm²	3.00	70	0.115	7425	855	6.0	7.4
	4.00	70	0.115	5570	640	8.0	11.3
	5.00	70	0.115	4455	510	10.0	17.8
	6.00	70	0.145	3715	540	15.5	20.3
	7.00	70	0.145	3185	460	17.5	27.3
	8.00	70	0.145	2785	405	20.5	35.7
	9.00	70	0.190	2475	470	30.0	34.4
	10.00	70	0.190	2230	425	33.5	42.8
	12.00	70	0.190	1855	350	39.5	62.6
Stahl 850 - 1100 N/mm²	3.00	45	0.100	4775	480	3.5	13.2
	4.00	45	0.100	3580	360	4.5	20.0
	5.00	45	0.100	2865	285	5.5	31.9
	6.00	45	0.140	2385	335	9.5	32.8
	7.00	45	0.140	2045	285	11.0	44.1
	8.00	45	0.140	1790	250	12.5	57.8
	9.00	45	0.180	1590	285	18.0	56.7
	10.00	45	0.180	1430	255	20.0	71.3
	12.00	45	0.180	1195	215	24.5	101.9
Stahl 1100 - 1300 N/mm²	3.00	30	0.090	3185	285	2.0	22.2
	4.00	30	0.090	2385	215	2.5	33.5
	5.00	30	0.090	1910	170	3.5	53.5
	6.00	30	0.125	1590	200	5.5	54.9
	7.00	30	0.125	1365	170	6.5	73.9
	8.00	30	0.125	1195	150	7.5	96.4
	9.00	30	0.160	1060	170	11.0	95.1
	10.00	30	0.160	955	155	12.0	117.3
	12.00	30	0.160	795	125	14.0	175.2

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379]	3.00	35	0.100	3715	370	2.5	17.1
	4.00	35	0.100	2785	280	3.5	25.7
	5.00	35	0.100	2230	225	4.5	40.4
	6.00	35	0.140	1855	260	7.5	42.2
	7.00	35	0.140	1590	225	8.5	55.9
	8.00	35	0.140	1395	195	10.0	74.2
	9.00	35	0.180	1240	225	14.5	71.9
	10.00	35	0.180	1115	200	15.5	90.9
	12.00	35	0.180	930	165	18.5	132.7
Gusseisen GG(G)	3.00	70	0.160	7425	1190	8.5	5.3
	4.00	70	0.160	5570	890	11.0	8.1
	5.00	70	0.160	4455	715	14.0	12.7
	6.00	70	0.210	3715	780	22.0	14.1
	7.00	70	0.210	3185	670	26.0	18.8
	8.00	70	0.210	2785	585	29.5	24.7
	9.00	70	0.260	2475	645	41.0	25.1
	10.00	70	0.260	2230	580	45.5	31.3
	12.00	70	0.260	1855	480	54.5	45.6

Tieflochbohrer

30xd

HM
MGD²



Rm < 850	Rm 850-1100	Rm 1100-1300							GG(G)

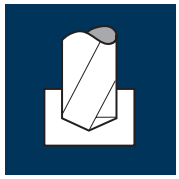
Beispiel: **Bestell-Nr.** Artikel-Nr. **B52930** ø-Code **.0300**

ø Code	d_1 h7	d_2 h6	l_1	l_2	l_4	L_{max}	DURO-D² B52930
.0300	3.0	4	145	110	32	105.5	●
.0350	3.5	4	160	126	32	121.0	●
.0400	4.0	4	160	126	32	120.0	●
.0450	4.5	5	180	144	34	137.5	●
.0500	5.0	5	195	159	34	151.5	●
.0550	5.5	6	210	172	36	164.0	●
.0600	6.0	6	230	192	36	183.0	●
.0700	7.0	7	260	220	38	209.5	●
.0800	8.0	8	295	253	40	241.0	●
.0900	9.0	9	325	283	40	269.5	●
.1000	10.0	10	360	318	40	303.0	●
.1100	11.0	11	400	353	45	336.5	●
.1200	12.0	12	430	383	45	365.0	●

Anwendungstechnische Hinweise Seite 428

Pilotbohrung notwendig!

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	0.20	100	0.004	60000	240	0.0	0.3
	0.30	100	0.006	60000	360	0.0	0.3
	0.40	100	0.008	60000	480	0.0	0.3
	0.50	100	0.010	60000	600	0.0	0.3
	0.60	100	0.012	53050	635	0.0	0.3
	0.70	100	0.014	45475	635	0.0	0.3
	0.80	100	0.016	39790	635	0.5	0.4
	0.90	100	0.018	35370	635	0.5	0.4
	1.00	100	0.020	31830	635	0.5	0.5
Stahl 500 - 850 N/mm²	0.20	80	0.004	60000	240	0.0	0.3
	0.30	80	0.007	60000	420	0.0	0.2
	0.40	80	0.009	60000	540	0.0	0.2
	0.50	80	0.011	50930	560	0.0	0.3
	0.60	80	0.013	42440	550	0.0	0.3
	0.70	80	0.016	36380	580	0.0	0.4
	0.80	80	0.018	31830	575	0.5	0.4
	0.90	80	0.020	28295	565	0.5	0.5
	1.00	80	0.022	25465	560	0.5	0.5
Stahl 850 - 1100 N/mm²	0.20	40	0.003	60000	180	0.0	0.3
	0.30	40	0.005	42440	210	0.0	0.5
	0.40	40	0.006	31830	190	0.0	0.6
	0.50	40	0.008	25465	205	0.0	0.8
	0.60	40	0.009	21220	190	0.0	0.9
	0.70	40	0.011	18190	200	0.0	1.1
	0.80	40	0.012	15915	190	0.0	1.3
	0.90	40	0.014	14145	200	0.0	1.4
	1.00	40	0.015	12730	190	0.0	1.6
Nichtrostender Stahl [Cr-Ni/1.4301]	0.20	50	0.004	60000	240	0.0	0.3
	0.30	50	0.005	53050	265	0.0	0.4
	0.40	50	0.007	39790	280	0.0	0.4
	0.50	50	0.009	31830	285	0.0	0.5
	0.60	50	0.011	26525	290	0.0	0.6
	0.70	50	0.013	22735	295	0.0	0.7
	0.80	50	0.015	19895	300	0.0	0.8
	0.90	50	0.016	17685	285	0.0	1.0
	1.00	50	0.018	15915	285	0.0	1.1

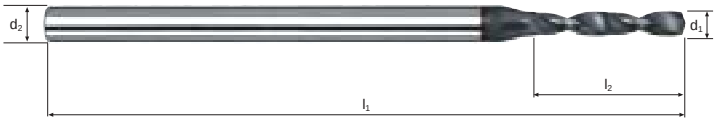
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Gusseisen GG(G)	0.20	130	0.004	60000	240	0.0	0.3
	0.30	130	0.007	60000	420	0.0	0.2
	0.40	130	0.009	60000	540	0.0	0.2
	0.50	130	0.011	60000	660	0.0	0.2
	0.60	130	0.013	60000	780	0.0	0.2
	0.70	130	0.016	59115	945	0.5	0.2
	0.80	130	0.018	51725	930	0.5	0.3
	0.90	130	0.020	45980	920	0.5	0.3
	1.00	130	0.022	41380	910	0.5	0.3
Al-Knetlegierung Si < 6%	0.20	160	0.004	60000	240	0.0	0.3
	0.30	160	0.007	60000	420	0.0	0.2
	0.40	160	0.009	60000	540	0.0	0.2
	0.50	160	0.011	60000	660	0.0	0.2
	0.60	160	0.013	60000	780	0.0	0.2
	0.70	160	0.016	60000	960	0.5	0.2
	0.80	160	0.018	60000	1080	0.5	0.2
	0.90	160	0.020	56590	1130	0.5	0.2
	1.00	160	0.022	50930	1120	1.0	0.3

Mikrobohrer Microdrill NX

5xd

HM MG10

h5

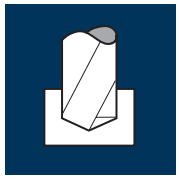


Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless		GG(G) Aluminium

Beispiel: **Bestell-Nr.** Artikel-Nr. **B57014** ø-Code **.0020**

ø Code	d_1 m7	d_2 h5	l_1	l_2	L_{max}		DURO-SD B57014
.0020	0.20	3	42	1.3	1.0		●
.0025	0.25	3	42	1.6	1.2		●
.0030	0.30	3	42	2.0	1.6		●
.0035	0.35	3	42	2.3	1.8		●
.0040	0.40	3	42	2.6	2.0		●
.0045	0.45	3	42	2.9	2.2		●
.0050	0.50	3	42	3.3	2.6		●
.0055	0.55	3	42	3.6	2.8		●
.0060	0.60	3	42	3.9	3.0		●
.0065	0.65	3	42	4.2	3.2		●
.0070	0.70	3	42	4.6	3.6		●
.0075	0.75	3	42	4.9	3.8		●
.0080	0.80	3	42	5.2	4.0		●
.0085	0.85	3	42	5.5	4.2		●
.0087	0.87	3	42	5.7	4.4		●
.0090	0.90	3	42	5.9	4.6		●
.0095	0.95	3	42	6.2	4.8		●
.0100	1.00	3	42	6.5	5.0		●
.0105	1.05	3	42	6.8	5.2		●
.0107	1.07	3	42	7.0	5.4		●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	1.10	100	0.022	28935	635	0.5	0.5
	1.20	100	0.024	26525	635	0.5	0.6
	1.30	100	0.026	24485	635	1.0	0.6
	1.40	100	0.028	22735	635	1.0	0.7
	1.50	100	0.030	21220	635	1.0	0.7
	1.60	100	0.032	19895	635	1.5	0.8
	1.70	100	0.034	18725	635	1.5	0.8
	1.80	100	0.036	17685	635	1.5	0.9
	1.90	100	0.038	16755	635	2.0	0.9
Stahl 500 - 850 N/mm²	1.10	80	0.024	23150	555	0.5	0.6
	1.20	80	0.027	21220	575	0.5	0.6
	1.30	80	0.029	19590	570	1.0	0.7
	1.40	80	0.031	18190	565	1.0	0.7
	1.50	80	0.033	16975	560	1.0	0.8
	1.60	80	0.036	15915	575	1.0	0.8
	1.70	80	0.038	14980	570	1.5	0.9
	1.80	80	0.040	14145	565	1.5	1.0
	1.90	80	0.042	13405	565	1.5	1.0
Stahl 850 - 1100 N/mm²	1.10	40	0.017	11575	195	0.0	1.7
	1.20	40	0.018	10610	190	0.0	1.9
	1.30	40	0.020	9795	195	0.5	2.0
	1.40	40	0.022	9095	200	0.5	2.1
	1.50	40	0.023	8490	195	0.5	2.3
	1.60	40	0.025	7960	200	0.5	2.4
	1.70	40	0.026	7490	195	0.5	2.6
	1.80	40	0.028	7075	200	0.5	2.7
	1.90	40	0.029	6700	195	0.5	3.0
Nichtrostender Stahl [Cr-Ni/1.4301]	1.10	30	0.017	8680	150	0.0	2.2
	1.20	30	0.018	7960	145	0.0	2.5
	1.30	30	0.020	7345	145	0.0	2.7
	1.40	30	0.022	6820	150	0.0	2.8
	1.50	30	0.023	6365	145	0.5	3.1
	1.60	30	0.025	5970	150	0.5	3.2
	1.70	30	0.026	5615	145	0.5	3.6
	1.80	30	0.028	5305	150	0.5	3.6
	1.90	30	0.029	5025	145	0.5	4.0

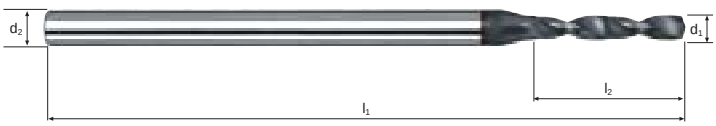
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Gusseisen GG(G)	1.10	130	0.024	37620	905	1.0	0.4
	1.20	130	0.027	34485	930	1.0	0.4
	1.30	130	0.029	31830	925	1.0	0.4
	1.40	130	0.031	29555	915	1.5	0.5
	1.50	130	0.033	27585	910	1.5	0.5
	1.60	130	0.036	25865	930	2.0	0.5
	1.70	130	0.038	24340	925	2.0	0.6
	1.80	130	0.040	22990	920	2.5	0.6
	1.90	130	0.042	21780	915	2.5	0.6
Al-Knetlegierung Si < 6%	1.10	160	0.024	46300	1110	1.0	0.3
	1.20	160	0.027	42440	1145	1.5	0.3
	1.30	160	0.029	39175	1135	1.5	0.3
	1.40	160	0.031	36380	1130	1.5	0.4
	1.50	160	0.033	33955	1120	2.0	0.4
	1.60	160	0.036	31830	1145	2.5	0.4
	1.70	160	0.038	29960	1140	2.5	0.5
	1.80	160	0.040	28295	1130	3.0	0.5
	1.90	160	0.042	26805	1125	3.0	0.5

Mikrobohrer Microdrill NX

5xd

HM MG10

h5

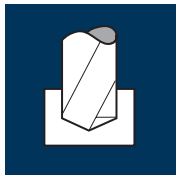


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B57014** ø-Code **.0110**

ø Code	d_1 m7	d_2 h5	l_1	l_2	L_{max}	DURO-SD B57014
.0110	1.10	3	42	7.2	5.6	●
.0115	1.15	3	42	7.5	5.8	●
.0120	1.20	3	42	7.8	6.0	●
.0125	1.25	3	42	8.1	6.2	●
.0130	1.30	3	42	8.5	6.6	●
.0135	1.35	3	42	8.8	6.8	●
.0140	1.40	3	42	9.1	7.0	●
.0142	1.42	3	42	9.2	7.1	●
.0145	1.45	3	42	9.4	7.2	●
.0150	1.50	3	42	9.8	7.6	●
.0155	1.55	3	42	10.1	7.8	●
.0160	1.60	3	42	10.4	8.0	●
.0162	1.62	3	42	10.5	8.1	●
.0165	1.65	3	42	10.7	8.2	●
.0170	1.70	3	42	11.1	8.6	●
.0175	1.75	3	42	11.4	8.8	●
.0180	1.80	3	42	11.7	9.0	●
.0185	1.85	3	50	12.0	9.2	●
.0190	1.90	3	50	12.4	9.6	●
.0195	1.95	3	50	12.7	9.8	●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	2.00	100	0.040	15915	635	2.0	0.9
	2.10	100	0.042	15160	635	2.0	1.0
	2.20	100	0.044	14470	635	2.5	1.0
	2.35	100	0.047	13545	635	3.0	1.1
	2.50	100	0.050	12730	635	3.0	1.2
	2.60	100	0.052	12245	635	3.5	1.2
	2.75	100	0.055	11575	635	4.0	1.3
	2.85	100	0.057	11170	635	4.0	1.3
	2.95	100	0.059	10790	635	4.5	1.4
Stahl 500 - 850 N/mm²	2.00	80	0.044	12730	560	2.0	1.1
	2.10	80	0.047	12125	570	2.0	1.1
	2.20	80	0.049	11575	565	2.0	1.2
	2.35	80	0.052	10835	565	2.5	1.3
	2.50	80	0.056	10185	570	3.0	1.3
	2.60	80	0.058	9795	570	3.0	1.4
	2.75	80	0.061	9260	565	3.5	1.5
	2.85	80	0.063	8935	565	3.5	1.5
	2.95	80	0.066	8630	570	4.0	1.6
Stahl 850 - 1100 N/mm²	2.00	40	0.031	6365	195	0.5	3.1
	2.10	40	0.032	6065	195	0.5	3.2
	2.20	40	0.034	5785	195	0.5	3.4
	2.35	40	0.036	5420	195	1.0	3.6
	2.50	40	0.038	5095	195	1.0	3.9
	2.60	40	0.040	4895	195	1.0	4.0
	2.75	40	0.042	4630	195	1.0	4.2
	2.85	40	0.044	4470	195	1.0	4.4
	2.95	40	0.045	4315	195	1.5	4.6
Nichtrostender Stahl [Cr-Ni/1.4301]	2.00	30	0.031	4775	150	0.5	4.0
	2.10	30	0.032	4545	145	0.5	4.3
	2.20	30	0.034	4340	150	0.5	4.4
	2.35	30	0.036	4065	145	0.5	4.9
	2.50	30	0.038	3820	145	0.5	5.2
	2.60	30	0.040	3675	145	1.0	5.4
	2.75	30	0.042	3470	145	1.0	5.7
	2.85	30	0.044	3350	145	1.0	5.9
	2.95	30	0.045	3235	145	1.0	6.1

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Gusseisen GG(G)	2.00	130	0.044	20690	910	3.0	0.7
	2.10	130	0.047	19705	925	3.0	0.7
	2.20	130	0.049	18810	920	3.5	0.7
	2.35	130	0.052	17610	915	4.0	0.8
	2.50	130	0.056	16550	925	4.5	0.8
	2.60	130	0.058	15915	925	5.0	0.8
	2.75	130	0.061	15045	920	5.5	0.9
	2.85	130	0.063	14520	915	6.0	0.9
	2.95	130	0.066	14025	925	6.5	1.0
Al-Knetlegierung Si < 6%	2.00	160	0.044	25465	1120	3.5	0.5
	2.10	160	0.047	24250	1140	4.0	0.6
	2.20	160	0.049	23150	1135	4.5	0.6
	2.35	160	0.052	21670	1125	5.0	0.6
	2.50	160	0.056	20370	1140	5.5	0.7
	2.60	160	0.058	19590	1135	6.0	0.7
	2.75	160	0.061	18520	1130	6.5	0.7
	2.85	160	0.063	17870	1125	7.0	0.8
	2.95	160	0.066	17265	1140	8.0	0.8

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HM MG10

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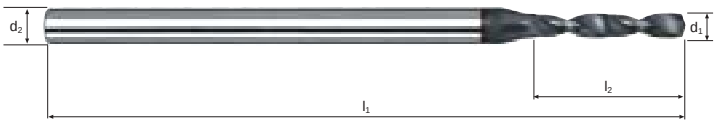
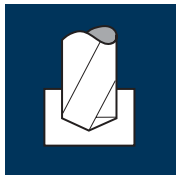


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B57014** ø-Code **.0200**

ø Code	d_1 m7	d_2 h5	l_1	l_2	L_{max}	DURO-SD B57014
.0200	2.00	3	50	13.0	10.0	●
.0205	2.05	3	50	13.3	10.2	●
.0210	2.10	3	50	13.7	10.6	●
.0215	2.15	3	50	14.0	10.8	●
.0220	2.20	3	50	14.3	11.0	●
.0225	2.25	3	50	14.6	11.2	●
.0230	2.30	3	50	15.0	11.6	●
.0235	2.35	3	50	15.3	11.8	●
.0240	2.40	3	50	15.6	12.0	●
.0245	2.45	3	50	15.9	12.2	●
.0250	2.50	3	50	16.3	12.6	●
.0255	2.55	3	50	16.6	12.8	●
.0260	2.60	3	50	16.9	13.0	●
.0265	2.65	3	50	17.2	13.2	●
.0270	2.70	3	50	17.6	13.6	●
.0275	2.75	3	50	17.9	13.8	●
.0280	2.80	3	50	18.2	14.0	●
.0285	2.85	3	50	18.5	14.2	●
.0290	2.90	3	50	18.9	14.6	●
.0295	2.95	3	50	19.2	14.8	●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	0.80	160	0.018	60000	1080	0.5	0.2
	0.90	160	0.020	56590	1130	0.5	0.2
	1.00	160	0.022	50930	1120	1.0	0.3
	1.10	160	0.024	46300	1110	1.0	0.3
	1.25	160	0.028	40745	1140	1.5	0.3
	1.40	160	0.032	36380	1165	2.0	0.4
	1.50	160	0.034	33955	1155	2.0	0.4
	1.65	160	0.039	30865	1205	2.5	0.4
	1.80	160	0.044	28295	1245	3.0	0.4
Stahl 500 - 850 N/mm²	0.80	120	0.018	47745	860	0.5	0.3
	0.90	120	0.020	42440	850	0.5	0.3
	1.00	120	0.022	38195	840	0.5	0.4
	1.10	120	0.024	34725	835	1.0	0.4
	1.25	120	0.028	30560	855	1.0	0.4
	1.40	120	0.032	27285	875	1.5	0.5
	1.50	120	0.034	25465	865	1.5	0.5
	1.65	120	0.039	23150	905	2.0	0.5
	1.80	120	0.044	21220	935	2.5	0.6
Stahl 850 - 1100 N/mm²	0.80	100	0.018	39790	715	0.5	0.3
	0.90	100	0.020	35370	705	0.5	0.4
	1.00	100	0.022	31830	700	0.5	0.4
	1.10	100	0.024	28935	695	0.5	0.5
	1.25	100	0.028	25465	715	1.0	0.5
	1.40	100	0.032	22735	730	1.0	0.6
	1.50	100	0.034	21220	720	1.5	0.6
	1.65	100	0.039	19290	750	1.5	0.7
	1.80	100	0.044	17685	780	2.0	0.7
Nichtrostender Stahl [Cr-Ni-Mo/1.4571]	0.80	70	0.014	27850	390	0.0	0.6
	0.90	70	0.016	24755	395	0.5	0.7
	1.00	70	0.018	22280	400	0.5	0.8
	1.10	70	0.020	20255	405	0.5	0.8
	1.25	70	0.023	17825	410	0.5	0.9
	1.40	70	0.026	15915	415	0.5	1.0
	1.50	70	0.029	14855	430	1.0	1.1
	1.65	70	0.032	13505	430	1.0	1.1
	1.80	70	0.036	12380	445	1.0	1.2

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Gusseisen GG(G)	0.80	200	0.021	60000	1260	0.5	0.2
	0.90	200	0.023	60000	1380	1.0	0.2
	1.00	200	0.026	60000	1560	1.0	0.2
	1.10	200	0.028	57875	1620	1.5	0.2
	1.25	200	0.033	50930	1680	2.0	0.2
	1.40	200	0.037	45475	1685	2.5	0.2
	1.50	200	0.041	42440	1740	3.0	0.3
	1.65	200	0.045	38585	1735	3.5	0.3
	1.80	200	0.050	35370	1770	4.5	0.3
Al-Knetlegierung Si < 6%	0.80	250	0.021	60000	1260	0.5	0.2
	0.90	250	0.023	60000	1380	1.0	0.2
	1.00	250	0.026	60000	1560	1.0	0.2
	1.10	250	0.028	60000	1680	1.5	0.2
	1.25	250	0.033	60000	1980	2.5	0.2
	1.40	250	0.037	56840	2105	3.0	0.2
	1.50	250	0.041	53050	2175	4.0	0.2
	1.65	250	0.045	48230	2170	4.5	0.2
	1.80	250	0.050	44210	2210	5.5	0.2

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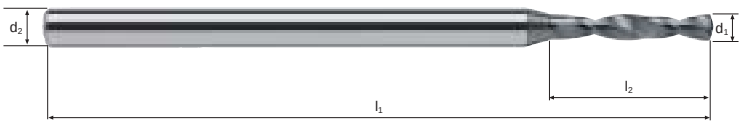
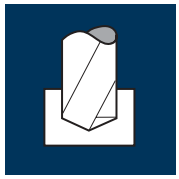


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B57015** ø-Code **.0080**

ø Code	d_1 m7	d_2 h5	l_1	l_2	L_{max}	DURO-SD B57015
.0080	0.80	3	46	5.2	4.0	●
.0085	0.85	3	46	5.5	4.2	●
.0090	0.90	3	46	5.9	4.6	●
.0095	0.95	3	46	6.2	4.8	●
.0100	1.00	3	48	6.5	5.0	●
.0105	1.05	3	48	6.8	5.2	●
.0110	1.10	3	48	7.2	5.6	●
.0115	1.15	3	48	7.5	5.8	●
.0120	1.20	3	48	7.8	6.0	●
.0125	1.25	3	48	8.1	6.2	●
.0130	1.30	3	48	8.5	6.6	●
.0135	1.35	3	48	8.8	6.8	●
.0140	1.40	3	50	9.1	7.0	●
.0145	1.45	3	50	9.4	7.2	●
.0150	1.50	3	50	9.8	7.6	●
.0155	1.55	3	50	10.1	7.8	●
.0160	1.60	3	50	10.4	8.0	●
.0165	1.65	3	50	10.7	8.2	●
.0170	1.70	3	52	11.1	8.6	●
.0175	1.75	3	52	11.4	8.8	●
.0180	1.80	3	52	11.7	9.0	●
.0185	1.85	3	52	12.0	9.2	●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	2.00	160	0.049	25465	1250	4.0	0.5
	2.10	160	0.051	24250	1235	4.5	0.5
	2.20	160	0.054	23150	1250	5.0	0.5
	2.35	160	0.059	21670	1280	5.5	0.6
	2.50	160	0.064	20370	1305	6.5	0.6
	2.60	160	0.067	19590	1315	7.0	0.6
	2.75	160	0.072	18520	1335	8.0	0.6
	2.85	160	0.075	17870	1340	8.5	0.6
	2.95	160	0.080	17265	1380	9.5	0.6
Stahl 500 - 850 N/mm²	2.00	120	0.049	19100	935	3.0	0.6
	2.10	120	0.051	18190	930	3.0	0.7
	2.20	120	0.054	17360	935	3.5	0.7
	2.35	120	0.059	16255	960	4.0	0.7
	2.50	120	0.064	15280	980	5.0	0.8
	2.60	120	0.067	14690	985	5.0	0.8
	2.75	120	0.072	13890	1000	6.0	0.8
	2.85	120	0.075	13405	1005	6.5	0.8
	2.95	120	0.080	12950	1035	7.0	0.9
Stahl 850 - 1100 N/mm²	2.00	100	0.049	15915	780	2.5	0.8
	2.10	100	0.051	15160	775	2.5	0.8
	2.20	100	0.054	14470	780	3.0	0.8
	2.35	100	0.059	13545	800	3.5	0.9
	2.50	100	0.064	12730	815	4.0	0.9
	2.60	100	0.067	12245	820	4.5	1.0
	2.75	100	0.072	11575	835	5.0	1.0
	2.85	100	0.075	11170	840	5.5	1.0
	2.95	100	0.080	10790	865	6.0	1.0
Nichtrostender Stahl [Cr-Ni-Mo/1.4571]	2.00	70	0.045	11140	500	1.5	1.2
	2.10	70	0.048	10610	510	2.0	1.2
	2.20	70	0.050	10130	505	2.0	1.3
	2.35	70	0.055	9480	520	2.5	1.4
	2.50	70	0.058	8915	515	2.5	1.5
	2.60	70	0.062	8570	530	3.0	1.5
	2.75	70	0.067	8100	545	3.0	1.5
	2.85	70	0.071	7820	555	3.5	1.5
	2.95	70	0.074	7555	560	4.0	1.6

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Gusseisen GG(G)	2.00	200	0.057	31830	1815	5.5	0.3
	2.10	200	0.060	30315	1820	6.5	0.3
	2.20	200	0.063	28935	1825	7.0	0.4
	2.35	200	0.069	27090	1870	8.0	0.4
	2.50	200	0.074	25465	1885	9.5	0.4
	2.60	200	0.079	24485	1935	10.5	0.4
	2.75	200	0.083	23150	1920	11.5	0.4
	2.85	200	0.086	22340	1920	12.0	0.4
	2.95	200	0.089	21580	1920	13.0	0.5
Al-Knetlegierung Si < 6%	2.00	250	0.057	39790	2270	7.0	0.3
	2.10	250	0.060	37895	2275	8.0	0.3
	2.20	250	0.063	36170	2280	8.5	0.3
	2.35	250	0.069	33865	2335	10.0	0.3
	2.50	250	0.074	31830	2355	11.5	0.3
	2.60	250	0.079	30605	2420	13.0	0.3
	2.75	250	0.083	28935	2400	14.5	0.3
	2.85	250	0.086	27920	2400	15.5	0.4
	2.95	250	0.089	26975	2400	16.5	0.4

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HM MG10

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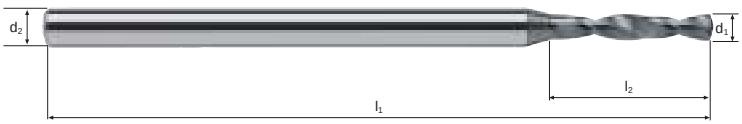
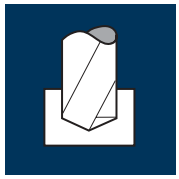


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B57015** ø-Code **.0190**

ø Code	d_1 m7	d_2 h5	l_1	l_2	L_{max}	DURO-SD B57015
.0190	1.90	3	52	12.4	9.6	●
.0195	1.95	3	52	12.7	9.8	●
.0200	2.00	3	56	13.0	10.0	●
.0205	2.05	3	56	13.3	10.2	●
.0210	2.10	3	56	13.7	10.6	●
.0215	2.15	3	56	14.0	10.8	●
.0220	2.20	3	56	14.3	11.0	●
.0225	2.25	3	56	14.6	11.2	●
.0230	2.30	3	56	15.0	11.6	●
.0235	2.35	3	56	15.3	11.8	●
.0240	2.40	3	56	15.6	12.0	●
.0245	2.45	3	56	15.9	12.2	●
.0250	2.50	3	56	16.3	12.6	●
.0255	2.55	3	60	16.6	12.8	●
.0260	2.60	3	60	16.9	13.0	●
.0265	2.65	3	60	17.2	13.2	●
.0270	2.70	3	60	17.6	13.6	●
.0275	2.75	3	60	17.9	13.8	●
.0280	2.80	3	60	18.2	14.0	●
.0285	2.85	3	60	18.5	14.2	●
.0290	2.90	3	60	18.9	14.6	●
.0295	2.95	3	60	19.2	14.8	●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	0.80	140	0.014	55705	780	0.5	0.5
	0.90	140	0.016	49515	790	0.5	0.5
	1.00	140	0.018	44565	800	0.5	0.6
	1.10	140	0.019	40510	770	0.5	0.7
	1.25	140	0.023	35650	820	1.0	0.7
	1.40	140	0.026	31830	830	1.5	0.8
	1.50	140	0.028	29710	830	1.5	0.9
	1.65	140	0.032	27010	865	2.0	0.9
	1.80	140	0.035	24755	865	2.0	1.0
Stahl 500 - 850 N/mm²	0.80	100	0.014	39790	555	0.5	0.7
	0.90	100	0.016	35370	565	0.5	0.8
	1.00	100	0.018	31830	575	0.5	0.8
	1.10	100	0.019	28935	550	0.5	1.0
	1.25	100	0.023	25465	585	0.5	1.0
	1.40	100	0.026	22735	590	1.0	1.1
	1.50	100	0.028	21220	595	1.0	1.2
	1.65	100	0.032	19290	615	1.5	1.3
	1.80	100	0.035	17685	620	1.5	1.4
Stahl 850 - 1100 N/mm²	0.80	80	0.014	31830	445	0.0	0.9
	0.90	80	0.016	28295	455	0.5	0.9
	1.00	80	0.018	25465	460	0.5	1.0
	1.10	80	0.019	23150	440	0.5	1.2
	1.25	80	0.023	20370	470	0.5	1.3
	1.40	80	0.026	18190	475	0.5	1.4
	1.50	80	0.028	16975	475	1.0	1.5
	1.65	80	0.032	15435	495	1.0	1.6
	1.80	80	0.035	14145	495	1.5	1.7
Nichtrostender Stahl [Cr-Ni-Mo/1.4571]	0.80	60	0.012	23875	285	0.0	1.3
	0.90	60	0.013	21220	275	0.0	1.6
	1.00	60	0.014	19100	265	0.0	1.8
	1.10	60	0.016	17360	280	0.5	1.9
	1.25	60	0.018	15280	275	0.5	2.2
	1.40	60	0.021	13640	285	0.5	2.4
	1.50	60	0.023	12730	295	0.5	2.4
	1.65	60	0.026	11575	300	0.5	2.6
	1.80	60	0.029	10610	310	1.0	2.8

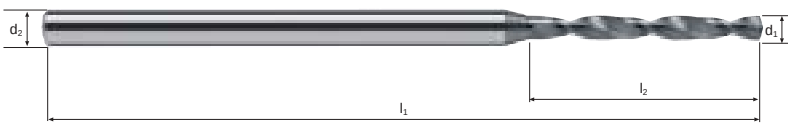
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Gusseisen GG(G)	0.80	150	0.016	59685	955	0.5	0.4
	0.90	150	0.019	53050	1010	0.5	0.4
	1.00	150	0.021	47745	1005	1.0	0.5
	1.10	150	0.023	43405	1000	1.0	0.5
	1.25	150	0.026	38195	995	1.0	0.6
	1.40	150	0.030	34105	1025	1.5	0.7
	1.50	150	0.032	31830	1020	2.0	0.7
	1.65	150	0.036	28935	1040	2.0	0.8
	1.80	150	0.040	26525	1060	2.5	0.8
Al-Knetlegierung Si < 6%	0.80	200	0.016	60000	960	0.5	0.4
	0.90	200	0.019	60000	1140	0.5	0.4
	1.00	200	0.021	60000	1260	1.0	0.4
	1.10	200	0.023	57875	1330	1.5	0.4
	1.25	200	0.026	50930	1325	1.5	0.5
	1.40	200	0.030	45475	1365	2.0	0.5
	1.50	200	0.032	42440	1360	2.5	0.5
	1.65	200	0.036	38585	1390	3.0	0.6
	1.80	200	0.040	35370	1415	3.5	0.6

Mikrobohrer Microdrill NX

8xd

HM MG10

h5

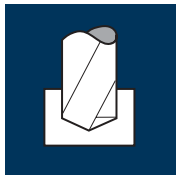


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B57020** ø-Code **.0080**

ø Code	d_1 m7	d_2 h5	l_1	l_2	L_{max}	DURO-SD B57020
.0080	0.80	3	46	7.6	6.4	●
.0085	0.85	3	46	8.1	6.8	●
.0090	0.90	3	46	8.5	7.2	●
.0095	0.95	3	46	9.0	7.6	●
.0100	1.00	3	48	9.5	8.0	●
.0105	1.05	3	48	10.0	8.4	●
.0110	1.10	3	48	10.4	8.8	●
.0115	1.15	3	48	10.9	9.2	●
.0120	1.20	3	48	11.4	9.6	●
.0125	1.25	3	48	11.9	10.0	●
.0130	1.30	3	48	12.3	10.4	●
.0135	1.35	3	48	12.8	10.8	●
.0140	1.40	3	50	13.3	11.2	●
.0145	1.45	3	50	13.8	11.6	●
.0150	1.50	3	50	14.2	12.0	●
.0155	1.55	3	50	14.7	12.4	●
.0160	1.60	3	50	15.2	12.8	●
.0165	1.65	3	50	15.7	13.2	●
.0170	1.70	3	52	16.1	13.6	●
.0175	1.75	3	52	16.6	14.0	●
.0180	1.80	3	52	17.1	14.4	●
.0185	1.85	3	52	17.6	14.8	●

Anwendung



Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Stahl < 500 N/mm²	2.00	140	0.039	22280	870	2.5	1.1
	2.10	140	0.041	21220	870	3.0	1.2
	2.20	140	0.043	20255	870	3.5	1.2
	2.35	140	0.047	18965	890	4.0	1.3
	2.50	140	0.051	17825	910	4.5	1.3
	2.60	140	0.053	17140	910	5.0	1.4
	2.75	140	0.058	16205	940	5.5	1.4
	2.85	140	0.060	15635	940	6.0	1.5
	2.95	140	0.064	15105	965	6.5	1.5
Stahl 500 - 850 N/mm²	2.00	100	0.039	15915	620	2.0	1.5
	2.10	100	0.041	15160	620	2.0	1.6
	2.20	100	0.043	14470	620	2.5	1.7
	2.35	100	0.047	13545	635	3.0	1.8
	2.50	100	0.051	12730	650	3.0	1.9
	2.60	100	0.053	12245	650	3.5	1.9
	2.75	100	0.058	11575	670	4.0	2.0
	2.85	100	0.060	11170	670	4.5	2.0
	2.95	100	0.064	10790	690	4.5	2.1
Stahl 850 - 1100 N/mm²	2.00	80	0.039	12730	495	1.5	1.9
	2.10	80	0.041	12125	495	1.5	2.0
	2.20	80	0.043	11575	500	2.0	2.1
	2.35	80	0.047	10835	510	2.0	2.2
	2.50	80	0.051	10185	520	2.5	2.3
	2.60	80	0.053	9795	520	3.0	2.4
	2.75	80	0.058	9260	535	3.0	2.5
	2.85	80	0.060	8935	535	3.5	2.6
	2.95	80	0.064	8630	550	4.0	2.6
Nichtrostender Stahl [Cr-Ni-Mo/1.4571]	2.00	60	0.036	9550	345	1.0	2.8
	2.10	60	0.038	9095	345	1.0	2.9
	2.20	60	0.040	8680	345	1.5	3.1
	2.35	60	0.044	8125	360	1.5	3.1
	2.50	60	0.047	7640	360	2.0	3.4
	2.60	60	0.050	7345	365	2.0	3.4
	2.75	60	0.054	6945	375	2.0	3.5
	2.85	60	0.057	6700	380	2.5	3.6
	2.95	60	0.059	6475	380	2.5	3.7

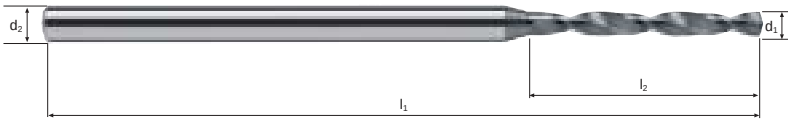
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
Gusseisen GG(G)	2.00	150	0.046	23875	1100	3.5	0.9
	2.10	150	0.048	22735	1090	4.0	0.9
	2.20	150	0.050	21705	1085	4.0	1.0
	2.35	150	0.055	20320	1120	5.0	1.0
	2.50	150	0.059	19100	1125	5.5	1.1
	2.60	150	0.063	18365	1155	6.0	1.1
	2.75	150	0.067	17360	1165	7.0	1.1
	2.85	150	0.069	16755	1155	7.5	1.2
	2.95	150	0.072	16185	1165	8.0	1.2
Al-Knetlegierung Si < 6%	2.00	200	0.046	31830	1465	4.5	0.7
	2.10	200	0.048	30315	1455	5.0	0.7
	2.20	200	0.050	28935	1445	5.5	0.7
	2.35	200	0.055	27090	1490	6.5	0.8
	2.50	200	0.059	25465	1500	7.5	0.8
	2.60	200	0.063	24485	1545	8.0	0.8
	2.75	200	0.067	23150	1550	9.0	0.9
	2.85	200	0.069	22340	1540	10.0	0.9
	2.95	200	0.072	21580	1555	10.5	0.9

Mikrobohrer Microdrill NX

8xd

HM MG10

h5

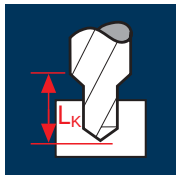


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B57020** ø-Code **.0190**

ø Code	d_1 m7	d_2 h5	l_1	l_2	L_{max}	DURO-SD B57020
.0190	1.90	3	52	18.0	15.2	●
.0195	1.95	3	52	18.5	15.6	●
.0200	2.00	3	56	19.0	16.0	●
.0205	2.05	3	56	19.5	16.4	●
.0210	2.10	3	56	20.0	16.9	●
.0215	2.15	3	56	20.4	17.2	●
.0220	2.20	3	56	20.9	17.6	●
.0225	2.25	3	56	21.4	18.0	●
.0230	2.30	3	56	21.9	18.5	●
.0235	2.35	3	56	22.3	18.8	●
.0240	2.40	3	56	22.8	19.2	●
.0245	2.45	3	56	23.3	19.6	●
.0250	2.50	3	56	23.8	20.1	●
.0255	2.55	3	60	24.2	20.4	●
.0260	2.60	3	60	24.7	20.8	●
.0265	2.65	3	60	25.2	21.2	●
.0270	2.70	3	60	25.7	21.7	●
.0275	2.75	3	60	26.1	22.0	●
.0280	2.80	3	60	26.6	22.4	●
.0285	2.85	3	60	27.1	22.8	●
.0290	2.90	3	60	27.6	23.3	●
.0295	2.95	3	60	28.0	23.6	●

Anwendung

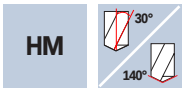


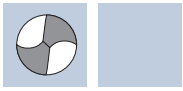
Werkstoff	d1 [mm]	für	v_c [m/min]	f [mm]	L_K [mm]	n [min⁻¹]	v_f [mm/min]	Q [cm³/min]
Stahl < 500 N/mm²	2.50	M3	110	0.045	9.6	11670	525	3.5
	3.30	M4	110	0.055	12.5	8755	480	6.0
	4.20	M5	110	0.070	14.9	7005	490	9.5
	5.00	M6	110	0.085	18.1	5835	495	14.0
	6.80	M8	110	0.115	23.0	4375	505	25.5
	8.50	M10	110	0.145	28.0	3500	505	39.5
	10.20	M12	110	0.170	33.1	2920	495	56.0
	14.00	M16	110	0.230	42.4	2190	505	101.5
Stahl 500 - 850 N/mm²	2.50	M3	80	0.045	9.6	8490	380	2.5
	3.30	M4	80	0.055	12.5	6365	350	4.5
	4.20	M5	80	0.070	14.9	5095	355	7.0
	5.00	M6	80	0.085	18.1	4245	360	10.0
	6.80	M8	80	0.115	23.0	3185	365	18.5
	8.50	M10	80	0.145	28.0	2545	370	29.0
	10.20	M12	80	0.170	33.1	2120	360	40.5
	14.00	M16	80	0.230	42.4	1590	365	73.5
Stahl 850 - 1100 N/mm²	2.50	M3	55	0.040	9.6	5835	235	1.5
	3.30	M4	55	0.050	12.5	4375	220	3.0
	4.20	M5	55	0.065	14.9	3500	230	4.5
	5.00	M6	55	0.075	18.1	2920	220	6.0
	6.80	M8	55	0.100	23.0	2190	220	11.0
	8.50	M10	55	0.125	28.0	1750	220	17.5
	10.20	M12	55	0.150	33.1	1460	220	25.0
	14.00	M16	55	0.200	42.4	1095	220	44.0
Gusseisen GG(G)	2.50	M3	160	0.080	9.6	16975	1360	9.5
	3.30	M4	160	0.105	12.5	12730	1335	17.0
	4.20	M5	160	0.130	14.9	10185	1325	26.0
	5.00	M6	160	0.160	18.1	8490	1360	38.5
	6.80	M8	160	0.210	23.0	6365	1335	67.0
	8.50	M10	160	0.265	28.0	5095	1350	106.0
	10.20	M12	160	0.315	33.1	4245	1335	151.0
	14.00	M16	160	0.420	42.4	3185	1340	269.5

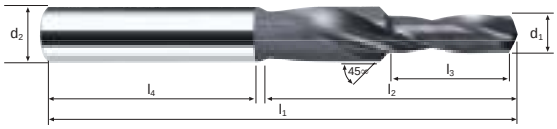
Werkstoff	d1 [mm]	für	v_c [m/min]	f [mm]	L_K [mm]	n [min⁻¹]	v_f [mm/min]	Q [cm³/min]
Al-Knetlegierung Si < 6%	2.50	M3	200	0.080	9.6	21220	1700	12.0
	3.30	M4	200	0.105	12.5	15915	1670	21.0
	4.20	M5	200	0.130	14.9	12730	1655	32.5
	5.00	M6	200	0.160	18.1	10610	1700	48.0
	6.80	M8	200	0.210	23.0	7960	1670	84.0
	8.50	M10	200	0.265	28.0	6365	1685	132.5
	10.20	M12	200	0.315	33.1	5305	1670	189.0
	14.00	M16	200	0.420	42.4	3980	1670	336.0

Stufenbohrer

3xd, für Gewindebohrerkernloch



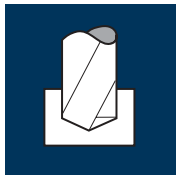




Rm < 850	Rm 850-1100	Rm 1100-1300							GG(G) Aluminium

Beispiel: **Bestell-Nr.** Artikel-Nr. **B52801** ø-Code **.0250**

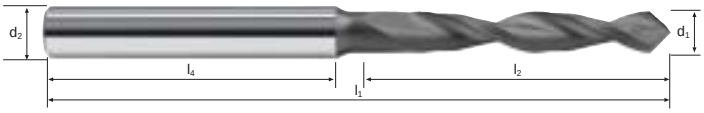
ø Code	für	d_1 m7	d_2 h6	l_1	l_2	l_3	l_4		DURO-D² B52801
.0250	M 3	2.5	6	62	20	8.8	36		●
.0330	M 4	3.3	6	62	24	11.4	36		●
.0420	M 5	4.2	6	66	28	13.6	36		●
.0500	M 6	5.0	8	79	34	16.5	36		●
.0680	M 8	6.8	10	89	47	21.0	40		●
.0850	M10	8.5	12	102	55	25.5	45		●
.1020	M12	10.2	14	107	60	30.0	45		●
.1400	M16	14.0	18	123	73	38.5	48		●

Anwendung	Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
	CFK Werkstoffe	3.00	100	0.050	10610	530	3.5	1.8
		4.00	100	0.060	7960	480	6.0	2.4
		4.83	100	0.080	6590	525	9.5	2.1
		5.00	100	0.090	6365	575	11.5	2.0
		6.00	100	0.095	5305	505	14.5	3.5
		6.35	100	0.100	5015	500	16.0	3.5

Spiralbohrer CFK

3xd

HM
XA



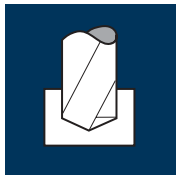
CFK

Beispiel:
Bestell-Nr. Artikel-Nr. **B52710** ø-Code **.0300**

ø Code	d_1	d_2 h6	l_1	l_2	l_4	L_{max}	DIAPLUS B52710
.0300	3.00	6	62	22	36	16.2	●
.0400	4.00	6	66	26	36	18.8	●
.0483	4.83	6	66	27	36	18.4	●
.0500	5.00	6	66	27	36	18.7	●
.0600	6.00	8	79	39	36	29.3	●
.0635	6.35	8	79	39	36	29.1	●

Weitere Ausführungen auf Anfrage

Anwendung

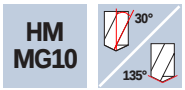


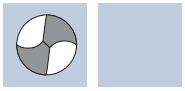
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
CFK/Ti-Werkstoffe	4.83	20	0.060	1320	80	1.5	25.7
	6.35	20	0.080	1005	80	2.5	30.8
CFK/Al-Werkstoffe	4.83	40	0.060	2635	160	3.0	12.9
	6.35	40	0.080	2005	160	5.0	15.4

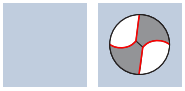
Spiralbohrer CFK/Metall-Verbund

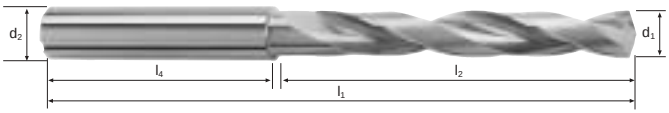
5xd

HM MG10









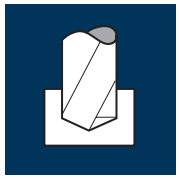
CFK/Ti | CFK/Al

Beispiel:
Bestell-Nr. Artikel-Nr. **B52724** ø-Code **.0483**

ø Code	d_1	d_2 h5	l_1	l_2	l_4	L_{max}	B52724
.0483	4.83	6	82	44	36	34.3	●
.0635	6.35	8	91	53	36	41.1	●

Weitere Ausführungen auf Anfrage

Anwendung

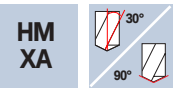


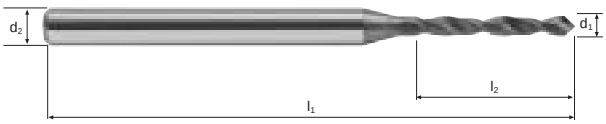
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min^{-1}]	v_f [mm/min]	Q [cm^3/min]	T [sek]
CFK Werkstoffe	**1.50**	**100**	**0.050**	**21220**	**1060**	**2.0**	**0.3**
	2.00	**100**	**0.060**	**15915**	**875**	**2.5**	**0.4**

Mikrobohrer Microdrill CFK

3xd

HM
XA





CFK

Beispiel:
Bestell-Nr. Artikel-Nr. **B57710** ø-Code **.0150**

ø Code	d_1	d_2 h5	l_1	l_2	L_{max}	DIAPLUS B57710
.0150	1.50	3	40	6.8	4.6	●
.0200	2.00	3	40	9.0	6.0	●

Weitere Ausführungen auf Anfrage

Anwendung

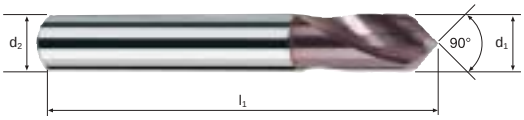
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min⁻¹]	v_f [mm/min]
Stahl < 500 N/mm²	3	160	0.070	16975	1190
	4	160	0.095	12730	1210
	5	160	0.120	10185	1220
	6	160	0.145	8490	1230
	8	160	0.190	6365	1210
	10	160	0.240	5095	1225
	12	160	0.285	4245	1210
	16	160	0.380	3185	1210
Stahl 500 - 850 N/mm²	3	120	0.070	12730	890
	4	120	0.095	9550	905
	5	120	0.120	7640	915
	6	120	0.145	6365	925
	8	120	0.190	4775	905
	10	120	0.240	3820	915
	12	120	0.285	3185	910
	16	120	0.380	2385	905
Stahl 850 - 1100 N/mm²	3	90	0.030	9550	285
	4	90	0.040	7160	285
	5	90	0.050	5730	285
	6	90	0.060	4775	285
	8	90	0.080	3580	285
	10	90	0.095	2865	270
	12	90	0.115	2385	275
	16	90	0.155	1790	275
Stahl 1100 - 1300 N/mm²	3	60	0.025	6365	160
	4	60	0.035	4775	165
	5	60	0.040	3820	155
	6	60	0.050	3185	160
	8	60	0.065	2385	155
	10	60	0.080	1910	155
	12	60	0.095	1590	150
	16	60	0.130	1195	155

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min⁻¹]	v_f [mm/min]
Stahl 1300 - 1500 N/mm²	3	30	0.025	3185	80
	4	30	0.035	2385	85
	5	30	0.040	1910	75
	6	30	0.050	1590	80
	8	30	0.065	1195	80
	10	30	0.080	955	75
	12	30	0.095	795	75
	16	30	0.130	595	75
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	3	40	0.015	4245	65
	4	40	0.020	3185	65
	5	40	0.025	2545	65
	6	40	0.030	2120	65
	8	40	0.040	1590	65
	10	40	0.045	1275	55
	12	40	0.060	1060	65
	16	40	0.075	795	60
Gusseisen GG(G)	3	180	0.075	19100	1435
	4	180	0.105	14325	1505
	5	180	0.130	11460	1490
	6	180	0.160	9550	1530
	8	180	0.210	7160	1505
	10	180	0.265	5730	1520
	12	180	0.315	4775	1505
	16	180	0.420	3580	1505
Al-Knetlegierung Si < 6%	3	220	0.075	23345	1750
	4	220	0.105	17505	1840
	5	220	0.130	14005	1820
	6	220	0.160	11670	1865
	8	220	0.210	8755	1840
	10	220	0.265	7005	1855
	12	220	0.315	5835	1840
	16	220	0.420	4375	1840

NC-Anbohrer

90°

HM
MG10



Rm < 850	**Rm** 850-1100	**Rm** 1100-1300					**Inox** Stainless		**GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B92040** ø-Code **.0300**

ø Code	d_1 h6	d_2 h6	l_1		U-4XD
					B92040
.0300	3	3	50		●
.0400	4	4	50		●
.0500	5	5	50		●
.0600	6	6	57		●
.0800	8	8	63		●
.1000	10	10	72		●
.1200	12	12	83		●
.1600	16	16	92		●

Anwendung

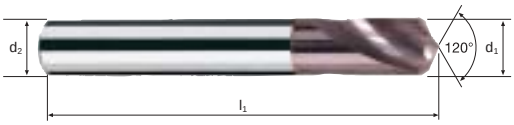
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min⁻¹]	v_f [mm/min]
Stahl < 500 N/mm²	3	160	0.070	16975	1190
	4	160	0.095	12730	1210
	5	160	0.120	10185	1220
	6	160	0.145	8490	1230
	8	160	0.190	6365	1210
	10	160	0.240	5095	1225
	12	160	0.285	4245	1210
	16	160	0.380	3185	1210
Stahl 500 - 850 N/mm²	3	120	0.070	12730	890
	4	120	0.095	9550	905
	5	120	0.120	7640	915
	6	120	0.145	6365	925
	8	120	0.190	4775	905
	10	120	0.240	3820	915
	12	120	0.285	3185	910
	16	120	0.380	2385	905
Stahl 850 - 1100 N/mm²	3	90	0.060	9550	575
	4	90	0.075	7160	535
	5	90	0.095	5730	545
	6	90	0.115	4775	550
	8	90	0.155	3580	555
	10	90	0.190	2865	545
	12	90	0.230	2385	550
	16	90	0.310	1790	555
Stahl 1100 - 1300 N/mm²	3	60	0.050	6365	320
	4	60	0.065	4775	310
	5	60	0.080	3820	305
	6	60	0.095	3185	305
	8	60	0.125	2385	300
	10	60	0.160	1910	305
	12	60	0.190	1590	300
	16	60	0.255	1195	305

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min⁻¹]	v_f [mm/min]
Stahl 1300 - 1500 N/mm²	3	30	0.050	3185	160
	4	30	0.065	2385	155
	5	30	0.080	1910	155
	6	30	0.095	1590	150
	8	30	0.125	1195	150
	10	30	0.160	955	155
	12	30	0.190	795	150
	16	30	0.255	595	150
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	3	60	0.040	6365	255
	4	60	0.055	4775	265
	5	60	0.070	3820	265
	6	60	0.080	3185	255
	8	60	0.110	2385	260
	10	60	0.135	1910	260
	12	60	0.165	1590	260
	16	60	0.220	1195	265
Gusseisen GG(G)	3	180	0.080	19100	1530
	4	180	0.105	14325	1505
	5	180	0.130	11460	1490
	6	180	0.160	9550	1530
	8	180	0.210	7160	1505
	10	180	0.265	5730	1520
	12	180	0.315	4775	1505
	16	180	0.420	3580	1505
Al-Knetlegierung Si < 6%	3	220	0.080	23345	1870
	4	220	0.105	17505	1840
	5	220	0.130	14005	1820
	6	220	0.160	11670	1865
	8	220	0.210	8755	1840
	10	220	0.265	7005	1855
	12	220	0.315	5835	1840
	16	220	0.420	4375	1840

NC-Anbohrer

120°

HM
MG10



Rm < 850	**Rm** 850-1100	**Rm** 1100-1300					**Inox** Stainless		**GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B92020** ø-Code **.0300**

					U-4XD
					B92020
ø Code	**d_1** h6	**d_2** h6	**l_1**		
.0300	3	3	50		●
.0400	4	4	50		●
.0500	5	5	50		●
.0600	6	6	57		●
.0800	8	8	63		●
.1000	10	10	72		●
.1200	12	12	83		●
.1600	16	16	92		●

Anwendung

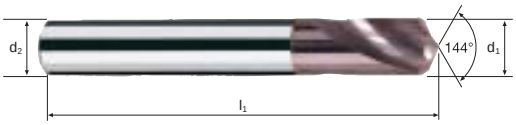
Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min⁻¹]	v_f [mm/min]
Stahl < 500 N/mm²	3	160	0.070	16975	1190
	4	160	0.095	12730	1210
	5	160	0.120	10185	1220
	6	160	0.145	8490	1230
	8	160	0.190	6365	1210
	10	160	0.240	5095	1225
	12	160	0.285	4245	1210
	16	160	0.380	3185	1210
Stahl 500 - 850 N/mm²	3	120	0.070	12730	890
	4	120	0.095	9550	905
	5	120	0.120	7640	915
	6	120	0.145	6365	925
	8	120	0.190	4775	905
	10	120	0.240	3820	915
	12	120	0.285	3185	910
	16	120	0.380	2385	905
Stahl 850 - 1100 N/mm²	3	90	0.060	9550	575
	4	90	0.075	7160	535
	5	90	0.095	5730	545
	6	90	0.115	4775	550
	8	90	0.155	3580	555
	10	90	0.190	2865	545
	12	90	0.230	2385	550
	16	90	0.310	1790	555
Stahl 1100 - 1300 N/mm²	3	60	0.050	6365	320
	4	60	0.065	4775	310
	5	60	0.080	3820	305
	6	60	0.095	3185	305
	8	60	0.125	2385	300
	10	60	0.160	1910	305
	12	60	0.190	1590	300
	16	60	0.255	1195	305

Werkstoff	d1 [mm]	v_c [m/min]	f [mm]	n [min⁻¹]	v_f [mm/min]
Stahl 1300 - 1500 N/mm²	3	30	0.050	3185	160
	4	30	0.065	2385	155
	5	30	0.080	1910	155
	6	30	0.095	1590	150
	8	30	0.125	1195	150
	10	30	0.160	955	155
	12	30	0.190	795	150
	16	30	0.255	595	150
Kaltarbeitsstahl (12% Cr) hoch legiert [1.2379] Nichtrostender Stahl [Cr-Ni/1.4301]	3	60	0.040	6365	255
	4	60	0.055	4775	265
	5	60	0.070	3820	265
	6	60	0.080	3185	255
	8	60	0.110	2385	260
	10	60	0.135	1910	260
	12	60	0.165	1590	260
	16	60	0.220	1195	265
Gusseisen GG(G)	3	180	0.080	19100	1530
	4	180	0.105	14325	1505
	5	180	0.130	11460	1490
	6	180	0.160	9550	1530
	8	180	0.210	7160	1505
	10	180	0.265	5730	1520
	12	180	0.315	4775	1505
	16	180	0.420	3580	1505
Al-Knetlegierung Si < 6%	3	220	0.080	23345	1870
	4	220	0.105	17505	1840
	5	220	0.130	14005	1820
	6	220	0.160	11670	1865
	8	220	0.210	8755	1840
	10	220	0.265	7005	1855
	12	220	0.315	5835	1840
	16	220	0.420	4375	1840

NC-Anbohrer

144°

HM
MG10



Rm < 850	**Rm** 850-1100	**Rm** 1100-1300					**Inox** Stainless		**GG(G) Aluminium**

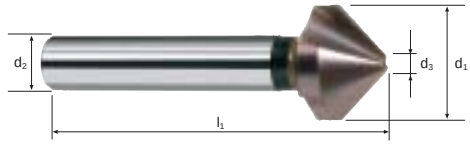
Beispiel: **Bestell-Nr.** Artikel-Nr. **B92008** ø-Code **.0300**

					U-4XD
					B92008
ø Code	**d_1** h6	**d_2** h6	**l_1**		
.0300	3	3	50		●
.0400	4	4	50		●
.0500	5	5	50		●
.0600	6	6	57		●
.0800	8	8	63		●
.1000	10	10	72		●
.1200	12	12	83		●
.1600	16	16	92		●

Kegelsenker

90°

HM



Rm < 850 | **Rm** 850-1100 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **B92360** ø-Code **.0630**

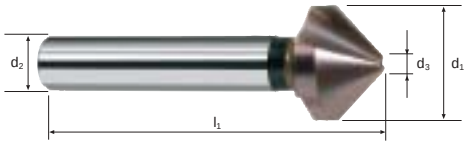
ø Code	d1 z9	d2 h9	d3	l1	z	U-4XD B92360
.0630	6.3	5	1.5	45	3	●
.0830	8.3	6	2.0	50	3	●
.1040*	10.4	6	2.5	50	3	●
.1240*	12.4	8	2.8	56	3	●
.1650*	16.5	10	3.2	60	3	●
.2050*	20.5	10	3.5	63	3	●

* Kopf Vollhartmetall, Schaft gelötet

Kegelsenker

90°

HSS

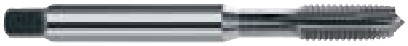
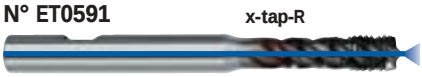


Rm < 850 | **Rm** 850-1100 | **Inox** Stainless | **GG(G) Aluminium**

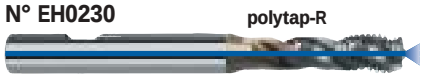
Beispiel: **Bestell-Nr.**	Artikel-Nr. **B92310**	ø-Code **.0530**					U-4XD	
							B92300	**B92310**
ø Code	**d_1** z9	**d_2** h9	**d_3**	**l_1**		**z**		
.0530	5.3	4	1.5	40		3	●	●
.0580	5.8	5	1.5	45		3	●	●
.0630	6.3	5	1.5	45		3	●	●
.0730	7.3	6	1.8	50		3	●	●
.0830	8.3	6	2.0	50		3	●	●
.0940	9.4	6	2.2	50		3	●	●
.1040	10.4	6	2.5	50		3	●	●
.1150	11.5	8	2.8	56		3	●	●
.1240	12.4	8	2.8	56		3	●	●
.1340	13.4	8	2.9	56		3	●	●
.1500	15.0	10	3.2	60		3	●	●
.1650	16.5	10	3.2	60		3	●	●
.1900	19.0	10	3.5	63		3	●	●
.2050	20.5	10	3.5	63		3	●	●
.2500	25.0	10	3.8	67		3	●	●
.3100	31.0	12	4.2	71		3	●	●
.9999	Kegelsenker-Sortiment enthaltend:						●	●
	1 Stk. ø 6.3 / 8.3 / 10.4 / 12.4 / 16.5 / 20.5							

passion
for precision
fraisa

Toleranz ISO 2 (6H)

N° EH0100 / EH0101		08	HSS PM/F		Rm <850	143
N° EH10310 / EH10311 s-tap		08	HSS-E Co5		Rm <850	145
N° EH0502 / EH0503 x-tap		11	HSS PM/F		Rm 850-1100	147
N° EH0570 / EH0571 x-tap		11	HSS PM/F		Rm 850-1100	149
N° EH0580 / EH0581 x-tap		11	HSS PM/F		Rm 850-1100	153
N° EH0590 x-tap-R		11	HSS PM/F		Rm 850-1100	155
N° EH0591 x-tap-R		11	HSS PM/F		Rm 850-1100	157
N° EH0512 / EH0513		15	HSS PM/F		Rm 1100-1500	159
N° EH0595 / EH0596 h-tap		15	HSS PM/F		Rm 1100-1500	161
N° EH6900 / EH6901 durotap H		60	HM MG10		HRC 48- >60	163
N° ET0400 / ET0401 Inotap		In	HSS PM/F		Inox Stainless	165
N° ET0570 / ET0571 x-tap		In	HSS PM/F		Inox Stainless	167
N° ET0580 / ET0581 x-tap		In	HSS PM/F		Inox Stainless	169
N° ET0590 x-tap-R		In	HSS PM/F		Inox Stainless	171
N° ET0591 x-tap-R		In	HSS PM/F		Inox Stainless	173
N° EH0600 / EH0601 c-tap		GG	HSS PM/F		GG(G) Cast iron	175

Toleranz ISO 2 (6H)

N° EH0620 / EH0621 c-tap		GG	HSS PM/F		GG(G) Cast iron		177
N° EH6500 durotap GG-R		GG	HM MG10		GG(G) Cast iron		179
N° EH6501 durotap GG-R		GG	HM MG10		GG(G) Cast iron		181
N° EH6550 / EH6551 durotap GG		GG	HM MG10		GG(G) Cast iron		183
N° EI0020 / EI0021		Al	HSS PM/F		Al Aluminium Alloy	Cu Copper	185
N° EI0050 / EI0051		Al	HSS PM/F		Al Aluminium Alloy	Cu Copper	187
N° EH6300 durotap A-R		Al	HM MG10		Al Aluminium Cast		189
N° EH6301 durotap A-R		Al	HM MG10		Al Aluminium Cast		191
N° EH6350 / EH6351 durotap A		Al	HM MG10		Al Aluminium Cast		193
N° ET0705 / ET0706 titap		Ti	HSS PM/F		Ti Titanium		195
N° ET0755 / ET0756 titap		Ti	HSS PM/F		Ti Titanium		199
N° E0598 n-tap		Ni	HSS PM/F		Ni Nickel Alloy		201
N° EH0109 polytap-R		R	HSS PM/F		Rm <850-1100	Inox Stainless	203
N° EH0110 polytap-R		R	HSS PM/F		Rm <850-1100	Inox Stainless	205
N° EH0229 polytap-R		R	HSS PM/F		Rm <850-1100	Inox Stainless	207
N° EH0230 polytap-R		R	HSS PM/F		Rm <850-1100	Inox Stainless	209

Metrisches Regelgewinde M

Toleranz ISO 2 (6H)

N° E10800 / E10801 u-tap	U	HSS-E Co5		Rm <850			211
N° E10820 / E10821 u-tap	U	HSS-E Co5		Rm <850			215
N° E10340 extra lang	U	HSS PM/F		Rm <850			219
N° E10350 extra lang	U	HSS PM/F		Rm <850			221

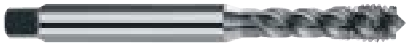
Toleranz ISO 2 (6H) LH

N° E10122 / E10123	U	HSS-E Co5		Rm <850			223
N° E10222 / E10223	U	HSS-E Co5		Rm <850			225

Toleranz ISO 2 +0.1

N° E10118 / E10119	U	HSS-E Co5		Rm <850			227
N° E10220 / E10221	U	HSS-E Co5		Rm <850			229

Toleranz ISO 3 (6G)

N° EH0504 / EH0505 x-tap	11	HSS PM/F		Rm 850-1100			231
N° EH0572 / EH0573 x-tap 	11	HSS PM/F		Rm 850-1100			233

Toleranz ISO 1 (4H)

N° E10110	U	HSS-E Co5		Rm <850			235
N° E10214	U	HSS-E Co5		Rm <850			237

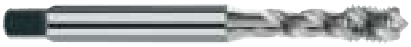
passion
for precision
fraisa

Toleranz 7G

N° E10114 / E10115

U	HSS-E Co5		Rm <850		239

N° E10218 / E10219



U	HSS-E Co5		Rm <850		241

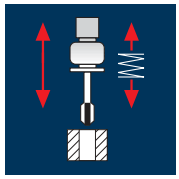
MJ Toleranz 4H

N° E0599

Ni	HSS PM/F		Ni Nickel Alloy		243

M

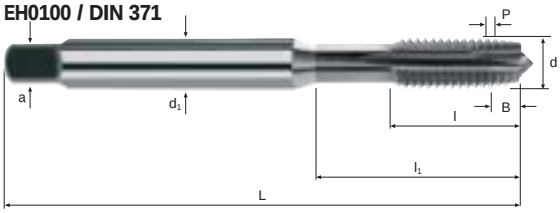
Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M 2	2.0	0.40	28	4455	1782	23	3660	1464	18	2865	1146
	M 2.5	2.5	0.45	28	3565	1604	23	2930	1319	18	2290	1031
	M 3	3.0	0.50	28	2970	1485	23	2440	1220	18	1910	955
	M 4	4.0	0.70	28	2230	1561	23	1830	1281	18	1430	1001
	M 5	5.0	0.80	28	1785	1428	23	1465	1172	18	1145	916
	M 6	6.0	1.00	28	1485	1485	23	1220	1220	18	955	955
	M 8	8.0	1.25	28	1115	1394	23	915	1144	18	715	894
	M10	10.0	1.50	28	890	1335	23	730	1095	18	575	863
	M12	12.0	1.75	28	745	1304	23	610	1068	18	475	831
Stahl < 500 N/mm²	M14	14.0	2.00	28	635	1270	23	525	1050	18	410	820
	M16	16.0	2.00	28	555	1110	23	460	920	18	360	720
	M18	18.0	2.50	28	495	1238	23	405	1013	18	320	800
	M20	20.0	2.50	28	445	1113	23	365	913	18	285	713
	M22	22.0	2.50	28	405	1013	23	335	838	18	260	650
	M24	24.0	3.00	28	370	1110	23	305	915	18	240	720
Stahl 500 - 850 N/mm²	M 2	2.0	0.40	25	3980	1592	20	3185	1274	15	2385	954
	M 2.5	2.5	0.45	25	3185	1433	20	2545	1145	15	1910	860
	M 3	3.0	0.50	25	2655	1328	20	2120	1060	15	1590	795
	M 4	4.0	0.70	25	1990	1393	20	1590	1113	15	1195	837
	M 5	5.0	0.80	25	1590	1272	20	1275	1020	15	955	764
	M 6	6.0	1.00	25	1325	1325	20	1060	1060	15	795	795
	M 8	8.0	1.25	25	995	1244	20	795	994	15	595	744
	M10	10.0	1.50	25	795	1193	20	635	953	15	475	713
	M12	12.0	1.75	25	665	1164	20	530	928	15	400	700
Stahl 500 - 850 N/mm²	M14	14.0	2.00	25	570	1140	20	455	910	15	340	680
	M16	16.0	2.00	25	495	990	20	400	800	15	300	600
	M18	18.0	2.50	25	440	1100	20	355	888	15	265	663
	M20	20.0	2.50	25	400	1000	20	320	800	15	240	600
	M22	22.0	2.50	25	360	900	20	290	725	15	215	538
	M24	24.0	3.00	25	330	990	20	265	795	15	200	600

M	ISO 2 (6H)
60°	HSS PM/F
DIN 371/376	
	X · P Form B

EH0100 / DIN 371



EH0101 / DIN 376

Rm < 850	Rm 850-1100

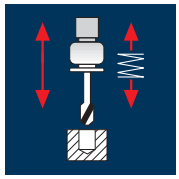
Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0100** ø-Code **.034**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH0100
.034	M 2	0.40	45	8	–	2.8	2.1	2	1.60	●
.040	M 2.5	0.45	50	9	–	2.8	2.1	2	2.05	●
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.50	●
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.30	●
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	4.20	●
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	5.00	●
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	6.80	●
.174	M10	1.50	100	22	39.0	10.0	8.0	3	8.50	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0101** ø-Code **.240**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH0101
.240	M12	1.75	110	24	40.0	9.0	7.0	3	10.20	●
.244	M14	2.00	110	26	40.0	11.0	9.0	3	12.00	●
.246	M16	2.00	110	27	40.0	12.0	9.0	3	14.00	●
.312	M18	2.50	125	30	45.0	14.0	11.0	4	15.50	●
.314	M20	2.50	140	32	50.0	16.0	12.0	4	17.50	●
.316	M22	2.50	140	32	50.0	18.0	14.5	4	19.50	●
.320	M24	3.00	160	34	60.0	18.0	14.5	4	21.00	●

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M 2	2.0	0.40	25	3980	1592	20	3185	1274	18	2865	1146
	M 2.5	2.5	0.45	25	3185	1433	20	2545	1145	18	2290	1031
	M 3	3.0	0.50	25	2655	1328	20	2120	1060	18	1910	955
	M 4	4.0	0.70	25	1990	1393	20	1590	1113	18	1430	1001
	M 5	5.0	0.80	25	1590	1272	20	1275	1020	18	1145	916
	M 6	6.0	1.00	25	1325	1325	20	1060	1060	18	955	955
	M 8	8.0	1.25	25	995	1244	20	795	994	18	715	894
	M10	10.0	1.50	25	795	1193	20	635	953	18	575	863
	M12	12.0	1.75	25	665	1164	20	530	928	18	475	831
Stahl < 500 N/mm²	M14	14.0	2.00	25	570	1140	20	455	910	18	410	820
	M16	16.0	2.00	25	495	990	20	400	800	18	360	720
	M18	18.0	2.50	25	440	1100	20	355	888	18	320	800
	M20	20.0	2.50	25	400	1000	20	320	800	18	285	713
	M22	22.0	2.50	25	360	900	20	290	725	18	260	650
	M24	24.0	3.00	25	330	990	20	265	795	18	240	720
Stahl 500 - 850 N/mm²	M 2	2.0	0.40	16	2545	1018	14	2230	892	12	1910	764
	M 2.5	2.5	0.45	16	2035	916	14	1785	803	12	1530	689
	M 3	3.0	0.50	16	1700	850	14	1485	743	12	1275	638
	M 4	4.0	0.70	16	1275	893	14	1115	781	12	955	669
	M 5	5.0	0.80	16	1020	816	14	890	712	12	765	612
	M 6	6.0	1.00	16	850	850	14	745	745	12	635	635
	M 8	8.0	1.25	16	635	794	14	555	694	12	475	594
	M10	10.0	1.50	16	510	765	14	445	668	12	380	570
	M12	12.0	1.75	16	425	744	14	370	648	12	320	560
Stahl 500 - 850 N/mm²	M14	14.0	2.00	16	365	730	14	320	640	12	275	550
	M16	16.0	2.00	16	320	640	14	280	560	12	240	480
	M18	18.0	2.50	16	285	713	14	250	625	12	210	525
	M20	20.0	2.50	16	255	638	14	225	563	12	190	475
	M22	22.0	2.50	16	230	575	14	205	513	12	175	438
	M24	24.0	3.00	16	210	630	14	185	555	12	160	480

Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Gusseisen GG(G)	M 2	2.0	0.40	14	2230	892	12	1910	764	10	1590	636
	M 2.5	2.5	0.45	14	1785	803	12	1530	689	10	1275	574
	M 3	3.0	0.50	14	1485	743	12	1275	638	10	1060	530
	M 4	4.0	0.70	14	1115	781	12	955	669	10	795	557
	M 5	5.0	0.80	14	890	712	12	765	612	10	635	508
	M 6	6.0	1.00	14	745	745	12	635	635	10	530	530
	M 8	8.0	1.25	14	555	694	12	475	594	10	400	500
	M10	10.0	1.50	14	445	668	12	380	570	10	320	480
	M12	12.0	1.75	14	370	648	12	320	560	10	265	464
Gusseisen GG(G)	M14	14.0	2.00	14	320	640	12	275	550	10	225	450
	M16	16.0	2.00	14	280	560	12	240	480	10	200	400
	M18	18.0	2.50	14	250	625	12	210	525	10	175	438
	M20	20.0	2.50	14	225	563	12	190	475	10	160	400
	M22	22.0	2.50	14	205	513	12	175	438	10	145	363
	M24	24.0	3.00	14	185	555	12	160	480	10	135	405
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2	2.0	0.40	3	475	190	2	320	128	2	320	128
	M 2.5	2.5	0.45	3	380	171	2	255	115	2	255	115
	M 3	3.0	0.50	3	320	160	2	210	105	2	210	105
	M 4	4.0	0.70	3	240	168	2	160	112	2	160	112
	M 5	5.0	0.80	3	190	152	2	125	100	2	125	100
	M 6	6.0	1.00	3	160	160	2	105	105	2	105	105
	M 8	8.0	1.25	3	120	150	2	80	100	2	80	100
	M10	10.0	1.50	3	95	143	2	65	98	2	65	98
	M12	12.0	1.75	3	80	140	2	55	96	2	55	96
Nichtrostender Stahl [Cr-Ni/1.4301]	M14	14.0	2.00	3	70	140	2	45	90	2	45	90
	M16	16.0	2.00	3	60	120	2	40	80	2	40	80
	M18	18.0	2.50	3	55	138	2	35	88	2	35	88
	M20	20.0	2.50	3	50	125	2	30	75	2	30	75
	M22	22.0	2.50	3	45	113	2	30	75	2	30	75
	M24	24.0	3.00	3	40	120	2	25	75	2	25	75

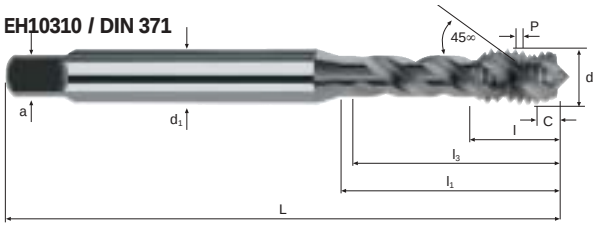
M | ISO 2 (6H)

60° | HSS-E Co5

DIN 371/376

X · P Form C

EH10310 / DIN 371



EH10311 / DIN 376

Rm < 850 | **Rm** 850-1100 | **Inox** Stainless | **GG(G)**

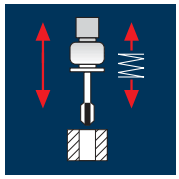
Beispiel: **Bestell-Nr.** Artikel-Nr. **EH10310** ø-Code **.034**

Ø Code	d	P	L	l	l1	l3	d1	a			TiCN EH10310
.034	M 2	0.40	45	8.0	–	10.5	2.8	2.1	3	1.60	●
.040	M 2.5	0.45	50	9.0	–	13.0	2.8	2.1	3	2.05	●
.044	M 3	0.50	56	4.0	18.0	16.0	3.5	2.7	3	2.50	●
.058	M 4	0.70	63	5.6	21.0	19.0	4.5	3.4	3	3.30	●
.084	M 5	0.80	70	6.4	25.0	23.0	6.0	4.9	3	4.20	●
.088	M 6	1.00	80	8.0	30.0	28.0	6.0	4.9	3	5.00	●
.160	M 8	1.25	90	10.0	35.0	33.0	8.0	6.2	3	6.80	●
.174	M10	1.50	100	12.0	39.0	37.0	10.0	8.0	3	8.50	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH10311** ø-Code **.240**

Ø Code	d	P	L	l	l1	l3	d1	a			TiCN EH10311
.240	M12	1.75	110	14.0	50.0	48.0	9.0	7.0	3	10.20	●
.244	M14	2.00	110	16.0	58.0	56.0	11.0	9.0	4	12.00	●
.246	M16	2.00	110	16.0	58.0	56.0	12.0	9.0	4	14.00	●
.312	M18	2.50	125	20.0	65.0	63.0	14.0	11.0	4	15.50	●
.314	M20	2.50	140	20.0	72.0	70.0	16.0	12.0	4	17.50	●
.316	M22	2.50	140	20.0	72.0	70.0	18.0	14.5	4	19.50	●
.320	M24	3.00	160	24.0	74.0	72.0	18.0	14.5	4	21.00	●

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	M 2	2.0	0.40	25	3980	1592	20	3185	1274	15	2385	954
	M 2.5	2.5	0.45	25	3185	1433	20	2545	1145	15	1910	860
	M 3	3.0	0.50	25	2655	1328	20	2120	1060	15	1590	795
	M 4	4.0	0.70	25	1990	1393	20	1590	1113	15	1195	837
	M 5	5.0	0.80	25	1590	1272	20	1275	1020	15	955	764
	M 6	6.0	1.00	25	1325	1325	20	1060	1060	15	795	795
	M 8	8.0	1.25	25	995	1244	20	795	994	15	595	744
	M10	10.0	1.50	25	795	1193	20	635	953	15	475	713
	M12	12.0	1.75	25	665	1164	20	530	928	15	400	700
Stahl 500 - 850 N/mm²	M14	14.0	2.00	25	570	1140	20	455	910	15	340	680
	M16	16.0	2.00	25	495	990	20	400	800	15	300	600
	M18	18.0	2.50	25	440	1100	20	355	888	15	265	663
	M20	20.0	2.50	25	400	1000	20	320	800	15	240	600
	M22	22.0	2.50	25	360	900	20	290	725	15	215	538
	M24	24.0	3.00	25	330	990	20	265	795	15	200	600
Stahl 850 - 1100 N/mm²	M 2	2.0	0.40	20	3185	1274	15	2385	954	12	1910	764
	M 2.5	2.5	0.45	20	2545	1145	15	1910	860	12	1530	689
	M 3	3.0	0.50	20	2120	1060	15	1590	795	12	1275	638
	M 4	4.0	0.70	20	1590	1113	15	1195	837	12	955	669
	M 5	5.0	0.80	20	1275	1020	15	955	764	12	765	612
	M 6	6.0	1.00	20	1060	1060	15	795	795	12	635	635
	M 8	8.0	1.25	20	795	994	15	595	744	12	475	594
	M10	10.0	1.50	20	635	953	15	475	713	12	380	570
	M12	12.0	1.75	20	530	928	15	400	700	12	320	560
Stahl 850 - 1100 N/mm²	M14	14.0	2.00	20	455	910	15	340	680	12	275	550
	M16	16.0	2.00	20	400	800	15	300	600	12	240	480
	M18	18.0	2.50	20	355	888	15	265	663	12	210	525
	M20	20.0	2.50	20	320	800	15	240	600	12	190	475
	M22	22.0	2.50	20	290	725	15	215	538	12	175	438
	M24	24.0	3.00	20	265	795	15	200	600	12	160	480

Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 1100 - 1300 N/mm²	M 2	2.0	0.40	7	1115	446	4	635	254
	M 2.5	2.5	0.45	7	890	401	4	510	230
	M 3	3.0	0.50	7	745	373	4	425	213
	M 4	4.0	0.70	7	555	389	4	320	224
	M 5	5.0	0.80	7	445	356	4	255	204
	M 6	6.0	1.00	7	370	370	4	210	210
	M 8	8.0	1.25	7	280	350	4	160	200
	M10	10.0	1.50	7	225	338	4	125	188
	M12	12.0	1.75	7	185	324	4	105	184
Stahl 1100 - 1300 N/mm²	M14	14.0	2.00	7	160	320	4	90	180
	M16	16.0	2.00	7	140	280	4	80	160
	M18	18.0	2.50	7	125	313	4	70	175
	M20	20.0	2.50	7	110	275	4	65	163
	M22	22.0	2.50	7	100	250	4	60	150
	M24	24.0	3.00	7	95	285	4	55	165

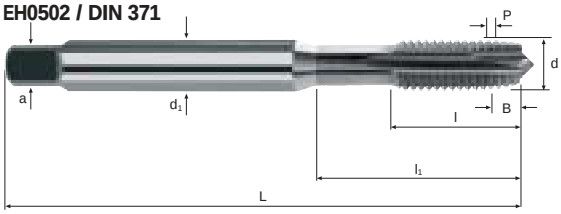
M | ISO 2 (6H)

60° | HSS PM/F

DIN 371/376

X · P Form B

EH0502 / DIN 371



EH0503 / DIN 376

Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300

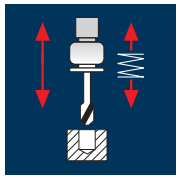
Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0502** ø-Code **.034**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH0502
.034	M 2	0.40	45	8	–	2.8	2.1	2	1.60	●
.040	M 2.5	0.45	50	9	–	2.8	2.1	2	2.05	●
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.50	●
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.30	●
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	4.20	●
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	5.00	●
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	6.80	●
.174	M10	1.50	100	22	39.0	10.0	8.0	3	8.50	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0503** ø-Code **.240**

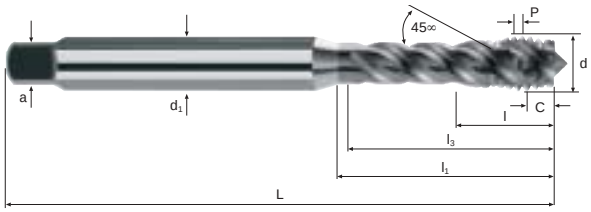
Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH0503
.240	M12	1.75	110	24	40.0	9.0	7.0	3	10.20	●
.244	M14	2.00	110	26	40.0	11.0	9.0	3	12.00	●
.246	M16	2.00	110	27	40.0	12.0	9.0	3	14.00	●
.312	M18	2.50	125	30	45.0	14.0	11.0	4	15.50	●
.314	M20	2.50	140	32	50.0	16.0	12.0	4	17.50	●
.316	M22	2.50	140	32	50.0	18.0	14.5	4	19.50	●
.320	M24	3.00	160	34	60.0	18.0	14.5	4	21.00	●

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	M 2	2.0	0.40	32	5095	2038	28	4455	1782	22	3500	1400
	M 2.5	2.5	0.45	32	4075	1834	28	3565	1604	22	2800	1260
	M 3	3.0	0.50	32	3395	1698	28	2970	1485	22	2335	1168
	M 4	4.0	0.70	32	2545	1782	28	2230	1561	22	1750	1225
	M 5	5.0	0.80	32	2035	1628	28	1785	1428	22	1400	1120
	M 6	6.0	1.00	32	1700	1700	28	1485	1485	22	1165	1165
	M 8	8.0	1.25	32	1275	1594	28	1115	1394	22	875	1094
	M10	10.0	1.50	32	1020	1530	28	890	1335	22	700	1050
Stahl 850 - 1100 N/mm²	M 2	2.0	0.40	20	3185	1274	16	2545	1018	10	1590	636
	M 2.5	2.5	0.45	20	2545	1145	16	2035	916	10	1275	574
	M 3	3.0	0.50	20	2120	1060	16	1700	850	10	1060	530
	M 4	4.0	0.70	20	1590	1113	16	1275	893	10	795	557
	M 5	5.0	0.80	20	1275	1020	16	1020	816	10	635	508
	M 6	6.0	1.00	20	1060	1060	16	850	850	10	530	530
	M 8	8.0	1.25	20	795	994	16	635	794	10	400	500
	M10	10.0	1.50	20	635	953	16	510	765	10	320	480

M	ISO 2 (6H)
60°	HSS PM/F
DIN 371	
	X · P Form C



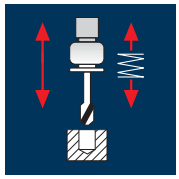
Rm < 850	Rm 850-1100								

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0570** ø-Code **.034**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			TiCN EH0570
.034	M 2	0.40	45	8	–	10.5	2.8	2.1	3	1.60	●
.040	M 2.5	0.45	50	9	–	13.0	2.8	2.1	3	2.05	●
.044	M 3	0.50	56	5	–	16.0	3.5	2.7	3	2.50	●
.058	M 4	0.70	63	7	–	19.0	4.5	3.4	3	3.30	●
.084	M 5	0.80	70	8	–	23.0	6.0	4.9	3	4.20	●
.088	M 6	1.00	80	10	–	28.0	6.0	4.9	3	5.00	●
.160	M 8	1.25	90	13	35.0	33.0	8.0	6.2	3	6.80	●
.173	M10	1.50	100	15	39.0	37.0	10.0	8.0	3	8.50	●
.174	M10	1.50	100	15	39.0	37.0	10.0	8.0	4	8.50	●

Grössere Abmessungen siehe Artikel-Nr. E0571, Seite 151

Anwendung



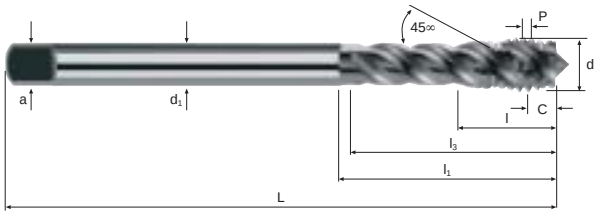
Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	M12	12.0	1.75	32	850	1488	28	745	1304	22	585	1024
	M14	14.0	2.00	32	730	1460	28	635	1270	22	500	1000
	M16	16.0	2.00	32	635	1270	28	555	1110	22	440	880
	M18	18.0	2.50	32	565	1413	28	495	1238	22	390	975
	M20	20.0	2.50	32	510	1275	28	445	1113	22	350	875
	M22	22.0	2.50	32	465	1163	28	405	1013	22	320	800
	M24	24.0	3.00	32	425	1275	28	370	1110	22	290	870
	M27	27.0	3.00	32	375	1125	28	330	990	22	260	780
	M30	30.0	3.50	32	340	1190	28	295	1033	22	235	823
Stahl 500 - 850 N/mm²	M33	33.0	3.50	32	310	1085	28	270	945	22	210	735
	M36	36.0	4.00	32	285	1140	28	250	1000	22	195	780
	M39	39.0	4.00	32	260	1040	28	230	920	22	180	720
	M42	42.0	4.50	32	245	1103	28	210	945	22	165	743
Stahl 850 - 1100 N/mm²	M12	12.0	1.75	20	530	928	16	425	744	10	265	464
	M14	14.0	2.00	20	455	910	16	365	730	10	225	450
	M16	16.0	2.00	20	400	800	16	320	640	10	200	400
	M18	18.0	2.50	20	355	888	16	285	713	10	175	438
	M20	20.0	2.50	20	320	800	16	255	638	10	160	400
	M22	22.0	2.50	20	290	725	16	230	575	10	145	363
	M24	24.0	3.00	20	265	795	16	210	630	10	135	405
	M27	27.0	3.00	20	235	705	16	190	570	10	120	360
	M30	30.0	3.50	20	210	735	16	170	595	10	105	368
Stahl 850 - 1100 N/mm²	M33	33.0	3.50	20	195	683	16	155	543	10	95	333
	M36	36.0	4.00	20	175	700	16	140	560	10	90	360
	M39	39.0	4.00	20	165	660	16	130	520	10	80	320
	M42	42.0	4.50	20	150	675	16	120	540	10	75	338

M | ISO 2 (6H)

60° | HSS PM/F

DIN 376

X - P Form C

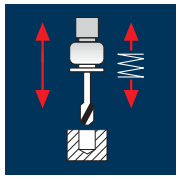


Rm < 850 | **Rm** 850-1100

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0571** ø-Code **.240**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			TiCN EH0571
.240	M12	1.75	110	18	50	48	9.0	7.0	4	10.20	●
.244	M14	2.00	110	20	58	56	11.0	9.0	4	12.00	●
.246	M16	2.00	110	20	58	56	12.0	9.0	4	14.00	●
.312	M18	2.50	125	25	65	63	14.0	11.0	4	15.50	●
.314	M20	2.50	140	25	72	70	16.0	12.0	4	17.50	●
.316	M22	2.50	140	25	72	70	18.0	14.5	5	19.50	●
.320	M24	3.00	160	30	74	72	18.0	14.5	5	21.00	●
.322	M27	3.00	160	30	84	82	20.0	16.0	5	24.00	●
.374	M30	3.50	180	35	92	90	22.0	18.0	5	26.50	●
.376	M33	3.50	180	35	100	98	25.0	20.0	6	29.50	●
.378	M36	4.00	200	40	101	99	28.0	22.0	6	32.00	●
.380	M39	4.00	200	40	101	99	32.0	24.0	6	35.00	●
.382	M42	4.50	200	45	106	104	32.0	24.0	6	37.50	●

Anwendung



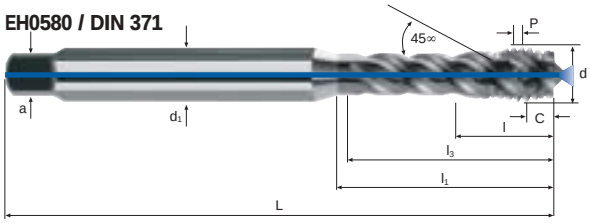
Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	M 4	4.0	0.70	32	2545	1782	28	2230	1561	22	1750	1225
	M 5	5.0	0.80	32	2035	1628	28	1785	1428	22	1400	1120
	M 6	6.0	1.00	32	1700	1700	28	1485	1485	22	1165	1165
	M 8	8.0	1.25	32	1275	1594	28	1115	1394	22	875	1094
	M10	10.0	1.50	32	1020	1530	28	890	1335	22	700	1050
	M12	12.0	1.75	32	850	1488	28	745	1304	22	585	1024
	M14	14.0	2.00	32	730	1460	28	635	1270	22	500	1000
	M16	16.0	2.00	32	635	1270	28	555	1110	22	440	880
	M18	18.0	2.50	32	565	1413	28	495	1238	22	390	975
Stahl 500 - 850 N/mm²	M20	20.0	2.50	32	510	1275	28	445	1113	22	350	875
	M22	22.0	2.50	32	465	1163	28	405	1013	22	320	800
	M24	24.0	3.00	32	425	1275	28	370	1110	22	290	870
Stahl 850 - 1100 N/mm²	M 4	4.0	0.70	20	1590	1113	16	1275	893	10	795	557
	M 5	5.0	0.80	20	1275	1020	16	1020	816	10	635	508
	M 6	6.0	1.00	20	1060	1060	16	850	850	10	530	530
	M 8	8.0	1.25	20	795	994	16	635	794	10	400	500
	M10	10.0	1.50	20	635	953	16	510	765	10	320	480
	M12	12.0	1.75	20	530	928	16	425	744	10	265	464
	M14	14.0	2.00	20	455	910	16	365	730	10	225	450
	M16	16.0	2.00	20	400	800	16	320	640	10	200	400
	M18	18.0	2.50	20	355	888	16	285	713	10	175	438
Stahl 850 - 1100 N/mm²	M20	20.0	2.50	20	320	800	16	255	638	10	160	400
	M22	22.0	2.50	20	290	725	16	230	575	10	145	363
	M24	24.0	3.00	20	265	795	16	210	630	10	135	405

Gewindebohrer x-tap

Incool

M	ISO 2 (6H)
60°	HSS PM/F
DIN 371/376	
	X · P Form C

EH0580 / DIN 371



EH0581 / DIN 376

Rm < 850	Rm 850-1100								

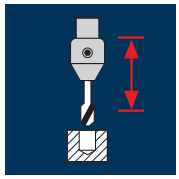
Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0580** ø-Code **.058**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			TiCN EH0580
.058	M 4	0.70	63	7	–	19	4.5	3.4	3	3.30	●
.084	M 5	0.80	70	8	–	23	6.0	4.9	3	4.20	●
.088	M 6	1.00	80	10	–	28	6.0	4.9	3	5.00	●
.160	M 8	1.25	90	13	35	33	8.0	6.2	3	6.80	●
.174	M10	1.50	100	15	39	37	10.0	8.0	4	8.50	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0581** ø-Code **.240**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			TiCN EH0581
.240	M12	1.75	110	18	50	48	9.0	7.0	4	10.20	●
.244	M14	2.00	110	20	58	56	11.0	9.0	4	12.00	●
.246	M16	2.00	110	20	58	56	12.0	9.0	4	14.00	●
.312	M18	2.50	125	25	65	63	14.0	11.0	4	15.50	●
.314	M20	2.50	140	25	72	70	16.0	12.0	4	17.50	●
.316	M22	2.50	140	25	72	70	18.0	14.5	5	19.50	●
.320	M24	3.00	160	30	74	72	18.0	14.5	5	21.00	●

Anwendung



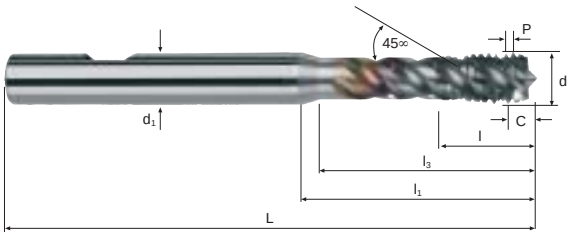
Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min^{-1}]	v_c 1.5 x d	n [min^{-1}]	v_c 2.0 x d	n [min^{-1}]
Stahl 500 - 850 N/mm^2	M 3	3.0	0.50	34	3610	30	3185	24	2545
	M 4	4.0	0.70	34	2705	30	2385	24	1910
	M 5	5.0	0.80	34	2165	30	1910	24	1530
	M 6	6.0	1.00	34	1805	30	1590	24	1275
	M 8	8.0	1.25	34	1355	30	1195	24	955
	M10	10.0	1.50	34	1080	30	955	24	765
	M12	12.0	1.75	34	900	30	795	24	635
	M14	14.0	2.00	34	775	30	680	24	545
	M16	16.0	2.00	34	675	30	595	24	475
Stahl 500 - 850 N/mm^2	M18	18.0	2.50	34	600	30	530	24	425
	M20	20.0	2.50	34	540	30	475	24	380
	M22	22.0	2.50	34	490	30	435	24	345
	M24	24.0	3.00	34	450	30	400	24	320
Stahl 850 - 1100 N/mm^2	M 3	3.0	0.50	22	2335	18	1910	12	1275
	M 4	4.0	0.70	22	1750	18	1430	12	955
	M 5	5.0	0.80	22	1400	18	1145	12	765
	M 6	6.0	1.00	22	1165	18	955	12	635
	M 8	8.0	1.25	22	875	18	715	12	475
	M10	10.0	1.50	22	700	18	575	12	380
	M12	12.0	1.75	22	585	18	475	12	320
	M14	14.0	2.00	22	500	18	410	12	275
	M16	16.0	2.00	22	440	18	360	12	240
Stahl 850 - 1100 N/mm^2	M18	18.0	2.50	22	390	18	320	12	210
	M20	20.0	2.50	22	350	18	285	12	190
	M22	22.0	2.50	22	320	18	260	12	175
	M24	24.0	3.00	22	290	18	240	12	160

M | ISO 2 (6H)

60° | HSS PM/F

DIN 1835B ISO 3338

X · P Form C

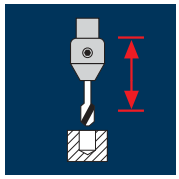


Rm < 850 | **Rm** 850-1100

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0590** ø-Code **.044**

ø Code	d	P	L	l	l1	l3	d1 h6			TiCN EH0590
.044	M 3	0.50	63	5	–	16	6	3	2.50	●
.058	M 4	0.70	66	7	–	19	6	3	3.30	●
.084	M 5	0.80	70	8	–	23	6	3	4.20	●
.088	M 6	1.00	80	10	–	28	6	3	5.00	●
.160	M 8	1.25	90	13	35	33	8	3	6.80	●
.174	M10	1.50	100	15	39	37	10	4	8.50	●
.240	M12	1.75	110	18	45	43	12	4	10.20	●
.244	M14	2.00	110	20	46	44	16	4	12.00	●
.246	M16	2.00	110	20	50	48	16	4	14.00	●
.312	M18	2.50	125	25	60	58	16	4	15.50	●
.314	M20	2.50	140	25	64	62	16	4	17.50	●
.316	M22	2.50	140	25	64	62	20	5	19.50	●
.320	M24	3.00	160	30	74	72	20	5	21.00	●

Anwendung

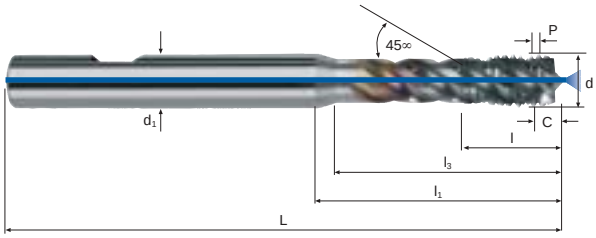


Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Stahl 500 - 850 N/mm²	M 4	4.0	0.70	28	2230	24	1910	18	1430
	M 5	5.0	0.80	28	1785	24	1530	18	1145
	M 6	6.0	1.00	28	1485	24	1275	18	955
	M 8	8.0	1.25	28	1115	24	955	18	715
	M10	10.0	1.50	28	890	24	765	18	575
	M12	12.0	1.75	28	745	24	635	18	475
	M14	14.0	2.00	28	635	24	545	18	410
	M16	16.0	2.00	28	555	24	475	18	360
	M18	18.0	2.50	28	495	24	425	18	320
Stahl 500 - 850 N/mm²	M20	20.0	2.50	28	445	24	380	18	285
	M22	22.0	2.50	28	405	24	345	18	260
	M24	24.0	3.00	28	370	24	320	18	240
Stahl 850 - 1100 N/mm²	M 4	4.0	0.70	22	1750	18	1430	12	955
	M 5	5.0	0.80	22	1400	18	1145	12	765
	M 6	6.0	1.00	22	1165	18	955	12	635
	M 8	8.0	1.25	22	875	18	715	12	475
	M10	10.0	1.50	22	700	18	575	12	380
	M12	12.0	1.75	22	585	18	475	12	320
	M14	14.0	2.00	22	500	18	410	12	275
	M16	16.0	2.00	22	440	18	360	12	240
	M18	18.0	2.50	22	390	18	320	12	210
Stahl 850 - 1100 N/mm²	M20	20.0	2.50	22	350	18	285	12	190
	M22	22.0	2.50	22	320	18	260	12	175
	M24	24.0	3.00	22	290	18	240	12	160

Gewindebohrer x-tap-R

Incool

M	ISO 2 (6H)
60°	HSS PM/F
DIN 1835B ISO 3338	
	X · P Form C

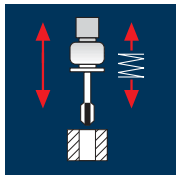


Rm < 850	Rm 850-1100								

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0591** ø-Code **.058**

ø Code	d	P	L	l	l_1	l_3	d_1 h6			TiCN EH0591
.058	M 4	0.70	66	7	–	19	6	3	3.30	●
.084	M 5	0.80	70	8	–	23	6	3	4.20	●
.088	M 6	1.00	80	10	–	28	6	3	5.00	●
.160	M 8	1.25	90	13	35	33	8	3	6.80	●
.174	M10	1.50	100	15	39	37	10	4	8.50	●
.240	M12	1.75	110	18	45	43	12	4	10.20	●
.244	M14	2.00	110	20	46	44	16	4	12.00	●
.246	M16	2.00	110	20	50	48	16	4	14.00	●
.312	M18	2.50	125	25	60	58	16	4	15.50	●
.314	M20	2.50	140	25	64	62	16	4	17.50	●
.316	M22	2.50	140	25	64	62	20	5	19.50	●
.320	M24	3.00	160	30	74	72	20	5	21.00	●

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 1100 - 1300 N/mm²	M 2	2.0	0.40	10	1590	636	8	1275	510	5	795	318
	M 2.5	2.5	0.45	10	1275	574	8	1020	459	5	635	286
	M 3	3.0	0.50	10	1060	530	8	850	425	5	530	265
	M 4	4.0	0.70	10	795	557	8	635	445	5	400	280
	M 5	5.0	0.80	10	635	508	8	510	408	5	320	256
	M 6	6.0	1.00	10	530	530	8	425	425	5	265	265
	M 8	8.0	1.25	10	400	500	8	320	400	5	200	250
	M10	10.0	1.50	10	320	480	8	255	383	5	160	240
	M12	12.0	1.75	10	265	464	8	210	368	5	135	236
Stahl 1100 - 1300 N/mm²	M14	14.0	2.00	10	225	450	8	180	360	5	115	230
	M16	16.0	2.00	10	200	400	8	160	320	5	100	200
	M18	18.0	2.50	10	175	438	8	140	350	5	90	225
	M20	20.0	2.50	10	160	400	8	125	313	5	80	200
	M22	22.0	2.50	10	145	363	8	115	288	5	70	175
	M24	24.0	3.00	10	135	405	8	105	315	5	65	195
Stahl 1300 - 1500 N/mm²	M 2	2.0	0.40	6	955	382	4	635	254	3	475	190
	M 2.5	2.5	0.45	6	765	344	4	510	230	3	380	171
	M 3	3.0	0.50	6	635	318	4	425	213	3	320	160
	M 4	4.0	0.70	6	475	333	4	320	224	3	240	168
	M 5	5.0	0.80	6	380	304	4	255	204	3	190	152
	M 6	6.0	1.00	6	320	320	4	210	210	3	160	160
	M 8	8.0	1.25	6	240	300	4	160	200	3	120	150
	M10	10.0	1.50	6	190	285	4	125	188	3	95	143
	M12	12.0	1.75	6	160	280	4	105	184	3	80	140
Stahl 1300 - 1500 N/mm²	M14	14.0	2.00	6	135	270	4	90	180	3	70	140
	M16	16.0	2.00	6	120	240	4	80	160	3	60	120
	M18	18.0	2.50	6	105	263	4	70	175	3	55	138
	M20	20.0	2.50	6	95	238	4	65	163	3	50	125
	M22	22.0	2.50	6	85	213	4	60	150	3	45	113
	M24	24.0	3.00	6	80	240	4	55	165	3	40	120

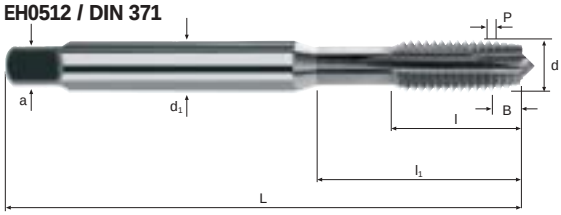
M | ISO 2 (6H)

60° | HSS PM/F

DIN 371/376

X · P Form B

EH0512 / DIN 371



EH0513 / DIN 376

Rm 1100-1300 | Rm 1300-1500

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0512** ø-Code **.034**

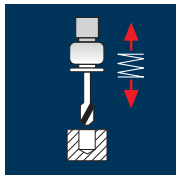
Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH0512
.034	M 2	0.40	45	8	–	2.8	2.1	2	1.70 *	●
.040	M 2.5	0.45	50	9	–	2.8	2.1	2	2.10	●
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.60 *	●
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.40	●
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	4.30	●
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	5.10	●
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	6.90	●
.174	M10	1.50	100	22	39.0	10.0	8.0	3	8.60	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0513** ø-Code **.240**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH0513
.240	M12	1.75	110	24	40.0	9.0	7.0	3	10.40	●
.244	M14	2.00	110	26	40.0	11.0	9.0	3	12.20	●
.246	M16	2.00	110	27	40.0	12.0	9.0	3	14.20	●
.312	M18	2.50	125	30	45.0	14.0	11.0	4	15.70	●
.314	M20	2.50	140	32	50.0	16.0	12.0	4	17.70	●
.316	M22	2.50	140	32	50.0	18.0	14.5	4	19.70	●
.320	M24	3.00	160	34	60.0	18.0	14.5	4	21.20	●

* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]
Stahl 1100 - 1300 N/mm²	M 3	3.0	0.50	6	635	318	5	530	265
	M 4	4.0	0.70	6	475	333	5	400	280
	M 5	5.0	0.80	6	380	304	5	320	256
	M 6	6.0	1.00	6	320	320	5	265	265
	M 8	8.0	1.25	6	240	300	5	200	250
	M10	10.0	1.50	6	190	285	5	160	240
	M12	12.0	1.75	6	160	280	5	135	236
	M14	14.0	2.00	6	135	270	5	115	230
	M16	16.0	2.00	6	120	240	5	100	200
Stahl 1100 - 1300 N/mm²	M18	18.0	2.50	6	105	263	5	90	225
	M20	20.0	2.50	6	95	238	5	80	200
	M22	22.0	2.50	6	85	213	5	70	175
	M24	24.0	3.00	6	80	240	5	65	195
Stahl 1300 - 1500 N/mm²	M 3	3.0	0.50	5	530	265	4	425	213
	M 4	4.0	0.70	5	400	280	4	320	224
	M 5	5.0	0.80	5	320	256	4	255	204
	M 6	6.0	1.00	5	265	265	4	210	210
	M 8	8.0	1.25	5	200	250	4	160	200
	M10	10.0	1.50	5	160	240	4	125	188
	M12	12.0	1.75	5	135	236	4	105	184
	M14	14.0	2.00	5	115	230	4	90	180
	M16	16.0	2.00	5	100	200	4	80	160
Stahl 1300 - 1500 N/mm²	M18	18.0	2.50	5	90	225	4	70	175
	M20	20.0	2.50	5	80	200	4	65	163
	M22	22.0	2.50	5	70	175	4	60	150
	M24	24.0	3.00	5	65	195	4	55	165

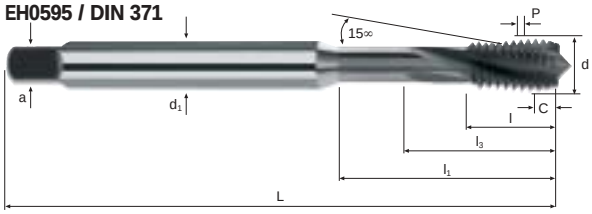
M | ISO 2 (6H)

60° | HSS PM/F

DIN 371/376

X · P Form C

EH0595 / DIN 371



EH0596 / DIN 376

Rm 1100-1300 | Rm 1300-1500

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0595** ø-Code **.044**

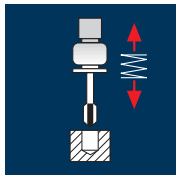
Ø Code	d	P	L	l	l_1	l_3	d_1	a			TiCN EH0595
.044	M 3	0.50	56	5	18	16	3.5	2.7	3	2.60 *	●
.058	M 4	0.70	63	7	21	19	4.5	3.4	3	3.40	●
.084	M 5	0.80	70	8	25	23	6.0	4.9	3	4.30	●
.088	M 6	1.00	80	10	30	28	6.0	4.9	3	5.10	●
.160	M 8	1.25	90	13	35	33	8.0	6.2	3	6.90	●
.174	M10	1.50	100	15	39	37	10.0	8.0	4	8.60	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0596** ø-Code **.240**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			TiCN EH0596
.240	M12	1.75	110	18	50	48	9.0	7.0	4	10.40	●
.244	M14	2.00	110	20	58	56	11.0	9.0	4	12.20	●
.246	M16	2.00	110	20	58	56	12.0	9.0	4	14.20	●
.312	M18	2.50	125	25	65	63	14.0	11.0	4	15.70	●
.314	M20	2.50	140	25	72	70	16.0	12.0	4	17.70	●
.316	M22	2.50	140	25	72	70	18.0	14.5	4	19.70	●
.320	M24	3.00	160	30	74	72	18.0	14.5	5	21.20	●

* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff

Werkzeugstahl gehärtet 48 - 52 HRC

M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
M 4	4.0	0.70	8	635	445	6	475	333	4	320	224
M 5	5.0	0.80	8	510	408	6	380	304	4	255	204
M 6	6.0	1.00	8	425	425	6	320	320	4	210	210
M 8	8.0	1.25	8	320	400	6	240	300	4	160	200
M10	10.0	1.50	8	255	383	6	190	285	4	125	188
M12	12.0	1.75	8	210	368	6	160	280	4	105	184
M14	14.0	2.00	8	180	360	6	135	270	4	90	180
M16	16.0	2.00	8	160	320	6	120	240	4	80	160

Werkzeugstahl gehärtet 52 - 56 HRC

M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
M 4	4.0	0.70	6	475	333	4	320	224	3	240	168
M 5	5.0	0.80	6	380	304	4	255	204	3	190	152
M 6	6.0	1.00	6	320	320	4	210	210	3	160	160
M 8	8.0	1.25	6	240	300	4	160	200	3	120	150
M10	10.0	1.50	6	190	285	4	125	188	3	95	143
M12	12.0	1.75	6	160	280	4	105	184	3	80	140
M14	14.0	2.00	6	135	270	4	90	180	3	70	140
M16	16.0	2.00	6	120	240	4	80	160	3	60	120

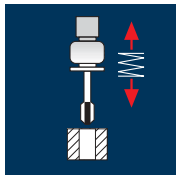
Werkzeugstahl gehärtet 56 - 60 HRC

M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
M 4	4.0	0.70	4	320	224	2	160	112			
M 5	5.0	0.80	4	255	204	2	125	100			
M 6	6.0	1.00	4	210	210	2	105	105			
M 8	8.0	1.25	4	160	200	2	80	100			
M10	10.0	1.50	4	125	188	2	65	98			
M12	12.0	1.75	4	105	184	2	55	96			
M14	14.0	2.00	4	90	180	2	45	90			
M16	16.0	2.00	4	80	160	2	40	80			

Werkzeugstahl gehärtet > 60 HRC

M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
M 4	4.0	0.70	2	160	112	1.5	120	84			
M 5	5.0	0.80	2	125	100	1.5	95	76			
M 6	6.0	1.00	2	105	105	1.5	80	80			
M 8	8.0	1.25	2	80	100	1.5	60	75			
M10	10.0	1.50	2	65	98	1.5	50	75			
M12	12.0	1.75	2	55	96	1.5	40	70			
M14	14.0	2.00	2	45	90	1.5	35	70			
M16	16.0	2.00	2	40	80	1.5	30	60			

Anwendung



Werkstoff

Werkzeugstahl gehärtet 48 - 52 HRC

M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
M 4	4.0	0.70	8	635	445	6	475	333	4	320	224
M 5	5.0	0.80	8	510	408	6	380	304	4	255	204
M 6	6.0	1.00	8	425	425	6	320	320	4	210	210
M 8	8.0	1.25	8	320	400	6	240	300	4	160	200
M10	10.0	1.50	8	255	383	6	190	285	4	125	188
M12	12.0	1.75	8	210	368	6	160	280	4	105	184
M14	14.0	2.00	8	180	360	6	135	270	4	90	180
M16	16.0	2.00	8	160	320	6	120	240	4	80	160

Werkzeugstahl gehärtet 52 - 56 HRC

M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
M 4	4.0	0.70	6	475	333	4	320	224	3	240	168
M 5	5.0	0.80	6	380	304	4	255	204	3	190	152
M 6	6.0	1.00	6	320	320	4	210	210	3	160	160
M 8	8.0	1.25	6	240	300	4	160	200	3	120	150
M10	10.0	1.50	6	190	285	4	125	188	3	95	143
M12	12.0	1.75	6	160	280	4	105	184	3	80	140
M14	14.0	2.00	6	135	270	4	90	180	3	70	140
M16	16.0	2.00	6	120	240	4	80	160	3	60	120

Werkzeugstahl gehärtet 56 - 60 HRC

M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
M 4	4.0	0.70	4	320	224	2	160	112			
M 5	5.0	0.80	4	255	204	2	125	100			
M 6	6.0	1.00	4	210	210	2	105	105			
M 8	8.0	1.25	4	160	200	2	80	100			
M10	10.0	1.50	4	125	188	2	65	98			
M12	12.0	1.75	4	105	184	2	55	96			
M14	14.0	2.00	4	90	180	2	45	90			
M16	16.0	2.00	4	80	160	2	40	80			

Werkzeugstahl gehärtet > 60 HRC

M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
M 4	4.0	0.70	2	160	112	1.5	120	84			
M 5	5.0	0.80	2	125	100	1.5	95	76			
M 6	6.0	1.00	2	105	105	1.5	80	80			
M 8	8.0	1.25	2	80	100	1.5	60	75			
M10	10.0	1.50	2	65	98	1.5	50	75			
M12	12.0	1.75	2	55	96	1.5	40	70			
M14	14.0	2.00	2	45	90	1.5	35	70			
M16	16.0	2.00	2	40	80	1.5	30	60			

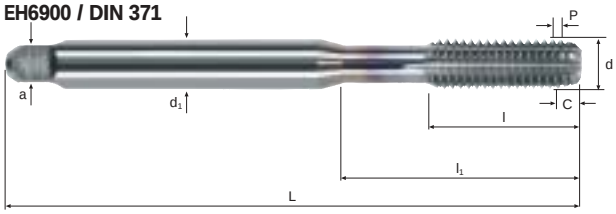
Gewindebohrer durotap H

60

M

M	ISO 2 (6H)
60°	HM MG10
DIN 371/376	
	X · P Form C

EH6900 / DIN 371



EH6901 / DIN 376

HRC 48-56 | HRC 56-60 | HRC > 60

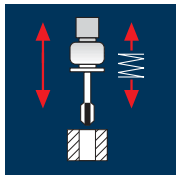
Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6900** ø-Code **.058**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH6900
.058	M 4	0.70	63	13	21	4.5	3.4	4	3.40	●
.084	M 5	0.80	70	15	25	6.0	4.9	4	4.30	●
.088	M 6	1.00	80	17	30	6.0	4.9	4	5.10	●
.160	M 8	1.25	90	20	35	8.0	6.2	5	6.90	●
.174	M10	1.50	100	22	39	10.0	8.0	5	8.60	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6901** ø-Code **.240**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH6901
.240	M12	1.75	110	24	40	9.0	7.0	5	10.40	●
.244	M14	2.00	110	26	40	11.0	9.0	5	12.20	●
.246	M16	2.00	110	27	40	12.0	9.0	5	14.20	●

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch	M 2	2.0	0.40	12	1910	764	10	1590	636	8	1275	510
	M 2.5	2.5	0.45	12	1530	689	10	1275	574	8	1020	459
	M 3	3.0	0.50	12	1275	638	10	1060	530	8	850	425
	M 4	4.0	0.70	12	955	669	10	795	557	8	635	445
	M 5	5.0	0.80	12	765	612	10	635	508	8	510	408
	M 6	6.0	1.00	12	635	635	10	530	530	8	425	425
	M 8	8.0	1.25	12	475	594	10	400	500	8	320	400
	M10	10.0	1.50	12	380	570	10	320	480	8	255	383
	M12	12.0	1.75	12	320	560	10	265	464	8	210	368
Nichtrostender Stahl ferritisch/martensitisch	M14	14.0	2.00	12	275	550	10	225	450	8	180	360
	M16	16.0	2.00	12	240	480	10	200	400	8	160	320
	M18	18.0	2.50	12	210	525	10	175	438	8	140	350
	M20	20.0	2.50	12	190	475	10	160	400	8	125	313
	M22	22.0	2.50	12	175	438	10	145	363	8	115	288
	M24	24.0	3.00	12	160	480	10	135	405	8	105	315
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2	2.0	0.40	7	1115	446	5	795	318	4	635	254
	M 2.5	2.5	0.45	7	890	401	5	635	286	4	510	230
	M 3	3.0	0.50	7	745	373	5	530	265	4	425	213
	M 4	4.0	0.70	7	555	389	5	400	280	4	320	224
	M 5	5.0	0.80	7	445	356	5	320	256	4	255	204
	M 6	6.0	1.00	7	370	370	5	265	265	4	210	210
	M 8	8.0	1.25	7	280	350	5	200	250	4	160	200
	M10	10.0	1.50	7	225	338	5	160	240	4	125	188
	M12	12.0	1.75	7	185	324	5	135	236	4	105	184
Nichtrostender Stahl [Cr-Ni/1.4301]	M14	14.0	2.00	7	160	320	5	115	230	4	90	180
	M16	16.0	2.00	7	140	280	5	100	200	4	80	160
	M18	18.0	2.50	7	125	313	5	90	225	4	70	175
	M20	20.0	2.50	7	110	275	5	80	200	4	65	163
	M22	22.0	2.50	7	100	250	5	70	175	4	60	150
	M24	24.0	3.00	7	95	285	5	65	195	4	55	165

Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M 2	2.0	0.40	8	1275	510	6	955	382	5	795	318
	M 2.5	2.5	0.45	8	1020	459	6	765	344	5	635	286
	M 3	3.0	0.50	8	850	425	6	635	318	5	530	265
	M 4	4.0	0.70	8	635	445	6	475	333	5	400	280
	M 5	5.0	0.80	8	510	408	6	380	304	5	320	256
	M 6	6.0	1.00	8	425	425	6	320	320	5	265	265
	M 8	8.0	1.25	8	320	400	6	240	300	5	200	250
	M10	10.0	1.50	8	255	383	6	190	285	5	160	240
	M12	12.0	1.75	8	210	368	6	160	280	5	135	236
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M14	14.0	2.00	8	180	360	6	135	270	5	115	230
	M16	16.0	2.00	8	160	320	6	120	240	5	100	200
	M18	18.0	2.50	8	140	350	6	105	263	5	90	225
	M20	20.0	2.50	8	125	313	6	95	238	5	80	200
	M22	22.0	2.50	8	115	288	6	85	213	5	70	175
	M24	24.0	3.00	8	105	315	6	80	240	5	65	195
Hitzebeständiger Stahl [17-4 PH]	M 2	2.0	0.40	5	795	318	4	635	254	3	475	190
	M 2.5	2.5	0.45	5	635	286	4	510	230	3	380	171
	M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
	M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
	M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
	M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
	M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
	M10	10.0	1.50	5	160	240	4	125	188	3	95	143
	M12	12.0	1.75	5	135	236	4	105	184	3	80	140
Hitzebeständiger Stahl [17-4 PH]	M14	14.0	2.00	5	115	230	4	90	180	3	70	140
	M16	16.0	2.00	5	100	200	4	80	160	3	60	120
	M18	18.0	2.50	5	90	225	4	70	175	3	55	138
	M20	20.0	2.50	5	80	200	4	65	163	3	50	125
	M22	22.0	2.50	5	70	175	4	60	150	3	45	113
	M24	24.0	3.00	5	65	195	4	55	165	3	40	120

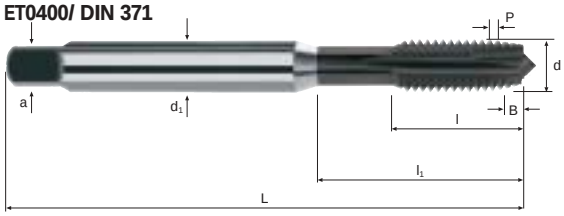
Gewindebohrer Inotap

In

M

M	ISO 2 (6H)
60°	HSS PM/F
DIN 371/376	
	X · P Form B

ET0400/ DIN 371



ET0401/ DIN 376

Inox Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET0400** ø-Code **.034**

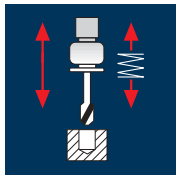
Ø Code	d	P	L	l	l_1	d_1	a			TRIBO ET0400
.034	M 2	0.40	45	8	–	2.8	2.1	2	1.70 *	●
.040	M 2.5	0.45	50	9	–	2.8	2.1	2	2.10	●
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.60 *	●
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.40	●
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	4.30	●
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	5.10	●
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	6.90	●
.174	M10	1.50	100	22	39.0	10.0	8.0	3	8.60	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET0401** ø-Code **.240**

Ø Code	d	P	L	l	l_1	d_1	a			TRIBO ET0401
.240	M12	1.75	110	24	40.0	9.0	7.0	3	10.40	●
.244	M14	2.00	110	26	40.0	11.0	9.0	3	12.20	●
.246	M16	2.00	110	27	40.0	12.0	9.0	3	14.20	●
.312	M18	2.50	125	30	45.0	14.0	11.0	4	15.70	●
.314	M20	2.50	140	32	50.0	16.0	12.0	4	17.70	●
.316	M22	2.50	140	32	50.0	18.0	14.5	4	19.70	●
.320	M24	3.00	160	34	60.0	18.0	14.5	4	21.20	●

* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch	M 2	2.0	0.40	10	1590	636	8	1275	510	6	955	382
	M 2.5	2.5	0.45	10	1275	574	8	1020	459	6	765	344
	M 3	3.0	0.50	10	1060	530	8	850	425	6	635	318
	M 4	4.0	0.70	10	795	557	8	635	445	6	475	333
	M 5	5.0	0.80	10	635	508	8	510	408	6	380	304
	M 6	6.0	1.00	10	530	530	8	425	425	6	320	320
	M 8	8.0	1.25	10	400	500	8	320	400	6	240	300
	M10	10.0	1.50	10	320	480	8	255	383	6	190	285
	M12	12.0	1.75	10	265	464	8	210	368	6	160	280
Nichtrostender Stahl ferritisch/martensitisch	M14	14.0	2.00	10	225	450	8	180	360	6	135	270
	M16	16.0	2.00	10	200	400	8	160	320	6	120	240
	M18	18.0	2.50	10	175	438	8	140	350	6	105	263
	M20	20.0	2.50	10	160	400	8	125	313	6	95	238
	M22	22.0	2.50	10	145	363	8	115	288	6	85	213
	M24	24.0	3.00	10	135	405	8	105	315	6	80	240
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2	2.0	0.40	5	795	318	4	635	254	3	475	190
	M 2.5	2.5	0.45	5	635	286	4	510	230	3	380	171
	M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
	M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
	M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
	M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
	M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
	M10	10.0	1.50	5	160	240	4	125	188	3	95	143
	M12	12.0	1.75	5	135	236	4	105	184	3	80	140
Nichtrostender Stahl [Cr-Ni/1.4301]	M14	14.0	2.00	5	115	230	4	90	180	3	70	140
	M16	16.0	2.00	5	100	200	4	80	160	3	60	120
	M18	18.0	2.50	5	90	225	4	70	175	3	55	138
	M20	20.0	2.50	5	80	200	4	65	163	3	50	125
	M22	22.0	2.50	5	70	175	4	60	150	3	45	113
	M24	24.0	3.00	5	65	195	4	55	165	3	40	120

Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M 2	2.0	0.40	6	955	382	5	795	318	4	635	254
	M 2.5	2.5	0.45	6	765	344	5	635	286	4	510	230
	M 3	3.0	0.50	6	635	318	5	530	265	4	425	213
	M 4	4.0	0.70	6	475	333	5	400	280	4	320	224
	M 5	5.0	0.80	6	380	304	5	320	256	4	255	204
	M 6	6.0	1.00	6	320	320	5	265	265	4	210	210
	M 8	8.0	1.25	6	240	300	5	200	250	4	160	200
	M10	10.0	1.50	6	190	285	5	160	240	4	125	188
	M12	12.0	1.75	6	160	280	5	135	236	4	105	184
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M14	14.0	2.00	6	135	270	5	115	230	4	90	180
	M16	16.0	2.00	6	120	240	5	100	200	4	80	160
	M18	18.0	2.50	6	105	263	5	90	225	4	70	175
	M20	20.0	2.50	6	95	238	5	80	200	4	65	163
	M22	22.0	2.50	6	85	213	5	70	175	4	60	150
	M24	24.0	3.00	6	80	240	5	65	195	4	55	165
Hitzebeständiger Stahl [17-4 PH]	M 2	2.0	0.40	4	635	254	3	475	190			
	M 2.5	2.5	0.45	4	510	230	3	380	171			
	M 3	3.0	0.50	4	425	213	3	320	160			
	M 4	4.0	0.70	4	320	224	3	240	168			
	M 5	5.0	0.80	4	255	204	3	190	152			
	M 6	6.0	1.00	4	210	210	3	160	160			
	M 8	8.0	1.25	4	160	200	3	120	150			
	M10	10.0	1.50	4	125	188	3	95	143			
	M12	12.0	1.75	4	105	184	3	80	140			
Hitzebeständiger Stahl [17-4 PH]	M14	14.0	2.00	4	90	180	3	70	140			
	M16	16.0	2.00	4	80	160	3	60	120			
	M18	18.0	2.50	4	70	175	3	55	138			
	M20	20.0	2.50	4	65	163	3	50	125			
	M22	22.0	2.50	4	60	150	3	45	113			
	M24	24.0	3.00	4	55	165	3	40	120			

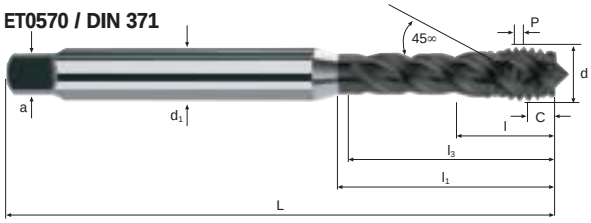
Gewindebohrer x-tap

In

M

M	ISO 2 (6H)
60°	HSS PM/F
DIN 371/376	
	X · P Form C

ET0570 / DIN 371



ET0571 / DIN 376

Inox Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET0570** ø-Code **.034**

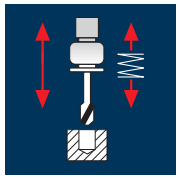
Ø Code	d	P	L	l	l_1	l_3	d_1	a			TRIBO ET0570
.034	M 2	0.40	45	8	–	10.5	2.8	2.1	3	1.70 *	●
.040	M 2.5	0.45	50	9	–	13.0	2.8	2.1	3	2.10	●
.044	M 3	0.50	56	5	–	16.0	3.5	2.7	3	2.60 *	●
.058	M 4	0.70	63	7	–	19.0	4.5	3.4	3	3.40	●
.084	M 5	0.80	70	8	–	23.0	6.0	4.9	3	4.30	●
.088	M 6	1.00	80	10	–	28.0	6.0	4.9	3	5.10	●
.160	M 8	1.25	90	13	35.0	33.0	8.0	6.2	3	6.90	●
.174	M10	1.50	100	15	39.0	37.0	10.0	8.0	4	8.60	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET0571** ø-Code **.240**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			TRIBO ET0571
.240	M12	1.75	110	18	50.0	48.0	9.0	7.0	4	10.40	●
.244	M14	2.00	110	20	58.0	56.0	11.0	9.0	4	12.20	●
.246	M16	2.00	110	20	58.0	56.0	12.0	9.0	4	14.20	●
.312	M18	2.50	125	25	65.0	63.0	14.0	11.0	4	15.70	●
.314	M20	2.50	140	25	72.0	70.0	16.0	12.0	4	17.70	●
.316	M22	2.50	140	25	72.0	70.0	18.0	14.5	5	19.70	●
.320	M24	3.00	160	30	74.0	72.0	18.0	14.5	5	21.20	●

* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch	M 4	4.0	0.70	10	795	557	8	635	445	6	475	333
	M 5	5.0	0.80	10	635	508	8	510	408	6	380	304
	M 6	6.0	1.00	10	530	530	8	425	425	6	320	320
	M 8	8.0	1.25	10	400	500	8	320	400	6	240	300
	M10	10.0	1.50	10	320	480	8	255	383	6	190	285
	M12	12.0	1.75	10	265	464	8	210	368	6	160	280
	M14	14.0	2.00	10	225	450	8	180	360	6	135	270
	M16	16.0	2.00	10	200	400	8	160	320	6	120	240
	M18	18.0	2.50	10	175	438	8	140	350	6	105	263
Nichtrostender Stahl ferritisch/martensitisch	M20	20.0	2.50	10	160	400	8	125	313	6	95	238
	M22	22.0	2.50	10	145	363	8	115	288	6	85	213
	M24	24.0	3.00	10	135	405	8	105	315	6	80	240
Nichtrostender Stahl [Cr-Ni/1.4301]	M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
	M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
	M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
	M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
	M10	10.0	1.50	5	160	240	4	125	188	3	95	143
	M12	12.0	1.75	5	135	236	4	105	184	3	80	140
	M14	14.0	2.00	5	115	230	4	90	180	3	70	140
	M16	16.0	2.00	5	100	200	4	80	160	3	60	120
	M18	18.0	2.50	5	90	225	4	70	175	3	55	138
Nichtrostender Stahl [Cr-Ni/1.4301]	M20	20.0	2.50	5	80	200	4	65	163	3	50	125
	M22	22.0	2.50	5	70	175	4	60	150	3	45	113
	M24	24.0	3.00	5	65	195	4	55	165	3	40	120

Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M 4	4.0	0.70	6	475	333	5	400	280	4	320	224
	M 5	5.0	0.80	6	380	304	5	320	256	4	255	204
	M 6	6.0	1.00	6	320	320	5	265	265	4	210	210
	M 8	8.0	1.25	6	240	300	5	200	250	4	160	200
	M10	10.0	1.50	6	190	285	5	160	240	4	125	188
	M12	12.0	1.75	6	160	280	5	135	236	4	105	184
	M14	14.0	2.00	6	135	270	5	115	230	4	90	180
	M16	16.0	2.00	6	120	240	5	100	200	4	80	160
	M18	18.0	2.50	6	105	263	5	90	225	4	70	175
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M20	20.0	2.50	6	95	238	5	80	200	4	65	163
	M22	22.0	2.50	6	85	213	5	70	175	4	60	150
	M24	24.0	3.00	6	80	240	5	65	195	4	55	165
Hitzebeständiger Stahl [17-4 PH]	M 4	4.0	0.70	4	320	224	3	240	168			
	M 5	5.0	0.80	4	255	204	3	190	152			
	M 6	6.0	1.00	4	210	210	3	160	160			
	M 8	8.0	1.25	4	160	200	3	120	150			
	M10	10.0	1.50	4	125	188	3	95	143			
	M12	12.0	1.75	4	105	184	3	80	140			
	M14	14.0	2.00	4	90	180	3	70	140			
	M16	16.0	2.00	4	80	160	3	60	120			
	M18	18.0	2.50	4	70	175	3	55	138			
Hitzebeständiger Stahl [17-4 PH]	M20	20.0	2.50	4	65	163	3	50	125			
	M22	22.0	2.50	4	60	150	3	45	113			
	M24	24.0	3.00	4	55	165	3	40	120			

Gewindebohrer x-tap

Incool

In

M

ISO 2 (6H)

60°

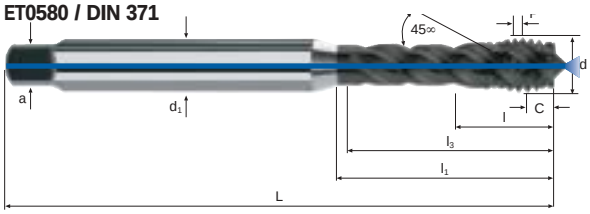
HSS PM/F

DIN 371/376

X - P

Form C

ET0580 / DIN 371



ET0581 / DIN 376

Inox Stainless

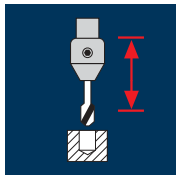
Beispiel: **Bestell-Nr.** Artikel-Nr. **ET0580** ø-Code **.058**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			TRIBO ET0580
.058	M 4	0.70	63	7	–	19	4.5	3.4	3	3.40	●
.084	M 5	0.80	70	8	–	23	6.0	4.9	3	4.30	●
.088	M 6	1.00	80	10	–	28	6.0	4.9	3	5.10	●
.160	M 8	1.25	90	13	35	33	8.0	6.2	3	6.90	●
.174	M10	1.50	100	15	39	37	10.0	8.0	4	8.60	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET0581** ø-Code **.240**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			TRIBO ET0581
.240	M12	1.75	110	18	50	48	9.0	7.0	4	10.40	●
.244	M14	2.00	110	20	58	56	11.0	9.0	4	12.20	●
.246	M16	2.00	110	20	58	56	12.0	9.0	4	14.20	●
.312	M18	2.50	125	25	65	63	14.0	11.0	4	15.70	●
.314	M20	2.50	140	25	72	70	16.0	12.0	4	17.70	●
.316	M22	2.50	140	25	72	70	18.0	14.5	5	19.70	●
.320	M24	3.00	160	30	74	72	18.0	14.5	5	21.20	●

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Nichtrostender Stahl ferritisch/martensitisch	M 3	3.0	0.50	12	1275	10	1060	8	850
	M 4	4.0	0.70	12	955	10	795	8	635
	M 5	5.0	0.80	12	765	10	635	8	510
	M 6	6.0	1.00	12	635	10	530	8	425
	M 8	8.0	1.25	12	475	10	400	8	320
	M10	10.0	1.50	12	380	10	320	8	255
	M12	12.0	1.75	12	320	10	265	8	210
	M14	14.0	2.00	12	275	10	225	8	180
	M16	16.0	2.00	12	240	10	200	8	160
Nichtrostender Stahl ferritisch/martensitisch	M18	18.0	2.50	12	210	10	175	8	140
	M20	20.0	2.50	12	190	10	160	8	125
	M22	22.0	2.50	12	175	10	145	8	115
	M24	24.0	3.00	12	160	10	135	8	105
Nichtrostender Stahl [Cr-Ni/1.4301]	M 3	3.0	0.50	7	745	5	530	4	425
	M 4	4.0	0.70	7	555	5	400	4	320
	M 5	5.0	0.80	7	445	5	320	4	255
	M 6	6.0	1.00	7	370	5	265	4	210
	M 8	8.0	1.25	7	280	5	200	4	160
	M10	10.0	1.50	7	225	5	160	4	125
	M12	12.0	1.75	7	185	5	135	4	105
	M14	14.0	2.00	7	160	5	115	4	90
	M16	16.0	2.00	7	140	5	100	4	80
Nichtrostender Stahl [Cr-Ni/1.4301]	M18	18.0	2.50	7	125	5	90	4	70
	M20	20.0	2.50	7	110	5	80	4	65
	M22	22.0	2.50	7	100	5	70	4	60
	M24	24.0	3.00	7	95	5	65	4	55

Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M 3	3.0	0.50	8	850	6	635	5	530
	M 4	4.0	0.70	8	635	6	475	5	400
	M 5	5.0	0.80	8	510	6	380	5	320
	M 6	6.0	1.00	8	425	6	320	5	265
	M 8	8.0	1.25	8	320	6	240	5	200
	M10	10.0	1.50	8	255	6	190	5	160
	M12	12.0	1.75	8	210	6	160	5	135
	M14	14.0	2.00	8	180	6	135	5	115
	M16	16.0	2.00	8	160	6	120	5	100
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M18	18.0	2.50	8	140	6	105	5	90
	M20	20.0	2.50	8	125	6	95	5	80
	M22	22.0	2.50	8	115	6	85	5	70
	M24	24.0	3.00	8	105	6	80	5	65
Hitzebeständiger Stahl [17-4 PH]	M 3	3.0	0.50	5	530	4	425		
	M 4	4.0	0.70	5	400	4	320		
	M 5	5.0	0.80	5	320	4	255		
	M 6	6.0	1.00	5	265	4	210		
	M 8	8.0	1.25	5	200	4	160		
	M10	10.0	1.50	5	160	4	125		
	M12	12.0	1.75	5	135	4	105		
	M14	14.0	2.00	5	115	4	90		
	M16	16.0	2.00	5	100	4	80		
Hitzebeständiger Stahl [17-4 PH]	M18	18.0	2.50	5	90	4	70		
	M20	20.0	2.50	5	80	4	65		
	M22	22.0	2.50	5	70	4	60		
	M24	24.0	3.00	5	65	4	55		

Gewindebohrer x-tap-R

In

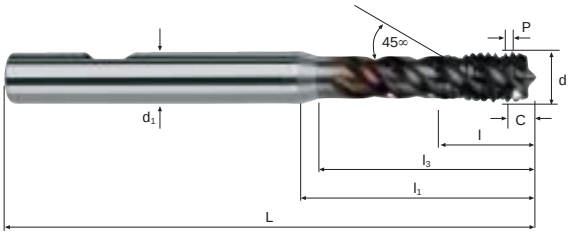
M

M | ISO 2 (6H)

60° | HSS PM/F

DIN 1835B ISO 3338

X · P Form C

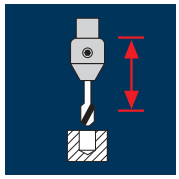


Inox Stainless

Beispiel: **Bestell-Nr.**	Artikel-Nr. ET0590	ø-Code .044									TRIBO ET0590
ø Code	d	P	L	l	l_1	l_3	d_1 h6				
.044	M 3	0.50	63	5	–	16	6	3	2.60 *		●
.058	M 4	0.70	66	7	–	19	6	3	3.40		●
.084	M 5	0.80	70	8	–	23	6	3	4.30		●
.088	M 6	1.00	80	10	–	28	6	3	5.10		●
.160	M 8	1.25	90	13	35	33	8	3	6.90		●
.174	M10	1.50	100	15	39	37	10	4	8.60		●
.240	M12	1.75	110	18	45	43	12	4	10.40		●
.244	M14	2.00	110	20	46	44	16	4	12.20		●
.246	M16	2.00	110	20	50	48	16	4	14.20		●
.312	M18	2.50	125	25	60	58	16	4	15.70		●
.314	M20	2.50	140	25	64	62	16	4	17.70		●
.316	M22	2.50	140	25	64	62	20	5	19.70		●
.320	M24	3.00	160	30	74	72	20	5	21.20		●

* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Nichtrostender Stahl ferritisch/martensitisch	M 4	4.0	0.70	12	955	10	795	8	635
	M 5	5.0	0.80	12	765	10	635	8	510
	M 6	6.0	1.00	12	635	10	530	8	425
	M 8	8.0	1.25	12	475	10	400	8	320
	M10	10.0	1.50	12	380	10	320	8	255
	M12	12.0	1.75	12	320	10	265	8	210
	M14	14.0	2.00	12	275	10	225	8	180
	M16	16.0	2.00	12	240	10	200	8	160
	M18	18.0	2.50	12	210	10	175	8	140
Nichtrostender Stahl ferritisch/martensitisch	M20	20.0	2.50	12	190	10	160	8	125
	M22	22.0	2.50	12	175	10	145	8	115
	M24	24.0	3.00	12	160	10	135	8	105
Nichtrostender Stahl [Cr-Ni/1.4301]	M 4	4.0	0.70	7	555	5	400	4	320
	M 5	5.0	0.80	7	445	5	320	4	255
	M 6	6.0	1.00	7	370	5	265	4	210
	M 8	8.0	1.25	7	280	5	200	4	160
	M10	10.0	1.50	7	225	5	160	4	125
	M12	12.0	1.75	7	185	5	135	4	105
	M14	14.0	2.00	7	160	5	115	4	90
	M16	16.0	2.00	7	140	5	100	4	80
	M18	18.0	2.50	7	125	5	90	4	70
Nichtrostender Stahl [Cr-Ni/1.4301]	M20	20.0	2.50	7	110	5	80	4	65
	M22	22.0	2.50	7	100	5	70	4	60
	M24	24.0	3.00	7	95	5	65	4	55

Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M 4	4.0	0.70	8	635	6	475	5	400
	M 5	5.0	0.80	8	510	6	380	5	320
	M 6	6.0	1.00	8	425	6	320	5	265
	M 8	8.0	1.25	8	320	6	240	5	200
	M10	10.0	1.50	8	255	6	190	5	160
	M12	12.0	1.75	8	210	6	160	5	135
	M14	14.0	2.00	8	180	6	135	5	115
	M16	16.0	2.00	8	160	6	120	5	100
	M18	18.0	2.50	8	140	6	105	5	90
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M20	20.0	2.50	8	125	6	95	5	80
	M22	22.0	2.50	8	115	6	85	5	70
	M24	24.0	3.00	8	105	6	80	5	65
Hitzebeständiger Stahl [17-4 PH]	M 4	4.0	0.70	5	400	4	320		
	M 5	5.0	0.80	5	320	4	255		
	M 6	6.0	1.00	5	265	4	210		
	M 8	8.0	1.25	5	200	4	160		
	M10	10.0	1.50	5	160	4	125		
	M12	12.0	1.75	5	135	4	105		
	M14	14.0	2.00	5	115	4	90		
	M16	16.0	2.00	5	100	4	80		
	M18	18.0	2.50	5	90	4	70		
Hitzebeständiger Stahl [17-4 PH]	M20	20.0	2.50	5	80	4	65		
	M22	22.0	2.50	5	70	4	60		
	M24	24.0	3.00	5	65	4	55		

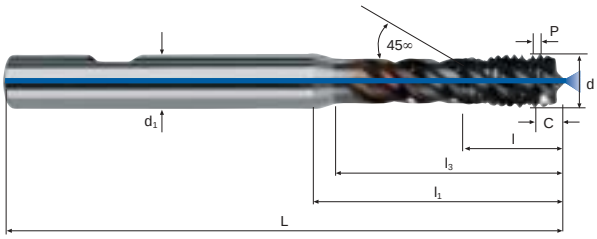
Gewindebohrer x-tap-R

Incool

In

M

M	ISO 2 (6H)
60°	HSS PM/F
DIN 1835B ISO 3338	
	X · P Form C



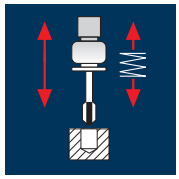
M

Inox Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET0591** ø-Code **.058**

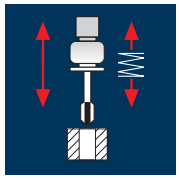
ø Code	d	P	L	l	l_1	l_3	d_1 h6			TRIBO ET0591
.058	M 4	0.70	66	7	–	19	6	3	3.40	●
.084	M 5	0.80	70	8	–	23	6	3	4.30	●
.088	M 6	1.00	80	10	–	28	6	3	5.10	●
.160	M 8	1.25	90	13	35	33	8	3	6.90	●
.174	M10	1.50	100	15	39	37	10	4	8.60	●
.240	M12	1.75	110	18	45	43	12	4	10.40	●
.244	M14	2.00	110	20	46	44	16	4	12.20	●
.246	M16	2.00	110	20	50	48	16	4	14.20	●
.312	M18	2.50	125	25	60	58	16	4	15.70	●
.314	M20	2.50	140	25	64	62	16	4	17.70	●
.316	M22	2.50	140	25	64	62	20	5	19.70	●
.320	M24	3.00	160	30	74	72	20	5	21.20	●

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Gusseisen GG	M 2	2.0	0.40	28	4455	1782	24	3820	1528	20	3185	1274
	M 2.5	2.5	0.45	28	3565	1604	24	3055	1375	20	2545	1145
	M 3	3.0	0.50	28	2970	1485	24	2545	1273	20	2120	1060
	M 4	4.0	0.70	28	2230	1561	24	1910	1337	20	1590	1113
	M 5	5.0	0.80	28	1785	1428	24	1530	1224	20	1275	1020
	M 6	6.0	1.00	28	1485	1485	24	1275	1275	20	1060	1060
	M 8	8.0	1.25	28	1115	1394	24	955	1194	20	795	994
	M10	10.0	1.50	28	890	1335	24	765	1148	20	635	953
	M12	12.0	1.75	28	745	1304	24	635	1111	20	530	928
Gusseisen GG	M14	14.0	2.00	28	635	1270	24	545	1090	20	455	910
	M16	16.0	2.00	28	555	1110	24	475	950	20	400	800
	M18	18.0	2.50	28	495	1238	24	425	1063	20	355	888
	M20	20.0	2.50	28	445	1113	24	380	950	20	320	800
	M22	22.0	2.50	28	405	1013	24	345	863	20	290	725
	M24	24.0	3.00	28	370	1110	24	320	960	20	265	795
Gusseisen GGG	M 2	2.0	0.40	20	3185	1274	18	2865	1146	15	2385	954
	M 2.5	2.5	0.45	20	2545	1145	18	2290	1031	15	1910	860
	M 3	3.0	0.50	20	2120	1060	18	1910	955	15	1590	795
	M 4	4.0	0.70	20	1590	1113	18	1430	1001	15	1195	837
	M 5	5.0	0.80	20	1275	1020	18	1145	916	15	955	764
	M 6	6.0	1.00	20	1060	1060	18	955	955	15	795	795
	M 8	8.0	1.25	20	795	994	18	715	894	15	595	744
	M10	10.0	1.50	20	635	953	18	575	863	15	475	713
	M12	12.0	1.75	20	530	928	18	475	831	15	400	700
Gusseisen GGG	M14	14.0	2.00	20	455	910	18	410	820	15	340	680
	M16	16.0	2.00	20	400	800	18	360	720	15	300	600
	M18	18.0	2.50	20	355	888	18	320	800	15	265	663
	M20	20.0	2.50	20	320	800	18	285	713	15	240	600
	M22	22.0	2.50	20	290	725	18	260	650	15	215	538
	M24	24.0	3.00	20	265	795	18	240	720	15	200	600

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Gusseisen GG	M 2	2.0	0.40	30	4775	1910	28	4455	1782	25	3980	1592
	M 2.5	2.5	0.45	30	3820	1719	28	3565	1604	25	3185	1433
	M 3	3.0	0.50	30	3185	1593	28	2970	1485	25	2655	1328
	M 4	4.0	0.70	30	2385	1670	28	2230	1561	25	1990	1393
	M 5	5.0	0.80	30	1910	1528	28	1785	1428	25	1590	1272
	M 6	6.0	1.00	30	1590	1590	28	1485	1485	25	1325	1325
	M 8	8.0	1.25	30	1195	1494	28	1115	1394	25	995	1244
	M10	10.0	1.50	30	955	1433	28	890	1335	25	795	1193
	M12	12.0	1.75	30	795	1391	28	745	1304	25	665	1164
Gusseisen GG	M14	14.0	2.00	30	680	1360	28	635	1270	25	570	1140
	M16	16.0	2.00	30	595	1190	28	555	1110	25	495	990
	M18	18.0	2.50	30	530	1325	28	495	1238	25	440	1100
	M20	20.0	2.50	30	475	1188	28	445	1113	25	400	1000
	M22	22.0	2.50	30	435	1088	28	405	1013	25	360	900
	M24	24.0	3.00	30	400	1200	28	370	1110	25	330	990
Gusseisen GGG	M 2	2.0	0.40	25	3980	1592	22	3500	1400	20	3185	1274
	M 2.5	2.5	0.45	25	3185	1433	22	2800	1260	20	2545	1145
	M 3	3.0	0.50	25	2655	1328	22	2335	1168	20	2120	1060
	M 4	4.0	0.70	25	1990	1393	22	1750	1225	20	1590	1113
	M 5	5.0	0.80	25	1590	1272	22	1400	1120	20	1275	1020
	M 6	6.0	1.00	25	1325	1325	22	1165	1165	20	1060	1060
	M 8	8.0	1.25	25	995	1244	22	875	1094	20	795	994
	M10	10.0	1.50	25	795	1193	22	700	1050	20	635	953
	M12	12.0	1.75	25	665	1164	22	585	1024	20	530	928
Gusseisen GGG	M14	14.0	2.00	25	570	1140	22	500	1000	20	455	910
	M16	16.0	2.00	25	495	990	22	440	880	20	400	800
	M18	18.0	2.50	25	440	1100	22	390	975	20	355	888
	M20	20.0	2.50	25	400	1000	22	350	875	20	320	800
	M22	22.0	2.50	25	360	900	22	320	800	20	290	725
	M24	24.0	3.00	25	330	990	22	290	870	20	265	795

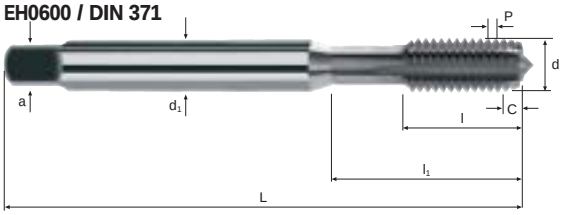
Gewindebohrer c-tap

GG

M

M	ISO 2 (6H)
60°	HSS PM/F
DIN 371/376	
	X · P Form C

EH0600 / DIN 371



EH0601 / DIN 376

GG(G)

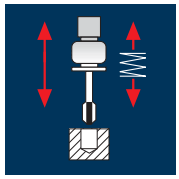
Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0600** ø-Code **.034**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH0600
.034	M 2	0.40	45	8	–	2.8	2.1	3	1.60	●
.040	M 2.5	0.45	50	9	–	2.8	2.1	3	2.05	●
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.50	●
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.30	●
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	4.20	●
.088	M 6	1.00	80	17	30.0	6.0	4.9	4	5.00	●
.160	M 8	1.25	90	20	35.0	8.0	6.2	4	6.80	●
.174	M10	1.50	100	22	39.0	10.0	8.0	4	8.50	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0601** ø-Code **.240**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH0601
.240	M12	1.75	110	24	40.0	9.0	7.0	4	10.20	●
.244	M14	2.00	110	26	40.0	11.0	9.0	4	12.00	●
.246	M16	2.00	110	27	40.0	12.0	9.0	4	14.00	●
.312	M18	2.50	125	30	45.0	14.0	11.0	4	15.50	●
.314	M20	2.50	140	32	50.0	16.0	12.0	4	17.50	●
.316	M22	2.50	140	32	50.0	18.0	14.5	5	19.50	●
.320	M24	3.00	160	34	60.0	18.0	14.5	5	21.00	●

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Gusseisen GG	M 4	4.0	0.70	28	2230	1561	24	1910	1337	20	1590	1113
	M 5	5.0	0.80	28	1785	1428	24	1530	1224	20	1275	1020
	M 6	6.0	1.00	28	1485	1485	24	1275	1275	20	1060	1060
	M 8	8.0	1.25	28	1115	1394	24	955	1194	20	795	994
	M10	10.0	1.50	28	890	1335	24	765	1148	20	635	953
	M12	12.0	1.75	28	745	1304	24	635	1111	20	530	928
	M14	14.0	2.00	28	635	1270	24	545	1090	20	455	910
	M16	16.0	2.00	28	555	1110	24	475	950	20	400	800
	M18	18.0	2.50	28	495	1238	24	425	1063	20	355	888
Gusseisen GG	M20	20.0	2.50	28	445	1113	24	380	950	20	320	800
	M22	22.0	2.50	28	405	1013	24	345	863	20	290	725
	M24	24.0	3.00	28	370	1110	24	320	960	20	265	795
Gusseisen GGG	M 4	4.0	0.40	20	1590	636	18	1430	572	15	1195	478
	M 5	5.0	0.45	20	1275	574	18	1145	515	15	955	430
	M 6	6.0	0.50	20	1060	530	18	955	478	15	795	398
	M 8	8.0	0.70	20	795	557	18	715	500	15	595	417
	M10	10.0	0.80	20	635	508	18	575	460	15	475	380
	M12	12.0	1.00	20	530	530	18	475	475	15	400	400
	M14	14.0	1.25	20	455	569	18	410	513	15	340	425
	M16	16.0	1.50	20	400	600	18	360	540	15	300	450
	M18	18.0	1.75	20	355	621	18	320	560	15	265	464
Gusseisen GGG	M20	20.0	2.00	20	320	640	18	285	570	15	240	480
	M22	22.0	2.00	20	290	580	18	260	520	15	215	430
	M24	24.0	2.50	20	265	663	18	240	600	15	200	500

Gewindebohrer c-tap

Incool

GG

M

ISO 2 (6H)

60°

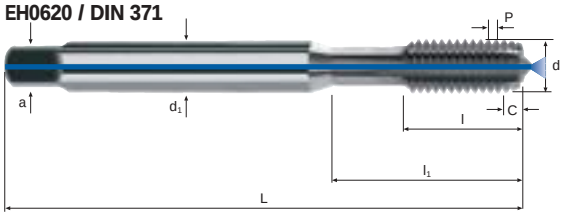
HSS PM/F

DIN 371/376

X · P

Form C

EH0620 / DIN 371



EH0621 / DIN 376

GG(G)

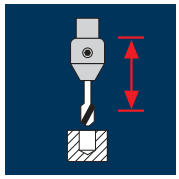
Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0620** ø-Code **.058**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH0620
.058	M 4	0.70	63	13	21	4.5	3.4	3	3.30	●
.084	M 5	0.80	70	15	25	6.0	4.9	3	4.20	●
.088	M 6	1.00	80	17	30	6.0	4.9	4	5.00	●
.160	M 8	1.25	90	20	35	8.0	6.2	4	6.80	●
.174	M10	1.50	100	22	39	10.0	8.0	4	8.50	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0621** ø-Code **.240**

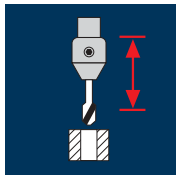
Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH0621
.240	M12	1.75	110	24	40	9.0	7.0	4	10.20	●
.244	M14	2.00	110	26	40	11.0	9.0	4	12.00	●
.246	M16	2.00	110	27	40	12.0	9.0	4	14.00	●
.312	M18	2.50	125	30	45	14.0	11.0	4	15.50	●
.314	M20	2.50	140	32	50	16.0	12.0	4	17.50	●
.316	M22	2.50	140	32	50	18.0	14.5	5	19.50	●
.320	M24	3.00	160	34	60	18.0	14.5	5	21.00	●

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Gusseisen GG	M 3	3.0	0.50	80	8490	70	7425	50	5305
	M 4	4.0	0.70	80	6365	70	5570	50	3980
	M 5	5.0	0.80	80	5095	70	4455	50	3185
	M 6	6.0	1.00	80	4245	70	3715	50	2655
	M 8	8.0	1.25	80	3185	70	2785	50	1990
	M10	10.0	1.50	80	2545	70	2230	50	1590
	M12	12.0	1.75	80	2120	70	1855	50	1325
Gusseisen GGG	M 3	3.0	0.50	60	6365	40	4245	30	3185
	M 4	4.0	0.70	60	4775	40	3185	30	2385
	M 5	5.0	0.80	60	3820	40	2545	30	1910
	M 6	6.0	1.00	60	3185	40	2120	30	1590
	M 8	8.0	1.25	60	2385	40	1590	30	1195
	M10	10.0	1.50	60	1910	40	1275	30	955
	M12	12.0	1.75	60	1590	40	1060	30	795

Anwendung



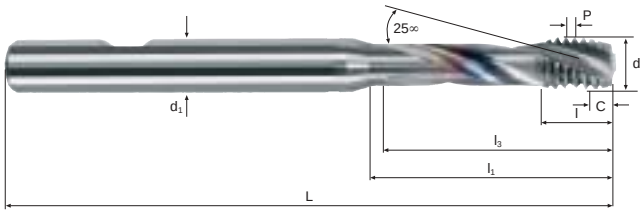
Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]	v_c 3.0 x d	n [min⁻¹]
Gusseisen GG	M 3	3.0	0.50	80	8490	60	6365	50	5305
	M 4	4.0	0.70	80	6365	60	4775	50	3980
	M 5	5.0	0.80	80	5095	60	3820	50	3185
	M 6	6.0	1.00	80	4245	60	3185	50	2655
	M 8	8.0	1.25	80	3185	60	2385	50	1990
	M10	10.0	1.50	80	2545	60	1910	50	1590
	M12	12.0	1.75	80	2120	60	1590	50	1325
Gusseisen GGG	M 3	3.0	0.50	60	6365	50	5305	40	4245
	M 4	4.0	0.70	60	4775	50	3980	40	3185
	M 5	5.0	0.80	60	3820	50	3185	40	2545
	M 6	6.0	1.00	60	3185	50	2655	40	2120
	M 8	8.0	1.25	60	2385	50	1990	40	1590
	M10	10.0	1.50	60	1910	50	1590	40	1275
	M12	12.0	1.75	60	1590	50	1325	40	1060

Gewindebohrer durotap GG-R

GG

M

M	ISO 2 (6H)
60°	HM MG10
DIN 6535 HB	
	X · P Form C

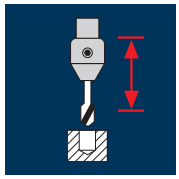


GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6500** ø-Code **.044**

ø Code	d	P	L	l	l1	l3	d1 h6			TiCN EH6500
.044	M 3	0.50	63	2.5	18	16	6	3	2.50	●
.058	M 4	0.70	63	3.5	21	19	6	3	3.30	●
.084	M 5	0.80	70	4.0	25	23	6	3	4.20	●
.088	M 6	1.00	80	5.0	30	28	6	3	5.00	●
.160	M 8	1.25	90	6.5	35	33	8	3	6.80	●
.174	M10	1.50	100	7.5	39	37	10	3	8.50	●
.240	M12	1.75	110	9.0	45	43	12	3	10.20	●

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Gusseisen GG	M 6	6.0	1.00	80	4245	70	3715	50	2655
	M 8	8.0	1.25	80	3185	70	2785	50	1990
	M10	10.0	1.50	80	2545	70	2230	50	1590
	M12	12.0	1.75	80	2120	70	1855	50	1325
Gusseisen GGG	M 6	6.0	1.00	60	3185	40	2120	30	1590
	M 8	8.0	1.25	60	2385	40	1590	30	1195
	M10	10.0	1.50	60	1910	40	1275	30	955
	M12	12.0	1.75	60	1590	40	1060	30	795

Gewindebohrer durotap GG-R

Incool

GG

M

ISO 2 (6H)

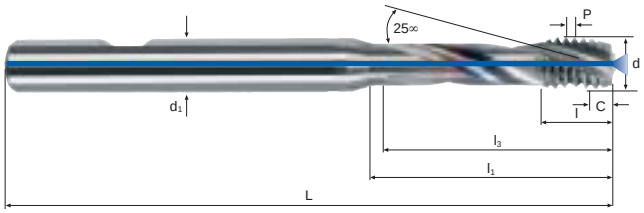
60°

HM MG10

DIN 6535 HB

X · P

Form C

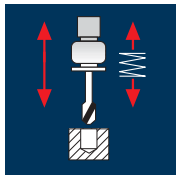


GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6501** ø-Code **.088**

ø Code	d	P	L	l	l1	l3	d1 h6			TiCN EH6501
.088	M 6	1.00	80	5.0	30	28	6	3	5.00	●
.160	M 8	1.25	90	6.5	35	33	8	3	6.80	●
.174	M10	1.50	100	7.5	39	37	10	3	8.50	●
.240	M12	1.75	110	9.0	45	43	12	3	10.20	●

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Gusseisen GG	M 3	3.0	0.50	80	8490	70	7425	50	5305
	M 4	4.0	0.70	80	6365	70	5570	50	3980
	M 5	5.0	0.80	80	5095	70	4455	50	3185
	M 6	6.0	1.00	80	4245	70	3715	50	2655
	M 8	8.0	1.25	80	3185	70	2785	50	1990
	M10	10.0	1.50	80	2545	70	2230	50	1590
	M12	12.0	1.75	80	2120	70	1855	50	1325
Gusseisen GGG	M 3	3.0	0.50	60	6365	40	4245	30	3185
	M 4	4.0	0.70	60	4775	40	3185	30	2385
	M 5	5.0	0.80	60	3820	40	2545	30	1910
	M 6	6.0	1.00	60	3185	40	2120	30	1590
	M 8	8.0	1.25	60	2385	40	1590	30	1195
	M10	10.0	1.50	60	1910	40	1275	30	955
	M12	12.0	1.75	60	1590	40	1060	30	795

Gewindebohrer durotap GG

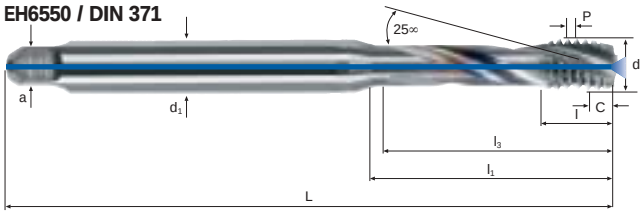
Incool

GG

M

M	ISO 2 (6H)
60°	HM MG10
DIN 371/376	
	X · P Form C

EH6550 / DIN 371



EH6551 / DIN 376

GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6550** ø-Code **.044**

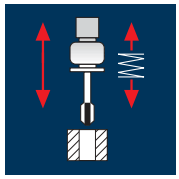
Ø Code	d	P	L	l	l_1	l_3	d_1	a			TiCN EH6550
.044 *	M 3	0.50	56	5	18	16	3.5	2.7	3	2.50	●
.058 *	M 4	0.70	63	7	21	19	4.5	3.4	3	3.30	●
.084 *	M 5	0.80	70	8	25	23	6.0	4.9	3	4.20	●
.088	M 6	1.00	80	10	30	28	6.0	4.9	3	5.00	●
.160	M 8	1.25	90	13	35	33	8.0	6.2	3	6.80	●
.174	M10	1.50	100	15	39	37	10.0	8.0	3	8.50	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6551** ø-Code **.240**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			TiCN EH6551
.240	M12	1.75	110	18	50	48	9.0	7.0	3	10.20	●

* ohne innere Kühlmittelzufuhr

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Reinaluminium	M 2	2.0	0.40	23	3660	1464	19	3025	1210	16	2545	1018
	M 2.5	2.5	0.45	23	2930	1319	19	2420	1089	16	2035	916
	M 3	3.0	0.50	23	2440	1220	19	2015	1008	16	1700	850
	M 4	4.0	0.70	23	1830	1281	19	1510	1057	16	1275	893
	M 5	5.0	0.80	23	1465	1172	19	1210	968	16	1020	816
	M 6	6.0	1.00	23	1220	1220	19	1010	1010	16	850	850
	M 8	8.0	1.25	23	915	1144	19	755	944	16	635	794
	M10	10.0	1.50	23	730	1095	19	605	908	16	510	765
	M12	12.0	1.75	23	610	1068	19	505	884	16	425	744
Reinaluminium	M14	14.0	2.00	23	525	1050	19	430	860	16	365	730
	M16	16.0	2.00	23	460	920	19	380	760	16	320	640
	M18	18.0	2.50	23	405	1013	19	335	838	16	285	713
	M20	20.0	2.50	23	365	913	19	300	750	16	255	638
	M22	22.0	2.50	23	335	838	19	275	688	16	230	575
	M24	24.0	3.00	23	305	915	19	250	750	16	210	630
Al-Knetlegierung Si < 6% nicht ausgehärtet	M 2	2.0	0.40	35	5570	2228	30	4775	1910	25	3980	1592
	M 2.5	2.5	0.45	35	4455	2005	30	3820	1719	25	3185	1433
	M 3	3.0	0.50	35	3715	1858	30	3185	1593	25	2655	1328
	M 4	4.0	0.70	35	2785	1949	30	2385	1670	25	1990	1393
	M 5	5.0	0.80	35	2230	1784	30	1910	1528	25	1590	1272
	M 6	6.0	1.00	35	1855	1855	30	1590	1590	25	1325	1325
	M 8	8.0	1.25	35	1395	1744	30	1195	1494	25	995	1244
	M10	10.0	1.50	35	1115	1673	30	955	1433	25	795	1193
	M12	12.0	1.75	35	930	1628	30	795	1391	25	665	1164
Al-Knetlegierung Si < 6% nicht ausgehärtet	M14	14.0	2.00	35	795	1590	30	680	1360	25	570	1140
	M16	16.0	2.00	35	695	1390	30	595	1190	25	495	990
	M18	18.0	2.50	35	620	1550	30	530	1325	25	440	1100
	M20	20.0	2.50	35	555	1388	30	475	1188	25	400	1000
	M22	22.0	2.50	35	505	1263	30	435	1088	25	360	900
	M24	24.0	3.00	35	465	1395	30	400	1200	25	330	990

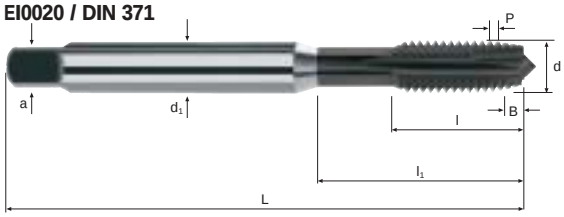
Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet	M 2	2.0	0.40	20	3185	1274	17	2705	1082	14	2230	892
	M 2.5	2.5	0.45	20	2545	1145	17	2165	974	14	1785	803
	M 3	3.0	0.50	20	2120	1060	17	1805	903	14	1485	743
	M 4	4.0	0.70	20	1590	1113	17	1355	948	14	1115	781
	M 5	5.0	0.80	20	1275	1020	17	1080	864	14	890	712
	M 6	6.0	1.00	20	1060	1060	17	900	900	14	745	745
	M 8	8.0	1.25	20	795	994	17	675	844	14	555	694
	M10	10.0	1.50	20	635	953	17	540	810	14	445	668
	M12	12.0	1.75	20	530	928	17	450	788	14	370	648
Al-Knetlegierung Si < 6% ausgehärtet	M14	14.0	2.00	20	455	910	17	385	770	14	320	640
	M16	16.0	2.00	20	400	800	17	340	680	14	280	560
	M18	18.0	2.50	20	355	888	17	300	750	14	250	625
	M20	20.0	2.50	20	320	800	17	270	675	14	225	563
	M22	22.0	2.50	20	290	725	17	245	613	14	205	513
	M24	24.0	3.00	20	265	795	17	225	675	14	185	555
Reinkupfer	M 2	2.0	0.40	21	3340	1336	18	2865	1146	15	2385	954
	M 2.5	2.5	0.45	21	2675	1204	18	2290	1031	15	1910	860
	M 3	3.0	0.50	21	2230	1115	18	1910	955	15	1590	795
	M 4	4.0	0.70	21	1670	1169	18	1430	1001	15	1195	837
	M 5	5.0	0.80	21	1335	1068	18	1145	916	15	955	764
	M 6	6.0	1.00	21	1115	1115	18	955	955	15	795	795
	M 8	8.0	1.25	21	835	1044	18	715	894	15	595	744
	M10	10.0	1.50	21	670	1005	18	575	863	15	475	713
	M12	12.0	1.75	21	555	971	18	475	831	15	400	700
Reinkupfer	M14	14.0	2.00	21	475	950	18	410	820	15	340	680
	M16	16.0	2.00	21	420	840	18	360	720	15	300	600
	M18	18.0	2.50	21	370	925	18	320	800	15	265	663
	M20	20.0	2.50	21	335	838	18	285	713	15	240	600
	M22	22.0	2.50	21	305	763	18	260	650	15	215	538
	M24	24.0	3.00	21	280	840	18	240	720	15	200	600

Al

M

M	ISO 2 (6H)
60°	HSS PM/F
DIN 371/376	
	X · P Form B

EI0020 / DIN 371



EI0021 / DIN 376

			Al Aluminium > 99%	**Al** Aluminium Alloy	**Al** Aluminium Cast		**Cu** Copper	**Plastic** Thermoplast		

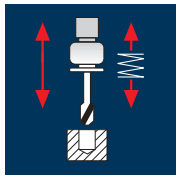
Beispiel: **Bestell-Nr.** Artikel-Nr. **EI0020** ø-Code **.034**

Ø Code	d	P	L	l	l_1	d_1	a			INTEGRAL EI0020
.034	M 2	0.40	45	8	–	2.8	2.1	2	1.60	●
.040	M 2.5	0.45	50	9	–	2.8	2.1	2	2.05	●
.044	M 3	0.50	56	12	18.0	3.5	2.7	2	2.50	●
.058	M 4	0.70	63	13	21.0	4.5	3.4	2	3.30	●
.084	M 5	0.80	70	15	25.0	6.0	4.9	2	4.20	●
.088	M 6	1.00	80	17	30.0	6.0	4.9	2	5.00	●
.160	M 8	1.25	90	20	35.0	8.0	6.2	2	6.80	●
.174	M10	1.50	100	22	39.0	10.0	8.0	2	8.50	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EI0021** ø-Code **.240**

Ø Code	d	P	L	l	l_1	d_1	a			INTEGRAL EI0021
.240	M12	1.75	110	24	40.0	9.0	7.0	3	10.20	●
.244	M14	2.00	110	26	40.0	11.0	9.0	3	12.00	●
.246	M16	2.00	110	27	40.0	12.0	9.0	3	14.00	●
.312	M18	2.50	125	30	45.0	14.0	11.0	3	15.50	●
.314	M20	2.50	140	32	50.0	16.0	12.0	3	17.50	●
.316	M22	2.50	140	32	50.0	18.0	14.5	3	19.50	●
.320	M24	3.00	160	34	60.0	18.0	14.5	3	21.00	●

Anwendung

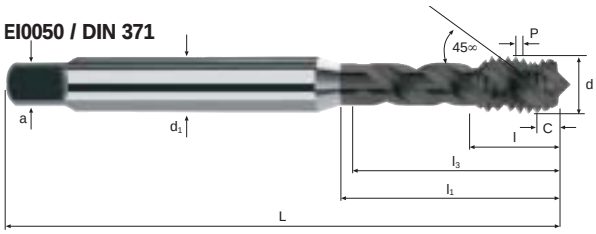


Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Reinaluminium	M 2	2.0	0.40	25	3980	1592	21	3340	1336	17	2705	1082
	M 2.5	2.5	0.45	25	3185	1433	21	2675	1204	17	2165	974
	M 3	3.0	0.50	25	2655	1328	21	2230	1115	17	1805	903
	M 4	4.0	0.70	25	1990	1393	21	1670	1169	17	1355	948
	M 5	5.0	0.80	25	1590	1272	21	1335	1068	17	1080	864
	M 6	6.0	1.00	25	1325	1325	21	1115	1115	17	900	900
	M 8	8.0	1.25	25	995	1244	21	835	1044	17	675	844
	M10	10.0	1.50	25	795	1193	21	670	1005	17	540	810
	M12	12.0	1.75	25	665	1164	21	555	971	17	450	788
Reinaluminium	M14	14.0	2.00	25	570	1140	21	475	950	17	385	770
	M16	16.0	2.00	25	495	990	21	420	840	17	340	680
	M18	18.0	2.50	25	440	1100	21	370	925	17	300	750
	M20	20.0	2.50	25	400	1000	21	335	838	17	270	675
	M22	22.0	2.50	25	360	900	21	305	763	17	245	613
	M24	24.0	3.00	25	330	990	21	280	840	17	225	675
Al-Knetlegierung Si < 6% nicht ausgehärtet	M 2	2.0	0.40	27	4295	1718	24	3820	1528	18	2865	1146
	M 2.5	2.5	0.45	27	3440	1548	24	3055	1375	18	2290	1031
	M 3	3.0	0.50	27	2865	1433	24	2545	1273	18	1910	955
	M 4	4.0	0.70	27	2150	1505	24	1910	1337	18	1430	1001
	M 5	5.0	0.80	27	1720	1376	24	1530	1224	18	1145	916
	M 6	6.0	1.00	27	1430	1430	24	1275	1275	18	955	955
	M 8	8.0	1.25	27	1075	1344	24	955	1194	18	715	894
	M10	10.0	1.50	27	860	1290	24	765	1148	18	575	863
	M12	12.0	1.75	27	715	1251	24	635	1111	18	475	831
Al-Knetlegierung Si < 6% nicht ausgehärtet	M14	14.0	2.00	27	615	1230	24	545	1090	18	410	820
	M16	16.0	2.00	27	535	1070	24	475	950	18	360	720
	M18	18.0	2.50	27	475	1188	24	425	1063	18	320	800
	M20	20.0	2.50	27	430	1075	24	380	950	18	285	713
	M22	22.0	2.50	27	390	975	24	345	863	18	260	650
	M24	24.0	3.00	27	360	1080	24	320	960	18	240	720

Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet	M 2	2.0	0.40	21	3340	1336	18	2865	1146	15	2385	954
	M 2.5	2.5	0.45	21	2675	1204	18	2290	1031	15	1910	860
	M 3	3.0	0.50	21	2230	1115	18	1910	955	15	1590	795
	M 4	4.0	0.70	21	1670	1169	18	1430	1001	15	1195	837
	M 5	5.0	0.80	21	1335	1068	18	1145	916	15	955	764
	M 6	6.0	1.00	21	1115	1115	18	955	955	15	795	795
	M 8	8.0	1.25	21	835	1044	18	715	894	15	595	744
	M10	10.0	1.50	21	670	1005	18	575	863	15	475	713
	M12	12.0	1.75	21	555	971	18	475	831	15	400	700
Al-Knetlegierung Si < 6% ausgehärtet	M14	14.0	2.00	21	475	950	18	410	820	15	340	680
	M16	16.0	2.00	21	420	840	18	360	720	15	300	600
	M18	18.0	2.50	21	370	925	18	320	800	15	265	663
	M20	20.0	2.50	21	335	838	18	285	713	15	240	600
	M22	22.0	2.50	21	305	763	18	260	650	15	215	538
	M24	24.0	3.00	21	280	840	18	240	720	15	200	600
Reinkupfer	M 2	2.0	0.40	20	3185	1274	18	2865	1146	16	2545	1018
	M 2.5	2.5	0.45	20	2545	1145	18	2290	1031	16	2035	916
	M 3	3.0	0.50	20	2120	1060	18	1910	955	16	1700	850
	M 4	4.0	0.70	20	1590	1113	18	1430	1001	16	1275	893
	M 5	5.0	0.80	20	1275	1020	18	1145	916	16	1020	816
	M 6	6.0	1.00	20	1060	1060	18	955	955	16	850	850
	M 8	8.0	1.25	20	795	994	18	715	894	16	635	794
	M10	10.0	1.50	20	635	953	18	575	863	16	510	765
	M12	12.0	1.75	20	530	928	18	475	831	16	425	744
Reinkupfer	M14	14.0	2.00	20	455	910	18	410	820	16	365	730
	M16	16.0	2.00	20	400	800	18	360	720	16	320	640
	M18	18.0	2.50	20	355	888	18	320	800	16	285	713
	M20	20.0	2.50	20	320	800	18	285	713	16	255	638
	M22	22.0	2.50	20	290	725	18	260	650	16	230	575
	M24	24.0	3.00	20	265	795	18	240	720	16	210	630

M	ISO 2 (6H)
60°	HSS PM/F
DIN 371/376	
	Form C

EI0050 / DIN 371



EI0051 / DIN 376

			Al Aluminium > 99%	Al Aluminium Alloy	Al Aluminium Cast		Cu Copper	Plastic Thermoplast	

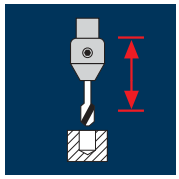
Beispiel: **Bestell-Nr.** Artikel-Nr. **EI0050** ø-Code **.034**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			INTEGRAL EI0050
.034	M 2	0.40	45	8	–	10.5	2.8	2.1	3	1.60	●
.040	M 2.5	0.45	50	9	–	13.0	2.8	2.1	3	2.05	●
.044	M 3	0.50	56	5	18.0	16.0	3.5	2.7	3	2.50	●
.058	M 4	0.70	63	7	21.0	19.0	4.5	3.4	3	3.30	●
.084	M 5	0.80	70	8	25.0	23.0	6.0	4.9	3	4.20	●
.088	M 6	1.00	80	10	30.0	28.0	6.0	4.9	3	5.00	●
.160	M 8	1.25	90	13	35.0	33.0	8.0	6.2	3	6.80	●
.174	M10	1.50	100	15	39.0	37.0	10.0	8.0	3	8.50	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EI0051** ø-Code **.240**

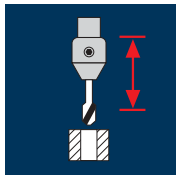
Ø Code	d	P	L	l	l_1	l_3	d_1	a			INTEGRAL EI0051
.240	M12	1.75	110	18	50.0	48.0	9.0	7.0	3	10.20	●
.244	M14	2.00	110	20	58.0	56.0	11.0	9.0	4	12.00	●
.246	M16	2.00	110	20	58.0	56.0	12.0	9.0	4	14.00	●
.312	M18	2.50	125	25	65.0	63.0	14.0	11.0	4	15.50	●
.314	M20	2.50	140	25	72.0	70.0	16.0	12.0	4	17.50	●
.316	M22	2.50	140	25	72.0	70.0	18.0	14.5	4	19.50	●
.320	M24	3.00	160	30	74.0	72.0	18.0	14.5	4	21.00	●

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Aluminiumguss	M 5	5.0	0.80	80	5095	60	3820	40	2545
	M 6	6.0	1.00	80	4245	60	3185	40	2120
	M 7	7.0	1.00	80	3640	60	2730	40	1820
	M 8	8.0	1.25	80	3185	60	2385	40	1590
	M10	10.0	1.50	80	2545	60	1910	40	1275
CuAlFe (Ampco)	M 5	5.0	0.80	10	635	8	510	7	445
	M 6	6.0	1.00	10	530	8	425	7	370
	M 7	7.0	1.00	10	455	8	365	7	320
	M 8	8.0	1.25	10	400	8	320	7	280
	M10	10.0	1.50	10	320	8	255	7	225

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]	v_c 3.0 x d	n [min⁻¹]
Aluminiumguss	M 5	5.0	0.80	100	6365	80	5095	60	3820
	M 6	6.0	1.00	100	5305	80	4245	60	3185
	M 7	7.0	1.00	100	4545	80	3640	60	2730
	M 8	8.0	1.25	100	3980	80	3185	60	2385
	M10	10.0	1.50	100	3185	80	2545	60	1910
CuAlFe (Ampco)	M 5	5.0	0.80	12	765	10	635	9	575
	M 6	6.0	1.00	12	635	10	530	9	475
	M 7	7.0	1.00	12	545	10	455	9	410
	M 8	8.0	1.25	12	475	10	400	9	360
	M10	10.0	1.50	12	380	10	320	9	285

Gewindebohrer durotap A-R

Al

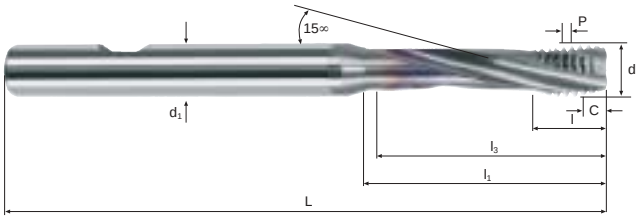
M

M | ISO 2 (6H)

60° | HM MG10

DIN 6535 HB

X · P Form C

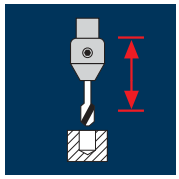


M

Al Aluminium Cast | Cu Copper | GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6300** ø-Code **.084**

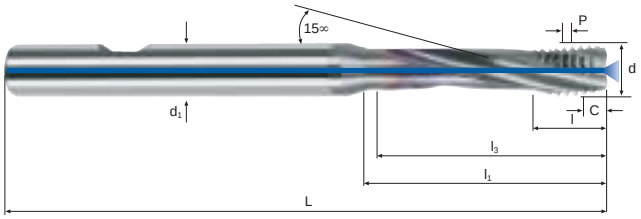
ø Code	d	P	L	l	l1	l3	d1 h6			TiCN EH6300
.084	M 5	0.80	70	4.0	25	23	6	3	4.20	●
.088	M 6	1.00	80	5.0	30	28	6	3	5.00	●
.089	M 7	1.00	80	5.0	30	28	8	3	6.00	●
.160	M 8	1.25	90	6.5	35	33	8	3	6.80	●
.174	M10	1.50	100	7.5	39	37	10	3	8.50	●

Anwendung	Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
	Aluminiumguss	M 6	6.0	1.00	80	4245	60	3185	40	2120
		M 7	7.0	1.00	80	3640	60	2730	40	1820
		M 8	8.0	1.25	80	3185	60	2385	40	1590
		M10	10.0	1.50	80	2545	60	1910	40	1275
	CuAlFe (Ampco)	M 6	6.0	1.00	10	530	8	425	7	370
		M 7	7.0	1.00	10	455	8	365	7	320
		M 8	8.0	1.25	10	400	8	320	7	280
		M10	10.0	1.50	10	320	8	255	7	225

Gewindebohrer durotap A-R

Incool

M	ISO 2 (6H)
60°	HM MG10
DIN 6535 HB	
	X - P Form C

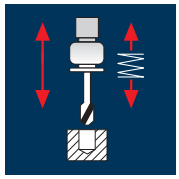


Al Aluminium Cast | **Cu** Copper | **GG(G)**

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6301** ø-Code **.088**

ø Code	d	P	L	l	l1	l3	d1 h6			TiCN EH6301
.088	M 6	1.00	80	5.0	30	28	6	3	5.00	●
.089	M 7	1.00	80	5.0	30	28	8	3	6.00	●
.160	M 8	1.25	90	6.5	35	33	8	3	6.80	●
.174	M10	1.50	100	7.5	39	37	10	3	8.50	●

Anwendung



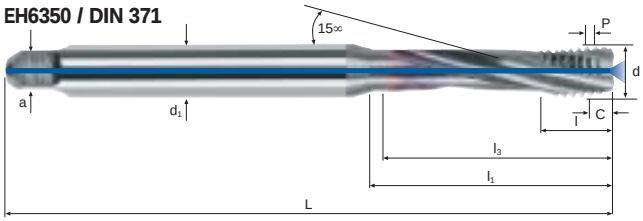
Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Aluminiumguss	M 4	4.0	0.70	80	6365	4456	60	4775	3343	40	3185	2230
	M 5	5.0	0.80	80	5095	4076	60	3820	3056	40	2545	2036
	M 6	6.0	1.00	80	4245	4245	60	3185	3185	40	2120	2120
	M 8	8.0	1.25	80	3185	3981	60	2385	2981	40	1590	1988
	M10	10.0	1.50	80	2545	3818	60	1910	2865	40	1275	1913
	M12	12.0	1.75	80	2120	3710	60	1590	2783	40	1060	1855
	M14	14.0	2.00	80	1820	3640	60	1365	2730	40	910	1820
	M16	16.0	2.00	80	1590	3180	60	1195	2390	40	795	1590
CuAlFe (Ampco)	M 4	4.0	0.70	10	795	557	8	635	445	7	555	389
	M 5	5.0	0.80	10	635	508	8	510	408	7	445	356
	M 6	6.0	1.00	10	530	530	8	425	425	7	370	370
	M 8	8.0	1.25	10	400	500	8	320	400	7	280	350
	M10	10.0	1.50	10	320	480	8	255	383	7	225	338
	M12	12.0	1.75	10	265	464	8	210	368	7	185	324
	M14	14.0	2.00	10	225	450	8	180	360	7	160	320
	M16	16.0	2.00	10	200	400	8	160	320	7	140	280

Gewindebohrer durotap A

Incool

M	ISO 2 (6H)
60°	HM MG10
DIN 371/376	
	X · P Form C

EH6350 / DIN 371



EH6351 / DIN 376

					Al Aluminium Cast		Cu Copper		GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6350** ø-Code **.058**

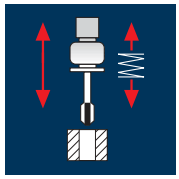
Ø Code	d	P	L	l	l_1	l_3	d_1	a			TiCN EH6350
.058 *	M 4	0.70	63	7	21	19	4.5	3.4	3	3.30	●
.084 *	M 5	0.80	70	8	25	23	6.0	4.9	3	4.20	●
.088	M 6	1.00	80	10	30	28	6.0	4.9	3	5.00	●
.160	M 8	1.25	90	13	35	33	8.0	6.2	3	6.80	●
.174	M10	1.50	100	15	39	37	10.0	8.0	3	8.50	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6351** ø-Code **.240**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			TiCN EH6351
.240	M12	1.75	110	18	50	48	9.0	7.0	3	10.20	●
.244	M14	2.00	110	20	58	56	11.0	9.0	4	12.00	●
.246	M16	2.00	110	20	58	56	12.0	9.0	4	14.00	●

* ohne innere Kühlmittelzufuhr

Anwendung



Werkstoff

Titanlegierungen
> 300 HB
[Ti6Al4V]

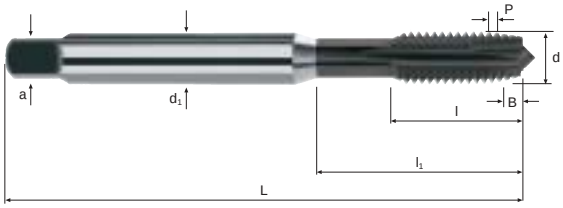
M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
M 1.2	1.2	0.25	4	1060	265	3	795	199	2	530	133
M 1.4	1.4	0.30	4	910	273	3	680	204	2	455	137
M 1.6	1.6	0.35	4	795	278	3	595	208	2	400	140
M 1.8	1.8	0.35	4	705	247	3	530	186	2	355	124
M 2	2.0	0.40	4	635	254	3	475	190	2	320	128
M 2.5	2.5	0.45	4	510	230	3	380	171	2	255	115
M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
M 3.5	3.5	0.60	5	455	273	4	365	219	3	275	165
M 4	4.0	0.70	5	400	280	4	320	224	3	240	168

Titanlegierungen
> 300 HB
[Ti6Al4V]

M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
M10	10.0	1.50	5	160	240	4	125	188	3	95	143

Gewindebohrer titap

M	ISO 2 (6H)
60°	HSS PM/F
DIN 371	
	X · P Form B



Ti Titanium

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET0705** ø-Code **.012**

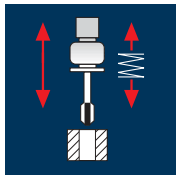
ø Code	d	P	L	l	l_1	d_1	a			TRIBO ET0705
.012	M 1.2	0.25	40	5.5	–	2.5	2.1	2	1.00 *	●
.020	M 1.4	0.30	40	7.0	–	2.5	2.1	2	1.15 *	●
.022	M 1.6	0.35	40	8.0	–	2.5	2.1	2	1.30	●
.026	M 1.8	0.35	40	8.0	–	2.5	2.1	2	1.50	●
.034	M 2	0.40	45	8.0	–	2.8	2.1	2	1.70 *	●
.040	M 2.5	0.45	50	9.0	–	2.8	2.1	2	2.10	●
.044	M 3	0.50	56	12.0	18.0	3.5	2.7	3	2.60 *	●
.056	M 3.5	0.60	56	12.0	20.0	4.0	3.0	3	3.00	●
.058	M 4	0.70	63	13.0	21.0	4.5	3.4	3	3.40	●
.084	M 5	0.80	70	15.0	25.0	6.0	4.9	3	4.30	●
.088	M 6	1.00	80	17.0	30.0	6.0	4.9	3	5.10	●
.160	M 8	1.25	90	20.0	35.0	8.0	6.2	3	6.90	●
.174	M10	1.50	100	22.0	39.0	10.0	8.0	3	8.60	●

≤ M1.4 Toleranz ISO 1 (4H)

* angegebenes Mass liegt ausserhalb der Norm

Grössere Abmessungen siehe Artikel-Nr. ET0706, Seite 197

Anwendung



Werkstoff

Titanlegierungen
> 300 HB
[Ti6Al4V]

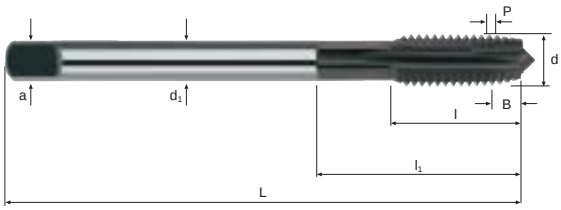
M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
M12	12.0	1.75	5	135	236	4	105	184	3	80	140
M14	14.0	2.00	5	115	230	4	90	180	3	70	140
M16	16.0	2.00	5	100	200	4	80	160	3	60	120
M18	18.0	2.50	5	90	225	4	70	175	3	55	138
M20	20.0	2.50	5	80	200	4	65	163	3	50	125
M22	22.0	2.50	5	70	175	4	60	150	3	45	113
M24	24.0	3.00	5	65	195	4	55	165	3	40	120

Gewindebohrer titap

Ti

M

M	ISO 2 (6H)
60°	HSS PM/F
DIN 376	
	X · P Form B

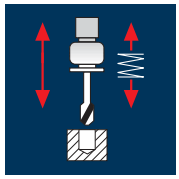


M

Ti Titanium

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET0706** ø-Code **.240**

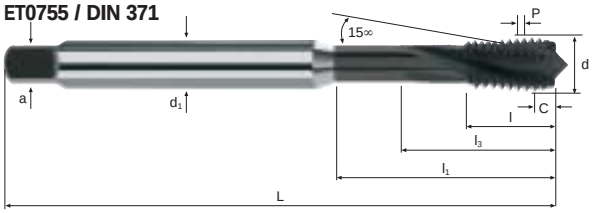
Ø Code	d	P	L	l	l_1	d_1	a			TRIBO ET0706
.240	M12	1.75	110	24	40	9	7.0	3	10.40	●
.244	M14	2.00	110	26	40	11	9.0	3	12.20	●
.246	M16	2.00	110	27	40	12	9.0	3	14.20	●
.312	M18	2.50	125	30	45	14	11.0	4	15.70	●
.314	M20	2.50	140	32	50	16	12.0	4	17.70	●
.316	M22	2.50	140	32	50	18	14.5	4	19.70	●
.320	M24	3.00	160	34	60	18	14.5	4	21.20	●

Anwendung	Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	
	**Titanlegierungen > 300 HB [Ti6Al4V]**	**M 2**	**2.0**	**0.40**	**4**	**635**	**254**	**3**	**475**	**190**	
		M 2.5	**2.5**	**0.45**	**4**	**510**	**230**	**3**	**380**	**171**	
		M 3	**3.0**	**0.50**	**5**	**530**	**265**	**4**	**425**	**213**	
		M 3.5	**3.5**	**0.60**	**5**	**455**	**273**	**4**	**365**	**219**	
		M 4	**4.0**	**0.70**	**5**	**400**	**280**	**4**	**320**	**224**	
		M 5	**5.0**	**0.80**	**5**	**320**	**256**	**4**	**255**	**204**	
		M 6	**6.0**	**1.00**	**5**	**265**	**265**	**4**	**210**	**210**	
		M 8	**8.0**	**1.25**	**5**	**200**	**250**	**4**	**160**	**200**	
		M10	**10.0**	**1.50**	**5**	**160**	**240**	**4**	**125**	**188**	
	Titanlegierungen > 300 HB [Ti6Al4V]	**M12**	**12.0**	**1.75**	**5**	**135**	**236**	**4**	**105**	**184**	
		M14	**14.0**	**2.00**	**5**	**115**	**230**	**4**	**90**	**180**	
		M16	**16.0**	**2.00**	**5**	**100**	**200**	**4**	**80**	**160**	
		M18	**18.0**	**2.50**	**5**	**90**	**225**	**4**	**70**	**175**	
		M20	**20.0**	**2.50**	**5**	**80**	**200**	**4**	**65**	**163**	
		M22	**22.0**	**2.50**	**5**	**70**	**175**	**4**	**60**	**150**	
		M24	**24.0**	**3.00**	**5**	**65**	**195**	**4**	**55**	**165**	

Gewindebohrer titap

M	ISO 2 (6H)
60°	HSS PM/F
DIN 371/376	
	X · P Form C

ET0755 / DIN 371



ET0756 / DIN 376

Ti Titanium

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET0755** ø-Code **.034**

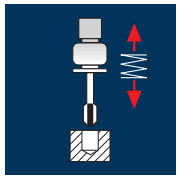
Ø Code	d	P	L	l	l_1	l_3	d_1	a			TRIBO ET0755
.034	M 2	0.40	45	8	–	10.5	2.8	2.1	3	1.70 *	●
.040	M 2.5	0.45	50	9	–	13.0	2.8	2.1	3	2.10	●
.044	M 3	0.50	56	5	18.0	16.0	3.5	2.7	3	2.60 *	●
.056	M 3.5	0.60	56	6	20.0	18.0	4.0	3.0	3	3.00	●
.058	M 4	0.70	63	7	21.0	19.0	4.5	3.4	3	3.40	●
.084	M 5	0.80	70	8	25.0	23.0	6.0	4.9	3	4.30	●
.088	M 6	1.00	80	10	30.0	28.0	6.0	4.9	3	5.10	●
.160	M 8	1.25	90	13	35.0	33.0	8.0	6.2	3	6.90	●
.174	M10	1.50	100	15	39.0	37.0	10.0	8.0	4	8.60	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET0756** ø-Code **.240**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			TRIBO ET0756
.240	M12	1.75	110	18	50.0	48.0	9.0	7.0	4	10.40	●
.244	M14	2.00	110	20	58.0	56.0	11.0	9.0	4	12.20	●
.246	M16	2.00	110	20	58.0	56.0	12.0	9.0	4	14.20	●
.312	M18	2.50	125	25	65.0	63.0	14.0	11.0	5	15.70	●
.314	M20	2.50	140	25	72.0	70.0	16.0	12.0	5	17.70	●
.316	M22	2.50	140	25	72.0	70.0	18.0	14.5	5	19.70	●
.320	M24	3.00	160	30	74.0	72.0	18.0	14.5	5	21.20	●

* angegebenes Mass liegt ausserhalb der Norm

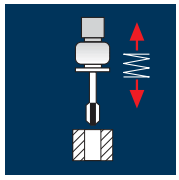
Anwendung



Werkstoff

M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]
Nickelbasislegierungen nicht ausgehärtet								
M 2	2.0	0.40	3	475	190	2	320	128
M 2.5	2.5	0.45	3	380	171	2	255	115
M 3	3.0	0.50	3	320	160	2	210	105
M 4	4.0	0.70	3	240	168	2	160	112
M 5	5.0	0.80	3	190	152	2	125	100
M 6	6.0	1.00	3	160	160	2	105	105
M 8	8.0	1.25	3	120	150	2	80	100
M10	10.0	1.50	3	95	143	2	65	98
M12	12.0	1.75	3	80	140	2	55	96
Nickelbasislegierungen nicht ausgehärtet								
M14	14.0	2.00	3	70	140	2	45	90
M16	16.0	2.00	3	60	120	2	40	80
M18	18.0	2.50	3	55	138	2	35	88
M20	20.0	2.50	3	50	125	2	30	75
M22	22.0	2.50	3	45	113	2	30	75
M24	24.0	3.00	3	40	120	2	25	75
Nickelbasislegierungen ausgehärtet								
M 2	2.0	0.40	2	320	128	2	320	128
M 2.5	2.5	0.45	2	255	115	2	255	115
M 3	3.0	0.50	2	210	105	2	210	105
M 4	4.0	0.70	2	160	112	2	160	112
M 5	5.0	0.80	2	125	100	2	125	100
M 6	6.0	1.00	2	105	105	2	105	105
M 8	8.0	1.25	2	80	100	2	80	100
M10	10.0	1.50	2	65	98	2	65	98
M12	12.0	1.75	2	55	96	2	55	96
Nickelbasislegierungen ausgehärtet								
M14	14.0	2.00	2	45	90	2	45	90
M16	16.0	2.00	2	40	80	2	40	80
M18	18.0	2.50	2	35	88	2	35	88
M20	20.0	2.50	2	30	75	2	30	75
M22	22.0	2.50	2	30	75	2	30	75
M24	24.0	3.00	2	25	75	2	25	75

Anwendung



Werkstoff

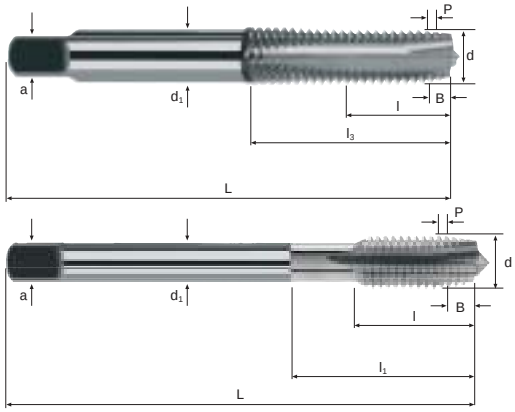
M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]
Nickelbasislegierungen nicht ausgehärtet								
M 2	2.0	0.40	3	475	190	2	320	128
M 2.5	2.5	0.45	3	380	171	2	255	115
M 3	3.0	0.50	3	320	160	2	210	105
M 4	4.0	0.70	3	240	168	2	160	112
M 5	5.0	0.80	3	190	152	2	125	100
M 6	6.0	1.00	3	160	160	2	105	105
M 8	8.0	1.25	3	120	150	2	80	100
M10	10.0	1.50	3	95	143	2	65	98
M12	12.0	1.75	3	80	140	2	55	96
Nickelbasislegierungen nicht ausgehärtet								
M14	14.0	2.00	3	70	140	2	45	90
M16	16.0	2.00	3	60	120	2	40	80
M18	18.0	2.50	3	55	138	2	35	88
M20	20.0	2.50	3	50	125	2	30	75
M22	22.0	2.50	3	45	113	2	30	75
M24	24.0	3.00	3	40	120	2	25	75
Nickelbasislegierungen ausgehärtet								
M 2	2.0	0.40	2	320	128	2	320	128
M 2.5	2.5	0.45	2	255	115	2	255	115
M 3	3.0	0.50	2	210	105	2	210	105
M 4	4.0	0.70	2	160	112	2	160	112
M 5	5.0	0.80	2	125	100	2	125	100
M 6	6.0	1.00	2	105	105	2	105	105
M 8	8.0	1.25	2	80	100	2	80	100
M 10	10.0	1.50	2	65	98	2	65	98
M 12	12.0	1.75	2	55	96	2	55	96
Nickelbasislegierungen ausgehärtet								
M14	14.0	2.00	2	45	90	2	45	90
M16	16.0	2.00	2	40	80	2	40	80
M18	18.0	2.50	2	35	88	2	35	88
M20	20.0	2.50	2	30	75	2	30	75
M22	22.0	2.50	2	30	75	2	30	75
M24	24.0	3.00	2	25	75	2	25	75

Gewindebohrer n-tap

Ni

M

M	ISO 2 (6H)
60°	HSS PM/F
X · P Form B	



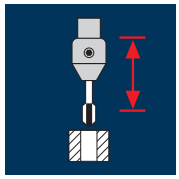
Nickel-Alloys

Beispiel: **Bestell-Nr.** Artikel-Nr. **E0598** ø-Code **.034**

ø Code	d	P	L	l	l_1	l_3	d_1	a			E0598	
.034	M 2	0.40	41	8	–	11	2.8	2.1	2	1.70 *	●	
.040	M 2.5	0.45	44	9	–	13	2.8	2.1	2	2.10	●	
.044	M 3	0.50	48	11	–	16	3.5	2.7	3	2.60 *	●	
.058	M 4	0.70	53	13	–	19	4.5	3.4	3	3.40	●	
.084	M 5	0.80	58	15	–	22	6.0	4.9	3	4.30	●	
.088	M 6	1.00	66	17	–	28	6.0	4.9	3	5.10	●	
.160	M 8	1.25	72	20	–	34	8.0	6.2	3	6.90	●	
.174	M10	1.50	80	22	–	37	10.0	8.0	3	8.60	●	
.240	M12	1.75	89	24	40	–	9.0	7.0	3	10.40	●	
.244	M14	2.00	95	26	40	–	11.0	9.0	3	12.20	●	
.246	M16	2.00	102	27	40	–	12.0	9.0	3	14.20	●	
.312	M18	2.50	112	30	45	–	14.0	11.0	3	15.70	●	
.314	M20	2.50	112	32	45	–	16.0	12.0	3	17.70	●	
.316	M22	2.50	118	32	50	–	18.0	14.5	4	19.70	●	
.320	M24	3.00	130	34	60	–	18.0	14.5	4	21.20	●	

* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]	v_c 3.0 x d	n [min⁻¹]
Stahl < 500 N/mm²	M 3	3.0	0.50	25	2655	20	2120	15	1590
	M 4	4.0	0.70	25	1990	20	1590	15	1195
	M 5	5.0	0.80	25	1590	20	1275	15	955
	M 6	6.0	1.00	25	1325	20	1060	15	795
	M 8	8.0	1.25	25	995	20	795	15	595
	M10	10.0	1.50	25	795	20	635	15	475
	M12	12.0	1.75	25	665	20	530	15	400
	M16	16.0	2.00	25	495	20	400	15	300
	M20	20.0	2.50	25	400	20	320	15	240
Stahl 500 - 850 N/mm²	M 3	3.0	0.50	22	2335	18	1910	12	1275
	M 4	4.0	0.70	22	1750	18	1430	12	955
	M 5	5.0	0.80	22	1400	18	1145	12	765
	M 6	6.0	1.00	22	1165	18	955	12	635
	M 8	8.0	1.25	22	875	18	715	12	475
	M10	10.0	1.50	22	700	18	575	12	380
	M12	12.0	1.75	22	585	18	475	12	320
	M16	16.0	2.00	22	440	18	360	12	240
	M20	20.0	2.50	22	350	18	285	12	190
Stahl 850 - 1100 N/mm²	M 3	3.0	0.50	18	1910	12	1275	10	1060
	M 4	4.0	0.70	18	1430	12	955	10	795
	M 5	5.0	0.80	18	1145	12	765	10	635
	M 6	6.0	1.00	18	955	12	635	10	530
	M 8	8.0	1.25	18	715	12	475	10	400
	M10	10.0	1.50	18	575	12	380	10	320
	M12	12.0	1.75	18	475	12	320	10	265
	M16	16.0	2.00	18	360	12	240	10	200
	M20	20.0	2.50	18	285	12	190	10	160
Gusseisen GG(G)	M 3	3.0	0.50	22	2335	20	2120	18	1910
	M 4	4.0	0.70	22	1750	20	1590	18	1430
	M 5	5.0	0.80	22	1400	20	1275	18	1145
	M 6	6.0	1.00	22	1165	20	1060	18	955
	M 8	8.0	1.25	22	875	20	795	18	715
	M10	10.0	1.50	22	700	20	635	18	575
	M12	12.0	1.75	22	585	20	530	18	475
	M16	16.0	2.00	22	440	20	400	18	360
	M20	20.0	2.50	22	350	20	320	18	285

Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]	v_c 3.0 x d	n [min⁻¹]
Nichtrostender Stahl [Cr-Ni/1.4301]	M 3	3.0	0.50	6	635	4	425	3	320
	M 4	4.0	0.70	6	475	4	320	3	240
	M 5	5.0	0.80	6	380	4	255	3	190
	M 6	6.0	1.00	6	320	4	210	3	160
	M 8	8.0	1.25	6	240	4	160	3	120
	M10	10.0	1.50	6	190	4	125	3	95
	M12	12.0	1.75	6	160	4	105	3	80
	M16	16.0	2.00	6	120	4	80	3	60
	M20	20.0	2.50	6	95	4	65	3	50
Al-Knetlegierung Si < 6% ausgehärtet	M 3	3.0	0.50	25	2655	20	2120	15	1590
	M 4	4.0	0.70	25	1990	20	1590	15	1195
	M 5	5.0	0.80	25	1590	20	1275	15	955
	M 6	6.0	1.00	25	1325	20	1060	15	795
	M 8	8.0	1.25	25	995	20	795	15	595
	M10	10.0	1.50	25	795	20	635	15	475
	M12	12.0	1.75	25	665	20	530	15	400
	M16	16.0	2.00	25	495	20	400	15	300
	M20	20.0	2.50	25	400	20	320	15	240

Gewindebohrer polytap-R

R

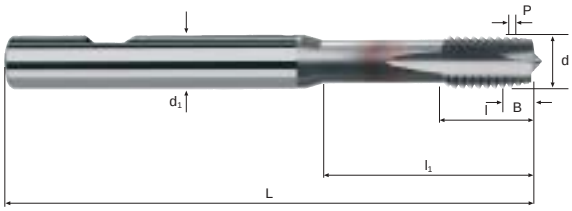
M

M | ISO 2 (6H)

60° | HSS PM/F

DIN 1835B ISO 3338

X · P Form B

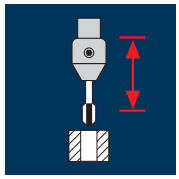


Rm < 850 | **Rm** 850-1100 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0109** ø-Code **.044**

ø Code	d	P	L	l	l1	d1 h6			TiCN
									EH0109
.044	M 3	0.50	63	5	18	6	3	2.50	●
.058	M 4	0.70	66	7	21	6	3	3.30	●
.084	M 5	0.80	70	8	25	6	3	4.20	●
.088	M 6	1.00	80	10	30	6	3	5.00	●
.160	M 8	1.25	90	13	35	8	3	6.80	●
.174	M10	1.50	100	15	39	10	3	8.50	●
.240	M12	1.75	110	18	45	12	3	10.20	●
.244	M14	2.00	110	20	46	16	3	12.00	●
.246	M16	2.00	110	20	50	16	3	14.00	●
.312	M18	2.50	125	25	60	16	4	15.50	●
.314	M20	2.50	140	25	64	16	4	17.50	●

Anwendung



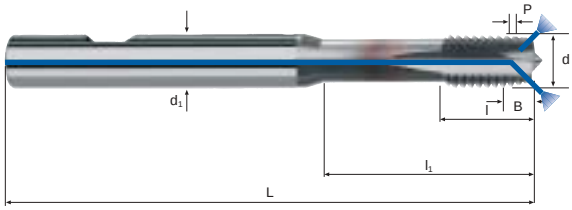
Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]	v_c 3.0 x d	n [min⁻¹]
Stahl < 500 N/mm²	M 6	6.0	1.00	25	1325	20	1060	15	795
	M 8	8.0	1.25	25	995	20	795	15	595
	M10	10.0	1.50	25	795	20	635	15	475
	M12	12.0	1.75	25	665	20	530	15	400
	M14	14.0	2.00	25	570	20	455	15	340
	M16	16.0	2.00	25	495	20	400	15	300
	M18	18.0	2.50	25	440	20	355	15	265
	M20	20.0	2.50	25	400	20	320	15	240
Stahl 500 - 850 N/mm²	M 6	6.0	1.00	22	1165	18	955	12	635
	M 8	8.0	1.25	22	875	18	715	12	475
	M10	10.0	1.50	22	700	18	575	12	380
	M12	12.0	1.75	22	585	18	475	12	320
	M14	14.0	2.00	22	500	18	410	12	275
	M16	16.0	2.00	22	440	18	360	12	240
	M18	18.0	2.50	22	390	18	320	12	210
	M20	20.0	2.50	22	350	18	285	12	190
Stahl 850 - 1100 N/mm²	M 6	6.0	1.00	18	955	12	635	10	530
	M 8	8.0	1.25	18	715	12	475	10	400
	M10	10.0	1.50	18	575	12	380	10	320
	M12	12.0	1.75	18	475	12	320	10	265
	M14	14.0	2.00	18	410	12	275	10	225
	M16	16.0	2.00	18	360	12	240	10	200
	M18	18.0	2.50	18	320	12	210	10	175
	M20	20.0	2.50	18	285	12	190	10	160
Gusseisen GG(G)	M 6	6.0	1.00	22	1165	20	1060	18	955
	M 8	8.0	1.25	22	875	20	795	18	715
	M10	10.0	1.50	22	700	20	635	18	575
	M12	12.0	1.75	22	585	20	530	18	475
	M14	14.0	2.00	22	500	20	455	18	410
	M16	16.0	2.00	22	440	20	400	18	360
	M18	18.0	2.50	22	390	20	355	18	320
	M20	20.0	2.50	22	350	20	320	18	285

Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]	v_c 3.0 x d	n [min⁻¹]
Nichtrostender Stahl [Cr-Ni/1.4301]	M 6	6.0	1.00	6	320	4	210	3	160
	M 8	8.0	1.25	6	240	4	160	3	120
	M10	10.0	1.50	6	190	4	125	3	95
	M12	12.0	1.75	6	160	4	105	3	80
	M14	14.0	2.00	6	135	4	90	3	70
	M16	16.0	2.00	6	120	4	80	3	60
	M18	18.0	2.50	6	105	4	70	3	55
	M20	20.0	2.50	6	95	4	65	3	50
Al-Knetlegierung Si < 6% ausgehärtet	M 6	6.0	1.00	25	1325	20	1060	15	795
	M 8	8.0	1.25	25	995	20	795	15	595
	M10	10.0	1.50	25	795	20	635	15	475
	M12	12.0	1.75	25	665	20	530	15	400
	M14	14.0	2.00	25	570	20	455	15	340
	M16	16.0	2.00	25	495	20	400	15	300
	M18	18.0	2.50	25	440	20	355	15	265
	M20	20.0	2.50	25	400	20	320	15	240

Gewindebohrer polytap-R

Incool

M	ISO 2 (6H)
60°	HSS PM/F
DIN 1835B ISO 3338	
	Form B

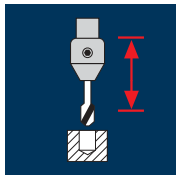


Rm < 850	Rm 850-1100						Inox Stainless		GG(G) Aluminium

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0110** ø-Code **.088**

ø Code	d	P	L	l	l_1	d_1 h6			TiCN EH0110
.088	M 6	1.00	80	10	30	6	3	5.00	●
.160	M 8	1.25	90	13	35	8	3	6.80	●
.174	M10	1.50	100	15	39	10	3	8.50	●
.240	M12	1.75	110	18	45	12	3	10.20	●
.244	M14	2.00	110	20	46	16	3	12.00	●
.246	M16	2.00	110	20	50	16	3	14.00	●
.312	M18	2.50	125	25	60	16	4	15.50	●
.314	M20	2.50	140	25	64	16	4	17.50	●

Anwendung

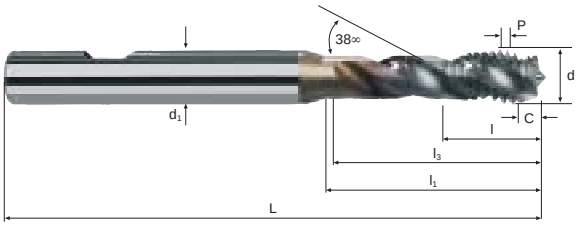


Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Stahl < 500 N/mm²	M 3	3.0	0.50	25	2655	22	2335	15	1590
	M 4	4.0	0.70	25	1990	22	1750	15	1195
	M 5	5.0	0.80	25	1590	22	1400	15	955
	M 6	6.0	1.00	25	1325	22	1165	15	795
	M 8	8.0	1.25	25	995	22	875	15	595
	M10	10.0	1.50	25	795	22	700	15	475
	M12	12.0	1.75	25	665	22	585	15	400
	M16	16.0	2.00	25	495	22	440	15	300
	M20	20.0	2.50	25	400	22	350	15	240
Stahl 500 - 850 N/mm²	M 3	3.0	0.50	22	2335	20	2120	12	1275
	M 4	4.0	0.70	22	1750	20	1590	12	955
	M 5	5.0	0.80	22	1400	20	1275	12	765
	M 6	6.0	1.00	22	1165	20	1060	12	635
	M 8	8.0	1.25	22	875	20	795	12	475
	M10	10.0	1.50	22	700	20	635	12	380
	M12	12.0	1.75	22	585	20	530	12	320
	M16	16.0	2.00	22	440	20	400	12	240
	M20	20.0	2.50	22	350	20	320	12	190
Stahl 850 - 1100 N/mm²	M 3	3.0	0.50	18	1910	12	1275	8	850
	M 4	4.0	0.70	18	1430	12	955	8	635
	M 5	5.0	0.80	18	1145	12	765	8	510
	M 6	6.0	1.00	18	955	12	635	8	425
	M 8	8.0	1.25	18	715	12	475	8	320
	M10	10.0	1.50	18	575	12	380	8	255
	M12	12.0	1.75	18	475	12	320	8	210
	M16	16.0	2.00	18	360	12	240	8	160
	M20	20.0	2.50	18	285	12	190	8	125
Gusseisen GG(G)	M 3	3.0	0.50	18	1910	15	1590	12	1275
	M 4	4.0	0.70	18	1430	15	1195	12	955
	M 5	5.0	0.80	18	1145	15	955	12	765
	M 6	6.0	1.00	18	955	15	795	12	635
	M 8	8.0	1.25	18	715	15	595	12	475
	M10	10.0	1.50	18	575	15	475	12	380
	M12	12.0	1.75	18	475	15	400	12	320
	M16	16.0	2.00	18	360	15	300	12	240
	M20	20.0	2.50	18	285	15	240	12	190

Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Nichtrostender Stahl [Cr-Ni/1.4301]	M 3	3.0	0.50	4	425	3	320	2	210
	M 4	4.0	0.70	4	320	3	240	2	160
	M 5	5.0	0.80	4	255	3	190	2	125
	M 6	6.0	1.00	4	210	3	160	2	105
	M 8	8.0	1.25	4	160	3	120	2	80
	M10	10.0	1.50	4	125	3	95	2	65
	M12	12.0	1.75	4	105	3	80	2	55
	M16	16.0	2.00	4	80	3	60	2	40
	M20	20.0	2.50	4	65	3	50	2	30
Al-Knetlegierung Si < 6% ausgehärtet	M 3	3.0	0.50	25	2655	22	2335	15	1590
	M 4	4.0	0.70	25	1990	22	1750	15	1195
	M 5	5.0	0.80	25	1590	22	1400	15	955
	M 6	6.0	1.00	25	1325	22	1165	15	795
	M 8	8.0	1.25	25	995	22	875	15	595
	M10	10.0	1.50	25	795	22	700	15	475
	M12	12.0	1.75	25	665	22	585	15	400
	M16	16.0	2.00	25	495	22	440	15	300
	M20	20.0	2.50	25	400	22	350	15	240

Gewindebohrer polytap-R

M	ISO 2 (6H)
60°	HSS PM/F
DIN 1835B ISO 3338	
	X · P Form C

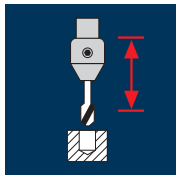


Rm < 850	Rm 850-1100						Inox Stainless		GG(G) Aluminium

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0229** ø-Code **.044**

ø Code	d	P	L	l	l_1	l_3	d_1 h6			TiCN EH0229
.044	M 3	0.50	63	5	18	16	6	3	2.50	●
.058	M 4	0.70	66	7	21	19	6	3	3.30	●
.084	M 5	0.80	70	8	25	23	6	3	4.20	●
.088	M 6	1.00	80	10	30	28	6	3	5.00	●
.160	M 8	1.25	90	13	35	33	8	3	6.80	●
.174	M10	1.50	100	15	39	37	10	3	8.50	●
.240	M12	1.75	110	18	45	43	12	3	10.20	●
.244	M14	2.00	110	20	46	44	16	4	12.00	●
.246	M16	2.00	110	20	50	48	16	4	14.00	●
.312	M18	2.50	125	25	60	58	16	4	15.50	●
.314	M20	2.50	140	25	64	62	16	4	17.50	●

Anwendung



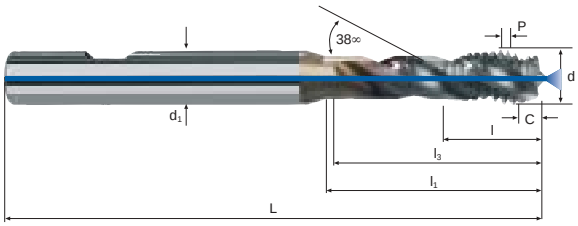
Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Stahl < 500 N/mm²	M 4	4.0	0.70	25	1990	22	1750	15	1195
	M 5	5.0	0.80	25	1590	22	1400	15	955
	M 6	6.0	1.00	25	1325	22	1165	15	795
	M 8	8.0	1.25	25	995	22	875	15	595
	M10	10.0	1.50	25	795	22	700	15	475
	M12	12.0	1.75	25	665	22	585	15	400
	M14	14.0	2.00	25	570	22	500	15	340
	M16	16.0	2.00	25	495	22	440	15	300
	M20	20.0	2.50	25	400	22	350	15	240
Stahl 500 - 850 N/mm²	M 4	4.0	0.70	22	1750	20	1590	12	955
	M 5	5.0	0.80	22	1400	20	1275	12	765
	M 6	6.0	1.00	22	1165	20	1060	12	635
	M 8	8.0	1.25	22	875	20	795	12	475
	M10	10.0	1.50	22	700	20	635	12	380
	M12	12.0	1.75	22	585	20	530	12	320
	M14	14.0	2.00	22	500	20	455	12	275
	M16	16.0	2.00	22	440	20	400	12	240
	M20	20.0	2.50	22	350	20	320	12	190
Stahl 850 - 1100 N/mm²	M 4	4.0	0.70	18	1430	12	955	8	635
	M 5	5.0	0.80	18	1145	12	765	8	510
	M 6	6.0	1.00	18	955	12	635	8	425
	M 8	8.0	1.25	18	715	12	475	8	320
	M10	10.0	1.50	18	575	12	380	8	255
	M12	12.0	1.75	18	475	12	320	8	210
	M14	14.0	2.00	18	410	12	275	8	180
	M16	16.0	2.00	18	360	12	240	8	160
	M20	20.0	2.50	18	285	12	190	8	125
Gusseisen GG(G)	M 4	4.0	0.70	18	1430	15	1195	12	955
	M 5	5.0	0.80	18	1145	15	955	12	765
	M 6	6.0	1.00	18	955	15	795	12	635
	M 8	8.0	1.25	18	715	15	595	12	475
	M10	10.0	1.50	18	575	15	475	12	380
	M12	12.0	1.75	18	475	15	400	12	320
	M14	14.0	2.00	18	410	15	340	12	275
	M16	16.0	2.00	18	360	15	300	12	240
	M20	20.0	2.50	18	285	15	240	12	190

Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Nichtrostender Stahl [Cr-Ni/1.4301]	M 4	4.0	0.70	4	320	3	240	2	160
	M 5	5.0	0.80	4	255	3	190	2	125
	M 6	6.0	1.00	4	210	3	160	2	105
	M 8	8.0	1.25	4	160	3	120	2	80
	M10	10.0	1.50	4	125	3	95	2	65
	M12	12.0	1.75	4	105	3	80	2	55
	M14	14.0	2.00	4	90	3	70	2	45
	M16	16.0	2.00	4	80	3	60	2	40
	M20	20.0	2.50	4	65	3	50	2	30
Al-Knetlegierung Si < 6% ausgehärtet	M 4	4.0	0.70	25	1990	22	1750	15	1195
	M 5	5.0	0.80	25	1590	22	1400	15	955
	M 6	6.0	1.00	25	1325	22	1165	15	795
	M 8	8.0	1.25	25	995	22	875	15	595
	M10	10.0	1.50	25	795	22	700	15	475
	M12	12.0	1.75	25	665	22	585	15	400
	M14	14.0	2.00	25	570	22	500	15	340
	M16	16.0	2.00	25	495	22	440	15	300
	M20	20.0	2.50	25	400	22	350	15	240

Gewindebohrer polytap-R

Incool

M	ISO 2 (6H)
60°	HSS PM/F
DIN 1835B ISO 3338	
	X · P Form C

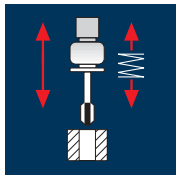


Rm < 850	Rm 850-1100						Inox Stainless		GG(G) Aluminium

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0230** ø-Code **.058**

ø Code	d	P	L	l	l_1	l_3	d_1 h6			TiCN EH0230
.058	M 4	0.70	66	7	21	19	6	3	3.30	●
.084	M 5	0.80	70	8	25	23	6	3	4.20	●
.088	M 6	1.00	80	10	30	28	6	3	5.00	●
.160	M 8	1.25	90	13	35	33	8	3	6.80	●
.174	M10	1.50	100	15	39	37	10	3	8.50	●
.240	M12	1.75	110	18	45	43	12	3	10.20	●
.244	M14	2.00	110	20	46	44	16	4	12.00	●
.246	M16	2.00	110	20	50	48	16	4	14.00	●
.312	M18	2.50	125	25	60	58	16	4	15.50	●
.314	M20	2.50	140	25	64	62	16	4	17.50	●

Anwendung

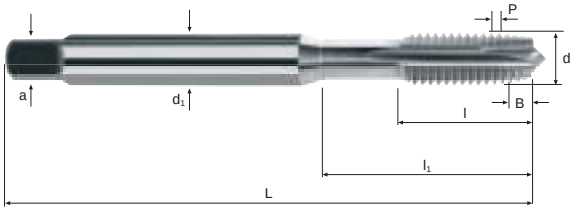


Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M 1	1.0	0.25	14	4455	1114	12	3820	955	10	3185	796
	M 1.2	1.2	0.25	14	3715	929	12	3185	796	10	2655	664
	M 1.4	1.4	0.30	14	3185	956	12	2730	819	10	2275	683
	M 1.6	1.6	0.35	14	2785	975	12	2385	835	10	1990	697
	M 1.8	1.8	0.35	14	2475	866	12	2120	742	10	1770	620
	M 2	2.0	0.40	14	2230	892	12	1910	764	10	1590	636
	M 2.2	2.2	0.45	14	2025	911	12	1735	781	10	1445	650
	M 2.3	2.3	0.40	14	1940	776	12	1660	664	10	1385	554
	M 2.5	2.5	0.45	14	1785	803	12	1530	689	10	1275	574
Stahl < 500 N/mm²	M 2.6	2.6	0.45	18	2205	992	15	1835	826	12	1470	662
	M 3	3.0	0.50	18	1910	955	15	1590	795	12	1275	638
	M 3.5	3.5	0.60	18	1635	981	15	1365	819	12	1090	654
	M 4	4.0	0.70	18	1430	1001	15	1195	837	12	955	669
	M 4.5	4.5	0.75	18	1275	956	15	1060	795	12	850	638
	M 5	5.0	0.80	18	1145	916	15	955	764	12	765	612
	M 6	6.0	1.00	18	955	955	15	795	795	12	635	635
	M 8	8.0	1.25	18	715	894	15	595	744	12	475	594
	M10	10.0	1.50	18	575	863	15	475	713	12	380	570
Stahl 500 - 850 N/mm²	M 1	1.0	0.25	12	3820	955	8	2545	636	6	1910	478
	M 1.2	1.2	0.25	12	3185	796	8	2120	530	6	1590	398
	M 1.4	1.4	0.30	12	2730	819	8	1820	546	6	1365	410
	M 1.6	1.6	0.35	12	2385	835	8	1590	557	6	1195	418
	M 1.8	1.8	0.35	12	2120	742	8	1415	495	6	1060	371
	M 2	2.0	0.40	12	1910	764	8	1275	510	6	955	382
	M 2.2	2.2	0.45	12	1735	781	8	1155	520	6	870	392
	M 2.3	2.3	0.40	12	1660	664	8	1105	442	6	830	332
	M 2.5	2.5	0.45	12	1530	689	8	1020	459	6	765	344
Stahl 500 - 850 N/mm²	M 2.6	2.6	0.45	15	1835	826	10	1225	551	8	980	441
	M 3	3.0	0.50	15	1590	795	10	1060	530	8	850	425
	M 3.5	3.5	0.60	15	1365	819	10	910	546	8	730	438
	M 4	4.0	0.70	15	1195	837	10	795	557	8	635	445
	M 4.5	4.5	0.75	15	1060	795	10	705	529	8	565	424
	M 5	5.0	0.80	15	955	764	10	635	508	8	510	408
	M 6	6.0	1.00	15	795	795	10	530	530	8	425	425
	M 8	8.0	1.25	15	595	744	10	400	500	8	320	400
	M10	10.0	1.50	15	475	713	10	320	480	8	255	383

Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet Empfehlung: unbeschichtet	M 1	1.0	0.25	12	3820	955	10	3185	796	8	2545	636
	M 1.2	1.2	0.25	12	3185	796	10	2655	664	8	2120	530
	M 1.4	1.4	0.30	12	2730	819	10	2275	683	8	1820	546
	M 1.6	1.6	0.35	12	2385	835	10	1990	697	8	1590	557
	M 1.8	1.8	0.35	12	2120	742	10	1770	620	8	1415	495
	M 2	2.0	0.40	12	1910	764	10	1590	636	8	1275	510
	M 2.2	2.2	0.45	12	1735	781	10	1445	650	8	1155	520
	M 2.3	2.3	0.40	12	1660	664	10	1385	554	8	1105	442
	M 2.5	2.5	0.45	12	1530	689	10	1275	574	8	1020	459
Al-Knetlegierung Si < 6% ausgehärtet Empfehlung: unbeschichtet	M 2.6	2.6	0.45	15	1835	826	12	1470	662	10	1225	551
	M 3	3.0	0.50	15	1590	795	12	1275	638	10	1060	530
	M 3.5	3.5	0.60	15	1365	819	12	1090	654	10	910	546
	M 4	4.0	0.70	15	1195	837	12	955	669	10	795	557
	M 4.5	4.5	0.75	15	1060	795	12	850	638	10	705	529
	M 5	5.0	0.80	15	955	764	12	765	612	10	635	508
	M 6	6.0	1.00	15	795	795	12	635	635	10	530	530
	M 8	8.0	1.25	15	595	744	12	475	594	10	400	500
	M10	10.0	1.50	15	475	713	12	380	570	10	320	480
Nichtrostender Stahl [Cr-Ni/1.4301]	M 1	1.0	0.25	4	1275	319	3	955	239	2	635	159
	M 1.2	1.2	0.25	4	1060	265	3	795	199	2	530	133
	M 1.4	1.4	0.30	4	910	273	3	680	204	2	455	137
	M 1.6	1.6	0.35	4	795	278	3	595	208	2	400	140
	M 1.8	1.8	0.35	4	705	247	3	530	186	2	355	124
	M 2	2.0	0.40	4	635	254	3	475	190	2	320	128
	M 2.2	2.2	0.45	4	580	261	3	435	196	2	290	131
	M 2.3	2.3	0.40	4	555	222	3	415	166	2	275	110
	M 2.5	2.5	0.45	4	510	230	3	380	171	2	255	115
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2.6	2.6	0.45	5	610	275	4	490	221	3	365	164
	M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
	M 3.5	3.5	0.60	5	455	273	4	365	219	3	275	165
	M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
	M 4.5	4.5	0.75	5	355	266	4	285	214	3	210	158
	M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
	M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
	M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
	M10	10.0	1.50	5	160	240	4	125	188	3	95	143

Gewindebohrer u-tap

M	ISO 2 (6H)
60°	HSS-E Co5
DIN 371	
	X · P Form B



Rm < 850							Inox Stainless		GG(G) Aluminium Copper

Beispiel: **Bestell-Nr.** Artikel-Nr. **E10800** ø-Code **.010**

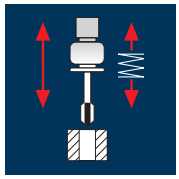
ø Code	d	P	L	l	l1	d1	a			E10800	VAP EV10800
.010	M 1	0.25	40	5.5	–	2.5	2.1	2	0.80 *	●	●
.012	M 1.2	0.25	40	5.5	–	2.5	2.1	2	1.00	●	●
.020	M 1.4	0.30	40	7.0	–	2.5	2.1	2	1.15 *	●	●
.022	M 1.6	0.35	40	8.0	–	2.5	2.1	2	1.30	●	●
.024	M 1.7	0.35	40	8.0	–	2.5	2.1	2	1.40	●	●
.026	M 1.8	0.35	40	8.0	–	2.5	2.1	2	1.50	●	●
.034	M 2	0.40	45	8.0	–	2.8	2.1	2	1.60	●	●
.036	M 2.2	0.45	45	9.0	–	2.8	2.1	2	1.75	●	●
.038	M 2.3	0.40	45	9.0	–	2.8	2.1	2	1.90	●	●
.040	M 2.5	0.45	50	9.0	–	2.8	2.1	2	2.05	●	●
.042	M 2.6	0.45	50	9.0	–	2.8	2.1	2	2.15	●	●
.044	M 3	0.50	56	12.0	18.0	3.5	2.7	3	2.50	●	●
.056	M 3.5	0.60	56	12.0	20.0	4.0	3.0	3	2.90	●	●
.058	M 4	0.70	63	13.0	21.0	4.5	3.4	3	3.30	●	●
.061	M 4.5	0.75	70	14.0	25.0	6.0	4.9	3	3.75	●	●
.084	M 5	0.80	70	15.0	25.0	6.0	4.9	3	4.20	●	●
.088	M 6	1.00	80	17.0	30.0	6.0	4.9	3	5.00	●	●
.089	M 7	1.00	80	17.0	30.0	7.0	6.2	3	6.00	●	●
.160	M 8	1.25	90	20.0	35.0	8.0	6.2	3	6.80	●	●
.174	M10	1.50	100	22.0	39.0	10.0	8.0	3	8.50	●	●

≤ M1.4 Toleranz ISO 1 (4H)

* angegebenes Mass liegt ausserhalb der Norm

Grössere Abmessungen siehe Artikel-Nr. E10801, Seite 213

Anwendung



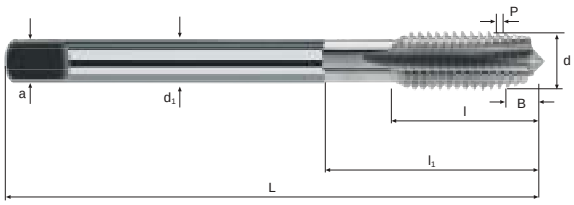
Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M12	12.0	1.75	18	475	831	15	400	700	12	320	560
	M14	14.0	2.00	18	410	820	15	340	680	12	275	550
	M16	16.0	2.00	18	360	720	15	300	600	12	240	480
	M18	18.0	2.50	18	320	800	15	265	663	12	210	525
	M20	20.0	2.50	18	285	713	15	240	600	12	190	475
	M22	22.0	2.50	18	260	650	15	215	538	12	175	438
	M24	24.0	3.00	18	240	720	15	200	600	12	160	480
Stahl 500 - 850 N/mm²	M12	12.0	1.75	15	400	700	10	265	464	8	210	368
	M14	14.0	2.00	15	340	680	10	225	450	8	180	360
	M16	16.0	2.00	15	300	600	10	200	400	8	160	320
	M18	18.0	2.50	15	265	663	10	175	438	8	140	350
	M20	20.0	2.50	15	240	600	10	160	400	8	125	313
	M22	22.0	2.50	15	215	538	10	145	363	8	115	288
	M24	24.0	3.00	15	200	600	10	135	405	8	105	315
Al-Knetlegierung Si < 6% ausgehärtet Empfehlung: unbeschichtet	M12	12.0	1.75	15	400	700	12	320	560	10	265	464
	M14	14.0	2.00	15	340	680	12	275	550	10	225	450
	M16	16.0	2.00	15	300	600	12	240	480	10	200	400
	M18	18.0	2.50	15	265	663	12	210	525	10	175	438
	M20	20.0	2.50	15	240	600	12	190	475	10	160	400
	M22	22.0	2.50	15	215	538	12	175	438	10	145	363
	M24	24.0	3.00	15	200	600	12	160	480	10	135	405
Nichtrostender Stahl [Cr-Ni/1.4301]	M12	2.6	0.45	5	610	275	4	490	221	3	365	164
	M14	3.0	0.50	5	530	265	4	425	213	3	320	160
	M16	3.5	0.60	5	455	273	4	365	219	3	275	165
	M18	4.0	0.70	5	400	280	4	320	224	3	240	168
	M20	4.5	0.75	5	355	266	4	285	214	3	210	158
	M22	5.0	0.80	5	320	256	4	255	204	3	190	152
	M24	6.0	1.00	5	265	265	4	210	210	3	160	160

Gewindebohrer u-tap

U

M

M	ISO 2 (6H)
60°	HSS-E Co5
DIN 376	
	X · P Form B

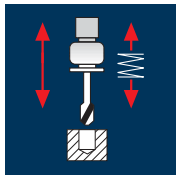


Rm < 850							Inox Stainless		GG(G) Aluminium Copper

Beispiel: **Bestell-Nr.** Artikel-Nr. **E10801** ø-Code **.240**

ø Code	d	P	L	l	l_1	d_1	a			VAP E10801	VAP EV10801
.240	M12	1.75	110	24	40	9.0	7.0	3	10.20	●	●
.244	M14	2.00	110	26	40	11.0	9.0	3	12.00	●	●
.246	M16	2.00	110	27	40	12.0	9.0	3	14.00	●	●
.312	M18	2.50	125	30	45	14.0	11.0	4	15.50	●	●
.314	M20	2.50	140	32	50	16.0	12.0	4	17.50	●	●
.316	M22	2.50	140	32	50	18.0	14.5	4	19.50	●	●
.320	M24	3.00	160	34	60	18.0	14.5	4	21.00	●	●

Anwendung

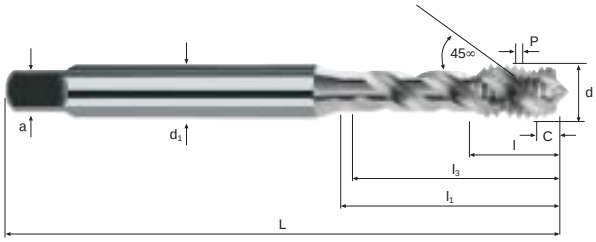


Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M 1.6	1.6	0.35	11	2190	767	10	1990	697	8	1590	557
	M 1.7	1.7	0.35	11	2060	721	10	1870	655	8	1500	525
	M 1.8	1.8	0.35	11	1945	681	10	1770	620	8	1415	495
	M 2	2.0	0.40	11	1750	700	10	1590	636	8	1275	510
	M 2.2	2.2	0.45	11	1590	716	10	1445	650	8	1155	520
	M 2.3	2.3	0.40	11	1520	608	10	1385	554	8	1105	442
	M 2.5	2.5	0.45	11	1400	630	10	1275	574	8	1020	459
	M 2.6	2.6	0.45	14	1715	772	12	1470	662	10	1225	551
	M 3	3.0	0.50	14	1485	743	12	1275	638	10	1060	530
Stahl < 500 N/mm²	M 3.5	3.5	0.60	14	1275	765	12	1090	654	10	910	546
	M 4	4.0	0.70	14	1115	781	12	955	669	10	795	557
	M 4.5	4.5	0.75	14	990	743	12	850	638	10	705	529
	M 5	5.0	0.80	14	890	712	12	765	612	10	635	508
	M 6	6.0	1.00	14	745	745	12	635	635	10	530	530
	M 7	7.0	1.00	14	635	635	12	545	545	10	455	455
	M 8	8.0	1.25	14	555	694	12	475	594	10	400	500
	M10	10.0	1.50	14	445	668	12	380	570	10	320	480
Stahl 500 - 850 N/mm²	M 1.6	1.6	0.35	8	1590	557	7	1395	488	6	1195	418
	M 1.7	1.7	0.35	8	1500	525	7	1310	458	6	1125	394
	M 1.8	1.8	0.35	8	1415	495	7	1240	434	6	1060	371
	M 2	2.0	0.40	8	1275	510	7	1115	446	6	955	382
	M 2.2	2.2	0.45	8	1155	520	7	1015	457	6	870	392
	M 2.3	2.3	0.40	8	1105	442	7	970	388	6	830	332
	M 2.5	2.5	0.45	8	1020	459	7	890	401	6	765	344
	M 2.6	2.6	0.45	9	1100	495	8	980	441	7	855	385
	M 3	3.0	0.50	9	955	478	8	850	425	7	745	373
Stahl 500 - 850 N/mm²	M 3.5	3.5	0.60	9	820	492	8	730	438	7	635	381
	M 4	4.0	0.70	9	715	500	8	635	445	7	555	389
	M 4.5	4.5	0.75	9	635	476	8	565	424	7	495	371
	M 5	5.0	0.80	9	575	460	8	510	408	7	445	356
	M 6	6.0	1.00	9	475	475	8	425	425	7	370	370
	M 7	7.0	1.00	9	410	410	8	365	365	7	320	320
	M 8	8.0	1.25	9	360	450	8	320	400	7	280	350
	M10	10.0	1.50	9	285	428	8	255	383	7	225	338

Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet Empfehlung: unbeschichtet	M 1.6	1.6	0.35	8	1590	557	6	1195	418	5	995	348
	M 1.7	1.7	0.35	8	1500	525	6	1125	394	5	935	327
	M 1.8	1.8	0.35	8	1415	495	6	1060	371	5	885	310
	M 2	2.0	0.40	8	1275	510	6	955	382	5	795	318
	M 2.2	2.2	0.45	8	1155	520	6	870	392	5	725	326
	M 2.3	2.3	0.40	8	1105	442	6	830	332	5	690	276
	M 2.5	2.5	0.45	8	1020	459	6	765	344	5	635	286
	M 2.6	2.6	0.45	10	1225	551	8	980	441	6	735	331
	M 3	3.0	0.50	10	1060	530	8	850	425	6	635	318
Al-Knetlegierung Si < 6% ausgehärtet Empfehlung: unbeschichtet	M 3.5	3.5	0.60	10	910	546	8	730	438	6	545	327
	M 4	4.0	0.70	10	795	557	8	635	445	6	475	333
	M 4.5	4.5	0.75	10	705	529	8	565	424	6	425	319
	M 5	5.0	0.80	10	635	508	8	510	408	6	380	304
	M 6	6.0	1.00	10	530	530	8	425	425	6	320	320
	M 7	7.0	1.00	10	455	455	8	365	365	6	275	275
	M 8	8.0	1.25	10	400	500	8	320	400	6	240	300
	M10	10.0	1.50	10	320	480	8	255	383	6	190	285
Nichtrostender Stahl [Cr-Ni/1.4301]	M 1.6	1.6	0.35	3	595	208	2	400	140	2	400	140
	M 1.7	1.7	0.35	3	560	196	2	375	131	2	375	131
	M 1.8	1.8	0.35	3	530	186	2	355	124	2	355	124
	M 2	2.0	0.40	3	475	190	2	320	128	2	320	128
	M 2.2	2.2	0.45	3	435	196	2	290	131	2	290	131
	M 2.3	2.3	0.40	3	415	166	2	275	110	2	275	110
	M 2.5	2.5	0.45	3	380	171	2	255	115	2	255	115
	M 2.6	2.6	0.45	4	490	221	3	365	164	3	365	164
	M 3	3.0	0.50	4	425	213	3	320	160	3	320	160
Nichtrostender Stahl [Cr-Ni/1.4301]	M 3.5	3.5	0.60	4	365	219	3	275	165	3	275	165
	M 4	4.0	0.70	4	320	224	3	240	168	3	240	168
	M 4.5	4.5	0.75	4	285	214	3	210	158	3	210	158
	M 5	5.0	0.80	4	255	204	3	190	152	3	190	152
	M 6	6.0	1.00	4	210	210	3	160	160	3	160	160
	M 7	7.0	1.00	4	180	180	3	135	135	3	135	135
	M 8	8.0	1.25	4	160	200	3	120	150	3	120	150
	M10	10.0	1.50	4	125	188	3	95	143	3	95	143

Gewindebohrer u-tap

M	ISO 2 (6H)
60°	HSS-E Co5
DIN 371	
	X · P Form C



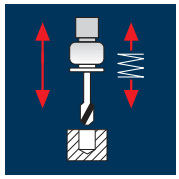
Rm < 850							Inox Stainless		GG(G) Aluminium Copper

Beispiel: **Bestell-Nr.** Artikel-Nr. **E10820** ø-Code **.022**

ø Code	d	P	L	l	l_1	l_3	d_1	a			E10820	VAP EV10820
.022	M 1.6	0.35	40	8.0	–	9.0	2.5	2.1	3	1.30	●	●
.024	M 1.7	0.35	40	8.0	–	9.0	2.5	2.1	3	1.40	●	●
.026	M 1.8	0.35	40	8.0	–	9.0	2.5	2.1	3	1.50	●	●
.034	M 2	0.40	45	8.0	–	10.5	2.8	2.1	3	1.60	●	●
.036	M 2.2	0.45	45	9.0	–	12.5	2.8	2.1	3	1.75	●	●
.038	M 2.3	0.40	45	9.0	–	12.5	2.8	2.1	3	1.90	●	●
.040	M 2.5	0.45	50	9.0	–	13.0	2.8	2.1	3	2.05	●	●
.042	M 2.6	0.45	50	9.0	–	13.0	2.8	2.1	3	2.15	●	●
.044	M 3	0.50	56	4.0	18.0	16.0	3.5	2.7	3	2.50	●	●
.056	M 3.5	0.60	56	4.8	20.0	18.0	4.0	3.0	3	2.90	●	●
.058	M 4	0.70	63	5.6	21.0	19.0	4.5	3.4	3	3.30	●	●
.061	M 4.5	0.75	70	6.0	25.0	23.0	6.0	4.9	3	3.75	●	●
.084	M 5	0.80	70	6.4	25.0	23.0	6.0	4.9	3	4.20	●	●
.088	M 6	1.00	80	8.0	30.0	28.0	6.0	4.9	3	5.00	●	●
.089	M 7	1.00	80	8.0	30.0	28.0	7.0	6.2	3	6.00	●	●
.160	M 8	1.25	90	10.0	35.0	33.0	8.0	6.2	3	6.80	●	●
.174	M10	1.50	100	12.0	39.0	37.0	10.0	8.0	3	8.50	●	●

Grössere Abmessungen siehe Artikel-Nr. E10821, Seite 217

Anwendung

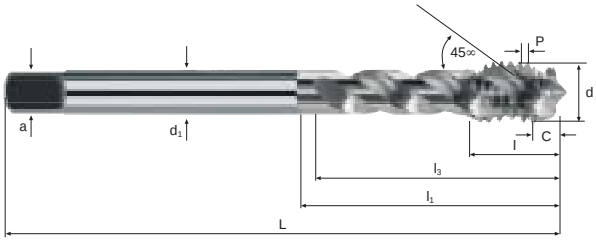


Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M12	12.0	1.75	14	370	648	12	320	560	10	265	464
	M14	14.0	2.00	14	320	640	12	275	550	10	225	450
	M16	16.0	2.00	14	280	560	12	240	480	10	200	400
	M18	18.0	2.50	14	250	625	12	210	525	10	175	438
	M20	20.0	2.50	14	225	563	12	190	475	10	160	400
	M22	22.0	2.50	14	205	513	12	175	438	10	145	363
	M24	24.0	3.00	14	185	555	12	160	480	10	135	405
	M27	27.0	3.00	14	165	495	12	140	420	10	120	360
	M30	30.0	3.50	14	150	525	12	125	438	10	105	368
Stahl < 500 N/mm²	M33	33.0	3.50	14	135	473	12	115	403	10	95	333
	M36	36.0	4.00	14	125	500	12	105	420	10	90	360
	M39	39.0	4.00	14	115	460	12	100	400	10	80	320
	M42	42.0	4.50	14	105	473	12	90	405	10	75	338
Stahl 500 - 850 N/mm²	M12	12.0	1.75	9	240	420	8	210	368	7	185	324
	M14	14.0	2.00	9	205	410	8	180	360	7	160	320
	M16	16.0	2.00	9	180	360	8	160	320	7	140	280
	M18	18.0	2.50	9	160	400	8	140	350	7	125	313
	M20	20.0	2.50	9	145	363	8	125	313	7	110	275
	M22	22.0	2.50	9	130	325	8	115	288	7	100	250
	M24	24.0	3.00	9	120	360	8	105	315	7	95	285
	M27	27.0	3.00	9	105	315	8	95	285	7	85	255
	M30	30.0	3.50	9	95	333	8	85	298	7	75	263
Stahl 500 - 850 N/mm²	M33	33.0	3.50	9	85	298	8	75	263	7	70	245
	M36	36.0	4.00	9	80	320	8	70	280	7	60	240
	M39	39.0	4.00	9	75	300	8	65	260	7	55	220
	M42	42.0	4.50	9	70	315	8	60	270	7	55	248

Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet Empfehlung: unbeschichtet	M12	12.0	1.75	10	265	464	8	210	368	6	160	280
	M14	14.0	2.00	10	225	450	8	180	360	6	135	270
	M16	16.0	2.00	10	200	400	8	160	320	6	120	240
	M18	18.0	2.50	10	175	438	8	140	350	6	105	263
	M20	20.0	2.50	10	160	400	8	125	313	6	95	238
	M22	22.0	2.50	10	145	363	8	115	288	6	85	213
	M24	24.0	3.00	10	135	405	8	105	315	6	80	240
	M27	27.0	3.00	10	120	360	8	95	285	6	70	210
	M30	30.0	3.50	10	105	368	8	85	298	6	65	228
Al-Knetlegierung Si < 6% ausgehärtet Empfehlung: unbeschichtet	M33	33.0	3.50	10	95	333	8	75	263	6	60	210
	M36	36.0	4.00	10	90	360	8	70	280	6	55	220
	M39	39.0	4.00	10	80	320	8	65	260	6	50	200
	M42	42.0	4.50	10	75	338	8	60	270	6	45	203
Nichtrostender Stahl [Cr-Ni/1.4301]	M12	12.0	1.75	4	105	184	3	80	140	3	80	140
	M14	14.0	2.00	4	90	180	3	70	140	3	70	140
	M16	16.0	2.00	4	80	160	3	60	120	3	60	120
	M18	18.0	2.50	4	70	175	3	55	138	3	55	138
	M20	20.0	2.50	4	65	163	3	50	125	3	50	125
	M22	22.0	2.50	4	60	150	3	45	113	3	45	113
	M24	24.0	3.00	4	55	165	3	40	120	3	40	120
	M27	27.0	3.00	4	45	135	3	35	105	3	35	105
	M30	30.0	3.50	4	40	140	3	30	105	3	30	105
Nichtrostender Stahl [Cr-Ni/1.4301]	M33	33.0	3.50	4	40	140	3	30	105	3	30	105
	M36	36.0	4.00	4	35	140	3	25	100	3	25	100
	M39	39.0	4.00	4	35	140	3	25	100	3	25	100
	M42	42.0	4.50	4	30	135	3	25	113	3	25	113

Gewindebohrer u-tap

M	ISO 2 (6H)
60°	HSS-E Co5
DIN 376	
	X · P Form C

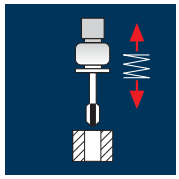


Rm < 850							Inox Stainless		GG(G) Aluminium Copper

Beispiel: **Bestell-Nr.** Artikel-Nr. **E10821** ø-Code **.240**

ø Code	d	P	L	l	l_1	l_3	d_1	a			E10821	VAP EV10821
.240	M12	1.75	110	14	50	48	9	7.0	3	10.20	●	●
.244	M14	2.00	110	16	58	56	11	9.0	4	12.00	●	●
.246	M16	2.00	110	16	58	56	12	9.0	4	14.00	●	●
.312	M18	2.50	125	20	65	63	14	11.0	4	15.50	●	●
.314	M20	2.50	140	20	72	70	16	12.0	4	17.50	●	●
.316	M22	2.50	140	20	72	70	18	14.5	4	19.50	●	●
.320	M24	3.00	160	24	74	72	18	14.5	4	21.00	●	●
.322	M27	3.00	160	30	84	82	20	16.0	4	24.00	●	●
.374	M30	3.50	180	35	92	90	22	18.0	4	26.50	●	●
.376	M33	3.50	180	35	100	98	25	20.0	4	29.50	●	●
.378	M36	4.00	200	40	101	99	28	22.0	4	32.00	●	●
.380	M39	4.00	200	40	101	99	32	24.0	4	35.00	●	●
.382	M42	4.50	200	45	106	104	32	24.0	4	37.50	●	●

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M 3	3.0	0.50	8	850	425	6	635	318	4	425	213
	M 4	4.0	0.70	8	635	445	6	475	333	4	320	224
	M 5	5.0	0.80	8	510	408	6	380	304	4	255	204
	M 6	6.0	1.00	8	425	425	6	320	320	4	210	210
	M 8	8.0	1.25	8	320	400	6	240	300	4	160	200
	M10	10.0	1.50	8	255	383	6	190	285	4	125	188
Stahl 500 - 850 N/mm²	M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
	M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
	M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
	M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
	M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
	M10	10.0	1.50	5	160	240	4	125	188	3	95	143
Al-Knetlegierung Si < 6% ausgehärtet	M 3	3.0	0.50	8	850	425	6	635	318	4	425	213
	M 4	4.0	0.70	8	635	445	6	475	333	4	320	224
	M 5	5.0	0.80	8	510	408	6	380	304	4	255	204
	M 6	6.0	1.00	8	425	425	6	320	320	4	210	210
	M 8	8.0	1.25	8	320	400	6	240	300	4	160	200
	M10	10.0	1.50	8	255	383	6	190	285	4	125	188
Gusseisen GG(G)	M 3	3.0	0.50	12	1275	638	10	1060	530	8	850	425
	M 4	4.0	0.70	12	955	669	10	795	557	8	635	445
	M 5	5.0	0.80	12	765	612	10	635	508	8	510	408
	M 6	6.0	1.00	12	635	635	10	530	530	8	425	425
	M 8	8.0	1.25	12	475	594	10	400	500	8	320	400
	M10	10.0	1.50	12	380	570	10	320	480	8	255	383

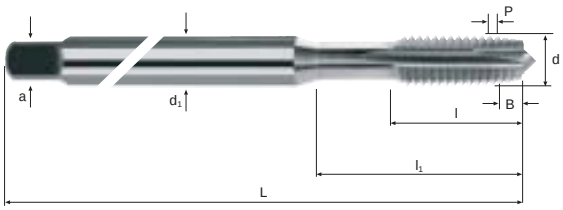
Gewindebohrer

Extra lang

U

M

M	ISO 2 (6H)
60°	HSS PM/F
	Form B

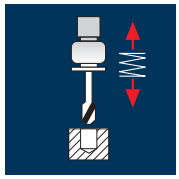


Rm < 850									GG(G) Aluminium

Beispiel: **Bestell-Nr.** Artikel-Nr. **E10340** ø-Code **.044**

Ø Code	d	P	L	l	l_1	d_1	a			E10340	
.044	M 3	0.50	100	12	18	3.5	2.7	3	2.50	●	
.058	M 4	0.70	125	13	21	4.5	3.4	3	3.30	●	
.084	M 5	0.80	140	15	25	6.0	4.9	3	4.20	●	
.088	M 6	1.00	160	17	30	6.0	4.9	3	5.00	●	
.160	M 8	1.25	180	20	35	8.0	6.2	3	6.80	●	
.174	M10	1.50	200	22	39	10.0	8.0	3	8.50	●	

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M 3	3.0	0.50	8	850	425	6	635	318	4	425	213
	M 4	4.0	0.70	8	635	445	6	475	333	4	320	224
	M 5	5.0	0.80	8	510	408	6	380	304	4	255	204
	M 6	6.0	1.00	8	425	425	6	320	320	4	210	210
	M 8	8.0	1.25	8	320	400	6	240	300	4	160	200
	M10	10.0	1.50	8	255	383	6	190	285	4	125	188
Stahl 500 - 850 N/mm²	M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
	M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
	M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
	M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
	M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
	M10	10.0	1.50	5	160	240	4	125	188	3	95	143
Al-Knetlegierung Si < 6% ausgehärtet	M 3	3.0	0.50	8	850	425	6	635	318	4	425	213
	M 4	4.0	0.70	8	635	445	6	475	333	4	320	224
	M 5	5.0	0.80	8	510	408	6	380	304	4	255	204
	M 6	6.0	1.00	8	425	425	6	320	320	4	210	210
	M 8	8.0	1.25	8	320	400	6	240	300	4	160	200
	M10	10.0	1.50	8	255	383	6	190	285	4	125	188
Gusseisen GG(G)	M 3	3.0	0.50	12	1275	638	10	1060	530	8	850	425
	M 4	4.0	0.70	12	955	669	10	795	557	8	635	445
	M 5	5.0	0.80	12	765	612	10	635	508	8	510	408
	M 6	6.0	1.00	12	635	635	10	530	530	8	425	425
	M 8	8.0	1.25	12	475	594	10	400	500	8	320	400
	M10	10.0	1.50	12	380	570	10	320	480	8	255	383

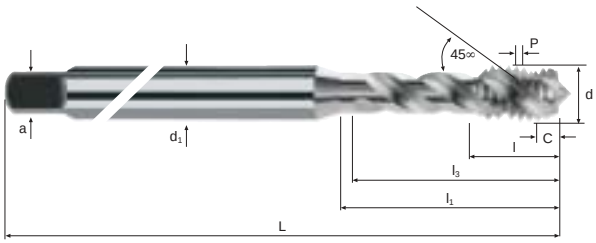
Gewindebohrer

Extra lang

U

M

M	ISO 2 (6H)
60°	HSS PM/F
	X · P Form C

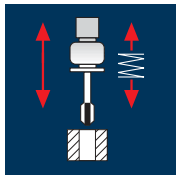


Rm < 850									GG(G) Aluminium

Beispiel: **Bestell-Nr.** Artikel-Nr. **E10350** ø-Code **.044**

											E10350	
Ø Code	d	P	L	l	l_1	l_3	d_1	a				
.044	M 3	0.50	100	4.0	18	16	3.5	2.7	3	2.50	●	
.058	M 4	0.70	125	5.6	21	19	4.5	3.4	3	3.30	●	
.084	M 5	0.80	140	6.4	25	23	6.0	4.9	3	4.20	●	
.088	M 6	1.00	160	8.0	30	28	6.0	4.9	3	5.00	●	
.160	M 8	1.25	180	10.0	35	33	8.0	6.2	3	6.80	●	
.174	M10	1.50	200	12.0	39	37	10.0	8.0	3	8.50	●	

Anwendung



Werkstoff	M-LH	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M 2	2.0	0.40	14	2230	892	12	1910	764	10	1590	636
	M 2.5	2.5	0.45	14	1785	803	12	1530	689	10	1275	574
	M 3	3.0	0.50	18	1910	955	15	1590	795	12	1275	638
	M 4	4.0	0.70	18	1430	1001	15	1195	837	12	955	669
	M 5	5.0	0.80	18	1145	916	15	955	764	12	765	612
	M 6	6.0	1.00	18	955	955	15	795	795	12	635	635
	M 8	8.0	1.25	18	715	894	15	595	744	12	475	594
	M10	10.0	1.50	18	575	863	15	475	713	12	380	570
	M12	12.0	1.75	18	475	831	15	400	700	12	320	560
Stahl < 500 N/mm²	M16	16.0	2.00	18	360	720	15	300	600	12	240	480
	M20	20.0	2.50	18	285	713	15	240	600	12	190	475
	M24	24.0	3.00	18	240	720	15	200	600	12	160	480
Stahl 500 - 850 N/mm²	M 2	2.0	0.40	12	1910	764	8	1275	510	6	955	382
	M 2.5	2.5	0.45	12	1530	689	8	1020	459	6	765	344
	M 3	3.0	0.50	15	1590	795	10	1060	530	8	850	425
	M 4	4.0	0.70	15	1195	837	10	795	557	8	635	445
	M 5	5.0	0.80	15	955	764	10	635	508	8	510	408
	M 6	6.0	1.00	15	795	795	10	530	530	8	425	425
	M 8	8.0	1.25	15	595	744	10	400	500	8	320	400
	M10	10.0	1.50	15	475	713	10	320	480	8	255	383
	M12	12.0	1.75	15	400	700	10	265	464	8	210	368
Stahl 500 - 850 N/mm²	M16	16.0	2.00	15	300	600	10	200	400	8	160	320
	M20	20.0	2.50	15	240	600	10	160	400	8	125	313
	M24	24.0	3.00	15	200	600	10	135	405	8	105	315

Werkstoff	M-LH	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet	M 2	2.0	0.40	12	1910	764	10	1590	636	8	1275	510
	M 2.5	2.5	0.45	12	1530	689	10	1275	574	8	1020	459
	M 3	3.0	0.50	15	1590	795	12	1275	638	10	1060	530
	M 4	4.0	0.70	15	1195	837	12	955	669	10	795	557
	M 5	5.0	0.80	15	955	764	12	765	612	10	635	508
	M 6	6.0	1.00	15	795	795	12	635	635	10	530	530
	M 8	8.0	1.25	15	595	744	12	475	594	10	400	500
	M10	10.0	1.50	15	475	713	12	380	570	10	320	480
	M12	12.0	1.75	15	400	700	12	320	560	10	265	464
Al-Knetlegierung Si < 6% ausgehärtet	M16	16.0	2.00	15	300	600	12	240	480	10	200	400
	M20	20.0	2.50	15	240	600	12	190	475	10	160	400
	M24	24.0	3.00	15	200	600	12	160	480	10	135	405
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2	2.0	0.40	4	635	254	3	475	190	2	320	128
	M 2.5	2.5	0.45	4	510	230	3	380	171	2	255	115
	M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
	M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
	M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
	M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
	M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
	M10	10.0	1.50	5	160	240	4	125	188	3	95	143
	M12	12.0	1.75	5	135	236	4	105	184	3	80	140
Nichtrostender Stahl [Cr-Ni/1.4301]	M16	16.0	2.00	5	100	200	4	80	160	3	60	120
	M20	20.0	2.50	5	80	200	4	65	163	3	50	125
	M24	24.0	3.00	5	65	195	4	55	165	3	40	120

U

M

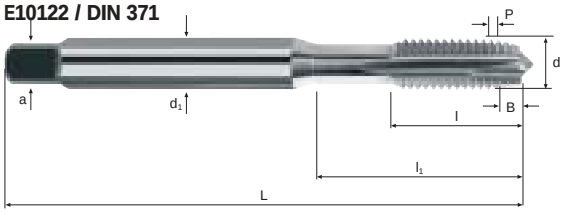
M-LH | ISO 2 (6H)

60° | HSS-E Co5

DIN 371/376

X · P Form B

E10122 / DIN 371



E10123 / DIN 376

Rm < 850 | **Inox** Stainless | **GG(G) Aluminium Copper**

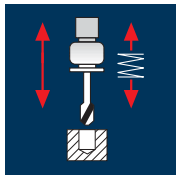
Beispiel: **Bestell-Nr.** Artikel-Nr. **E10122** ø-Code **.034**

Ø Code	d	P		L	l	l_1	d_1	a			E10122
.034	M 2	0.40	LH	45	8.0	–	2.8	2.1	2	1.60	●
.040	M 2.5	0.45	LH	50	9.0	–	2.8	2.1	2	2.05	●
.044	M 3	0.50	LH	56	12.0	18.0	3.5	2.7	3	2.50	●
.058	M 4	0.70	LH	63	13.0	21.0	4.5	3.4	3	3.30	●
.084	M 5	0.80	LH	70	15.0	25.0	6.0	4.9	3	4.20	●
.088	M 6	1.00	LH	80	17.0	30.0	6.0	4.9	3	5.00	●
.160	M 8	1.25	LH	90	20.0	35.0	8.0	6.2	3	6.80	●
.174	M10	1.50	LH	100	22.0	39.0	10.0	8.0	3	8.50	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **E10123** ø-Code **.240**

Ø Code	d	P		L	l	l_1	d_1	a			E10123
.240	M12	1.75	LH	110	24.0	40.0	9.0	7.0	3	10.20	●
.246	M16	2.00	LH	110	27.0	40.0	12.0	9.0	3	14.00	●
.314	M20	2.50	LH	140	32.0	50.0	16.0	12.0	4	17.50	●
.320	M24	3.00	LH	160	34.0	60.0	18.0	14.5	4	21.00	●

Anwendung

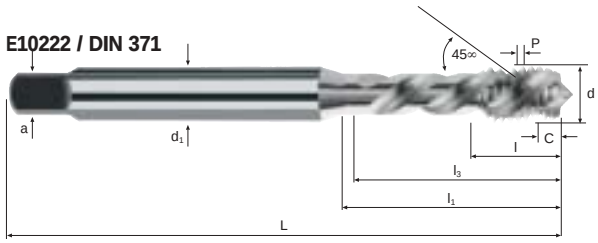


Werkstoff	M-LH	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M 2	2.0	0.40	11	1750	700	10	1590	636	8	1275	510
	M 2.5	2.5	0.45	11	1400	630	10	1275	574	8	1020	459
	M 3	3.0	0.50	14	1485	743	12	1275	638	10	1060	530
	M 4	4.0	0.70	14	1115	781	12	955	669	10	795	557
	M 5	5.0	0.80	14	890	712	12	765	612	10	635	508
	M 6	6.0	1.00	14	745	745	12	635	635	10	530	530
	M 8	8.0	1.25	14	555	694	12	475	594	10	400	500
	M10	10.0	1.50	14	445	668	12	380	570	10	320	480
	M12	12.0	1.75	14	370	648	12	320	560	10	265	464
Stahl < 500 N/mm²	M16	16.0	2.00	14	280	560	12	240	480	10	200	400
	M20	20.0	2.50	14	225	563	12	190	475	10	160	400
	M24	24.0	3.00	14	185	555	12	160	480	10	135	405
Stahl 500 - 850 N/mm²	M 2	2.0	0.40	7	1115	446	6	955	382	5	795	318
	M 2.5	2.5	0.45	7	890	401	6	765	344	5	635	286
	M 3	3.0	0.50	9	955	478	8	850	425	7	745	373
	M 4	4.0	0.70	9	715	500	8	635	445	7	555	389
	M 5	5.0	0.80	9	575	460	8	510	408	7	445	356
	M 6	6.0	1.00	9	475	475	8	425	425	7	370	370
	M 8	8.0	1.25	9	360	450	8	320	400	7	280	350
	M10	10.0	1.50	9	285	428	8	255	383	7	225	338
	M12	12.0	1.75	9	240	420	8	210	368	7	185	324
Stahl 500 - 850 N/mm²	M16	16.0	2.00	9	180	360	8	160	320	7	140	280
	M20	20.0	2.50	9	145	363	8	125	313	7	110	275
	M24	24.0	3.00	9	120	360	8	105	315	7	95	285

Werkstoff	M-LH	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet	M 2	2.0	0.40	8	1275	510	6	955	382	5	795	318
	M 2.5	2.5	0.45	8	1020	459	6	765	344	5	635	286
	M 3	3.0	0.50	10	1060	530	8	850	425	6	635	318
	M 4	4.0	0.70	10	795	557	8	635	445	6	475	333
	M 5	5.0	0.80	10	635	508	8	510	408	6	380	304
	M 6	6.0	1.00	10	530	530	8	425	425	6	320	320
	M 8	8.0	1.25	10	400	500	8	320	400	6	240	300
	M10	10.0	1.50	10	320	480	8	255	383	6	190	285
	M12	12.0	1.75	10	265	464	8	210	368	6	160	280
Al-Knetlegierung Si < 6% ausgehärtet	M16	16.0	2.00	10	200	400	8	160	320	6	120	240
	M20	20.0	2.50	10	160	400	8	125	313	6	95	238
	M24	24.0	3.00	10	135	405	8	105	315	6	80	240
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2	2.0	0.40	3	475	190	2	320	128	2	320	128
	M 2.5	2.5	0.45	3	380	171	2	255	115	2	255	115
	M 3	3.0	0.50	4	425	213	3	320	160	3	320	160
	M 4	4.0	0.70	4	320	224	3	240	168	3	240	168
	M 5	5.0	0.80	4	255	204	3	190	152	3	190	152
	M 6	6.0	1.00	4	210	210	3	160	160	3	160	160
	M 8	8.0	1.25	4	160	200	3	120	150	3	120	150
	M10	10.0	1.50	4	125	188	3	95	143	3	95	143
	M12	12.0	1.75	4	105	184	3	80	140	3	80	140
Nichtrostender Stahl [Cr-Ni/1.4301]	M16	16.0	2.00	4	80	160	3	60	120	3	60	120
	M20	20.0	2.50	4	65	163	3	50	125	3	50	125
	M24	24.0	3.00	4	55	165	3	40	120	3	40	120

Gewindebohrer

M-LH	ISO 2 (6H)
60°	HSS-E Co5
DIN 371/376	
	Form C



Rm < 850							Inox Stainless		GG(G) Aluminium Copper

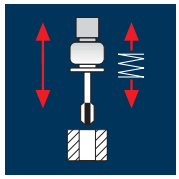
Beispiel: **Bestell-Nr.** Artikel-Nr. **E10222** ø-Code **.034**

Ø Code	d	P		L	l	l1	l3	d1	a			E10222	
.034	M 2	0.40	LH	45	8.0	–	10.5	2.8	2.1	3	1.60	●	
.040	M 2.5	0.45	LH	50	9.0	–	13.0	2.8	2.1	3	2.05	●	
.044	M 3	0.50	LH	56	4.0	18.0	16.0	3.5	2.7	3	2.50	●	
.058	M 4	0.70	LH	63	5.6	21.0	19.0	4.5	3.4	3	3.30	●	
.084	M 5	0.80	LH	70	6.4	25.0	23.0	6.0	4.9	3	4.20	●	
.088	M 6	1.00	LH	80	8.0	30.0	28.0	6.0	4.9	3	5.00	●	
.160	M 8	1.25	LH	90	10.0	35.0	33.0	8.0	6.2	3	6.80	●	
.174	M10	1.50	LH	100	12.0	39.0	37.0	10.0	8.0	3	8.50	●	

Beispiel: **Bestell-Nr.** Artikel-Nr. **E10223** ø-Code **.240**

Ø Code	d	P		L	l	l1	l3	d1	a			E10223	
.240	M12	1.75	LH	110	14.0	50.0	48.0	9.0	7.0	3	10.20	●	
.246	M16	2.00	LH	110	16.0	58.0	56.0	12.0	9.0	4	14.00	●	
.314	M20	2.50	LH	140	20.0	72.0	70.0	16.0	12.0	4	17.50	●	
.320	M24	3.00	LH	160	24.0	74.0	72.0	18.0	14.5	4	21.00	●	

Anwendung

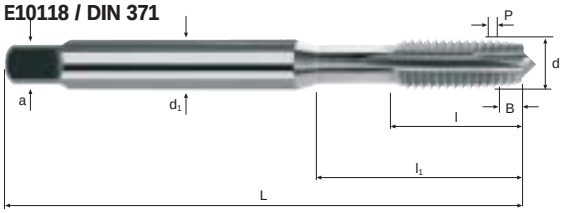


Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M 2	2.0	0.40	14	2230	892	12	1910	764	10	1590	636
	M 2.5	2.5	0.45	14	1785	803	12	1530	689	10	1275	574
	M 3	3.0	0.50	18	1910	955	15	1590	795	12	1275	638
	M 4	4.0	0.70	18	1430	1001	15	1195	837	12	955	669
	M 5	5.0	0.80	18	1145	916	15	955	764	12	765	612
	M 6	6.0	1.00	18	955	955	15	795	795	12	635	635
	M 8	8.0	1.25	18	715	894	15	595	744	12	475	594
	M10	10.0	1.50	18	575	863	15	475	713	12	380	570
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen	M12	12.0	1.75	18	475	831	15	400	700	12	320	560
Stahl < 500 N/mm²	M16	16.0	2.00	18	360	720	15	300	600	12	240	480
	M20	20.0	2.50	18	285	713	15	240	600	12	190	475
	M24	24.0	3.00	18	240	720	15	200	600	12	160	480
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen												
Stahl 500 - 850 N/mm²	M 2	2.0	0.40	12	1910	764	8	1275	510	6	955	382
	M 2.5	2.5	0.45	12	1530	689	8	1020	459	6	765	344
	M 3	3.0	0.50	15	1590	795	10	1060	530	8	850	425
	M 4	4.0	0.70	15	1195	837	10	795	557	8	635	445
	M 5	5.0	0.80	15	955	764	10	635	508	8	510	408
	M 6	6.0	1.00	15	795	795	10	530	530	8	425	425
	M 8	8.0	1.25	15	595	744	10	400	500	8	320	400
	M10	10.0	1.50	15	475	713	10	320	480	8	255	383
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen	M12	12.0	1.75	15	400	700	10	265	464	8	210	368
Stahl 500 - 850 N/mm²	M16	16.0	2.00	15	300	600	10	200	400	8	160	320
	M20	20.0	2.50	15	240	600	10	160	400	8	125	313
	M24	24.0	3.00	15	200	600	10	135	405	8	105	315
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen												

Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet	M 2	2.0	0.40	12	1910	764	10	1590	636	8	1275	510
	M 2.5	2.5	0.45	12	1530	689	10	1275	574	8	1020	459
	M 3	3.0	0.50	15	1590	795	12	1275	638	10	1060	530
	M 4	4.0	0.70	15	1195	837	12	955	669	10	795	557
	M 5	5.0	0.80	15	955	764	12	765	612	10	635	508
	M 6	6.0	1.00	15	795	795	12	635	635	10	530	530
	M 8	8.0	1.25	15	595	744	12	475	594	10	400	500
	M10	10.0	1.50	15	475	713	12	380	570	10	320	480
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen	M12	12.0	1.75	15	400	700	12	320	560	10	265	464
Al-Knetlegierung Si < 6% ausgehärtet	M16	16.0	2.00	15	300	600	12	240	480	10	200	400
	M20	20.0	2.50	15	240	600	12	190	475	10	160	400
	M24	24.0	3.00	15	200	600	12	160	480	10	135	405
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen												
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2	2.0	0.40	4	635	254	3	475	190	2	320	128
	M 2.5	2.5	0.45	4	510	230	3	380	171	2	255	115
	M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
	M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
	M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
	M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
	M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
	M10	10.0	1.50	5	160	240	4	125	188	3	95	143
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen	M12	12.0	1.75	5	135	236	4	105	184	3	80	140
Nichtrostender Stahl [Cr-Ni/1.4301]	M16	16.0	2.00	5	100	200	4	80	160	3	60	120
	M20	20.0	2.50	5	80	200	4	65	163	3	50	125
	M24	24.0	3.00	5	65	195	4	55	165	3	40	120
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen												

M	ISO 2 +0.1
60°	HSS-E Co5
DIN 371/376	
	Form B

E10118 / DIN 371



E10119 / DIN 376

Rm < 850							Inox Stainless		GG(G) Aluminium Copper

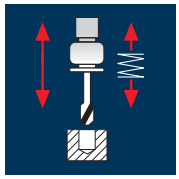
Beispiel: **Bestell-Nr.** Artikel-Nr. **E10118** ø-Code **.034**

Ø Code	d	P	L	l	l_1	d_1	a	⌀	Δ	E10118	
.034	M 2	0.40	45	8	–	2.8	2.1	2	+0.100	●	
.040	M 2.5	0.45	50	9	–	2.8	2.1	2	+0.100	●	
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	+0.100	●	
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	+0.100	●	
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	+0.100	●	
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	+0.100	●	
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	+0.100	●	
.174	M10	1.50	100	22	39.0	10.0	8.0	3	+0.100	●	

Beispiel: **Bestell-Nr.** Artikel-Nr. **E10119** ø-Code **.240**

Ø Code	d	P	L	l	l_1	d_1	a	⌀	Δ	E10119	
.240	M12	1.75	110	24	40.0	9.0	7.0	3	+0.100	●	
.246	M16	2.00	110	27	40.0	12.0	9.0	4	+0.100	●	
.314	M20	2.50	140	32	50.0	16.0	12.0	4	+0.100	●	
.320	M24	3.00	160	34	60.0	18.0	14.5	4	+0.100	●	

Anwendung

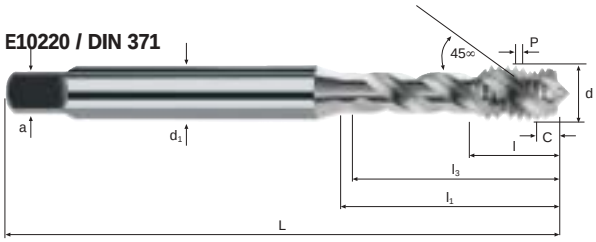


Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M 2	2.0	0.40	12	1910	764	10	1590	636	8	1275	510
	M 2.5	2.5	0.45	12	1530	689	10	1275	574	8	1020	459
	M 3	3.0	0.50	14	1485	743	12	1275	638	10	1060	530
	M 4	4.0	0.70	14	1115	781	12	955	669	10	795	557
	M 5	5.0	0.80	14	890	712	12	765	612	10	635	508
	M 6	6.0	1.00	14	745	745	12	635	635	10	530	530
	M 8	8.0	1.25	14	555	694	12	475	594	10	400	500
	M10	10.0	1.50	14	445	668	12	380	570	10	320	480
	M12	12.0	1.75	14	370	648	12	320	560	10	265	464
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen												
Stahl < 500 N/mm²	M16	16.0	2.00	14	280	560	12	240	480	10	200	400
	M20	20.0	2.50	14	225	563	12	190	475	10	160	400
	M24	24.0	3.00	14	185	555	12	160	480	10	135	405
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen												
Stahl 500 - 850 N/mm²	M 2	2.0	0.40	7	1115	446	6	955	382	5	795	318
	M 2.5	2.5	0.45	7	890	401	6	765	344	5	635	286
	M 3	3.0	0.50	9	955	478	8	850	425	7	745	373
	M 4	4.0	0.70	9	715	500	8	635	445	7	555	389
	M 5	5.0	0.80	9	575	460	8	510	408	7	445	356
	M 6	6.0	1.00	9	475	475	8	425	425	7	370	370
	M 8	8.0	1.25	9	360	450	8	320	400	7	280	350
	M10	10.0	1.50	9	285	428	8	255	383	7	225	338
	M12	12.0	1.75	9	240	420	8	210	368	7	185	324
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen												
Stahl 500 - 850 N/mm²	M16	16.0	2.00	9	180	360	8	160	320	7	140	280
	M20	20.0	2.50	9	145	363	8	125	313	7	110	275
	M24	24.0	3.00	9	120	360	8	105	315	7	95	285
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen												

Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet	M 2	2.0	0.40	8	1275	510	6	955	382	5	795	318
	M 2.5	2.5	0.45	8	1020	459	6	765	344	5	635	286
	M 3	3.0	0.50	10	1060	530	8	850	425	6	635	318
	M 4	4.0	0.70	10	795	557	8	635	445	6	475	333
	M 5	5.0	0.80	10	635	508	8	510	408	6	380	304
	M 6	6.0	1.00	10	530	530	8	425	425	6	320	320
	M 8	8.0	1.25	10	400	500	8	320	400	6	240	300
	M10	10.0	1.50	10	320	480	8	255	383	6	190	285
	M12	12.0	1.75	10	265	464	8	210	368	6	160	280
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen												
Al-Knetlegierung Si < 6% ausgehärtet	M16	16.0	2.00	10	200	400	8	160	320	6	120	240
	M20	20.0	2.50	10	160	400	8	125	313	6	95	238
	M24	24.0	3.00	10	135	405	8	105	315	6	80	240
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen												
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2	2.0	0.40	3	475	190	2	320	128	2	320	128
	M 2.5	2.5	0.45	3	380	171	2	255	115	2	255	115
	M 3	3.0	0.50	4	425	213	3	320	160	3	320	160
	M 4	4.0	0.70	4	320	224	3	240	168	3	240	168
	M 5	5.0	0.80	4	255	204	3	190	152	3	190	152
	M 6	6.0	1.00	4	210	210	3	160	160	3	160	160
	M 8	8.0	1.25	4	160	200	3	120	150	3	120	150
	M10	10.0	1.50	4	125	188	3	95	143	3	95	143
	M12	12.0	1.75	4	105	184	3	80	140	3	80	140
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen												
Nichtrostender Stahl [Cr-Ni/1.4301]	M16	16.0	2.00	4	80	160	3	60	120	3	60	120
	M20	20.0	2.50	4	65	163	3	50	125	3	50	125
	M24	24.0	3.00	4	55	165	3	40	120	3	40	120
Empfehlung: Bohr- ø entsprechend Toleranz anpasssen												

Gewindebohrer

M	ISO 2 +0.1
60°	HSS-E Co5
DIN 371/376	
	Form C



Rm < 850							Inox Stainless		GG(G) Aluminium Copper

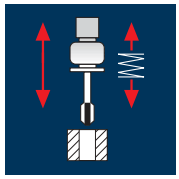
Beispiel: **Bestell-Nr.** Artikel-Nr. **E10220** ø-Code **.034**

Ø Code	d	P	L	l	l1	l3	d1	a		Δ	E10220	
.034	M 2	0.40	45	8.0	–	10.5	2.8	2.1	3	+0.100	●	
.040	M 2.5	0.45	50	9.0	–	13.0	2.8	2.1	3	+0.100	●	
.044	M 3	0.50	56	4.0	18.0	16.0	3.5	2.7	3	+0.100	●	
.058	M 4	0.70	63	5.6	21.0	19.0	4.5	3.4	3	+0.100	●	
.084	M 5	0.80	70	6.4	25.0	23.0	6.0	4.9	3	+0.100	●	
.088	M 6	1.00	80	8.0	30.0	28.0	6.0	4.9	3	+0.100	●	
.160	M 8	1.25	90	10.0	35.0	33.0	8.0	6.2	3	+0.100	●	
.174	M10	1.50	100	12.0	39.0	37.0	10.0	8.0	3	+0.100	●	

Beispiel: **Bestell-Nr.** Artikel-Nr. **E10221** ø-Code **.240**

Ø Code	d	P	L	l	l1	l3	d1	a		Δ	E10221	
.240	M12	1.75	110	14.0	50.0	48.0	9.0	7.0	3	+0.100	●	
.246	M16	2.00	110	16.0	58.0	56.0	12.0	9.0	4	+0.100	●	
.314	M20	2.50	140	20.0	72.0	70.0	16.0	12.0	4	+0.100	●	
.320	M24	3.00	160	24.0	74.0	72.0	18.0	14.5	4	+0.100	●	

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	M 2	2.0	0.40	25	3980	1592	20	3185	1274	15	2385	954
	M 2.5	2.5	0.45	25	3185	1433	20	2545	1145	15	1910	860
	M 3	3.0	0.50	25	2655	1328	20	2120	1060	15	1590	795
	M 4	4.0	0.70	25	1990	1393	20	1590	1113	15	1195	837
	M 5	5.0	0.80	25	1590	1272	20	1275	1020	15	955	764
	M 6	6.0	1.00	25	1325	1325	20	1060	1060	15	795	795
	M 8	8.0	1.25	25	995	1244	20	795	994	15	595	744
	M10	10.0	1.50	25	795	1193	20	635	953	15	475	713
	M12	12.0	1.75	25	665	1164	20	530	928	15	400	700
Stahl 500 - 850 N/mm²	M16	16.0	2.00	25	495	990	20	400	800	15	300	600
	M20	20.0	2.50	25	400	1000	20	320	800	15	240	600
	M24	24.0	3.00	25	330	990	20	265	795	15	200	600
Stahl 850 - 1100 N/mm²	M 2	2.0	0.40	20	3185	1274	15	2385	954	12	1910	764
	M 2.5	2.5	0.45	20	2545	1145	15	1910	860	12	1530	689
	M 3	3.0	0.50	20	2120	1060	15	1590	795	12	1275	638
	M 4	4.0	0.70	20	1590	1113	15	1195	837	12	955	669
	M 5	5.0	0.80	20	1275	1020	15	955	764	12	765	612
	M 6	6.0	1.00	20	1060	1060	15	795	795	12	635	635
	M 8	8.0	1.25	20	795	994	15	595	744	12	475	594
	M10	10.0	1.50	20	635	953	15	475	713	12	380	570
	M12	12.0	1.75	20	530	928	15	400	700	12	320	560
Stahl 850 - 1100 N/mm²	M16	16.0	2.00	20	400	800	15	300	600	12	240	480
	M20	20.0	2.50	20	320	800	15	240	600	12	190	475
	M24	24.0	3.00	20	265	795	15	200	600	12	160	480

Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 1100 - 1300 N/mm²	M 2	2.0	0.40	7	1115	446	4	635	254
	M 2.5	2.5	0.45	7	890	401	4	510	230
	M 3	3.0	0.50	7	745	373	4	425	213
	M 4	4.0	0.70	7	555	389	4	320	224
	M 5	5.0	0.80	7	445	356	4	255	204
	M 6	6.0	1.00	7	370	370	4	210	210
	M 8	8.0	1.25	7	280	350	4	160	200
	M10	10.0	1.50	7	225	338	4	125	188
	M12	12.0	1.75	7	185	324	4	105	184
Stahl 1100 - 1300 N/mm²	M16	16.0	2.00	7	140	280	4	80	160
	M20	20.0	2.50	7	110	275	4	65	163
	M24	24.0	3.00	7	95	285	4	55	165

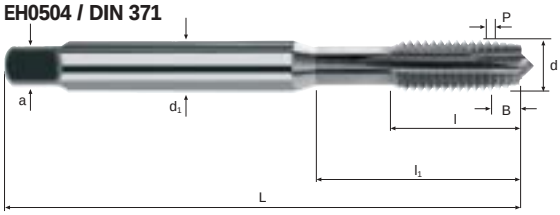
M | ISO 3 (6G)

60° | HSS PM/F

DIN 371/376

X · P Form B

EH0504 / DIN 371



EH0505 / DIN 376

Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300

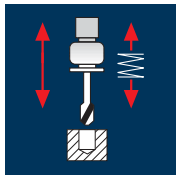
Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0504** ø-Code **.034**

Ø Code	d	P	L	l	l_1	d_1	a	⌀	Δ	TiCN EH0504
.034	M 2	0.40	45	8	–	2.8	2.1	2	+0.015	●
.040	M 2.5	0.45	50	9	–	2.8	2.1	2	+0.015	●
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	+0.016	●
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	+0.019	●
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	+0.020	●
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	+0.024	●
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	+0.025	●
.174	M10	1.50	100	22	39.0	10.0	8.0	3	+0.028	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0505** ø-Code **.240**

Ø Code	d	P	L	l	l_1	d_1	a	⌀	Δ	TiCN EH0505
.240	M 12	1.75	110	24	40.0	9.0	7.0	3	+0.032	●
.246	M 16	2.00	110	27	40.0	12.0	9.0	3	+0.034	●
.314	M 20	2.50	140	32	50.0	16.0	12.0	4	+0.036	●
.320	M 24	3.00	160	34	60.0	18.0	14.5	4	+0.042	●

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	M 2	2.0	0.40	32	5095	2038	28	4455	1782	22	3500	1400
	M 2.5	2.5	0.45	32	4075	1834	28	3565	1604	22	2800	1260
	M 3	3.0	0.50	32	3395	1698	28	2970	1485	22	2335	1168
	M 4	4.0	0.70	32	2545	1782	28	2230	1561	22	1750	1225
	M 5	5.0	0.80	32	2035	1628	28	1785	1428	22	1400	1120
	M 6	6.0	1.00	32	1700	1700	28	1485	1485	22	1165	1165
	M 8	8.0	1.25	32	1275	1594	28	1115	1394	22	875	1094
	M10	10.0	1.50	32	1020	1530	28	890	1335	22	700	1050
	M12	12.0	1.75	32	850	1488	28	745	1304	22	585	1024
Stahl 500 - 850 N/mm²	M16	16.0	2.00	32	635	1270	28	555	1110	22	440	880
	M20	20.0	2.50	32	510	1275	28	445	1113	22	350	875
	M24	24.0	3.00	32	425	1275	28	370	1110	22	290	870
Stahl 850 - 1100 N/mm²	M 2	2.0	0.40	20	3185	1274	16	2545	1018	10	1590	636
	M 2.5	2.5	0.45	20	2545	1145	16	2035	916	10	1275	574
	M 3	3.0	0.50	20	2120	1060	16	1700	850	10	1060	530
	M 4	4.0	0.70	20	1590	1113	16	1275	893	10	795	557
	M 5	5.0	0.80	20	1275	1020	16	1020	816	10	635	508
	M 6	6.0	1.00	20	1060	1060	16	850	850	10	530	530
	M 8	8.0	1.25	20	795	994	16	635	794	10	400	500
	M10	10.0	1.50	20	635	953	16	510	765	10	320	480
	M12	12.0	1.75	20	530	928	16	425	744	10	265	464
Stahl 850 - 1100 N/mm²	M16	16.0	2.00	20	400	800	16	320	640	10	200	400
	M20	20.0	2.50	20	320	800	16	255	638	10	160	400
	M24	24.0	3.00	20	265	795	16	210	630	10	135	405

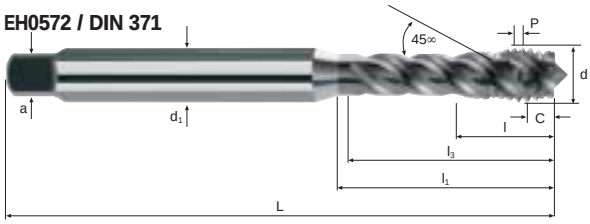
M | ISO 3 (6G)

60° | HSS PM/F

DIN 371/376

X · P Form C

EH0572 / DIN 371



EH0573 / DIN 376

Rm < 850 | **Rm** 850-1100

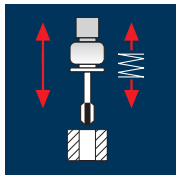
Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0572** ø-Code **.034**

Ø Code	d	P	L	l	l1	l3	d1	a	⌂	Δ	TiCN EH0572
.034	M 2	0.40	45	8	–	10.5	2.8	2.1	3	+0.015	●
.040	M 2.5	0.45	50	9	–	13.0	2.8	2.1	3	+0.015	●
.044	M 3	0.50	56	5	–	16.0	3.5	2.7	3	+0.016	●
.058	M 4	0.70	63	7	–	19.0	4.5	3.4	3	+0.019	●
.084	M 5	0.80	70	8	–	23.0	6.0	4.9	3	+0.020	●
.088	M 6	1.00	80	10	–	28.0	6.0	4.9	3	+0.024	●
.160	M 8	1.25	90	13	35.0	33.0	8.0	6.2	3	+0.025	●
.174	M10	1.50	100	15	39.0	37.0	10.0	8.0	4	+0.028	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH0573** ø-Code **.240**

Ø Code	d	P	L	l	l1	l3	d1	a	⌂	Δ	TiCN EH0573
.240	M12	1.75	110	18	50.0	48.0	9.0	7.0	4	+0.032	●
.246	M16	2.00	110	20	58.0	56.0	12.0	9.0	4	+0.034	●
.314	M20	2.50	140	25	72.0	70.0	16.0	12.0	4	+0.036	●
.320	M24	3.00	160	30	74.0	72.0	18.0	14.5	5	+0.042	●

Anwendung



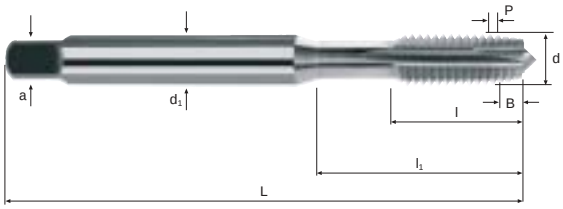
Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min^{-1}]	v_f [100%]	v_c 2.0 x d	n [min^{-1}]	v_f [100%]	v_c 3.0 x d	n [min^{-1}]	v_f [100%]
Stahl < 500 N/mm^2	M 2	2.0	0.40	14	2230	892	12	1910	764	10	1590	636
	M 2.5	2.5	0.45	14	1785	803	12	1530	689	10	1275	574
	M 3	3.0	0.50	18	1910	955	15	1590	795	12	1275	638
	M 4	4.0	0.70	18	1430	1001	15	1195	837	12	955	669
	M 5	5.0	0.80	18	1145	916	15	955	764	12	765	612
	M 6	6.0	1.00	18	955	955	15	795	795	12	635	635
	M 8	8.0	1.25	18	715	894	15	595	744	12	475	594
	M10	10.0	1.50	18	575	863	15	475	713	12	380	570
Stahl 500 - 850 N/mm^2	M 2	2.0	0.40	12	1910	764	8	1275	510	6	955	382
	M 2.5	2.5	0.45	12	1530	689	8	1020	459	6	765	344
	M 3	3.0	0.50	15	1590	795	10	1060	530	8	850	425
	M 4	4.0	0.70	15	1195	837	10	795	557	8	635	445
	M 5	5.0	0.80	15	955	764	10	635	508	8	510	408
	M 6	6.0	1.00	15	795	795	10	530	530	8	425	425
	M 8	8.0	1.25	15	595	744	10	400	500	8	320	400
	M10	10.0	1.50	15	475	713	10	320	480	8	255	383
Al-Knetlegierung Si < 6% ausgehärtet	M 2	2.0	0.40	12	1910	764	10	1590	636	8	1275	510
	M 2.5	2.5	0.45	12	1530	689	10	1275	574	8	1020	459
	M 3	3.0	0.50	15	1590	795	12	1275	638	10	1060	530
	M 4	4.0	0.70	15	1195	837	12	955	669	10	795	557
	M 5	5.0	0.80	15	955	764	12	765	612	10	635	508
	M 6	6.0	1.00	15	795	795	12	635	635	10	530	530
	M 8	8.0	1.25	15	595	744	12	475	594	10	400	500
	M10	10.0	1.50	15	475	713	12	380	570	10	320	480
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2	2.0	0.40	4	635	254	3	475	190	2	320	128
	M 2.5	2.5	0.45	4	510	230	3	380	171	2	255	115
	M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
	M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
	M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
	M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
	M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
	M10	10.0	1.50	5	160	240	4	125	188	3	95	143

Gewindebohrer

U

M

M	ISO 1 (4H)
60°	HSS-E Co5
DIN 371	
	X · P Form B

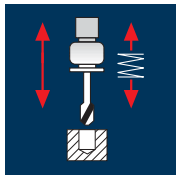


Rm < 850							Inox Stainless		GG(G) Aluminium Copper

Beispiel: **Bestell-Nr.** Artikel-Nr. **E10110** ø-Code **.034**

										E10110	
Ø Code	d	P	L	l	l_1	d_1	a		Δ		
.034	M 2	0.40	45	8	–	2.8	2.1	2	–0.014	●	
.040	M 2.5	0.45	50	9	–	2.8	2.1	2	–0.015	●	
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	–0.016	●	
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	–0.019	●	
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	–0.020	●	
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	–0.024	●	
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	–0.025	●	
.174	M10	1.50	100	22	39.0	10.0	8.0	3	–0.028	●	

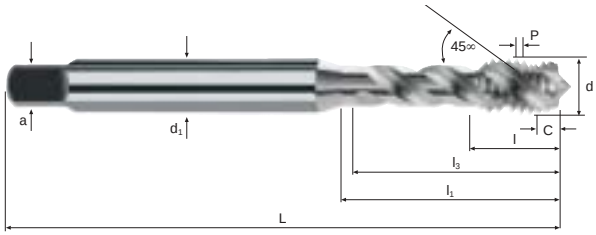
Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M 2	2.0	0.40	11	1750	700	10	1590	636	8	1275	510
	M 2.5	2.5	0.45	11	1400	630	10	1275	574	8	1020	459
	M 3	3.0	0.50	14	1485	743	12	1275	638	10	1060	530
	M 4	4.0	0.70	14	1115	781	12	955	669	10	795	557
	M 5	5.0	0.80	14	890	712	12	765	612	10	635	508
	M 6	6.0	1.00	14	745	745	12	635	635	10	530	530
	M 8	8.0	1.25	14	555	694	12	475	594	10	400	500
	M10	10.0	1.50	14	445	668	12	380	570	10	320	480
Stahl 500 - 850 N/mm²	M 2	2.0	0.40	7	1115	446	6	955	382	5	795	318
	M 2.5	2.5	0.45	7	890	401	6	765	344	5	635	286
	M 3	3.0	0.50	9	955	478	8	850	425	7	745	373
	M 4	4.0	0.70	9	715	500	8	635	445	7	555	389
	M 5	5.0	0.80	9	575	460	8	510	408	7	445	356
	M 6	6.0	1.00	9	475	475	8	425	425	7	370	370
	M 8	8.0	1.25	9	360	450	8	320	400	7	280	350
	M10	10.0	1.50	9	285	428	8	255	383	7	225	338
Al-Knetlegierung Si < 6% ausgehärtet	M 2	2.0	0.40	8	1275	510	6	955	382	5	795	318
	M 2.5	2.5	0.45	8	1020	459	6	765	344	5	635	286
	M 3	3.0	0.50	10	1060	530	8	850	425	6	635	318
	M 4	4.0	0.70	10	795	557	8	635	445	6	475	333
	M 5	5.0	0.80	10	635	508	8	510	408	6	380	304
	M 6	6.0	1.00	10	530	530	8	425	425	6	320	320
	M 8	8.0	1.25	10	400	500	8	320	400	6	240	300
	M10	10.0	1.50	10	320	480	8	255	383	6	190	285
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2	2.0	0.40	3	475	190	2	320	128	2	320	128
	M 2.5	2.5	0.45	3	380	171	2	255	115	2	255	115
	M 3	3.0	0.50	4	425	213	3	320	160	3	320	160
	M 4	4.0	0.70	4	320	224	3	240	168	3	240	168
	M 5	5.0	0.80	4	255	204	3	190	152	3	190	152
	M 6	6.0	1.00	4	210	210	3	160	160	3	160	160
	M 8	8.0	1.25	4	160	200	3	120	150	3	120	150
	M10	10.0	1.50	4	125	188	3	95	143	3	95	143

Gewindebohrer

M	ISO 1 (4H)
60°	HSS-E Co5
DIN 371	
	X · P Form C

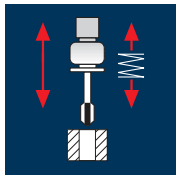


Rm < 850							Inox Stainless		GG(G) Aluminium Copper

Beispiel: **Bestell-Nr.** Artikel-Nr. **E10214** ø-Code **.034**

ø Code	d	P	L	l	l_1	l_3	d_1	a		Δ	E10214	
.034	M 2	0.40	45	8.0	–	10.5	2.8	2.1	3	–0.014	●	
.040	M 2.5	0.45	50	9.0	–	13.0	2.8	2.1	3	–0.015	●	
.044	M 3	0.50	56	4.0	18.0	16.0	3.5	2.7	3	–0.016	●	
.058	M 4	0.70	63	5.6	21.0	19.0	4.5	3.4	3	–0.019	●	
.084	M 5	0.80	70	6.4	25.0	23.0	6.0	4.9	3	–0.020	●	
.088	M 6	1.00	80	8.0	30.0	28.0	6.0	4.9	3	–0.024	●	
.160	M 8	1.25	90	10.0	35.0	33.0	8.0	6.2	3	–0.025	●	
.174	M10	1.50	100	12.0	39.0	37.0	10.0	8.0	3	–0.028	●	

Anwendung

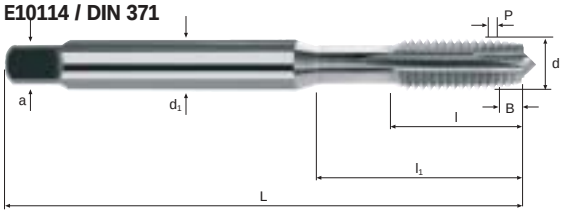


Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M 2	2.0	0.40	14	2230	892	12	1910	764	10	1590	636
	M 2.5	2.5	0.45	14	1785	803	12	1530	689	10	1275	574
	M 3	3.0	0.50	18	1910	955	15	1590	795	12	1275	638
	M 4	4.0	0.70	18	1430	1001	15	1195	837	12	955	669
	M 5	5.0	0.80	18	1145	916	15	955	764	12	765	612
	M 6	6.0	1.00	18	955	955	15	795	795	12	635	635
	M 8	8.0	1.25	18	715	894	15	595	744	12	475	594
	M10	10.0	1.50	18	575	863	15	475	713	12	380	570
	M12	12.0	1.75	18	475	831	15	400	700	12	320	560
Stahl < 500 N/mm²	M16	16.0	2.00	18	360	720	15	300	600	12	240	480
	M20	20.0	2.50	18	285	713	15	240	600	12	190	475
	M24	24.0	3.00	18	240	720	15	200	600	12	160	480
Stahl 500 - 850 N/mm²	M 2	2.0	0.40	12	1910	764	8	1275	510	6	955	382
	M 2.5	2.5	0.45	12	1530	689	8	1020	459	6	765	344
	M 3	3.0	0.50	15	1590	795	10	1060	530	8	850	425
	M 4	4.0	0.70	15	1195	837	10	795	557	8	635	445
	M 5	5.0	0.80	15	955	764	10	635	508	8	510	408
	M 6	6.0	1.00	15	795	795	10	530	530	8	425	425
	M 8	8.0	1.25	15	595	744	10	400	500	8	320	400
	M10	10.0	1.50	15	475	713	10	320	480	8	255	383
	M12	12.0	1.75	15	400	700	10	265	464	8	210	368
Stahl 500 - 850 N/mm²	M16	16.0	2.00	15	300	600	10	200	400	8	160	320
	M20	20.0	2.50	15	240	600	10	160	400	8	125	313
	M24	24.0	3.00	15	200	600	10	135	405	8	105	315

Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet	M 2	2.0	0.40	12	1910	764	10	1590	636	8	1275	510
	M 2.5	2.5	0.45	12	1530	689	10	1275	574	8	1020	459
	M 3	3.0	0.50	15	1590	795	12	1275	638	10	1060	530
	M 4	4.0	0.70	15	1195	837	12	955	669	10	795	557
	M 5	5.0	0.80	15	955	764	12	765	612	10	635	508
	M 6	6.0	1.00	15	795	795	12	635	635	10	530	530
	M 8	8.0	1.25	15	595	744	12	475	594	10	400	500
	M10	10.0	1.50	15	475	713	12	380	570	10	320	480
	M12	12.0	1.75	15	400	700	12	320	560	10	265	464
Al-Knetlegierung Si < 6% ausgehärtet	M16	16.0	2.00	15	300	600	12	240	480	10	200	400
	M20	20.0	2.50	15	240	600	12	190	475	10	160	400
	M24	24.0	3.00	15	200	600	12	160	480	10	135	405
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2	2.0	0.40	4	635	254	3	475	190	2	320	128
	M 2.5	2.5	0.45	4	510	230	3	380	171	2	255	115
	M 3	3.0	0.50	5	530	265	4	425	213	3	320	160
	M 4	4.0	0.70	5	400	280	4	320	224	3	240	168
	M 5	5.0	0.80	5	320	256	4	255	204	3	190	152
	M 6	6.0	1.00	5	265	265	4	210	210	3	160	160
	M 8	8.0	1.25	5	200	250	4	160	200	3	120	150
	M10	10.0	1.50	5	160	240	4	125	188	3	95	143
	M12	12.0	1.75	5	135	236	4	105	184	3	80	140
Nichtrostender Stahl [Cr-Ni/1.4301]	M16	16.0	2.00	5	100	200	4	80	160	3	60	120
	M20	20.0	2.50	5	80	200	4	65	163	3	50	125
	M24	24.0	3.00	5	65	195	4	55	165	3	40	120

M	7G
60°	HSS-E Co5
DIN 371/376	
	Form B

E10114 / DIN 371



E10115 / DIN 376

Rm < 850							Inox Stainless		GG(G) Aluminium Copper

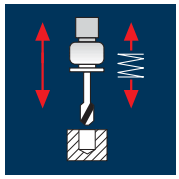
Beispiel: **Bestell-Nr.** Artikel-Nr. **E10114** ø-Code **.034**

Ø Code	d	P	L	l	l_1	d_1	a		Δ	E10114	
.034	M 2	0.40	45	8	–	2.8	2.1	2	+0.030	●	
.040	M 2.5	0.45	50	9	–	2.8	2.1	2	+0.030	●	
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	+0.032	●	
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	+0.038	●	
.084	M 5	0.80	70	15	25.0	6.0	4.9	3	+0.040	●	
.088	M 6	1.00	80	17	30.0	6.0	4.9	3	+0.048	●	
.160	M 8	1.25	90	20	35.0	8.0	6.2	3	+0.050	●	
.174	M10	1.50	100	22	39.0	10.0	8.0	3	+0.056	●	

Beispiel: **Bestell-Nr.** Artikel-Nr. **E10115** ø-Code **.240**

Ø Code	d	P	L	l	l_1	d_1	a		Δ	E10115	
.240	M12	1.75	110	24	40.0	9.0	7.0	3	+0.064	●	
.246	M16	2.00	110	27	40.0	12.0	9.0	3	+0.068	●	
.314	M20	2.50	140	32	50.0	16.0	12.0	4	+0.072	●	
.320	M24	3.00	160	34	60.0	18.0	14.5	4	+0.085	●	

Anwendung

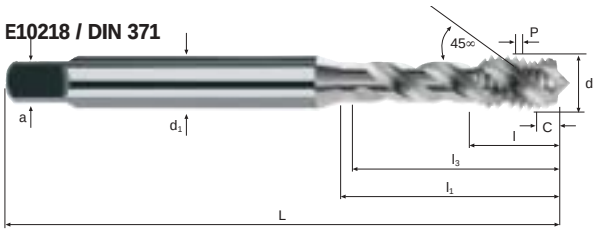


Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	M 2	2.0	0.40	11	1750	700	10	1590	636	8	1275	510
	M 2.5	2.5	0.45	11	1400	630	10	1275	574	8	1020	459
	M 3	3.0	0.50	14	1485	743	12	1275	638	10	1060	530
	M 4	4.0	0.70	14	1115	781	12	955	669	10	795	557
	M 5	5.0	0.80	14	890	712	12	765	612	10	635	508
	M 6	6.0	1.00	14	745	745	12	635	635	10	530	530
	M 8	8.0	1.25	14	555	694	12	475	594	10	400	500
	M10	10.0	1.50	14	445	668	12	380	570	10	320	480
	M12	12.0	1.75	14	370	648	12	320	560	10	265	464
Stahl < 500 N/mm²	M16	16.0	2.00	14	280	560	12	240	480	10	200	400
	M20	20.0	2.50	14	225	563	12	190	475	10	160	400
	M24	24.0	3.00	14	185	555	12	160	480	10	135	405
Stahl 500 - 850 N/mm²	M 2	2.0	0.40	7	1115	446	6	955	382	5	795	318
	M 2.5	2.5	0.45	7	890	401	6	765	344	5	635	286
	M 3	3.0	0.50	9	955	478	8	850	425	7	745	373
	M 4	4.0	0.70	9	715	500	8	635	445	7	555	389
	M 5	5.0	0.80	9	575	460	8	510	408	7	445	356
	M 6	6.0	1.00	9	475	475	8	425	425	7	370	370
	M 8	8.0	1.25	9	360	450	8	320	400	7	280	350
	M10	10.0	1.50	9	285	428	8	255	383	7	225	338
	M12	12.0	1.75	9	240	420	8	210	368	7	185	324
Stahl 500 - 850 N/mm²	M16	16.0	2.00	9	180	360	8	160	320	7	140	280
	M20	20.0	2.50	9	145	363	8	125	313	7	110	275
	M24	24.0	3.00	9	120	360	8	105	315	7	95	285

Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet	M 2	2.0	0.40	8	1275	510	6	955	382	5	795	318
	M 2.5	2.5	0.45	8	1020	459	6	765	344	5	635	286
	M 3	3.0	0.50	10	1060	530	8	850	425	6	635	318
	M 4	4.0	0.70	10	795	557	8	635	445	6	475	333
	M 5	5.0	0.80	10	635	508	8	510	408	6	380	304
	M 6	6.0	1.00	10	530	530	8	425	425	6	320	320
	M 8	8.0	1.25	10	400	500	8	320	400	6	240	300
	M10	10.0	1.50	10	320	480	8	255	383	6	190	285
	M12	12.0	1.75	10	265	464	8	210	368	6	160	280
Al-Knetlegierung Si < 6% ausgehärtet	M16	16.0	2.00	10	200	400	8	160	320	6	120	240
	M20	20.0	2.50	10	160	400	8	125	313	6	95	238
	M24	24.0	3.00	10	135	405	8	105	315	6	80	240
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2	2.0	0.40	3	475	190	2	320	128	2	320	128
	M 2.5	2.5	0.45	3	380	171	2	255	115	2	255	115
	M 3	3.0	0.50	4	425	213	3	320	160	3	320	160
	M 4	4.0	0.70	4	320	224	3	240	168	3	240	168
	M 5	5.0	0.80	4	255	204	3	190	152	3	190	152
	M 6	6.0	1.00	4	210	210	3	160	160	3	160	160
	M 8	8.0	1.25	4	160	200	3	120	150	3	120	150
	M10	10.0	1.50	4	125	188	3	95	143	3	95	143
	M12	12.0	1.75	4	105	184	3	80	140	3	80	140
Nichtrostender Stahl [Cr-Ni/1.4301]	M16	16.0	2.00	4	80	160	3	60	120	3	60	120
	M20	20.0	2.50	4	65	163	3	50	125	3	50	125
	M24	24.0	3.00	4	55	165	3	40	120	3	40	120

M	7G
60°	HSS-E Co5
DIN 371/376	
	X · P Form C

E10218 / DIN 371



E10219 / DIN 376

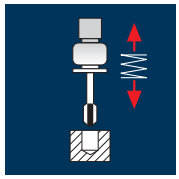
Rm < 850							Inox Stainless		GG(G) Aluminium Copper

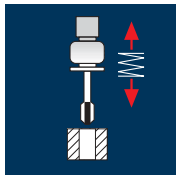
Beispiel: **Bestell-Nr.** Artikel-Nr. **E10218** ø-Code **.034**

Ø Code	d	P	L	l	l_1	l_3	d_1	a	⌀	Δ	E10218	
.034	M 2	0.40	45	8.0	–	10.5	2.8	2.1	3	+0.030	●	
.040	M 2.5	0.45	50	9.0	–	13.0	2.8	2.1	3	+0.030	●	
.044	M 3	0.50	56	4.0	18.0	16.0	3.5	2.7	3	+0.032	●	
.058	M 4	0.70	63	5.6	21.0	19.0	4.5	3.4	3	+0.038	●	
.084	M 5	0.80	70	6.4	25.0	23.0	6.0	4.9	3	+0.040	●	
.088	M 6	1.00	80	8.0	30.0	28.0	6.0	4.9	3	+0.048	●	
.160	M 8	1.25	90	10.0	35.0	33.0	8.0	6.2	3	+0.050	●	
.174	M10	1.50	100	12.0	39.0	37.0	10.0	8.0	3	+0.056	●	

Beispiel: **Bestell-Nr.** Artikel-Nr. **E10219** ø-Code **.240**

Ø Code	d	P	L	l	l_1	l_3	d_1	a	⌀	Δ	E10219	
.240	M12	1.75	110	14.0	50.0	48.0	9.0	7.0	3	+0.064	●	
.246	M16	2.00	110	16.0	58.0	56.0	12.0	9.0	4	+0.068	●	
.314	M20	2.50	140	20.0	72.0	70.0	16.0	12.0	4	+0.072	●	
.320	M24	3.00	160	24.0	74.0	72.0	18.0	14.5	4	+0.085	●	

Anwendung	Werkstoff	MJ	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]
	Nickelbasislegierungen nicht ausgehärtet	MJ 2	2.0	0.40	3	475	190	2	320	128
		MJ 2.5	2.5	0.45	3	380	171	2	255	115
		MJ 3	3.0	0.50	3	320	160	2	210	105
		MJ 4	4.0	0.70	3	240	168	2	160	112
		MJ 5	5.0	0.80	3	190	152	2	125	100
		MJ 6	6.0	1.00	3	160	160	2	105	105
		MJ 8	8.0	1.00	3	120	120	2	80	80
		MJ 8	8.0	1.25	3	120	150	2	80	100
		MJ 10	10.0	1.25	3	95	119	2	65	81
	Nickelbasislegierungen nicht ausgehärtet	MJ 10	10.0	1.50	3	95	143	2	65	98
	Nickelbasislegierungen ausgehärtet	MJ 2	2.0	0.40	2	320	128	2	320	128
		MJ 2.5	2.5	0.45	2	255	115	2	255	115
		MJ 3	3.0	0.50	2	210	105	2	210	105
		MJ 4	4.0	0.70	2	160	112	2	160	112
		MJ 5	5.0	0.80	2	125	100	2	125	100
		MJ 6	6.0	1.00	2	105	105	2	105	105
		MJ 8	8.0	1.00	2	80	80	2	80	80
		MJ 8	8.0	1.25	2	80	100	2	80	100
		MJ 10	10.0	1.25	2	65	81	2	65	81
	Nickelbasislegierungen ausgehärtet	MJ 10	10.0	1.50	2	65	98	2	65	98

Anwendung	Werkstoff	MJ	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]
	Nickelbasislegierungen nicht ausgehärtet	MJ 2	2.0	0.40	3	475	190	2	320	128
		MJ 2.5	2.5	0.45	3	380	171	2	255	115
		MJ 3	3.0	0.50	3	320	160	2	210	105
		MJ 4	4.0	0.70	3	240	168	2	160	112
		MJ 5	5.0	0.80	3	190	152	2	125	100
		MJ 6	6.0	1.00	3	160	160	2	105	105
		MJ 8	8.0	1.00	3	120	120	2	80	80
		MJ 8	8.0	1.25	3	120	150	2	80	100
		MJ 10	10.0	1.25	3	95	119	2	65	81
	Nickelbasislegierungen nicht ausgehärtet	MJ 10	10.0	1.50	3	95	143	2	65	98
	Nickelbasislegierungen ausgehärtet	MJ 2	2.0	0.40	2	320	128	2	320	128
		MJ 2.5	2.5	0.45	2	255	115	2	255	115
		MJ 3	3.0	0.50	2	210	105	2	210	105
		MJ 4	4.0	0.70	2	160	112	2	160	112
		MJ 5	5.0	0.80	2	125	100	2	125	100
		MJ 6	6.0	1.00	2	105	105	2	105	105
		MJ 8	8.0	1.00	2	80	80	2	80	80
		MJ 8	8.0	1.25	2	80	100	2	80	100
		MJ 10	10.0	1.25	2	65	81	2	65	81
	Nickelbasislegierungen ausgehärtet	MJ 10	10.0	1.50	2	65	98	2	65	98

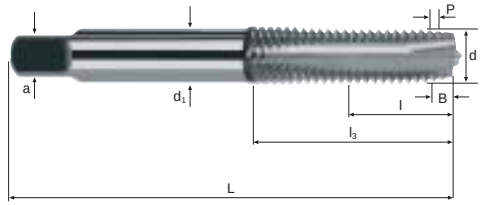
Gewindebohrer

Ni

M

MJ | 4H

HSS PM/F



Nickel-Alloys

Beispiel: **Bestell-Nr.** Artikel-Nr. **E0599** ø-Code **.034**

ø Code	d	P	L	l	l_1	l_3	d_1	a			E0599	
.034	MJ 2	0.40	41	8	–	11	2.8	2.1	3	1.70	●	
.040	MJ 2.5	0.45	44	9	–	13	2.8	2.1	3	2.20 *	●	
.044	MJ 3	0.50	48	11	–	16	3.5	2.7	3	2.65	●	
.058	MJ 4	0.70	53	13	–	19	4.5	3.4	3	3.50 *	●	
.084	MJ 5	0.80	58	15	–	22	6.0	4.9	3	4.40	●	
.088	MJ 6	1.00	66	17	–	28	6.0	4.9	3	5.20	●	
.090	MJ 8	1.00	72	20	–	34	8.0	6.2	3	7.20	●	
.160	MJ 8	1.25	72	20	–	34	8.0	6.2	3	7.00 *	●	
.162	MJ10	1.25	80	22	–	37	10.0	8.0	3	9.00 *	●	
.174	MJ10	1.50	80	22	–	37	10.0	8.0	3	8.70	●	

* angegebenes Mass liegt ausserhalb der Norm

passion
for precision
fraisa

Metrisches Feingewinde MF

Toleranz ISO 2 (6H)

N° EH1257 / EH1258 x-tap

N° EH1260 / EH1261 x-tap

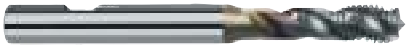
N° EH6910 / EH6911

N° ET1240 / ET1241 Inotap

N° ET1260 / ET1261 x-tap

N° EH1270 / EH1271

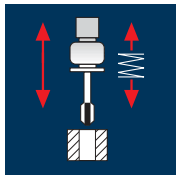
N° EH1229 polytap-R



11	HSS PM/F		Rm 850-1100		247
11	HSS PM/F		Rm 850-1100		251
60	HM MG10		HRC 48- >60		255
In	HSS PM/F		Inox Stainless		257
In	HSS PM/F		Inox Stainless		261
GG	HSS PM/F		GG(G) Cast iron		265
R	HSS PM/F		Rm <850-1100	Inox Stainless	269

MF

Anwendung



Werkstoff	MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	M 2.5	2.5	0.35	25	3185	1115	20	2545	891	15	1910	669
	M 3	3.0	0.35	25	2655	929	20	2120	742	15	1590	557
	M 3.5	3.5	0.35	25	2275	796	20	1820	637	15	1365	478
	M 4	4.0	0.50	25	1990	995	20	1590	795	15	1195	598
	M 5	5.0	0.50	25	1590	795	20	1275	638	15	955	478
	M 6	6.0	0.50	25	1325	663	20	1060	530	15	795	398
	M 8	8.0	0.50	25	995	498	20	795	398	15	595	298
	M10	10.0	0.50	25	795	398	20	635	318	15	475	238
	M 6	6.0	0.75	25	1325	994	20	1060	795	15	795	596
Stahl 500 - 850 N/mm²	M 7	7.0	0.75	25	1135	851	20	910	683	15	680	510
	M 8	8.0	0.75	25	995	746	20	795	596	15	595	446
	M10	10.0	0.75	25	795	596	20	635	476	15	475	356
	M 8	8.0	1.00	25	995	995	20	795	795	15	595	595
	M 9	9.0	1.00	25	885	885	20	705	705	15	530	530
	M10	10.0	1.00	25	795	795	20	635	635	15	475	475
	M10	10.0	1.25	25	795	994	20	635	794	15	475	594
Stahl 850 - 1100 N/mm²	M 2.5	2.5	0.35	20	2545	891	15	1910	669	12	1530	536
	M 3	3.0	0.35	20	2120	742	15	1590	557	12	1275	446
	M 3.5	3.5	0.35	20	1820	637	15	1365	478	12	1090	382
	M 4	4.0	0.50	20	1590	795	15	1195	598	12	955	478
	M 5	5.0	0.50	20	1275	638	15	955	478	12	765	383
	M 6	6.0	0.50	20	1060	530	15	795	398	12	635	318
	M 8	8.0	0.50	20	795	398	15	595	298	12	475	238
	M10	10.0	0.50	20	635	318	15	475	238	12	380	190
	M 6	6.0	0.75	20	1060	795	15	795	596	12	635	476
Stahl 850 - 1100 N/mm²	M 7	7.0	0.75	20	910	683	15	680	510	12	545	409
	M 8	8.0	0.75	20	795	596	15	595	446	12	475	356
	M10	10.0	0.75	20	635	476	15	475	356	12	380	285
	M 8	8.0	1.00	20	795	795	15	595	595	12	475	475
	M 9	9.0	1.00	20	705	705	15	530	530	12	425	425
	M10	10.0	1.00	20	635	635	15	475	475	12	380	380
	M10	10.0	1.25	20	635	794	15	475	594	12	380	475

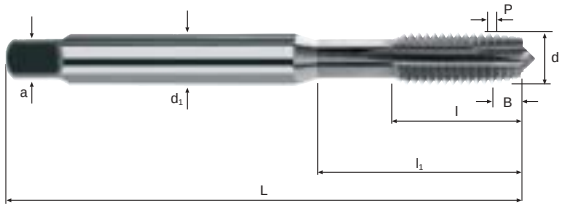
Werkstoff	MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 1100 - 1300 N/mm²	M 2.5	2.5	0.35	7	890	312	4	510	179
	M 3	3.0	0.35	7	745	261	4	425	149
	M 3.5	3.5	0.35	7	635	222	4	365	128
	M 4	4.0	0.50	7	555	278	4	320	160
	M 5	5.0	0.50	7	445	223	4	255	128
	M 6	6.0	0.50	7	370	185	4	210	105
	M 8	8.0	0.50	7	280	140	4	160	80
	M10	10.0	0.50	7	225	113	4	125	63
	M 6	6.0	0.75	7	370	278	4	210	158
Stahl 1100 - 1300 N/mm²	M 7	7.0	0.75	7	320	240	4	180	135
	M 8	8.0	0.75	7	280	210	4	160	120
	M10	10.0	0.75	7	225	169	4	125	94
	M 8	8.0	1.00	7	280	280	4	160	160
	M 9	9.0	1.00	7	250	250	4	140	140
	M10	10.0	1.00	7	225	225	4	125	125
	M10	10.0	1.25	7	225	281	4	125	156

MF | ISO 2 (6H)

60° | HSS PM/F

DIN 371

X · P Form B



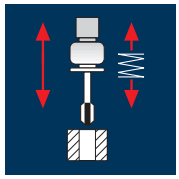
Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1257** ø-Code **.029**

ø Code	d	P	L	l	l_1	d_1	a			TiCN EH1257
.029	M 2.5	0.35	50	9	–	2.8	2.1	2	2.15	●
.031	M 3	0.35	56	12	18	3.5	2.7	3	2.65	●
.032	M 3.5	0.35	56	12	20	4.0	3.0	3	3.15	●
.046	M 4	0.50	63	13	21	4.5	3.4	3	3.50	●
.048	M 5	0.50	70	15	25	6.0	4.9	3	4.50	●
.050	M 6	0.50	80	17	30	6.0	4.9	3	5.50	●
.052	M 8	0.50	90	20	35	8.0	6.2	3	7.50	●
.054	M10	0.50	100	22	39	10.0	8.0	3	9.50	●
.064	M 6	0.75	80	17	30	6.0	4.9	3	5.20	●
.065	M 7	0.75	80	17	30	7.0	5.5	3	6.20	●
.066	M 8	0.75	90	20	35	8.0	6.2	3	7.20	●
.068	M10	0.75	100	22	39	10.0	8.0	3	9.20	●
.090	M 8	1.00	90	20	35	8.0	6.2	3	7.00	●
.091	M 9	1.00	90	20	35	9.0	7.0	3	8.00	●
.092	M10	1.00	100	22	39	10.0	8.0	3	9.00	●
.162	M10	1.25	100	22	39	10.0	8.0	3	8.80	●

Grössere Abmessungen siehe Artikel-Nr. EH1258, Seite 249

Anwendung



Werkstoff	MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	M12	12.0	0.75	25	665	499	20	530	398	15	400	300
	M14	14.0	0.75	25	570	428	20	455	341	15	340	255
	M16	16.0	0.75	25	495	371	20	400	300	15	300	225
	M12	12.0	1.00	25	665	665	20	530	530	15	400	400
	M13	13.0	1.00	25	610	610	20	490	490	15	365	365
	M14	14.0	1.00	25	570	570	20	455	455	15	340	340
	M16	16.0	1.00	25	495	495	20	400	400	15	300	300
	M18	18.0	1.00	25	440	440	20	355	355	15	265	265
	M20	20.0	1.00	25	400	400	20	320	320	15	240	240
Stahl 500 - 850 N/mm²	M12	12.0	1.25	25	665	831	20	530	663	15	400	500
	M14	14.0	1.25	25	570	713	20	455	569	15	340	425
	M16	16.0	1.25	25	495	619	20	400	500	15	300	375
	M12	12.0	1.50	25	665	998	20	530	795	15	400	600
	M14	14.0	1.50	25	570	855	20	455	683	15	340	510
	M16	16.0	1.50	25	495	743	20	400	600	15	300	450
	M18	18.0	1.50	25	440	660	20	355	533	15	265	398
	M20	20.0	1.50	25	400	600	20	320	480	15	240	360
	M24	24.0	1.50	25	330	495	20	265	398	15	200	300
Stahl 850 - 1100 N/mm²	M12	12.0	0.75	20	530	398	15	400	300	12	320	240
	M14	14.0	0.75	20	455	341	15	340	255	12	275	206
	M16	16.0	0.75	20	400	300	15	300	225	12	240	180
	M12	12.0	1.00	20	530	530	15	400	400	12	320	320
	M13	13.0	1.00	20	490	490	15	365	365	12	295	295
	M14	14.0	1.00	20	455	455	15	340	340	12	275	275
	M16	16.0	1.00	20	400	400	15	300	300	12	240	240
	M18	18.0	1.00	20	355	355	15	265	265	12	210	210
	M20	20.0	1.00	20	320	320	15	240	240	12	190	190
Stahl 850 - 1100 N/mm²	M12	12.0	1.25	20	530	663	15	400	500	12	320	400
	M14	14.0	1.25	20	455	569	15	340	425	12	275	344
	M16	16.0	1.25	20	400	500	15	300	375	12	240	300
	M12	12.0	1.50	20	530	795	15	400	600	12	320	480
	M14	14.0	1.50	20	455	683	15	340	510	12	275	413
	M16	16.0	1.50	20	400	600	15	300	450	12	240	360
	M18	18.0	1.50	20	355	533	15	265	398	12	210	315
	M20	20.0	1.50	20	320	480	15	240	360	12	190	285
	M24	24.0	1.50	20	265	398	15	200	300	12	160	240

Werkstoff	MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	
Stahl 1100 - 1300 N/mm²	M12	12.0	0.75	7	185	139	4	105	79	
	M14	14.0	0.75	7	160	120	4	90	68	
	M16	16.0	0.75	7	140	105	4	80	60	
	M12	12.0	1.00	7	185	185	4	105	105	
	M13	13.0	1.00	7	170	170	4	100	100	
	M14	14.0	1.00	7	160	160	4	90	90	
	M16	16.0	1.00	7	140	140	4	80	80	
	M18	18.0	1.00	7	125	125	4	70	70	
	M20	20.0	1.00	7	110	110	4	65	65	
Stahl 1100 - 1300 N/mm²	M12	12.0	1.25	7	185	231	4	105	131	
	M14	14.0	1.25	7	160	200	4	90	113	
	M16	16.0	1.25	7	140	175	4	80	100	
	M12	12.0	1.50	7	185	278	4	105	158	
	M14	14.0	1.50	7	160	240	4	90	135	
	M16	16.0	1.50	7	140	210	4	80	120	
	M18	18.0	1.50	7	125	188	4	70	105	
	M20	20.0	1.50	7	110	165	4	65	98	
	M24	24.0	1.50	7	95	143	4	55	83	

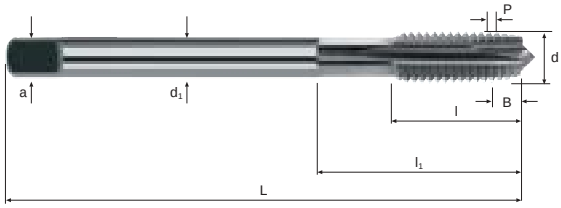
Gewindebohrer x-tap

MF | ISO 2 (6H)

60° | HSS PM/F

DIN 374

X · P Form B

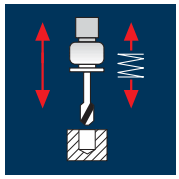


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1258** ø-Code **.070**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN
										EH1258
.070	M12	0.75	100	18	39	9.0	7.0	3	11.30	●
.072	M14	0.75	100	18	39	11.0	9.0	3	13.30	●
.074	M16	0.75	100	18	39	12.0	9.0	3	15.30	●
.094	M12	1.00	100	18	39	9.0	7.0	3	11.00	●
.095	M13	1.00	100	18	39	11.0	7.0	3	12.00	●
.096	M14	1.00	100	18	39	11.0	9.0	3	13.00	●
.097	M15	1.00	100	18	39	12.0	9.0	3	14.00	●
.098	M16	1.00	100	18	39	12.0	9.0	3	15.00	●
.099	M17	1.00	100	18	39	12.0	9.0	4	16.00	●
.100	M18	1.00	110	20	45	14.0	11.0	4	17.00	●
.102	M20	1.00	125	20	50	16.0	12.0	4	19.00	●
.164	M12	1.25	100	22	39	9.0	7.0	3	10.80	●
.166	M14	1.25	100	22	39	11.0	9.0	3	12.80	●
.168	M16	1.25	100	22	39	12.0	9.0	3	14.80	●
.176	M12	1.50	100	22	39	9.0	7.0	3	10.50	●
.178	M14	1.50	100	22	39	11.0	9.0	3	12.50	●
.180	M16	1.50	100	22	39	12.0	9.0	3	14.50	●
.182	M18	1.50	110	22	45	14.0	11.0	4	16.50	●
.184	M20	1.50	125	25	50	16.0	12.0	4	18.50	●
.186	M22	1.50	125	26	50	18.0	14.5	4	20.50	●
.188	M24	1.50	140	27	52	18.0	14.5	4	22.50	●

Anwendung



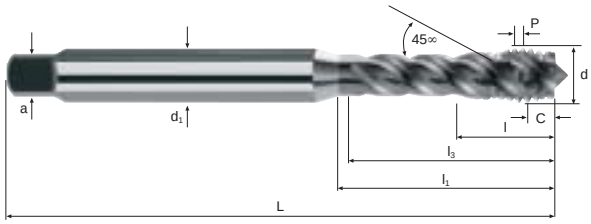
Werkstoff	MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min^{-1}]	v_f [100%]	v_c 1.5 x d	n [min^{-1}]	v_f [100%]	v_c 2.0 x d	n [min^{-1}]	v_f [100%]
Stahl 500 - 850 N/mm^2	M 2.5	2.5	0.35	32	4075	1426	28	3565	1248	22	2800	980
	M 3	3.0	0.35	32	3395	1188	28	2970	1040	22	2335	817
	M 3.5	3.5	0.35	32	2910	1018	28	2545	891	22	2000	700
	M 4	4.0	0.50	32	2545	1273	28	2230	1115	22	1750	875
	M 5	5.0	0.50	32	2035	1018	28	1785	893	22	1400	700
	M 6	6.0	0.50	32	1700	850	28	1485	743	22	1165	583
	M 8	8.0	0.50	32	1275	638	28	1115	558	22	875	438
	M10	10.0	0.50	32	1020	510	28	890	445	22	700	350
	M 6	6.0	0.75	32	1700	1275	28	1485	1114	22	1165	874
Stahl 500 - 850 N/mm^2	M 7	7.0	0.75	32	1455	1091	28	1275	956	22	1000	750
	M 8	8.0	0.75	32	1275	956	28	1115	836	22	875	656
	M10	10.0	0.75	32	1020	765	28	890	668	22	700	525
	M 8	8.0	1.00	32	1275	1275	28	1115	1115	22	875	875
	M 9	9.0	1.00	32	1130	1130	28	990	990	22	780	780
	M10	10.0	1.00	32	1020	1020	28	890	890	22	700	700
	M10	10.0	1.25	32	1020	1275	28	890	1113	22	700	875
Stahl 850 - 1100 N/mm^2	M 2.5	2.5	0.35	20	2545	891	16	2035	712	10	1275	446
	M 3	3.0	0.35	20	2120	742	16	1700	595	10	1060	371
	M 3.5	3.5	0.35	20	1820	637	16	1455	509	10	910	319
	M 4	4.0	0.50	20	1590	795	16	1275	638	10	795	398
	M 5	5.0	0.50	20	1275	638	16	1020	510	10	635	318
	M 6	6.0	0.50	20	1060	530	16	850	425	10	530	265
	M 8	8.0	0.50	20	795	398	16	635	318	10	400	200
	M10	10.0	0.50	20	635	318	16	510	255	10	320	160
	M 6	6.0	0.75	20	1060	795	16	850	638	10	530	398
Stahl 850 - 1100 N/mm^2	M 7	7.0	0.75	20	910	683	16	730	548	10	455	341
	M 8	8.0	0.75	20	795	596	16	635	476	10	400	300
	M10	10.0	0.75	20	635	476	16	510	383	10	320	240
	M 8	8.0	1.00	20	795	795	16	635	635	10	400	400
	M 9	9.0	1.00	20	705	705	16	565	565	10	355	355
	M10	10.0	1.00	20	635	635	16	510	510	10	320	320
	M10	10.0	1.25	20	635	794	16	510	638	10	320	400

MF | ISO 2 (6H)

60° | HSS PM/F

DIN 371

X · P Form C



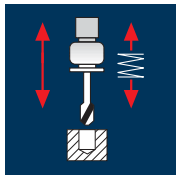
Rm < 850 | **Rm** 850-1100

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1260** ø-Code **.029**

ø Code	d	P	L	l	l_1	l_3	d_1	a			TiCN EH1260
.029	M 2.5	0.35	50	9	–	13	2.8	2.1	3	2.15	●
.031	M 3	0.35	56	5	18	16	3.5	2.7	3	2.65	●
.032	M 3.5	0.35	56	6	20	18	4.0	3.0	3	3.15	●
.046	M 4	0.50	63	7	21	19	4.5	3.4	3	3.50	●
.048	M 5	0.50	70	8	25	23	6.0	4.9	3	4.50	●
.050	M 6	0.50	80	10	30	28	6.0	4.9	3	5.50	●
.052	M 8	0.50	90	13	35	33	8.0	6.2	3	7.50	●
.054	M10	0.50	100	15	39	37	10.0	8.0	4	9.50	●
.064	M 6	0.75	80	10	30	28	6.0	4.9	3	5.20	●
.065	M 7	0.75	80	10	30	28	7.0	5.5	3	6.20	●
.066	M 8	0.75	90	13	35	33	8.0	6.2	3	7.20	●
.068	M10	0.75	100	15	39	37	10.0	8.0	4	9.20	●
.090	M 8	1.00	90	13	35	33	8.0	6.2	3	7.00	●
.091	M 9	1.00	90	13	35	33	9.0	7.0	3	8.00	●
.092	M10	1.00	100	15	39	37	10.0	8.0	4	9.00	●
.162	M10	1.25	100	15	39	37	10.0	8.0	4	8.80	●

Grössere Abmessungen siehe Artikel-Nr. EH1261, Seite 253

Anwendung



Werkstoff	MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	M12	12.0	0.75	32	850	638	28	745	559	22	585	439
	M14	14.0	0.75	32	730	548	28	635	476	22	500	375
	M16	16.0	0.75	32	635	476	28	555	416	22	440	330
	M12	12.0	1.00	32	850	850	28	745	745	22	585	585
	M13	13.0	1.00	32	785	785	28	685	685	22	540	540
	M14	14.0	1.00	32	730	730	28	635	635	22	500	500
	M15	15.0	1.00	32	680	680	28	595	595	22	465	465
	M16	16.0	1.00	32	635	635	28	555	555	22	440	440
	M17	17.0	1.00	32	600	600	28	525	525	22	410	410
Stahl 500 - 850 N/mm²	M18	18.0	1.00	32	565	565	28	495	495	22	390	390
	M20	20.0	1.00	32	510	510	28	445	445	22	350	350
	M12	12.0	1.25	32	850	1063	28	745	931	22	585	731
	M14	14.0	1.25	32	730	913	28	635	794	22	500	625
	M16	16.0	1.25	32	635	794	28	555	694	22	440	550
	M12	12.0	1.50	32	850	1275	28	745	1118	22	585	878
	M14	14.0	1.50	32	730	1095	28	635	953	22	500	750
	M16	16.0	1.50	32	635	953	28	555	833	22	440	660
	M18	18.0	1.50	32	565	848	28	495	743	22	390	585
Stahl 500 - 850 N/mm²	M20	20.0	1.50	32	510	765	28	445	668	22	350	525
	M22	22.0	1.50	32	465	698	28	405	608	22	320	480
	M24	24.0	1.50	32	425	638	28	370	555	22	290	435

Werkstoff	MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 850 - 1100 N/mm²	M12	12.0	0.75	20	530	398	16	425	319	10	265	199
	M14	14.0	0.75	20	455	341	16	365	274	10	225	169
	M16	16.0	0.75	20	400	300	16	320	240	10	200	150
	M12	12.0	1.00	20	530	530	16	425	425	10	265	265
	M13	13.0	1.00	20	490	490	16	390	390	10	245	245
	M14	14.0	1.00	20	455	455	16	365	365	10	225	225
	M15	15.0	1.00	20	425	425	16	340	340	10	210	210
	M16	16.0	1.00	20	400	400	16	320	320	10	200	200
	M17	17.0	1.00	20	375	375	16	300	300	10	185	185
Stahl 850 - 1100 N/mm²	M18	18.0	1.00	20	355	355	16	285	285	10	175	175
	M20	20.0	1.00	20	320	320	16	255	255	10	160	160
	M12	12.0	1.25	20	530	663	16	425	531	10	265	331
	M14	14.0	1.25	20	455	569	16	365	456	10	225	281
	M16	16.0	1.25	20	400	500	16	320	400	10	200	250
	M12	12.0	1.50	20	530	795	16	425	638	10	265	398
	M14	14.0	1.50	20	455	683	16	365	548	10	225	338
	M16	16.0	1.50	20	400	600	16	320	480	10	200	300
	M18	18.0	1.50	20	355	533	16	285	428	10	175	263
Stahl 850 - 1100 N/mm²	M20	20.0	1.50	20	320	480	16	255	383	10	160	240
	M22	22.0	1.50	20	290	435	16	230	345	10	145	218
	M24	24.0	1.50	20	265	398	16	210	315	10	135	203

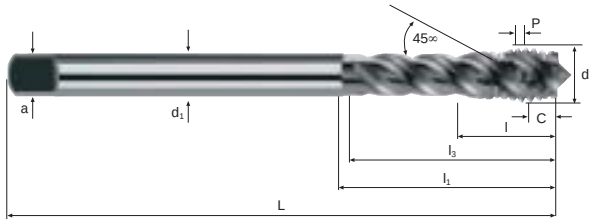
Gewindebohrer x-tap

MF | ISO 2 (6H)

60° | HSS PM/F

DIN 374

X · P Form C

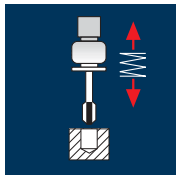


Rm < 850 | **Rm** 850-1100

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1261** ø-Code **.070**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			TiCN EH1261
.070	M12	0.75	100	11	39	37	9.0	7.0	4	11.30	●
.072	M14	0.75	100	11	39	37	11.0	9.0	4	13.30	●
.074	M16	0.75	100	12	39	37	12.0	9.0	4	15.30	●
.094	M12	1.00	100	11	39	37	9.0	7.0	4	11.00	●
.095	M13	1.00	100	11	39	37	11.0	9.0	4	12.00	●
.096	M14	1.00	100	11	39	37	11.0	9.0	4	13.00	●
.097	M15	1.00	100	12	39	37	12.0	9.0	4	14.00	●
.098	M16	1.00	100	12	39	37	12.0	9.0	4	15.00	●
.099	M17	1.00	100	12	39	37	12.0	9.0	4	16.00	●
.100	M18	1.00	110	13	50	48	14.0	11.0	4	17.00	●
.102	M20	1.00	125	14	65	63	16.0	12.0	4	19.00	●
.164	M12	1.25	100	15	39	37	9.0	7.0	4	10.80	●
.166	M14	1.25	100	15	39	37	11.0	9.0	4	12.80	●
.168	M16	1.25	100	15	39	37	12.0	9.0	4	14.80	●
.176	M12	1.50	100	15	39	37	9.0	7.0	4	10.50	●
.178	M14	1.50	100	15	39	37	11.0	9.0	4	12.50	●
.180	M16	1.50	100	15	39	37	12.0	9.0	4	14.50	●
.182	M18	1.50	110	17	50	48	14.0	11.0	4	16.50	●
.184	M20	1.50	125	18	65	63	16.0	12.0	4	18.50	●
.186	M22	1.50	125	18	65	63	18.0	14.5	5	20.50	●
.188	M24	1.50	140	20	72	70	18.0	14.5	5	22.50	●

Anwendung



Werkstoff

Werkzeugstahl gehärtet 48 - 52 HRC

MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
M 6	6.0	0.50	8	425	213	6	320	160	4	210	105
M 8	8.0	1.00	8	320	320	6	240	240	4	160	160
M10	10.0	1.00	8	255	255	6	190	190	4	125	125
M12	12.0	1.50	8	210	315	6	160	240	4	105	158
M14	14.0	1.50	8	180	270	6	135	203	4	90	135
M16	16.0	1.50	8	160	240	6	120	180	4	80	120

Werkzeugstahl gehärtet 52 - 56 HRC

MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
M 6	6.0	0.50	6	320	160	4	210	105	3	160	80
M 8	8.0	1.00	6	240	240	4	160	160	3	120	120
M10	10.0	1.00	6	190	190	4	125	125	3	95	95
M12	12.0	1.50	6	160	240	4	105	158	3	80	120
M14	14.0	1.50	6	135	203	4	90	135	3	70	105
M16	16.0	1.50	6	120	180	4	80	120	3	60	90

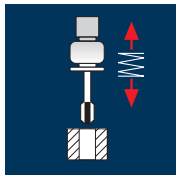
Werkzeugstahl gehärtet 56 - 60 HRC

MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
M 6	6.0	0.50	4	210	105	2	105	53			
M 8	8.0	1.00	4	160	160	2	80	80			
M10	10.0	1.00	4	125	125	2	65	65			
M12	12.0	1.50	4	105	158	2	55	83			
M14	14.0	1.50	4	90	135	2	45	68			
M16	16.0	1.50	4	80	120	2	40	60			

Werkzeugstahl gehärtet > 60 HRC

MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
M 6	6.0	0.50	2	105	53	1.5	80	40			
M 8	8.0	1.00	2	80	80	1.5	60	60			
M10	10.0	1.00	2	65	65	1.5	50	50			
M12	12.0	1.50	2	55	83	1.5	40	60			
M14	14.0	1.50	2	45	68	1.5	35	53			
M16	16.0	1.50	2	40	60	1.5	30	45			

Anwendung



Werkstoff

Werkzeugstahl gehärtet 48 - 52 HRC

MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
M 6	6.0	0.50	8	425	213	6	320	160	4	210	105
M 8	8.0	1.00	8	320	320	6	240	240	4	160	160
M10	10.0	1.00	8	255	255	6	190	190	4	125	125
M12	12.0	1.50	8	210	315	6	160	240	4	105	158
M14	14.0	1.50	8	180	270	6	135	203	4	90	135
M16	16.0	1.50	8	160	240	6	120	180	4	80	120

Werkzeugstahl gehärtet 52 - 56 HRC

MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
M 6	6.0	0.50	6	320	160	4	210	105	3	160	80
M 8	8.0	1.00	6	240	240	4	160	160	3	120	120
M10	10.0	1.00	6	190	190	4	125	125	3	95	95
M12	12.0	1.50	6	160	240	4	105	158	3	80	120
M14	14.0	1.50	6	135	203	4	90	135	3	70	105
M16	16.0	1.50	6	120	180	4	80	120	3	60	90

Werkzeugstahl gehärtet 56 - 60 HRC

MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
M 6	6.0	0.50	4	210	105	2	105	53			
M 8	8.0	1.00	4	160	160	2	80	80			
M10	10.0	1.00	4	125	125	2	65	65			
M12	12.0	1.50	4	105	158	2	55	83			
M14	14.0	1.50	4	90	135	2	45	68			
M16	16.0	1.50	4	80	120	2	40	60			

Werkzeugstahl gehärtet > 60 HRC

MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
M 6	6.0	0.50	2	105	53	1.5	80	40			
M 8	8.0	1.00	2	80	80	1.5	60	60			
M10	10.0	1.00	2	65	65	1.5	50	50			
M12	12.0	1.50	2	55	83	1.5	40	60			
M14	14.0	1.50	2	45	68	1.5	35	53			
M16	16.0	1.50	2	40	60	1.5	30	45			

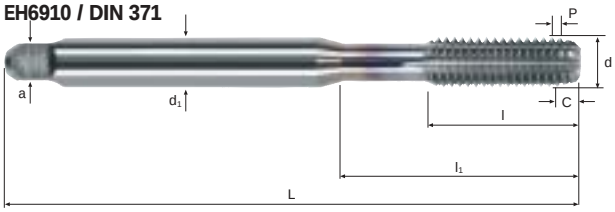
MF | ISO 2 (6H)

60° | HM MG10

DIN 371/374

X · P Form C

EH6910 / DIN 371



EH6911 / DIN 374

HRC 48-56 | HRC 56-60 | HRC > 60

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6910** ø-Code **.050**

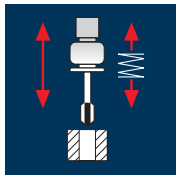
Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH6910
.050	M 6	0.50	80	17	30	6.0	4.9	4	5.60 *	●
.090	M 8	1.00	90	20	35	8.0	6.2	5	7.10	●
.092	M10	1.00	100	22	39	10.0	8.0	5	9.10	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6911** ø-Code **.176**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH6911
.176	M12	1.50	100	22	39	9	7.0	5	10.70 *	●
.178	M14	1.50	100	22	39	11	9.0	5	12.70 *	●
.180	M16	1.50	100	22	39	12	9.0	5	14.70 *	●

* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff	MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch	M 2.5	2.5	0.35	12	1530	536	10	1275	446	8	1020	357
	M 3	3.0	0.35	12	1275	446	10	1060	371	8	850	298
	M 3.5	3.5	0.35	12	1090	382	10	910	319	8	730	255
	M 4	4.0	0.50	12	955	478	10	795	398	8	635	318
	M 5	5.0	0.50	12	765	383	10	635	318	8	510	255
	M 6	6.0	0.50	12	635	318	10	530	265	8	425	213
	M 8	8.0	0.50	12	475	238	10	400	200	8	320	160
	M10	10.0	0.50	12	380	190	10	320	160	8	255	128
	M 6	6.0	0.75	12	635	476	10	530	398	8	425	319
Nichtrostender Stahl ferritisch/martensitisch	M 7	7.0	0.75	12	545	409	10	455	341	8	365	274
	M 8	8.0	0.75	12	475	356	10	400	300	8	320	240
	M10	10.0	0.75	12	380	285	10	320	240	8	255	191
	M 8	8.0	1.00	12	475	475	10	400	400	8	320	320
	M 9	9.0	1.00	12	425	425	10	355	355	8	285	285
	M10	10.0	1.00	12	380	380	10	320	320	8	255	255
	M10	10.0	1.25	12	380	475	10	320	400	8	255	319
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2.5	2.5	0.35	7	890	312	5	635	222	4	510	179
	M 3	3.0	0.35	7	745	261	5	530	186	4	425	149
	M 3.5	3.5	0.35	7	635	222	5	455	159	4	365	128
	M 4	4.0	0.50	7	555	278	5	400	200	4	320	160
	M 5	5.0	0.50	7	445	223	5	320	160	4	255	128
	M 6	6.0	0.50	7	370	185	5	265	133	4	210	105
	M 8	8.0	0.50	7	280	140	5	200	100	4	160	80
	M10	10.0	0.50	7	225	113	5	160	80	4	125	63
	M 6	6.0	0.75	7	370	278	5	265	199	4	210	158
Nichtrostender Stahl [Cr-Ni/1.4301]	M 7	7.0	0.75	7	320	240	5	225	169	4	180	135
	M 8	8.0	0.75	7	280	210	5	200	150	4	160	120
	M10	10.0	0.75	7	225	169	5	160	120	4	125	94
	M 8	8.0	1.00	7	280	280	5	200	200	4	160	160
	M 9	9.0	1.00	7	250	250	5	175	175	4	140	140
	M10	10.0	1.00	7	225	225	5	160	160	4	125	125
	M10	10.0	1.25	7	225	281	5	160	200	4	125	156

Werkstoff	MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M 2.5	2.5	0.35	8	1020	357	6	765	268	5	635	222
	M 3	3.0	0.35	8	850	298	6	635	222	5	530	186
	M 3.5	3.5	0.35	8	730	255	6	545	191	5	455	159
	M 4	4.0	0.50	8	635	318	6	475	238	5	400	200
	M 5	5.0	0.50	8	510	255	6	380	190	5	320	160
	M 6	6.0	0.50	8	425	213	6	320	160	5	265	133
	M 8	8.0	0.50	8	320	160	6	240	120	5	200	100
	M10	10.0	0.50	8	255	128	6	190	95	5	160	80
	M 6	6.0	0.75	8	425	319	6	320	240	5	265	199
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M 7	7.0	0.75	8	365	274	6	275	206	5	225	169
	M 8	8.0	0.75	8	320	240	6	240	180	5	200	150
	M10	10.0	0.75	8	255	191	6	190	143	5	160	120
	M 8	8.0	1.00	8	320	320	6	240	240	5	200	200
	M 9	9.0	1.00	8	285	285	6	210	210	5	175	175
	M10	10.0	1.00	8	255	255	6	190	190	5	160	160
	M10	10.0	1.25	8	255	319	6	190	238	5	160	200
Hitzebeständiger Stahl [17-4 PH]	M 2.5	2.5	0.35	5	635	222	4	510	179	3	380	133
	M 3	3.0	0.35	5	530	186	4	425	149	3	320	112
	M 3.5	3.5	0.35	5	455	159	4	365	128	3	275	96
	M 4	4.0	0.50	5	400	200	4	320	160	3	240	120
	M 5	5.0	0.50	5	320	160	4	255	128	3	190	95
	M 6	6.0	0.50	5	265	133	4	210	105	3	160	80
	M 8	8.0	0.50	5	200	100	4	160	80	3	120	60
	M10	10.0	0.50	5	160	80	4	125	63	3	95	48
	M 6	6.0	0.75	5	265	199	4	210	158	3	160	120
Hitzebeständiger Stahl [17-4 PH]	M 7	7.0	0.75	5	225	169	4	180	135	3	135	101
	M 8	8.0	0.75	5	200	150	4	160	120	3	120	90
	M10	10.0	0.75	5	160	120	4	125	94	3	95	71
	M 8	8.0	1.00	5	200	200	4	160	160	3	120	120
	M 9	9.0	1.00	5	175	175	4	140	140	3	105	105
	M10	10.0	1.00	5	160	160	4	125	125	3	95	95
	M10	10.0	1.25	5	160	200	4	125	156	3	95	119

Gewindebohrer Inotap

In

MF

ISO 2 (6H)

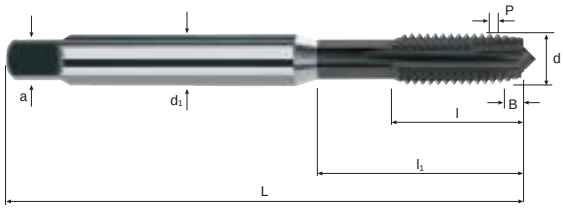
60°

HSS PM/F

DIN 371

X · P

Form B



MF

Inox Stainless

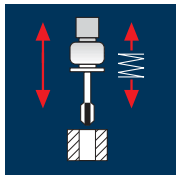
Beispiel: **Bestell-Nr.** Artikel-Nr. **ET1240** ø-Code **.029**

Ø Code	d	P	L	l	l_1	d_1	a			TRIBO ET1240
.029	M 2.5	0.35	50	9	–	2.8	2.1	2	2.20	●
.031	M 3	0.35	56	12	18	3.5	2.7	3	2.70	●
.032	M 3.5	0.35	56	12	20	4.0	3.0	3	3.20	●
.046	M 4	0.50	63	13	21	4.5	3.4	3	3.60 *	●
.048	M 5	0.50	70	15	25	6.0	4.9	3	4.60 *	●
.050	M 6	0.50	80	17	30	6.0	4.9	3	5.60 *	●
.052	M 8	0.50	90	20	35	8.0	6.2	3	7.60 *	●
.054	M10	0.50	100	22	39	10.0	8.0	3	9.60 *	●
.064	M 6	0.75	80	17	30	6.0	4.9	3	5.30	●
.065	M 7	0.75	80	17	30	7.0	5.5	3	6.30	●
.066	M 8	0.75	90	20	35	8.0	6.2	3	7.30	●
.068	M10	0.75	100	22	39	10.0	8.0	3	9.30	●
.090	M 8	1.00	90	20	35	8.0	6.2	3	7.10	●
.091	M 9	1.00	90	20	35	9.0	7.0	3	8.10	●
.092	M10	1.00	100	22	39	10.0	8.0	3	9.10	●
.162	M10	1.25	100	22	39	10.0	8.0	3	8.90	●

* angegebenes Mass liegt ausserhalb der Norm

Grössere Abmessungen siehe Artikel-Nr. ET1241, Seite 259

Anwendung



Werkstoff	MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch	M12	12.0	0.75	12	320	240	10	265	199	8	210	158
	M14	14.0	0.75	12	275	206	10	225	169	8	180	135
	M16	16.0	0.75	12	240	180	10	200	150	8	160	120
	M12	12.0	1.00	12	320	320	10	265	265	8	210	210
	M13	13.0	1.00	12	295	295	10	245	245	8	195	195
	M14	14.0	1.00	12	275	275	10	225	225	8	180	180
	M16	16.0	1.00	12	240	240	10	200	200	8	160	160
	M18	18.0	1.00	12	210	210	10	175	175	8	140	140
	M20	20.0	1.00	12	190	190	10	160	160	8	125	125
Nichtrostender Stahl ferritisch/martensitisch	M12	12.0	1.25	12	320	400	10	265	331	8	210	263
	M14	14.0	1.25	12	275	344	10	225	281	8	180	225
	M16	16.0	1.25	12	240	300	10	200	250	8	160	200
	M12	12.0	1.50	12	320	480	10	265	398	8	210	315
	M14	14.0	1.50	12	275	413	10	225	338	8	180	270
	M16	16.0	1.50	12	240	360	10	200	300	8	160	240
	M18	18.0	1.50	12	210	315	10	175	263	8	140	210
	M20	20.0	1.50	12	190	285	10	160	240	8	125	188
	M24	24.0	1.50	12	160	240	10	135	203	8	105	158
Nichtrostender Stahl [Cr-Ni/1.4301]	M12	12.0	0.75	7	185	139	5	135	101	4	105	79
	M14	14.0	0.75	7	160	120	5	115	86	4	90	68
	M16	16.0	0.75	7	140	105	5	100	75	4	80	60
	M12	12.0	1.00	7	185	185	5	135	135	4	105	105
	M13	13.0	1.00	7	170	170	5	120	120	4	100	100
	M14	14.0	1.00	7	160	160	5	115	115	4	90	90
	M16	16.0	1.00	7	140	140	5	100	100	4	80	80
	M18	18.0	1.00	7	125	125	5	90	90	4	70	70
	M20	20.0	1.00	7	110	110	5	80	80	4	65	65
Nichtrostender Stahl [Cr-Ni/1.4301]	M12	12.0	1.25	7	185	231	5	135	169	4	105	131
	M14	14.0	1.25	7	160	200	5	115	144	4	90	113
	M16	16.0	1.25	7	140	175	5	100	125	4	80	100
	M12	12.0	1.50	7	185	278	5	135	203	4	105	158
	M14	14.0	1.50	7	160	240	5	115	173	4	90	135
	M16	16.0	1.50	7	140	210	5	100	150	4	80	120
	M18	18.0	1.50	7	125	188	5	90	135	4	70	105
	M20	20.0	1.50	7	110	165	5	80	120	4	65	98
	M24	24.0	1.50	7	95	143	5	65	98	4	55	83

Werkstoff	MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M12	12.0	0.75	8	210	158	6	160	120	5	135	101
	M14	14.0	0.75	8	180	135	6	135	101	5	115	86
	M16	16.0	0.75	8	160	120	6	120	90	5	100	75
	M12	12.0	1.00	8	210	210	6	160	160	5	135	135
	M13	13.0	1.00	8	195	195	6	145	145	5	120	120
	M14	14.0	1.00	8	180	180	6	135	135	5	115	115
	M16	16.0	1.00	8	160	160	6	120	120	5	100	100
	M18	18.0	1.00	8	140	140	6	105	105	5	90	90
	M20	20.0	1.00	8	125	125	6	95	95	5	80	80
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M12	12.0	1.25	8	210	263	6	160	200	5	135	169
	M14	14.0	1.25	8	180	225	6	135	169	5	115	144
	M16	16.0	1.25	8	160	200	6	120	150	5	100	125
	M12	12.0	1.50	8	210	315	6	160	240	5	135	203
	M14	14.0	1.50	8	180	270	6	135	203	5	115	173
	M16	16.0	1.50	8	160	240	6	120	180	5	100	150
	M18	18.0	1.50	8	140	210	6	105	158	5	90	135
	M20	20.0	1.50	8	125	188	6	95	143	5	80	120
	M24	24.0	1.50	8	105	158	6	80	120	5	65	98
Hitzebeständiger Stahl [17-4 PH]	M12	12.0	0.75	5	135	101	4	105	79	3	80	60
	M14	14.0	0.75	5	115	86	4	90	68	3	70	53
	M16	16.0	0.75	5	100	75	4	80	60	3	60	45
	M12	12.0	1.00	5	135	135	4	105	105	3	80	80
	M13	13.0	1.00	5	120	120	4	100	100	3	75	75
	M14	14.0	1.00	5	115	115	4	90	90	3	70	70
	M16	16.0	1.00	5	100	100	4	80	80	3	60	60
	M18	18.0	1.00	5	90	90	4	70	70	3	55	55
	M20	20.0	1.00	5	80	80	4	65	65	3	50	50
Hitzebeständiger Stahl [17-4 PH]	M12	12.0	1.25	5	135	169	4	105	131	3	80	100
	M14	14.0	1.25	5	115	144	4	90	113	3	70	88
	M16	16.0	1.25	5	100	125	4	80	100	3	60	75
	M12	12.0	1.50	5	135	203	4	105	158	3	80	120
	M14	14.0	1.50	5	115	173	4	90	135	3	70	105
	M16	16.0	1.50	5	100	150	4	80	120	3	60	90
	M18	18.0	1.50	5	90	135	4	70	105	3	55	83
	M20	20.0	1.50	5	80	120	4	65	98	3	50	75
	M24	24.0	1.50	5	65	98	4	55	83	3	40	60

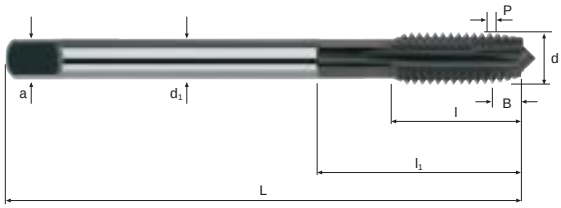
Gewindebohrer Inotap

MF | ISO 2 (6H)

60° | HSS PM/F

DIN 374

X · P Form B



MF

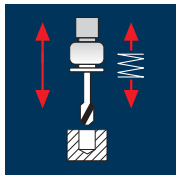
Inox Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET1241** ø-Code **.070**

Ø Code	d	P	L	l	l_1	d_1	a			TRIBO ET1241
.070	M12	0.75	100	18	39	9.0	7.0	3	11.40 *	●
.072	M14	0.75	100	18	39	11.0	9.0	3	13.40 *	●
.074	M16	0.75	100	18	39	12.0	9.0	3	15.40 *	●
.094	M12	1.00	100	18	39	9.0	7.0	3	11.10	●
.095	M13	1.00	100	18	39	11.0	9.0	3	12.10	●
.096	M14	1.00	100	18	39	11.0	9.0	3	13.10	●
.097	M15	1.00	100	18	39	12.0	9.0	3	14.10	●
.098	M16	1.00	100	18	39	12.0	9.0	3	15.10	●
.099	M17	1.00	100	18	39	12.0	9.0	4	16.10	●
.100	M18	1.00	110	20	45	14.0	11.0	4	17.10	●
.102	M20	1.00	125	20	50	16.0	12.0	4	19.10	●
.164	M12	1.25	100	22	39	9.0	7.0	3	10.90	●
.166	M14	1.25	100	22	39	11.0	9.0	3	12.90	●
.168	M16	1.25	100	22	39	12.0	9.0	3	14.90	●
.176	M12	1.50	100	22	39	9.0	7.0	3	10.70	●
.178	M14	1.50	100	22	39	11.0	9.0	3	12.70	●
.180	M16	1.50	100	22	39	12.0	9.0	3	14.70	●
.182	M18	1.50	110	25	45	14.0	11.0	4	16.70	●
.184	M20	1.50	125	26	50	16.0	12.0	4	18.70	●
.186	M22	1.50	125	26	50	18.0	14.5	4	20.70	●
.188	M24	1.50	140	27	52	18.0	14.5	4	22.70	●

* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff	MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch	M 2.5	2.5	0.35	10	1275	446	8	1020	357	6	765	268
	M 3	3.0	0.35	10	1060	371	8	850	298	6	635	222
	M 3.5	3.5	0.35	10	910	319	8	730	255	6	545	191
	M 4	4.0	0.50	10	795	398	8	635	318	6	475	238
	M 5	5.0	0.50	10	635	318	8	510	255	6	380	190
	M 6	6.0	0.50	10	530	265	8	425	213	6	320	160
	M 8	8.0	0.50	10	400	200	8	320	160	6	240	120
	M10	10.0	0.50	10	320	160	8	255	128	6	190	95
	M 6	6.0	0.75	10	530	398	8	425	319	6	320	240
Nichtrostender Stahl ferritisch/martensitisch	M 7	7.0	0.75	10	455	341	8	365	274	6	275	206
	M 8	8.0	0.75	10	400	300	8	320	240	6	240	180
	M10	10.0	0.75	10	320	240	8	255	191	6	190	143
	M 8	8.0	1.00	10	400	400	8	320	320	6	240	240
	M 9	9.0	1.00	10	355	355	8	285	285	6	210	210
	M10	10.0	1.00	10	320	320	8	255	255	6	190	190
	M10	10.0	1.25	10	320	400	8	255	319	6	190	238
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2.5	2.5	0.35	5	635	222	4	510	179	3	380	133
	M 3	3.0	0.35	5	530	186	4	425	149	3	320	112
	M 3.5	3.5	0.35	5	455	159	4	365	128	3	275	96
	M 4	4.0	0.50	5	400	200	4	320	160	3	240	120
	M 5	5.0	0.50	5	320	160	4	255	128	3	190	95
	M 6	6.0	0.50	5	265	133	4	210	105	3	160	80
	M 8	8.0	0.50	5	200	100	4	160	80	3	120	60
	M10	10.0	0.50	5	160	80	4	125	63	3	95	48
	M 6	6.0	0.75	5	265	199	4	210	158	3	160	120
Nichtrostender Stahl [Cr-Ni/1.4301]	M 7	7.0	0.75	5	225	169	4	180	135	3	135	101
	M 8	8.0	0.75	5	200	150	4	160	120	3	120	90
	M10	10.0	0.75	5	160	120	4	125	94	3	95	71
	M 8	8.0	1.00	5	200	200	4	160	160	3	120	120
	M 9	9.0	1.00	5	175	175	4	140	140	3	105	105
	M10	10.0	1.00	5	160	160	4	125	125	3	95	95
	M10	10.0	1.25	5	160	200	4	125	156	3	95	119

Werkstoff	MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M 2.5	2.5	0.35	6	765	268	5	635	222	4	510	179
	M 3	3.0	0.35	6	635	222	5	530	186	4	425	149
	M 3.5	3.5	0.35	6	545	191	5	455	159	4	365	128
	M 4	4.0	0.50	6	475	238	5	400	200	4	320	160
	M 5	5.0	0.50	6	380	190	5	320	160	4	255	128
	M 6	6.0	0.50	6	320	160	5	265	133	4	210	105
	M 8	8.0	0.50	6	240	120	5	200	100	4	160	80
	M10	10.0	0.50	6	190	95	5	160	80	4	125	63
	M 6	6.0	0.75	6	320	240	5	265	199	4	210	158
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M 7	7.0	0.75	6	275	206	5	225	169	4	180	135
	M 8	8.0	0.75	6	240	180	5	200	150	4	160	120
	M10	10.0	0.75	6	190	143	5	160	120	4	125	94
	M 8	8.0	1.00	6	240	240	5	200	200	4	160	160
	M 9	9.0	1.00	6	210	210	5	175	175	4	140	140
	M10	10.0	1.00	6	190	190	5	160	160	4	125	125
	M10	10.0	1.25	6	190	238	5	160	200	4	125	156
Hitzebeständiger Stahl [17-4 PH]	M 2.5	2.5	0.35	4	510	179	3	380	133			
	M 3	3.0	0.35	4	425	149	3	320	112			
	M 3.5	3.5	0.35	4	365	128	3	275	96			
	M 4	4.0	0.50	4	320	160	3	240	120			
	M 5	5.0	0.50	4	255	128	3	190	95			
	M 6	6.0	0.50	4	210	105	3	160	80			
	M 8	8.0	0.50	4	160	80	3	120	60			
	M10	10.0	0.50	4	125	63	3	95	48			
	M 6	6.0	0.75	4	210	158	3	160	120			
Hitzebeständiger Stahl [17-4 PH]	M 7	7.0	0.75	4	180	135	3	135	101			
	M 8	8.0	0.75	4	160	120	3	120	90			
	M10	10.0	0.75	4	125	94	3	95	71			
	M 8	8.0	1.00	4	160	160	3	120	120			
	M 9	9.0	1.00	4	140	140	3	105	105			
	M10	10.0	1.00	4	125	125	3	95	95			
	M10	10.0	1.25	4	125	156	3	95	119			

Gewindebohrer x-tap

In

MF

ISO 2 (6H)

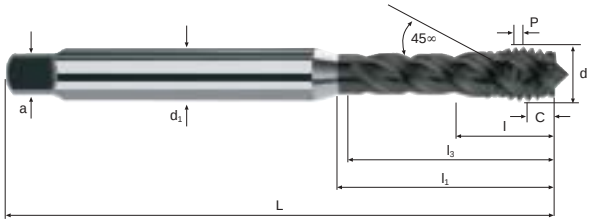
60°

HSS PM/F

DIN 371

X - P

Form C



MF

Inox Stainless

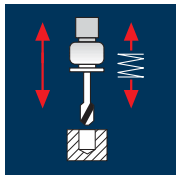
Beispiel: **Bestell-Nr.** Artikel-Nr. **ET1260** ø-Code **.029**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			TRIBO ET1260
.029	M 2.5	0.35	50	9	–	13	2.8	2.1	3	2.20	●
.031	M 3	0.35	56	5	18	16	3.5	2.7	3	2.70	●
.032	M 3.5	0.35	56	6	20	18	4.0	3.0	3	3.20	●
.046	M 4	0.50	63	7	21	19	4.5	3.4	3	3.60 *	●
.048	M 5	0.50	70	8	25	23	6.0	4.9	3	4.60 *	●
.050	M 6	0.50	80	10	30	28	6.0	4.9	3	5.60 *	●
.052	M 8	0.50	90	13	35	33	8.0	6.2	3	7.60 *	●
.054	M10	0.50	100	15	39	37	10.0	8.0	4	9.60 *	●
.064	M 6	0.75	80	10	30	28	6.0	4.9	3	5.30	●
.065	M 7	0.75	80	10	30	28	7.0	5.5	3	6.30	●
.066	M 8	0.75	90	13	35	33	8.0	6.2	3	7.30	●
.068	M10	0.75	100	15	39	37	10.0	8.0	4	9.30	●
.090	M 8	1.00	90	13	35	33	8.0	6.2	3	7.10	●
.091	M 9	1.00	90	13	35	33	9.0	7.0	3	8.10	●
.092	M10	1.00	100	15	39	37	10.0	8.0	4	9.10	●
.162	M10	1.25	100	15	39	37	10.0	8.0	4	8.90	●

* angegebenes Mass liegt ausserhalb der Norm

Grössere Abmessungen siehe Artikel-Nr. ET1261, Seite 263

Anwendung



Werkstoff	MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch	M12	12.0	0.75	10	265	199	8	210	158	6	160	120
	M14	14.0	0.75	10	225	169	8	180	135	6	135	101
	M16	16.0	0.75	10	200	150	8	160	120	6	120	90
	M12	12.0	1.00	10	265	265	8	210	210	6	160	160
	M13	13.0	1.00	10	245	245	8	195	195	6	145	145
	M14	14.0	1.00	10	225	225	8	180	180	6	135	135
	M16	16.0	1.00	10	200	200	8	160	160	6	120	120
	M18	18.0	1.00	10	175	175	8	140	140	6	105	105
	M20	20.0	1.00	10	160	160	8	125	125	6	95	95
Nichtrostender Stahl ferritisch/martensitisch	M12	12.0	1.25	10	265	331	8	210	263	6	160	200
	M14	14.0	1.25	10	225	281	8	180	225	6	135	169
	M16	16.0	1.25	10	200	250	8	160	200	6	120	150
	M12	12.0	1.50	10	265	398	8	210	315	6	160	240
	M14	14.0	1.50	10	225	338	8	180	270	6	135	203
	M16	16.0	1.50	10	200	300	8	160	240	6	120	180
	M18	18.0	1.50	10	175	263	8	140	210	6	105	158
	M20	20.0	1.50	10	160	240	8	125	188	6	95	143
	M24	24.0	1.50	10	135	203	8	105	158	6	80	120
Nichtrostender Stahl [Cr-Ni/1.4301]	M12	12.0	0.75	5	135	101	4	105	79	3	80	60
	M14	14.0	0.75	5	115	86	4	90	68	3	70	53
	M16	16.0	0.75	5	100	75	4	80	60	3	60	45
	M12	12.0	1.00	5	135	135	4	105	105	3	80	80
	M13	13.0	1.00	5	120	120	4	100	100	3	75	75
	M14	14.0	1.00	5	115	115	4	90	90	3	70	70
	M16	16.0	1.00	5	100	100	4	80	80	3	60	60
	M18	18.0	1.00	5	90	90	4	70	70	3	55	55
	M20	20.0	1.00	5	80	80	4	65	65	3	50	50
Nichtrostender Stahl [Cr-Ni/1.4301]	M12	12.0	1.25	5	135	169	4	105	131	3	80	100
	M14	14.0	1.25	5	115	144	4	90	113	3	70	88
	M16	16.0	1.25	5	100	125	4	80	100	3	60	75
	M12	12.0	1.50	5	135	203	4	105	158	3	80	120
	M14	14.0	1.50	5	115	173	4	90	135	3	70	105
	M16	16.0	1.50	5	100	150	4	80	120	3	60	90
	M18	18.0	1.50	5	90	135	4	70	105	3	55	83
	M20	20.0	1.50	5	80	120	4	65	98	3	50	75
	M24	24.0	1.50	5	65	98	4	55	83	3	40	60

Werkstoff	MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M12	12.0	0.75	6	160	120	5	135	101	4	105	79
	M14	14.0	0.75	6	135	101	5	115	86	4	90	68
	M16	16.0	0.75	6	120	90	5	100	75	4	80	60
	M12	12.0	1.00	6	160	160	5	135	135	4	105	105
	M13	13.0	1.00	6	145	145	5	120	120	4	100	100
	M14	14.0	1.00	6	135	135	5	115	115	4	90	90
	M16	16.0	1.00	6	120	120	5	100	100	4	80	80
	M18	18.0	1.00	6	105	105	5	90	90	4	70	70
	M20	20.0	1.00	6	95	95	5	80	80	4	65	65
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	M12	12.0	1.25	6	160	200	5	135	169	4	105	131
	M14	14.0	1.25	6	135	169	5	115	144	4	90	113
	M16	16.0	1.25	6	120	150	5	100	125	4	80	100
	M12	12.0	1.50	6	160	240	5	135	203	4	105	158
	M14	14.0	1.50	6	135	203	5	115	173	4	90	135
	M16	16.0	1.50	6	120	180	5	100	150	4	80	120
	M18	18.0	1.50	6	105	158	5	90	135	4	70	105
	M20	20.0	1.50	6	95	143	5	80	120	4	65	98
	M24	24.0	1.50	6	80	120	5	65	98	4	55	83
Hitzebeständiger Stahl [17-4 PH]	M12	12.0	0.75	4	105	79	3	80	60			
	M14	14.0	0.75	4	90	68	3	70	53			
	M16	16.0	0.75	4	80	60	3	60	45			
	M12	12.0	1.00	4	105	105	3	80	80			
	M13	13.0	1.00	4	100	100	3	75	75			
	M14	14.0	1.00	4	90	90	3	70	70			
	M16	16.0	1.00	4	80	80	3	60	60			
	M18	18.0	1.00	4	70	70	3	55	55			
	M20	20.0	1.00	4	65	65	3	50	50			
Hitzebeständiger Stahl [17-4 PH]	M12	12.0	1.25	4	105	131	3	80	100			
	M14	14.0	1.25	4	90	113	3	70	88			
	M16	16.0	1.25	4	80	100	3	60	75			
	M12	12.0	1.50	4	105	158	3	80	120			
	M14	14.0	1.50	4	90	135	3	70	105			
	M16	16.0	1.50	4	80	120	3	60	90			
	M18	18.0	1.50	4	70	105	3	55	83			
	M20	20.0	1.50	4	65	98	3	50	75			
	M24	24.0	1.50	4	55	83	3	40	60			

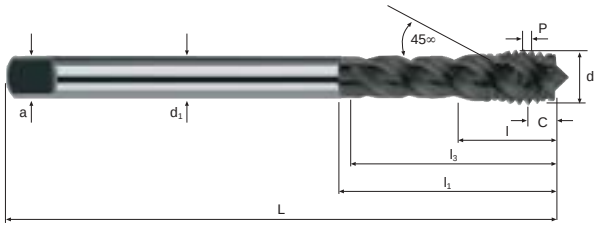
Gewindebohrer x-tap

MF | ISO 2 (6H)

60° | HSS PM/F

DIN 374

X · P | Form C



MF

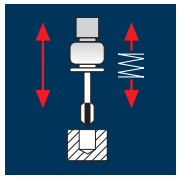
Inox Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET1261** ø-Code **.070**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			TRIBO
											ET1261
.070	M12	0.75	100	11	39	37	9.0	7.0	4	11.40 *	●
.072	M14	0.75	100	11	39	37	11.0	9.0	4	13.40 *	●
.074	M16	0.75	100	12	39	37	12.0	9.0	4	15.40 *	●
.094	M12	1.00	100	11	39	37	9.0	7.0	4	11.10	●
.095	M13	1.00	100	11	39	37	11.0	9.0	4	12.10	●
.096	M14	1.00	100	11	39	37	11.0	9.0	4	13.10	●
.097	M15	1.00	100	12	39	37	12.0	9.0	4	14.10	●
.098	M16	1.00	100	12	39	37	12.0	9.0	4	15.10	●
.099	M17	1.00	100	12	39	37	12.0	9.0	4	16.10	●
.100	M18	1.00	110	13	50	48	14.0	11.0	4	17.10	●
.102	M20	1.00	125	14	65	63	16.0	12.0	4	19.10	●
.164	M12	1.25	100	15	39	37	9.0	7.0	4	10.90	●
.166	M14	1.25	100	15	39	37	11.0	9.0	4	12.90	●
.168	M16	1.25	100	15	39	37	12.0	9.0	4	14.90	●
.176	M12	1.50	100	15	39	37	9.0	7.0	4	10.70 *	●
.178	M14	1.50	100	15	39	37	11.0	9.0	4	12.70 *	●
.180	M16	1.50	100	15	39	37	12.0	9.0	4	14.70 *	●
.182	M18	1.50	110	17	50	48	14.0	11.0	4	16.70 *	●
.184	M20	1.50	125	18	65	63	16.0	12.0	4	18.70 *	●
.186	M22	1.50	125	18	65	63	18.0	14.5	5	20.70 *	●
.188	M24	1.50	140	20	72	70	18.0	14.5	5	22.70 *	●

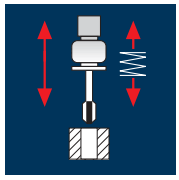
* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff	MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Gusseisen GG	M 2.5	2.5	0.35	28	3565	1248	24	3055	1069	20	2545	891
	M 3	3.0	0.35	28	2970	1040	24	2545	891	20	2120	742
	M 3.5	3.5	0.35	28	2545	891	24	2185	765	20	1820	637
	M 4	4.0	0.50	28	2230	1115	24	1910	955	20	1590	795
	M 5	5.0	0.50	28	1785	893	24	1530	765	20	1275	638
	M 6	6.0	0.50	28	1485	743	24	1275	638	20	1060	530
	M 8	8.0	0.50	28	1115	558	24	955	478	20	795	398
	M10	10.0	0.50	28	890	445	24	765	383	20	635	318
	M 6	6.0	0.75	28	1485	1114	24	1275	956	20	1060	795
Gusseisen GG	M 7	7.0	0.75	28	1275	956	24	1090	818	20	910	683
	M 8	8.0	0.75	28	1115	836	24	955	716	20	795	596
	M10	10.0	0.75	28	890	668	24	765	574	20	635	476
	M 8	8.0	1.00	28	1115	1115	24	955	955	20	795	795
	M 9	9.0	1.00	28	990	990	24	850	850	20	705	705
	M10	10.0	1.00	28	890	890	24	765	765	20	635	635
	M10	10.0	1.25	28	890	1113	24	765	956	20	635	794
Gusseisen GGG	M 2.5	2.5	0.35	20	2545	891	18	2290	802	15	1910	669
	M 3	3.0	0.35	20	2120	742	18	1910	669	15	1590	557
	M 3.5	3.5	0.35	20	1820	637	18	1635	572	15	1365	478
	M 4	4.0	0.50	20	1590	795	18	1430	715	15	1195	598
	M 5	5.0	0.50	20	1275	638	18	1145	573	15	955	478
	M 6	6.0	0.50	20	1060	530	18	955	478	15	795	398
	M 8	8.0	0.50	20	795	398	18	715	358	15	595	298
	M10	10.0	0.50	20	635	318	18	575	288	15	475	238
	M 6	6.0	0.75	20	1060	795	18	955	716	15	795	596
Gusseisen GGG	M 7	7.0	0.75	20	910	683	18	820	615	15	680	510
	M 8	8.0	0.75	20	795	596	18	715	536	15	595	446
	M10	10.0	0.75	20	635	476	18	575	431	15	475	356
	M 8	8.0	1.00	20	795	795	18	715	715	15	595	595
	M 9	9.0	1.00	20	705	705	18	635	635	15	530	530
	M10	10.0	1.00	20	635	635	18	575	575	15	475	475
	M10	10.0	1.25	20	635	794	18	575	719	15	475	594

Anwendung



Werkstoff	MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Gusseisen GG	M 2.5	2.5	0.35	30	3820	1337	28	3565	1248	25	3185	1115
	M 3	3.0	0.35	30	3185	1115	28	2970	1040	25	2655	929
	M 3.5	3.5	0.35	30	2730	955	28	2545	891	25	2275	796
	M 4	4.0	0.50	30	2385	1193	28	2230	1115	25	1990	995
	M 5	5.0	0.50	30	1910	955	28	1785	893	25	1590	795
	M 6	6.0	0.50	30	1590	795	28	1485	743	25	1325	663
	M 8	8.0	0.50	30	1195	598	28	1115	558	25	995	498
	M10	10.0	0.50	30	955	478	28	890	445	25	795	398
	M 6	6.0	0.75	30	1590	1193	28	1485	1114	25	1325	994
Gusseisen GG	M 7	7.0	0.75	30	1365	1024	28	1275	956	25	1135	851
	M 8	8.0	0.75	30	1195	896	28	1115	836	25	995	746
	M10	10.0	0.75	30	955	716	28	890	668	25	795	596
	M 8	8.0	1.00	30	1195	1195	28	1115	1115	25	995	995
	M 9	9.0	1.00	30	1060	1060	28	990	990	25	885	885
	M10	10.0	1.00	30	955	955	28	890	890	25	795	795
	M10	10.0	1.25	30	955	1194	28	890	1113	25	795	994
Gusseisen GGG	M 2.5	2.5	0.35	25	3185	1115	22	2800	980	20	2545	891
	M 3	3.0	0.35	25	2655	929	22	2335	817	20	2120	742
	M 3.5	3.5	0.35	25	2275	796	22	2000	700	20	1820	637
	M 4	4.0	0.50	25	1990	995	22	1750	875	20	1590	795
	M 5	5.0	0.50	25	1590	795	22	1400	700	20	1275	638
	M 6	6.0	0.50	25	1325	663	22	1165	583	20	1060	530
	M 8	8.0	0.50	25	995	498	22	875	438	20	795	398
	M10	10.0	0.50	25	795	398	22	700	350	20	635	318
	M 6	6.0	0.75	25	1325	994	22	1165	874	20	1060	795
Gusseisen GGG	M 7	7.0	0.75	25	1135	851	22	1000	750	20	910	683
	M 8	8.0	0.75	25	995	746	22	875	656	20	795	596
	M10	10.0	0.75	25	795	596	22	700	525	20	635	476
	M 8	8.0	1.00	25	995	995	22	875	875	20	795	795
	M 9	9.0	1.00	25	885	885	22	780	780	20	705	705
	M10	10.0	1.00	25	795	795	22	700	700	20	635	635
	M10	10.0	1.25	25	795	994	22	700	875	20	635	794

Gewindebohrer

GG

MF

ISO 2 (6H)

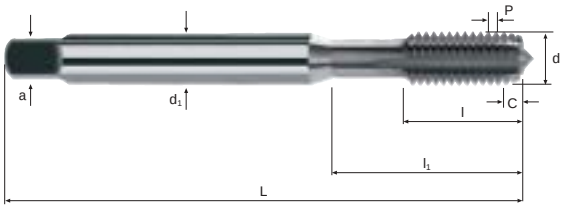
60°

HSS PM/F

DIN 371

X · P

Form C



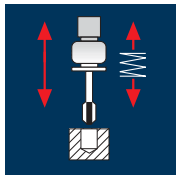
GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1270** ø-Code **.029**

ø Code	d	P	L	l	l_1	d_1	a			TiCN EH1270
.029	M 2.5	0.35	50	9	–	2.8	2.1	3	2.15	●
.031	M 3	0.35	56	12	18	3.5	2.7	3	2.65	●
.032	M 3.5	0.35	56	12	20	4.0	3.0	3	3.15	●
.046	M 4	0.50	63	13	21	4.5	3.4	3	3.50	●
.048	M 5	0.50	70	15	25	6.0	4.9	3	4.50	●
.050	M 6	0.50	80	17	30	6.0	4.9	4	5.50	●
.052	M 8	0.50	90	20	35	8.0	6.2	4	7.50	●
.054	M10	0.50	100	22	39	10.0	8.0	4	9.50	●
.064	M 6	0.75	80	17	30	6.0	4.9	4	5.20	●
.065	M 7	0.75	80	17	30	7.0	5.5	4	6.20	●
.066	M 8	0.75	90	20	35	8.0	6.2	4	7.20	●
.068	M10	0.75	100	22	39	10.0	8.0	4	9.20	●
.090	M 8	1.00	90	20	35	8.0	6.2	4	7.00	●
.091	M 9	1.00	90	20	35	9.0	7.0	4	8.00	●
.092	M10	1.00	100	22	39	10.0	8.0	4	9.00	●
.162	M10	1.25	100	22	39	10.0	8.0	4	8.80	●

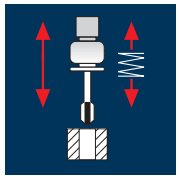
Grössere Abmessungen siehe Artikel-Nr. EH1271, Seite 267

Anwendung



Werkstoff	MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Gusseisen GG	M12	12.0	0.75	28	745	559	24	635	476	20	530	398
	M14	14.0	0.75	28	635	476	24	545	409	20	455	341
	M16	16.0	0.75	28	555	416	24	475	356	20	400	300
	M12	12.0	1.00	28	745	745	24	635	635	20	530	530
	M13	13.0	1.00	28	685	685	24	590	590	20	490	490
	M14	14.0	1.00	28	635	635	24	545	545	20	455	455
	M16	16.0	1.00	28	555	555	24	475	475	20	400	400
	M18	18.0	1.00	28	495	495	24	425	425	20	355	355
	M20	20.0	1.00	28	445	445	24	380	380	20	320	320
Gusseisen GG	M12	12.0	1.25	28	745	931	24	635	794	20	530	663
	M14	14.0	1.25	28	635	794	24	545	681	20	455	569
	M16	16.0	1.25	28	555	694	24	475	594	20	400	500
	M12	12.0	1.50	28	745	1118	24	635	953	20	530	795
	M14	14.0	1.50	28	635	953	24	545	818	20	455	683
	M16	16.0	1.50	28	555	833	24	475	713	20	400	600
	M18	18.0	1.50	28	495	743	24	425	638	20	355	533
	M20	20.0	1.50	28	445	668	24	380	570	20	320	480
	M24	24.0	1.50	28	370	555	24	320	480	20	265	398
Gusseisen GGG	M12	12.0	0.75	20	530	398	18	475	356	15	400	300
	M14	14.0	0.75	20	455	341	18	410	308	15	340	255
	M16	16.0	0.75	20	400	300	18	360	270	15	300	225
	M12	12.0	1.00	20	530	530	18	475	475	15	400	400
	M13	13.0	1.00	20	490	490	18	440	440	15	365	365
	M14	14.0	1.00	20	455	455	18	410	410	15	340	340
	M16	16.0	1.00	20	400	400	18	360	360	15	300	300
	M18	18.0	1.00	20	355	355	18	320	320	15	265	265
	M20	20.0	1.00	20	320	320	18	285	285	15	240	240
Gusseisen GGG	M12	12.0	1.25	20	530	663	18	475	594	15	400	500
	M14	14.0	1.25	20	455	569	18	410	513	15	340	425
	M16	16.0	1.25	20	400	500	18	360	450	15	300	375
	M12	12.0	1.50	20	530	795	18	475	713	15	400	600
	M14	14.0	1.50	20	455	683	18	410	615	15	340	510
	M16	16.0	1.50	20	400	600	18	360	540	15	300	450
	M18	18.0	1.50	20	355	533	18	320	480	15	265	398
	M20	20.0	1.50	20	320	480	18	285	428	15	240	360
	M24	24.0	1.50	20	265	398	18	240	360	15	200	300

Anwendung



Werkstoff	MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Gusseisen GG	M12	12.0	0.75	30	795	596	28	745	559	25	665	499
	M14	14.0	0.75	30	680	510	28	635	476	25	570	428
	M16	16.0	0.75	30	595	446	28	555	416	25	495	371
	M12	12.0	1.00	30	795	795	28	745	745	25	665	665
	M13	13.0	1.00	30	735	735	28	685	685	25	610	610
	M14	14.0	1.00	30	680	680	28	635	635	25	570	570
	M16	16.0	1.00	30	595	595	28	555	555	25	495	495
	M18	18.0	1.00	30	530	530	28	495	495	25	440	440
	M20	20.0	1.00	30	475	475	28	445	445	25	400	400
Gusseisen GG	M12	12.0	1.25	30	795	994	28	745	931	25	665	831
	M14	14.0	1.25	30	680	850	28	635	794	25	570	713
	M16	16.0	1.25	30	595	744	28	555	694	25	495	619
	M12	12.0	1.50	30	795	1193	28	745	1118	25	665	998
	M14	14.0	1.50	30	680	1020	28	635	953	25	570	855
	M16	16.0	1.50	30	595	893	28	555	833	25	495	743
	M18	18.0	1.50	30	530	795	28	495	743	25	440	660
	M20	20.0	1.50	30	475	713	28	445	668	25	400	600
	M24	24.0	1.50	30	400	600	28	370	555	25	330	495
Gusseisen GGG	M12	12.0	0.75	25	665	499	22	585	439	20	530	398
	M14	14.0	0.75	25	570	428	22	500	375	20	455	341
	M16	16.0	0.75	25	495	371	22	440	330	20	400	300
	M12	12.0	1.00	25	665	665	22	585	585	20	530	530
	M13	13.0	1.00	25	610	610	22	540	540	20	490	490
	M14	14.0	1.00	25	570	570	22	500	500	20	455	455
	M16	16.0	1.00	25	495	495	22	440	440	20	400	400
	M18	18.0	1.00	25	440	440	22	390	390	20	355	355
	M20	20.0	1.00	25	400	400	22	350	350	20	320	320
Gusseisen GGG	M12	12.0	1.25	25	665	831	22	585	731	20	530	663
	M14	14.0	1.25	25	570	713	22	500	625	20	455	569
	M16	16.0	1.25	25	495	619	22	440	550	20	400	500
	M12	12.0	1.50	25	665	998	22	585	878	20	530	795
	M14	14.0	1.50	25	570	855	22	500	750	20	455	683
	M16	16.0	1.50	25	495	743	22	440	660	20	400	600
	M18	18.0	1.50	25	440	660	22	390	585	20	355	533
	M20	20.0	1.50	25	400	600	22	350	525	20	320	480
	M24	24.0	1.50	25	330	495	22	290	435	20	265	398

Gewindebohrer

GG

MF

ISO 2 (6H)

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HSS PM/F

DIN 374

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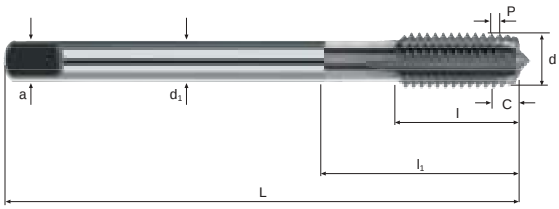
Form C



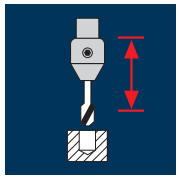
MF

GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1271** ø-Code **.070**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH1271
.070	M12	0.75	100	18	39	9.0	7.0	4	11.30	●
.072	M14	0.75	100	18	39	11.0	9.0	4	13.30	●
.074	M16	0.75	100	18	39	12.0	9.0	4	15.30	●
.094	M12	1.00	100	18	39	9.0	7.0	4	11.00	●
.095	M13	1.00	100	18	39	11.0	9.0	4	12.00	●
.096	M14	1.00	100	18	39	11.0	9.0	4	13.00	●
.097	M15	1.00	100	18	39	12.0	9.0	4	14.00	●
.098	M16	1.00	100	18	39	12.0	9.0	4	15.00	●
.099	M17	1.00	100	18	39	12.0	9.0	4	16.00	●
.100	M18	1.00	110	20	45	14.0	11.0	4	17.00	●
.102	M20	1.00	125	20	50	16.0	12.0	4	19.00	●
.164	M12	1.25	100	22	39	9.0	7.0	4	10.80	●
.166	M14	1.25	100	22	39	11.0	9.0	4	12.80	●
.168	M16	1.25	100	22	39	12.0	9.0	4	14.80	●
.176	M12	1.50	100	22	39	9.0	7.0	4	10.50	●
.178	M14	1.50	100	22	39	11.0	9.0	4	12.50	●
.180	M16	1.50	100	22	39	12.0	9.0	4	14.50	●
.182	M18	1.50	110	25	45	14.0	11.0	4	16.50	●
.184	M20	1.50	125	26	50	16.0	12.0	4	18.50	●
.186	M22	1.50	125	26	50	18.0	14.5	5	20.50	●
.188	M24	1.50	140	27	52	18.0	14.5	5	22.50	●

Anwendung



Werkstoff	MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Stahl 500 - 850 N/mm²	M 3	3.0	0.35	22	2335	20	2120	12	1275
	M 4	4.0	0.50	22	1750	20	1590	12	955
	M 5	5.0	0.50	22	1400	20	1275	12	765
	M 6	6.0	0.50	22	1165	20	1060	12	635
	M 6	6.0	0.75	22	1165	20	1060	12	635
	M 8	8.0	0.75	22	875	20	795	12	475
	M10	10.0	0.75	22	700	20	635	12	380
	M 8	8.0	1.00	22	875	20	795	12	475
	M10	10.0	1.00	22	700	20	635	12	380
Stahl 500 - 850 N/mm²	M12	12.0	1.00	22	585	20	530	12	320
	M14	14.0	1.00	22	500	20	455	12	275
	M16	16.0	1.00	22	440	20	400	12	240
	M10	10.0	1.25	22	700	20	635	12	380
	M12	12.0	1.25	22	585	20	530	12	320
	M12	12.0	1.50	22	585	20	530	12	320
	M14	14.0	1.50	22	500	20	455	12	275
	M16	16.0	1.50	22	440	20	400	12	240
	M20	20.0	1.50	22	350	20	320	12	190
Stahl 850 - 1100 N/mm²	M 3	3.0	0.35	18	1910	12	1275	8	850
	M 4	4.0	0.50	18	1430	12	955	8	635
	M 5	5.0	0.50	18	1145	12	765	8	510
	M 6	6.0	0.50	18	955	12	635	8	425
	M 6	6.0	0.75	18	955	12	635	8	425
	M 8	8.0	0.75	18	715	12	475	8	320
	M10	10.0	0.75	18	575	12	380	8	255
	M 8	8.0	1.00	18	715	12	475	8	320
	M10	10.0	1.00	18	575	12	380	8	255
Stahl 850 - 1100 N/mm²	M12	12.0	1.00	18	475	12	320	8	210
	M14	14.0	1.00	18	410	12	275	8	180
	M16	16.0	1.00	18	360	12	240	8	160
	M10	10.0	1.25	18	575	12	380	8	255
	M12	12.0	1.25	18	475	12	320	8	210
	M12	12.0	1.50	18	475	12	320	8	210
	M14	14.0	1.50	18	410	12	275	8	180
	M16	16.0	1.50	18	360	12	240	8	160
	M20	20.0	1.50	18	285	12	190	8	125

Werkstoff	MF	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Nichtrostender Stahl [Cr-Ni/1.4301]	M 3	3.0	0.35	4	425	3	320	2	210
	M 4	4.0	0.50	4	320	3	240	2	160
	M 5	5.0	0.50	4	255	3	190	2	125
	M 6	6.0	0.50	4	210	3	160	2	105
	M 6	6.0	0.75	4	210	3	160	2	105
	M 8	8.0	0.75	4	160	3	120	2	80
	M10	10.0	0.75	4	125	3	95	2	65
	M 8	8.0	1.00	4	160	3	120	2	80
	M10	10.0	1.00	4	125	3	95	2	65
Nichtrostender Stahl [Cr-Ni/1.4301]	M12	12.0	1.00	4	105	3	80	2	55
	M14	14.0	1.00	4	90	3	70	2	45
	M16	16.0	1.00	4	80	3	60	2	40
	M10	10.0	1.25	4	125	3	95	2	65
	M12	12.0	1.25	4	105	3	80	2	55
	M12	12.0	1.50	4	105	3	80	2	55
	M14	14.0	1.50	4	90	3	70	2	45
	M16	16.0	1.50	4	80	3	60	2	40
	M20	20.0	1.50	4	65	3	50	2	30
Al-Knetlegierung Si < 6% ausgehärtet	M 3	3.0	0.35	22	2335	20	2120	12	1275
	M 4	4.0	0.50	22	1750	20	1590	12	955
	M 5	5.0	0.50	22	1400	20	1275	12	765
	M 6	6.0	0.50	22	1165	20	1060	12	635
	M 6	6.0	0.75	22	1165	20	1060	12	635
	M 8	8.0	0.75	22	875	20	795	12	475
	M10	10.0	0.75	22	700	20	635	12	380
	M 8	8.0	1.00	22	875	20	795	12	475
	M10	10.0	1.00	22	700	20	635	12	380
Al-Knetlegierung Si < 6% ausgehärtet	M12	12.0	1.00	22	585	20	530	12	320
	M14	14.0	1.00	22	500	20	455	12	275
	M16	16.0	1.00	22	440	20	400	12	240
	M10	10.0	1.25	22	700	20	635	12	380
	M12	12.0	1.25	22	585	20	530	12	320
	M12	12.0	1.50	22	585	20	530	12	320
	M14	14.0	1.50	22	500	20	455	12	275
	M16	16.0	1.50	22	440	20	400	12	240
	M20	20.0	1.50	22	350	20	320	12	190

Gewindebohrer polytap-R

R

MF

ISO 2 (6H)

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DIN 1835B ISO 3338

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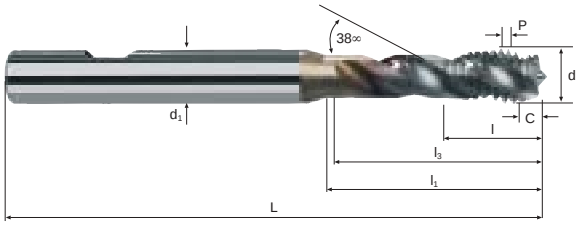
Form C



MF

Rm < 850 | **Rm** 850-1100 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1229** ø-Code **.031**

ø Code	d	P	L	l	l_1	l_3	d_1 h6			TiCN EH1229
.031	M 3	0.35	63	5	18	16	6	3	2.65	●
.046	M 4	0.50	66	7	21	19	6	3	3.50	●
.048	M 5	0.50	70	8	25	23	6	3	4.50	●
.050	M 6	0.50	80	10	30	28	6	3	5.50	●
.064	M 6	0.75	80	10	30	28	6	3	5.20	●
.066	M 8	0.75	90	13	35	33	8	3	7.20	●
.068	M10	0.75	100	15	39	37	10	3	9.20	●
.090	M 8	1.00	90	13	35	37	8	3	7.00	●
.092	M10	1.00	100	15	39	37	10	3	9.00	●
.094	M12	1.00	110	11	39	37	12	3	11.00	●
.096	M14	1.00	110	11	46	44	16	4	13.00	●
.098	M16	1.00	110	12	50	48	16	4	15.00	●
.162	M10	1.25	100	15	39	37	10	3	8.80	●
.164	M12	1.25	110	15	39	37	12	3	10.80	●
.176	M12	1.50	110	15	39	37	12	3	10.50	●
.178	M14	1.50	110	15	46	44	16	4	12.50	●
.180	M16	1.50	110	15	50	48	16	4	14.50	●
.184	M20	1.50	140	20	64	62	16	4	18.50	●

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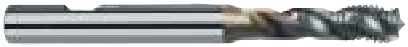
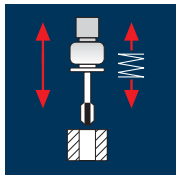
Whitworth-Rohrgewinde zylindrisch G

G

N° EH1400		08	HSS PM/F		Rm <850	273
N° EH11425	s-tap	08	HSS-E Co5		Rm <850	275
N° EH1472	x-tap	11	HSS PM/F		Rm 850-1100	277
N° EH1475	x-tap	11	HSS PM/F		Rm 850-1100	279
N° EH1482		15	HSS PM/F		Rm 1100-1500	281
N° EH1495		15	HSS PM/F		Rm 1100-1500	283
N° EH6916		60	HM MG10		HRC 48- >60	285
N° ET1440	Inotap	In	HSS PM/F		Inox Stainless	287
N° ET1475	x-tap	In	HSS PM/F		Inox Stainless	289
N° EH1480		GG	HSS PM/F		GG(G) Cast iron	291
N° EI1402		Al	HSS PM/F		Al Aluminium Alloy / Cu Copper	293
N° EI1452		Al	HSS PM/F		Al Aluminium Alloy / Cu Copper	295
N° EH1429	polytap-R 	R	HSS PM/F		Rm <850-1100 / Inox Stainless	297
N° E11480	u-tap	U	HSS-E Co5		Rm <850	299
N° E11482	u-tap	U	HSS-E Co5		Rm <850	301

Anwendung



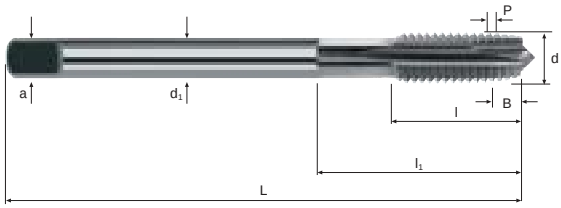
Werkstoff	G	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl **< 500 N/mm²**	G 1/8	9.728	0.907	28	915	830	23	755	685	18	590	535
	G 1/4	13.157	1.337	28	675	902	23	555	742	18	435	582
	G 3/8	16.662	1.337	28	535	715	23	440	588	18	345	461
	G 1/2	20.955	1.814	28	425	771	23	350	635	18	275	499
	G 5/8	22.911	1.814	28	390	707	23	320	580	18	250	454
	G 3/4	26.441	1.814	28	335	608	23	275	499	18	215	390
Stahl **500 - 850 N/mm²**	G 1/8	9.728	0.907	25	820	744	20	655	594	15	490	444
	G 1/4	13.157	1.337	25	605	809	20	485	648	15	365	488
	G 3/8	16.662	1.337	25	480	642	20	380	508	15	285	381
	G 1/2	20.955	1.814	25	380	689	20	305	553	15	230	417
	G 5/8	22.911	1.814	25	345	626	20	280	508	15	210	381
	G 3/4	26.441	1.814	25	300	544	20	240	435	15	180	327

G

HSS
PM/F

DIN
5156

Form B

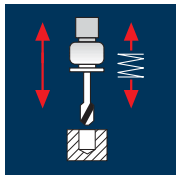


Rm < 850 | **Rm** 850-1100

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1400** ø-Code **.551**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	d_1	a			TiCN EH1400
.551	G 1/8	28	9.728	90	18	35	7	5.5	3	8.80	●
.552	G 1/4	19	13.157	100	20	39	11	9.0	3	11.80	●
.553	G 3/8	19	16.662	100	22	39	12	9.0	4	15.25	●
.554	G 1/2	14	20.955	125	25	50	16	12.0	4	19.00	●
.555	G 5/8	14	22.911	125	25	50	18	14.5	4	21.00	●
.556	G 3/4	14	26.441	140	28	56	20	16.0	4	24.50	●

Anwendung



Werkstoff	G	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl **< 500 N/mm²**	G 1/8	9.728	0.907	25	820	744	20	655	594	18	590	535
	G 1/4	13.157	1.337	25	605	809	20	485	648	18	435	582
	G 3/8	16.662	1.337	25	480	642	20	380	508	18	345	461
	G 1/2	20.955	1.814	25	380	689	20	305	553	18	275	499
	G 5/8	22.911	1.814	25	345	626	20	280	508	18	250	454
	G 3/4	26.441	1.814	25	300	544	20	240	435	18	215	390
Stahl **500 - 850 N/mm²**	G 1/8	9.728	0.907	16	525	476	14	460	417	12	395	358
	G 1/4	13.157	1.337	16	385	515	14	340	455	12	290	388
	G 3/8	16.662	1.337	16	305	408	14	265	354	12	230	308
	G 1/2	20.955	1.814	16	245	444	14	215	390	12	180	327
	G 5/8	22.911	1.814	16	220	399	14	195	354	12	165	299
	G 3/4	26.441	1.814	16	195	354	14	170	308	12	145	263
Gusseisen **GG(G)**	G 1/8	9.728	0.907	14	460	417	12	395	358	10	325	295
	G 1/4	13.157	1.337	14	340	455	12	290	388	10	240	321
	G 3/8	16.662	1.337	14	265	354	12	230	308	10	190	254
	G 1/2	20.955	1.814	14	215	390	12	180	327	10	150	272
	G 5/8	22.911	1.814	14	195	354	12	165	299	10	140	254
	G 3/4	26.441	1.814	14	170	308	12	145	263	10	120	218
Nichtrostender Stahl **[Cr-Ni/1.4301]**	G 1/8	9.728	0.907	3	100	91	2	65	59	2	65	59
	G 1/4	13.157	1.337	3	75	100	2	50	67	2	50	67
	G 3/8	16.662	1.337	3	55	74	2	40	53	2	40	53
	G 1/2	20.955	1.814	3	45	82	2	30	54	2	30	54
	G 5/8	22.911	1.814	3	40	73	2	30	54	2	30	54
	G 3/4	26.441	1.814	3	35	63	2	25	45	2	25	45

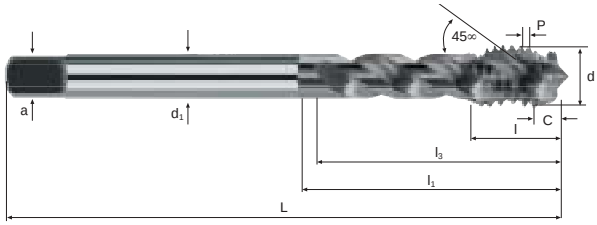
Gewindebohrer s-tap

G

HSS-E Co5

DIN 5156

Form C

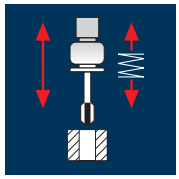


Rm < 850 | **Rm** 850-1100 | **Inox** Stainless | **GG(G)**

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH11425** ø-Code **.551**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			TiCN EH11425
.551	G 1/8	28	9.728	90	7.3	35	33	7	5.5	3	8.80	●
.552	G 1/4	19	13.157	100	10.7	39	37	11	9.0	4	11.80	●
.553	G 3/8	19	16.662	100	10.7	39	37	12	9.0	4	15.25	●
.554	G 1/2	14	20.955	125	14.5	65	63	16	12.0	4	19.00	●
.555	G 5/8	14	22.911	125	14.5	65	63	18	14.5	4	21.00	●
.556	G 3/4	14	26.441	140	14.5	72	70	20	16.0	5	24.50	●

Anwendung



Werkstoff

Stahl
500 - 850 N/mm²

G	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
G 1/8	9.728	0.907	25	820	744	20	655	594	15	490	444
G 1/4	13.157	1.337	25	605	809	20	485	648	15	365	488
G 3/8	16.662	1.337	25	480	642	20	380	508	15	285	381
G 1/2	20.955	1.814	25	380	689	20	305	553	15	230	417
G 5/8	22.911	1.814	25	345	626	20	280	508	15	210	381
G 3/4	26.441	1.814	25	300	544	20	240	435	15	180	327

Stahl
850 - 1100 N/mm²

G	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
G 1/8	9.728	0.907	20	655	594	15	490	444	12	395	358
G 1/4	13.157	1.337	20	485	648	15	365	488	12	290	388
G 3/8	16.662	1.337	20	380	508	15	285	381	12	230	308
G 1/2	20.955	1.814	20	305	553	15	230	417	12	180	327
G 5/8	22.911	1.814	20	280	508	15	210	381	12	165	299
G 3/4	26.441	1.814	20	240	435	15	180	327	12	145	263

Stahl
1100 - 1300 N/mm²

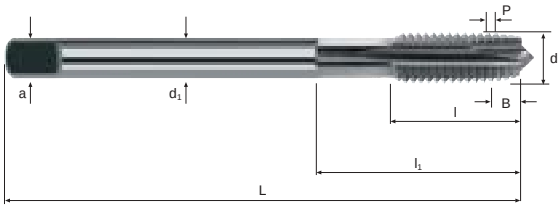
G	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
G 1/8	9.728	0.907	7	230	209	4	130	118			
G 1/4	13.157	1.337	7	170	227	4	95	127			
G 3/8	16.662	1.337	7	135	180	4	75	100			
G 1/2	20.955	1.814	7	105	190	4	60	109			
G 5/8	22.911	1.814	7	95	172	4	55	100			
G 3/4	26.441	1.814	7	85	154	4	50	91			

G

HSS
PM/F

DIN
5156

Form B

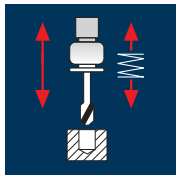


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1472** ø-Code **.551**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	d_1	a			TiCN
											EH1472
.551	G 1/8	28	9.728	90	18	35	7	5.5	3	8.80	●
.552	G 1/4	19	13.157	100	20	39	11	9.0	3	11.80	●
.553	G 3/8	19	16.662	100	22	39	12	9.0	4	15.25	●
.554	G 1/2	14	20.955	125	25	50	16	12.0	4	19.00	●
.555	G 5/8	14	22.911	125	25	50	18	14.5	4	21.00	●
.556	G 3/4	14	26.441	140	28	56	20	16.0	5	24.50	●

Anwendung



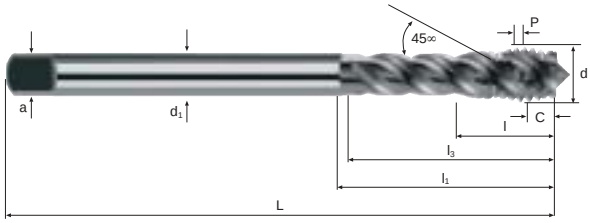
Werkstoff	G	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	G 1/8	9.728	0.907	32	1045	948	28	915	830	22	720	653
	G 1/4	13.157	1.337	32	775	1036	28	675	902	22	530	709
	G 3/8	16.662	1.337	32	610	816	28	535	715	22	420	562
	G 1/2	20.955	1.814	32	485	880	28	425	771	22	335	608
	G 5/8	22.911	1.814	32	445	807	28	390	707	22	305	553
	G 3/4	26.441	1.814	32	385	698	28	335	608	22	265	481
Stahl 850 - 1100 N/mm²	G 1/8	9.728	0.907	20	655	594	16	525	476	10	325	295
	G 1/4	13.157	1.337	20	485	648	16	385	515	10	240	321
	G 3/8	16.662	1.337	20	380	508	16	305	408	10	190	254
	G 1/2	20.955	1.814	20	305	553	16	245	444	10	150	272
	G 5/8	22.911	1.814	20	280	508	16	220	399	10	140	254
	G 3/4	26.441	1.814	20	240	435	16	195	354	10	120	218

G

HSS PM/F

DIN 5156

Form C

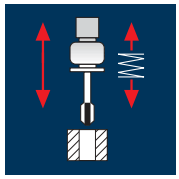


Rm < 850 | **Rm** 850-1100

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1475** ø-Code **.551**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			TiCN EH1475
.551	G 1/8	28	9.728	90	10	35	33	7	5.5	3	8.80	●
.552	G 1/4	19	13.157	100	14	39	37	11	9.0	4	11.80	●
.553	G 3/8	19	16.662	100	14	39	37	12	9.0	4	15.25	●
.554	G 1/2	14	20.955	125	20	65	63	16	12.0	5	19.00	●
.555	G 5/8	14	22.911	125	20	65	63	18	14.5	5	21.00	●
.556	G 3/4	14	26.441	140	22	72	70	20	16.0	5	24.50	●

Anwendung



Werkstoff

Stahl
1100 - 1300 N/mm²

G	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
G 1/8	9.728	0.907	10	325	295	8	260	236	5	165	150
G 1/4	13.157	1.337	10	240	321	8	195	261	5	120	160
G 3/8	16.662	1.337	10	190	254	8	155	207	5	95	127
G 1/2	20.955	1.814	10	150	272	8	120	218	5	75	136
G 5/8	22.911	1.814	10	140	254	8	110	200	5	70	127
G 3/4	26.441	1.814	10	120	218	8	95	172	5	60	109

Stahl
1300 - 1500 N/mm²

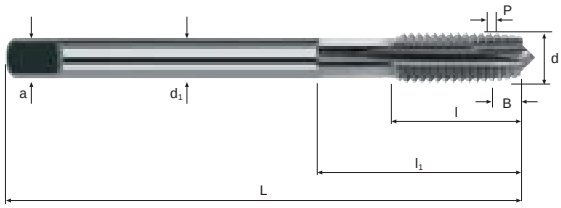
G	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
G 1/8	9.728	0.907	6	195	177	4	130	118	3	100	91
G 1/4	13.157	1.337	6	145	194	4	95	127	3	75	100
G 3/8	16.662	1.337	6	115	154	4	75	100	3	55	74
G 1/2	20.955	1.814	6	90	163	4	60	109	3	45	82
G 5/8	22.911	1.814	6	85	154	4	55	100	3	40	73
G 3/4	26.441	1.814	6	70	127	4	50	91	3	35	63

G

HSS
PM/F

DIN
5156

Form B



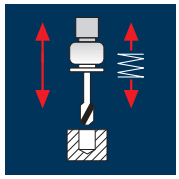
Rm
1100-1300

Rm
1300-1500

Beispiel:
Bestell-Nr. Artikel-Nr. **EH1482** ø-Code **.551**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	d_1	a			TiCN
											EH1482
.551	G 1/8	28	9.728	90	18	35	7	5.5	3	8.85 *	●
.552	G 1/4	19	13.157	100	20	39	11	9.0	3	11.90 *	●
.553	G 3/8	19	16.662	100	22	39	12	9.0	4	15.40 *	●
.554	G 1/2	14	20.955	125	25	50	16	12.0	4	19.20 *	●
.555	G 5/8	14	22.911	125	25	50	18	14.5	4	21.10	●
.556	G 3/4	14	26.441	140	28	56	20	16.0	5	24.60	●

* angegebenes Mass liegt ausserhalb der Norm

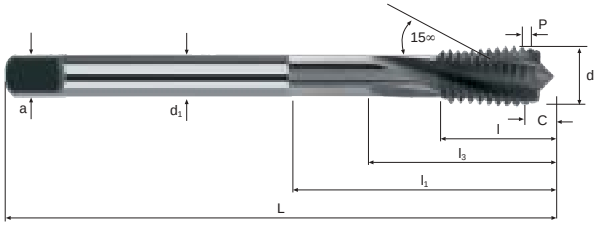
Anwendung	Werkstoff	G	ø [mm]	P [mm]	v_c 1.0 x d	n [min^{-1}]	v_f [100%]	v_c 1.5 x d	n [min^{-1}]	v_f [100%]	
	**Stahl** **1100 - 1300 N/mm²**	**G 1/8**	**9.728**	**0.907**	**6**	**195**	**177**	**5**	**165**	**150**	
		G 1/4	**13.157**	**1.337**	**6**	**145**	**194**	**5**	**120**	**160**	
		G 3/8	**16.662**	**1.337**	**6**	**115**	**154**	**5**	**95**	**127**	
		G 1/2	**20.955**	**1.814**	**6**	**90**	**163**	**5**	**75**	**136**	
		G 5/8	**22.911**	**1.814**	**6**	**85**	**154**	**5**	**70**	**127**	
		G 3/4	**26.441**	**1.814**	**6**	**70**	**127**	**5**	**60**	**109**	
	Stahl **1300 - 1500 N/mm²**	**G 1/8**	**9.728**	**0.907**	**5**	**165**	**150**	**4**	**130**	**118**	
		G 1/4	**13.157**	**1.337**	**5**	**120**	**160**	**4**	**95**	**127**	
		G 3/8	**16.662**	**1.337**	**5**	**95**	**127**	**4**	**75**	**100**	
		G 1/2	**20.955**	**1.814**	**5**	**75**	**136**	**4**	**60**	**109**	
		G 5/8	**22.911**	**1.814**	**5**	**70**	**127**	**4**	**55**	**100**	
		G 3/4	**26.441**	**1.814**	**5**	**60**	**109**	**4**	**50**	**91**	

G

HSS
PM/F

DIN
5156

Form C



Rm
1100-1300

Rm
1300-1500

Beispiel:
Bestell-Nr.

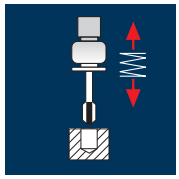
Artikel-Nr. **EH1495**

ø-Code **.551**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			TiCN
												EH1495
.551	G 1/8	28	9.728	90	10	35	33	7	5.5	4	8.85 *	●
.552	G 1/4	19	13.157	100	14	39	37	11	9.0	4	11.90 *	●
.553	G 3/8	19	16.662	100	14	39	37	12	9.0	4	15.40 *	●
.554	G 1/2	14	20.955	125	20	65	63	16	12.0	4	19.20 *	●
.555	G 5/8	14	22.911	125	20	65	63	18	14.5	4	21.10	●
.556	G 3/4	14	26.441	140	22	72	70	20	16.0	5	24.60	●

* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff

Werkzeugstahl gehärtet 48 - 52 HRC

G	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
G 1/8	9.728	0.907	8	260	236	6	195	177	4	130	118
G 1/4	13.157	1.337	8	195	261	6	145	194	4	95	127
G 3/8	16.662	1.337	8	155	207	6	115	154	4	75	100
G 1/2	20.955	1.814	8	120	218	6	90	163	4	60	109

Werkzeugstahl gehärtet 52 - 56 HRC

G	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
G 1/8	9.728	0.907	6	195	177	4	130	118	3	100	91
G 1/4	13.157	1.337	6	145	194	4	95	127	3	75	100
G 3/8	16.662	1.337	6	115	154	4	75	100	3	55	74
G 1/2	20.955	1.814	6	90	163	4	60	109	3	45	82

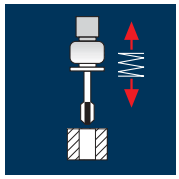
Werkzeugstahl gehärtet 56 - 60 HRC

G	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
G 1/8	9.728	0.907	4	130	118	2	65	59			
G 1/4	13.157	1.337	4	95	127	2	50	67			
G 3/8	16.662	1.337	4	75	100	2	40	53			
G 1/2	20.955	1.814	4	60	109	2	30	54			

Werkzeugstahl gehärtet > 60 HRC

G	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
G 1/8	9.728	0.907	2	65	59	1.5	50	45			
G 1/4	13.157	1.337	2	50	67	1.5	35	47			
G 3/8	16.662	1.337	2	40	53	1.5	30	40			
G 1/2	20.955	1.814	2	30	54	1.5	25	45			

Anwendung



Werkstoff

Werkzeugstahl gehärtet 48 - 52 HRC

G	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
G 1/8	9.728	0.907	8	260	236	6	195	177	4	130	118
G 1/4	13.157	1.337	8	195	261	6	145	194	4	95	127
G 3/8	16.662	1.337	8	155	207	6	115	154	4	75	100
G 1/2	20.955	1.814	8	120	218	6	90	163	4	60	109

Werkzeugstahl gehärtet 52 - 56 HRC

G	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
G 1/8	9.728	0.907	6	195	177	4	130	118	3	100	91
G 1/4	13.157	1.337	6	145	194	4	95	127	3	75	100
G 3/8	16.662	1.337	6	115	154	4	75	100	3	55	74
G 1/2	20.955	1.814	6	90	163	4	60	109	3	45	82

Werkzeugstahl gehärtet 56 - 60 HRC

G	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
G 1/8	9.728	0.907	4	130	118	2	65	59			
G 1/4	13.157	1.337	4	95	127	2	50	67			
G 3/8	16.662	1.337	4	75	100	2	40	53			
G 1/2	20.955	1.814	4	60	109	2	30	54			

Werkzeugstahl gehärtet > 60 HRC

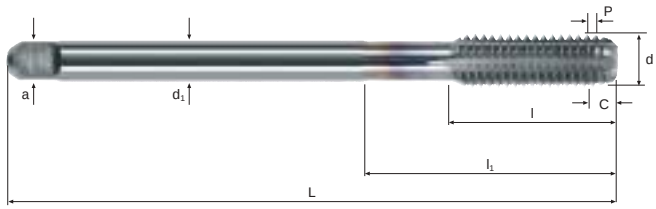
G	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
G 1/8	9.728	0.907	2	65	59	1.5	50	45			
G 1/4	13.157	1.337	2	50	67	1.5	35	47			
G 3/8	16.662	1.337	2	40	53	1.5	30	40			
G 1/2	20.955	1.814	2	30	54	1.5	25	45			

G

HM MG10

DIN 5156

Form C



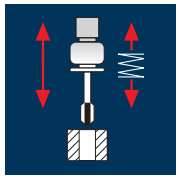
HRC 48-56 | HRC 56-60 | HRC > 60

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6916** ø-Code **.551**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	d_1	a			TiCN EH6916
.551	G 1/8	28	9.728	90	18	35	7	5.5	5	8.85 *	●
.552	G 1/4	19	13.157	100	20	39	11	9.0	5	11.90 *	●
.553	G 3/8	19	16.662	100	22	39	12	9.0	5	15.40 *	●
.554	G 1/2	14	20.955	125	25	50	16	12.0	5	19.20 *	●

* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff	G	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch	G 1/8	9.728	0.907	12	395	358	10	325	295	8	260	236
	G 1/4	13.157	1.337	12	290	388	10	240	321	8	195	261
	G 3/8	16.662	1.337	12	230	308	10	190	254	8	155	207
	G 1/2	20.955	1.814	12	180	327	10	150	272	8	120	218
	G 5/8	22.911	1.814	12	165	299	10	140	254	8	110	200
	G 3/4	26.441	1.814	12	145	263	10	120	218	8	95	172
Nichtrostender Stahl [Cr-Ni/1.4301]	G 1/8	9.728	0.907	7	230	209	5	165	150	4	130	118
	G 1/4	13.157	1.337	7	170	227	5	120	160	4	95	127
	G 3/8	16.662	1.337	7	135	180	5	95	127	4	75	100
	G 1/2	20.955	1.814	7	105	190	5	75	136	4	60	109
	G 5/8	22.911	1.814	7	95	172	5	70	127	4	55	100
	G 3/4	26.441	1.814	7	85	154	5	60	109	4	50	91
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	G 1/8	9.728	0.907	8	260	236	6	195	177	5	165	150
	G 1/4	13.157	1.337	8	195	261	6	145	194	5	120	160
	G 3/8	16.662	1.337	8	155	207	6	115	154	5	95	127
	G 1/2	20.955	1.814	8	120	218	6	90	163	5	75	136
	G 5/8	22.911	1.814	8	110	200	6	85	154	5	70	127
	G 3/4	26.441	1.814	8	95	172	6	70	127	5	60	109
Hitzebeständiger Stahl [17-4 PH]	G 1/8	9.728	0.907	5	165	150	4	130	118	3	100	91
	G 1/4	13.157	1.337	5	120	160	4	95	127	3	75	100
	G 3/8	16.662	1.337	5	95	127	4	75	100	3	55	74
	G 1/2	20.955	1.814	5	75	136	4	60	109	3	45	82
	G 5/8	22.911	1.814	5	70	127	4	55	100	3	40	73
	G 3/4	26.441	1.814	5	60	109	4	50	91	3	35	63

Gewindebohrer Inotap

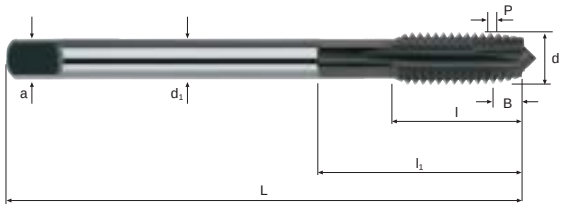
In

G

HSS PM/F

DIN 5156

Form B



G

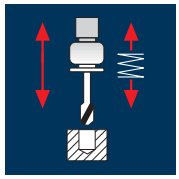
Inox Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET1440** ø-Code **.551**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	d_1	a			TRIBO ET1440
.551	G 1/8	28	9.728	90	18	35	7	5.5	3	8.85 *	●
.552	G 1/4	19	13.157	100	20	39	11	9.0	3	11.90 *	●
.553	G 3/8	19	16.662	100	22	39	12	9.0	4	15.40 *	●
.554	G 1/2	14	20.955	125	25	50	16	12.0	4	19.20 *	●
.555	G 5/8	14	22.911	125	25	50	18	14.5	4	21.10	●
.556	G 3/4	14	26.441	140	28	56	20	16.0	4	24.60	●

* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff	G	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch	G 1/8	9.728	0.907	10	325	295	8	260	236	6	195	177
	G 1/4	13.157	1.337	10	240	321	8	195	261	6	145	194
	G 3/8	16.662	1.337	10	190	254	8	155	207	6	115	154
	G 1/2	20.955	1.814	10	150	272	8	120	218	6	90	163
	G 5/8	22.911	1.814	10	140	254	8	110	200	6	85	154
	G 3/4	26.441	1.814	10	120	218	8	95	172	6	70	127
Nichtrostender Stahl [Cr-Ni/1.4301]	G 1/8	9.728	0.907	5	165	150	4	130	118	3	100	91
	G 1/4	13.157	1.337	5	120	160	4	95	127	3	75	100
	G 3/8	16.662	1.337	5	95	127	4	75	100	3	55	74
	G 1/2	20.955	1.814	5	75	136	4	60	109	3	45	82
	G 5/8	22.911	1.814	5	70	127	4	55	100	3	40	73
	G 3/4	26.441	1.814	5	60	109	4	50	91	3	35	63
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	G 1/8	9.728	0.907	6	195	177	5	165	150	4	130	118
	G 1/4	13.157	1.337	6	145	194	5	120	160	4	95	127
	G 3/8	16.662	1.337	6	115	154	5	95	127	4	75	100
	G 1/2	20.955	1.814	6	90	163	5	75	136	4	60	109
	G 5/8	22.911	1.814	6	85	154	5	70	127	4	55	100
	G 3/4	26.441	1.814	6	70	127	5	60	109	4	50	91
Hitzebeständiger Stahl [17-4 PH]	G 1/8	9.728	0.907	4	130	118	3	100	91			
	G 1/4	13.157	1.337	4	95	127	3	75	100			
	G 3/8	16.662	1.337	4	75	100	3	55	74			
	G 1/2	20.955	1.814	4	60	109	3	45	82			
	G 5/8	22.911	1.814	4	55	100	3	40	73			
	G 3/4	26.441	1.814	4	50	91	3	35	63			

Gewindebohrer x-tap

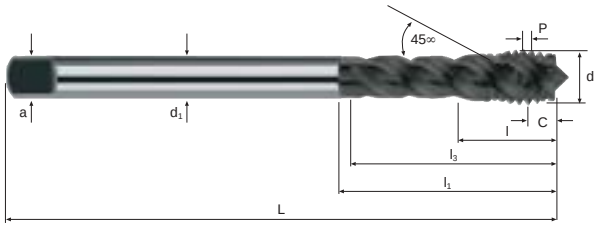
In

G

HSS PM/F

DIN 5156

Form C



G

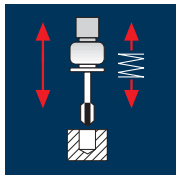
Inox
Stainless

Beispiel:
Bestell-Nr. Artikel-Nr. **ET1475** ø-Code **.551**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			TRIBO ET1475
.551	G 1/8	28	9.728	90	10	35	33	7	5.5	3	8.85 *	●
.552	G 1/4	19	13.157	100	14	39	37	11	9.0	4	11.90 *	●
.553	G 3/8	19	16.662	100	14	39	37	12	9.0	4	15.40 *	●
.554	G 1/2	14	20.955	125	20	65	63	16	12.0	5	19.20 *	●
.555	G 5/8	14	22.911	125	20	65	63	18	14.5	5	21.10	●
.556	G 3/4	14	26.441	140	22	72	70	20	16.0	5	24.60	●

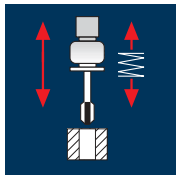
* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff	G	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Gusseisen GG	G 1/8	9.728	0.907	28	915	830	24	785	712	20	655	594
	G 1/4	13.157	1.337	28	675	902	24	580	775	20	485	648
	G 3/8	16.662	1.337	28	535	715	24	460	615	20	380	508
	G 1/2	20.955	1.814	28	425	771	24	365	662	20	305	553
	G 5/8	22.911	1.814	28	390	707	24	335	608	20	280	508
	G 3/4	26.441	1.814	28	335	608	24	290	526	20	240	435
Gusseisen GGG	G 1/8	9.728	0.907	20	655	594	18	590	535	15	490	444
	G 1/4	13.157	1.337	20	485	648	18	435	582	15	365	488
	G 3/8	16.662	1.337	20	380	508	18	345	461	15	285	381
	G 1/2	20.955	1.814	20	305	553	18	275	499	15	230	417
	G 5/8	22.911	1.814	20	280	508	18	250	454	15	210	381
	G 3/4	26.441	1.814	20	240	435	18	215	390	15	180	327

Anwendung



Werkstoff	G	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Gusseisen GG	G 1/8	9.728	0.907	30	980	889	28	915	830	25	820	744
	G 1/4	13.157	1.337	30	725	969	28	675	902	25	605	809
	G 3/8	16.662	1.337	30	575	769	28	535	715	25	480	642
	G 1/2	20.955	1.814	30	455	825	28	425	771	25	380	689
	G 5/8	22.911	1.814	30	415	753	28	390	707	25	345	626
	G 3/4	26.441	1.814	30	360	653	28	335	608	25	300	544
Gusseisen GGG	G 1/8	9.728	0.907	25	820	744	22	720	653	20	655	594
	G 1/4	13.157	1.337	25	605	809	22	530	709	20	485	648
	G 3/8	16.662	1.337	25	480	642	22	420	562	20	380	508
	G 1/2	20.955	1.814	25	380	689	22	335	608	20	305	553
	G 5/8	22.911	1.814	25	345	626	22	305	553	20	280	508
	G 3/4	26.441	1.814	25	300	544	22	265	481	20	240	435

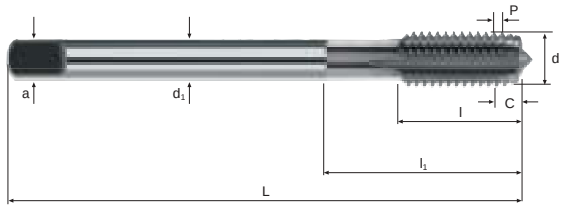
GG

G

HSS
PM/F

DIN
5156

Form C



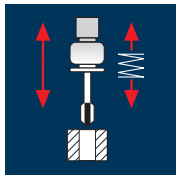
G

GG(G)

Beispiel:
Bestell-Nr. Artikel-Nr. **EH1480** ø-Code **.551**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	d_1	a			TiCN EH1480
.551	G 1/8	28	9.728	90	18	35	7	5.5	4	8.80	●
.552	G 1/4	19	13.157	100	20	39	11	9.0	4	11.80	●
.553	G 3/8	19	16.662	100	22	39	12	9.0	4	15.25	●
.554	G 1/2	14	20.955	125	25	50	16	12.0	5	19.00	●
.555	G 5/8	14	22.911	125	25	50	18	14.5	5	21.00	●
.556	G 3/4	14	26.441	140	28	56	20	16.0	5	24.50	●

Anwendung



Werkstoff	G	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Reinaluminium	G 1/8	9.728	0.907	23	755	685	19	620	562	16	525	476
	G 1/4	13.157	1.337	23	555	742	19	460	615	16	385	515
	G 3/8	16.662	1.337	23	440	588	19	365	488	16	305	408
	G 1/2	20.955	1.814	23	350	635	19	290	526	16	245	444
	G 5/8	22.911	1.814	23	320	580	19	265	481	16	220	399
	G 3/4	26.441	1.814	23	275	499	19	230	417	16	195	354
Al-Knetlegierung Si < 6% nicht ausgehärtet	G 1/8	9.728	0.907	35	1145	1039	30	980	889	25	820	744
	G 1/4	13.157	1.337	35	845	1130	30	725	969	25	605	809
	G 3/8	16.662	1.337	35	670	896	30	575	769	25	480	642
	G 1/2	20.955	1.814	35	530	961	30	455	825	25	380	689
	G 5/8	22.911	1.814	35	485	880	30	415	753	25	345	626
	G 3/4	26.441	1.814	35	420	762	30	360	653	25	300	544
Al-Knetlegierung Si < 6% ausgehärtet	G 1/8	9.728	0.907	20	655	594	17	555	503	14	460	417
	G 1/4	13.157	1.337	20	485	648	17	410	548	14	340	455
	G 3/8	16.662	1.337	20	380	508	17	325	435	14	265	354
	G 1/2	20.955	1.814	20	305	553	17	260	472	14	215	390
	G 5/8	22.911	1.814	20	280	508	17	235	426	14	195	354
	G 3/4	26.441	1.814	20	240	435	17	205	372	14	170	308
Reinkupfer	G 1/8	9.728	0.907	21	685	621	18	590	535	15	490	444
	G 1/4	13.157	1.337	21	510	682	18	435	582	15	365	488
	G 3/8	16.662	1.337	21	400	535	18	345	461	15	285	381
	G 1/2	20.955	1.814	21	320	580	18	275	499	15	230	417
	G 5/8	22.911	1.814	21	290	526	18	250	454	15	210	381
	G 3/4	26.441	1.814	21	255	463	18	215	390	15	180	327

Gewindebohrer

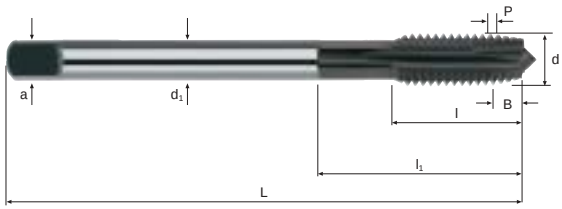
Al

G

HSS
PM/F

DIN
5156

Form B



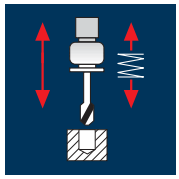
G

Al Aluminium > 99%	Al Aluminium Alloy	Al Aluminium Cast	Cu Copper	Plastic Thermoplast

Beispiel: **Bestell-Nr.** Artikel-Nr. **EI1402** ø-Code **.551**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	d_1	a			INTEGRAL EI1402
.551	G 1/8	28	9.728	90	18	35	7	5.5	2	8.80	●
.552	G 1/4	19	13.157	100	20	39	11	9.0	3	11.80	●
.553	G 3/8	19	16.662	100	22	39	12	9.0	3	15.25	●
.554	G 1/2	14	20.955	125	25	50	16	12.0	3	19.00	●
.555	G 5/8	14	22.911	125	25	50	18	14.5	3	21.00	●
.556	G 3/4	14	26.441	140	28	56	20	16.0	3	24.50	●

Anwendung



Werkstoff	G	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Reinaluminium	G 1/8	9.728	0.907	25	820	744	21	685	621	17	555	503
	G 1/4	13.157	1.337	25	605	809	21	510	682	17	410	548
	G 3/8	16.662	1.337	25	480	642	21	400	535	17	325	435
	G 1/2	20.955	1.814	25	380	689	21	320	580	17	260	472
	G 5/8	22.911	1.814	25	345	626	21	290	526	17	235	426
	G 3/4	26.441	1.814	25	300	544	21	255	463	17	205	372
Al-Knetlegierung Si < 6% nicht ausgehärtet	G 1/8	9.728	0.907	27	885	803	24	785	712	18	590	535
	G 1/4	13.157	1.337	27	655	876	24	580	775	18	435	582
	G 3/8	16.662	1.337	27	515	689	24	460	615	18	345	461
	G 1/2	20.955	1.814	27	410	744	24	365	662	18	275	499
	G 5/8	22.911	1.814	27	375	680	24	335	608	18	250	454
	G 3/4	26.441	1.814	27	325	590	24	290	526	18	215	390
Al-Knetlegierung Si < 6% ausgehärtet	G 1/8	9.728	0.907	21	685	621	18	590	535	15	490	444
	G 1/4	13.157	1.337	21	510	682	18	435	582	15	365	488
	G 3/8	16.662	1.337	21	400	535	18	345	461	15	285	381
	G 1/2	20.955	1.814	21	320	580	18	275	499	15	230	417
	G 5/8	22.911	1.814	21	290	526	18	250	454	15	210	381
	G 3/4	26.441	1.814	21	255	463	18	215	390	15	180	327
Reinkupfer	G 1/8	9.728	0.907	20	655	594	18	590	535	16	525	476
	G 1/4	13.157	1.337	20	485	648	18	435	582	16	385	515
	G 3/8	16.662	1.337	20	380	508	18	345	461	16	305	408
	G 1/2	20.955	1.814	20	305	553	18	275	499	16	245	444
	G 5/8	22.911	1.814	20	280	508	18	250	454	16	220	399
	G 3/4	26.441	1.814	20	240	435	18	215	390	16	195	354

Gewindebohrer

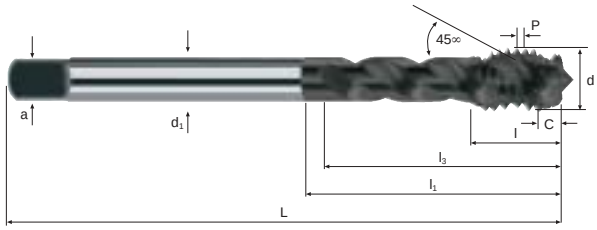
Al

G

HSS
PM/F

DIN
5156

Form C



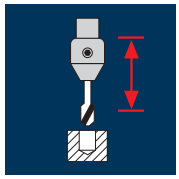
G

Al Aluminium > 99% | **Al** Aluminium Alloy | **Al** Aluminium Cast | **Cu** Copper | **Plastic** Thermoplast

Beispiel: **Bestell-Nr.** Artikel-Nr. **EI1452** ø-Code **.551**

												INTEGRAL
												EI1452
ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			
.551	G 1/8	28	9.728	90	10	35	33	7	5.5	3	8.80	●
.552	G 1/4	19	13.157	100	14	39	37	11	9.0	4	11.80	●
.553	G 3/8	19	16.662	100	14	39	37	12	9.0	4	15.25	●
.554	G 1/2	14	20.955	125	20	65	63	16	12.0	4	19.00	●
.555	G 5/8	14	22.911	125	20	65	63	18	14.5	4	21.00	●
.556	G 3/4	14	26.441	140	22	72	70	20	16.0	5	24.50	●

Anwendung



Werkstoff	G	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Stahl < 500 N/mm²	G 1/8	9.728	0.907	25	820	22	720	15	490
	G 1/4	13.157	1.337	25	605	22	530	15	365
	G 3/8	16.662	1.337	25	480	22	420	15	285
	G 1/2	20.955	1.814	25	380	22	335	15	230
	G 5/8	22.911	1.814	25	345	22	305	15	210
	G 3/4	26.441	1.814	25	300	22	265	15	180
Stahl 500 - 850 N/mm²	G 1/8	9.728	0.907	22	720	20	655	12	395
	G 1/4	13.157	1.337	22	530	20	485	12	290
	G 3/8	16.662	1.337	22	420	20	380	12	230
	G 1/2	20.955	1.814	22	335	20	305	12	180
	G 5/8	22.911	1.814	22	305	20	280	12	165
	G 3/4	26.441	1.814	22	265	20	240	12	145
Stahl 850 - 1100 N/mm²	G 1/8	9.728	0.907	18	590	12	395	8	260
	G 1/4	13.157	1.337	18	435	12	290	8	195
	G 3/8	16.662	1.337	18	345	12	230	8	155
	G 1/2	20.955	1.814	18	275	12	180	8	120
	G 5/8	22.911	1.814	18	250	12	165	8	110
	G 3/4	26.441	1.814	18	215	12	145	8	95
Gusseisen GG(G)	G 1/8	9.728	0.907	18	590	15	490	12	395
	G 1/4	13.157	1.337	18	435	15	365	12	290
	G 3/8	16.662	1.337	18	345	15	285	12	230
	G 1/2	20.955	1.814	18	275	15	230	12	180
	G 5/8	22.911	1.814	18	250	15	210	12	165
	G 3/4	26.441	1.814	18	215	15	180	12	145

Werkstoff	G	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_c 1.5 x d	n [min⁻¹]	v_c 2.0 x d	n [min⁻¹]
Nichtrostender Stahl [Cr-Ni/1.4301]	G 1/8	9.728	0.907	4	130	3	100	2	65
	G 1/4	13.157	1.337	4	95	3	75	2	50
	G 3/8	16.662	1.337	4	75	3	55	2	40
	G 1/2	20.955	1.814	4	60	3	45	2	30
	G 5/8	22.911	1.814	4	55	3	40	2	30
	G 3/4	26.441	1.814	4	50	3	35	2	25
Al-Knetlegierung Si < 6% ausgehärtet	G 1/8	9.728	0.907	25	820	22	720	15	490
	G 1/4	13.157	1.337	25	605	22	530	15	365
	G 3/8	16.662	1.337	25	480	22	420	15	285
	G 1/2	20.955	1.814	25	380	22	335	15	230
	G 5/8	22.911	1.814	25	345	22	305	15	210
	G 3/4	26.441	1.814	25	300	22	265	15	180

Gewindebohrer polytap-R

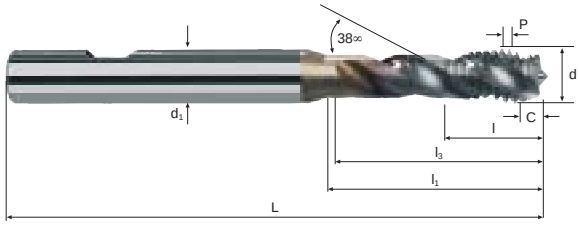
R

G

HSS PM/F

DIN 1835B ISO 3338

Form C



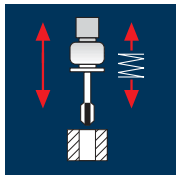
G

Rm < 850 | **Rm** 850-1100 | **Inox** Stainless | **GG(G) Aluminium**

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1429** ø-Code **.551**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1 h6			TiCN EH1429
.551	G 1/8	28	9.728	100	15	39	37	10	3	8.80	●
.552	G 1/4	19	13.157	110	15	46	44	16	4	11.80	●
.553	G 3/8	19	16.662	110	15	50	48	16	4	15.25	●
.554	G 1/2	14	20.955	140	20	64	62	20	4	19.00	●
.555	G 5/8	14	22.911	140	20	64	62	20	4	21.00	●
.556	G 3/4	14	26.441	160	24	84	82	20	5	24.50	●

Anwendung



Werkstoff	G	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	G 1/8	9.728	0.907	18	590	535	15	490	444	12	395	358
	G 1/4	13.157	1.337	18	435	582	15	365	488	12	290	388
	G 3/8	16.662	1.337	18	345	461	15	285	381	12	230	308
	G 1/2	20.955	1.814	18	275	499	15	230	417	12	180	327
	G 5/8	22.911	1.814	18	250	454	15	210	381	12	165	299
	G 3/4	26.441	1.814	18	215	390	15	180	327	12	145	263
Stahl 500 - 850 N/mm²	G 1/8	9.728	0.907	15	490	444	10	325	295	8	260	236
	G 1/4	13.157	1.337	15	365	488	10	240	321	8	195	261
	G 3/8	16.662	1.337	15	285	381	10	190	254	8	155	207
	G 1/2	20.955	1.814	15	230	417	10	150	272	8	120	218
	G 5/8	22.911	1.814	15	210	381	10	140	254	8	110	200
	G 3/4	26.441	1.814	15	180	327	10	120	218	8	95	172
Al-Knetlegierung Si < 6% ausgehärtet Empfehlung: unbeschichtet	G 1/8	9.728	0.907	15	490	444	12	395	358	10	325	295
	G 1/4	13.157	1.337	15	365	488	12	290	388	10	240	321
	G 3/8	16.662	1.337	15	285	381	12	230	308	10	190	254
	G 1/2	20.955	1.814	15	230	417	12	180	327	10	150	272
	G 5/8	22.911	1.814	15	210	381	12	165	299	10	140	254
	G 3/4	26.441	1.814	15	180	327	12	145	263	10	120	218
Nichtrostender Stahl [Cr-Ni/1.4301]	G 1/8	9.728	0.907	5	165	150	4	130	118	3	100	91
	G 1/4	13.157	1.337	5	120	160	4	95	127	3	75	100
	G 3/8	16.662	1.337	5	95	127	4	75	100	3	55	74
	G 1/2	20.955	1.814	5	75	136	4	60	109	3	45	82
	G 5/8	22.911	1.814	5	70	127	4	55	100	3	40	73
	G 3/4	26.441	1.814	5	60	109	4	50	91	3	35	63

Gewindebohrer u-tap

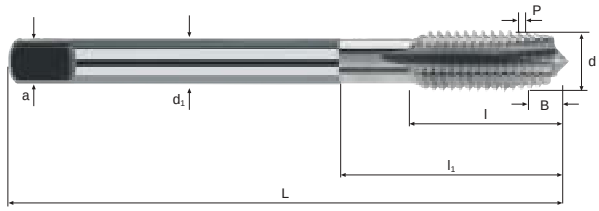
U

G

HSS-E Co5

DIN 5156

Form B



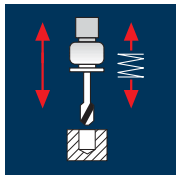
Rm < 850 | **Inox** Stainless | GG(G) Aluminium Copper

G

Beispiel: **Bestell-Nr.** Artikel-Nr. **E11480** ø-Code **.551**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	d_1	a			VAP E11480	VAP EV11480
.551	G 1/8	28	9.728	90	18	35	7	5.5	3	8.80	●	●
.552	G 1/4	19	13.157	100	20	39	11	9.0	3	11.80	●	●
.553	G 3/8	19	16.662	100	22	39	12	9.0	4	15.25	●	●
.554	G 1/2	14	20.955	125	25	50	16	12.0	4	19.00	●	●
.555	G 5/8	14	22.911	125	25	50	18	14.5	4	21.00	●	●
.556	G 3/4	14	26.441	140	28	56	20	16.0	4	24.50	●	●

Anwendung



Werkstoff

Werkstoff	G	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	G 1/8	9.728	0.907	14	460	417	12	395	358	10	325	295
	G 1/4	13.157	1.337	14	340	455	12	290	388	10	240	321
	G 3/8	16.662	1.337	14	265	354	12	230	308	10	190	254
	G 1/2	20.955	1.814	14	215	390	12	180	327	10	150	272
	G 5/8	22.911	1.814	14	195	354	12	165	299	10	140	254
	G 3/4	26.441	1.814	14	170	308	12	145	263	10	120	218
Stahl 500 - 850 N/mm²	G 1/8	9.728	0.907	9	295	268	8	260	236	7	230	209
	G 1/4	13.157	1.337	9	220	294	8	195	261	7	170	227
	G 3/8	16.662	1.337	9	170	227	8	155	207	7	135	180
	G 1/2	20.955	1.814	9	135	245	8	120	218	7	105	190
	G 5/8	22.911	1.814	9	125	227	8	110	200	7	95	172
	G 3/4	26.441	1.814	9	110	200	8	95	172	7	85	154
Al-Knetlegierung Si < 6% ausgehärtet Empfehlung: unbeschichtet	G 1/8	9.728	0.907	10	325	295	8	260	236	6	195	177
	G 1/4	13.157	1.337	10	240	321	8	195	261	6	145	194
	G 3/8	16.662	1.337	10	190	254	8	155	207	6	115	154
	G 1/2	20.955	1.814	10	150	272	8	120	218	6	90	163
	G 5/8	22.911	1.814	10	140	254	8	110	200	6	85	154
	G 3/4	26.441	1.814	10	120	218	8	95	172	6	70	127
Nichtrostender Stahl [Cr-Ni/1.4301]	G 1/8	9.728	0.907	4	130	118	3	100	91	3	100	91
	G 1/4	13.157	1.337	4	95	127	3	75	100	3	75	100
	G 3/8	16.662	1.337	4	75	100	3	55	74	3	55	74
	G 1/2	20.955	1.814	4	60	109	3	45	82	3	45	82
	G 5/8	22.911	1.814	4	55	100	3	40	73	3	40	73
	G 3/4	26.441	1.814	4	50	91	3	35	63	3	35	63

Gewindebohrer u-tap

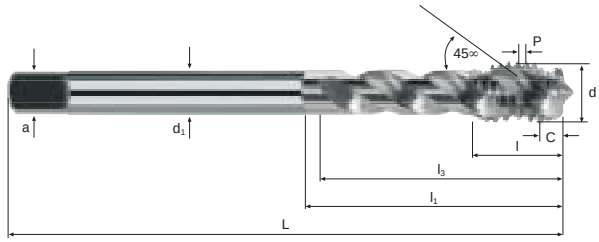
U

G

HSS-E Co5

DIN 5156

Form C



G

Rm < 850

Inox Stainless

GG(G) Aluminium Copper

Beispiel: **Bestell-Nr.** Artikel-Nr. **E11482** ø-Code **.551**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			E11482	VAP EV11482
.551	G 1/8	28	9.728	90	7.3	35	33	7	5.5	3	8.80	●	●
.552	G 1/4	19	13.157	100	10.7	39	37	11	9.0	4	11.80	●	●
.553	G 3/8	19	16.662	100	10.7	39	37	12	9.0	4	15.25	●	●
.554	G 1/2	14	20.955	125	14.5	65	63	16	12.0	4	19.00	●	●
.555	G 5/8	14	22.911	125	14.5	65	63	18	14.5	4	21.00	●	●
.556	G 3/4	14	26.441	140	14.5	72	70	20	16.0	5	24.50	●	●

passion
for precision
fraisa

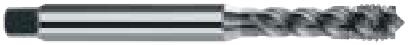
Amerikanische Gewinde UNC / UNJC / UNF / UNJF

UNC, Toleranz 2B

N° EH1687 / EH1688

11	HSS PM/F		**Rm** 850-1100		305

N° EH1690 / EH1691 x-tap



11	HSS PM/F		**Rm** 850-1100		309

N° ET1620 / ET1621

In	HSS PM/F		**Inox** Stainless		313

N° ET1690 / ET1691 x-tap

In	HSS PM/F		**Inox** Stainless		317

N° EI1602

Al	HSS PM/F		**Al** Aluminium Alloy	**Cu** Copper	321

N° EI1652

Al	HSS PM/F		**Al** Aluminium Alloy	**Cu** Copper	323

UNJC, Toleranz 3B

N° E1699

Ni	HSS PM/F		**Ni** Nickel Alloy		325

UN

UNF, Toleranz 2B

N° EH1787 / EH1788

11	HSS PM/F		**Rm** 850-1100		327

N° EH1790 / EH1791 x-tap

11	HSS PM/F		**Rm** 850-1100		329

N° ET1750 / ET1751

In	HSS PM/F		**Inox** Stainless		331

N° ET1790 / ET1791 x-tap

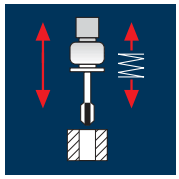
In	HSS PM/F		**Inox** Stainless		333

UNJF, Toleranz 3B

N° E1799

Ni	HSS PM/F		**Ni** Nickel Alloy		335

Anwendung



Werkstoff	UNC		ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	2	-56	2.184	0.454	20	2915	1323	16	2330	1058	12	1750	795
	3	-48	2.515	0.529	20	2530	1338	16	2025	1071	12	1520	804
	4	-40	2.845	0.635	20	2240	1422	16	1790	1137	12	1345	854
	5	-40	3.175	0.635	20	2005	1273	16	1605	1019	12	1205	765
	6	-32	3.505	0.794	20	1815	1441	16	1455	1155	12	1090	865
	8	-32	4.166	0.794	20	1530	1215	16	1225	973	12	915	727
	10	-24	4.826	1.058	20	1320	1397	16	1055	1116	12	790	836
	12	-24	5.486	1.058	20	1160	1227	16	930	984	12	695	735
	1/4	-20	6.350	1.270	20	1005	1276	16	800	1016	12	600	762
Stahl 500 - 850 N/mm²	5/16	-18	7.938	1.411	20	800	1129	16	640	903	12	480	677
	3/8	-16	9.525	1.588	20	670	1064	16	535	850	12	400	635
Stahl 850 - 1100 N/mm²	2	-56	2.184	0.454	16	2330	1058	12	1750	795	10	1455	661
	3	-48	2.515	0.529	16	2025	1071	12	1520	804	10	1265	669
	4	-40	2.845	0.635	16	1790	1137	12	1345	854	10	1120	711
	5	-40	3.175	0.635	16	1605	1019	12	1205	765	10	1005	638
	6	-32	3.505	0.794	16	1455	1155	12	1090	865	10	910	723
	8	-32	4.166	0.794	16	1225	973	12	915	727	10	765	607
	10	-24	4.826	1.058	16	1055	1116	12	790	836	10	660	698
	12	-24	5.486	1.058	16	930	984	12	695	735	10	580	614
	1/4	-20	6.350	1.270	16	800	1016	12	600	762	10	500	635
Stahl 850 - 1100 N/mm²	5/16	-18	7.938	1.411	16	640	903	12	480	677	10	400	564
	3/8	-16	9.525	1.588	16	535	850	12	400	635	10	335	532

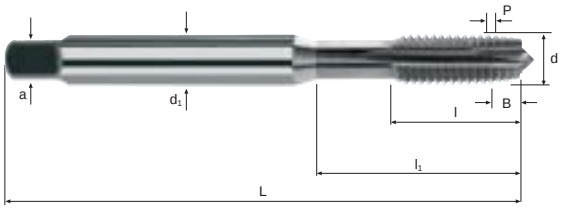
Werkstoff	UNC		ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 1100 - 1300 N/mm²	2	-56	2.184	0.454	5	730	331	3	435	197
	3	-48	2.515	0.529	5	635	336	3	380	201
	4	-40	2.845	0.635	5	560	356	3	335	213
	5	-40	3.175	0.635	5	500	318	3	300	191
	6	-32	3.505	0.794	5	455	361	3	270	214
	8	-32	4.166	0.794	5	380	302	3	230	183
	10	-24	4.826	1.058	5	330	349	3	200	212
	12	-24	5.486	1.058	5	290	307	3	175	185
	1/4	-20	6.350	1.270	5	250	318	3	150	191
Stahl 1100 - 1300 N/mm²	5/16	-18	7.938	1.411	5	200	282	3	120	169
	3/8	-16	9.525	1.588	5	165	262	3	100	159

UNC | 2B

60° | HSS PM/F

DIN 371

X · P Form B



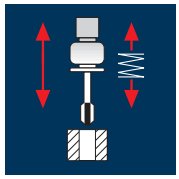
Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1687** ø-Code **.701**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	d_1	a			TiCN EH1687
.701	Nr. 2	-56	2.184	45	9	–	2.8	2.1	3	1.85	●
.702	Nr. 3	-48	2.515	50	9	–	2.8	2.1	3	2.10	●
.703	Nr. 4	-40	2.845	56	12	18.0	3.5	2.7	3	2.35	●
.704	Nr. 5	-40	3.175	56	12	18.0	3.5	2.7	3	2.65	●
.705	Nr. 6	-32	3.505	56	12	20.0	4.0	3.0	3	2.85	●
.706	Nr. 8	-32	4.166	63	13	21.0	4.5	3.4	3	3.50	●
.707	Nr. 10	-24	4.826	70	15	25.0	6.0	4.9	3	3.90	●
.708	Nr. 12	-24	5.486	80	17	30.0	6.0	4.9	3	4.50	●
.709	1/4	-20	6.350	80	17	30.0	7.0	5.5	3	5.10	●
.710	5/16	-18	7.938	90	20	35.0	8.0	6.2	3	6.60	●
.711	3/8	-16	9.525	100	22	39.0	10.0	8.0	3	8.00	●

Grössere Abmessungen siehe Artikel-Nr. EH1688, Seite 307

Anwendung



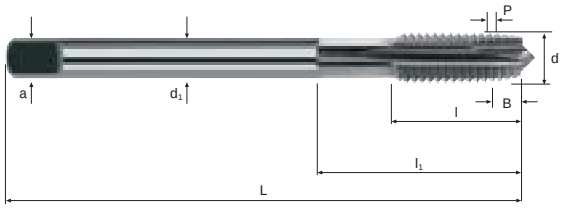
Werkstoff	UNC		ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	7/16	-14	11.113	1.814	20	575	1043	16	460	834	12	345	626
	1/2	-13	12.700	1.954	20	500	977	16	400	782	12	300	586
	9/16	-12	14.288	2.117	20	445	942	16	355	752	12	265	561
	5/8	-11	15.875	2.309	20	400	924	16	320	739	12	240	554
	3/4	-10	19.050	2.540	20	335	851	16	265	673	12	200	508
	7/8	-9	22.225	2.822	20	285	804	16	230	649	12	170	480
	1"	-8	25.400	3.175	20	250	794	16	200	635	12	150	476
Stahl 850 - 1100 N/mm²	7/16	-14	11.113	1.814	16	460	834	12	345	626	10	285	517
	1/2	-13	12.700	1.954	16	400	782	12	300	586	10	250	489
	9/16	-12	14.288	2.117	16	355	752	12	265	561	10	225	476
	5/8	-11	15.875	2.309	16	320	739	12	240	554	10	200	462
	3/4	-10	19.050	2.540	16	265	673	12	200	508	10	165	419
	7/8	-9	22.225	2.822	16	230	649	12	170	480	10	145	409
	1"	-8	25.400	3.175	16	200	635	12	150	476	10	125	397
Stahl 1100 - 1300 N/mm²	7/16	-14	11.113	1.814	5	145	263	3	85	154			
	1/2	-13	12.700	1.954	5	125	244	3	75	147			
	9/16	-12	14.288	2.117	5	110	233	3	65	138			
	5/8	-11	15.875	2.309	5	100	231	3	60	139			
	3/4	-10	19.050	2.540	5	85	216	3	50	127			
	7/8	-9	22.225	2.822	5	70	198	3	45	127			
	1"	-8	25.400	3.175	5	65	206	3	40	127			

UNC | 2B

60° | HSS PM/F

≈DIN 376

X · P Form B

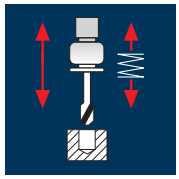


Rm < 850 | **Rm** 850-1100 | **Rm** 1100-1300

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1688** ø-Code **.712**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	d_1	a			TiCN EH1688
.712	7/16	-14	11.113	100	22	39	8	6.2	3	9.40	●
.713	1/2	-13	12.700	110	24	40	9	7.0	3	10.80	●
.714	9/16	-12	14.288	110	26	40	11	9.0	3	12.20	●
.715	5/8	-11	15.875	110	27	40	12	9.0	3	13.50	●
.716	3/4	-10	19.050	125	30	45	14	11.0	4	16.50	●
.717	7/8	-9	22.225	140	32	50	18	14.5	4	19.50	●
.718	1”	-8	25.400	160	34	50	18	14.5	5	22.30	●

Anwendung



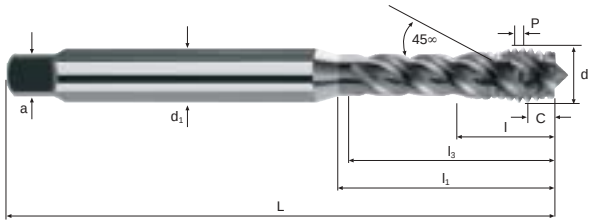
Werkstoff	UNC		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	2	-56	2.184	0.454	25	3645	1655	22	3205	1455	18	2625	1192
	3	-48	2.515	0.529	25	3165	1674	22	2785	1473	18	2280	1206
	4	-40	2.845	0.635	25	2795	1775	22	2460	1562	18	2015	1280
	5	-40	3.175	0.635	25	2505	1591	22	2205	1400	18	1805	1146
	6	-32	3.505	0.794	25	2270	1802	22	2000	1588	18	1635	1298
	8	-32	4.166	0.794	25	1910	1517	22	1680	1334	18	1375	1092
	10	-24	4.826	1.058	25	1650	1746	22	1450	1534	18	1185	1254
	12	-24	5.486	1.058	25	1450	1534	22	1275	1349	18	1045	1106
	1/4	-20	6.350	1.270	25	1255	1594	22	1105	1403	18	900	1143
Stahl 500 - 850 N/mm²	5/16	-18	7.938	1.411	25	1000	1411	22	880	1242	18	720	1016
	3/8	-16	9.525	1.588	25	835	1326	22	735	1167	18	600	953
Stahl 850 - 1100 N/mm²	2	-56	2.184	0.454	16	2330	1058	13	1895	860	8	1165	529
	3	-48	2.515	0.529	16	2025	1071	13	1645	870	8	1015	537
	4	-40	2.845	0.635	16	1790	1137	13	1455	924	8	895	568
	5	-40	3.175	0.635	16	1605	1019	13	1305	829	8	800	508
	6	-32	3.505	0.794	16	1455	1155	13	1180	937	8	725	576
	8	-32	4.166	0.794	16	1225	973	13	995	790	8	610	484
	10	-24	4.826	1.058	16	1055	1116	13	855	905	8	530	561
	12	-24	5.486	1.058	16	930	984	13	755	799	8	465	492
	1/4	-20	6.350	1.270	16	800	1016	13	650	826	8	400	508
Stahl 850 - 1100 N/mm²	5/16	-18	7.938	1.411	16	640	903	13	520	734	8	320	452
	3/8	-16	9.525	1.588	16	535	850	13	435	691	8	265	421

UNC | 2B

60° | HSS PM/F

DIN 371

X · P Form C



Rm < 850 | **Rm 850-1100**

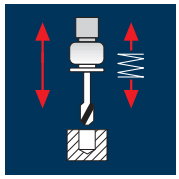
UN

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1690** ø-Code **.701**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			TiCN EH1690
.701	Nr. 2	-56	2.184	45	9	–	12.5	2.8	2.1	3	1.85	●
.702	Nr. 3	-48	2.515	50	9	–	13.0	2.8	2.1	3	2.10	●
.703	Nr. 4	-40	2.845	56	5	–	16.0	3.5	2.7	3	2.35	●
.704	Nr. 5	-40	3.175	56	5	–	16.0	3.5	2.7	3	2.65	●
.705	Nr. 6	-32	3.505	56	6	–	18.0	4.0	3.0	3	2.85	●
.706	Nr. 8	-32	4.166	63	7	–	19.0	4.5	3.4	3	3.50	●
.707	Nr. 10	-24	4.826	70	8	–	23.0	6.0	4.9	3	3.90	●
.708	Nr. 12	-24	5.486	80	10	–	28.0	6.0	4.9	3	4.50	●
.709	1/4	-20	6.350	80	10	30.0	28.0	7.0	5.5	3	5.10	●
.710	5/16	-18	7.938	90	13	35.0	33.0	8.0	6.2	3	6.60	●
.711	3/8	-16	9.525	100	15	39.0	37.0	10.0	8.0	3	8.00	●

Grössere Abmessungen siehe Artikel-Nr. EH1691, Seite 311

Anwendung



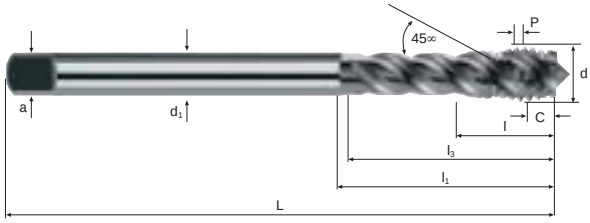
Werkstoff	UNC		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	7/16	-14	11.113	1.814	25	715	1297	22	630	1143	18	515	934
	1/2	-13	12.700	1.954	25	625	1221	22	550	1075	18	450	879
	9/16	-12	14.288	2.117	25	555	1175	22	490	1037	18	400	847
	5/8	-11	15.875	2.309	25	500	1155	22	440	1016	18	360	831
	3/4	-10	19.050	2.540	25	420	1067	22	370	940	18	300	762
	7/8	-9	22.225	2.822	25	360	1016	22	315	889	18	260	734
	1"	-8	25.400	3.175	25	315	1000	22	275	873	18	225	714
Stahl 850 - 1100 N/mm²	7/16	-14	11.113	1.814	16	460	834	13	370	671	8	230	417
	1/2	-13	12.700	1.954	16	400	782	13	325	635	8	200	391
	9/16	-12	14.288	2.117	16	355	752	13	290	614	8	180	381
	5/8	-11	15.875	2.309	16	320	739	13	260	600	8	160	369
	3/4	-10	19.050	2.540	16	265	673	13	215	546	8	135	343
	7/8	-9	22.225	2.822	16	230	649	13	185	522	8	115	325
	1"	-8	25.400	3.175	16	200	635	13	165	524	8	100	318

UNC | 2B

60° | HSS PM/F

–DIN 376

X · P Form C



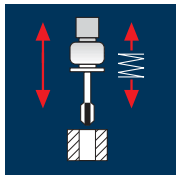
Rm < 850 | **Rm** 850-1100

UN

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1691** ø-Code **.712**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			TiCN EH1691
.712	7/16	-14	11.113	100	15	39	37	8	6.2	3	9.40	●
.713	1/2	-13	12.700	110	18	50	48	9	7.0	3	10.80	●
.714	9/16	-12	14.288	110	20	58	56	11	9.0	3	12.20	●
.715	5/8	-11	15.875	110	20	58	56	12	9.0	3	13.50	●
.716	3/4	-10	19.050	125	25	65	63	14	11.0	4	16.50	●
.717	7/8	-9	22.225	140	25	72	70	18	14.5	4	19.50	●
.718	1”	-8	25.400	160	30	72	70	18	14.5	5	22.30	●

Anwendung



Werkstoff	UNC		ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch	2	-56	2.184	0.454	10	1455	661	8	1165	529	6	875	397
	3	-48	2.515	0.529	10	1265	669	8	1015	537	6	760	402
	4	-40	2.845	0.635	10	1120	711	8	895	568	6	670	425
	5	-40	3.175	0.635	10	1005	638	8	800	508	6	600	381
	6	-32	3.505	0.794	10	910	723	8	725	576	6	545	433
	8	-32	4.166	0.794	10	765	607	8	610	484	6	460	365
	10	-24	4.826	1.058	10	660	698	8	530	561	6	395	418
	12	-24	5.486	1.058	10	580	614	8	465	492	6	350	370
	1/4	-20	6.350	1.270	10	500	635	8	400	508	6	300	381
Nichtrostender Stahl ferritisch/martensitisch	5/16	-18	7.938	1.411	10	400	564	8	320	452	6	240	339
	3/8	-16	9.525	1.588	10	335	532	8	265	421	6	200	318
Nichtrostender Stahl [Cr-Ni/1.4301]	2	-56	2.184	0.454	6	875	397	4	585	266	3	435	197
	3	-48	2.515	0.529	6	760	402	4	505	267	3	380	201
	4	-40	2.845	0.635	6	670	425	4	450	286	3	335	213
	5	-40	3.175	0.635	6	600	381	4	400	254	3	300	191
	6	-32	3.505	0.794	6	545	433	4	365	290	3	270	214
	8	-32	4.166	0.794	6	460	365	4	305	242	3	230	183
	10	-24	4.826	1.058	6	395	418	4	265	280	3	200	212
	12	-24	5.486	1.058	6	350	370	4	230	243	3	175	185
	1/4	-20	6.350	1.270	6	300	381	4	200	254	3	150	191
Nichtrostender Stahl [Cr-Ni/1.4301]	5/16	-18	7.938	1.411	6	240	339	4	160	226	3	120	169
	3/8	-16	9.525	1.588	6	200	318	4	135	214	3	100	159

Werkstoff	UNC		ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	2	-56	2.184	0.454	6	875	397	5	730	331	4	585	266
	3	-48	2.515	0.529	6	760	402	5	635	336	4	505	267
	4	-40	2.845	0.635	6	670	425	5	560	356	4	450	286
	5	-40	3.175	0.635	6	600	381	5	500	318	4	400	254
	6	-32	3.505	0.794	6	545	433	5	455	361	4	365	290
	8	-32	4.166	0.794	6	460	365	5	380	302	4	305	242
	10	-24	4.826	1.058	6	395	418	5	330	349	4	265	280
	12	-24	5.486	1.058	6	350	370	5	290	307	4	230	243
	1/4	-20	6.350	1.270	6	300	381	5	250	318	4	200	254
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	5/16	-18	7.938	1.411	6	240	339	5	200	282	4	160	226
	3/8	-16	9.525	1.588	6	200	318	5	165	262	4	135	214
Hitzebeständiger Stahl [17-4 PH]	2	-56	2.184	0.454	4	585	266	3	435	197	2	290	132
	3	-48	2.515	0.529	4	505	267	3	380	201	2	255	135
	4	-40	2.845	0.635	4	450	286	3	335	213	2	225	143
	5	-40	3.175	0.635	4	400	254	3	300	191	2	200	127
	6	-32	3.505	0.794	4	365	290	3	270	214	2	180	143
	8	-32	4.166	0.794	4	305	242	3	230	183	2	155	123
	10	-24	4.826	1.058	4	265	280	3	200	212	2	130	138
	12	-24	5.486	1.058	4	230	243	3	175	185	2	115	122
	1/4	-20	6.350	1.270	4	200	254	3	150	191	2	100	127
Hitzebeständiger Stahl [17-4 PH]	5/16	-18	7.938	1.411	4	160	226	3	120	169	2	80	113
	3/8	-16	9.525	1.588	4	135	214	3	100	159	2	65	103

Gewindebohrer

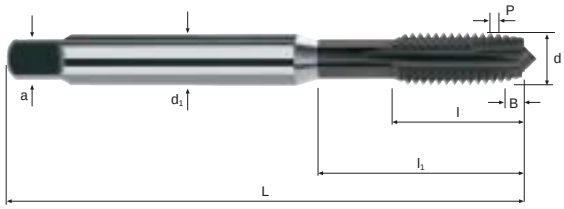
In

UNC | 2B

60° | HSS PM/F

≈DIN 371

X · P Form B



Inox Stainless

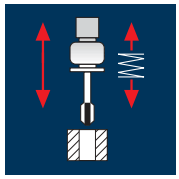
UN

												TRIBO
	Beispiel: **Bestell-Nr.**		Artikel-Nr. **ET1620**	ø-Code **.701**								**ET1620**
ø Code	**d**	**P(TPI)**	**d** (mm)	**L**	**l**	**l_1**	**d_1**	**a**				
.701	**Nr. 2**	**-56**	2.184	45	9	–	2.8	2.1	2	1.90 *		●
.702	**Nr. 3**	**-48**	2.515	50	9	–	2.8	2.1	2	2.15 *		●
.703	**Nr. 4**	**-40**	2.845	56	12	18.0	3.5	2.7	3	2.40 *		●
.704	**Nr. 5**	**-40**	3.175	56	12	18.0	3.5	2.7	3	2.70 *		●
.705	**Nr. 6**	**-32**	3.505	56	12	20.0	4.0	3.0	3	2.90 *		●
.706	**Nr. 8**	**-32**	4.166	63	13	21.0	4.5	3.4	3	3.50		●
.707	**Nr. 10**	**-24**	4.826	70	15	25.0	6.0	4.9	3	4.00 *		●
.708	**Nr. 12**	**-24**	5.486	80	17	30.0	6.0	4.9	3	4.60 *		●
.709	**1/4**	**-20**	6.350	80	17	30.0	7.0	5.5	3	5.20		●
.710	**5/16**	**-18**	7.938	90	20	35.0	8.0	6.2	3	6.70		●
.711	**3/8**	**-16**	9.525	100	22	39.0	10.0	8.0	3	8.10		●

* angegebenes Mass liegt ausserhalb der Norm

Grössere Abmessungen siehe Artikel-Nr. ET1621, Seite 315

Anwendung



Werkstoff

UNC		ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch												
7/16	-14	11.113	1.814	10	285	517	8	230	417	6	170	308
1/2	-13	12.700	1.954	10	250	489	8	200	391	6	150	293
9/16	-12	14.288	2.117	10	225	476	8	180	381	6	135	286
5/8	-11	15.875	2.309	10	200	462	8	160	369	6	120	277
3/4	-10	19.050	2.540	10	165	419	8	135	343	6	100	254
7/8	-9	22.225	2.822	10	145	409	8	115	325	6	85	240
1"	-8	25.400	3.175	10	125	397	8	100	318	6	75	238
Nichtrostender Stahl [Cr-Ni/1.4301]												
7/16	-14	11.113	1.814	6	170	308	4	115	209	3	85	154
1/2	-13	12.700	1.954	6	150	293	4	100	195	3	75	147
9/16	-12	14.288	2.117	6	135	286	4	90	191	3	65	138
5/8	-11	15.875	2.309	6	120	277	4	80	185	3	60	139
3/4	-10	19.050	2.540	6	100	254	4	65	165	3	50	127
7/8	-9	22.225	2.822	6	85	240	4	55	155	3	45	127
1"	-8	25.400	3.175	6	75	238	4	50	159	3	40	127
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]												
7/16	-14	11.113	1.814	6	170	308	5	145	263	4	115	209
1/2	-13	12.700	1.954	6	150	293	5	125	244	4	100	195
9/16	-12	14.288	2.117	6	135	286	5	110	233	4	90	191
5/8	-11	15.875	2.309	6	120	277	5	100	231	4	80	185
3/4	-10	19.050	2.540	6	100	254	5	85	216	4	65	165
7/8	-9	22.225	2.822	6	85	240	5	70	198	4	55	155
1"	-8	25.400	3.175	6	75	238	5	65	206	4	50	159
Hitzebeständiger Stahl [17-4 PH]												
7/16	-14	11.113	1.814	4	115	209	3	85	154	2	55	100
1/2	-13	12.700	1.954	4	100	195	3	75	147	2	50	98
9/16	-12	14.288	2.117	4	90	191	3	65	138	2	45	95
5/8	-11	15.875	2.309	4	80	185	3	60	139	2	40	92
3/4	-10	19.050	2.540	4	65	165	3	50	127	2	35	89
7/8	-9	22.225	2.822	4	55	155	3	45	127	2	30	85
1"	-8	25.400	3.175	4	50	159	3	40	127	2	25	79

Gewindebohrer

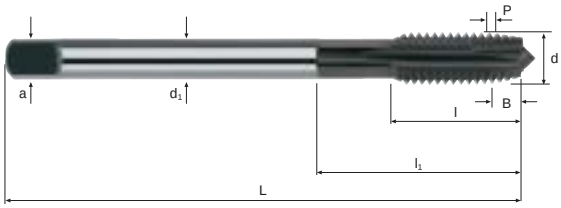
In

UNC | 2B

60° | HSS PM/F

≈DIN 376

X · P Form B

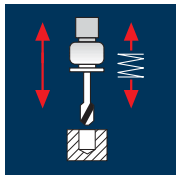


Inox Stainless

UN

Beispiel: **Bestell-Nr.**	Artikel-Nr. **ET1621**	ø-Code **.712**									TRIBO **ET1621**
ø Code	**d**	**P(TPI)**	**d** (mm)	**L**	**l**	**l_1**	**d_1**	**a**			
.712	**7/16**	**-14**	11.113	100	22	39	8	6.2	3	9.50	●
.713	**1/2**	**-13**	12.700	110	24	40	9	7.0	3	11.00	●
.714	**9/16**	**-12**	14.288	110	26	40	11	9.0	3	12.40	●
.715	**5/8**	**-11**	15.875	110	27	40	12	9.0	3	13.80	●
.716	**3/4**	**-10**	19.050	125	30	45	14	11.0	4	16.80	●
.717	**7/8**	**-9**	22.225	140	32	50	18	14.5	4	19.70	●
.718	**1 “**	**-8**	25.400	160	34	50	18	14.5	5	22.60	●

Anwendung



Werkstoff	UNC		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch	2	-56	2.184	0.454	8	1165	529	6	875	397	5	730	331
	3	-48	2.515	0.529	8	1015	537	6	760	402	5	635	336
	4	-40	2.845	0.635	8	895	568	6	670	425	5	560	356
	5	-40	3.175	0.635	8	800	508	6	600	381	5	500	318
	6	-32	3.505	0.794	8	725	576	6	545	433	5	455	361
	8	-32	4.166	0.794	8	610	484	6	460	365	5	380	302
	10	-24	4.826	1.058	8	530	561	6	395	418	5	330	349
	12	-24	5.486	1.058	8	465	492	6	350	370	5	290	307
	1/4	-20	6.350	1.270	8	400	508	6	300	381	5	250	318
Nichtrostender Stahl ferritisch/martensitisch	5/16	-18	7.938	1.411	8	320	452	6	240	339	5	200	282
	3/8	-16	9.525	1.588	8	265	421	6	200	318	5	165	262
Nichtrostender Stahl [Cr-Ni/1.4301]	2	-56	2.184	0.454	4	585	266	3	435	197	2	290	132
	3	-48	2.515	0.529	4	505	267	3	380	201	2	255	135
	4	-40	2.845	0.635	4	450	286	3	335	213	2	225	143
	5	-40	3.175	0.635	4	400	254	3	300	191	2	200	127
	6	-32	3.505	0.794	4	365	290	3	270	214	2	180	143
	8	-32	4.166	0.794	4	305	242	3	230	183	2	155	123
	10	-24	4.826	1.058	4	265	280	3	200	212	2	130	138
	12	-24	5.486	1.058	4	230	243	3	175	185	2	115	122
	1/4	-20	6.350	1.270	4	200	254	3	150	191	2	100	127
Nichtrostender Stahl [Cr-Ni/1.4301]	5/16	-18	7.938	1.411	4	160	226	3	120	169	2	80	113
	3/8	-16	9.525	1.588	4	135	214	3	100	159	2	65	103

Werkstoff	UNC		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	2	-56	2.184	0.454	5	730	331	4	585	266	3	435	197
	3	-48	2.515	0.529	5	635	336	4	505	267	3	380	201
	4	-40	2.845	0.635	5	560	356	4	450	286	3	335	213
	5	-40	3.175	0.635	5	500	318	4	400	254	3	300	191
	6	-32	3.505	0.794	5	455	361	4	365	290	3	270	214
	8	-32	4.166	0.794	5	380	302	4	305	242	3	230	183
	10	-24	4.826	1.058	5	330	349	4	265	280	3	200	212
	12	-24	5.486	1.058	5	290	307	4	230	243	3	175	185
	1/4	-20	6.350	1.270	5	250	318	4	200	254	3	150	191
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	5/16	-18	7.938	1.411	5	200	282	4	160	226	3	120	169
	3/8	-16	9.525	1.588	5	165	262	4	135	214	3	100	159
Hitzebeständiger Stahl [17-4 PH]	2	-56	2.184	0.454	3	435	197	2	290	132			
	3	-48	2.515	0.529	3	380	201	2	255	135			
	4	-40	2.845	0.635	3	335	213	2	225	143			
	5	-40	3.175	0.635	3	300	191	2	200	127			
	6	-32	3.505	0.794	3	270	214	2	180	143			
	8	-32	4.166	0.794	3	230	183	2	155	123			
	10	-24	4.826	1.058	3	200	212	2	130	138			
	12	-24	5.486	1.058	3	175	185	2	115	122			
	1/4	-20	6.350	1.270	3	150	191	2	100	127			
Hitzebeständiger Stahl [17-4 PH]	5/16	-18	7.938	1.411	3	120	169	2	80	113			
	3/8	-16	9.525	1.588	3	100	159	2	65	103			

Gewindebohrer x-tap

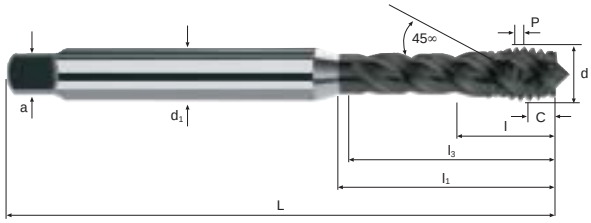
In

UNC | 2B

60° | HSS PM/F

DIN 371

X · P Form C



Inox Stainless

UN

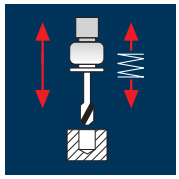
Beispiel: **Bestell-Nr.** Artikel-Nr. **ET1690** ø-Code **.701**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			TRIBO ET1690
.701	Nr. 2	-56	2.184	45	9	–	12.5	2.8	2.1	3	1.90 *	●
.702	Nr. 3	-48	2.515	50	9	–	13.0	2.8	2.1	3	2.15 *	●
.703	Nr. 4	-40	2.845	56	5	–	16.0	3.5	2.7	3	2.40 *	●
.704	Nr. 5	-40	3.175	56	5	–	16.0	3.5	2.7	3	2.70 *	●
.705	Nr. 6	-32	3.505	56	6	–	18.0	4.0	3.0	3	2.90 *	●
.706	Nr. 8	-32	4.166	63	7	–	19.0	4.5	3.4	3	3.50	●
.707	Nr. 10	-24	4.826	70	8	–	23.0	6.0	4.9	3	4.00 *	●
.708	Nr. 12	-24	5.486	80	10	–	28.0	6.0	4.9	3	4.60 *	●
.709	1/4	-20	6.350	80	10	30.0	28.0	7.0	5.5	3	5.20	●
.710	5/16	-18	7.938	90	13	35.0	33.0	8.0	6.2	3	6.70	●
.711	3/8	-16	9.525	100	15	39.0	37.0	10.0	8.0	3	8.10	●

* angegebenes Mass liegt ausserhalb der Norm

Grössere Abmessungen siehe Artikel-Nr. ET1691, Seite 319

Anwendung



Werkstoff	UNC		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch	7/16	-14	11.113	1.814	8	230	417	6	170	308	5	145	263
	1/2	-13	12.700	1.954	8	200	391	6	150	293	5	125	244
	9/16	-12	14.288	2.117	8	180	381	6	135	286	5	110	233
	5/8	-11	15.875	2.309	8	160	369	6	120	277	5	100	231
	3/4	-10	19.050	2.540	8	135	343	6	100	254	5	85	216
	7/8	-9	22.225	2.822	8	115	325	6	85	240	5	70	198
	1"	-8	25.400	3.175	8	100	318	6	75	238	5	65	206
Nichtrostender Stahl [Cr-Ni/1.4301]	7/16	-14	11.113	1.814	4	115	209	3	85	154	2	55	100
	1/2	-13	12.700	1.954	4	100	195	3	75	147	2	50	98
	9/16	-12	14.288	2.117	4	90	191	3	65	138	2	45	95
	5/8	-11	15.875	2.309	4	80	185	3	60	139	2	40	92
	3/4	-10	19.050	2.540	4	65	165	3	50	127	2	35	89
	7/8	-9	22.225	2.822	4	55	155	3	45	127	2	30	85
	1"	-8	25.400	3.175	4	50	159	3	40	127	2	25	79
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	7/16	-14	11.113	1.814	5	145	263	4	115	209	3	85	154
	1/2	-13	12.700	1.954	5	125	244	4	100	195	3	75	147
	9/16	-12	14.288	2.117	5	110	233	4	90	191	3	65	138
	5/8	-11	15.875	2.309	5	100	231	4	80	185	3	60	139
	3/4	-10	19.050	2.540	5	85	216	4	65	165	3	50	127
	7/8	-9	22.225	2.822	5	70	198	4	55	155	3	45	127
	1"	-8	25.400	3.175	5	65	206	4	50	159	3	40	127
Hitzebeständiger Stahl [17-4 PH]	7/16	-14	11.113	1.814	3	85	154	2	55	100			
	1/2	-13	12.700	1.954	3	75	147	2	50	98			
	9/16	-12	14.288	2.117	3	65	138	2	45	95			
	5/8	-11	15.875	2.309	3	60	139	2	40	92			
	3/4	-10	19.050	2.540	3	50	127	2	35	89			
	7/8	-9	22.225	2.822	3	45	127	2	30	85			
	1"	-8	25.400	3.175	3	40	127	2	25	79			

Gewindebohrer x-tap

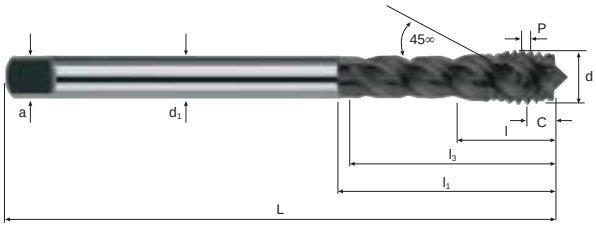
In

UNC | 2B

60° | HSS PM/F

≈DIN 376

X · P Form C



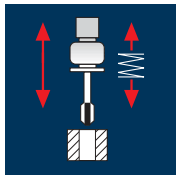
Inox Stainless

UN

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET1691** ø-Code **.712**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			TRIBO
												ET1691
.712	7/16	-14	11.113	100	15	39	37	8	6.2	3	9.50	●
.713	1/2	-13	12.700	110	18	50	48	9	7.0	3	11.00	●
.714	9/16	-12	14.288	110	20	58	56	11	9.0	3	12.40	●
.715	5/8	-11	15.875	110	20	58	56	12	9.0	3	13.80	●
.716	3/4	-10	19.050	125	25	65	63	14	11.0	4	16.80	●
.717	7/8	-9	22.225	140	25	72	70	18	14.5	4	19.70	●
.718	1”	-8	25.400	160	30	72	70	18	14.5	5	22.60	●

Anwendung



Werkstoff	UNC		ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Reinaluminium	2	-56	2.184	0.454	18	2625	1192	15	2185	992	13	1895	860
	3	-48	2.515	0.529	18	2280	1206	15	1900	1005	13	1645	870
	4	-40	2.845	0.635	18	2015	1280	15	1680	1067	13	1455	924
	5	-40	3.175	0.635	18	1805	1146	15	1505	956	13	1305	829
	6	-32	3.505	0.794	18	1635	1298	15	1360	1080	13	1180	937
	8	-32	4.166	0.794	18	1375	1092	15	1145	909	13	995	790
	10	-24	4.826	1.058	18	1185	1254	15	990	1047	13	855	905
	12	-24	5.486	1.058	18	1045	1106	15	870	920	13	755	799
	1/4	-20	6.350	1.270	18	900	1143	15	750	953	13	650	826
Reinaluminium	5/16	-18	7.938	1.411	18	720	1016	15	600	847	13	520	734
	3/8	-16	9.525	1.588	18	600	953	15	500	794	13	435	691
Al-Knetlegierung Si < 6% nicht ausgehärtet	2	-56	2.184	0.454	28	4080	1852	24	3500	1589	20	2915	1323
	3	-48	2.515	0.529	28	3545	1875	24	3040	1608	20	2530	1338
	4	-40	2.845	0.635	28	3135	1991	24	2685	1705	20	2240	1422
	5	-40	3.175	0.635	28	2805	1781	24	2405	1527	20	2005	1273
	6	-32	3.505	0.794	28	2545	2021	24	2180	1731	20	1815	1441
	8	-32	4.166	0.794	28	2140	1699	24	1835	1457	20	1530	1215
	10	-24	4.826	1.058	28	1845	1952	24	1585	1677	20	1320	1397
	12	-24	5.486	1.058	28	1625	1719	24	1395	1476	20	1160	1227
	1/4	-20	6.350	1.270	28	1405	1784	24	1205	1530	20	1005	1276
Al-Knetlegierung Si < 6% nicht ausgehärtet	5/16	-18	7.938	1.411	28	1125	1587	24	960	1355	20	800	1129
	3/8	-16	9.525	1.588	28	935	1485	24	800	1270	20	670	1064

Werkstoff	UNC		ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet	2	-56	2.184	0.454	16	2330	1058	14	2040	926	11	1605	729
	3	-48	2.515	0.529	16	2025	1071	14	1770	936	11	1390	735
	4	-40	2.845	0.635	16	1790	1137	14	1565	994	11	1230	781
	5	-40	3.175	0.635	16	1605	1019	14	1405	892	11	1105	702
	6	-32	3.505	0.794	16	1455	1155	14	1270	1008	11	1000	794
	8	-32	4.166	0.794	16	1225	973	14	1070	850	11	840	667
	10	-24	4.826	1.058	16	1055	1116	14	925	979	11	725	767
	12	-24	5.486	1.058	16	930	984	14	810	857	11	640	677
	1/4	-20	6.350	1.270	16	800	1016	14	700	889	11	550	699
Al-Knetlegierung Si < 6% ausgehärtet	5/16	-18	7.938	1.411	16	640	903	14	560	790	11	440	621
	3/8	-16	9.525	1.588	16	535	850	14	470	746	11	370	588
Reinkupfer	2	-56	2.184	0.454	17	2480	1126	14	2040	926	12	1750	795
	3	-48	2.515	0.529	17	2150	1137	14	1770	936	12	1520	804
	4	-40	2.845	0.635	17	1900	1207	14	1565	994	12	1345	854
	5	-40	3.175	0.635	17	1705	1083	14	1405	892	12	1205	765
	6	-32	3.505	0.794	17	1545	1227	14	1270	1008	12	1090	865
	8	-32	4.166	0.794	17	1300	1032	14	1070	850	12	915	727
	10	-24	4.826	1.058	17	1120	1185	14	925	979	12	790	836
	12	-24	5.486	1.058	17	985	1042	14	810	857	12	695	735
	1/4	-20	6.350	1.270	17	850	1080	14	700	889	12	600	762
Reinkupfer	5/16	-18	7.938	1.411	17	680	959	14	560	790	12	480	677
	3/8	-16	9.525	1.588	17	570	905	14	470	746	12	400	635

Gewindebohrer

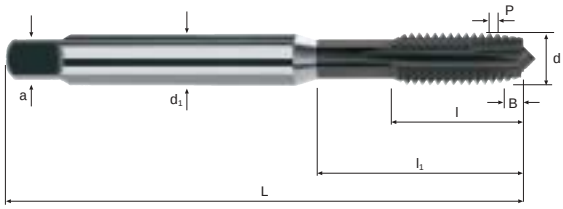
Al

UNC | 2B

60° | HSS PM/F

DIN 371

X · P
Form B



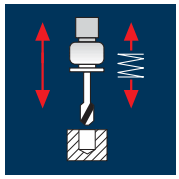
			Al Aluminium > 99%	Al Aluminium Alloy	Al Aluminium Cast		Cu Copper	Plastic Thermoplast	

UN

Beispiel: **Bestell-Nr.** Artikel-Nr. **EI1602** ø-Code **.701**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	d_1	a			INTEGRAL EI1602
.701	Nr. 2	-56	2.184	45	9	–	2.8	2.1	2	1.85	●
.702	Nr. 3	-48	2.515	50	9	–	2.8	2.1	2	2.10	●
.703	Nr. 4	-40	2.845	56	12	18.0	3.5	2.7	2	2.35	●
.704	Nr. 5	-40	3.175	56	12	18.0	3.5	2.7	2	2.65	●
.705	Nr. 6	-32	3.505	56	12	20.0	4.0	3.0	2	2.85	●
.706	Nr. 8	-32	4.166	63	13	21.0	4.5	3.4	2	3.50	●
.707	Nr. 10	-24	4.826	70	15	25.0	6.0	4.9	2	3.90	●
.708	Nr. 12	-24	5.486	80	17	30.0	6.0	4.9	2	4.50	●
.709	1/4	-20	6.350	80	17	30.0	7.0	5.5	2	5.10	●
.710	5/16	-18	7.938	90	20	35.0	8.0	6.2	2	6.60	●
.711	3/8	-16	9.525	100	22	39.0	10.0	8.0	2	8.00	●

Anwendung



Werkstoff	UNC		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Reinaluminium	2	-56	2.184	0.454	12	1750	795	10	1455	661	8	1165	529
	3	-48	2.515	0.529	12	1520	804	10	1265	669	8	1015	537
	4	-40	2.845	0.635	12	1345	854	10	1120	711	8	895	568
	5	-40	3.175	0.635	12	1205	765	10	1005	638	8	800	508
	6	-32	3.505	0.794	12	1090	865	10	910	723	8	725	576
	8	-32	4.166	0.794	12	915	727	10	765	607	8	610	484
	10	-24	4.826	1.058	12	790	836	10	660	698	8	530	561
	12	-24	5.486	1.058	12	695	735	10	580	614	8	465	492
	1/4	-20	6.350	1.270	12	600	762	10	500	635	8	400	508
Reinaluminium	5/16	-18	7.938	1.411	12	480	677	10	400	564	8	320	452
	3/8	-16	9.525	1.588	12	400	635	10	335	532	8	265	421
Al-Knetlegierung Si < 6% nicht ausgehärtet	2	-56	2.184	0.454	12	1750	795	10	1455	661	8	1165	529
	3	-48	2.515	0.529	12	1520	804	10	1265	669	8	1015	537
	4	-40	2.845	0.635	12	1345	854	10	1120	711	8	895	568
	5	-40	3.175	0.635	12	1205	765	10	1005	638	8	800	508
	6	-32	3.505	0.794	12	1090	865	10	910	723	8	725	576
	8	-32	4.166	0.794	12	915	727	10	765	607	8	610	484
	10	-24	4.826	1.058	12	790	836	10	660	698	8	530	561
	12	-24	5.486	1.058	12	695	735	10	580	614	8	465	492
	1/4	-20	6.350	1.270	12	600	762	10	500	635	8	400	508
Al-Knetlegierung Si < 6% nicht ausgehärtet	5/16	-18	7.938	1.411	12	480	677	10	400	564	8	320	452
	3/8	-16	9.525	1.588	12	400	635	10	335	532	8	265	421

Werkstoff	UNC		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet	2	-56	2.184	0.454	10	1455	661	9	1310	595	8	1165	529
	3	-48	2.515	0.529	10	1265	669	9	1140	603	8	1015	537
	4	-40	2.845	0.635	10	1120	711	9	1005	638	8	895	568
	5	-40	3.175	0.635	10	1005	638	9	900	572	8	800	508
	6	-32	3.505	0.794	10	910	723	9	815	647	8	725	576
	8	-32	4.166	0.794	10	765	607	9	690	548	8	610	484
	10	-24	4.826	1.058	10	660	698	9	595	630	8	530	561
	12	-24	5.486	1.058	10	580	614	9	520	550	8	465	492
	1/4	-20	6.350	1.270	10	500	635	9	450	572	8	400	508
Al-Knetlegierung Si < 6% ausgehärtet	5/16	-18	7.938	1.411	10	400	564	9	360	508	8	320	452
	3/8	-16	9.525	1.588	10	335	532	9	300	476	8	265	421
Reinkupfer	2	-56	2.184	0.454	16	2330	1058	14	2040	926	13	1895	860
	3	-48	2.515	0.529	16	2025	1071	14	1770	936	13	1645	870
	4	-40	2.845	0.635	16	1790	1137	14	1565	994	13	1455	924
	5	-40	3.175	0.635	16	1605	1019	14	1405	892	13	1305	829
	6	-32	3.505	0.794	16	1455	1155	14	1270	1008	13	1180	937
	8	-32	4.166	0.794	16	1225	973	14	1070	850	13	995	790
	10	-24	4.826	1.058	16	1055	1116	14	925	979	13	855	905
	12	-24	5.486	1.058	16	930	984	14	810	857	13	755	799
	1/4	-20	6.350	1.270	16	800	1016	14	700	889	13	650	826
Reinkupfer	5/16	-18	7.938	1.411	16	640	903	14	560	790	13	520	734
	3/8	-16	9.525	1.588	16	535	850	14	470	746	13	435	691

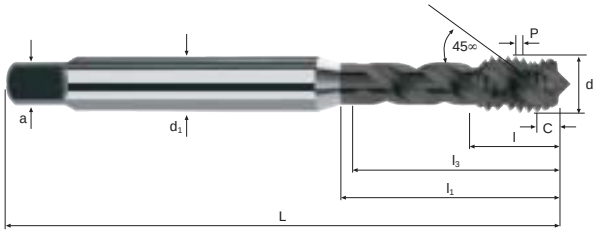
Al

UNC | 2B

60° | HSS PM/F

DIN 371

X · P | Form C



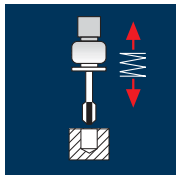
Al Aluminium > 99% | **Al** Aluminium Alloy | **Al** Aluminium Cast | **Cu** Copper | **Plastic** Thermoplast

UN

Beispiel: **Bestell-Nr.** Artikel-Nr. **EI1652** ø-Code **.701**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			INTEGRAL
												EI1652
.701	Nr. 2	-56	2.184	45	9	–	12.5	2.8	2.1	3	1.85	●
.702	Nr. 3	-48	2.515	50	9	–	13.0	2.8	2.1	3	2.10	●
.703	Nr. 4	-40	2.845	56	5	18.0	16.0	3.5	2.7	3	2.35	●
.704	Nr. 5	-40	3.175	56	5	18.0	16.0	3.5	2.7	3	2.65	●
.705	Nr. 6	-32	3.505	56	6	20.0	18.0	4.0	3.0	3	2.85	●
.706	Nr. 8	-32	4.166	63	7	21.0	19.0	4.5	3.4	3	3.50	●
.707	Nr. 10	-24	4.826	70	8	25.0	23.0	6.0	4.9	3	3.90	●
.708	Nr. 12	-24	5.486	80	10	30.0	28.0	6.0	4.9	3	4.50	●
.709	1/4	-20	6.350	80	10	30.0	28.0	7.0	5.5	3	5.10	●
.710	5/16	-18	7.938	90	13	35.0	33.0	8.0	6.2	3	6.60	●
.711	3/8	-16	9.525	100	15	39.0	37.0	10.0	8.0	3	8.00	●

Anwendung



Werkstoff

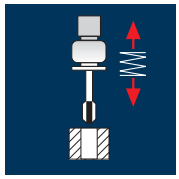
Nickelbasislegierungen nicht ausgehärtet

UNJC		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]
4	-40	2.845	0.635	2	225	143	1.5	170	108
6	-32	3.505	0.794	2	180	143	1.5	135	107
8	-32	4.166	0.794	2	155	123	1.5	115	91
10	-24	4.826	1.058	2	130	138	1.5	100	106
1/4	-20	4.350	1.270	2	145	184	1.5	110	140
5/16	-18	7.938	1.411	2	80	113	1.5	60	85
3/8	-16	9.525	1.588	2	65	103	1.5	50	79

Nickelbasislegierungen ausgehärtet

UNJC		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]
4	-40	2.845	0.635	1.5	170	108	1.5	170	108
6	-32	3.505	0.794	1.5	135	107	1.5	135	107
8	-32	4.166	0.794	1.5	115	91	1.5	115	91
10	-24	4.826	1.058	1.5	100	106	1.5	100	106
1/4	-20	4.350	1.270	1.5	110	140	1.5	110	140
5/16	-18	7.938	1.411	1.5	60	85	1.5	60	85
3/8	-16	9.525	1.588	1.5	50	79	1.5	50	79

Anwendung



Werkstoff

Nickelbasislegierungen nicht ausgehärtet

UNJC		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]
4	-40	2.845	0.635	2	225	143	1.5	170	108
6	-32	3.505	0.794	2	180	143	1.5	135	107
8	-32	4.166	0.794	2	155	123	1.5	115	91
10	-24	4.826	1.058	2	130	138	1.5	100	106
1/4	-20	4.350	1.270	2	145	184	1.5	110	140
5/16	-18	7.938	1.411	2	80	113	1.5	60	85
3/8	-16	9.525	1.588	2	65	103	1.5	50	79

Nickelbasislegierungen ausgehärtet

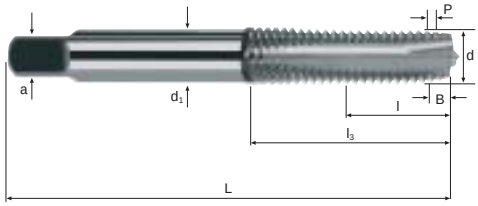
UNJC		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]
4	-40	2.845	0.635	1.5	170	108	1.5	170	108
6	-32	3.505	0.794	1.5	135	107	1.5	135	107
8	-32	4.166	0.794	1.5	115	91	1.5	115	91
10	-24	4.826	1.058	1.5	100	106	1.5	100	106
1/4	-20	4.350	1.270	1.5	110	140	1.5	110	140
5/16	-18	7.938	1.411	1.5	60	85	1.5	60	85
3/8	-16	9.525	1.588	1.5	50	79	1.5	50	79

Gewindebohrer

Ni

UNJC | 3B

60° | HSS PM/F



Nickel-Alloys

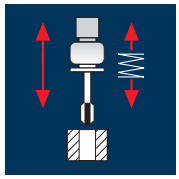
UN

Beispiel: **Bestell-Nr.** Artikel-Nr. **E1699** ø-Code **.703**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			E1699	
.703	Nr. 4	-40	2.845	48	11	–	16	3.5	2.7	3	2.40 *	●	
.705	Nr. 6	-32	3.505	50	12	–	18	4.0	3.0	3	2.90	●	
.706	Nr. 8	-32	4.166	53	13	–	19	4.5	3.4	3	3.60 *	●	
.707	Nr. 10	-24	4.826	58	15	–	22	6.0	4.9	3	4.00	●	
.709	1/4	-20	6.350	66	17	–	28	7.0	5.5	3	5.40 *	●	
.710	5/16	-18	7.938	72	20	–	34	8.0	6.2	3	6.80	●	
.711	3/8	-16	9.525	80	22	–	37	10.0	8.0	3	8.20	●	

* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff	UNF		ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	6	-40	3.505	0.635	25	2270	1441	20	1815	1153	15	1360	864
	8	-36	4.166	0.706	25	1910	1348	20	1530	1080	15	1145	808
	10	-32	4.826	0.794	25	1650	1310	20	1320	1048	15	990	786
	12	-28	5.486	0.907	25	1450	1315	20	1160	1052	15	870	789
	1/4	-28	6.350	0.907	25	1255	1138	20	1005	912	15	750	680
	5/16	-24	7.938	1.058	25	1005	1064	20	800	847	15	600	635
	3/8	-24	9.525	1.058	25	835	883	20	670	709	15	500	529
	7/16	-20	11.113	1.270	25	715	908	20	575	730	15	430	546
	1/2	-20	12.700	1.270	25	625	794	20	500	635	15	375	476
Stahl 500 - 850 N/mm²	9/16	-18	14.288	1.411	25	555	783	20	445	628	15	335	473
	5/8	-18	15.875	1.411	25	500	706	20	400	564	15	300	423
	3/4	-16	19.050	1.588	25	420	667	20	335	532	15	250	397
	7/8	-14	22.225	1.814	25	360	653	20	285	517	15	215	390
	1"	-12	25.400	2.117	25	315	667	20	250	529	15	190	402
Stahl 850 - 1100 N/mm²	6	-40	3.505	0.635	20	1815	1153	15	1360	864	12	1090	692
	8	-36	4.166	0.706	20	1530	1080	15	1145	808	12	915	646
	10	-32	4.826	0.794	20	1320	1048	15	990	786	12	790	627
	12	-28	5.486	0.907	20	1160	1052	15	870	789	12	695	630
	1/4	-28	6.350	0.907	20	1005	912	15	750	680	12	600	544
	5/16	-24	7.938	1.058	20	800	847	15	600	635	12	480	508
	3/8	-24	9.525	1.058	20	670	709	15	500	529	12	400	423
	7/16	-20	11.113	1.270	20	575	730	15	430	546	12	345	438
	1/2	-20	12.700	1.270	20	500	635	15	375	476	12	300	381
Stahl 850 - 1100 N/mm²	9/16	-18	14.288	1.411	20	445	628	15	335	473	12	265	374
	5/8	-18	15.875	1.411	20	400	564	15	300	423	12	240	339
	3/4	-16	19.050	1.588	20	335	532	15	250	397	12	200	318
	7/8	-14	22.225	1.814	20	285	517	15	215	390	12	170	308
	1"	-12	25.400	2.117	20	250	529	15	190	402	12	150	318

Werkstoff	UNF		ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 1100 - 1300 N/mm²	6	-40	3.505	0.635	7	635	403	4	365	232
	8	-36	4.166	0.706	7	535	377	4	305	215
	10	-32	4.826	0.794	7	460	365	4	265	210
	12	-28	5.486	0.907	7	405	367	4	230	209
	1/4	-28	6.350	0.907	7	350	317	4	200	181
	5/16	-24	7.938	1.058	7	280	296	4	160	169
	3/8	-24	9.525	1.058	7	235	249	4	135	143
	7/16	-20	11.113	1.270	7	200	254	4	115	146
	1/2	-20	12.700	1.270	7	175	222	4	100	127
Stahl 1100 - 1300 N/mm²	9/16	-18	14.288	1.411	7	155	219	4	90	127
	5/8	-18	15.875	1.411	7	140	198	4	80	113
	3/4	-16	19.050	1.588	7	115	183	4	65	103
	7/8	-14	22.225	1.814	7	100	181	4	55	100
	1"	-12	25.400	2.117	7	90	191	4	50	106

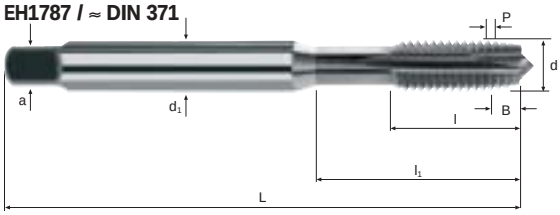
UNF | 2B

60° | HSS PM/F

DIN 371/374

X · P Form B

EH1787 / ≈ DIN 371



EH1788 / ≈ DIN 374

Rm < 850 | **Rm 850-1100** | Rm 1100-1300

UN

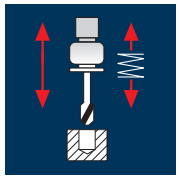
Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1787** ø-Code **.756**

ø Code	d	P(TPI)	d (mm)	L	l	l1	d1	a			TiCN EH1787
.756	Nr. 6	-40	3.505	56	12	20	4.0	3.0	3	2.95	●
.757	Nr. 8	-36	4.166	63	13	21	4.5	3.4	3	3.50	●
.758	Nr. 10	-32	4.826	70	15	25	6.0	4.9	3	4.10	●
.759	Nr. 12	-28	5.486	80	17	30	6.0	4.9	3	4.60	●
.760	1/4	-28	6.350	80	17	30	7.0	5.5	3	5.50	●
.761	5/16	-24	7.938	90	20	35	8.0	6.2	3	6.90	●
.762	3/8	-24	9.525	100	22	39	10.0	8.0	3	8.50	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH1788** ø-Code **.763**

ø Code	d	P(TPI)	d (mm)	L	l	l1	d1	a			TiCN EH1788
.763	7/16	-20	11.113	100	22	39	8.0	6.2	3	9.90	●
.764	1/2	-20	12.700	100	22	39	9.0	7.0	3	11.50	●
.765	9/16	-18	14.288	100	22	39	11.0	9.0	3	12.90	●
.766	5/8	-18	15.875	100	22	39	12.0	9.0	3	14.50	●
.767	3/4	-16	19.050	110	25	45	14.0	11.0	4	17.50	●
.768	7/8	-14	22.225	125	26	50	18.0	14.5	4	20.40	●
.769	1“	-12	25.400	140	32	52	18.0	14.5	5	23.30	●

Anwendung



Werkstoff	UNF		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl 500 - 850 N/mm²	6	-40	3.505	0.635	32	2905	1845	28	2545	1616	22	2000	1270
	8	-36	4.166	0.706	32	2445	1725	28	2140	1510	22	1680	1185
	10	-32	4.826	0.794	32	2110	1675	28	1845	1465	22	1450	1151
	12	-28	5.486	0.907	32	1855	1683	28	1625	1474	22	1275	1157
	1/4	-28	6.350	0.907	32	1605	1456	28	1405	1274	22	1105	1002
	5/16	-24	7.938	1.058	32	1285	1360	28	1125	1191	22	880	931
	3/8	-24	9.525	1.058	32	1070	1132	28	935	989	22	735	778
	7/16	-20	11.113	1.270	32	915	1162	28	800	1016	22	630	800
	1/2	-20	12.700	1.270	32	800	1016	28	700	889	22	550	699
Stahl 500 - 850 N/mm²	9/16	-18	14.288	1.411	32	715	1009	28	625	882	22	490	691
	5/8	-18	15.875	1.411	32	640	903	28	560	790	22	440	621
	3/4	-16	19.050	1.588	32	535	849	28	470	746	22	370	587
	7/8	-14	22.225	1.814	32	460	835	28	400	726	22	315	572
	1"	-12	25.400	2.117	32	400	847	28	350	741	22	275	582
Stahl 850 - 1100 N/mm²	6	-40	3.505	0.635	20	1815	1153	16	1455	924	10	910	578
	8	-36	4.166	0.706	20	1530	1080	16	1225	864	10	765	540
	10	-32	4.826	0.794	20	1320	1048	16	1055	837	10	660	524
	12	-28	5.486	0.907	20	1160	1052	16	930	844	10	580	526
	1/4	-28	6.350	0.907	20	1005	912	16	800	726	10	500	454
	5/16	-24	7.938	1.058	20	800	847	16	640	677	10	400	423
	3/8	-24	9.525	1.058	20	670	709	16	535	566	10	335	354
	7/16	-20	11.113	1.270	20	575	730	16	460	584	10	285	362
	1/2	-20	12.700	1.270	20	500	635	16	400	508	10	250	318
Stahl 850 - 1100 N/mm²	9/16	-18	14.288	1.411	20	445	628	16	355	501	10	225	317
	5/8	-18	15.875	1.411	20	400	564	16	320	452	10	200	282
	3/4	-16	19.050	1.588	20	335	532	16	265	421	10	165	262
	7/8	-14	22.225	1.814	20	285	517	16	230	417	10	145	263
	1"	-12	25.400	2.117	20	250	529	16	200	423	10	125	265

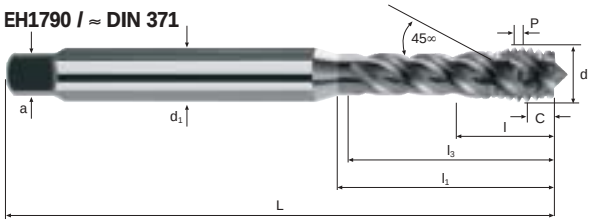
UNF | 2B

60° | HSS PM/F

≈DIN 371/374

X · P Form C

EH1790 / ≈ DIN 371



EH1791 / ≈ DIN 374

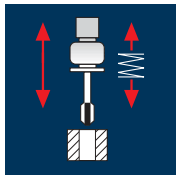
Rm < 850 | **Rm 850-1100**

UN

	Beispiel: Bestell-Nr.	Artikel-Nr. EH1790	ø-Code .756									TiCN EH1790
ø Code	d	P(TPI)	d (mm)	L	l	l1	l3	d1	a			
.756	Nr. 6	-40	3.505	56	6	20	18	4.0	3.0	3	2.95	●
.757	Nr. 8	-36	4.166	63	7	21	19	4.5	3.4	3	3.50	●
.758	Nr. 10	-32	4.826	70	8	25	23	6.0	4.9	3	4.10	●
.759	Nr. 12	-28	5.486	80	10	30	28	6.0	4.9	3	4.60	●
.760	1/4	-28	6.350	80	10	30	28	7.0	5.5	3	5.50	●
.761	5/16	-24	7.938	90	13	35	33	8.0	6.2	3	6.90	●
.762	3/8	-24	9.525	100	15	39	37	10.0	8.0	3	8.50	●

	Beispiel: Bestell-Nr.	Artikel-Nr. EH1791	ø-Code .763									TiCN EH1791
ø Code	d	P(TPI)	d (mm)	L	l	l1	l3	d1	a			
.763	7/16	-20	11.113	100	15	39	37	8.0	6.2	4	9.90	●
.764	1/2	-20	12.700	100	15	39	37	9.0	7.0	4	11.50	●
.765	9/16	-18	14.288	100	15	39	37	11.0	9.0	4	12.90	●
.766	5/8	-18	15.875	100	15	39	37	12.0	9.0	4	14.50	●
.767	3/4	-16	19.050	110	17	50	48	14.0	11.0	4	17.50	●
.768	7/8	-14	22.225	125	18	65	63	18.0	14.5	5	20.40	●
.769	1“	-12	25.400	140	24	72	70	18.0	14.5	5	23.30	●

Anwendung



Werkstoff

UNF		ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch												
6	-40	3.505	0.635	12	1090	692	10	910	578	8	725	460
8	-36	4.166	0.706	12	915	646	10	765	540	8	610	430
10	-32	4.826	0.794	12	790	627	10	660	524	8	530	421
12	-28	5.486	0.907	12	695	630	10	580	526	8	465	422
1/4	-28	6.350	0.907	12	600	544	10	500	454	8	400	363
5/16	-24	7.938	1.058	12	480	508	10	400	423	8	320	339
3/8	-24	9.525	1.058	12	400	423	10	335	354	8	265	280
7/16	-20	11.113	1.270	12	345	438	10	285	362	8	230	292
1/2	-20	12.700	1.270	12	300	381	10	250	318	8	200	254
Nichtrostender Stahl ferritisch/martensitisch												
9/16	-18	14.288	1.411	12	265	374	10	225	317	8	180	254
5/8	-18	15.875	1.411	12	240	339	10	200	282	8	160	226
3/4	-16	19.050	1.588	12	200	318	10	165	262	8	135	214
7/8	-14	22.225	1.814	12	170	308	10	145	263	8	115	209
1"	-12	25.400	2.117	12	150	318	10	125	265	8	100	212
Nichtrostender Stahl [Cr-Ni/1.4301]												
6	-40	3.505	0.635	7	635	403	5	455	289	4	365	232
8	-36	4.166	0.706	7	535	377	5	380	268	4	305	215
10	-32	4.826	0.794	7	460	365	5	330	262	4	265	210
12	-28	5.486	0.907	7	405	367	5	290	263	4	230	209
1/4	-28	6.350	0.907	7	350	317	5	250	227	4	200	181
5/16	-24	7.938	1.058	7	280	296	5	200	212	4	160	169
3/8	-24	9.525	1.058	7	235	249	5	165	175	4	135	143
7/16	-20	11.113	1.270	7	200	254	5	145	184	4	115	146
1/2	-20	12.700	1.270	7	175	222	5	125	159	4	100	127
Nichtrostender Stahl [Cr-Ni/1.4301]												
9/16	-18	14.288	1.411	7	155	219	5	110	155	4	90	127
5/8	-18	15.875	1.411	7	140	198	5	100	141	4	80	113
3/4	-16	19.050	1.588	7	115	183	5	85	135	4	65	103
7/8	-14	22.225	1.814	7	100	181	5	70	127	4	55	100
1"	-12	25.400	2.117	7	90	191	5	65	138	4	50	106

Werkstoff

UNF		ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]												
6	-40	3.505	0.635	8	725	460	6	545	346	5	455	289
8	-36	4.166	0.706	8	610	430	6	460	325	5	380	268
10	-32	4.826	0.794	8	530	421	6	395	314	5	330	262
12	-28	5.486	0.907	8	465	422	6	350	317	5	290	263
1/4	-28	6.350	0.907	8	400	363	6	300	272	5	250	227
5/16	-24	7.938	1.058	8	320	339	6	240	254	5	200	212
3/8	-24	9.525	1.058	8	265	280	6	200	212	5	165	175
7/16	-20	11.113	1.270	8	230	292	6	170	216	5	145	184
1/2	-20	12.700	1.270	8	200	254	6	150	191	5	125	159
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]												
9/16	-18	14.288	1.411	8	180	254	6	135	190	5	110	155
5/8	-18	15.875	1.411	8	160	226	6	120	169	5	100	141
3/4	-16	19.050	1.588	8	135	214	6	100	159	5	85	135
7/8	-14	22.225	1.814	8	115	209	6	85	154	5	70	127
1"	-12	25.400	2.117	8	100	212	6	75	159	5	65	138
Hitzebeständiger Stahl [17-4 PH]												
6	-40	3.505	0.635	5	455	289	4	365	232	3	270	171
8	-36	4.166	0.706	5	380	268	4	305	215	3	230	162
10	-32	4.826	0.794	5	330	262	4	265	210	3	200	159
12	-28	5.486	0.907	5	290	263	4	230	209	3	175	159
1/4	-28	6.350	0.907	5	250	227	4	200	181	3	150	136
5/16	-24	7.938	1.058	5	200	212	4	160	169	3	120	127
3/8	-24	9.525	1.058	5	165	175	4	135	143	3	100	106
7/16	-20	11.113	1.270	5	145	184	4	115	146	3	85	108
1/2	-20	12.700	1.270	5	125	159	4	100	127	3	75	95
Hitzebeständiger Stahl [17-4 PH]												
9/16	-18	14.288	1.411	5	110	155	4	90	127	3	65	92
5/8	-18	15.875	1.411	5	100	141	4	80	113	3	60	85
3/4	-16	19.050	1.588	5	85	135	4	65	103	3	50	79
7/8	-14	22.225	1.814	5	70	127	4	55	100	3	45	82
1"	-12	25.400	2.117	5	65	138	4	50	106	3	40	85

Gewindebohrer

In

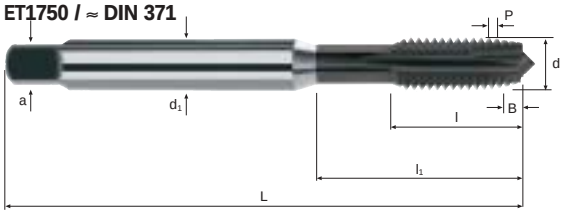
UNF | 2B

60° | HSS PM/F

–DIN 371/374

X · P Form B

ET1750 / ≈ DIN 371



ET1751 / ≈ DIN 374

Inox Stainless

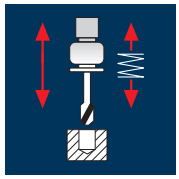
UN

	Beispiel: **Bestell-Nr.**	Artikel-Nr. **ET1750**	ø-Code **.756**									TRIBO **ET1750**
ø Code	d	P(TPI)	d (mm)	L	l	l_1	d_1	a				
.756	Nr. 6	-40	3.505	56	12	20	4.0	3.0	3	3.00		●
.757	Nr. 8	-36	4.166	63	13	21	4.5	3.4	3	3.60		●
.758	Nr. 10	-32	4.826	70	15	25	6.0	4.9	3	4.20 *		●
.759	Nr. 12	-28	5.486	80	17	30	6.0	4.9	3	4.70		●
.760	1/4	-28	6.350	80	17	30	7.0	5.5	3	5.60 *		●
.761	5/16	-24	7.938	90	20	35	8.0	6.2	3	7.00		●
.762	3/8	-24	9.525	100	22	39	10.0	8.0	3	8.60		●

	Beispiel: **Bestell-Nr.**	Artikel-Nr. **ET1751**	ø-Code **.763**									TRIBO **ET1751**
ø Code	d	P(TPI)	d (mm)	L	l	l_1	d_1	a				
.763	7/16	-20	11.113	100	22	39	8.0	6.2	3	10.00		●
.764	1/2	-20	12.700	100	22	39	9.0	7.0	3	11.60		●
.765	9/16	-18	14.288	100	22	39	11.0	9.0	3	13.00		●
.766	5/8	-18	15.875	100	22	39	12.0	9.0	3	14.70 *		●
.767	3/4	-16	19.050	110	25	45	14.0	11.0	4	17.70 *		●
.768	7/8	-14	22.225	125	26	50	18.0	14.5	4	20.70 *		●
.769	1“	-12	25.400	140	32	52	18.0	14.5	4	23.50		●

* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff	UNF		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch	6	-40	3.505	0.635	10	910	578	8	725	460	6	545	346
	8	-36	4.166	0.706	10	765	540	8	610	430	6	460	325
	10	-32	4.826	0.794	10	660	524	8	530	421	6	395	314
	12	-28	5.486	0.907	10	580	526	8	465	422	6	350	317
	1/4	-28	6.350	0.907	10	500	454	8	400	363	6	300	272
	5/16	-24	7.938	1.058	10	400	423	8	320	339	6	240	254
	3/8	-24	9.525	1.058	10	335	354	8	265	280	6	200	212
	7/16	-20	11.113	1.270	10	285	362	8	230	292	6	170	216
	1/2	-20	12.700	1.270	10	250	318	8	200	254	6	150	191
Nichtrostender Stahl ferritisch/martensitisch	9/16	-18	14.288	1.411	10	225	317	8	180	254	6	135	190
	5/8	-18	15.875	1.411	10	200	282	8	160	226	6	120	169
	3/4	-16	19.050	1.588	10	165	262	8	135	214	6	100	159
	7/8	-14	22.225	1.814	10	145	263	8	115	209	6	85	154
	1"	-12	25.400	2.117	10	125	265	8	100	212	6	75	159
Nichtrostender Stahl [Cr-Ni/1.4301]	6	-40	3.505	0.635	5	455	289	4	365	232	3	270	171
	8	-36	4.166	0.706	5	380	268	4	305	215	3	230	162
	10	-32	4.826	0.794	5	330	262	4	265	210	3	200	159
	12	-28	5.486	0.907	5	290	263	4	230	209	3	175	159
	1/4	-28	6.350	0.907	5	250	227	4	200	181	3	150	136
	5/16	-24	7.938	1.058	5	200	212	4	160	169	3	120	127
	3/8	-24	9.525	1.058	5	165	175	4	135	143	3	100	106
	7/16	-20	11.113	1.270	5	145	184	4	115	146	3	85	108
	1/2	-20	12.700	1.270	5	125	159	4	100	127	3	75	95
Nichtrostender Stahl [Cr-Ni/1.4301]	9/16	-18	14.288	1.411	5	110	155	4	90	127	3	65	92
	5/8	-18	15.875	1.411	5	100	141	4	80	113	3	60	85
	3/4	-16	19.050	1.588	5	85	135	4	65	103	3	50	79
	7/8	-14	22.225	1.814	5	70	127	4	55	100	3	45	82
	1"	-12	25.400	2.117	5	65	138	4	50	106	3	40	85

Werkstoff	UNF		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	6	-40	3.505	0.635	6	545	346	5	455	289	4	365	232
	8	-36	4.166	0.706	6	460	325	5	380	268	4	305	215
	10	-32	4.826	0.794	6	395	314	5	330	262	4	265	210
	12	-28	5.486	0.907	6	350	317	5	290	263	4	230	209
	1/4	-28	6.350	0.907	6	300	272	5	250	227	4	200	181
	5/16	-24	7.938	1.058	6	240	254	5	200	212	4	160	169
	3/8	-24	9.525	1.058	6	200	212	5	165	175	4	135	143
	7/16	-20	11.113	1.270	6	170	216	5	145	184	4	115	146
	1/2	-20	12.700	1.270	6	150	191	5	125	159	4	100	127
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	9/16	-18	14.288	1.411	6	135	190	5	110	155	4	90	127
	5/8	-18	15.875	1.411	6	120	169	5	100	141	4	80	113
	3/4	-16	19.050	1.588	6	100	159	5	85	135	4	65	103
	7/8	-14	22.225	1.814	6	85	154	5	70	127	4	55	100
	1"	-12	25.400	2.117	6	75	159	5	65	138	4	50	106
Hitzebeständiger Stahl [17-4 PH]	6	-40	3.505	0.635	4	365	232	3	270	171			
	8	-36	4.166	0.706	4	305	215	3	230	162			
	10	-32	4.826	0.794	4	265	210	3	200	159			
	12	-28	5.486	0.907	4	230	209	3	175	159			
	1/4	-28	6.350	0.907	4	200	181	3	150	136			
	5/16	-24	7.938	1.058	4	160	169	3	120	127			
	3/8	-24	9.525	1.058	4	135	143	3	100	106			
	7/16	-20	11.113	1.270	4	115	146	3	85	108			
	1/2	-20	12.700	1.270	4	100	127	3	75	95			
Hitzebeständiger Stahl [17-4 PH]	9/16	-18	14.288	1.411	4	90	127	3	65	92			
	5/8	-18	15.875	1.411	4	80	113	3	60	85			
	3/4	-16	19.050	1.588	4	65	103	3	50	79			
	7/8	-14	22.225	1.814	4	55	100	3	45	82			
	1"	-12	25.400	2.117	4	50	106	3	40	85			

Gewindebohrer x-tap

In

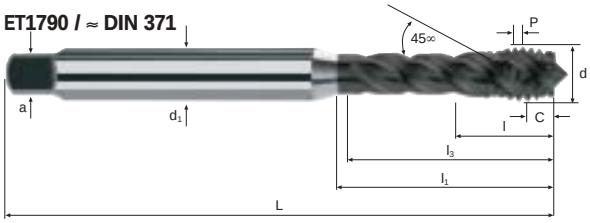
UNF | 2B

60° | HSS PM/F

≈DIN 371/374

X · P Form C

ET1790 / ≈ DIN 371



ET1791 / ≈ DIN 374

Inox Stainless

UN

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET1790** ø-Code **.756**

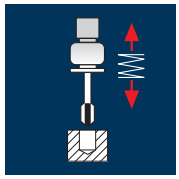
ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			TRIBO ET1790
.756	Nr. 6	-40	3.505	56	6	20	18	4.0	3.0	3	3.00	●
.757	Nr. 8	-36	4.166	63	7	21	19	4.5	3.4	3	3.60	●
.758	Nr. 10	-32	4.826	70	8	25	23	6.0	4.9	3	4.20 *	●
.759	Nr. 12	-28	5.486	80	10	30	28	6.0	4.9	3	4.70	●
.760	1/4	-28	6.350	80	10	30	28	7.0	5.5	3	5.60 *	●
.761	5/16	-24	7.938	90	13	35	33	8.0	6.2	3	7.00	●
.762	3/8	-24	9.525	100	15	39	37	10.0	8.0	3	8.60	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **ET1791** ø-Code **.763**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			TRIBO ET1791
.763	7/16	-20	11.113	100	15	39	37	8.0	6.2	4	10.00	●
.764	1/2	-20	12.700	100	15	39	37	9.0	7.0	4	11.60	●
.765	9/16	-18	14.288	100	15	39	37	11.0	9.0	4	13.00	●
.766	5/8	-18	15.875	100	15	39	37	12.0	9.0	4	14.70 *	●
.767	3/4	-16	19.050	110	17	50	48	14.0	11.0	4	17.70 *	●
.768	7/8	-14	22.225	125	18	65	63	18.0	14.5	5	20.70 *	●
.769	1“	-12	25.400	140	24	72	70	18.0	14.5	5	23.50	●

* angegebenes Mass liegt ausserhalb der Norm

Anwendung



Werkstoff

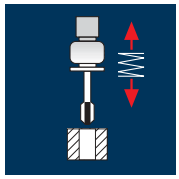
Nickelbasislegierungen nicht ausgehärtet

UNJF		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]
6	-40	3.505	0.635	3	270	171	2	180	114
8	-36	4.166	0.706	3	230	162	2	155	109
10	-32	4.826	0.794	3	200	159	2	130	103
1/4	-28	6.350	0.907	3	150	136	2	100	91
5/16	-24	7.938	1.058	3	120	127	2	80	85
3/8	-24	9.525	1.058	3	100	106	2	65	69

Nickelbasislegierungen ausgehärtet

UNJF		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]
6	-40	3.505	0.635	2	180	114	2	180	114
8	-36	4.166	0.706	2	155	109	2	155	109
10	-32	4.826	0.794	2	130	103	2	130	103
1/4	-28	6.350	0.907	2	100	91	2	100	91
5/16	-24	7.938	1.058	2	80	85	2	80	85
3/8	-24	9.525	1.058	2	65	69	2	65	69

Anwendung



Werkstoff

Nickelbasislegierungen nicht ausgehärtet

UNJF		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]
6	-40	3.505	0.635	3	270	171	2	180	114
8	-36	4.166	0.706	3	230	162	2	155	109
10	-32	4.826	0.794	3	200	159	2	130	103
1/4	-28	6.350	0.907	3	150	136	2	100	91
5/16	-24	7.938	1.058	3	120	127	2	80	85
3/8	-24	9.525	1.058	3	100	106	2	65	69

Nickelbasislegierungen ausgehärtet

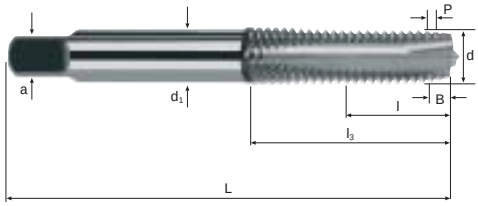
UNJF		ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]
6	-40	3.505	0.635	2	180	114	2	180	114
8	-36	4.166	0.706	2	155	109	2	155	109
10	-32	4.826	0.794	2	130	103	2	130	103
1/4	-28	6.350	0.907	2	100	91	2	100	91
5/16	-24	7.938	1.058	2	80	85	2	80	85
3/8	-24	9.525	1.058	2	65	69	2	65	69

Gewindebohrer

Ni

UNJF | 3B

60° | HSS PM/F



Nickel-Alloys

UN

Beispiel: **Bestell-Nr.** Artikel-Nr. **E1799** ø-Code **.756**

ø Code	d	P(TPI)	d (mm)	L	l	l_1	l_3	d_1	a			E1799
.756	Nr. 6	-40	3.505	50	12	–	18	4.0	3.0	3	3.05	●
.757	Nr. 8	-36	4.166	53	13	–	19	4.5	3.4	3	3.60	●
.758	Nr. 10	-32	4.826	58	15	–	22	6.0	4.9	3	4.20	●
.760	1/4	-28	6.350	66	17	–	28	7.0	5.5	3	5.60	●
.761	5/16	-24	7.938	72	20	–	34	8.0	6.2	3	7.10	●
.762	3/8	-24	9.525	80	22	–	37	10.0	8.0	3	8.70 *	●

* angegebenes Mass liegt ausserhalb der Norm

passion
for precision
fraisa

Amerikanische Rohrgewinde kegelig NPT / NPTF

NPT

N° ET1830

In	HSS-E Co5		**Inox** Stainless		339

N° E11820

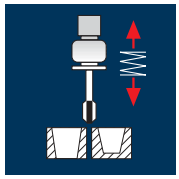
U	HSS-E Co5		**Rm** <850		341

NPTF

N° E11846

U	HSS-E Co5		**Rm** <850		343

Anwendung



Werkstoff	NPT	ø [mm]	P [mm]	v_c	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch	1/16 -27	6.25	0.941	2	100	94
	1/8 -27	8.50	0.941	2	75	71
	1/4 -18	11.10	1.411	2	55	78
	3/8 -18	14.70	1.411	2	45	63
	1/2 -14	18.00	1.814	2	35	63
	3/4 -14	23.25	1.814	2	25	45
	1" -11.5	29.25	2.209	2	20	44
Nichtrostender Stahl [Cr-Ni/1.4301]	1/16 -27	6.25	0.941	2	100	94
	1/8 -27	8.50	0.941	2	75	71
	1/4 -18	11.10	1.411	2	55	78
	3/8 -18	14.70	1.411	2	45	63
	1/2 14	18.00	1.814	2	35	63
	3/4 -14	23.25	1.814	2	25	45
	1" -11.5	29.25	2.209	2	20	44
Nichtrostender Stahl [Cr-Ni-Mo-…/1.4571]	1/16 -27	6.25	0.941	2	100	94
	1/8 -27	8.50	0.941	2	75	71
	1/4 -18	11.10	1.411	2	55	78
	3/8 -18	14.70	1.411	2	45	63
	1/2 -14	18.00	1.814	2	35	63
	3/4 -14	23.25	1.814	2	25	45
	1" -11.5	29.25	2.209	2	20	44
Hitzebeständiger Stahl [17-4 PH]	1/16 -27	6.25	0.941	1.5	75	71
	1/8 -27	8.50	0.941	1.5	55	52
	1/4 -18	11.10	1.411	1.5	45	63
	3/8 -18	14.70	1.411	1.5	30	42
	1/2 -14	18.00	1.814	1.5	25	45
	3/4 -14	23.25	1.814	1.5	20	36
	1" -11.5	29.25	2.209	1.5	15	33

Gewindebohrer

In

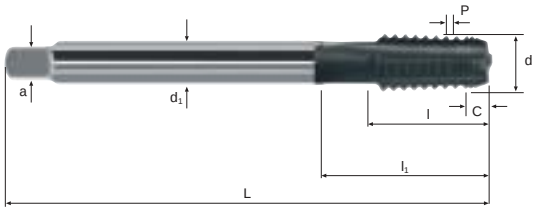
NPT

60°
1 : 16

HSS-E
Co5

DIN
374

X · P
Form C



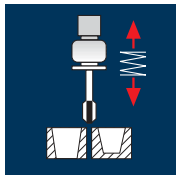
Inox
Stainless

Beispiel:
Bestell-Nr. Artikel-Nr. **ET1830** ø-Code **.840**

Ø Code	d	P(TPI)	L	l	l_1	d_1	a			TRIBO ET1830
.840	1/16	-27	80	17.5	27	7	5.5	3	i	●
.841	1/8	-27	90	19.0	30	8	6.2	4		●
.842	1/4	-18	100	27.0	40	11	9.0	4		●
.843	3/8	-18	110	27.0	40	14	11.0	4		●
.844	1/2	-14	125	35.0	48	18	14.5	5		●
.845	3/4	-14	140	35.0	50	20	16.0	5		●
.846	1”	-11.5	170	44.5	60	28	22.0	5		●

NPT
NPTF

Anwendung



Werkstoff	NPT	ø [mm]	P [mm]	v_c	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	1/16 -27	6.25	0.941	8	405	381
	1/8 -27	8.50	0.941	8	300	282
	1/4 -18	11.10	1.411	8	230	325
	3/8 -18	14.70	1.411	8	175	247
	1/2 -14	18.00	1.814	8	140	254
	3/4 -14	23.25	1.814	8	110	200
	1" -11.5	29.25	2.209	8	85	188
Stahl 500 - 850 N/mm²	1/16 -27	6.25	0.941	6	305	287
	1/8 -27	8.50	0.941	6	225	212
	1/4 -18	11.10	1.411	6	170	240
	3/8 -18	14.70	1.411	6	130	183
	1/2 -14	18.00	1.814	6	105	190
	3/4 -14	23.25	1.814	6	80	145
	1" -11.5	29.25	2.209	6	65	144
Stahl 850 - 1100 N/mm²	1/16 -27	6.25	0.941	5	255	240
	1/8 -27	8.50	0.941	5	185	174
	1/4 -18	11.10	1.411	5	145	205
	3/8 -18	14.70	1.411	5	110	155
	1/2 -14	18.00	1.814	5	90	163
	3/4 -14	23.25	1.814	5	70	127
	1" -11.5	29.25	2.209	5	55	121
Al-Knetlegierung Si < 6% ausgehärtet	1/16 -27	6.25	0.941	10	510	480
	1/8 -27	8.50	0.941	10	375	353
	1/4 -18	11.10	1.411	10	285	402
	3/8 -18	14.70	1.411	10	215	303
	1/2 -14	18.00	1.814	10	175	317
	3/4 -14	23.25	1.814	10	135	245
	1" -11.5	29.25	2.209	10	110	243

Werkstoff	NPT	ø [mm]	P [mm]	v_c	n [min⁻¹]	v_f [100%]
Gusseisen GG(G)	1/16 -27	6.25	0.941	6	305	287
	1/8 -27	8.50	0.941	6	225	212
	1/4 -18	11.10	1.411	6	170	240
	3/8 -18	14.70	1.411	6	130	183
	1/2 -14	18.00	1.814	6	105	190
	3/4 -14	23.25	1.814	6	80	145
	1" -11.5	29.25	2.209	6	65	144

Gewindebohrer

U

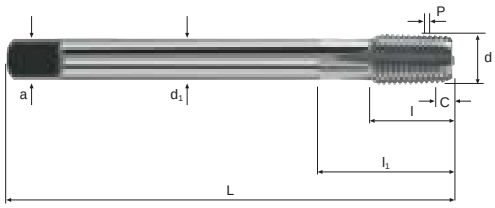
NPT

60°
1 : 16

HSS-E
Co5

DIN
374

X · P
Form C



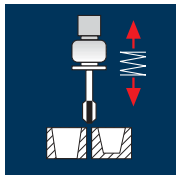
Rm < 850	Rm 850-1100								GG(G) Aluminium Copper

Beispiel: **Bestell-Nr.** Artikel-Nr. **E11820** ø-Code **.840**

Ø Code	d	P(TPI)	L	l	l_1	d_1	a			E11820	
.840	1/16	-27	80	14	27	7	5.5	3	i	●	
.841	1/8	-27	90	14	30	8	6.2	4		●	
.842	1/4	-18	100	20	40	11	9.0	4		●	
.843	3/8	-18	110	20	40	14	11.0	4		●	
.844	1/2	-14	125	26	48	18	14.5	5		●	
.845	3/4	-14	140	26	50	20	16.0	5		●	
.846	1”	-11.5	170	31	60	28	22.0	5		●	

NPT
NPTF

Anwendung



Werkstoff	NPTF	ø [mm]	P [mm]	v_c	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	1/16 -27	6.25	0.941	8	405	381
	1/8 -27	8.50	0.941	8	300	282
	1/4 -18	11.10	1.411	8	230	325
	3/8 -18	14.70	1.411	8	175	247
	1/2 -14	18.00	1.814	8	140	254
	3/4 -14	23.25	1.814	8	110	200
	1" -11.5	29.25	2.209	8	85	188
Stahl 500 - 850 N/mm²	1/16 -27	6.25	0.941	6	305	287
	1/8 -27	8.50	0.941	6	225	212
	1/4 -18	11.10	1.411	6	170	240
	3/8 -18	14.70	1.411	6	130	183
	1/2 -14	18.00	1.814	6	105	190
	3/4 -14	23.25	1.814	6	80	145
	1" -11.5	29.25	2.209	6	65	144
Stahl 850 - 1100 N/mm²	1/16 -27	6.25	0.941	5	255	240
	1/8 -27	8.50	0.941	5	185	174
	1/4 -18	11.10	1.411	5	145	205
	3/8 -18	14.70	1.411	5	110	155
	1/2 -14	18.00	1.814	5	90	163
	3/4 -14	23.25	1.814	5	70	127
	1" -11.5	29.25	2.209	5	55	121
Al-Knetlegierung Si < 6% ausgehärtet	1/16 -27	6.25	0.941	10	510	480
	1/8 -27	8.50	0.941	10	375	353
	1/4 -18	11.10	1.411	10	285	402
	3/8 -18	14.70	1.411	10	215	303
	1/2 -14	18.00	1.814	10	175	317
	3/4 -14	23.25	1.814	10	135	245
	1" -11.5	29.25	2.209	10	110	243

Werkstoff	NPTF	ø [mm]	P [mm]	v_c	n [min⁻¹]	v_f [100%]
Gusseisen GG(G)	1/16 -27	6.25	0.941	6	305	287
	1/8 -27	8.50	0.941	6	225	212
	1/4 -18	11.10	1.411	6	170	240
	3/8 -18	14.70	1.411	6	130	183
	1/2 -14	18.00	1.814	6	105	190
	3/4 -14	23.25	1.814	6	80	145
	1" -11.5	29.25	2.209	6	65	144

Gewindebohrer

U

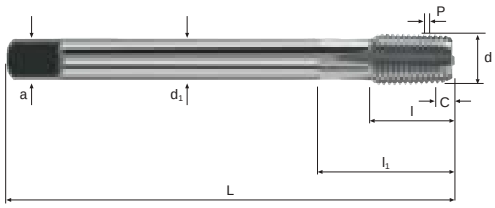
NPTF

60°
1 : 16

HSS-E
Co5

DIN
374

X · P
Form C



Rm < 850	Rm 850-1100								GG(G) Aluminium Copper

Beispiel: **Bestell-Nr.** Artikel-Nr. **E11846** ø-Code **.840**

Ø Code	d	P(TPI)	L	l	l_1	d_1	a			E11846	
.840	1/16	-27	80	17.5	27	7	5.5	3	i	●	
.841	1/8	-27	90	19.0	30	8	6.2	4		●	
.842	1/4	-18	100	27.0	40	11	9.0	4		●	
.843	3/8	-18	110	27.0	40	14	11.0	4		●	
.844	1/2	-14	125	35.0	48	18	14.5	5		●	
.845	3/4	-14	140	35.0	50	20	16.0	5		●	
.846	1”	-11.5	170	44.5	60	28	22.0	5		●	

NPT
NPTF

passion
for precision
fraisa

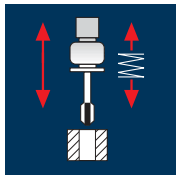
Toleranz 6H mod

N° E11970 / E11971

N° E11980 / E11981

U	HSS-E Co5		Rm <850	Al Aluminium Alloy	347
U	HSS-E Co5		Rm <850	Al Aluminium Alloy	349

Anwendung



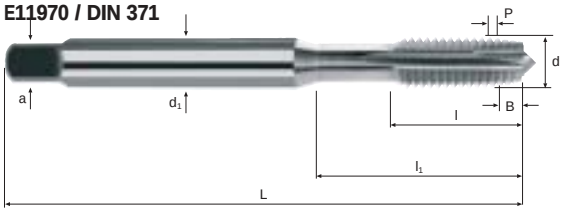
Werkstoff	EG-M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	EGM 2	2.520	0.40	14	1770	708	12	1515	606	10	1265	506
	EGM 2.5	3.084	0.45	14	1445	650	12	1240	558	10	1030	464
	EGM 3	3.650	0.50	14	1220	610	12	1045	523	10	870	435
	EGM 4	4.910	0.70	14	910	637	12	780	546	10	650	455
	EGM 5	6.040	0.80	14	740	592	12	630	504	10	525	420
	EGM 6	7.300	1.00	14	610	610	12	525	525	10	435	435
	EGM 8	9.624	1.25	14	465	581	12	395	494	10	330	413
	EGM 10	11.948	1.50	14	375	563	12	320	480	10	265	398
	EGM 12	14.274	1.75	14	310	543	12	270	473	10	225	394
Stahl < 500 N/mm²	EGM 14	16.598	2.00	14	270	540	12	230	460	10	190	380
	EGM 16	18.598	2.00	14	240	480	12	205	410	10	170	340
Stahl 500 - 850 N/mm²	EGM 2	2.520	0.40	10	1265	506	8	1010	404	6	760	304
	EGM 2.5	3.084	0.45	10	1030	464	8	825	371	6	620	279
	EGM 3	3.650	0.50	10	870	435	8	700	350	6	525	263
	EGM 4	4.910	0.70	10	650	455	8	520	364	6	390	273
	EGM 5	6.040	0.80	10	525	420	8	420	336	6	315	252
	EGM 6	7.300	1.00	10	435	435	8	350	350	6	260	260
	EGM 8	9.624	1.25	10	330	413	8	265	331	6	200	250
	EGM 10	11.948	1.50	10	265	398	8	215	323	6	160	240
	EGM 12	14.274	1.75	10	225	394	8	180	315	6	135	236
Stahl 500 - 850 N/mm²	EGM 14	16.598	2.00	10	190	380	8	155	310	6	115	230
	EGM 16	18.598	2.00	10	170	340	8	135	270	6	105	210

Werkstoff	EG-M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet	EGM 2	2.520	0.40	11	1390	556	9	1135	454	7	885	354
	EGM 2.5	3.084	0.45	11	1135	511	9	930	419	7	720	324
	EGM 3	3.650	0.50	11	960	480	9	785	393	7	610	305
	EGM 4	4.910	0.70	11	715	500	9	585	410	7	455	319
	EGM 5	6.040	0.80	11	580	464	9	475	380	7	370	296
	EGM 6	7.300	1.00	11	480	480	9	390	390	7	305	305
	EGM 8	9.624	1.25	11	365	456	9	300	375	7	230	288
	EGM 10	11.948	1.50	11	295	443	9	240	360	7	185	278
	EGM 12	14.274	1.75	11	245	429	9	200	350	7	155	271
Al-Knetlegierung Si < 6% ausgehärtet	EGM 14	16.598	2.00	11	210	420	9	175	350	7	135	270
	EGM 16	18.598	2.00	11	190	380	9	155	310	7	120	240
Reinkupfer	EGM 2	2.520	0.40	12	1515	606	10	1265	506	8	1010	404
	EGM 2.5	3.084	0.45	12	1240	558	10	1030	464	8	825	371
	EGM 3	3.650	0.50	12	1045	523	10	870	435	8	700	350
	EGM 4	4.910	0.70	12	780	546	10	650	455	8	520	364
	EGM 5	6.040	0.80	12	630	504	10	525	420	8	420	336
	EGM 6	7.300	1.00	12	525	525	10	435	435	8	350	350
	EGM 8	9.624	1.25	12	395	494	10	330	413	8	265	331
	EGM 10	11.948	1.50	12	320	480	10	265	398	8	215	323
	EGM 12	14.274	1.75	12	270	473	10	225	394	8	180	315
Reinkupfer	EGM 14	16.598	2.00	12	230	460	10	190	380	8	155	310
	EGM 16	18.598	2.00	12	205	410	10	170	340	8	135	270

Gewindebohrer für Drahteinsätze

EG M	6H mod
60°	HSS-E Co5
DIN 371/376	
	Form B

E11970 / DIN 371



E11971 / DIN 376

Rm < 850			Al Aluminium > 99%	Al Aluminium Alloy	Al Aluminium Cast		Cu Copper	Plastic Thermoplast	GG(G)

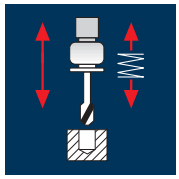
Beispiel: **Bestell-Nr.** Artikel-Nr. **E11970** ø-Code **.034**

Ø Code	d	P	L	l	l_1	d_1	a			E11970	
.034	EGM 2	0.40	50	9	15	2.8	2.1	2	2.15	●	
.040	EGM 2.5	0.45	56	12	18	3.5	2.7	3	2.65	●	
.044	EGM 3	0.50	63	13	21	4.5	3.0	3	3.15	●	
.058	EGM 4	0.70	70	15	25	6.0	4.9	3	4.20	●	
.084	EGM 5	0.80	80	17	30	6.0	4.9	3	5.25	●	
.088	EGM 6	1.00	90	20	35	8.0	6.2	3	6.30	●	
.160	EGM 8	1.25	100	22	39	10.0	8.0	3	8.40	●	

Beispiel: **Bestell-Nr.** Artikel-Nr. **E11971** ø-Code **.174**

Ø Code	d	P	L	l	l_1	d_1	a			E11971	
.174	EGM10	1.50	110	24	40	9.0	7.0	3	10.40	●	
.240	EGM12	1.75	110	26	40	11.0	9.0	3	12.50	●	
.244	EGM14	2.00	110	27	40	12.0	9.0	4	14.50	●	
.246	EGM16	2.00	125	30	65	14.0	11.0	4	16.50	●	

Anwendung



Werkstoff	EG-M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 500 N/mm²	EGM 2	2.520	0.40	11	1390	556	10	1265	506	8	1010	404
	EGM 2.5	3.084	0.45	11	1135	511	10	1030	464	8	825	371
	EGM 3	3.650	0.50	11	960	480	10	870	435	8	700	350
	EGM 4	4.910	0.70	11	715	500	10	650	455	8	520	364
	EGM 5	6.040	0.80	11	580	464	10	525	420	8	420	336
	EGM 6	7.300	1.00	11	480	480	10	435	435	8	350	350
	EGM 8	9.624	1.25	11	365	456	10	330	413	8	265	331
	EGM 10	11.948	1.50	11	295	443	10	265	398	8	215	323
	EGM 12	14.274	1.75	11	245	429	10	225	394	8	180	315
Stahl < 500 N/mm²	EGM 14	16.598	2.00	11	210	420	10	190	380	8	155	310
	EGM 16	18.598	2.00	11	190	380	10	170	340	8	135	270
Stahl 500 - 850 N/mm²	EGM 2	2.520	0.40	8	1010	404	7	885	354	6	760	304
	EGM 2.5	3.084	0.45	8	825	371	7	720	324	6	620	279
	EGM 3	3.650	0.50	8	700	350	7	610	305	6	525	263
	EGM 4	4.910	0.70	8	520	364	7	455	319	6	390	273
	EGM 5	6.040	0.80	8	420	336	7	370	296	6	315	252
	EGM 6	7.300	1.00	8	350	350	7	305	305	6	260	260
	EGM 8	9.624	1.25	8	265	331	7	230	288	6	200	250
	EGM 10	11.948	1.50	8	215	323	7	185	278	6	160	240
	EGM 12	14.274	1.75	8	180	315	7	155	271	6	135	236
Stahl 500 - 850 N/mm²	EGM 14	16.598	2.00	8	155	310	7	135	270	6	115	230
	EGM 16	18.598	2.00	8	135	270	7	120	240	6	105	210

Werkstoff	EG-M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Al-Knetlegierung Si < 6% ausgehärtet	EGM 2	2.520	0.40	7	885	354	6	760	304	6	760	304
	EGM 2.5	3.084	0.45	7	720	324	6	620	279	6	620	279
	EGM 3	3.650	0.50	7	610	305	6	525	263	6	525	263
	EGM 4	4.910	0.70	7	455	319	6	390	273	6	390	273
	EGM 5	6.040	0.80	7	370	296	6	315	252	6	315	252
	EGM 6	7.300	1.00	7	305	305	6	260	260	6	260	260
	EGM 8	9.624	1.25	7	230	288	6	200	250	6	200	250
	EGM 10	11.948	1.50	7	185	278	6	160	240	6	160	240
	EGM 12	14.274	1.75	7	155	271	6	135	236	6	135	236
Al-Knetlegierung Si < 6% ausgehärtet	EGM 14	16.598	2.00	7	135	270	6	115	230	6	115	230
	EGM 16	18.598	2.00	7	120	240	6	105	210	6	105	210
Reinkupfer	EGM 2	2.520	0.40	10	1265	506	9	1135	454	8	1010	404
	EGM 2.5	3.084	0.45	10	1030	464	9	930	419	8	825	371
	EGM 3	3.650	0.50	10	870	435	9	785	393	8	700	350
	EGM 4	4.910	0.70	10	650	455	9	585	410	8	520	364
	EGM 5	6.040	0.80	10	525	420	9	475	380	8	420	336
	EGM 6	7.300	1.00	10	435	435	9	390	390	8	350	350
	EGM 8	9.624	1.25	10	330	413	9	300	375	8	265	331
	EGM 10	11.948	1.50	10	265	398	9	240	360	8	215	323
	EGM 12	14.274	1.75	10	225	394	9	200	350	8	180	315
Reinkupfer	EGM 14	16.598	2.00	10	190	380	9	175	350	8	155	310
	EGM 16	18.598	2.00	10	170	340	9	155	310	8	135	270

Gewindebohrer für Drahteinsätze

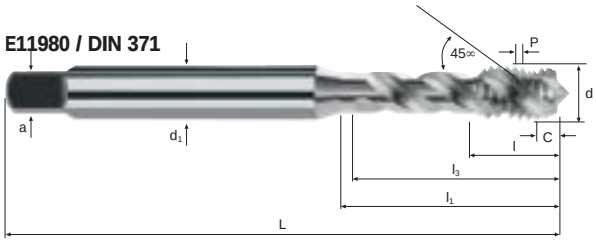
U

EG M | 6H mod

60° | HSS-E Co5

DIN 371/376

X · P Form C



Rm < 850 | **Al** Aluminium > 99% | **Al** Aluminium Alloy | **Al** Aluminium Cast | **Cu** Copper | **Plastic** Thermoplast | GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **E11980** ø-Code **.034**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			E11980
.034	EGM 2	0.40	50	9.0	15	13	2.8	2.1	3	2.15	●
.040	EGM 2.5	0.45	56	4.0	18	16	3.5	2.7	3	2.65	●
.044	EGM 3	0.50	63	5.6	21	19	4.5	3.0	3	3.15	●
.058	EGM 4	0.70	70	6.4	25	23	6.0	4.9	3	4.20	●
.084	EGM 5	0.80	80	8.0	30	28	6.0	4.9	3	5.25	●
.088	EGM 6	1.00	90	10.0	35	33	8.0	6.2	3	6.30	●
.160	EGM 8	1.25	100	12.0	39	37	10.0	8.0	3	8.40	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **E11981** ø-Code **.174**

Ø Code	d	P	L	l	l_1	l_3	d_1	a			E11981
.174	EGM10	1.50	110	14.0	50	48	9.0	7.0	3	10.40	●
.240	EGM12	1.75	110	16.0	58	56	11.0	9.0	4	12.50	●
.244	EGM14	2.00	110	16.0	58	56	12.0	9.0	4	14.50	●
.246	EGM16	2.00	125	20.0	65	63	14.0	11.0	4	16.50	●

EG

passion
for precision
fraisa

Toleranz ISO 2 (6H)

N° EF10060 / EF10061

Al	HSS PM/F		Al Aluminium Alloy	Cu Copper	355

N° EH6100 / EH6101 duroform

U	HM MG10		Rm <850-1100	Al Aluminium Alloy	359

N° EL10080 / EL10081 Lightform Steel

St	HSS PM/F		Rm <850		361

N° EH10070 / EH10071

St	HSS PM/F		Rm <850		365

N° EH10072 / EH10073

St	HSS PM/F		Rm <850		369

Toleranz ISO 3 (6G)

N° EF10064 / EF10065

Al	HSS PM/F		Al Aluminium Alloy	Cu Copper	371

N° EH10074 / EH10075

St	HSS PM/F		Rm <850		373

Toleranz 7G

N° EF10068

Al	HSS PM/F		Al Aluminium Alloy	Cu Copper	375

N° EH10078

St	HSS PM/F		Rm <850		377

passion
for precision
fraisa

Gewindeformer MF

Toleranz ISO 2 (6H)

N° EF11260 / EF11261

N° EH11270 / EH11271

Al	HSS PM/F		**Al** Aluminium Alloy	**Cu** Copper	379
St	HSS PM/F		**Rm** <850		381

Gewindeformer für Drahteinsätze EG M

Toleranz 6H mod

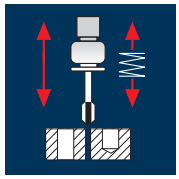
N° EF11960 / EF11961

N° EH11950 / EH11951

Al	HSS PM/F		**Al** Aluminium Alloy	**Cu** Copper	383
St	HSS PM/F		**Rm** <850		385

CF

Anwendung



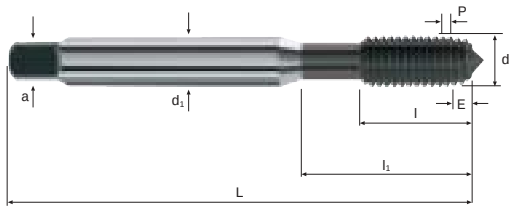
Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Reinaluminium	M 1	1.0	0.25	25	7960	1990	20	6365	1591	15	4775	1194
	M 1.2	1.2	0.25	25	6630	1658	20	5305	1326	15	3980	995
	M 1.4	1.4	0.30	25	5685	1706	20	4545	1364	15	3410	1023
	M 1.6	1.6	0.35	25	4975	1741	20	3980	1393	15	2985	1045
	M 1.8	1.8	0.35	25	4420	1547	20	3535	1237	15	2655	929
	M 2	2.0	0.40	25	3980	1592	20	3185	1274	15	2385	954
	M 2.2	2.2	0.45	25	3615	1627	20	2895	1303	15	2170	977
	M 2.5	2.5	0.45	25	3185	1433	20	2545	1145	15	1910	860
	M 3	3.0	0.50	25	2655	1328	20	2120	1060	15	1590	795
Reinaluminium	M 4	4.0	0.70	25	1990	1393	20	1590	1113	15	1195	837
	M 5	5.0	0.80	25	1590	1272	20	1275	1020	15	955	764
	M 6	6.0	1.00	25	1325	1325	20	1060	1060	15	795	795
	M 8	8.0	1.25	25	995	1244	20	795	994	15	595	744
	M10	10.0	1.50	25	795	1193	20	635	953	15	475	713
Al-Knetlegierung Si < 6% nicht ausgehärtet	M 1	1.0	0.25	30	9550	2388	25	7960	1990	20	6365	1591
	M 1.2	1.2	0.25	30	7960	1990	25	6630	1658	20	5305	1326
	M 1.4	1.4	0.30	30	6820	2046	25	5685	1706	20	4545	1364
	M 1.6	1.6	0.35	30	5970	2090	25	4975	1741	20	3980	1393
	M 1.8	1.8	0.35	30	5305	1857	25	4420	1547	20	3535	1237
	M 2	2.0	0.40	30	4775	1910	25	3980	1592	20	3185	1274
	M 2.2	2.2	0.45	30	4340	1953	25	3615	1627	20	2895	1303
	M 2.5	2.5	0.45	30	3820	1719	25	3185	1433	20	2545	1145
	M 3	3.0	0.50	30	3185	1593	25	2655	1328	20	2120	1060
Al-Knetlegierung Si < 6% nicht ausgehärtet	M 4	4.0	0.70	30	2385	1670	25	1990	1393	20	1590	1113
	M 5	5.0	0.80	30	1910	1528	25	1590	1272	20	1275	1020
	M 6	6.0	1.00	30	1590	1590	25	1325	1325	20	1060	1060
	M 8	8.0	1.25	30	1195	1494	25	995	1244	20	795	994
	M10	10.0	1.50	30	955	1433	25	795	1193	20	635	953

Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Reinkupfer	M 1	1.0	0.25	15	4775	1194	10	3185	796	10	3185	796
	M 1.2	1.2	0.25	15	3980	995	10	2655	664	10	2655	664
	M 1.4	1.4	0.30	15	3410	1023	10	2275	683	10	2275	683
	M 1.6	1.6	0.35	15	2985	1045	10	1990	697	10	1990	697
	M 1.8	1.8	0.35	15	2655	929	10	1770	620	10	1770	620
	M 2	2.0	0.40	15	2385	954	10	1590	636	10	1590	636
	M 2.2	2.2	0.45	15	2170	977	10	1445	650	10	1445	650
	M 2.5	2.5	0.45	15	1910	860	10	1275	574	10	1275	574
	M 3	3.0	0.50	15	1590	795	10	1060	530	10	1060	530
Reinkupfer	M 4	4.0	0.70	15	1195	837	10	795	557	10	795	557
	M 5	5.0	0.80	15	955	764	10	635	508	10	635	508
	M 6	6.0	1.00	15	795	795	10	530	530	10	530	530
	M 8	8.0	1.25	15	595	744	10	400	500	10	400	500
	M10	10.0	1.50	15	475	713	10	320	480	10	320	480
Buntmetalle A_5 > 15%	M 1	1.0	0.25	15	4775	1194	10	3185	796	10	3185	796
	M 1.2	1.2	0.25	15	3980	995	10	2655	664	10	2655	664
	M 1.4	1.4	0.30	15	3410	1023	10	2275	683	10	2275	683
	M 1.6	1.6	0.35	15	2985	1045	10	1990	697	10	1990	697
	M 1.8	1.8	0.35	15	2655	929	10	1770	620	10	1770	620
	M 2	2.0	0.40	15	2385	954	10	1590	636	10	1590	636
	M 2.2	2.2	0.45	15	2170	977	10	1445	650	10	1445	650
	M 2.5	2.5	0.45	15	1910	860	10	1275	574	10	1275	574
	M 3	3.0	0.50	15	1590	795	10	1060	530	10	1060	530
Buntmetalle A_5 > 15%	M 4	4.0	0.70	15	1195	837	10	795	557	10	795	557
	M 5	5.0	0.80	15	955	764	10	635	508	10	635	508
	M 6	6.0	1.00	15	795	795	10	530	530	10	530	530
	M 8	8.0	1.25	15	595	744	10	400	500	10	400	500
	M10	10.0	1.50	15	475	713	10	320	480	10	320	480

Gewindeformer

Al

M	ISO 2 (6H)
60°	HSS PM/F
DIN 371	
	Form E



			Al Aluminium > 99%	Al Aluminium Alloy			Cu Copper		CuZn Brass

Beispiel: **Bestell-Nr.** Artikel-Nr. **EF10060** ø-Code **.010**

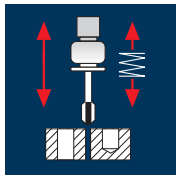
ø Code	d	P	L	l	l1	d1	a			F-DLC EF10060
.010	M 1	0.25	40	5.5	–	2.5	2.1	3	0.87	●
.012	M 1.2	0.25	40	5.5	–	2.5	2.1	3	1.07	●
.020	M 1.4	0.30	40	7.0	–	2.5	2.1	3	1.25	●
.022	M 1.6	0.35	40	8.0	–	2.5	2.1	3	1.42	●
.026	M 1.8	0.35	40	8.0	–	2.5	2.1	3	1.62	●
.034	M 2	0.40	45	8.0	–	2.8	2.1	3	1.80	●
.036	M 2.2	0.45	45	9.0	–	2.8	2.1	3	2.00	●
.040	M 2.5	0.45	50	9.0	–	2.8	2.1	3	2.30	●
.044	M 3	0.50	56	12.0	18.0	3.5	2.7	3	2.80	●
.058	M 4	0.70	63	13.0	21.0	4.5	3.4	3	3.70	●
.084	M 5	0.80	70	15.0	25.0	6.0	4.9	4	4.60	●
.088	M 6	1.00	80	17.0	30.0	6.0	4.9	4	5.50	●
.160	M 8	1.25	90	20.0	35.0	8.0	6.2	4	7.40	●
.174	M10	1.50	100	22.0	39.0	10.0	8.0	4	9.30	●

≤ M 1.4 Toleranz ISO1 (4H)

Grössere Abmessungen siehe Artikel-Nr. EF10061, Seite 357

CF

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Reinaluminium	M12	12.0	1.75	25	665	1164	20	530	928	15	400	700
	M14	14.0	2.00	25	570	1140	20	455	910	15	340	680
	M16	16.0	2.00	25	495	990	20	400	800	15	300	600
Al-Knetlegierung Si < 6% nicht ausgehärtet	M12	12.0	1.75	30	795	1391	25	665	1164	20	530	928
	M14	14.0	2.00	30	680	1360	25	570	1140	20	455	910
	M16	16.0	2.00	30	595	1190	25	495	990	20	400	800
Reinkupfer	M12	12.0	1.75	15	400	700	10	265	464	10	265	464
	M14	14.0	2.00	15	340	680	10	225	450	10	225	450
	M16	16.0	2.00	15	300	600	10	200	400	10	200	400
Buntmetalle A_5 > 15%	M12	12.0	1.75	15	400	700	10	265	464	10	265	464
	M14	14.0	2.00	15	340	680	10	225	450	10	225	450
	M16	16.0	2.00	15	300	600	10	200	400	10	200	400

Gewindeformer

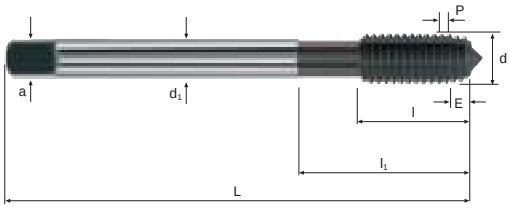
Al

M | ISO 2 (6H)

60° | HSS PM/F

DIN 376

Form E



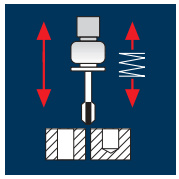
Al Aluminium > 99% | **Al** Aluminium Alloy | **Cu** Copper | **CuZn Brass**

Beispiel: **Bestell-Nr.** Artikel-Nr. **EF10061** ø-Code **.240**

Ø Code	d	P	L	l	l_1	d_1	a			F-DLC EF10061
.240	M12	1.75	110	24	40	9	7	5	11.20	●
.244	M14	2.00	110	26	40	11	9	5	13.10	●
.246	M16	2.00	110	27	40	12	9	5	15.10	●

CF

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 850 N/mm² A_5 > 10%	M 3	3.0	0.50	35	3715	1858	30	3185	1593	25	2655	1328
	M 4	4.0	0.70	35	2785	1949	30	2385	1670	25	1990	1393
	M 5	5.0	0.80	35	2230	1784	30	1910	1528	25	1590	1272
	M 6	6.0	1.00	35	1855	1855	30	1590	1590	25	1325	1325
	M 8	8.0	1.25	35	1395	1744	30	1195	1494	25	995	1244
	M10	10.0	1.50	35	1115	1673	30	955	1433	25	795	1193
	M12	12.0	1.75	35	930	1628	30	795	1391	25	665	1164
Stahl 850 - 1100 N/mm² A_5 > 10%	M 3	3.0	0.50	30	3185	1593	25	2655	1328	20	2120	1060
	M 4	4.0	0.70	30	2385	1670	25	1990	1393	20	1590	1113
	M 5	5.0	0.80	30	1910	1528	25	1590	1272	20	1275	1020
	M 6	6.0	1.00	30	1590	1590	25	1325	1325	20	1060	1060
	M 8	8.0	1.25	30	1195	1494	25	995	1244	20	795	994
	M10	10.0	1.50	30	955	1433	25	795	1193	20	635	953
	M12	12.0	1.75	30	795	1391	25	665	1164	20	530	928
Reinaluminium	M 3	3.0	0.50	50	5305	2653	40	4245	2123	30	3185	1593
	M 4	4.0	0.70	50	3980	2786	40	3185	2230	30	2385	1670
	M 5	5.0	0.80	50	3185	2548	40	2545	2036	30	1910	1528
	M 6	6.0	1.00	50	2655	2655	40	2120	2120	30	1590	1590
	M 8	8.0	1.25	50	1990	2488	40	1590	1988	30	1195	1494
	M10	10.0	1.50	50	1590	2385	40	1275	1913	30	955	1433
	M12	12.0	1.75	50	1325	2319	40	1060	1855	30	795	1391
Al-Knetlegierung Si < 6% nicht ausgehärtet	M 3	3.0	0.50	80	8490	4245	60	6365	3183	40	4245	2123
	M 4	4.0	0.70	80	6365	4456	60	4775	3343	40	3185	2230
	M 5	5.0	0.80	80	5095	4076	60	3820	3056	40	2545	2036
	M 6	6.0	1.00	80	4245	4245	60	3185	3185	40	2120	2120
	M 8	8.0	1.25	80	3185	3981	60	2385	2981	40	1590	1988
	M10	10.0	1.50	80	2545	3818	60	1910	2865	40	1275	1913
	M12	12.0	1.75	80	2120	3710	60	1590	2783	40	1060	1855

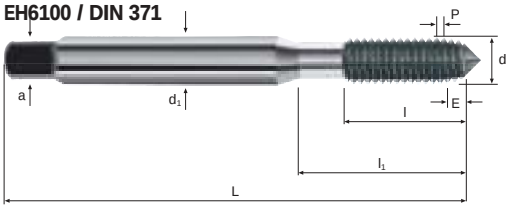
Werkstoff	M	ø [mm]	P [mm]	v_c 1.0 x d	n [min⁻¹]	v_f [100%]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Reinkupfer	M 3	3.0	0.50	60	6365	3183	40	4245	2123	30	3185	1593
	M 4	4.0	0.70	60	4775	3343	40	3185	2230	30	2385	1670
	M 5	5.0	0.80	60	3820	3056	40	2545	2036	30	1910	1528
	M 6	6.0	1.00	60	3185	3185	40	2120	2120	30	1590	1590
	M 8	8.0	1.25	60	2385	2981	40	1590	1988	30	1195	1494
	M10	10.0	1.50	60	1910	2865	40	1275	1913	30	955	1433
	M12	12.0	1.75	60	1590	2783	40	1060	1855	30	795	1391
Buntmetalle A_5 > 15%	M 3	3.0	0.50	50	5305	2653	30	3185	1593	25	2655	1328
	M 4	4.0	0.70	50	3980	2786	30	2385	1670	25	1990	1393
	M 5	5.0	0.80	50	3185	2548	30	1910	1528	25	1590	1272
	M 6	6.0	1.00	50	2655	2655	30	1590	1590	25	1325	1325
	M 8	8.0	1.25	50	1990	2488	30	1195	1494	25	995	1244
	M10	10.0	1.50	50	1590	2385	30	955	1433	25	795	1193
	M12	12.0	1.75	50	1325	2319	30	795	1391	25	665	1164
Nichtrostender Stahl ferritisch/martensitisch A_5 > 10%	M 3	3.0	0.50	30	3185	1593	25	2655	1328	20	2120	1060
	M 4	4.0	0.70	30	2385	1670	25	1990	1393	20	1590	1113
	M 5	5.0	0.80	30	1910	1528	25	1590	1272	20	1275	1020
	M 6	6.0	1.00	30	1590	1590	25	1325	1325	20	1060	1060
	M 8	8.0	1.25	30	1195	1494	25	995	1244	20	795	994
	M10	10.0	1.50	30	955	1433	25	795	1193	20	635	953
	M12	12.0	1.75	30	795	1391	25	665	1164	20	530	928
Nichtrostender Stahl [Cr-Ni/1.4301]	M 3	3.0	0.50	30	3185	1593	25	2655	1328	20	2120	1060
	M 4	4.0	0.70	30	2385	1670	25	1990	1393	20	1590	1113
	M 5	5.0	0.80	30	1910	1528	25	1590	1272	20	1275	1020
	M 6	6.0	1.00	30	1590	1590	25	1325	1325	20	1060	1060
	M 8	8.0	1.25	30	1195	1494	25	995	1244	20	795	994
	M10	10.0	1.50	30	955	1433	25	795	1193	20	635	953
	M12	12.0	1.75	30	795	1391	25	665	1164	20	530	928

Gewindeformer duroform

U

M	ISO 2 (6H)
60°	HM MG10
DIN 371/376	
	Form E

EH6100 / DIN 371



EH6101 / DIN 376

Rm < 850	Rm 850-1100						Inox Stainless		Aluminium Copper

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6100** ø-Code **.044**

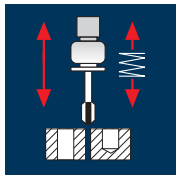
Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH6100
.044	M 3	0.50	56	12	18	3.5	2.7	3	2.80	●
.058	M 4	0.70	63	13	21	4.5	3.4	4	3.70	●
.084	M 5	0.80	70	15	25	6.0	4.9	4	4.60	●
.088	M 6	1.00	80	17	30	6.0	4.9	4	5.50	●
.160	M 8	1.25	90	20	35	8.0	6.2	5	7.40	●
.174	M10	1.50	100	22	39	10.0	8.0	5	9.30	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH6101** ø-Code **.240**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH6101
.240	M12	1.75	110	24	50	9.0	7.0	7	11.20	●

CF

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 850 N/mm² A_5 > 10%	M 1	1.0	0.25	20	6365	1591	15	4775	1194	10	3185	796
	M 1.2	1.2	0.25	20	5305	1326	15	3980	995	10	2655	664
	M 1.4	1.4	0.30	20	4545	1364	15	3410	1023	10	2275	683
	M 1.6	1.6	0.35	20	3980	1393	15	2985	1045	10	1990	697
	M 1.8	1.8	0.35	20	3535	1237	15	2655	929	10	1770	620
	M 2	2.0	0.40	20	3185	1274	15	2385	954	10	1590	636
	M 2.2	2.2	0.45	20	2895	1303	15	2170	977	10	1445	650
	M 2.5	2.5	0.45	20	2545	1145	15	1910	860	10	1275	574
	M 3	3.0	0.50	20	2120	1060	15	1590	795	10	1060	530
Stahl < 850 N/mm² A_5 > 10%	M 4	4.0	0.70	20	1590	1113	15	1195	837	10	795	557
	M 5	5.0	0.80	20	1275	1020	15	955	764	10	635	508
	M 6	6.0	1.00	20	1060	1060	15	795	795	10	530	530
	M 8	8.0	1.25	20	795	994	15	595	744	10	400	500
	M 10	10.0	1.50	20	635	953	15	475	713	10	320	480
Stahl 850 - 1100 N/mm² A_5 > 10%	M 1	1.0	0.25	15	4775	1194	10	3185	796			
	M 1.2	1.2	0.25	15	3980	995	10	2655	664			
	M 1.4	1.4	0.30	15	3410	1023	10	2275	683			
	M 1.6	1.6	0.35	15	2985	1045	10	1990	697			
	M 1.8	1.8	0.35	15	2655	929	10	1770	620			
	M 2	2.0	0.40	15	2385	954	10	1590	636			
	M 2.2	2.2	0.45	15	2170	977	10	1445	650			
	M 2.5	2.5	0.45	15	1910	860	10	1275	574			
	M 3	3.0	0.50	15	1590	795	10	1060	530			
Stahl 850 - 1100 N/mm² A_5 > 10%	M 4	4.0	0.70	15	1195	837	10	795	557			
	M 5	5.0	0.80	15	955	764	10	635	508			
	M 6	6.0	1.00	15	795	795	10	530	530			
	M 8	8.0	1.25	15	595	744	10	400	500			
	M 10	10.0	1.50	15	475	713	10	320	480			

Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch A_5 > 10%	M 1	1.0	0.25	15	4775	1194	10	3185	796
	M 1.2	1.2	0.25	15	3980	995	10	2655	664
	M 1.4	1.4	0.30	15	3410	1023	10	2275	683
	M 1.6	1.6	0.35	15	2985	1045	10	1990	697
	M 1.8	1.8	0.35	15	2655	929	10	1770	620
	M 2	2.0	0.40	15	2385	954	10	1590	636
	M 2.2	2.2	0.45	15	2170	977	10	1445	650
	M 2.5	2.5	0.45	15	1910	860	10	1275	574
	M 3	3.0	0.50	15	1590	795	10	1060	530
Nichtrostender Stahl ferritisch/martensitisch A_5 > 10%	M 4	4.0	0.70	15	1195	837	10	795	557
	M 5	5.0	0.80	15	955	764	10	635	508
	M 6	6.0	1.00	15	795	795	10	530	530
	M 8	8.0	1.25	15	595	744	10	400	500
	M 10	10.0	1.50	15	475	713	10	320	480
Nichtrostender Stahl [Cr-Ni/1.4301]	M 1	1.0	0.25	15	4775	1194	10	3185	796
	M 1.2	1.2	0.25	15	3980	995	10	2655	664
	M 1.4	1.4	0.30	15	3410	1023	10	2275	683
	M 1.6	1.6	0.35	15	2985	1045	10	1990	697
	M 1.8	1.8	0.35	15	2655	929	10	1770	620
	M 2	2.0	0.40	15	2385	954	10	1590	636
	M 2.2	2.2	0.45	15	2170	977	10	1445	650
	M 2.5	2.5	0.45	15	1910	860	10	1275	574
	M 3	3.0	0.50	15	1590	795	10	1060	530
Nichtrostender Stahl [Cr-Ni/1.4301]	M 4	4.0	0.70	15	1195	837	10	795	557
	M 5	5.0	0.80	15	955	764	10	635	508
	M 6	6.0	1.00	15	795	795	10	530	530
	M 8	8.0	1.25	15	595	744	10	400	500
	M 10	10.0	1.50	15	475	713	10	320	480

Gewindeformer Lightform Steel

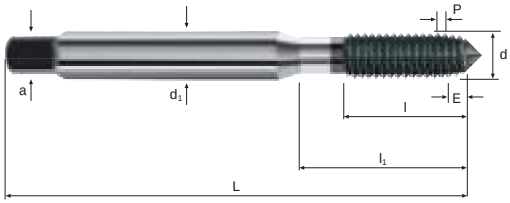
St

M | ISO 2 (6H)

60° | HSS PM/F

DIN 371

X · P Form C



Rm < 850 | **Rm** 850-1100 | **Inox** Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **EL10080** ø-Code **.010**

											LONGCUT
											EL10080
Ø Code	d	P	L	l	l_1	d_1	a				
.010 *	M 1	0.25	40	5.5	–	2.5	2.1	3	0.87		●
.012 *	M 1.2	0.25	40	5.5	–	2.5	2.1	3	1.07		●
.020 *	M 1.4	0.30	40	7.0	–	2.5	2.1	3	1.25		●
.022 *	M 1.6	0.35	40	8.0	–	2.5	2.1	3	1.42		●
.026 *	M 1.8	0.35	40	8.0	–	2.5	2.1	3	1.62		●
.034	M 2	0.40	45	8.0	–	2.8	2.1	3	1.80		●
.036	M 2.2	0.45	45	9.0	–	2.8	2.1	3	2.00		●
.040	M 2.5	0.45	50	9.0	–	2.8	2.1	3	2.30		●
.044	M 3	0.50	56	12.0	18.0	3.5	2.7	3	2.80		●
.058	M 4	0.70	63	13.0	21.0	4.5	3.4	3	3.70		●
.084	M 5	0.80	70	15.0	25.0	6.0	4.9	4	4.60		●
.088	M 6	1.00	80	17.0	30.0	6.0	4.9	4	5.50		●
.160	M 8	1.25	90	20.0	35.0	8.0	6.2	4	7.40		●
.174	M10	1.50	100	22.0	39.0	10.0	8.0	4	9.30		●

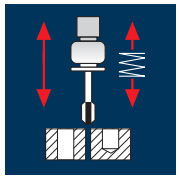
≤ M 1.4 Toleranz ISO1 (4H)

* ohne Schmiernuten

Grössere Abmessungen siehe Artikel-Nr. EL10081, Seite 363

CF

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl <850 N/mm² A_5 > 10%	M 12	12.0	1.75	20	530	928	15	400	700	10	265	464
	M 14	14.0	2.00	20	455	910	15	340	680	10	225	450
	M 16	16.0	2.00	20	400	800	15	300	600	10	200	400
Stahl 850 - 1100 N/mm² A_5 > 10%	M 12	12.0	1.75	15	400	700	10	265	464			
	M 14	14.0	2.00	15	340	680	10	225	450			
	M 16	16.0	2.00	15	300	600	10	200	400			
Nichtrostender Stahl ferritisch/martensitisch A_5 > 10%	M 12	12.0	1.75	15	400	700	10	265	464			
	M 14	14.0	2.00	15	340	680	10	225	450			
	M 16	16.0	2.00	15	300	600	10	200	400			
Nichtrostender Stahl [Cr-Ni/1.4301]	M 12	12.0	1.75	15	400	700	10	265	464			
	M 14	14.0	2.00	15	340	680	10	225	450			
	M 16	16.0	2.00	15	300	600	10	200	400			

Gewindeformer Lightform Steel

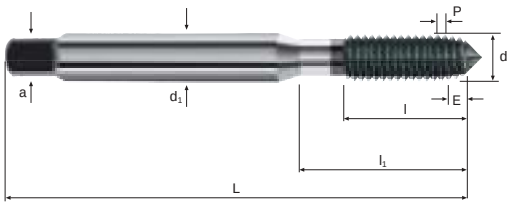
St

M | ISO 2 (6H)

60° | HSS PM/F

DIN 376

Form C



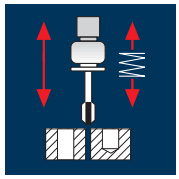
Rm < 850 | **Rm** 850-1100 | **Inox** Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **EL10081** ø-Code **.240**

										LONGCUT
										EL10081
ø Code	**d**	**P**	**L**	**l**	**l_1**	**d_1**	**a**			
.240	**M12**	**1.75**	110	24	40	9	7	5	11.20	●
.244	**M14**	**2.00**	110	26	40	11	9	5	13.10	●
.246	**M16**	**2.00**	110	27	40	12	9	5	15.10	●

CF

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 850 N/mm² A_5 > 10%	M 1	1.0	0.25	20	6365	1591	15	4775	1194	10	3185	796
	M 1.2	1.2	0.25	20	5305	1326	15	3980	995	10	2655	664
	M 1.4	1.4	0.30	20	4545	1364	15	3410	1023	10	2275	683
	M 1.6	1.6	0.35	20	3980	1393	15	2985	1045	10	1990	697
	M 1.8	1.8	0.35	20	3535	1237	15	2655	929	10	1770	620
	M 2	2.0	0.40	20	3185	1274	15	2385	954	10	1590	636
	M 2.2	2.2	0.45	20	2895	1303	15	2170	977	10	1445	650
	M 2.5	2.5	0.45	20	2545	1145	15	1910	860	10	1275	574
	M 3	3.0	0.50	20	2120	1060	15	1590	795	10	1060	530
Stahl < 850 N/mm² A_5 > 10%	M 4	4.0	0.70	20	1590	1113	15	1195	837	10	795	557
	M 5	5.0	0.80	20	1275	1020	15	955	764	10	635	508
	M 6	6.0	1.00	20	1060	1060	15	795	795	10	530	530
	M 8	8.0	1.25	20	795	994	15	595	744	10	400	500
	M10	10.0	1.50	20	635	953	15	475	713	10	320	480
Stahl 850 - 1100 N/mm² A_5 > 10%	M 1	1.0	0.25	15	4775	1194	10	3185	796			
	M 1.2	1.2	0.25	15	3980	995	10	2655	664			
	M 1.4	1.4	0.30	15	3410	1023	10	2275	683			
	M 1.6	1.6	0.35	15	2985	1045	10	1990	697			
	M 1.8	1.8	0.35	15	2655	929	10	1770	620			
	M 2	2.0	0.40	15	2385	954	10	1590	636			
	M 2.2	2.2	0.45	15	2170	977	10	1445	650			
	M 2.5	2.5	0.45	15	1910	860	10	1275	574			
	M 3	3.0	0.50	15	1590	795	10	1060	530			
Stahl 850 - 1100 N/mm² A_5 > 10%	M 4	4.0	0.70	15	1195	837	10	795	557			
	M 5	5.0	0.80	15	955	764	10	635	508			
	M6	6.0	1.00	15	795	795	10	530	530			
	M8	8.0	1.25	15	595	744	10	400	500			
	M10	10.0	1.50	15	475	713	10	320	480			

Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch A_5 > 10%	M 1	1.0	0.25	15	4775	1194	10	3185	796
	M 1.2	1.2	0.25	15	3980	995	10	2655	664
	M 1.4	1.4	0.30	15	3410	1023	10	2275	683
	M 1.6	1.6	0.35	15	2985	1045	10	1990	697
	M 1.8	1.8	0.35	15	2655	929	10	1770	620
	M 2	2.0	0.40	15	2385	954	10	1590	636
	M 2.2	2.2	0.45	15	2170	977	10	1445	650
	M 2.5	2.5	0.45	15	1910	860	10	1275	574
	M 3	3.0	0.50	15	1590	795	10	1060	530
Nichtrostender Stahl ferritisch/martensitisch A_5 > 10%	M 4	4.0	0.70	15	1195	837	10	795	557
	M 5	5.0	0.80	15	955	764	10	635	508
	M 6	6.0	1.00	15	795	795	10	530	530
	M 8	8.0	1.25	15	595	744	10	400	500
	M10	10.0	1.50	15	475	713	10	320	480
Nichtrostender Stahl [Cr-Ni/1.4301]	M 1	1.0	0.25	15	4775	1194	10	3185	796
	M 1.2	1.2	0.25	15	3980	995	10	2655	664
	M 1.4	1.4	0.30	15	3410	1023	10	2275	683
	M 1.6	1.6	0.35	15	2985	1045	10	1990	697
	M 1.8	1.8	0.35	15	2655	929	10	1770	620
	M 2	2.0	0.40	15	2385	954	10	1590	636
	M 2.2	2.2	0.45	15	2170	977	10	1445	650
	M 2.5	2.5	0.45	15	1910	860	10	1275	574
	M 3	3.0	0.50	15	1590	795	10	1060	530
Nichtrostender Stahl [Cr-Ni/1.4301]	M 4	4.0	0.70	15	1195	837	10	795	557
	M 5	5.0	0.80	15	955	764	10	635	508
	M 6	6.0	1.00	15	795	795	10	530	530
	M 8	8.0	1.25	15	595	744	10	400	500
	M10	10.0	1.50	15	475	713	10	320	480

Gewindeformer

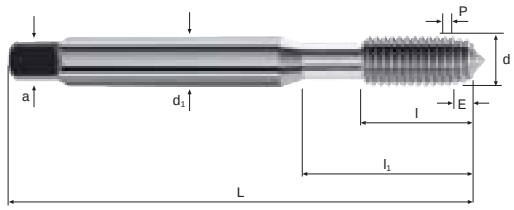
St

M | ISO 2 (6H)

60° | HSS PM/F

DIN 371

Form E



Rm < 850 | **Rm** 850-1100 | **Inox** Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH10070** ø-Code **.010**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH10070
.010 *	M 1	0.25	40	5.5	–	2.5	2.1	3	0.87	●
.012 *	M 1.2	0.25	40	5.5	–	2.5	2.1	3	1.07	●
.020 *	M 1.4	0.30	40	7.0	–	2.5	2.1	3	1.25	●
.022 *	M 1.6	0.35	40	8.0	–	2.5	2.1	3	1.42	●
.026 *	M 1.8	0.35	40	8.0	–	2.5	2.1	3	1.62	●
.034	M 2	0.40	45	8.0	–	2.8	2.1	3	1.80	●
.036	M 2.2	0.45	45	9.0	–	2.8	2.1	3	2.00	●
.040	M 2.5	0.45	50	9.0	–	2.8	2.1	3	2.30	●
.044	M 3	0.50	56	12.0	18.0	3.5	2.7	3	2.80	●
.058	M 4	0.70	63	13.0	21.0	4.5	3.4	4	3.70	●
.084	M 5	0.80	70	15.0	25.0	6.0	4.9	4	4.60	●
.088	M 6	1.00	80	17.0	30.0	6.0	4.9	4	5.50	●
.160	M 8	1.25	90	20.0	35.0	8.0	6.2	5	7.40	●
.174	M10	1.50	100	22.0	39.0	10.0	8.0	5	9.30	●

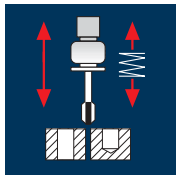
≤ M 1.4 Toleranz ISO1 (4H)

* ohne Schmiernuten

Grössere Abmessungen siehe Artikel-Nr. EH10071, Seite 367

CF

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 850 N/mm² A_5 > 10%	M12	12.0	1.75	20	530	928	15	400	700	10	265	464
	M14	14.0	2.00	20	455	910	15	340	680	10	225	450
	M16	16.0	2.00	20	400	800	15	300	600	10	200	400
Stahl 850 - 1100 N/mm² A_5 > 10%	M12	12.0	1.75	15	400	700	10	265	464			
	M14	14.0	2.00	15	340	680	10	225	450			
	M16	16.0	2.00	15	300	600	10	200	400			
Nichtrostender Stahl ferritisch/martensitisch A_5 > 10%	M12	12.0	1.75	15	400	700	10	265	464			
	M14	14.0	2.00	15	340	680	10	225	450			
	M16	16.0	2.00	15	300	600	10	200	400			
Nichtrostender Stahl [Cr-Ni/1.4301]	M12	12.0	1.75	15	400	700	10	265	464			
	M14	14.0	2.00	15	340	680	10	225	450			
	M16	16.0	2.00	15	300	600	10	200	400			

Gewindeformer

St

M

ISO 2 (6H)

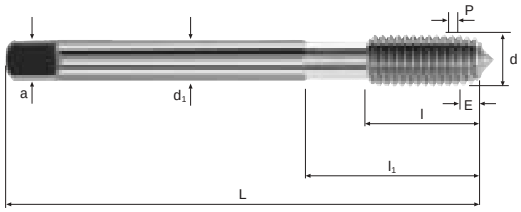
60°

HSS PM/F

DIN 376

X - P

Form E



Rm < 850

Rm 850-1100

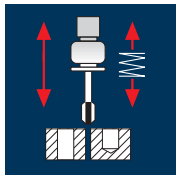
Inox Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH10071** ø-Code **.240**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH10071
.240	M12	1.75	110	24	40	9	7	7	11.20	●
.244	M14	2.00	110	26	40	11	9	7	13.10	●
.246	M16	2.00	110	27	40	12	9	7	15.10	●

CF

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 850 N/mm² A_5 > 10%	M 6	6.0	1.00	25	1325	1325	20	1060	1060	15	795	795
	M 8	8.0	1.25	25	995	1244	20	795	994	15	595	744
	M10	10.0	1.50	25	795	1193	20	635	953	15	475	713
	M12	12.0	1.75	25	665	1164	20	530	928	15	400	700
	M14	14.0	2.00	25	570	1140	20	455	910	15	340	680
	M16	16.0	2.00	25	495	990	20	400	800	15	300	600
Stahl 850 - 1100 N/mm² A_5 > 10%	M 6	6.0	1.00	15	795	795	10	530	530			
	M 8	8.0	1.25	15	595	744	10	400	500			
	M10	10.0	1.50	15	475	713	10	320	480			
	M12	12.0	1.75	15	400	700	10	265	464			
	M14	14.0	2.00	15	340	680	10	225	450			
	M16	16.0	2.00	15	300	600	10	200	400			
Nichtrostender Stahl ferritisch/martensitisch A_5 > 10%	M 6	6.0	1.00	15	795	795	10	530	530			
	M 8	8.0	1.25	15	595	744	10	400	500			
	M10	10.0	1.50	15	475	713	10	320	480			
	M12	12.0	1.75	15	400	700	10	265	464			
	M14	14.0	2.00	15	340	680	10	225	450			
	M16	16.0	2.00	15	300	600	10	200	400			
Nichtrostender Stahl [Cr-Ni/1.4301]	M 6	6.0	1.00	15	795	795	10	530	530			
	M 8	8.0	1.25	15	595	744	10	400	500			
	M10	10.0	1.50	15	475	713	10	320	480			
	M12	12.0	1.75	15	400	700	10	265	464			
	M14	14.0	2.00	15	340	680	10	225	450			
	M16	16.0	2.00	15	300	600	10	200	400			

Gewindeformer

Incool

St

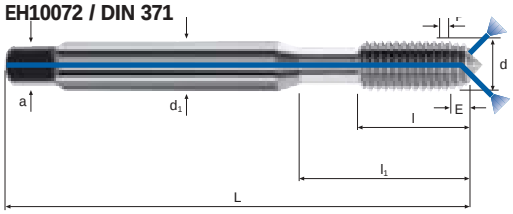
M | ISO 2 (6H)

60° | HSS PM/F

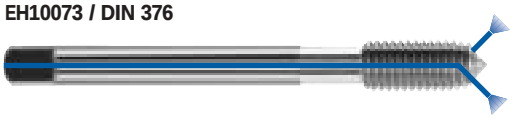
DIN 371/376

X - P | Form E

EH10072 / DIN 371



EH10073 / DIN 376



Rm < 850 | **Rm** 850-1100 | **Inox** Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH10072** ø-Code **.088**

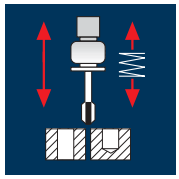
Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH10072
.088	M 6	1.00	80	17	30	6	4.9	4	5.50	●
.160	M 8	1.25	90	20	35	8	6.2	5	7.40	●
.174	M10	1.50	100	22	39	10	8.0	5	9.30	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH10073** ø-Code **.240**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH10073
.240	M12	1.75	110	24	50	9	7.0	7	11.20	●
.244	M14	2.00	110	26	58	11	9.0	7	13.10	●
.246	M16	2.00	110	27	58	12	9.0	7	15.10	●

CF

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Reinaluminium	M 2	2.0	0.40	25	3980	1592	20	3185	1274	15	2385	954
	M 2.2	2.2	0.45	25	3615	1627	20	2895	1303	15	2170	977
	M 2.5	2.5	0.45	25	3185	1433	20	2545	1145	15	1910	860
	M 3	3.0	0.50	25	2655	1328	20	2120	1060	15	1590	795
	M 4	4.0	0.70	25	1990	1393	20	1590	1113	15	1195	837
	M 5	5.0	0.80	25	1590	1272	20	1275	1020	15	955	764
	M 6	6.0	1.00	25	1325	1325	20	1060	1060	15	795	795
	M 8	8.0	1.25	25	995	1244	20	795	994	15	595	744
	M10	10.0	1.50	25	795	1193	20	635	953	15	475	713
Reinaluminium	M12	12.0	1.75	25	665	1164	20	530	928	15	400	700
	M14	14.0	2.00	25	570	1140	20	455	910	15	340	680
	M16	16.0	2.00	25	495	990	20	400	800	15	300	600
Al-Knetlegierung Si < 6% nicht ausgehärtet	M 2	2.0	0.40	30	4775	1910	25	3980	1592	20	3185	1274
	M 2.2	2.2	0.45	30	4340	1953	25	3615	1627	20	2895	1303
	M 2.5	2.5	0.45	30	3820	1719	25	3185	1433	20	2545	1145
	M 3	3.0	0.50	30	3185	1593	25	2655	1328	20	2120	1060
	M 4	4.0	0.70	30	2385	1670	25	1990	1393	20	1590	1113
	M 5	5.0	0.80	30	1910	1528	25	1590	1272	20	1275	1020
	M 6	6.0	1.00	30	1590	1590	25	1325	1325	20	1060	1060
	M 8	8.0	1.25	30	1195	1494	25	995	1244	20	795	994
	M10	10.0	1.50	30	955	1433	25	795	1193	20	635	953
Al-Knetlegierung Si < 6% nicht ausgehärtet	M12	12.0	1.75	30	795	1391	25	665	1164	20	530	928
	M14	14.0	2.00	30	680	1360	25	570	1140	20	455	910
	M16	16.0	2.00	30	595	1190	25	495	990	20	400	800

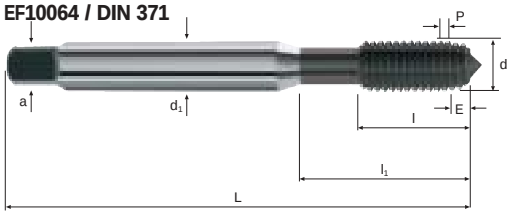
Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Reinkupfer	M 2	2.0	0.40	15	2385	954	10	1590	636	10	1590	636
	M 2.2	2.2	0.45	15	2170	977	10	1445	650	10	1445	650
	M 2.5	2.5	0.45	15	1910	860	10	1275	574	10	1275	574
	M 3	3.0	0.50	15	1590	795	10	1060	530	10	1060	530
	M 4	4.0	0.70	15	1195	837	10	795	557	10	795	557
	M 5	5.0	0.80	15	955	764	10	635	508	10	635	508
	M 6	6.0	1.00	15	795	795	10	530	530	10	530	530
	M 8	8.0	1.25	15	595	744	10	400	500	10	400	500
	M10	10.0	1.50	15	475	713	10	320	480	10	320	480
Reinkupfer	M12	12.0	1.75	15	400	700	10	265	464	10	265	464
	M14	14.0	2.00	15	340	680	10	225	450	10	225	450
	M16	16.0	2.00	15	300	600	10	200	400	10	200	400
Buntmetalle A_5 > 15%	M 2	2.0	0.40	15	2385	954	10	1590	636	10	1590	636
	M 2.2	2.2	0.45	15	2170	977	10	1445	650	10	1445	650
	M 2.5	2.5	0.45	15	1910	860	10	1275	574	10	1275	574
	M 3	3.0	0.50	15	1590	795	10	1060	530	10	1060	530
	M 4	4.0	0.70	15	1195	837	10	795	557	10	795	557
	M 5	5.0	0.80	15	955	764	10	635	508	10	635	508
	M 6	6.0	1.00	15	795	795	10	530	530	10	530	530
	M 8	8.0	1.25	15	595	744	10	400	500	10	400	500
	M10	10.0	1.50	15	475	713	10	320	480	10	320	480
Buntmetalle A_5 > 15%	M12	12.0	1.75	15	400	700	10	265	464	10	265	464
	M14	14.0	2.00	15	340	680	10	225	450	10	225	450
	M16	16.0	2.00	15	300	600	10	200	400	10	200	400

Gewindeformer

Al

M	ISO 3 (6G)
60°	HSS PM/F
DIN 371/376	
	X - P Form E

EF10064 / DIN 371



EF10065 / DIN 376

			Al Aluminium > 99%	Al Aluminium Alloy			Cu Copper		CuZn Brass

Beispiel: **Bestell-Nr.** Artikel-Nr. **EF10064** ø-Code **.034**

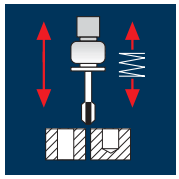
Ø Code	d	P	L	l	l_1	d_1	a			F-DLC EF10064
.034	M 2	0.40	45	8	–	2.8	2.1	3	1.80	●
.036	M 2.2	0.45	45	9	–	2.8	2.1	3	2.00	●
.040	M 2.5	0.45	50	9	–	2.8	2.1	3	2.30	●
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.80	●
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.70	●
.084	M 5	0.80	70	15	25.0	6.0	4.9	4	4.60	●
.088	M 6	1.00	80	17	30.0	6.0	4.9	4	5.50	●
.160	M 8	1.25	90	20	35.0	8.0	6.2	4	7.40	●
.174	M10	1.50	100	22	39.0	10.0	8.0	4	9.30	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EF10065** ø-Code **.240**

Ø Code	d	P	L	l	l_1	d_1	a			F-DLC EF10065
.240	M12	1.75	110	24	40.0	9.0	7.0	5	11.20	●
.244	M14	2.00	110	26	40.0	11.0	9.0	5	13.10	●
.246	M16	2.00	110	27	40.0	12.0	9.0	5	15.10	●

CF

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 850 N/mm² A_5 > 10%	M 2	2.0	0.40	20	3185	1274	15	2385	954	10	1590	636
	M 2.2	2.2	0.45	20	2895	1303	15	2170	977	10	1445	650
	M 2.5	2.5	0.45	20	2545	1145	15	1910	860	10	1275	574
	M 3	3.0	0.50	20	2120	1060	15	1590	795	10	1060	530
	M 4	4.0	0.70	20	1590	1113	15	1195	837	10	795	557
	M 5	5.0	0.80	20	1275	1020	15	955	764	10	635	508
	M 6	6.0	1.00	20	1060	1060	15	795	795	10	530	530
	M 8	8.0	1.25	20	795	994	15	595	744	10	400	500
	M10	10.0	1.50	20	635	953	15	475	713	10	320	480
Stahl < 850 N/mm² A_5 > 10%	M12	12.0	1.75	20	530	928	15	400	700	10	265	464
	M14	14.0	2.00	20	455	910	15	340	680	10	225	450
	M16	16.0	2.00	20	400	800	15	300	600	10	200	400
Stahl 850 - 1100 N/mm² A_5 > 10%	M 2	2.0	0.40	15	2385	954	10	1590	636			
	M 2.2	2.2	0.45	15	2170	977	10	1445	650			
	M 2.5	2.5	0.45	15	1910	860	10	1275	574			
	M 3	3.0	0.50	15	1590	795	10	1060	530			
	M 4	4.0	0.70	15	1195	837	10	795	557			
	M 5	5.0	0.80	15	955	764	10	635	508			
	M 6	6.0	1.00	15	795	795	10	530	530			
	M 8	8.0	1.25	15	595	744	10	400	500			
	M10	10.0	1.50	15	475	713	10	320	480			
Stahl 850 - 1100 N/mm² A_5 > 10%	M12	12.0	1.75	15	400	700	10	265	464			
	M14	14.0	2.00	15	340	680	10	225	450			
	M16	16.0	2.00	15	300	600	10	200	400			

Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch A_5 > 10%	M 2	2.0	0.40	15	2385	954	10	1590	636
	M 2.2	2.2	0.45	15	2170	977	10	1445	650
	M 2.5	2.5	0.45	15	1910	860	10	1275	574
	M 3	3.0	0.50	15	1590	795	10	1060	530
	M 4	4.0	0.70	15	1195	837	10	795	557
	M 5	5.0	0.80	15	955	764	10	635	508
	M 6	6.0	1.00	15	795	795	10	530	530
	M 8	8.0	1.25	15	595	744	10	400	500
	M10	10.0	1.50	15	475	713	10	320	480
Nichtrostender Stahl ferritisch/martensitisch A_5 > 10%	M12	12.0	1.75	15	400	700	10	265	464
	M14	14.0	2.00	15	340	680	10	225	450
	M16	16.0	2.00	15	300	600	10	200	400
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2	2.0	0.40	15	2385	954	10	1590	636
	M 2.2	2.2	0.45	15	2170	977	10	1445	650
	M 2.5	2.5	0.45	15	1910	860	10	1275	574
	M 3	3.0	0.50	15	1590	795	10	1060	530
	M 4	4.0	0.70	15	1195	837	10	795	557
	M 5	5.0	0.80	15	955	764	10	635	508
	M 6	6.0	1.00	15	795	795	10	530	530
	M 8	8.0	1.25	15	595	744	10	400	500
	M10	10.0	1.50	15	475	713	10	320	480
Nichtrostender Stahl [Cr-Ni/1.4301]	M12	12.0	1.75	15	400	700	10	265	464
	M14	14.0	2.00	15	340	680	10	225	450
	M16	16.0	2.00	15	300	600	10	200	400

Gewindeformer

St

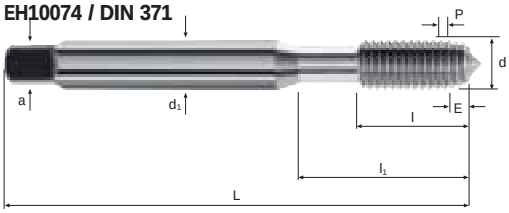
M | ISO 3 (6G)

60° | HSS PM/F

DIN 371/376

X · P | Form E

EH10074 / DIN 371



EH10075 / DIN 376

Rm < 850 | **Rm** 850-1100 | **Inox** Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH10074** ø-Code **.034**

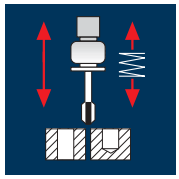
Ø Code	d	P	L	l	l1	d1	a			TiCN EH10074
.034	M 2	0.40	45	8	–	2.8	2.1	3	1.80	●
.036	M 2.2	0.45	45	9	–	2.8	2.1	3	2.00	●
.040	M 2.5	0.45	50	9	–	2.8	2.1	3	2.30	●
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.80	●
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.70	●
.084	M 5	0.80	70	15	25.0	6.0	4.9	4	4.60	●
.088	M 6	1.00	80	17	30.0	6.0	4.9	4	5.50	●
.160	M 8	1.25	90	20	35.0	8.0	6.2	5	7.40	●
.174	M10	1.50	100	22	39.0	10.0	8.0	5	9.30	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH10075** ø-Code **.240**

Ø Code	d	P	L	l	l1	d1	a			TiCN EH10075
.240	M12	1.75	110	24	40	9.0	7.0	7	11.20	●
.244	M14	2.00	110	26	40	11.0	9.0	7	13.10	●
.246	M16	2.00	110	27	40	12.0	9.0	7	15.10	●

CF

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Reinaluminium	M 2	2.0	0.40	25	3980	1592	20	3185	1274	15	2385	954
	M 2.2	2.2	0.45	25	3615	1627	20	2895	1303	15	2170	977
	M 2.5	2.5	0.45	25	3185	1433	20	2545	1145	15	1910	860
	M 3	3.0	0.50	25	2655	1328	20	2120	1060	15	1590	795
	M 4	4.0	0.70	25	1990	1393	20	1590	1113	15	1195	837
	M 5	5.0	0.80	25	1590	1272	20	1275	1020	15	955	764
	M 6	6.0	1.00	25	1325	1325	20	1060	1060	15	795	795
	M 8	8.0	1.25	25	995	1244	20	795	994	15	595	744
	M10	10.0	1.50	25	795	1193	20	635	953	15	475	713
Al-Knetlegierung Si < 6% nicht ausgehärtet	M 2	2.0	0.40	30	4775	1910	25	3980	1592	20	3185	1274
	M 2.2	2.2	0.45	30	4340	1953	25	3615	1627	20	2895	1303
	M 2.5	2.5	0.45	30	3820	1719	25	3185	1433	20	2545	1145
	M 3	3.0	0.50	30	3185	1593	25	2655	1328	20	2120	1060
	M 4	4.0	0.70	30	2385	1670	25	1990	1393	20	1590	1113
	M 5	5.0	0.80	30	1910	1528	25	1590	1272	20	1275	1020
	M 6	6.0	1.00	30	1590	1590	25	1325	1325	20	1060	1060
	M 8	8.0	1.25	30	1195	1494	25	995	1244	20	795	994
	M10	10.0	1.50	30	955	1433	25	795	1193	20	635	953
Reinkupfer	M 2	2.0	0.40	15	2385	954	10	1590	636	10	1590	636
	M 2.2	2.2	0.45	15	2170	977	10	1445	650	10	1445	650
	M 2.5	2.5	0.45	15	1910	860	10	1275	574	10	1275	574
	M 3	3.0	0.50	15	1590	795	10	1060	530	10	1060	530
	M 4	4.0	0.70	15	1195	837	10	795	557	10	795	557
	M 5	5.0	0.80	15	955	764	10	635	508	10	635	508
	M 6	6.0	1.00	15	795	795	10	530	530	10	530	530
	M 8	8.0	1.25	15	595	744	10	400	500	10	400	500
	M10	10.0	1.50	15	475	713	10	320	480	10	320	480
Buntmetalle A_5 > 15%	M 2	2.0	0.40	15	2385	954	10	1590	636	10	1590	636
	M 2.2	2.2	0.45	15	2170	977	10	1445	650	10	1445	650
	M 2.5	2.5	0.45	15	1910	860	10	1275	574	10	1275	574
	M 3	3.0	0.50	15	1590	795	10	1060	530	10	1060	530
	M 4	4.0	0.70	15	1195	837	10	795	557	10	795	557
	M 5	5.0	0.80	15	955	764	10	635	508	10	635	508
	M 6	6.0	1.00	15	795	795	10	530	530	10	530	530
	M 8	8.0	1.25	15	595	744	10	400	500	10	400	500
	M10	10.0	1.50	15	475	713	10	320	480	10	320	480

Gewindeformer

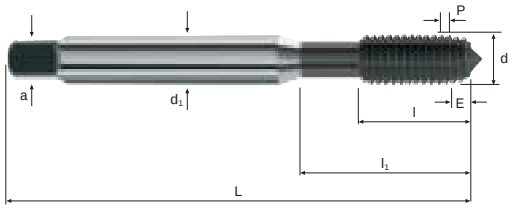
Al

M | 7G

60° | HSS PM/F

DIN 371

Form E



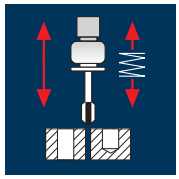
Al Aluminium > 99% | **Al** Aluminium Alloy | **Cu** Copper | CuZn Brass

Beispiel: **Bestell-Nr.** Artikel-Nr. **EF10068** ø-Code **.034**

Ø Code	d	P	L	l	l_1	d_1	a			F-DLC EF10068
.034	M 2	0.40	45	8	–	2.8	2.1	3	1.80	●
.036	M 2.2	0.45	45	9	–	2.8	2.1	3	2.00	●
.040	M 2.5	0.45	50	9	–	2.8	2.1	3	2.30	●
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.80	●
.058	M 4	0.70	63	13	21.0	4.5	3.4	3	3.70	●
.084	M 5	0.80	70	15	25.0	6.0	4.9	4	4.60	●
.088	M 6	1.00	80	17	30.0	6.0	4.9	4	5.50	●
.160	M 8	1.25	90	20	35.0	8.0	6.2	4	7.40	●
.174	M10	1.50	100	22	39.0	10.0	8.0	4	9.30	●

CF

Anwendung



Werkstoff	M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 850 N/mm² A_5 > 10%	M 2	2.0	0.40	20	3185	1274	15	2385	954	10	1590	636
	M 2.2	2.2	0.45	20	2895	1303	15	2170	977	10	1445	650
	M 2.5	2.5	0.45	20	2545	1145	15	1910	860	10	1275	574
	M 3	3.0	0.50	20	2120	1060	15	1590	795	10	1060	530
	M 4	4.0	0.70	20	1590	1113	15	1195	837	10	795	557
	M 5	5.0	0.80	20	1275	1020	15	955	764	10	635	508
	M 6	6.0	1.00	20	1060	1060	15	795	795	10	530	530
	M 8	8.0	1.25	20	795	994	15	595	744	10	400	500
	M10	10.0	1.50	20	635	953	15	475	713	10	320	480
Stahl 850 - 1100 N/mm² A_5 > 10%	M 2	2.0	0.40	15	2385	954	10	1590	636			
	M 2.2	2.2	0.45	15	2170	977	10	1445	650			
	M 2.5	2.5	0.45	15	1910	860	10	1275	574			
	M 3	3.0	0.50	15	1590	795	10	1060	530			
	M 4	4.0	0.70	15	1195	837	10	795	557			
	M 5	5.0	0.80	15	955	764	10	635	508			
	M 6	6.0	1.00	15	795	795	10	530	530			
	M 8	8.0	1.25	15	595	744	10	400	500			
	M10	10.0	1.50	15	475	713	10	320	480			
Nichtrostender Stahl ferritisch/martensitisch A_5 > 10%	M 2	2.0	0.40	15	2385	954	10	1590	636			
	M 2.2	2.2	0.45	15	2170	977	10	1445	650			
	M 2.5	2.5	0.45	15	1910	860	10	1275	574			
	M 3	3.0	0.50	15	1590	795	10	1060	530			
	M 4	4.0	0.70	15	1195	837	10	795	557			
	M 5	5.0	0.80	15	955	764	10	635	508			
	M 6	6.0	1.00	15	795	795	10	530	530			
	M 8	8.0	1.25	15	595	744	10	400	500			
	M10	10.0	1.50	15	475	713	10	320	480			
Nichtrostender Stahl [Cr-Ni/1.4301]	M 2	2.0	0.40	15	2385	954	10	1590	636			
	M 2.2	2.2	0.45	15	2170	977	10	1445	650			
	M 2.5	2.5	0.45	15	1910	860	10	1275	574			
	M 3	3.0	0.50	15	1590	795	10	1060	530			
	M 4	4.0	0.70	15	1195	837	10	795	557			
	M 5	5.0	0.80	15	955	764	10	635	508			
	M 6	6.0	1.00	15	795	795	10	530	530			
	M 8	8.0	1.25	15	595	744	10	400	500			
	M10	10.0	1.50	15	475	713	10	320	480			

Gewindeformer

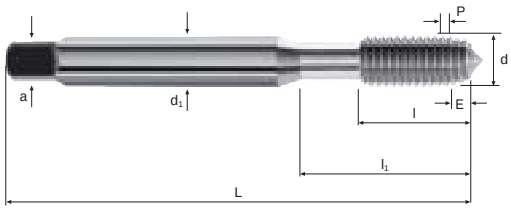
St

M | 7G

60° | HSS PM/F

DIN 371

Form E



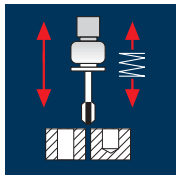
Rm < 850 | **Rm** 850-1100 | **Inox** Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH10078** ø-Code **.034**

Ø Code	d	P	L	l	l_1	d_1	a			TiCN EH10078
.034	M 2	0.40	45	8	–	2.8	2.1	3	1.80	●
.036	M 2.2	0.45	45	9	–	2.8	2.1	3	2.00	●
.040	M 2.5	0.45	50	9	–	2.8	2.1	3	2.30	●
.044	M 3	0.50	56	12	18.0	3.5	2.7	3	2.80	●
.058	M 4	0.70	63	13	21.0	4.5	3.4	4	3.70	●
.084	M 5	0.80	70	15	25.0	6.0	4.9	4	4.60	●
.088	M 6	1.00	80	17	30.0	6.0	4.9	4	5.50	●
.160	M 8	1.25	90	20	35.0	8.0	6.2	5	7.40	●
.174	M10	1.50	100	22	39.0	10.0	8.0	5	9.30	●

CF

Anwendung



Werkstoff	MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Reinaluminium	M 4	4.0	0.50	25	1990	995	20	1590	795	15	1195	598
	M 5	5.0	0.50	25	1590	795	20	1275	638	15	955	478
	M 6	6.0	0.50	25	1325	663	20	1060	530	15	795	398
	M 6	6.0	0.75	25	1325	994	20	1060	795	15	795	596
	M 8	8.0	0.75	25	995	746	20	795	596	15	595	446
	M10	10.0	0.75	25	795	596	20	635	476	15	475	356
	M 8	8.0	1.00	25	995	995	20	795	795	15	595	595
	M10	10.0	1.00	25	795	795	20	635	635	15	475	475
	M10	10.0	1.25	25	795	994	20	635	794	15	475	594
Reinaluminium	M12	12.0	1.00	25	665	665	20	530	530	15	400	400
	M14	14.0	1.00	25	570	570	20	455	455	15	340	340
	M16	16.0	1.00	25	495	495	20	400	400	15	300	300
	M12	12.0	1.25	25	665	831	20	530	663	15	400	500
	M12	12.0	1.50	25	665	998	20	530	795	15	400	600
	M14	14.0	1.50	25	570	855	20	455	683	15	340	510
	M16	16.0	1.50	25	495	743	20	400	600	15	300	450
	M20	20.0	1.50	25	400	600	20	320	480	15	240	360
Al-Knetlegierung Si < 6% nicht ausgehärtet	M 4	4.0	0.50	30	2385	1193	25	1990	995	20	1590	795
	M 5	5.0	0.50	30	1910	955	25	1590	795	20	1275	638
	M 6	6.0	0.50	30	1590	795	25	1325	663	20	1060	530
	M 6	6.0	0.75	30	1590	1193	25	1325	994	20	1060	795
	M 8	8.0	0.75	30	1195	896	25	995	746	20	795	596
	M10	10.0	0.75	30	955	716	25	795	596	20	635	476
	M 8	8.0	1.00	30	1195	1195	25	995	995	20	795	795
	M10	10.0	1.00	30	955	955	25	795	795	20	635	635
	M10	10.0	1.25	30	955	1194	25	795	994	20	635	794
Al-Knetlegierung Si < 6% nicht ausgehärtet	M12	12.0	1.00	30	795	795	25	665	665	20	530	530
	M14	14.0	1.00	30	680	680	25	570	570	20	455	455
	M16	16.0	1.00	30	595	595	25	495	495	20	400	400
	M12	12.0	1.25	30	795	994	25	665	831	20	530	663
	M12	12.0	1.50	30	795	1193	25	665	998	20	530	795
	M14	14.0	1.50	30	680	1020	25	570	855	20	455	683
	M16	16.0	1.50	30	595	893	25	495	743	20	400	600
	M20	20.0	1.50	30	475	713	25	400	600	20	320	480

Werkstoff	MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Reinkupfer	M 4	4.0	0.50	15	1195	598	10	795	398	10	795	398
	M 5	5.0	0.50	15	955	478	10	635	318	10	635	318
	M 6	6.0	0.50	15	795	398	10	530	265	10	530	265
	M 6	6.0	0.75	15	795	596	10	530	398	10	530	398
	M 8	8.0	0.75	15	595	446	10	400	300	10	400	300
	M10	10.0	0.75	15	475	356	10	320	240	10	320	240
	M 8	8.0	1.00	15	595	595	10	400	400	10	400	400
	M10	10.0	1.00	15	475	475	10	320	320	10	320	320
	M10	10.0	1.25	15	475	594	10	320	400	10	320	400
Reinkupfer	M12	12.0	1.00	15	400	400	10	265	265	10	265	265
	M14	14.0	1.00	15	340	340	10	225	225	10	225	225
	M16	16.0	1.00	15	300	300	10	200	200	10	200	200
	M12	12.0	1.25	15	400	500	10	265	331	10	265	331
	M12	12.0	1.50	15	400	600	10	265	398	10	265	398
	M14	14.0	1.50	15	340	510	10	225	338	10	225	338
	M16	16.0	1.50	15	300	450	10	200	300	10	200	300
	M20	20.0	1.50	15	240	360	10	160	240	10	160	240
Buntmetalle A_5 > 15%	M 4	4.0	0.50	15	1195	598	10	795	398	10	795	398
	M 5	5.0	0.50	15	955	478	10	635	318	10	635	318
	M 6	6.0	0.50	15	795	398	10	530	265	10	530	265
	M 6	6.0	0.75	15	795	596	10	530	398	10	530	398
	M 8	8.0	0.75	15	595	446	10	400	300	10	400	300
	M10	10.0	0.75	15	475	356	10	320	240	10	320	240
	M 8	8.0	1.00	15	595	595	10	400	400	10	400	400
	M10	10.0	1.00	15	475	475	10	320	320	10	320	320
	M10	10.0	1.25	15	475	594	10	320	400	10	320	400
Buntmetalle A_5 > 15%	M12	12.0	1.00	15	400	400	10	265	265	10	265	265
	M14	14.0	1.00	15	340	340	10	225	225	10	225	225
	M16	16.0	1.00	15	300	300	10	200	200	10	200	200
	M12	12.0	1.25	15	400	500	10	265	331	10	265	331
	M12	12.0	1.50	15	400	600	10	265	398	10	265	398
	M14	14.0	1.50	15	340	510	10	225	338	10	225	338
	M16	16.0	1.50	15	300	450	10	200	300	10	200	300
	M20	20.0	1.50	15	240	360	10	160	240	10	160	240

Gewindeformer

Al

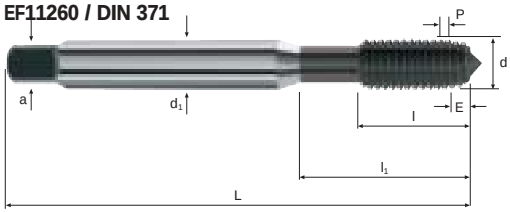
MF | ISO 2 (6H)

60° | HSS PM/F

DIN 371/374

X - P | Form E

EF11260 / DIN 371



EF11261 / DIN 374

Al Aluminium > 99% | **Al** Aluminium Alloy | **Cu** Copper | CuZn Brass

Beispiel: **Bestell-Nr.** Artikel-Nr. **EF11260** ø-Code **.046**

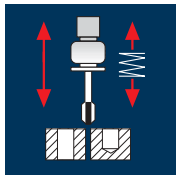
Ø Code	d	P	L	l	l_1	d_1	a			F-DLC EF11260
.046	M 4	0.50	63	13	21	4.5	3.4	3	3.80	●
.048	M 5	0.50	70	15	25	6.0	4.9	4	4.80	●
.050	M 6	0.50	80	17	30	6.0	4.9	4	5.80	●
.064	M 6	0.75	80	17	30	6.0	4.9	4	5.65	●
.066	M 8	0.75	90	20	35	8.0	6.2	4	7.65	●
.068	M10	0.75	100	22	39	10.0	8.0	4	9.65	●
.090	M 8	1.00	90	20	35	8.0	6.2	4	7.55	●
.092	M10	1.00	100	22	39	10.0	8.0	4	9.55	●
.162	M10	1.25	100	22	39	10.0	8.0	4	9.40	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EF11261** ø-Code **.094**

Ø Code	d	P	L	l	l_1	d_1	a			F-DLC EF11261
.094	M12	1.00	100	18	39	9.0	7.0	5	11.50	●
.096	M14	1.00	100	18	39	11.0	9.0	5	13.50	●
.098	M16	1.00	100	18	39	12.0	9.0	5	15.50	●
.164	M12	1.25	100	22	39	9.0	7.0	5	11.40	●
.176	M12	1.50	100	22	39	9.0	7.0	5	11.30	●
.178	M14	1.50	100	22	39	11.0	9.0	5	13.30	●
.180	M16	1.50	100	22	39	12.0	9.0	5	15.30	●
.184	M20	1.50	125	26	50	16.0	12.0	6	19.30	●

CF

Anwendung



Werkstoff	MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 850 N/mm² A_5 > 10%	M 4	4.0	0.50	20	1590	795	15	1195	598	10	795	398
	M 5	5.0	0.50	20	1275	638	15	955	478	10	635	318
	M 6	6.0	0.50	20	1060	530	15	795	398	10	530	265
	M 6	6.0	0.75	20	1060	795	15	795	596	10	530	398
	M 8	8.0	0.75	20	795	596	15	595	446	10	400	300
	M10	10.0	0.75	20	635	476	15	475	356	10	320	240
	M 8	8.0	1.00	20	795	795	15	595	595	10	400	400
	M10	10.0	1.00	20	635	635	15	475	475	10	320	320
	M10	10.0	1.25	20	635	794	15	475	594	10	320	400
Stahl < 850 N/mm² A_5 > 10%	M12	12.0	1.00	20	530	530	15	400	400	10	265	265
	M14	14.0	1.00	20	455	455	15	340	340	10	225	225
	M16	16.0	1.00	20	400	400	15	300	300	10	200	200
	M12	12.0	1.25	20	530	663	15	400	500	10	265	331
	M12	12.0	1.50	20	530	795	15	400	600	10	265	398
	M14	14.0	1.50	20	455	683	15	340	510	10	225	338
	M16	16.0	1.50	20	400	600	15	300	450	10	200	300
	M20	20.0	1.50	20	320	480	15	240	360	10	160	240
Stahl 850 - 1100 N/mm² A_5 > 10%	M 4	4.0	0.50	15	1195	598	10	795	398			
	M 5	5.0	0.50	15	955	478	10	635	318			
	M 6	6.0	0.50	15	795	398	10	530	265			
	M 6	6.0	0.75	15	795	596	10	530	398			
	M 8	8.0	0.75	15	595	446	10	400	300			
	M10	10.0	0.75	15	475	356	10	320	240			
	M 8	8.0	1.00	15	595	595	10	400	400			
	M10	10.0	1.00	15	475	475	10	320	320			
	M10	10.0	1.25	15	475	594	10	320	400			
Stahl 850 - 1100 N/mm² A_5 > 10%	M12	12.0	1.00	15	400	400	10	265	265			
	M14	14.0	1.00	15	340	340	10	225	225			
	M16	16.0	1.00	15	300	300	10	200	200			
	M12	12.0	1.25	15	400	500	10	265	331			
	M12	12.0	1.50	15	400	600	10	265	398			
	M14	14.0	1.50	15	340	510	10	225	338			
	M16	16.0	1.50	15	300	450	10	200	300			
	M20	20.0	1.50	15	240	360	10	160	240			

Werkstoff	MF	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]
Nichtrostender Stahl ferritisch/martensitisch A_5 > 10%	M 4	4.0	0.50	15	1195	598	10	795	398
	M 5	5.0	0.50	15	955	478	10	635	318
	M 6	6.0	0.50	15	795	398	10	530	265
	M 6	6.0	0.75	15	795	596	10	530	398
	M 8	8.0	0.75	15	595	446	10	400	300
	M10	10.0	0.75	15	475	356	10	320	240
	M 8	8.0	1.00	15	595	595	10	400	400
	M10	10.0	1.00	15	475	475	10	320	320
	M10	10.0	1.25	15	475	594	10	320	400
Nichtrostender Stahl ferritisch/martensitisch A_5 > 10%	M12	12.0	1.00	15	400	400	10	265	265
	M14	14.0	1.00	15	340	340	10	225	225
	M16	16.0	1.00	15	300	300	10	200	200
	M12	12.0	1.25	15	400	500	10	265	331
	M12	12.0	1.50	15	400	600	10	265	398
	M14	14.0	1.50	15	340	510	10	225	338
	M16	16.0	1.50	15	300	450	10	200	300
	M20	20.0	1.50	15	240	360	10	160	240
Nichtrostender Stahl [Cr-Ni/1.4301]	M 4	4.0	0.50	15	1195	598	10	795	398
	M 5	5.0	0.50	15	955	478	10	635	318
	M 6	6.0	0.50	15	795	398	10	530	265
	M 6	6.0	0.75	15	795	596	10	530	398
	M 8	8.0	0.75	15	595	446	10	400	300
	M10	10.0	0.75	15	475	356	10	320	240
	M 8	8.0	1.00	15	595	595	10	400	400
	M10	10.0	1.00	15	475	475	10	320	320
	M10	10.0	1.25	15	475	594	10	320	400
Nichtrostender Stahl [Cr-Ni/1.4301]	M12	12.0	1.00	15	400	400	10	265	265
	M14	14.0	1.00	15	340	340	10	225	225
	M16	16.0	1.00	15	300	300	10	200	200
	M12	12.0	1.25	15	400	500	10	265	331
	M12	12.0	1.50	15	400	600	10	265	398
	M14	14.0	1.50	15	340	510	10	225	338
	M16	16.0	1.50	15	300	450	10	200	300
	M20	20.0	1.50	15	240	360	10	160	240

Gewindeformer

St

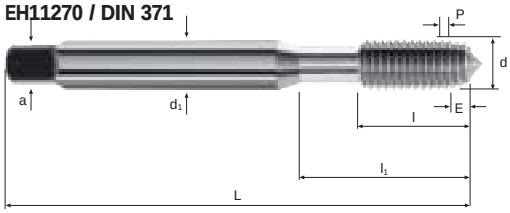
MF | ISO 2 (6H)

60° | HSS PM/F

DIN 371/374

X · P | Form E

EH11270 / DIN 371



EH11271 / DIN 374

Rm < 850 | **Rm** 850-1100 | **Inox** Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH11270** ø-Code **.046**

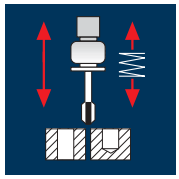
Ø Code	d	P	L	l	l1	d1	a			TiCN EH11270
.046	M 4	0.50	63	13	21	4.5	2.1	4	3.80	●
.048	M 5	0.50	70	15	25	6.0	2.7	4	4.80	●
.050	M 6	0.50	80	17	30	6.0	3.4	4	5.80	●
.064	M 6	0.75	80	17	30	6.0	3.4	4	5.65	●
.066	M 8	0.75	90	20	35	8.0	4.9	5	7.65	●
.068	M10	0.75	100	22	39	10.0	5.5	5	9.65	●
.090	M 8	1.00	90	20	35	8.0	4.9	5	7.55	●
.092	M10	1.00	100	22	39	10.0	5.5	5	9.55	●
.162	M10	1.25	100	22	39	10.0	5.5	5	9.40	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH11271** ø-Code **.094**

Ø Code	d	P	L	l	l1	d1	a			TiCN EH11271
.094	M12	1.00	100	18	39	9.0	7.0	7	11.50	●
.096	M14	1.00	100	18	39	11.0	9.0	7	13.50	●
.098	M16	1.00	100	18	39	12.0	9.0	7	15.50	●
.164	M12	1.25	100	22	39	9.0	7.0	7	11.40	●
.176	M12	1.50	100	22	39	9.0	7.0	7	11.30	●
.178	M14	1.50	100	22	39	11.0	9.0	7	13.30	●
.180	M16	1.50	100	22	39	12.0	9.0	7	15.30	●
.184	M20	1.50	125	26	50	16.0	12.0	7	19.30	●

CF

Anwendung



Werkstoff	EG-M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Reinaluminium	EGM 3	3.650	0.50	25	2180	1090	20	1745	873	15	1310	655
	EGM 4	4.910	0.70	25	1620	1134	20	1295	906	15	970	679
	EGM 5	6.040	0.80	25	1320	1056	20	1055	844	15	790	632
	EGM 6	7.300	1.00	25	1090	1090	20	870	870	15	655	655
	EGM 8	9.624	1.25	25	825	1031	20	660	825	15	495	619
	EGM 10	11.948	1.50	25	665	998	20	535	803	15	400	600
	EGM 12	14.274	1.75	25	555	971	20	445	779	15	335	586
Al-Knetlegierung Si < 6% nicht ausgehärtet	EGM 3	3.650	0.50	30	2615	1308	25	2180	1090	20	1745	873
	EGM 4	4.910	0.70	30	1945	1362	25	1620	1134	20	1295	906
	EGM 5	6.040	0.80	30	1580	1264	25	1320	1056	20	1055	844
	EGM 6	7.300	1.00	30	1310	1310	25	1090	1090	20	870	870
	EGM 8	9.624	1.25	30	990	1238	25	825	1031	20	660	825
	EGM 10	11.948	1.50	30	800	1200	25	665	998	20	535	803
	EGM 12	14.274	1.75	30	670	1173	25	555	971	20	445	779
Reinkupfer	EGM 3	3.650	0.50	15	1310	655	10	870	435	10	870	435
	EGM 4	4.910	0.70	15	970	679	10	650	455	10	650	455
	EGM 5	6.040	0.80	15	790	632	10	525	420	10	525	420
	EGM 6	7.300	1.00	15	655	655	10	435	435	10	435	435
	EGM 8	9.624	1.25	15	495	619	10	330	413	10	330	413
	EGM 10	11.948	1.50	15	400	600	10	265	398	10	265	398
	EGM 12	14.274	1.75	15	335	586	10	225	394	10	225	394
Buntmetalle A_5 > 15%	EGM 3	3.650	0.50	15	1310	655	10	870	435	10	870	435
	EGM 4	4.910	0.70	15	970	679	10	650	455	10	650	455
	EGM 5	6.040	0.80	15	790	632	10	525	420	10	525	420
	EGM 6	7.300	1.00	15	655	655	10	435	435	10	435	435
	EGM 8	9.624	1.25	15	495	619	10	330	413	10	330	413
	EGM 10	11.948	1.50	15	400	600	10	265	398	10	265	398
	EGM 12	14.274	1.75	15	335	586	10	225	394	10	225	394

Gewindeformer für Drahteinsätze

Al

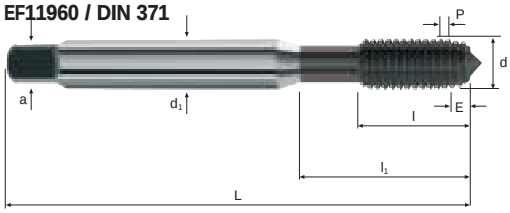
EG M | 6H mod

60° | HSS PM/F

DIN 371/376

X · P Form E

EF11960 / DIN 371



EF11961 / DIN 376

Al Aluminium > 99% | **Al** Aluminium Alloy | **Cu** Copper | CuZn Brass

Beispiel: **Bestell-Nr.** Artikel-Nr. **EF11960** ø-Code **.044**

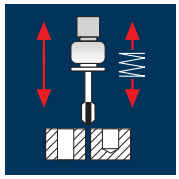
Ø Code	d	P	L	l	l_1	d_1	a			F-DLC EF11960
.044	EGM 3	0.50	63	13	21	4.5	3.4	3	3.40	●
.058	EGM 4	0.70	70	15	25	6.0	4.9	4	4.60	●
.084	EGM 5	0.80	80	17	30	6.0	4.9	4	5.70	●
.088	EGM 6	1.00	90	20	35	8.0	6.2	4	6.80	●
.160	EGM 8	1.25	100	22	39	10.0	8.0	4	9.00	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EF11961** ø-Code **.174**

Ø Code	d	P	L	l	l_1	d_1	a			F-DLC EF11961
.174	EGM10	1.50	110	25	50	9.0	7.0	5	11.20	●
.240	EGM12	1.75	110	26	58	11.0	9.0	5	13.40	●

CF

Anwendung



Werkstoff	EG-M	ø [mm]	P [mm]	v_c 1.5 x d	n [min⁻¹]	v_f [100%]	v_c 2.0 x d	n [min⁻¹]	v_f [100%]	v_c 3.0 x d	n [min⁻¹]	v_f [100%]
Stahl < 850 N/mm² A_5 > 10%	EGM 3	3.650	0.50	20	1745	873	15	1310	655	10	870	435
	EGM 4	4.910	0.70	20	1295	906	15	970	679	10	650	455
	EGM 5	6.040	0.80	20	1055	844	15	790	632	10	525	420
	EGM 6	7.300	1.00	20	870	870	15	655	655	10	435	435
	EGM 8	9.624	1.25	20	660	825	15	495	619	10	330	413
	EGM 10	11.948	1.50	20	535	803	15	400	600	10	265	398
	EGM 12	14.274	1.75	20	445	779	15	335	586	10	225	394
Stahl 850 - 1100 N/mm² A_5 > 10%	EGM 3	3.650	0.50	15	1310	655	10	870	435			
	EGM 4	4.910	0.70	15	970	679	10	650	455			
	EGM 5	6.040	0.80	15	790	632	10	525	420			
	EGM 6	7.300	1.00	15	655	655	10	435	435			
	EGM 8	9.624	1.25	15	495	619	10	330	413			
	EGM 10	11.948	1.50	15	400	600	10	265	398			
	EGM 12	14.274	1.75	15	335	586	10	225	394			
Nichtrostender Stahl ferritisch/martensitisch A_5 > 10%	EGM 3	3.650	0.50	15	1310	655	10	870	435			
	EGM 4	4.910	0.70	15	970	679	10	650	455			
	EGM 5	6.040	0.80	15	790	632	10	525	420			
	EGM 6	7.300	1.00	15	655	655	10	435	435			
	EGM 8	9.624	1.25	15	495	619	10	330	413			
	EGM 10	11.948	1.50	15	400	600	10	265	398			
	EGM 12	14.274	1.75	15	335	586	10	225	394			
Nichtrostender Stahl [Cr-Ni/1.4301]	EGM 3	3.650	0.50	15	1310	655	10	870	435			
	EGM 4	4.910	0.70	15	970	679	10	650	455			
	EGM 5	6.040	0.80	15	790	632	10	525	420			
	EGM 6	7.300	1.00	15	655	655	10	435	435			
	EGM 8	9.624	1.25	15	495	619	10	330	413			
	EGM 10	11.948	1.50	15	400	600	10	265	398			
	EGM 12	14.274	1.75	15	335	586	10	225	394			

Gewindeformer für Drahteinsätze

St

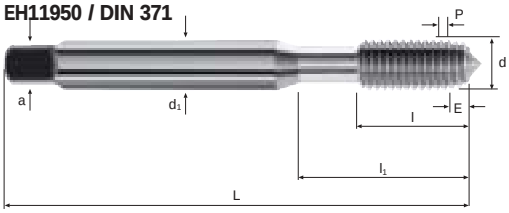
EG M | 6H mod

60° | HSS PM/F

DIN 371/376

X - P | Form E

EH11950 / DIN 371



EH11951 / DIN 376

Rm < 850 | **Rm** 850-1100 | **Inox** Stainless

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH11950** ø-Code **.044**

Ø Code	d	P	L	l	l1	d1	a			TiCN EH11950
.044	EGM 3	0.50	63	13	21	4.5	3.4	3	3.40	●
.058	EGM 4	0.70	70	15	25	6.0	4.9	4	4.60	●
.084	EGM 5	0.80	80	17	30	6.0	4.9	5	5.70	●
.088	EGM 6	1.00	90	20	35	8.0	6.2	5	6.80	●
.160	EGM 8	1.25	100	22	39	10.0	8.0	5	9.00	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH11951** ø-Code **.174**

Ø Code	d	P	L	l	l1	d1	a			TiCN EH11951
.174	EGM10	1.50	110	25	40	9.0	7.0	7	11.20	●
.240	EGM12	1.75	110	28	40	11.0	9.0	7	13.40	●

CF

passion
for precision
fraisa

Bohrgewindefräser mit Senkfase 45°

N° E22200

N° E22300

M	1.5xd		Al Aluminium Cast	GG(G) Cast iron	391
M	2xd		Al Aluminium Cast	GG(G) Cast iron	393

Gewindefräser mit Senkfase 45°

N° EH24200

N° EH24300

N° EH24220

N° EH24320

N° EH24340

N° EH24360

N° EH24370

M	1.5xd		HRC < 56	GG(G) Cast iron	395
M	2xd		Rm <850-1500	GG(G) Cast iron	397
MF	1.5xd		Rm <850-1500	GG(G) Cast iron	399
MF	2xd		Rm <850-1500	GG(G) Cast iron	401
G	2xd		Rm <850-1500	GG(G) Cast iron	403
UNC	2xd		Rm <850-1500	GG(G) Cast iron	405
UNF	2xd		Rm <850-1500	GG(G) Cast iron	407

passion
for precision
fraisa

Gewindefräser M / MF / G / UNC / UNF / UN / NPT / NPTF

Gewindefräser

N° EU2010

M	1.5xd		Rm <850-1500	GG(G) Cast iron	409

N° EU2060

G	1.5xd		Rm <850-1300	GG(G) Cast iron	411

N° EU2110

UN	1.5xd		Rm <850-1300	GG(G) Cast iron	413

N° EU2200 / EU2210

NPT NPTF			Rm <850-1300	GG(G) Cast iron	415

Mehrbereichgewindefräser

N° EH26020

M			Rm <850-1500	GG(G) Cast iron	417

N° EH26040

G			Rm <850-1500	GG(G) Cast iron	419

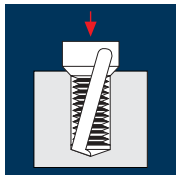
Gewindewirbler

N° E28500

M	3xd		Rm <850-1500	Inox Ti Ni	421

TM

Anwendung



Werkstoff	M	d2 [mm]	v_c [m/min]	f [mm]	L_K [mm]	n [min⁻¹]	v_f [mm/min]
Gusseisen GG(G)	M 4	3.30	100	0.050	7.4	9645	480
	M 5	4.20	100	0.065	9.4	7580	495
	M 6	5.00	100	0.075	11.7	6365	475
	M 8	6.80	100	0.100	14.7	4680	470
	M10	8.50	100	0.125	19.3	3745	470
	M12	10.20	100	0.150	22.2	3120	470
	M16	14.00	100	0.210	27.8	2275	480
Aluminiumguss	M 4	3.30	250	0.060	7.4	24115	1445
	M 5	4.20	250	0.075	9.4	18950	1420
	M 6	5.00	250	0.090	11.7	15915	1430
	M 8	6.80	250	0.120	14.7	11705	1405
	M10	8.50	250	0.150	19.3	9360	1405
	M12	10.20	250	0.180	22.2	7800	1405
	M16	14.00	250	0.250	27.8	5685	1420
Al-Knetlegierung Si < 6% Empfehlung: unbeschichtet	M 4	3.30	200	0.060	7.4	19290	1155
	M 5	4.20	200	0.075	9.4	15160	1135
	M 6	5.00	200	0.090	11.7	12735	1145
	M 8	6.80	200	0.120	14.7	9360	1125
	M10	8.50	200	0.150	19.3	7490	1125
	M12	10.20	200	0.180	22.2	6240	1125
	M16	14.00	200	0.250	27.8	4545	1135
Messing kurzspanend CuZn	M 4	3.30	250	0.060	7.4	24115	1445
	M 5	4.20	250	0.075	9.4	18950	1420
	M 6	5.00	250	0.090	11.7	15915	1430
	M 8	6.80	250	0.120	14.7	11705	1405
	M10	8.50	250	0.150	19.3	9360	1405
	M12	10.20	250	0.180	22.2	7800	1405
	M16	14.00	250	0.250	27.8	5685	1420

Schnittdaten für TiCN-beschichtete Werkzeuge

Anwendung

Werkstoff	M	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Gusseisen GG(G)	M 4	3.20	0.70	2	100	0.025	9945	99	495
	M 5	4.00	0.80	2	100	0.030	7960	96	480
	M 6	4.75	1.00	2	100	0.035	6700	98	470
	M 8	6.35	1.25	2	100	0.050	5015	103	500
	M10	7.95	1.50	2	100	0.060	4005	98	480
	M12	9.95	1.75	2	100	0.075	3200	82	480
	M16	13.20	2.00	2	100	0.100	2410	84	480
Aluminiumguss	M 4	3.20	0.70	2	250	0.030	24870	298	1490
	M 5	4.00	0.80	2	250	0.035	19895	279	1395
	M 6	4.75	1.00	2	250	0.045	16755	315	1510
	M 8	6.35	1.25	2	250	0.060	12530	310	1505
	M10	7.95	1.50	2	250	0.070	10010	287	1400
	M12	9.95	1.75	2	250	0.090	8000	246	1440
	M16	13.20	2.00	2	250	0.120	6030	253	1445
Al-Knetlegierung Si < 6% Empfehlung: unbeschichtet	M 4	3.20	0.70	2	200	0.030	19895	239	1195
	M 5	4.00	0.80	2	200	0.035	15915	223	1115
	M 6	4.75	1.00	2	200	0.045	13405	251	1205
	M 8	6.35	1.25	2	200	0.060	10025	249	1205
	M10	7.95	1.50	2	200	0.070	8010	230	1120
	M12	9.95	1.75	2	200	0.090	6400	196	1150
	M16	13.20	2.00	2	200	0.120	4825	203	1160
Messing kurzspanend CuZn	M 4	3.20	0.70	2	250	0.030	24870	298	1490
	M 5	4.00	0.80	2	250	0.035	19895	279	1395
	M 6	4.75	1.00	2	250	0.045	16755	315	1510
	M 8	6.35	1.25	2	250	0.060	12530	310	1505
	M10	7.95	1.50	2	250	0.070	10010	287	1400
	M12	9.95	1.75	2	250	0.090	8000	246	1440
	M16	13.20	2.00	2	250	0.120	6030	253	1445

Schnittdaten für TiCN-beschichtete Werkzeuge

Bohrgewindefräser

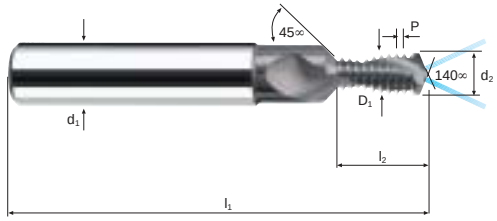
1.5xd, Senkfase 45°, Incool

M

60°

HM

DIN 6535 HA



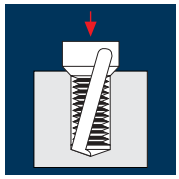
				Al Aluminium Alloy	Al Aluminium Cast		Cu Copper	Plastic Thermoplast	GG(G) CuZn Brass

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH22200** ø-Code **.058**

ø Code	d	P	l_1	l_2	d_1 h6	d_2	D_1	R_k 6H		TiCN E22200	TiCN EH22200
.058	M 4	0.70	48	6.9	6	3.3	3.20	1.560	2	●	●
.084	M 5	0.80	54	8.8	6	4.2	4.00	1.950	2	●	●
.088	M 6	1.00	62	10.9	8	5.0	4.75	2.315	2	●	●
.160	M 8	1.25	74	13.7	10	6.8	6.35	3.095	2	●	●
.174	M10	1.50	80	18.0	12	8.5	7.95	3.875	2	●	●
.240	M12	1.75	90	20.9	14	10.2	9.95	4.855	2	●	●
.246	M16	2.00	102	26.0	18	14.0	13.20	6.440	2	●	●

TM

Anwendung



Werkstoff	M	d2 [mm]	v_c [m/min]	f [mm]	L_K [mm]	n [min⁻¹]	v_f [mm/min]
Gusseisen GG(G)	M 4	3.30	100	0.050	9.5	9645	480
	M 5	4.20	100	0.065	11.8	7580	495
	M 6	5.00	100	0.075	14.7	6365	475
	M 8	6.80	100	0.100	19.7	4680	470
	M 10	8.50	100	0.125	23.8	3745	470
	M 12	10.20	100	0.150	27.4	3120	470
	M 16	14.00	100	0.210	37.8	2275	480
Aluminiumguss	M 4	3.30	250	0.060	9.5	24115	1445
	M 5	4.20	250	0.075	11.8	18950	1420
	M 6	5.00	250	0.090	14.7	15915	1430
	M 8	6.80	250	0.120	19.7	11705	1405
	M10	8.50	250	0.150	23.8	9360	1405
	M12	10.20	250	0.180	27.4	7800	1405
	M16	14.00	250	0.250	37.8	5685	1420
Al-Knetlegierung Si < 6% Empfehlung: unbeschichtet	M 4	3.30	200	0.060	9.5	19290	1155
	M 5	4.20	200	0.075	11.8	15160	1135
	M 6	5.00	200	0.090	14.7	12735	1145
	M 8	6.80	200	0.120	19.7	9360	1125
	M10	8.50	200	0.150	23.8	7490	1125
	M12	10.20	200	0.180	27.4	6240	1125
	M16	14.00	200	0.250	37.8	4545	1135
Messing kurzspanend CuZn	M 4	3.30	250	0.060	9.5	24115	1445
	M 5	4.20	250	0.075	11.8	18950	1420
	M 6	5.00	250	0.090	14.7	15915	1430
	M 8	6.80	250	0.120	19.7	11705	1405
	M10	8.50	250	0.150	23.8	9360	1405
	M12	10.20	250	0.180	27.4	7800	1405
	M16	14.00	250	0.250	37.8	5685	1420

Schnittdaten für TiCN-beschichtete Werkzeuge

Anwendung

Werkstoff	M	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Gusseisen GG(G)	M 4	3.20	0.70	2	100	0.020	9945	80	400
	M 5	4.00	0.80	2	100	0.025	7960	80	400
	M 6	4.75	1.00	2	100	0.030	6700	83	400
	M 8	6.35	1.25	2	100	0.040	5015	83	400
	M10	7.95	1.50	2	100	0.055	4005	90	440
	M12	9.95	1.75	2	100	0.065	3200	71	415
	M16	13.20	2.00	2	100	0.090	2410	76	435
Aluminiumguss	M 4	3.20	0.70	2	250	0.025	24870	249	1245
	M 5	4.00	0.80	2	250	0.030	19895	239	1195
	M 6	4.75	1.00	2	250	0.035	16755	245	1175
	M 8	6.35	1.25	2	250	0.050	12530	259	1255
	M10	7.95	1.50	2	250	0.060	10010	246	1200
	M12	9.95	1.75	2	250	0.075	8000	205	1200
	M16	13.20	2.00	2	250	0.100	6030	211	1205
Al-Knetlegierung Si < 6% Empfehlung: unbeschichtet	M 4	3.20	0.70	2	200	0.025	19895	199	995
	M 5	4.00	0.80	2	200	0.030	15915	191	955
	M 6	4.75	1.00	2	200	0.035	13405	196	940
	M 8	6.35	1.25	2	200	0.050	10025	207	1005
	M10	7.95	1.50	2	200	0.060	8010	197	960
	M12	9.95	1.75	2	200	0.075	6400	164	960
	M16	13.20	2.00	2	200	0.100	4825	169	965
Messing kurzspanend CuZn	M 4	3.20	0.70	2	250	0.025	24870	249	1245
	M 5	4.00	0.80	2	250	0.030	19895	239	1195
	M 6	4.75	1.00	2	250	0.035	16755	245	1175
	M 8	6.35	1.25	2	250	0.050	12530	259	1255
	M10	7.95	1.50	2	250	0.060	10010	246	1200
	M12	9.95	1.75	2	250	0.075	8000	205	1200
	M16	13.20	2.00	2	250	0.100	6030	211	1205

Schnittdaten für TiCN-beschichtete Werkzeuge

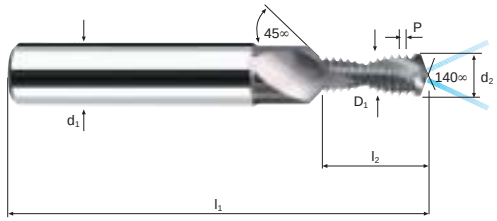
Bohrgewindefräser

2.0xd, Senkfase 45°, Incool

M

HM

DIN 6535 HA



				Al Aluminium Alloy	Al Aluminium Cast		Cu Copper	Plastic Thermoplast	GG(G) CuZn Brass

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH22300** ø-Code **.058**

ø Code	d	P	l_1	l_2	d_1 h6	d_2	D_1	R_k 6H		E22300	TiCN EH22300
.058	M 4	0.70	48	9.0	6	3.3	3.20	1.560	2	●	●
.084	M 5	0.80	54	11.2	6	4.2	4.00	1.950	2	●	●
.088	M 6	1.00	62	13.9	8	5.0	4.75	2.315	2	●	●
.160	M 8	1.25	74	18.7	10	6.8	6.35	3.095	2	●	●
.174	M10	1.50	80	22.5	12	8.5	7.95	3.875	2	●	●
.240	M12	1.75	90	26.1	14	10.2	9.95	4.855	2	●	●
.246	M16	2.00	102	36.0	18	14.0	13.20	6.440	2	●	●

TM

Anwendung

Werkstoff	M	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	L_K [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Stahl 850 - 1100 N/mm²	M 3	2.30	0.50	3	80	0.0060	5.7	11070	47	200
	M 4	3.00	0.70	3	80	0.0075	8.0	8490	48	190
	M 5	4.00	0.80	3	80	0.0100	9.8	6365	38	190
	M 6	4.80	1.00	3	80	0.0120	11.3	5305	38	190
	M 8	6.40	1.25	3	80	0.0160	14.1	3980	38	190
	M 10	7.95	1.50	4	80	0.0200	18.6	3205	52	255
	M 12	9.95	1.75	4	80	0.0250	21.4	2560	44	255
	M 16	12.80	2.00	4	80	0.0320	29.0	1990	51	255
Stahl 1300 - 1500 N/mm²	M 3	2.30	0.50	3	50	0.0050	5.7	6920	25	105
	M 4	3.00	0.70	3	50	0.0065	8.0	5305	26	105
	M 5	4.00	0.80	3	50	0.0090	9.8	3980	21	105
	M 6	4.80	1.00	3	50	0.0105	11.3	3315	21	105
	M 8	6.40	1.25	3	50	0.0140	14.1	2485	21	105
	M 10	7.95	1.50	4	50	0.0175	18.6	2000	29	140
	M 12	9.95	1.75	4	50	0.0220	21.4	1600	24	140
	M 16	12.80	2.00	4	50	0.0285	29.0	1245	28	140
Werkzeugstahl gehärtet 48 - 52 HRC	M 3	2.30	0.50	3	30	0.0040	5.7	4150	12	50
	M 4	3.00	0.70	3	30	0.0050	8.0	3185	13	50
	M 5	4.00	0.80	3	30	0.0065	9.8	2385	9	45
	M 6	4.80	1.00	3	30	0.0080	11.3	1990	10	50
	M 8	6.40	1.25	3	30	0.0105	14.1	1490	9	45
	M 10	7.95	1.50	4	30	0.0135	18.6	1200	13	65
	M 12	9.95	1.75	4	30	0.0165	21.4	960	11	65
	M 16	12.80	2.00	4	30	0.0215	29.0	745	13	65
Nichtrostender Stahl [Cr-Ni/1.4301]	M 3	2.30	0.50	3	50	0.0040	5.7	6920	20	85
	M 4	3.00	0.70	3	50	0.0050	8.0	5305	20	80
	M 5	4.00	0.80	3	50	0.0065	9.8	3980	16	80
	M 6	4.80	1.00	3	50	0.0080	11.3	3315	16	80
	M 8	6.40	1.25	3	50	0.0105	14.1	2485	16	80
	M 10	7.95	1.50	4	50	0.0135	18.6	2000	23	110
	M 12	9.95	1.75	4	50	0.0165	21.4	1600	18	105
	M 16	12.80	2.00	4	50	0.0215	29.0	1245	21	105

Werkstoff	M	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	L_K [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Gusseisen GG(G)	M 3	2.30	0.50	3	120	0.0060	5.7	16610	70	300
	M 4	3.00	0.70	3	120	0.0075	8.0	12735	71	285
	M 5	4.00	0.80	3	120	0.0100	9.8	9550	57	285
	M 6	4.80	1.00	3	120	0.0120	11.3	7960	57	285
	M 8	6.40	1.25	3	120	0.0160	14.1	5970	57	285
	M 10	7.95	1.50	4	120	0.0200	18.6	4805	79	385
	M 12	9.95	1.75	4	120	0.0250	21.4	3840	66	385
	M 16	12.80	2.00	4	120	0.0320	29.0	2985	76	380
Al-Knetlegierung Si < 6%	M 3	2.30	0.50	3	150	0.0080	5.7	20760	117	500
	M 4	3.00	0.70	3	150	0.0105	8.0	15915	125	500
	M 5	4.00	0.80	3	150	0.0140	9.8	11935	100	500
	M 6	4.80	1.00	3	150	0.0170	11.3	9945	101	505
	M 8	6.40	1.25	3	150	0.0225	14.1	7460	101	505
	M 10	7.95	1.50	4	150	0.0280	18.6	6005	138	675
	M 12	9.95	1.75	4	150	0.0350	21.4	4800	114	670
	M 16	12.80	2.00	4	150	0.0450	29.0	3730	134	670
Aluminiumguss	M 3	2.30	0.50	3	200	0.0080	5.7	27680	155	665
	M 4	3.00	0.70	3	200	0.0105	8.0	21220	168	670
	M 5	4.00	0.80	3	200	0.0140	9.8	15915	134	670
	M 6	4.80	1.00	3	200	0.0170	11.3	13265	135	675
	M 8	6.40	1.25	3	200	0.0225	14.1	9945	134	670
	M 10	7.95	1.50	4	200	0.0280	18.6	8010	183	895
	M 12	9.95	1.75	4	200	0.0350	21.4	6400	153	895
	M 16	12.80	2.00	4	200	0.0450	29.0	4975	179	895
Titanlegierungen > 300 HB [Ti6Al4V]	M 3	2.30	0.50	3	40	0.0040	5.7	5535	15	65
	M 4	3.00	0.70	3	40	0.0050	8.0	4245	16	65
	M 5	4.00	0.80	3	40	0.0065	9.8	3185	12	60
	M 6	4.80	1.00	3	40	0.0080	11.3	2655	13	65
	M 8	6.40	1.25	3	40	0.0105	14.1	1990	13	65
	M 10	7.95	1.50	4	40	0.0135	18.6	1600	17	85
	M 12	9.95	1.75	4	40	0.0165	21.4	1280	15	85
	M 16	12.80	2.00	4	40	0.0215	29.0	995	17	85

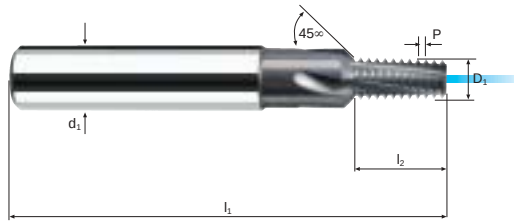
Gewindefräser

1.5xd, Senkfase 45°, Incool

M

HM

DIN 6535 HA



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	Aluminium GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH24200** ø-Code **.044**

ø Code	d	P	l_1	l_2	d_1 h6	D_1	R_k 6H		TiCN EH24200
.044*	M 3	0.50	48	5.3	6	2.30	1.125	3	●
.058	M 4	0.70	48	7.4	6	3.00	1.465	3	●
.084	M 5	0.80	54	9.2	6	4.00	1.960	3	●
.088	M 6	1.00	62	10.5	8	4.80	2.350	3	●
.160	M 8	1.25	74	13.1	10	6.40	3.138	3	●
.174	M10	1.50	80	17.3	12	7.95	3.900	4	●
.240	M12	1.75	90	20.1	14	9.95	4.887	4	●
.246	M16	2.00	102	27.0	18	12.80	6.300	4	●

* ohne innere Kühlmittelzufuhr

TM

Anwendung

Werkstoff	M	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	L_K [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Stahl 850 - 1100 N/mm²	M 3	2.30	0.50	3	80	0.0055	7.2	11070	43	185
	M 4	3.00	0.70	3	80	0.0070	9.4	8490	45	180
	M 5	4.00	0.80	3	80	0.0090	11.4	6365	34	170
	M 6	4.80	1.00	3	80	0.0110	14.3	5305	35	175
	M 8	6.40	1.25	3	80	0.0145	19.1	3980	35	175
	M 10	7.95	1.50	4	80	0.0180	23.1	3205	47	230
	M 12	9.95	1.75	4	80	0.0225	26.7	2560	39	230
	M 16	12.80	2.00	4	80	0.0290	37.0	1990	46	230
Stahl 1300 - 1500 N/mm²	M 3	2.30	0.50	3	50	0.0045	7.2	6920	22	95
	M 4	3.00	0.70	3	50	0.0060	9.4	5305	24	95
	M 5	4.00	0.80	3	50	0.0080	11.4	3980	19	95
	M 6	4.80	1.00	3	50	0.0095	14.3	3315	19	95
	M 8	6.40	1.25	3	50	0.0125	19.1	2485	19	95
	M 10	7.95	1.50	4	50	0.0160	23.1	2000	27	130
	M 12	9.95	1.75	4	50	0.0200	26.7	1600	22	130
	M 16	12.80	2.00	4	50	0.0255	37.0	1245	25	125
Werkzeugstahl gehärtet 48 - 52 HRC	M 3	2.30	0.50	3	30	0.0035	7.2	4150	11	45
	M 4	3.00	0.70	3	30	0.0045	9.4	3185	11	45
	M 5	4.00	0.80	3	30	0.0060	11.4	2385	9	45
	M 6	4.80	1.00	3	30	0.0070	14.3	1990	8	40
	M 8	6.40	1.25	3	30	0.0095	19.1	1490	8	40
	M 10	7.95	1.50	4	30	0.0120	23.1	1200	12	60
	M 12	9.95	1.75	4	30	0.0150	26.7	960	10	60
	M 16	12.80	2.00	4	30	0.0195	37.0	745	12	60
Nichtrostender Stahl [Cr-Ni/1.4301]	M 3	2.30	0.50	3	50	0.0035	7.2	6920	18	75
	M 4	3.00	0.70	3	50	0.0045	9.4	5305	18	70
	M 5	4.00	0.80	3	50	0.0060	11.4	3980	14	70
	M 6	4.80	1.00	3	50	0.0070	14.3	3315	14	70
	M 8	6.40	1.25	3	50	0.0095	19.1	2485	14	70
	M 10	7.95	1.50	4	50	0.0120	23.1	2000	19	95
	M 12	9.95	1.75	4	50	0.0150	26.7	1600	16	95
	M 16	12.80	2.00	4	50	0.0195	37.0	1245	19	95

Werkstoff	M	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	L_K [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Gusseisen GG(G)	M 3	2.30	0.50	3	120	0.0055	7.2	16610	64	275
	M 4	3.00	0.70	3	120	0.0070	9.4	12735	66	265
	M 5	4.00	0.80	3	120	0.0090	11.4	9550	52	260
	M 6	4.80	1.00	3	120	0.0110	14.3	7960	53	265
	M 8	6.40	1.25	3	120	0.0145	19.1	5970	52	260
	M 10	7.95	1.50	4	120	0.0180	23.1	4805	71	345
	M 12	9.95	1.75	4	120	0.0225	26.7	3840	59	345
	M 16	12.80	2.00	4	120	0.0290	37.0	2985	69	345
Al-Knetlegierung Si < 6%	M 3	2.30	0.50	3	150	0.0070	7.2	20760	102	435
	M 4	3.00	0.70	3	150	0.0095	9.4	15915	114	455
	M 5	4.00	0.80	3	150	0.0125	11.4	11935	90	450
	M 6	4.80	1.00	3	150	0.0155	14.3	9945	92	460
	M 8	6.40	1.25	3	150	0.0205	19.1	7460	92	460
	M 10	7.95	1.50	4	150	0.0250	23.1	6005	123	600
	M 12	9.95	1.75	4	150	0.0315	26.7	4800	103	605
	M 16	12.80	2.00	4	150	0.0405	37.0	3730	121	605
Aluminiumguss	M 3	2.30	0.50	3	200	0.0070	7.2	27680	135	580
	M 4	3.00	0.70	3	200	0.0095	9.4	21220	151	605
	M 5	4.00	0.80	3	200	0.0125	11.4	15915	119	595
	M 6	4.80	1.00	3	200	0.0155	14.3	13265	123	615
	M 8	6.40	1.25	3	200	0.0205	19.1	9945	122	610
	M 10	7.95	1.50	4	200	0.0250	23.1	8010	164	800
	M 12	9.95	1.75	4	200	0.0315	26.7	6400	138	805
	M 16	12.80	2.00	4	200	0.0405	37.0	4975	161	805
Titanlegierungen > 300 HB [Ti6Al4V]	M 3	2.30	0.50	3	40	0.0035	7.2	5535	14	60
	M 4	3.00	0.70	3	40	0.0045	9.4	4245	14	55
	M 5	4.00	0.80	3	40	0.0060	11.4	3185	11	55
	M 6	4.80	1.00	3	40	0.0070	14.3	2655	11	55
	M 8	6.40	1.25	3	40	0.0095	19.1	1990	11	55
	M 10	7.95	1.50	4	40	0.0120	23.1	1600	15	75
	M 12	9.95	1.75	4	40	0.0150	26.7	1280	13	75
	M 16	12.80	2.00	4	40	0.0195	37.0	995	16	80

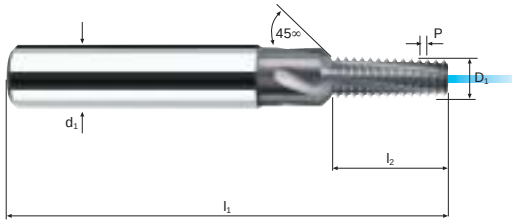
Gewindefräser

2.0xd, Senkfase 45°, Incool

M

HM

DIN 6535 HA



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	Aluminium GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH24300** ø-Code **.044**

ø Code	d	P	l_1	l_2	d_1 h6	D_1	R_k 6H		TiCN EH24300
.044*	M 3	0.50	48	6.8	6	2.30	1.125	3	●
.058	M 4	0.70	48	8.8	6	3.00	1.465	3	●
.084	M 5	0.80	54	10.8	6	4.00	1.960	3	●
.088	M 6	1.00	62	13.5	8	4.80	2.350	3	●
.160	M 8	1.25	74	18.1	10	6.40	3.138	3	●
.174	M10	1.50	80	21.8	12	7.95	3.900	4	●
.240	M12	1.75	90	25.4	14	9.95	4.887	4	●
.246	M16	2.00	102	35.0	18	12.80	6.300	4	●

* ohne innere Kühlmittelzufuhr

TM

Anwendung

Werkstoff	MF	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	L_K [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Stahl 850 - 1100 N/mm²	M 4	3.00	0.50	3	80	0.0075	7.9	8490	48	190
	M 5	4.00	0.50	3	80	0.0100	9.4	6365	38	190
	M 6	4.80	0.50	3	80	0.0120	10.6	5305	38	190
	M 6	4.80	0.75	3	80	0.0120	10.8	5305	38	190
	M 8	6.40	0.75	3	80	0.0160	14.1	3980	38	190
	M 8	6.40	1.00	3	80	0.0160	14.5	3980	38	190
	M 10	7.95	1.00	4	80	0.0200	17.8	3205	52	255
	M 10	7.95	1.25	4	80	0.0200	18.2	3205	52	255
	M 12	9.95	1.00	4	80	0.0250	20.8	2560	44	255
Stahl 850 - 1100 N/mm²	M 12	9.95	1.50	4	80	0.0250	21.6	2560	44	255
	M 14	11.20	1.50	4	80	0.0280	25.1	2275	51	255
	M 16	12.80	1.50	4	80	0.0320	28.3	1990	51	255
Stahl 1300 - 1500 N/mm²	M 4	3.00	0.50	3	50	0.0065	7.9	5305	26	105
	M 5	4.00	0.50	3	50	0.0090	9.4	3980	21	105
	M 6	4.80	0.50	3	50	0.0105	10.6	3315	21	105
	M 6	4.80	0.75	3	50	0.0105	10.8	3315	21	105
	M 8	6.40	0.75	3	50	0.0140	14.1	2485	21	105
	M 8	6.40	1.00	3	50	0.0140	14.5	2485	21	105
	M 10	7.95	1.00	4	50	0.0175	17.8	2000	29	140
	M 10	7.95	1.25	4	50	0.0175	18.2	2000	29	140
	M 12	9.95	1.00	4	50	0.0220	20.8	1600	24	140
Stahl 1300 - 1500 N/mm²	M 12	9.95	1.50	4	50	0.0220	21.6	1600	24	140
	M 14	11.20	1.50	4	50	0.0250	25.1	1420	28	140
	M 16	12.80	1.50	4	50	0.0285	28.3	1245	28	140

Werkstoff	MF	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	L_K [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Al-Knetlegierung Si < 6%	M 4	3.00	0.50	3	150	0.0105	7.9	15915	125	500
	M 5	4.00	0.50	3	150	0.0140	9.4	11935	100	500
	M 6	4.80	0.50	3	150	0.0170	10.6	9945	101	505
	M 6	4.80	0.75	3	150	0.0170	10.8	9945	101	505
	M 8	6.40	0.75	3	150	0.0225	14.1	7460	101	505
	M 8	6.40	1.00	3	150	0.0225	14.5	7460	101	505
	M 10	7.95	1.00	4	150	0.0280	17.8	6005	138	675
	M 10	7.95	1.25	4	150	0.0280	18.2	6005	138	675
	M 12	9.95	1.00	4	150	0.0350	20.8	4800	114	670
Al-Knetlegierung Si < 6%	M 12	9.95	1.50	4	150	0.0350	21.6	4800	114	670
	M 14	11.20	1.50	4	150	0.0395	25.1	4265	135	675
	M 16	12.80	1.50	4	150	0.0450	28.3	3730	134	670
Gusseisen GG(G)	M 4	3.00	0.50	3	120	0.0075	7.9	12735	71	285
	M 5	4.00	0.50	3	120	0.0100	9.4	9550	57	285
	M 6	4.80	0.50	3	120	0.0120	10.6	7960	57	285
	M 6	4.80	0.75	3	120	0.0120	10.8	7960	57	285
	M 8	6.40	0.75	3	120	0.0160	14.1	5970	57	285
	M 8	6.40	1.00	3	120	0.0160	14.5	5970	57	285
	M 10	7.95	1.00	4	120	0.0200	17.8	4805	79	385
	M 10	7.95	1.25	4	120	0.0200	18.2	4805	79	385
	M 12	9.95	1.00	4	120	0.0250	20.8	3840	66	385
Gusseisen GG(G)	M 12	9.95	1.50	4	120	0.0250	21.6	3840	66	385
	M 14	11.20	1.50	4	120	0.0280	25.1	3410	76	380
	M 16	12.80	1.50	4	120	0.0320	28.3	2985	76	380

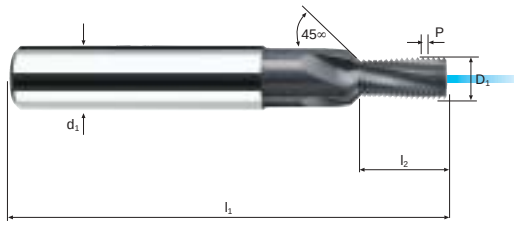
Gewindefräser

1.5xd, Senkfase 45°, Incool

MF

HM

DIN 6535 HA



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	Aluminium GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH24220** ø-Code **.046**

ø Code	d	P	l_1	l_2	d_1 h6	D_1	R_k 6H		TiCN EH24220
.046	M 4	0.50	48	7.3	6	3.00	1.475	3	●
.048	M 5	0.50	54	8.8	6	4.00	1.975	3	●
.050	M 6	0.50	62	9.8	8	4.80	2.375	3	●
.064	M 6	0.75	62	10.1	8	4.80	2.363	3	●
.066	M 8	0.75	74	13.1	10	6.40	3.163	3	●
.090	M 8	1.00	74	13.5	10	6.40	3.150	3	●
.092	M10	1.00	80	16.5	12	7.95	3.925	4	●
.162	M10	1.25	80	16.9	12	7.95	3.913	4	●
.094	M12	1.00	90	19.5	14	9.95	4.925	4	●
.176	M12	1.50	90	20.3	14	9.95	4.900	4	●
.178	M14	1.50	102	23.3	16	11.20	5.525	4	●
.180	M16	1.50	102	26.3	18	12.80	6.325	4	●

Anwendung

Werkstoff	MF	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	L_K [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Stahl 850 - 1100 N/mm²	M 4	3.00	0.50	3	80	0.0070	9.4	8490	45	180
	M 5	4.00	0.50	3	80	0.0090	11.4	6365	34	170
	M 6	4.80	0.50	3	80	0.0110	13.6	5305	35	175
	M 6	4.80	0.75	3	80	0.0110	13.9	5305	35	175
	M 8	6.40	0.75	3	80	0.0145	17.9	3980	35	175
	M 8	6.40	1.00	3	80	0.0145	18.5	3980	35	175
	M 10	7.95	1.00	4	80	0.0180	22.8	3205	47	230
	M 10	7.95	1.25	4	80	0.0180	23.2	3205	47	230
	M 12	9.95	1.00	4	80	0.0225	26.8	2560	39	230
Stahl 850 - 1100 N/mm²	M 12	9.95	1.50	4	80	0.0225	27.6	2560	39	230
	M 14	11.20	1.50	4	80	0.0250	32.6	2275	46	230
	M 16	12.80	1.50	4	80	0.0290	35.8	1990	46	230
Stahl 1300 - 1500 N/mm²	M 4	3.00	0.50	3	50	0.0060	9.4	5305	24	95
	M 5	4.00	0.50	3	50	0.0080	11.4	3980	19	95
	M 6	4.80	0.50	3	50	0.0095	13.6	3315	19	95
	M 6	4.80	0.75	3	50	0.0095	13.9	3315	19	95
	M 8	6.40	0.75	3	50	0.0125	17.9	2485	19	95
	M 8	6.40	1.00	3	50	0.0125	18.5	2485	19	95
	M 10	7.95	1.00	4	50	0.0160	22.8	2000	27	130
	M 10	7.95	1.25	4	50	0.0160	23.2	2000	27	130
	M 12	9.95	1.00	4	50	0.0200	26.8	1600	22	130
Stahl 1300 - 1500 N/mm²	M 12	9.95	1.50	4	50	0.0200	27.6	1600	22	130
	M 14	11.20	1.50	4	50	0.0225	32.6	1420	26	130
	M 16	12.80	1.50	4	50	0.0255	35.8	1245	25	125

Werkstoff	MF	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	L_K [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Al-Knetlegierung Si < 6%	M 4	3.00	0.50	3	150	0.0095	9.4	15915	114	455
	M 5	4.00	0.50	3	150	0.0125	11.4	11935	90	450
	M 6	4.80	0.50	3	150	0.0155	13.6	9945	92	460
	M 6	4.80	0.75	3	150	0.0155	13.9	9945	92	460
	M 8	6.40	0.75	3	150	0.0205	17.9	7460	92	460
	M 8	6.40	1.00	3	150	0.0205	18.5	7460	92	460
	M 10	7.95	1.00	4	150	0.0250	22.8	6005	123	600
	M 10	7.95	1.25	4	150	0.0250	23.2	6005	123	600
	M 12	9.95	1.00	4	150	0.0315	26.8	4800	103	605
Al-Knetlegierung Si < 6%	M 12	9.95	1.50	4	150	0.0315	27.6	4800	103	605
	M 14	11.20	1.50	4	150	0.0355	32.6	4265	121	605
	M 16	12.80	1.50	4	150	0.0405	35.8	3730	121	605
Gusseisen GG(G)	M 4	3.00	0.50	3	120	0.0070	9.4	12735	66	265
	M 5	4.00	0.50	3	120	0.0090	11.4	9550	52	260
	M 6	4.80	0.50	3	120	0.0110	13.6	7960	53	265
	M 6	4.80	0.75	3	120	0.0110	13.9	7960	53	265
	M 8	6.40	0.75	3	120	0.0145	17.9	5970	52	260
	M 8	6.40	1.00	3	120	0.0145	18.5	5970	52	260
	M 10	7.95	1.00	4	120	0.0180	22.8	4805	71	345
	M 10	7.95	1.25	4	120	0.0180	23.2	4805	71	345
	M 12	9.95	1.00	4	120	0.0225	26.8	3840	59	345
Gusseisen GG(G)	M 12	9.95	1.50	4	120	0.0225	27.6	3840	59	345
	M 14	11.20	1.50	4	120	0.0250	32.6	3410	68	340
	M 16	12.80	1.50	4	120	0.0290	35.8	2985	69	345

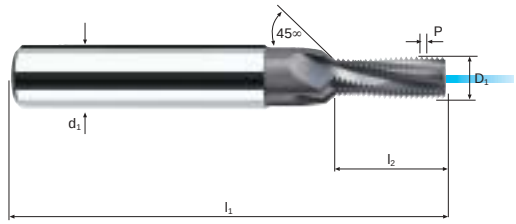
Gewindefräser

2.0xd, Senkfase 45°, Incool

MF

HM

DIN 6535 HA



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless	Ti Titanium	Aluminium GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH24320** ø-Code **.046**

ø Code	d	P	l_1	l_2	d_1 h6	D_1	R_k 6H		TiCN EH24320
.046	M 4	0.50	48	8.8	6	3.00	1.475	3	●
.048	M 5	0.50	54	10.8	6	4.00	1.975	3	●
.050	M 6	0.50	62	12.8	8	4.80	2.375	3	●
.064	M 6	0.75	62	13.1	8	4.80	2.363	3	●
.066	M 8	0.75	74	16.9	10	6.40	3.163	3	●
.090	M 8	1.00	74	17.5	10	6.40	3.150	3	●
.092	M10	1.00	80	21.5	12	7.95	3.925	4	●
.162	M10	1.25	80	21.9	12	7.95	3.913	4	●
.094	M12	1.00	90	25.5	14	9.95	4.925	4	●
.176	M12	1.50	90	26.3	14	9.95	4.900	4	●
.178	M14	1.50	102	30.8	16	11.20	5.525	4	●
.180	M16	1.50	102	33.8	18	12.80	6.325	4	●

TM

Anwendung

Werkstoff	G	D1 [mm]	P (TPI)	z	v_c [m/min]	f_z [mm]	L_K [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Stahl 850 - 1100 N/mm²	G 1/8	7.95	28	4	80	0.0180	22.4	3205	42	230
	G 1/4	10.50	19	4	80	0.0240	30.4	2425	47	235
	G 3/8	13.60	19	4	80	0.0310	37.3	1870	42	230
Stahl 1300 - 1500 N/mm²	G 1/8	7.95	28	4	50	0.0160	22.4	2000	24	130
	G 1/4	10.50	19	4	50	0.0210	30.4	1515	25	125
	G 3/8	13.60	19	4	50	0.0275	37.3	1170	24	130
Werkzeugstahl gehärtet 48 - 52 HRC	G 1/8	7.95	28	4	30	0.0120	22.4	1200	11	60
	G 1/4	10.50	19	4	30	0.0160	30.4	910	12	60
	G 3/8	13.60	19	4	30	0.0205	37.3	700	10	55
Nichtrostender Stahl [Cr-Ni/1.4301]	G 1/8	7.95	28	4	50	0.0120	22.4	2000	17	95
	G 1/4	10.50	19	4	50	0.0160	30.4	1515	19	95
	G 3/8	13.60	19	4	50	0.0205	37.3	1170	17	95

Werkstoff	G	D1 [mm]	P (TPI)	z	v_c [m/min]	f_z [mm]	L_K [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Gusseisen GG(G)	G 1/8	7.95	28	4	120	0.0180	22.4	4805	63	345
	G 1/4	10.50	19	4	120	0.0240	30.4	3640	71	350
	G 3/8	13.60	19	4	120	0.0310	37.3	2810	64	350
Al-Knetlegierung Si < 6%	G 1/8	7.95	28	4	150	0.0250	22.4	6005	110	600
	G 1/4	10.50	19	4	150	0.0335	30.4	4545	123	610
	G 3/8	13.60	19	4	150	0.0430	37.3	3510	111	605
Aluminiumguss	G 1/8	7.95	28	4	200	0.0250	22.4	8010	146	800
	G 1/4	10.50	19	4	200	0.0335	30.4	6065	165	815
	G 3/8	13.60	19	4	200	0.0430	37.3	4680	148	805
Titanlegierungen > 300 HB [Ti6Al4V]	G 1/8	7.95	28	4	40	0.0120	22.4	1600	14	75
	G 1/4	10.50	19	4	40	0.0160	30.4	1215	16	80
	G 3/8	13.60	19	4	40	0.0205	37.3	935	14	75

Gewindefräser

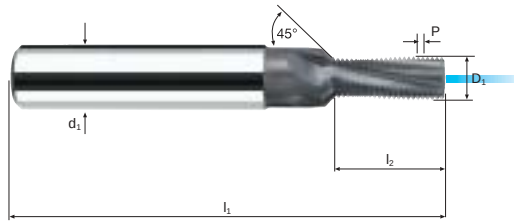
2.0xd, Senkfase 45°, Incool

G

55°

HM

DIN 6535 HA



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	Aluminium GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH24340** ø-Code **.551**

ø Code	d	P(TPI)	l_1	l_2	d_1 h6	D_1	R_k		TiCN EH24340
.551	**G 1/8**	**28**	80	21.3	12	7.95	3.930	4	●
.552	**G 1/4**	**19**	90	28.7	14	9.95	5.183	4	●
.553	**G 3/8**	**19**	102	35.4	18	13.60	6.733	4	●

TM

Anwendung

Werkstoff	UNC	D1 [mm]	P (TPI)	z	v_c [m/min]	f_z [mm]	L_K [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Stahl 850 - 1100 N/mm²	1/4	4.80	20	3	80	0.0110	15.5	5305	43	175
	5/16	5.95	18	3	80	0.0135	18.8	4280	44	175
	3/8	7.10	16	4	80	0.0160	22.9	3585	59	230
	7/16	7.95	14	4	80	0.0180	26.4	3205	65	230
	1/2	9.95	13	4	80	0.0225	30.0	2560	50	230
Stahl 1300 - 1500 N/mm²	1/4	4.80	20	3	50	0.0095	15.5	3315	23	95
	5/16	5.95	18	3	50	0.0120	18.8	2675	24	95
	3/8	7.10	16	4	50	0.0145	22.9	2240	33	130
	7/16	7.95	14	4	50	0.0160	26.4	2000	37	130
	1/2	9.95	13	4	50	0.0200	30.0	1600	28	130
Werkzeugstahl gehärtet 48 - 52 HRC	1/4	4.80	20	3	30	0.0075	15.5	1990	11	45
	5/16	5.95	18	3	30	0.0090	18.8	1605	11	45
	3/8	7.10	16	4	30	0.0110	22.9	1345	15	60
	7/16	7.95	14	4	30	0.0120	26.4	1200	17	60
	1/2	9.95	13	4	30	0.0150	30.0	960	13	60
Nichtrostender Stahl [Cr-Ni/1.4301]	1/4	4.80	20	3	50	0.0075	15.5	3315	18	75
	5/16	5.95	18	3	50	0.0090	18.8	2675	18	70
	3/8	7.10	16	4	50	0.0110	22.9	2240	25	100
	7/16	7.95	14	4	50	0.0120	26.4	2000	27	95
	1/2	9.95	13	4	50	0.0150	30.0	1600	21	95

Werkstoff	UNC	D1 [mm]	P (TPI)	z	v_c [m/min]	f_z [mm]	L_K [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Gusseisen GG(G)	1/4	4.80	20	3	120	0.0110	15.5	7960	65	265
	5/16	5.95	18	3	120	0.0135	18.8	6420	65	260
	3/8	7.10	16	4	120	0.0160	22.9	5380	88	345
	7/16	7.95	14	4	120	0.0180	26.4	4805	98	345
	1/2	9.95	13	4	120	0.0225	30.0	3840	75	345
Al-Knetlegierung Si < 6%	1/4	4.80	20	3	150	0.0150	15.5	9945	110	450
	5/16	5.95	18	3	150	0.0190	18.8	8025	114	455
	3/8	7.10	16	4	150	0.0225	22.9	6725	154	605
	7/16	7.95	14	4	150	0.0250	26.4	6005	171	600
	1/2	9.95	13	4	150	0.0315	30.0	4800	131	605
Aluminiumguss	1/4	4.80	20	3	200	0.0150	15.5	13265	145	595
	5/16	5.95	18	3	200	0.0190	18.8	10700	153	610
	3/8	7.10	16	4	200	0.0225	22.9	8965	205	805
	7/16	7.95	14	4	200	0.0250	26.4	8010	228	800
	1/2	9.95	13	4	200	0.0315	30.0	6400	174	805
Titanlegierungen > 300 HB [Ti6Al4V]	1/4	4.80	20	3	40	0.0075	15.5	2655	15	60
	5/16	5.95	18	3	40	0.0090	18.8	2140	15	60
	3/8	7.10	16	4	40	0.0110	22.9	1795	20	80
	7/16	7.95	14	4	40	0.0120	26.4	1600	21	75
	1/2	9.95	13	4	40	0.0150	30.0	1280	16	75

Gewindefräser

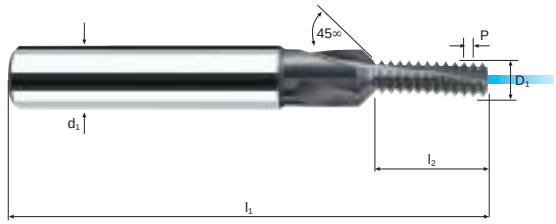
2.0xd, Senkfase 45°, Incool

UNC

60°

HM

DIN 6535 HA



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	Aluminium GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH24360** ø-Code **.709**

ø Code	d	P(TPI)	l_1	l_2	d_1 h6	D_1	R_k 2B		TiCN
									EH24360
.709	1/4	20	62	14.6	8	4.80	2.337	3	●
.710	5/16	18	74	17.6	10	5.95	2.904	3	●
.711	3/8	16	80	21.4	12	7.10	3.471	4	●
.712	7/16	14	80	24.5	12	7.95	3.884	4	●
.713	1/2	13	90	28.3	14	9.95	4.877	4	●

TM

Anwendung

Werkstoff	UNF	D1 [mm]	P (TPI)	z	v_c [m/min]	f_z [mm]	L_K [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Stahl 850 - 1100 N/mm²	1/4	4.80	28	3	80	0.0110	15.0	5305	43	175
	5/16	5.95	24	3	80	0.0135	18.7	4280	44	175
	3/8	7.95	24	4	80	0.0180	21.6	3205	38	230
	7/16	7.95	20	4	80	0.0180	26.7	3205	65	230
	1/2	9.95	20	4	80	0.0225	29.0	2560	50	230
Stahl 1300 - 1500 N/mm²	1/4	4.80	28	3	50	0.0095	15.0	3315	23	95
	5/16	5.95	24	3	50	0.0120	18.7	2675	24	95
	3/8	7.95	24	4	50	0.0160	21.6	2000	21	130
	7/16	7.95	20	4	50	0.0160	26.7	2000	37	130
	1/2	9.95	20	4	50	0.0200	29.0	1600	28	130
Werkzeugstahl gehärtet 48 - 52 HRC	1/4	4.80	28	3	30	0.0075	15.0	1990	11	45
	5/16	5.95	24	3	30	0.0090	18.7	1605	11	45
	3/8	7.95	24	4	30	0.0120	21.6	1200	10	60
	7/16	7.95	20	4	30	0.0120	26.7	1200	17	60
	1/2	9.95	20	4	30	0.0150	29.0	960	13	60
Nichtrostender Stahl [Cr-Ni/1.4301]	1/4	4.80	28	3	50	0.0075	15.0	3315	18	75
	5/16	5.95	24	3	50	0.0090	18.7	2675	18	70
	3/8	7.95	24	4	50	0.0120	21.6	2000	16	95
	7/16	7.95	20	4	50	0.0120	26.7	2000	27	95
	1/2	9.95	20	4	50	0.0150	29.0	1600	21	95

Werkstoff	UNF	D1 [mm]	P (TPI)	z	v_c [m/min]	f_z [mm]	L_K [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Gusseisen GG(G)	1/4	4.80	28	3	120	0.0110	15.0	7960	65	265
	5/16	5.95	24	3	120	0.0135	18.7	6420	65	260
	3/8	7.95	24	4	120	0.0180	21.6	4805	57	345
	7/16	7.95	20	4	120	0.0180	26.7	4805	98	345
	1/2	9.95	20	4	120	0.0225	29.0	3840	75	345
Al-Knetlegierung Si < 6%	1/4	4.80	28	3	150	0.0150	15.0	9945	110	450
	5/16	5.95	24	3	150	0.0190	18.7	8025	114	455
	3/8	7.95	24	4	150	0.0250	21.6	6005	99	600
	7/16	7.95	20	4	150	0.0250	26.7	6005	171	600
	1/2	9.95	20	4	150	0.0315	29.0	4800	131	605
Aluminiumguss	1/4	4.80	28	3	200	0.0150	15.0	13265	145	595
	5/16	5.95	24	3	200	0.0190	18.7	10700	153	610
	3/8	7.95	24	4	200	0.0250	21.6	8010	132	800
	7/16	7.95	20	4	200	0.0250	26.7	8010	228	800
	1/2	9.95	20	4	200	0.0315	29.0	6400	174	805
Titanlegierungen > 300 HB [Ti6Al4V]	1/4	4.80	28	3	40	0.0075	15.0	2655	15	60
	5/16	5.95	24	3	40	0.0090	18.7	2140	15	60
	3/8	7.95	24	4	40	0.0120	21.6	1600	12	75
	7/16	7.95	20	4	40	0.0120	26.7	1600	21	75
	1/2	9.95	20	4	40	0.0150	29.0	1280	16	75

Gewindefräser

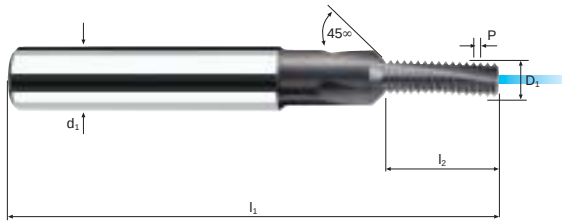
2.0xd, Senkfase 45°, Incool

UNF

60°

HM

DIN 6535 HA



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	Aluminium GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH24370** ø-Code **.760**

ø Code	d	P(TPI)	l_1	l_2	d_1 h6	D_1	R_k 2B		TiCN EH24370
.760	1/4	28	62	14.1	8	4.80	2.355	3	●
.761	5/16	24	74	17.5	10	5.95	2.922	3	●
.762	3/8	24	80	20.6	12	7.95	3.922	4	●
.763	7/16	20	80	24.8	12	7.95	3.912	4	●
.764	1/2	20	90	27.3	14	9.95	4.911	4	●

TM

Anwendung

Werkstoff	M	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	n [mm^{-1}]	v_{fc} [mm/min]	v_f [mm/min]
Stahl 850 - 1100 N/mm²	M 1.6	1.00	0.35	3	30	0.0015	9550	17	45
	M 2	1.30	0.40	3	30	0.0020	7345	16	45
	M 2.5	1.50	0.45	3	30	0.0025	6365	20	50
	M 3	2.10	0.50	3	30	0.0035	4545	15	50
	M 4	2.60	0.70	3	30	0.0065	3675	25	70
	M 5	3.60	0.80	3	30	0.0090	2655	20	70
	M 6	4.00	1.00	3	30	0.0100	2385	23	70
	M 8	5.00	1.25	3	30	0.0125	1910	26	70
	M 10	5.90	1.50	5	30	0.0150	1620	49	120
Stahl 850 - 1100 N/mm²	M 12	7.90	1.75	5	30	0.0200	1210	41	120
	M 16	9.90	2.00	5	30	0.0250	965	46	120
Stahl 1100 - 1300 N/mm²	M 1.6	1.00	0.35	3	20	0.0015	6365	11	30
	M 2	1.30	0.40	3	20	0.0020	4895	11	30
	M 2.5	1.50	0.45	3	20	0.0025	4245	12	30
	M 3	2.10	0.50	3	20	0.0035	3030	9	30
	M 4	2.60	0.70	3	20	0.0065	2450	18	50
	M 5	3.60	0.80	3	20	0.0090	1770	14	50
	M 6	4.00	1.00	3	20	0.0100	1590	17	50
	M 8	5.00	1.25	3	20	0.0125	1275	19	50
	M 10	5.90	1.50	5	20	0.0150	1080	33	80
Stahl 1100 - 1300 N/mm²	M 12	7.90	1.75	5	20	0.0200	805	27	80
	M 16	9.90	2.00	5	20	0.0250	645	31	80

Werkstoff	M	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	n [mm^{-1}]	v_{fc} [mm/min]	v_f [mm/min]
Al-Knetlegierung Si < 6%	M 1.6	1.00	0.35	3	60	0.0015	19100	32	85
	M 2	1.30	0.40	3	60	0.0020	14690	32	90
	M 2.5	1.50	0.45	3	60	0.0025	12735	38	95
	M 3	2.10	0.50	3	60	0.0035	9095	29	95
	M 4	2.60	0.70	3	60	0.0065	7345	51	145
	M 5	3.60	0.80	3	60	0.0090	5305	41	145
	M 6	4.00	1.00	3	60	0.0100	4775	48	145
	M 8	5.00	1.25	3	60	0.0125	3820	54	145
	M 10	5.90	1.50	5	60	0.0150	3235	100	245
Al-Knetlegierung Si < 6%	M 12	7.90	1.75	5	60	0.0200	2420	82	240
	M 16	9.90	2.00	5	60	0.0250	1930	92	240
Gusseisen GG(G)	M 1.6	1.00	0.35	3	50	0.0015	15915	26	70
	M 2	1.30	0.40	3	50	0.0020	12245	26	75
	M 2.5	1.50	0.45	3	50	0.0025	10610	32	80
	M 3	2.10	0.50	3	50	0.0035	7580	24	80
	M 4	2.60	0.70	3	50	0.0065	6120	42	120
	M 5	3.60	0.80	3	50	0.0090	4420	34	120
	M 6	4.00	1.00	3	50	0.0100	3980	40	120
	M 8	5.00	1.25	3	50	0.0125	3185	45	120
	M 10	5.90	1.50	5	50	0.0150	2700	84	205
Gusseisen GG(G)	M 12	7.90	1.75	5	50	0.0200	2015	68	200
	M 16	9.90	2.00	5	50	0.0250	1610	76	200

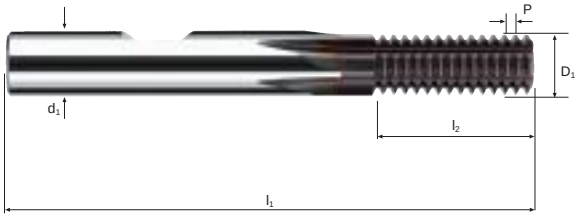
Gewindefräser

1.5xd

M

HM

DIN 6535 HB



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless	Ti Titanium	Aluminium GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EU2010** ø-Code **.022**

ø Code	d	P	l_1	l_2	d_1 h6	D_1	R_k 6H		UNICUT-4X EU2010
.022*	M 1.6	0.35	38	2.4	3	1.0	0.483	3	●
.034*	M 2	0.40	38	3.2	3	1.3	0.630	3	●
.040*	M 2.5	0.45	38	3.6	3	1.5	0.728	3	●
.044*	M 3	0.50	38	4.5	3	2.1	1.025	3	●
.058*	M 4	0.70	38	6.3	3	2.6	1.265	3	●
.084*	M 5	0.80	42	8.0	4	3.6	1.760	3	●
.088	M 6	1.00	57	9.0	6	4.0	1.950	3	●
.160	M 8	1.25	57	12.5	6	5.0	2.438	3	●
.174	M10	1.50	57	15.0	6	5.9	2.875	5	●
.240	M12	1.75	63	19.2	8	7.9	3.863	5	●
.246	M16	2.00	72	24.0	10	9.9	4.850	5	●

* nur ohne Seitenspannfläche

TM

Anwendung

Werkstoff	G	D1 [mm]	P (TPI)	z	v_c [m/min]	f_z [mm]	n [min⁻¹]	v_{fc} d/D_1 3/2	v_{fc} d/D_1 2/1	v_{fc} d/D_1 3/1	v_{fc} d/D_1 4/1	v_{fc} d/D_1 > 5/1	v_f [mm/min]
Stahl < 850 N/mm²	G1/16	5.90	28	5	30	0.0150	1620	40	60	80	90	96	120
	G1/4 -G3/8	7.90	19	5	30	0.0200	1210	40	60	80	90	96	120
	G1/2 -G7/8	11.90	14	5	30	0.0300	800	40	60	80	90	96	120
	G1 -G3	15.90	11	5	30	0.0400	600	40	60	80	90	96	120
Stahl 850 - 1100 N/mm²	G1/16	5.90	28	5	20	0.0150	1080	27	40	53	60	64	80
	G1/4 -G3/8	7.90	19	5	20	0.0200	805	27	40	53	60	64	80
	G1/2 -G7/8	11.90	14	5	20	0.0300	535	27	40	53	60	64	80
	G1 -G3	15.90	11	5	20	0.0400	400	27	40	53	60	64	80
Nichtrostender Stahl [Cr-Ni/1.4301]	G1/16	5.90	28	5	25	0.0100	1350	23	35	47	53	56	70
	G1/4 -G3/8	7.90	19	5	25	0.0130	1005	22	33	43	49	52	65
	G1/2 -G7/8	11.90	14	5	25	0.0200	670	22	33	43	49	52	65
	G1 -G3	15.90	11	5	25	0.0265	500	22	33	43	49	52	65
Gusseisen GG(G)	G1/16	5.90	28	5	50	0.0150	2700	68	103	137	154	164	205
	G1/4 -G3/8	7.90	19	5	50	0.0200	2015	67	100	133	150	160	200
	G1/2 -G7/8	11.90	14	5	50	0.0300	1335	67	100	133	150	160	200
	G1 -G3	15.90	11	5	50	0.0400	1000	67	100	133	150	160	200

Werkstoff	G	D1 [mm]	P (TPI)	z	v_c [m/min]	f_z [mm]	n [min⁻¹]	v_{fc} d/D_1 3/2	v_{fc} d/D_1 2/1	v_{fc} d/D_1 3/1	v_{fc} d/D_1 4/1	v_{fc} d/D_1 > 5/1	v_f [mm/min]
Al-Knetlegierung Si < 6%	G1/16	5.90	28	5	60	0.0150	3235	82	123	163	184	196	245
	G1/4 -G3/8	7.90	19	5	60	0.0200	2420	80	120	160	180	192	240
	G1/2 -G7/8	11.90	14	5	60	0.0300	1605	80	120	160	180	192	240
	G1 -G3	15.90	11	5	60	0.0400	1200	80	120	160	180	192	240
Aluminiumguss	G1/16	5.90	28	5	80	0.0150	4315	108	163	217	244	260	325
	G1/4 -G3/8	7.90	19	5	80	0.0200	3225	108	163	217	244	260	325
	G1/2 -G7/8	11.90	14	5	80	0.0300	2140	107	160	213	240	256	320
	G1 -G3	15.90	11	5	80	0.0400	1600	107	160	213	240	256	320
Reinkupfer	G1/16	5.90	28	5	70	0.0150	3775	95	143	190	214	228	285
	G1/4 -G3/8	7.90	19	5	70	0.0200	2820	93	140	187	210	224	280
	G1/2 -G7/8	11.90	14	5	70	0.0300	1870	93	140	187	210	224	280
	G1 -G3	15.90	11	5	70	0.0400	1400	93	140	187	210	224	280
Thermoplaste	G1/16	5.90	28	5	100	0.0150	5395	135	203	270	304	324	405
	G1/4 -G3/8	7.90	19	5	100	0.0200	4030	135	203	270	304	324	405
	G1/2 -G7/8	11.90	14	5	100	0.0300	2675	133	200	267	300	320	400
	G1 -G3	15.90	11	5	100	0.0400	2000	133	200	267	300	320	400

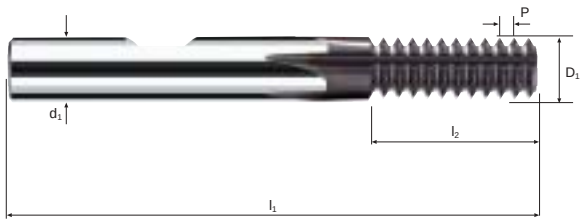
Gewindefräser

1.5xd

G

HM

DIN 6535 HB



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless	Ti Titanium	Aluminium GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EU2060** ø-Code **.550**

ø Code	d	P(TPI)	l_1	l_2	d_1 h6	D_1		UNICUT-4X EU2060
.550	G 1/16 - G1/8	28	57	14.5	6	5.9	5	●
.552	G 1/4 - G3/8	19	63	18.7	8	7.9	5	●
.554	G 1/2 - G7/8	14	83	29.0	12	11.9	5	●
.558	G1" - G3"	11	92	34.6	16	15.9	6	●

TM

Anwendung

Werkstoff	UNC	UNF	D1 [mm]	P (TPI)	z	v_c [m/min]	f_z [mm]	n [min^{-1}]	v_{fc} d/D$_1$ 3/2	v_{fc} d/D$_1$ 2/1	v_{fc} d/D$_1$ 3/1	v_{fc} d/D$_1$ 4/1	v_{fc} d/D$_1$ > 5/1	v_f [mm/min]
Stahl < 850 N/mm²	2	3	1.50	56	3	30	0.0025	6365	17	25	33	38	40	50
	3	4	1.50	48	3	30	0.0025	6365	17	25	33	38	40	50
	4-5	6	2.10	40	3	30	0.0035	4545	17	25	33	38	40	50
	8	10	3.00	32	3	30	0.0050	3185	17	25	33	38	40	50
	12	5/16-3/8	4.00	24	3	30	0.0065	2385	15	23	30	34	36	45
	1/4	7/16-1/2	4.00	20	3	30	0.0065	2385	15	23	30	34	36	45
	5/16	9/16-5/8	5.00	18	3	30	0.0085	1910	17	25	33	38	40	50
	3/8	3/4	5.90	16	5	30	0.0100	1620	27	40	53	60	64	80
	7/16	7/8	7.90	14	5	30	0.0130	1210	27	40	53	60	64	80
Stahl < 850 N/mm²	1/2		7.90	13	5	30	0.0130	1210	27	40	53	60	64	80
	9/16	1- 1 1/2	9.90	12	5	30	0.0165	965	27	40	53	60	64	80
	5/8		9.90	11	5	30	0.0165	965	27	40	53	60	64	80
Stahl 850 - 1100 N/mm²	2	3	1.50	56	3	20	0.0025	4245	10	15	20	23	24	30
	3	4	1.50	48	3	20	0.0025	4245	10	15	20	23	24	30
	4-5	6	2.10	40	3	20	0.0035	3030	10	15	20	23	24	30
	8	10	3.00	32	3	20	0.0050	2120	10	15	20	23	24	30
	12	5/16-3/8	4.00	24	3	20	0.0065	1590	10	15	20	23	24	30
	1/4	7/16-1/2	4.00	20	3	20	0.0065	1590	10	15	20	23	24	30
	5/16	9/16-5/8	5.00	18	3	20	0.0085	1275	12	18	23	26	28	35
	3/8	3/4	5.90	16	5	20	0.0100	1080	18	28	37	41	44	55
	7/16	7/8	7.90	14	5	20	0.0130	805	17	25	33	38	40	50
Stahl 850 - 1100 N/mm²	1/2		7.90	13	5	20	0.0130	805	17	25	33	38	40	50
	9/16	1- 1 1/2	9.90	12	5	20	0.0165	645	18	28	37	41	44	55
	5/8		9.90	11	5	20	0.0165	645	18	28	37	41	44	55

Werkstoff	UNC	UNF	D1 [mm]	P (TPI)	z	v_c [m/min]	f_z [mm]	n [min^{-1}]	v_{fc} d/D$_1$ 3/2	v_{fc} d/D$_1$ 2/1	v_{fc} d/D$_1$ 3/1	v_{fc} d/D$_1$ 4/1	v_{fc} d/D$_1$ > 5/1	v_f [mm/min]
Al-Knetlegierung Si < 6%	2	3	1.50	56	3	50	0.0025	10610	27	40	53	60	64	80
	3	4	1.50	48	3	50	0.0025	10610	27	40	53	60	64	80
	4-5	6	2.10	40	3	50	0.0035	7580	27	40	53	60	64	80
	8	10	3.00	32	3	50	0.0050	5305	27	40	53	60	64	80
	12	5/16-3/8	4.00	24	3	50	0.0065	3980	27	40	53	60	64	80
	1/4	7/16-1/2	4.00	20	3	50	0.0065	3980	27	40	53	60	64	80
	5/16	9/16-5/8	5.00	18	3	50	0.0085	3185	27	40	53	60	64	80
	3/8	3/4	5.90	16	5	50	0.0100	2700	45	68	90	101	108	135
	7/16	7/8	7.90	14	5	50	0.0130	2015	43	65	87	98	104	130
Al-Knetlegierung Si < 6%	1/2		7.90	13	5	50	0.0130	2015	43	65	87	98	104	130
	9/16	1- 1 1/2	9.90	12	5	50	0.0165	1610	45	68	90	101	108	135
	5/8		9.90	11	5	50	0.0165	1610	45	68	90	101	108	135
Gusseisen GG(G)	2	3	1.50	56	3	40	0.0025	8490	22	33	43	49	52	65
	3	4	1.50	48	3	40	0.0025	8490	22	33	43	49	52	65
	4-5	6	2.10	40	3	40	0.0035	6065	22	33	43	49	52	65
	8	10	3.00	32	3	40	0.0050	4245	22	33	43	49	52	65
	12	5/16-3/8	4.00	24	3	40	0.0065	3185	20	30	40	45	48	60
	1/4	7/16-1/2	4.00	20	3	40	0.0065	3185	20	30	40	45	48	60
	5/16	9/16-5/8	5.00	18	3	40	0.0085	2545	22	33	43	49	52	65
	3/8	3/4	5.90	16	5	40	0.0100	2160	37	55	73	83	88	110
	7/16	7/8	7.90	14	5	40	0.0130	1610	35	53	70	79	84	105
Gusseisen GG(G)	1/2		7.90	12	5	40	0.0130	1610	35	53	70	79	84	105
	9/16	1- 1 1/2	9.90	12	5	40	0.0165	1285	35	53	70	79	84	105
	5/8		9.90	11	5	40	0.0165	1285	35	53	70	79	84	105

Gewindefräser

1.5xd

UN

60°

HM

DIN 6535 HB

Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless	Ti Titanium	Aluminium GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EU2110** ø-Code **.750**

ø Code	UNC	UNF	P(TPI)	l_1	l_2	d_1 h6	D_1		UNICUT-4X EU2110
.750*		Nr. 2	64	38	3.1	3	1.5	3	●
.751*	Nr. 2	Nr. 3	56	38	3.1	3	1.5	3	●
.752*	Nr. 3	Nr. 4	48	38	3.7	3	1.5	3	●
.753*		Nr. 5	44	38	4.6	3	2.1	3	●
.754*	Nr. 4 - 5	Nr. 6	40	38	4.4	3	2.1	3	●
.755*		Nr. 8	36	42	6.3	4	3.0	3	●
.756*	Nr. 8	Nr. 10	32	42	6.3	4	3.0	3	●
.759*		Nr. 12 - 1/4	28	42	8.1	4	3.6	3	●
.761	Nr. 12	5/16 - 3/8	24	57	8.4	6	4.0	3	●
.762	1/4	7/16 - 1/2	20	57	10.1	6	4.0	3	●
.764	5/16	9/16 - 5/8	18	57	12.7	6	5.0	3	●
.766	3/8	3/4	16	57	14.2	6	5.9	5	●
.769	7/16	7/8	14	63	16.3	8	7.9	5	●
.770	1/2		13	63	19.5	8	7.9	5	●
.771	9/16	1" - 1 1/2	12	72	23.2	10	9.9	5	●
.773	5/8		11	72	23.0	10	9.9	5	●

* nur ohne Seitenspannfläche

TM

Anwendung

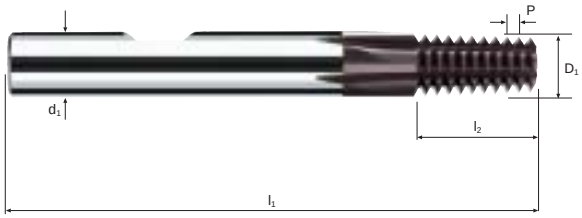
Werkstoff	NPT / NPTF	D1 [mm]	P (TPI)	z	v_c [m/min]	f_z [mm]	n [min⁻¹]	v_{fc} d/D1 3/2	v_{fc} d/D1 2/1	v_{fc} d/D1 3/1	v_{fc} d/D1 4/1	v_{fc} d/D1 > 5/1	v_f [mm/min]
Stahl < 850 N/mm²	1/16 - 1/8	5.90	27	5	30	0.0100	1620	27	40	53	60	64	80
	1/4 - 3/8	7.90	18	5	30	0.0130	1210	27	40	53	60	64	80
	1/2 - 3/4	11.90	14	5	30	0.0200	800	27	40	53	60	64	80
	1 - 2	15.90	12	6	30	0.0265	600	32	48	63	71	76	95
Stahl 850 - 1100 N/mm²	1/16 - 1/8	5.90	27	5	20	0.0100	1080	18	28	37	41	44	55
	1/4 - 3/8	7.90	18	5	20	0.0130	805	17	25	33	38	40	50
	1/2 - 3/4	11.90	14	5	20	0.0200	535	18	28	37	41	44	55
	1 - 2	15.90	12	6	20	0.0265	400	22	33	43	49	52	65
Nichtrostender Stahl [Cr-Ni/1.4301]	1/16 - 1/8	5.90	27	5	15	0.0100	810	13	20	27	30	32	40
	1/4 - 3/8	7.90	18	5	15	0.0130	605	13	20	27	30	32	40
	1/2 - 3/4	11.90	14	5	15	0.0200	400	13	20	27	30	32	40
	1 - 2	15.90	12	6	15	0.0265	300	17	25	33	38	40	50
Gusseisen GG(G)	1/16 - 1/8	5.90	27	5	40	0.0100	2160	37	55	73	83	88	110
	1/4 - 3/8	7.90	18	5	40	0.0130	1610	35	53	70	79	84	105
	1/2 - 3/4	11.90	14	5	40	0.0200	1070	35	53	70	79	84	105
	1 - 2	15.90	12	6	40	0.0265	800	42	63	83	94	100	125

Werkstoff	NPT / NPTF	D1 [mm]	P (TPI)	z	v_c [m/min]	f_z [mm]	n [min⁻¹]	v_{fc} d/D1 3/2	v_{fc} d/D1 2/1	v_{fc} d/D1 3/1	v_{fc} d/D1 4/1	v_{fc} d/D1 > 5/1	v_f [mm/min]
Al-Knetlegierung Si < 6%	1/16 - 1/8	5.90	27	5	50	0.0100	2700	45	68	90	101	108	135
	1/4 - 3/8	7.90	18	5	50	0.0130	2015	43	65	87	98	104	130
	1/2 - 3/4	11.90	14	5	50	0.0200	1335	45	68	90	101	108	135
	1 - 2	15.90	12	6	50	0.0265	1000	53	80	107	120	128	160
Aluminiumguss	1/16 - 1/8	5.90	27	5	60	0.0100	3235	53	80	107	120	128	160
	1/4 - 3/8	7.90	18	5	60	0.0130	2420	52	78	103	116	124	155
	1/2 - 3/4	11.90	14	5	60	0.0200	1605	53	80	107	120	128	160
	1 - 2	15.90	12	6	60	0.0265	1200	63	95	127	143	152	190
Reinkupfer	1/16 - 1/8	5.90	27	5	70	0.0100	3775	63	95	127	143	152	190
	1/4 - 3/8	7.90	18	5	70	0.0130	2820	62	93	123	139	148	185
	1/2 - 3/4	11.90	14	5	70	0.0200	1870	62	93	123	139	148	185
	1 - 2	15.90	12	6	70	0.0265	1400	75	113	150	169	180	225
Thermoplaste	1/16 - 1/8	5.90	27	5	90	0.0100	4855	82	123	163	184	196	245
	1/4 - 3/8	7.90	18	5	90	0.0130	3625	78	118	157	176	188	235
	1/2 - 3/4	11.90	14	5	90	0.0200	2405	80	120	160	180	192	240
	1 - 2	15.90	12	6	90	0.0265	1800	95	143	190	214	228	285

Gewindefräser

NPT
NPTF

HM



Rm < 850	Rm 850-1100	Rm 1100-1300					Inox Stainless	Ti Titanium	Aluminium GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EU2200** ø-Code **.840**

ø Code	d	P(TPI)	l1	l2	d1 h6	D1		UNICUT-4X EU2200
.840	NPT 1/16 - 1/8	27	57	9.4	6	5.9	5	●
.842	NPT 1/4 - 3/8	18	63	14.1	8	7.9	5	●
.844	NPT 1/2 - 3/4	14	83	19.9	12	11.9	5	●
.846	NPT 1" - 2"	11.5	92	26.5	16	15.9	6	●

Beispiel: **Bestell-Nr.** Artikel-Nr. **EU2210** ø-Code **.840**

ø Code	d	P(TPI)	l1	l2	d1 h6	D1		UNICUT-4X EU2210
.840	NPTF 1/16 - 1/8	27	57	9.4	6	5.9	5	●
.842	NPTF 1/4 - 3/8	18	63	14.1	8	7.9	5	●
.844	NPTF 1/2 - 3/4	14	83	19.9	12	11.9	5	●
.846	NPTF 1" - 2"	11.5	92	26.5	16	15.9	6	●

TM

Anwendung

Werkstoff	M	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	n [min⁻¹]	v_{fc} d/D_1 3/2	v_{fc} d/D_1 2/1	v_{fc} d/D_1 3/1	v_{fc} d/D_1 4/1	v_{fc} d/D_1 > 5/1	v_f [mm/min]
Stahl 850 - 1100 N/mm²	≥ M14	9.95	1.00	4	80	0.0250	2560	85	128	170	191	204	255
	≥ M14	9.95	1.25	4	80	0.0250	2560	85	128	170	191	204	255
	≥ M14	9.95	1.50	4	80	0.0250	2560	85	128	170	191	204	255
	≥ M18	11.95	1.00	4	80	0.0300	2130	85	128	170	191	204	255
	≥ M18	11.95	1.50	4	80	0.0300	2130	85	128	170	191	204	255
	≥ M24	15.95	1.00	5	80	0.0400	1595	107	160	213	240	256	320
	≥ M24	15.95	2.00	5	80	0.0400	1595	107	160	213	240	256	320
	≥ M30	19.95	1.50	5	80	0.0500	1275	107	160	213	240	256	320
	≥ M30	19.95	2.00	5	80	0.0500	1275	107	160	213	240	256	320
Stahl 1300 - 1500 N/mm²	≥ M14	9.95	1.00	4	50	0.0200	1600	43	65	87	98	104	130
	≥ M14	9.95	1.25	4	50	0.0200	1600	43	65	87	98	104	130
	≥ M14	9.95	1.50	4	50	0.0200	1600	43	65	87	98	104	130
	≥ M18	11.95	1.00	4	50	0.0240	1330	43	65	87	98	104	130
	≥ M18	11.95	1.50	4	50	0.0240	1330	43	65	87	98	104	130
	≥ M24	15.95	1.00	5	50	0.0320	1000	53	80	107	120	128	160
	≥ M24	15.95	2.00	5	50	0.0320	1000	53	80	107	120	128	160
	≥ M30	19.95	1.50	5	50	0.0400	800	53	80	107	120	128	160
	≥ M30	19.95	2.00	5	50	0.0400	800	53	80	107	120	128	160
Werkzeugstahl gehärtet 48 - 52 HRC	≥ M14	9.95	1.00	4	30	0.0165	960	22	33	43	49	52	65
	≥ M14	9.95	1.25	4	30	0.0165	960	22	33	43	49	52	65
	≥ M14	9.95	1.50	4	30	0.0165	960	22	33	43	49	52	65
	≥ M18	11.95	1.00	4	30	0.0200	800	22	33	43	49	52	65
	≥ M18	11.95	1.50	4	30	0.0200	800	22	33	43	49	52	65
	≥ M24	15.95	1.00	5	30	0.0265	600	27	40	53	60	64	80
	≥ M24	15.95	2.00	5	30	0.0265	600	27	40	53	60	64	80
	≥ M30	19.95	1.50	5	30	0.0335	480	27	40	53	60	64	80
	≥ M30	19.95	2.00	5	30	0.0335	480	27	40	53	60	64	80
Nichtrostender Stahl [Cr-Ni/1.4301]	≥ M14	9.95	1.00	4	45	0.0200	1440	38	58	77	86	92	115
	≥ M14	9.95	1.25	4	45	0.0200	1440	38	58	77	86	92	115
	≥ M14	9.95	1.50	4	45	0.0200	1440	38	58	77	86	92	115
	≥ M18	11.95	1.00	4	45	0.0240	1200	38	58	77	86	92	115
	≥ M18	11.95	1.50	4	45	0.0240	1200	38	58	77	86	92	115
	≥ M24	15.95	1.00	5	45	0.0320	900	48	73	97	109	116	145
	≥ M24	15.95	2.00	5	45	0.0320	900	48	73	97	109	116	145
	≥ M30	19.95	1.50	5	45	0.0400	720	48	73	97	109	116	145
	≥ M30	19.95	2.00	5	45	0.0400	720	48	73	97	109	116	145

Werkstoff	M	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	n [min⁻¹]	v_{fc} d/D_1 3/2	v_{fc} d/D_1 2/1	v_{fc} d/D_1 3/1	v_{fc} d/D_1 4/1	v_{fc} d/D_1 > 5/1	v_f [mm/min]
Gusseisen GG(G)	≥ M14	9.95	1.00	4	120	0.0250	3840	128	193	257	289	308	385
	≥ M14	9.95	1.25	4	120	0.0250	3840	128	193	257	289	308	385
	≥ M14	9.95	1.50	4	120	0.0250	3840	128	193	257	289	308	385
	≥ M18	11.95	1.00	4	120	0.0300	3195	128	193	257	289	308	385
	≥ M18	11.95	1.50	4	120	0.0300	3195	128	193	257	289	308	385
	≥ M24	15.95	1.00	5	120	0.0400	2395	160	240	320	360	384	480
	≥ M24	15.95	2.00	5	120	0.0400	2395	160	240	320	360	384	480
	≥ M30	19.95	1.50	5	120	0.0500	1915	160	240	320	360	384	480
	≥ M30	19.95	2.00	5	120	0.0500	1915	160	240	320	360	384	480
Al-Knetlegierung Si < 6%	≥ M14	9.95	1.00	4	150	0.0285	4800	182	273	363	409	436	545
	≥ M14	9.95	1.25	4	150	0.0285	4800	182	273	363	409	436	545
	≥ M14	9.95	1.50	4	150	0.0285	4800	182	273	363	409	436	545
	≥ M18	11.95	1.00	4	150	0.0340	3995	182	273	363	409	436	545
	≥ M18	11.95	1.50	4	150	0.0340	3995	182	273	363	409	436	545
	≥ M24	15.95	1.00	5	150	0.0455	2995	227	340	453	510	544	680
	≥ M24	15.95	2.00	5	150	0.0455	2995	227	340	453	510	544	680
	≥ M30	19.95	1.50	5	150	0.0570	2395	228	343	457	514	548	685
	≥ M30	19.95	2.00	5	150	0.0570	2395	228	343	457	514	548	685
Aluminiumguss	≥ M14	9.95	1.00	4	200	0.0285	6400	243	365	487	548	584	730
	≥ M14	9.95	1.25	4	200	0.0285	6400	243	365	487	548	584	730
	≥ M14	9.95	1.50	4	200	0.0285	6400	243	365	487	548	584	730
	≥ M18	11.95	1.00	4	200	0.0340	5330	242	363	483	544	580	725
	≥ M18	11.95	1.50	4	200	0.0340	5330	242	363	483	544	580	725
	≥ M24	15.95	1.00	5	200	0.0455	3990	303	455	607	683	728	910
	≥ M24	15.95	2.00	5	200	0.0455	3990	303	455	607	683	728	910
	≥ M30	19.95	1.50	5	200	0.0570	3190	303	455	607	683	728	910
	≥ M30	19.95	2.00	5	200	0.0570	3190	303	455	607	683	728	910
Titanlegierungen > 300 HB [Ti6Al4V]	≥ M14	9.95	1.00	4	35	0.0200	1120	30	45	60	68	72	90
	≥ M14	9.95	1.25	4	35	0.0200	1120	30	45	60	68	72	90
	≥ M14	9.95	1.50	4	35	0.0200	1120	30	45	60	68	72	90
	≥ M18	11.95	1.00	4	35	0.0240	930	30	45	60	68	72	90
	≥ M18	11.95	1.50	4	35	0.0240	930	30	45	60	68	72	90
	≥ M24	15.95	1.00	5	35	0.0320	700	37	55	73	83	88	110
	≥ M24	15.95	2.00	5	35	0.0320	700	37	55	73	83	88	110
	≥ M30	19.95	1.50	5	35	0.0400	560	37	55	73	83	88	110
	≥ M30	19.95	2.00	5	35	0.0400	560	37	55	73	83	88	110

Mehrbereichgewindefräser

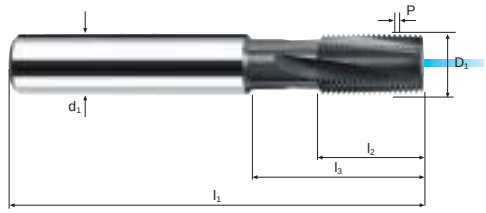
Incool

M

HM

60°

DIN 6535 HA



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	Aluminium GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH26020** ø-Code **.096**

ø Code	d min.	P	l_1	l_2	l_3	d_1 h6	D_1		TiCN EH26020
.096	14	1.00	70	16	25	10	9.95	4	●
.166	14	1.25	70	16	25	10	9.95	4	●
.178	14	1.50	70	16	25	10	9.95	4	●
.100	18	1.00	80	20	31	12	11.95	4	●
.182	18	1.50	80	20	31	12	11.95	4	●
.106	24	1.00	90	25	40	16	15.95	5	●
.188	24	1.50	90	25	40	16	15.95	5	●
.254	24	2.00	90	25	40	16	15.95	5	●
.194	30	1.50	105	33	50	20	19.95	5	●
.260	30	2.00	105	33	50	20	19.95	5	●

TM

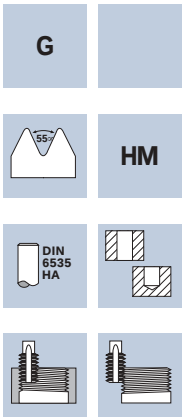
Anwendung

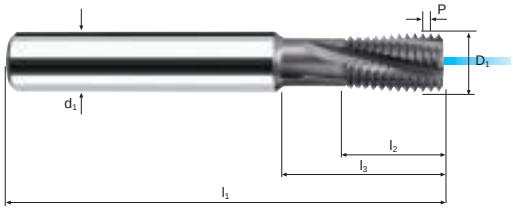
Werkstoff	G	D1 [mm]	P (TPI)	z	v_c [m/min]	f_z [mm]	n [min⁻¹]	v_{fc} d/D_1 3/2	v_{fc} d/D_1 2/1	v_{fc} d/D_1 3/1	v_{fc} d/D_1 4/1	v_{fc} d/D_1 > 5/1	v_f [mm/min]
Stahl 850 - 1100 N/mm²	G1/4 - G3/8	9.95	19	4	80	0.0250	2560	85	128	170	191	204	255
	G1/2 - G7/8	15.95	14	5	80	0.0400	1595	107	160	213	240	256	320
	G1 - G3	19.95	11	5	80	0.0500	1275	107	160	213	240	256	320
Stahl 1300 - 1500 N/mm²	G1/4 - G3/8	9.95	19	4	50	0.0200	1600	43	65	87	98	104	130
	G1/2 - G7/8	15.95	14	5	50	0.0320	1000	53	80	107	120	128	160
	G1 - G3	19.95	11	5	50	0.0400	800	53	80	107	120	128	160
Werkzeugstahl gehärtet 48 - 52 HRC	G1/4 - G3/8	9.95	19	4	30	0.0165	960	22	33	43	49	52	65
	G1/2 - G7/8	15.95	14	5	30	0.0265	600	27	40	53	60	64	80
	G1 - G3	19.95	11	5	30	0.0335	480	27	40	53	60	64	80
Nichtrostender Stahl [Cr-Ni/1.4301]	G1/4 - G3/8	9.95	19	4	45	0.0200	1440	38	58	77	86	92	115
	G1/2 - G7/8	15.95	14	5	45	0.0320	900	48	73	97	109	116	145
	G1 - G3	19.95	11	5	45	0.0400	720	48	73	97	109	116	145

Werkstoff	G	D1 [mm]	P (TPI)	z	v_c [m/min]	f_z [mm]	n [min⁻¹]	v_{fc} d/D_1 3/2	v_{fc} d/D_1 2/1	v_{fc} d/D_1 3/1	v_{fc} d/D_1 4/1	v_{fc} d/D_1 > 5/1	v_f [mm/min]
Gusseisen GG(G)	G1/4 - G3/8	9.95	19	4	120	0.0250	3840	128	193	257	289	308	385
	G1/2 - G7/8	15.95	14	5	120	0.0400	2395	160	240	320	360	384	480
	G1 - G3	19.95	11	5	120	0.0500	1915	160	240	320	360	384	480
Al-Knetlegierung Si < 6%	G1/4 - G3/8	9.95	19	4	150	0.0285	4800	182	273	363	409	436	545
	G1/2 - G7/8	15.95	14	5	150	0.0455	2995	227	340	453	510	544	680
	G1 - G3	19.95	11	5	150	0.0570	2395	228	343	457	514	548	685
Aluminiumguss	G1/4 - G3/8	9.95	19	4	200	0.0285	6400	243	365	487	548	584	730
	G1/2 - G7/8	15.95	14	5	200	0.0455	3990	303	455	607	683	728	910
	G1 - G3	19.95	11	5	200	0.0570	3190	303	455	607	683	728	910
Titanlegierungen > 300 HB [Ti6Al4V]	G1/4 - G3/8	9.95	19	4	35	0.0200	1120	30	45	60	68	72	90
	G1/2 - G7/8	15.95	14	5	35	0.0320	700	37	55	73	83	88	110
	G1 - G3	19.95	11	5	35	0.0400	560	37	55	73	83	88	110

Mehrbereichgewindefräser

Incool





Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56			Inox Stainless	Ti Titanium	Aluminium GG(G)

Beispiel: **Bestell-Nr.** Artikel-Nr. **EH26040** ø-Code **.552**

ø Code	d min.	P(TPI)	l_1	l_2	l_3	d_1 h6	D_1		TiCN EH26040
.552	1/4	19	70	16	25	10	9.95	4	●
.554	1/2	14	90	25	40	16	15.95	5	●
.558	1"	11	105	33	50	20	19.95	5	●

TM

Anwendung

Werkstoff	M	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Stahl 850 - 1100 N/mm²	M 1	0.70	0.25	3	120	0.0020	54570	98	325
	M 2	1.50	0.40	3	120	0.0040	25465	76	305
	M 3	2.20	0.50	3	120	0.0055	17365	76	285
	M 4	3.10	0.70	3	120	0.0080	12320	66	295
	M 5	3.80	0.80	3	120	0.0095	10050	68	285
	M 6	4.70	1.00	3	120	0.0120	8125	64	295
	M 8	5.90	1.25	5	120	0.0150	6475	127	485
	M10	7.90	1.50	5	120	0.0200	4835	102	485
Stahl 1300 - 1500 N/mm²	M 1	0.70	0.25	3	100	0.0010	45475	41	135
	M 2	1.50	0.40	3	100	0.0025	21220	40	160
	M 3	2.20	0.50	3	100	0.0035	14470	40	150
	M 4	3.10	0.70	3	100	0.0050	10270	35	155
	M 5	3.80	0.80	3	100	0.0065	8375	40	165
	M 6	4.70	1.00	3	100	0.0080	6775	36	165
	M 8	5.90	1.25	5	100	0.0100	5395	71	270
	M10	7.90	1.50	5	100	0.0130	4030	55	260
Nichtrostender Stahl [Cr-Ni/1.4301]	M 1	0.70	0.25	3	80	0.0010	36380	33	110
	M 2	1.50	0.40	3	80	0.0025	16975	31	125
	M 3	2.20	0.50	3	80	0.0035	11575	32	120
	M 4	3.10	0.70	3	80	0.0050	8215	28	125
	M 5	3.80	0.80	3	80	0.0060	6700	29	120
	M 6	4.70	1.00	3	80	0.0070	5420	25	115
	M 8	5.90	1.25	5	80	0.0090	4315	51	195
	M10	7.90	1.50	5	80	0.0120	3225	41	195
Nickelbasislegierungen	M 1	0.70	0.25	3	60	0.0010	27285	24	80
	M 2	1.50	0.40	3	60	0.0025	12735	24	95
	M 3	2.20	0.50	3	60	0.0035	8680	24	90
	M 4	3.10	0.70	3	60	0.0050	6160	20	90
	M 5	3.80	0.80	3	60	0.0060	5025	22	90
	M 6	4.70	1.00	3	60	0.0070	4065	18	85
	M 8	5.90	1.25	5	60	0.0090	3235	38	145
	M10	7.90	1.50	5	60	0.0120	2420	30	145

Werkstoff	M	D1 [mm]	P [mm]	z	v_c [m/min]	f_z [mm]	n [mm⁻¹]	v_{fc} [mm/min]	v_f [mm/min]
Al-Knetlegierung Si < 6%	M 1	0.70	0.25	3	150	0.0015	60000	81	270
	M 2	1.50	0.40	3	150	0.0035	31830	84	335
	M 3	2.20	0.50	3	150	0.0050	21705	87	325
	M 4	3.10	0.70	3	150	0.0070	15405	73	325
	M 5	3.80	0.80	3	150	0.0085	12565	77	320
	M 6	4.70	1.00	3	150	0.0105	10160	69	320
	M 8	5.90	1.25	5	150	0.0130	8095	138	525
	M10	7.90	1.50	5	150	0.0175	6045	111	530
Aluminiumguss	M 1	0.70	0.25	3	180	0.0020	60000	108	360
	M 2	1.50	0.40	3	180	0.0040	38200	115	460
	M 3	2.20	0.50	3	180	0.0055	26045	115	430
	M 4	3.10	0.70	3	180	0.0080	18485	100	445
	M 5	3.80	0.80	3	180	0.0095	15080	103	430
	M 6	4.70	1.00	3	180	0.0120	12190	95	440
	M 8	5.90	1.25	5	180	0.0150	9710	192	730
	M10	7.90	1.50	5	180	0.0200	7255	152	725
Reinkupfer	M 1	0.70	0.25	3	100	0.0015	45475	62	205
	M 2	1.50	0.40	3	100	0.0030	21220	48	190
	M 3	2.20	0.50	3	100	0.0045	14470	52	195
	M 4	3.10	0.70	3	100	0.0060	10270	42	185
	M 5	3.80	0.80	3	100	0.0075	8375	46	190
	M 6	4.70	1.00	3	100	0.0095	6775	42	195
	M 8	5.90	1.25	5	100	0.0120	5395	85	325
	M10	7.90	1.50	5	100	0.0160	4030	67	320
Titanlegierungen > 300 HB [Ti6Al4V]	M 1	0.70	0.25	3	70	0.0010	31830	29	95
	M 2	1.50	0.40	3	70	0.0025	14855	28	110
	M 3	2.20	0.50	3	70	0.0035	10130	28	105
	M 4	3.10	0.70	3	70	0.0050	7190	25	110
	M 5	3.80	0.80	3	70	0.0060	5865	25	105
	M 6	4.70	1.00	3	70	0.0070	4740	22	100
	M 8	5.90	1.25	5	70	0.0090	3775	45	170
	M10	7.90	1.50	5	70	0.0120	2820	36	170

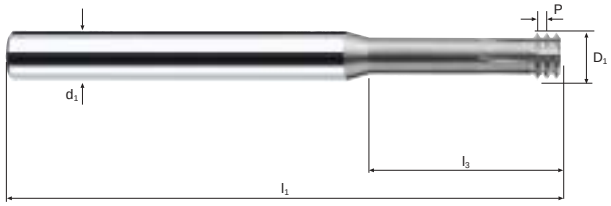
Gewindewirbler

3.0xd

M

HM

DIN 6535 HA



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless	Ti Titanium	Aluminium GG(G) Nickel-Alloys

Beispiel: **Bestell-Nr.** Artikel-Nr. **EU28500** ø-Code **.010**

ø Code	d	P	l_1	l_3	d_1 h6	D_1	R_k 6H			UNICUT-4X E28500	UNICUT-4X EU28500
.010	M 1	0.25	38	3.0	3	0.70	0.337	3	1	●	●
.020	M 1.4	0.30	38	4.2	3	1.00	0.485	3	1	●	●
.022	M 1.6	0.35	38	4.8	3	1.20	0.583	3	1	●	●
.034	M 2	0.40	38	6.0	3	1.50	0.730	3	1	●	●
.040	M 2.5	0.45	38	7.5	3	1.80	0.878	3	1	●	●
.044	M 3	0.50	42	9.0	3	2.20	1.075	3	3	●	●
.058	M 4	0.70	47	12.0	4	3.10	1.515	3	3	●	●
.084	M 5	0.80	57	15.0	6	3.80	1.860	3	3	●	●
.088	M 6	1.00	62	18.0	6	4.70	2.300	3	3	●	●
.160	M 8	1.25	65	24.0	6	5.90	2.888	5	3	●	●
.174	M10	1.50	86	30.0	8	7.90	3.875	5	3	●	●

TM

passion
for precision
fraisa

Informationen Bohrwerkzeuge

424 – 429

Informationen Gewindewerkzeuge

430 – 449

Allgemeine Informationen

450 – 460

Legende zur Produktseite der Bohrwerkzeuge

Werkzeugtechnologien

Bohrwerkzeug mit vier Fasen (zwei Reib- und zwei Führungsfasen)
- Verbesserte Geradheit der Bohrung
- Verbesserte Bohrungsqualität und Fluchtung
- Geringerer Verlauf der Bohrung beim Durchbohren von Querbohrungen
- Fluchtungsgenaue Bohrungen mit guten Oberflächen und optimale Abstützung des Werkzeuges beim Austritt

Bohrwerkzeug mit optimierter, polierter Spannut und innerer Kühlmittelzuführung
- Reduzierung der Reibung und dadurch weniger Adhäsionsneigung, verbesserte Spanabfuhr und geringere Temperaturbildung

Bohrwerkzeug mit optimierter, polierter Spannut ohne innere Kühlmittelzuführung
- Reduzierung der Reibung und dadurch weniger Adhäsionsneigung, verbesserte Spanabfuhr und geringere Temperaturbildung

Bohrwerkzeug mit Aufnahmeschaft in h5 Qualität
- Hohe Rundlauf- und Exzentrizitätsgenauigkeit
- Optimal für moderne Präzisionsspannmittel

Schneidstoffe

HM XA

Feinstkornhartmetall. Härte 1950 HV. Co-Gehalt 8%. Zeichnet sich besonders durch hohe Verschleissfestigkeit (Abrasion) aus.

HM MGX

Hochleistungs-Feinstkornhartmetall mit ultrafeinen Wolframkarbiden. Härte 1610HV. Co-Gehalt 10%.

HM MG10

Feinstkornhartmetall. Härte 1600 HV. Co-Gehalt 10%.

HM MGD²

Feinstkornhartmetall mit hoher Biege- und Scherfestigkeit bei guter Elastizität.

HM

Universal-Feinstkornhartmetall.

HSS

Hochleistungsschneidstoff. Schmelzmetallurgisch hergestellte HSS-Legierung.

Legende zur Produktseite der Bohrwerkzeuge

Kühlmittelzuführung

Bohrwerkzeug mit innerer Kühlmittelzuführung gewährleisten über die verbesserte Spanbildung und Späneabfuhr eine erhöhte Prozesssicherheit sowie eine gesteigerte Werkzeuglebensdauer.

Bohrwerkzeug ohne innere Kühlmittelzuführung.

Spitzen- und Drallwinkel

Die Grösse des Spitzenwinkels beeinflusst massgeblich das bearbeitbare Werkstoffspektrum. Darüber hinaus gewährleisten kleinere Spitzenwinkel bessere Zentriereigenschaften; grosse Spitzenwinkel verkleinern das Drehmoment.

Bei Bohrern beeinflusst der Drallwinkel massgeblich den Spanwinkel an der Hauptschneide (Bohrerspitze). Hohe Drallwinkel werden daher bei weichen Werkstoffen, kleine Drallwinkel bei harten und spröden Werkstoffen eingesetzt.

Ausführungen und Baumasse Spiralbohrer

HM Spiralbohrer 3xd
Die Baumasse dieses Werkzeuges entsprechen den Angaben der DIN 6537 K «Vollhartmetall-Spiralbohrer mit abgesetztem Zylinderschaft».

HM Spiralbohrer 5xd
Die Baumasse dieses Werkzeuges entsprechen den Angaben der DIN 6537 L «Vollhartmetall-Spiralbohrer mit abgesetztem Zylinderschaft».

HM Spiralbohrer und Tieflochbohrer grösser 5xd
Nach Werksnorm.

HM Spiralbohrer 8xd, optimiert
Nach Werksnorm, jedoch mit optimiertem l/d Verhältnis für optimale Werkzeugstabilität.

Spezielle Ausführungen und Baumasse

90°

Angabe des Spitzenwinkels bei NC-Anbohrern oder Kegelsenkern.
Kegelsenker 90° nach DIN 335

Bohrtiefen

Angabe der nominellen Bohrungstiefe. (Beispiel: 5xd: 5-facher Bohrerdurchmesser). Die nominelle Bohrungstiefe entspricht nicht der maximalen Bohrtiefe! Die maximale Bohrtiefe ist unter L_{max} angegeben.

i

Legende zur Produktseite der Bohrwerkzeuge

Form des Schaftes / Schaftausführungen

VHM-Werkzeuge mit zylindrischem Schaft: Schaftausführung nach DIN 6535 HA

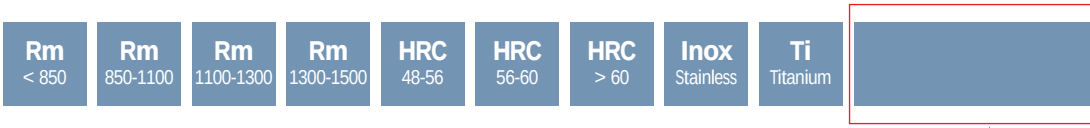
VHM-Werkzeuge mit zylindrischem Schaft und Seitenspannfläche: Schaftausführung nach DIN 6535 HB

VHM-Mikrobohrer und Tieflochbohrer mit zylindrischem Schaft: Schaftausführung nach Werksnorm

Bearbeitungseignung

Ein blauer Hintergrund bedeutet eine hervorragende Eignung des Werkzeuges für diesen Werkstoff.

Ein hellblauer Hintergrund bedeutet eine gute bis ausreichende Eignung des Werkzeuges für diesen Werkstoff.



Weitere Werkstoffe welche bearbeitet werden können, sind im Zusatzfeld angegeben

Abkürzungen

d_1	Schneidendurchmesser [mm]
d_2	Schaftdurchmesser [mm]
d_3	Stirnflächendurchmesser bei Kegelsenker [mm]
l_1	Gesamtlänge des Werkzeuges [mm]
l_2	Spannutenlänge [mm]
l_3	Länge der 2. Stufe (Stufenbohrer) [mm]
l_4	Schaftlänge [mm]
L_{max}	Maximale Bohrungstiefe des Werkzeuges
L_K	Bohrungstiefe für Kantenbruch (Stufenbohrer)

Kühlschmierung und Kühlmitteldruck

Grundsätzlich wird beim Bohren mit Kühlschmierstoff gearbeitet. Dabei ist das Ziel ein effizienter Späne- und Wärmeabtransport. Gehärtete Stähle oder spröd-abrasive Werkstoffe können auch trocken (Druckluft) oder mit MMS (Minimal-Mengen-Schmierung) bearbeitet werden.

Wird der Kühlschmierstoff extern hinzugefügt, ist auf die richtige Positionierung des Kühlmittelstrahls zu achten. Dieser sollte in die Spannut (parallel zum Drallwinkel) und auf den Bohrlocheintritt gerichtet sein.

Durch die Verwendung von IKZ (Innerer Kühlmittelzufuhr) wird eine Standzeit- oder Leistungserhöhung erreicht. Dabei ist je nach Ausführung und Durchmesser des Bohrwerkzeuges ein minimaler Kühlmitteldruck notwendig.

Nachfolgende Tabelle gibt einen Richtwert für die von Fraisa empfohlenen Kühlmitteldrücke für IKZ Spiralbohrer:

Erforderlicher Kühlmitteldruck für Spiralbohrer mit IKZ-Emulsion						
Ausführung	< ø 3 mm	ø 3-5 mm	ø 5-8 mm	ø 8-12 mm	ø 12-16 mm	ø 16-20 mm
bis 5xd	60 bar	50 bar	30 bar	25 bar	20 bar	15 bar
8xd – 30xd	80 bar	60 bar	40 bar	30 bar	25 bar	20 bar
Erforderlicher Kühlmitteldruck für Spiralbohrer mit IKS-MMS						
Ausführung	< ø 3 mm	ø 3-5 mm	ø 5-8 mm	ø 8-12 mm	ø 12-16 mm	ø 16-20 mm
bis 5xd	12 bar	10 bar	9 bar	8 bar	8 bar	7 bar
8xd – 30xd	14 bar	12 bar	10 bar	9 bar	9 bar	8 bar

Rundlaufgenauigkeit

Die Rundlaufgenauigkeit beim Bohrprozess ist mitunter eine wichtige Prozesseinflussgrösse. Der Rundlauffehler sollte so klein wie möglich sein, da dieser die Verschleissentwicklung stark beeinflusst.
Der Rundlauf sollte insbesondere bei Bohrdurchmessern kleiner 6mm kontrolliert werden. Die Kontrollmessung erfolgt dabei im eingespannten Zustand des Bohrwerkzeuges im Spannmittel und der Maschinenspindel.

Nachfolgende Tabelle gibt einen Richtwert für die von Fraisa empfohlenen maximalen Rundlauffehler:

Maximaler Rundlauffehler für Spiralbohrer						
Durchmesserbereich	< ø 1 mm	ø 1-3 mm	ø 3-6 mm	ø 6-10 mm	ø 10-16 mm	ø 16-20 mm
Max. Rundlauffehler	3 µm	5 µm	10 µm	15 µm	20 µm	25 µm

Zentrierung und Pilotbohrung

Bohrwerkzeuge müssen immer rechtwinklig zum Werkstück angesetzt werden. Muss in eine geneigte Fläche gebohrt werden, ist eine Hilfsfläche rechtwinklig zum Bohrwerkzeug anzubringen.

Der Spitzenwinkel des Zentrierbohrers sollte immer grösser sein als der Spitzenwinkels des nachfolgenden Spiralbohrers. Dadurch wird eine optimale Zentrierung über die Bohrspitze und geringere Verschleissentwicklung erreicht.

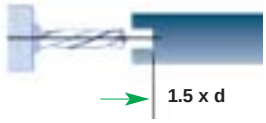
Folgende Empfehlung gibt Fraisa bezüglich Zentrierungen und Pilotbohrungen:

Ausführung	Schneidstoff	Empfehlung
bis 5xd	HM	Nein
bis 5xd	HSS	Ja
8xd	HM	Optional. Durch eine Zentrierung kann die Bohrungszylindrizität verbessert werden
12xd – 30xd	HM	Ja, eine Pilotbohrung ist notwendig (siehe Seite 428)

Anwendungstechnische Hinweise für Tieflochbohrer

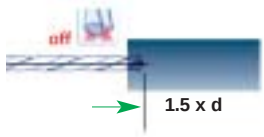
Fraisa SA empfiehlt zur Erhöhung der Standzeit und der Zuverlässigkeit folgende Bohrstrategie:

1. Schritt



Pilotbohrung = 1.5 x d.
Zum Beispiel: Supradrill® U 3xd. B62011.
Pilotbohrung muss vor Eintritt Tieflochbohrer spänefrei sein!

2. Schritt

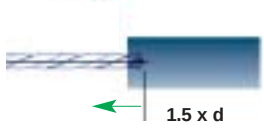


Werkzeug mit max. 300 1/min und v_f = 1000mm/min in die Bohrung einführen.
Ohne Kühlmittel bis 1mm vor den Bohrungsgrund der Pilotbohrung.

3. Schritt

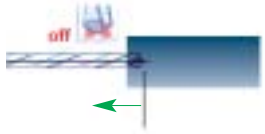
Kühlmittel ein.
Mit empfohlenen Schnittdaten ohne Spanbruch bohren.
Bei **Durchgangsbohrungen** den Vorschub vor dem Austritt um min. 25% reduzieren.

4. Schritt



Tieflochbohrer zurückfahren mit doppeltem Vorschub (=2 x v_f) – bis 1.5 x d nach Bohrungseintritt.
Position wie 2. Schritt.

5. Schritt



Danach die Drehzahl auf max. 300 1/min reduzieren.
Kühlmittel aus.
Bohrer aus der Bohrung herausfahren. (max. 1000 mm/min).

SICHERHEITSHINWEIS
Lange Tieflochbohrer dürfen ausserhalb der Bohrung nur mit geringer Drehzahl (max. 300 1/min) rotieren.
Höhere Drehzahlen können die Werkzeuge zum Schwingen anregen und dadurch zu spontanem Werkzeugbruch führen.

Berechnungsformeln für Schnittdaten

d_1	Schneidendurchmesser [mm]
v_c	Schnittgeschwindigkeit [m/min]
f	Vorschub pro Umdrehung [mm]
n	Drehzahl [min^{-1}]
v_f	Vorschubgeschwindigkeit [mm/min]
Q	Zeitspanvolumen [cm^3/min]
T	Bearbeitungshauptzeit für die maximale Bohrungstiefe des Werkzeuges [sec]
L	Effektive Bohrungstiefe [mm]

Drehzahl	$n = \frac{v_c \cdot 1000}{d_1 \cdot \pi}$	$\left[\frac{1}{min}\right]$
Schnittgeschwindigkeit	$v_c = \frac{d_1 \cdot n \cdot \pi}{1000}$	$\left[\frac{m}{min}\right]$
Vorschubgeschwindigkeit	$v_f = f \cdot n$	$\left[\frac{mm}{min}\right]$
Zeitspanvolumen	$Q = \frac{d_1^2 \cdot \pi \cdot v_f}{4 \cdot 1000}$	$\left[\frac{cm^3}{min}\right]$
Bearbeitungshauptzeit	$T = \frac{L}{v_f} \cdot 60$	[sec]

Materialcodes Gewindewerkzeuge

Gewindebohrer

08	Stahl < 850 N/mm²
11	Stahl 850 - 1100 N/mm²
15	Stahl 1100 - 1500 N/mm²
60	Werkzeugstahl 48 - 60 HRC
In	Nichtrostender Stahl
GG	Gusseisen GG(G)
Al	Aluminium
Ti	Titanlegierungen
Ni	Nickelbasislegierung aushärtbar
R	Universal Rigid
U	Universal

Gewindeformer

St	Stahl
Al	Aluminium
U	Universal

Legende zur Produktseite der Gewindewerkzeuge

Gewindearten

M	Metrisches ISO-Regelgewinde nach DIN ISO 965 (DIN 13)
MF	Metrisches ISO-Feingewinde nach DIN ISO 965 (DIN 13)
MJ	MJ-Gewinde für die Luft- und Raumfahrt nach DIN ISO 5855
G	Whitworth-Rohrgewinde nach DIN ISO 228
UNC	Amerikanische Grobgewinde nach ASME B1.1
UNJC	Amerikanische Grobgewinde nach SAE AS 8879
UNF	Amerikanische Feingewinde nach ASME B1.1
UNJF	Amerikanische Feingewinde nach SAE AS 8879
NPT	Amerikanische Rohrgewinde kegelig mit Dichtmittel nach ANSI B1.20.1
NPTF	Amerikanische Rohrgewinde kegelig ohne Dichtmittel nach ANSI B1.20.3
EG M	Metrisches ISO-Regelgewinde für Gewindedrahteinsätze nach DIN 8140-2

Legende zur Produktseite der Gewindewerkzeuge

Anwendungsklassen / Toleranzanlagen

ISO 2 (6H)	Werkzeuge der Anwendungsklasse 2 (ISO 2) sind für die Herstellung von Gewinden mit den Toleranzfeldern 4G, 5G, 6H ausgelegt.
ISO 1 (4H)	Werkzeuge der Anwendungsklasse 1 (ISO 1) sind für die Herstellung von Gewinden mit den Toleranzfeldern 4H, 5H ausgelegt.
ISO 3 (6G)	Werkzeuge der Anwendungsklasse 3 (ISO 3) sind für die Herstellung von Gewinden mit den Toleranzfeldern 6G, 7H, 8H ausgelegt.
7G	Werkzeuge der Anwendungsklasse 7G sind vorbeugend für die Herstellung von Gewinden mit den Toleranzfeldern 7G, 8G mit nachfolgendem Härteprozess mit Verzug ausgelegt.
ISO 2 +0,1	Werkzeuge der Anwendungsklasse 2 (ISO 2) sind für die Herstellung von Gewinden mit den Toleranzfeldern 4G, 5G, 6H ausgelegt. Für eine galvanische Oberflächenveredelung der Gewinde mit Schichtdicke 0.025 mm sind die Werkzeuge mit einer um 0.1 mm erhöhten Gewindetoleranz ausgelegt.
4H	Werkzeuge der Anwendungsklasse 4H sind für die Herstellung von MJ-Gewinden mit dem Toleranzfeldern 4H ausgelegt (ASME B1.1).
2B	Werkzeuge der Anwendungsklasse 2B sind für die Herstellung von Gewinden mit dem Toleranzfeld 2B ausgelegt.
3B	Werkzeuge der Anwendungsklasse 3B sind für die Herstellung von Gewinden mit dem Toleranzfeld 3B ausgelegt.
6H mod	Werkzeuge der Anwendungsklasse 6H sind für die Herstellung von Gewinden mit Gewindedrahteinsatz ausgelegt.

Schneidstoffe

HSS PM/F	Hochleistungsschneidstoff, pulvermetallurgisch hergestellte HSS-Legierung.
HSS-E Co5	Hochleistungsschneidstoff, schmelzmetallurgisch hergestellte HSS-Legierung. Co-Gehalt 5%.
HM MG10	Universal-Feinstkornhartmetall. Härte 1600 HV. Co-Gehalt 10%.
HM	Universal-Feinstkornhartmetall.

Legende zur Produktseite der Gewindewerkzeuge

Gewindenorm

Die Werkzeugzahnflanken entsprechen den unter «Gewindearten» angegebenen Normen.

Schaftformen

Zylindrische Schaftausführung nach angegebenen Werkzeugnormen.

Zylindrische Schaftausführung mit Seitenspannfläche nach angegebenen Werkzeugnormen.

Zylindrische Schaftausführung mit Vierkant nach angegebenen Werkzeugnormen.

Zylindrische Schaftausführung mit Vierkant ähnlich den angegebenen Werkzeugnormen.

Zylindrische Schaftausführung mit Vierkant.

Bohrungsformen

Gewindekernbohrungen müssen die richtigen Dimensionen im Bohrungsdurchmesser haben.
(Faustregel beim Gewindeschneiden: Bohrungsdurchmesser = Gewindenenndurchmesser - Steigung)

Werkzeug ist geeignet zur Herstellung von Sacklochgewinden.

Werkzeug ist geeignet zur Herstellung von Durchgangslochgewinden.

Werkzeug ist geeignet zur Herstellung von Sackloch- und Durchgangslochgewinden.

Werkzeug ist geeignet zur Herstellung von konischen Sackloch- und konischen Durchgangslochgewinden.

Legende zur Produktseite der Gewindewerkzeuge

Anschnittformen / Einlaufkegelformen

Anschnittform für Gewindebohrer nach DIN 2197, Tabelle 4: Typ B. Die Anzahl der Gänge im Anschnitt liegt zwischen 3.5 und 5.

Anschnittform für Gewindebohrer nach DIN 2197, Tabelle 4: Typ C. Die Anzahl der Gänge im Anschnitt liegt zwischen 2 und 3.
Einlaufkegelform für Gewindeformer nach DIN 2175, Tabelle 4: Typ C. Die Einlaufkegellänge beträgt 2 bis 3 Gänge.

Einlaufkegelform für Gewindeformer nach DIN 2175, Tabelle 4: Typ E. Die Einlaufkegellänge beträgt höchstens 2 Gänge.

Gewindebohrer

Werkzeug mit Spanfluss in Vorschubrichtung.

Werkzeug mit Spanfluss entgegen der Vorschubrichtung.

Werkzeug für kurzspanende Werkstoffe.

Gewindeformer

Werkzeug mit Polygonprofil ohne Schmiernuten.

Werkzeug mit Polygonprofil mit Schmiernuten.

Gewindefräser

Werkzeug ist geeignet zur Herstellung von Innengewinden.

Werkzeug ist geeignet zur Herstellung von Aussengewinden.

Legende zur Produktseite der Gewindewerkzeuge

Bearbeitungseignung

Ein blauer Hintergrund bedeutet eine hervorragende Eignung des Werkzeuges für diesen Werkstoff.

Ein hellblauer Hintergrund bedeutet eine gute bis ausreichende Eignung des Werkzeuges für diesen Werkstoff.

Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500	HRC 48-56	HRC 56-60	HRC > 60	Inox Stainless	Ti Titanium	

Weitere Werkstoffe welche bearbeitet werden können, sind im Zusatzfeld angegeben

Kühlschmierstoffe

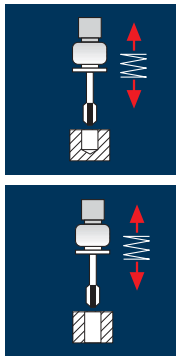
Grundsätzlich ist bei der Gewindeherstellung durch Gewindebohren und insbesondere durch Gewindeformen eine ausreichende Schmierung sicherzustellen. Je tiefer das Gewinde ist, desto wichtiger wird eine sehr gute Schmierung.

Beste Ergebnisse werden bei der Gewindeherstellung mit Öl erzielt (Schmierwirkung). Eine Bearbeitung mit mindestens 5%-iger Emulsion ist ebenfalls möglich.

Für die Bearbeitung ist Öl als Schmierstoff erforderlich.

Für die Bearbeitung ist Öl mit speziellen Zusätzen als Schmierstoff erforderlich.

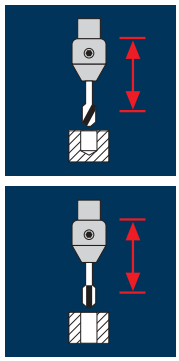
Bohrdurchmesser entsprechend Spalte kritische Materialien ab S. 445 wählen.



Gewindeschneiden mit Längenausgleich

Eine gute Ausgleichsfunktion des Futters muss gewährleistet sein (kein Klemmen). Ansonsten kann es trotz Ausgleichsfutter zum Verschneiden des Gewindes oder zu Steigungsfehlern kommen. Die Zugkraft des Längenausgleichsfutters muss entsprechend dem zu fertigenden Gewinde und des zu bearbeitenden Werkstoffs ausgewählt werden.

Programmieren einer zu hohen Drehzahl kann zu Problemen führen. Ist die Drehzahl so gewählt, dass sie nicht erreicht werden kann (wegen Trägheit der Maschine), so kann es zum frühzeitigen Bruch des Werkzeuges oder zum Verschneiden des Gewindes führen. Oft bringt die hohe Drehzahl bei genauer Betrachtung nicht die erhoffte Zeitersparnis.

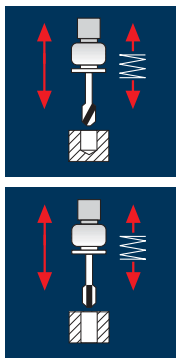


Rigid Tapping

Rigid Tapping wird für moderne Maschinen mit synchronisiertem Spindelantrieb eingesetzt. Sämtliche Werkzeuge verfügen über eine Seitenspannfläche und werden in konventionellen Spannfuttern eingesetzt.

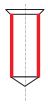
Beim Gewindeschneiden mit Rigid Tapping muss ein ausreichend grosser Sicherheitsabstand programmiert werden. Bei zu kleinem Sicherheitsabstand besteht das Problem, dass die Maschinenspindel vor Eintritt in die Bohrung nicht mit dem Vorschub synchron läuft. Die Folge ist ein Steigungsfehler des Gewindes auch bei synchroner Arbeitsweise.

Bei diversen Maschinen besteht die Möglichkeit, dass die empfohlene Drehzahl im Synchronbetrieb nicht erreicht werden kann. In diesen Fällen muss mit der maximalen Drehzahl gearbeitet werden, bei der noch die Synchronität der Maschine gewährleistet ist.



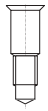
Gewindeschneiden mit Längenausgleich oder Rigid Tapping

Anwendungstechnische Hinweise für Gewindewerkzeuge



Aufhärten der Bohrung
Beim Bohren ist darauf zu achten, dass ein geeigneter, intakter Bohrer verwendet wird. Ist der Verschleiss schon zu gross, kann es beim Bohren zur Aufhärtung der Randzone kommen. Eine Folge dieser Aufhärtung kann der Bruch des Gewindewerkzeugs sein.

Aufhärten und Aufstauchen der Senkung
Bei der Vorbereitung der Bohrung sollten gute, für den Werkstoff bestimmte Werkzeuge verwendet werden. Ist der Senker zu stark verschlissen, härtet sich die Senkung auf oder sie ist gestaucht. Dadurch hat das Gewindewerkzeug bereits beim Anschneiden Probleme. Dies kann zu Ausbrüchen am Anschnitt führen. Die Senkung ist wichtig zur Führung des Gewindewerkzeugs.



Tiefliegende Gewinde
Für tief gelegene Gewinde müssen Werkzeuge mit ausreichend langen Nuten ausgewählt werden. Ansonsten besteht das Problem des Werkzeugbruchs durch Spänestau, weil die Späne nicht aus der Bohrung herausfliessen können. Bei Rigid Tapping kann mit mehreren Tiefenzustellungen gearbeitet werden, um die Späne zu verkürzen. Wichtig ist die genügende Kühlung.

Funktionalität des Ausgleichsfutters
Eine gute Ausgleichsfunktion des Futters muss gewährleistet sein (kein Klemmen). Ansonsten kann es trotz Ausgleichsfutter zum Verschneiden des Gewindes oder zu Steigungsfehlern kommen. Die Zugkraft des Längenausgleichsfutters muss entsprechend dem zu fertigenden Gewinde ausgewählt werden.

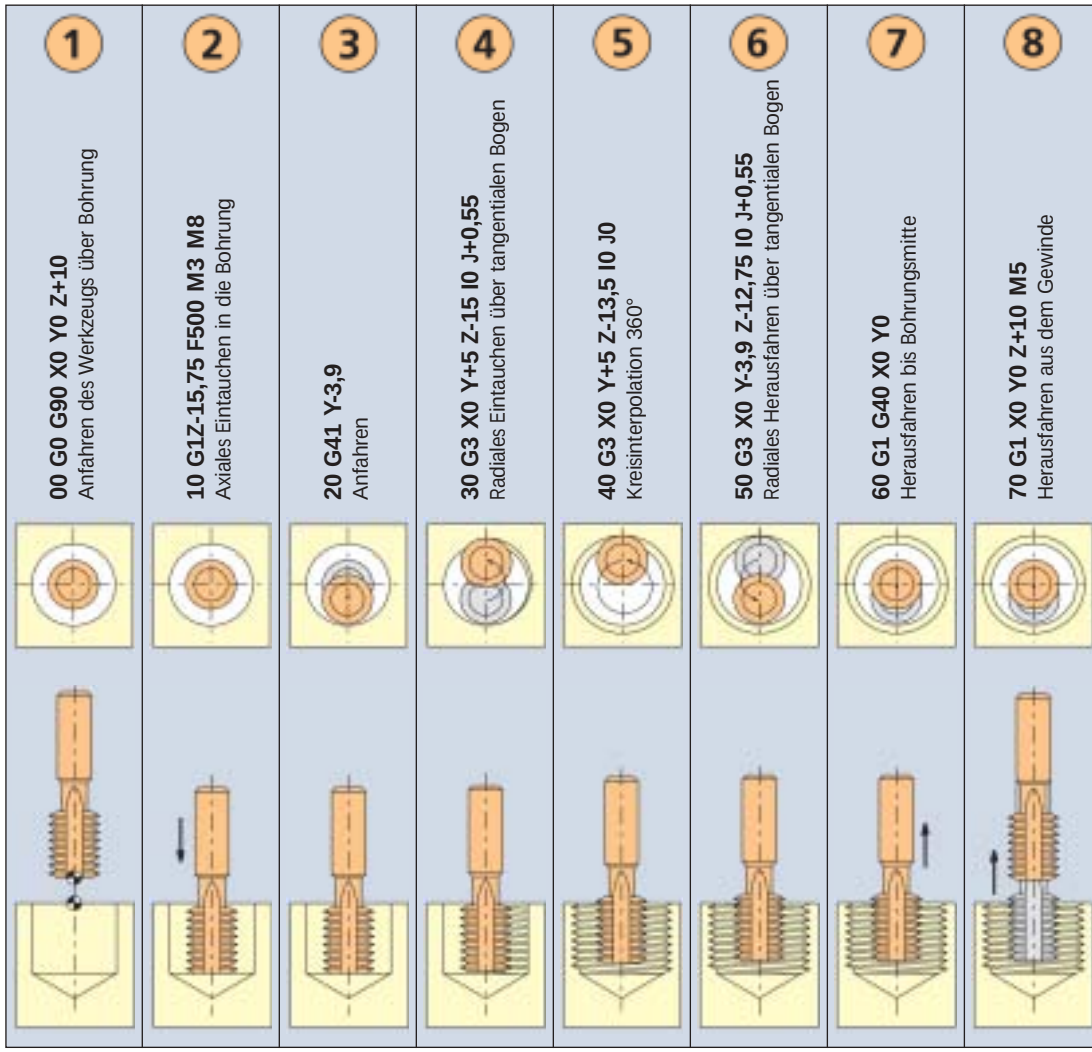
Korrekt ausgerichteter Kühlstrahl
Ein gezielter Kühlstrahl ist wichtig für das Gewindeschneiden. Die Ausrichtung sollte von oben in Richtung der Spannuten erfolgen, damit auch in der Tiefe die Kühlung wirksam ist. Bei ungerichtetem Kühlstrahl besteht das Problem der Wärmeentwicklung in der Bohrung und dadurch der Kaltverschweissung des Materials, was zu verkürzter Standzeit und schlechter Spanbildung führen kann.

Sicherheitsabstand
Beim Gewindeschneiden mit Rigid Tapping muss ein ausreichend grosser Sicherheitsabstand programmiert werden. Bei zu kleinem Sicherheitsabstand besteht das Problem, dass die Maschinenspindel vor Eintritt in die Bohrung nicht mit dem Vorschub synchron läuft. Die Folge ist ein Steigungsfehler des Gewindes auch bei synchroner Arbeitsweise.

Eignung der Maschine
Bei diversen Maschinen besteht die Möglichkeit, dass die empfohlene Drehzahl nicht gefahren werden kann. In diesem Fall sollte die Drehzahl der Maschine entsprechend programmiert werden.

Nicht konstante Drehzahl
Programmieren einer zu hohen Drehzahl kann zu Problemen führen: Ist die Drehzahl so gewählt, dass sie nicht erreicht werden kann (wegen Trägheit der Maschine), so kann es zum frühzeitigen Bruch des Werkzeugs oder zum Verschneiden des Gewindes führen. Oft bringt die hohe Drehzahl bei genauer Betrachtung nicht die erhoffte Zeitersparnis.

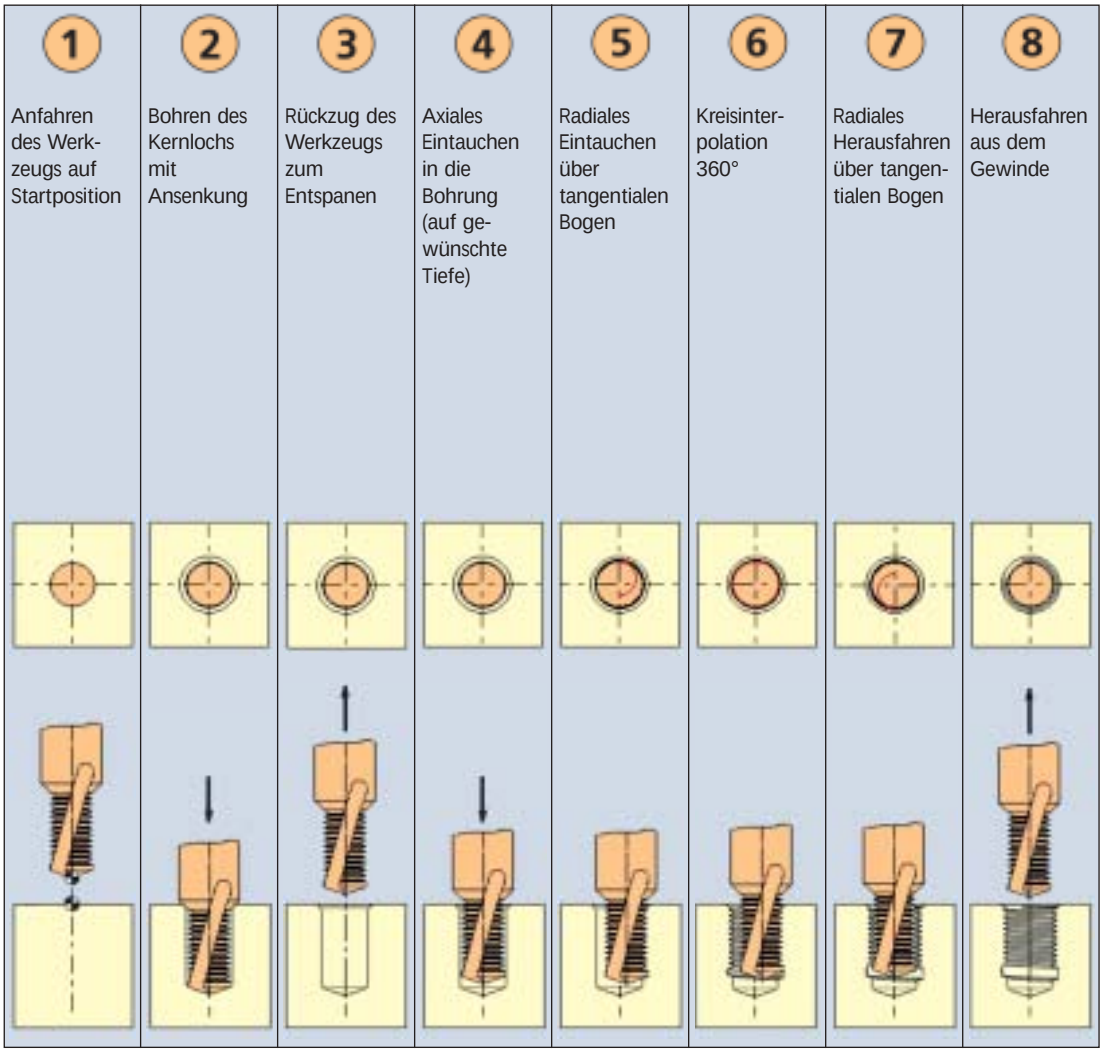
Gewindefräszyklus für M10 in ISO-Code als Beispiel



Bedeutung der eingesetzten G- und M-Befehle

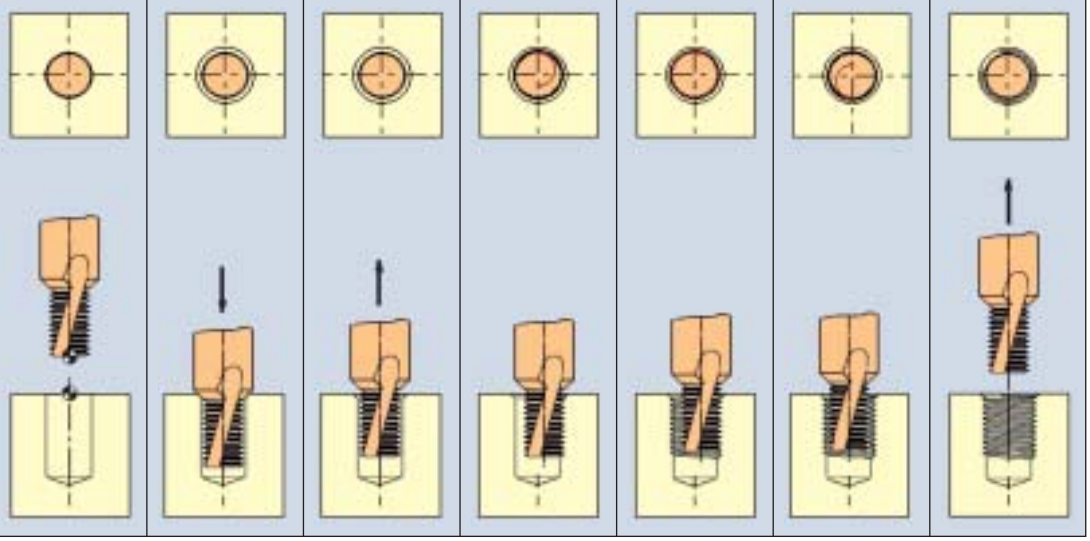
G0	G1	G3	G40	G41	G90	G91	M3	M5	M8	M9
Linearbewegung im Eilgang	Linearbewegung mit Vorschub F in mm/min	Kreisbogeninterpolation mit Mittelpunkt (I, J)	Werkzeugradiuskorrektur aufheben	Werkzeugradiuskorrektur (Wzg. links von Kontur)	Absolutmassprogrammierung	Kettenmassprogrammierung	Spindel ein (Rechtslauf)	Spindel aus	Kühlung ein	Kühlung aus

Gewindefräszyklus für Bohrgewindefräser

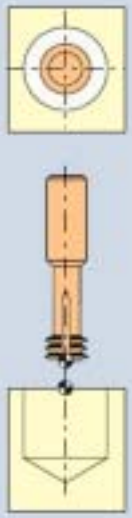
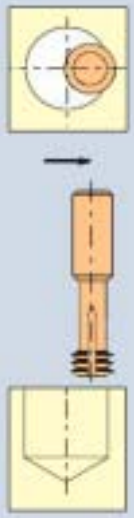
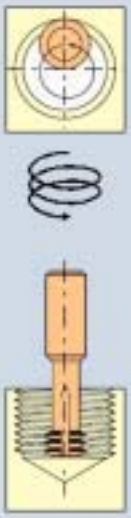
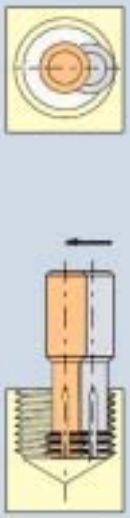
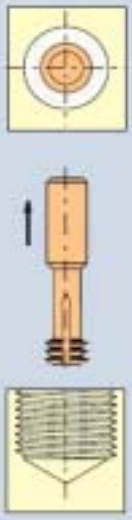


Gewindefräszyklus für Gewindefräser mit Senkfase

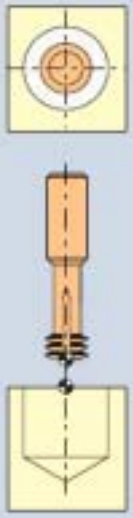
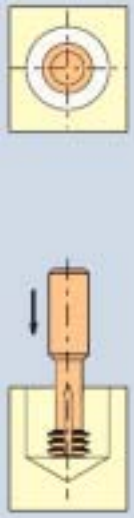
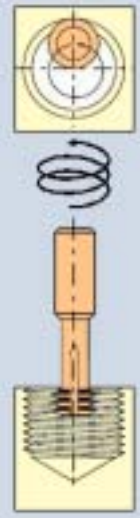
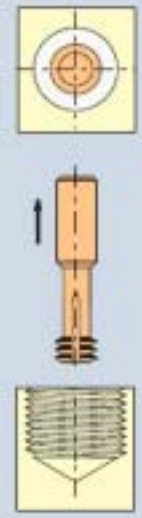
1	2	3	4	5	6	7
Anfahren des Werkzeugs über Bohrung	Ansenken der 90° Fase	Verfahren auf Gewindefräs-startposition	Radiales Eintauchen über tangen-tialen Bogen	Kreisinter-polation 360°	Radiales Herausfahren über tangen-tialen Bogen	Herausfahren aus dem Gewinde



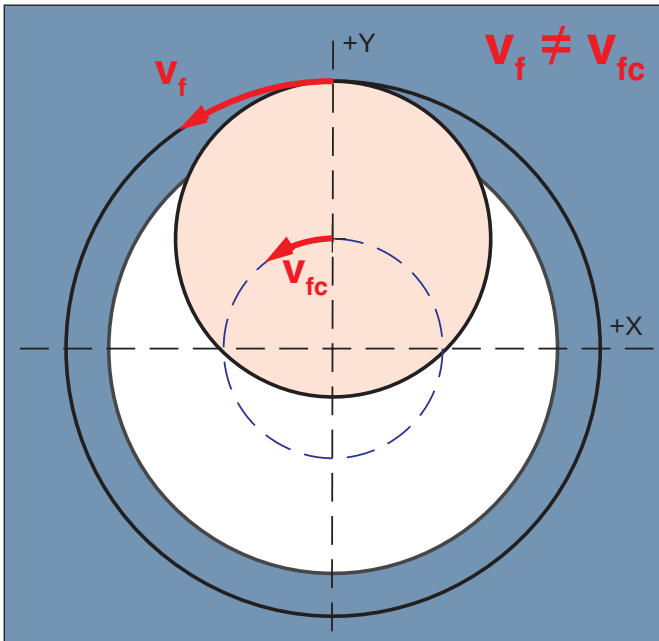
Gewindefräszyklus für Rechtsgewinde (im Gegenlauf) mit Gewindewirbler

1	2	3	4	5
Anfahren des Werkzeugs über Bohrung	Radiale Zustellung	Gewinde mittels Helixinterpolation erzeugen (auf gewünschte Tiefe)	Radiales Herausfahren	Herausfahren aus dem Gewinde
				

Gewindefräszyklus für Rechtsgewinde (im Gleichlauf) mit Gewindewirbler

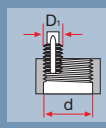
1	2	3	4	5
Anfahren des Werkzeugs über Bohrung	Axiales Eintauchen in die Bohrung (auf gewünschte Tiefe)	Radiales Eintauchen über tangentialen Bogen	Gewinde mittels Helixinterpolation erzeugen	Herausfahren aus dem Gewinde
				

Bestimmung der Vorschubgeschwindigkeit beim Gewindefräsen



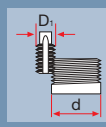
Umrechnung der gewünschten Vorschubgeschwindigkeit v_f am Werkstück auf die zu programmierende Vorschubgeschwindigkeit v_{fc} des Werkzeugzentrums:

Für Innengewinde



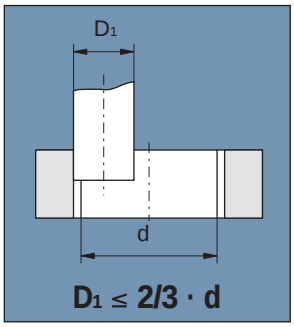
$$v_{fc} = \frac{v_f \cdot (d - D_1)}{d}$$

Für Aussengewinde



$$v_{fc} = \frac{v_f \cdot (d + D_1)}{d}$$

Vermeidung von Profilverzerrungen



Um Profilverzerrungen zu vermeiden, darf der Fräserdurchmesser D_1 maximal 2/3 des Mutterkerndurchmessers d betragen.

Das Aufmass der Kernbohrung soll 0.1 bis 0.3 mm betragen.

Das Gewinde wird dadurch einwandfrei gefräst.

Formeln und Abkürzungen

a	Mass Vierkant
d	Gewinde-Nenndurchmesser
d_1	Schaftdurchmesser
d_2	Bohrdurchmesser beim Bohrgewindefräser
D_1	Gewindefräserdurchmesser
d/D_1	Durchmesserverhältnis zur Bestimmung der Vorschubgeschwindigkeit
Rk	Korrigierter Fräserradius für 6H / ISO2-Muttertoleranz (zu programmierender Fräserradius im Werkzeugspeicher)
f_z	Vorschub pro Zahn
l	Länge Gewindeteil bei Gewindebohrer / Gewindeformer
l_1	Halslänge bei Gewindebohrer / Gewindeformer oder Gesamtlänge bei Gewindefräser
l_2	Länge Gewindeteil bei Gewindefräser
l_3	Nutenlänge bei Gewindebohrer oder Halslänge bei Gewindefräser
L	Gesamtlänge bei Gewindebohrer / Gewindeformer
L_K	Senktiefe bei Gewindefräser mit Senkfase
n	Drehzahl
P	Gewindesteigung
v_c	Schnittgeschwindigkeit
v_f	Vorschubgeschwindigkeit
v_{fc}	Vorschubgeschwindigkeit des Werkzeugzentrums
	Zähnezahl bei Gewindebohrern und Gewindefräsern
	Anzahl der Formkanten bei Gewindeformer
Δ	Differenz des Gewindeflanken-, Gewindeaussen- und Gewindekerndurchmessers zur Anwendungsklasse 2 (ISO 2) nach DIN 22857
R_m	Mechanische Zugfestigkeit
HRC	Härte nach Rockwell C
HV	Härte nach Vickers
HB	Härte nach Brinell

Drehzahl

$$n = \frac{v_c \cdot 1000}{d_1 \cdot \pi} \quad \left[\frac{1}{min}\right]$$

Schnittgeschwindigkeit

$$v_c = \frac{d \cdot \pi \cdot n}{1000} \quad \left[\frac{m}{min}\right]$$

Vorschubgeschwindigkeit

$$v_f = P \cdot n \quad \left[\frac{mm}{min}\right]$$

Kernlochbohrungen

M

ø	P	Grösstmass	Standard	kritische Mat.*
1.0	0.25	0.785	0.75	0.80 *
1.2	0.25	0.985	0.95	1.00 *
1.4	0.30	1.142	1.10	1.15 *
1.6	0.35	1.321	1.25	1.30
1.7	0.35	1.421	1.35	1.40
1.8	0.35	1.521	1.45	1.50
2.0	0.40	1.679	1.60	1.70
2.2	0.45	1.838	1.75	1.85 *
2.3	0.40	1.979	1.90	1.95
2.5	0.45	2.138	2.05	2.10
2.6	0.45	2.238	2.15	2.20
3.0	0.50	2.599	2.50	2.60 *
3.5	0.60	3.010	2.90	3.00
4.0	0.70	3.422	3.30	3.40
4.5	0.75	3.878	3.75	3.90 *
5.0	0.80	4.334	4.20	4.30
6.0	1.00	5.153	5.00	5.10
7.0	1.00	6.153	6.00	6.10
8.0	1.25	6.912	6.80	6.90
10.0	1.50	8.676	8.50	8.60
12.0	1.75	10.441	10.20	10.40
14.0	2.00	12.210	12.00	12.20
16.0	2.00	14.210	14.00	14.20
18.0	2.50	15.744	15.50	15.70
20.0	2.50	17.744	17.50	17.70
22.0	2.50	19.744	19.50	19.70
24.0	3.00	21.252	21.00	21.20
27.0	3.00	24.252	24.00	24.20
30.0	3.50	26.771	26.50	26.70
33.0	3.50	29.771	29.50	29.70
36.0	4.00	32.270	32.00	32.20
39.0	4.00	35.270	35.00	35.20
42.0	4.50	37.799	37.50	37.70

MF

ø	P	Grösstmass	Standard	kritische Mat.*
2.5	0.35	2.221	2.15	2.20
3.0	0.35	2.721	2.65	2.70
3.5	0.35	3.221	3.15	3.20
4.0	0.50	3.599	3.50	3.60 *
5.0	0.50	4.599	4.50	4.60 *
6.0	0.50	5.599	5.50	5.60 *
8.0	0.50	7.599	7.50	7.60 *
10.0	0.50	9.599	9.50	9.60 *
6.0	0.75	5.378	5.20	5.30
7.0	0.75	6.378	6.25	6.30
8.0	0.75	7.378	7.20	7.30
10.0	0.75	9.378	9.20	9.30
12.0	0.75	11.378	11.30	11.40 *
14.0	0.75	13.378	13.30	13.40 *
16.0	0.75	15.378	15.30	15.40 *
8.0	1.00	7.153	7.00	7.10
9.0	1.00	8.153	8.00	8.10
10.0	1.00	9.153	9.00	9.10
12.0	1.00	11.153	11.00	11.10
13.0	1.00	12.153	12.00	12.10
14.0	1.00	13.153	13.00	13.10
15.0	1.00	14.153	14.00	14.10
16.0	1.00	15.153	15.00	15.10
17.0	1.00	16.153	16.00	16.10
18.0	1.00	17.153	17.00	17.10
20.0	1.00	19.153	19.00	19.10
10.0	1.25	8.912	8.80	8.90
12.0	1.25	10.912	10.80	10.90
14.0	1.25	12.912	12.80	12.90
16.0	1.25	14.912	14.80	14.90
12.0	1.50	10.676	10.50	10.70 *
14.0	1.50	12.676	12.50	12.70 *
16.0	1.50	14.676	14.50	14.70 *
18.0	1.50	16.676	16.50	16.70 *
20.0	1.50	18.676	18.50	18.70 *
22.0	1.50	20.676	20.50	20.70 *
24.0	1.50	22.676	22.50	22.70 *

* angegebenes Mass liegt ausserhalb der Norm

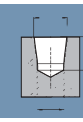
Kernlochbohrungen

MJ

ø	P	Grösstmass	Standard	kritische Mat.*
2.0	0.40	1.722	1.65	1.70
2.5	0.45	2.187	2.10	2.20 *
3.0	0.50	2.653	2.60	2.65
4.0	0.70	3.498	3.40	3.50 *
5.0	0.80	4.421	4.30	4.40
6.0	1.00	5.216	5.10	5.20
8.0	1.00	7.216	7.10	7.20
10.0	1.25	8.994	8.90	9.00 *

Rc

Rc 1:16 Bohrung konisch aufreiben mit Kegelreibahle 1:16



ø	P(TPI)	ø	D max	D min	L min
1/16	28	6.10	6.605	6.515	11.90
1/8	28	8.10	8.615	8.525	11.90
1/4	19	10.80	11.505	11.395	17.70
3/8	19	14.30	15.005	14.895	18.10
1/2	14	17.80	18.695	18.565	24.00
3/4	14	23.00	24.185	24.055	25.30

G

ø	P	Grösstmass	Standard	kritische Mat.*
1/8	28	8.848	8.80	8.85 *
1/4	19	11.890	11.80	11.90 *
3/8	19	15.395	15.25	15.40 *
1/2	14	19.172	19.00	19.20 *
5/8	14	21.128	21.00	21.10
3/4	14	24.658	24.50	24.60

BSW

ø	P	Grösstmass	Standard	kritische Mat.*
1/8	40	2.591	2.50	2.60 *
3/16	24	3.745	3.60	3.70
1/4	20	5.156	5.10	5.10
5/16	18	6.588	6.50	6.60 *
3/8	16	7.988	7.90	8.00 *
7/16	14	9.332	9.20	9.30
1/2	12	10.589	10.50	10.60 *
5/8	11	13.558	13.50	13.50
3/4	10	16.484	16.20	16.50 *
7/8	9	19.355	19.20	19.30
1	8	22.1492	22.00	22.10

Rp

ø	P	Grösstmass	Standard	kritische Mat.*
1/8	28	8.637	8.60	8.60
1/4	19	11.549	11.50	11.50
3/8	19	15.054	15.00	15.00
1/2	14	18.773	18.50	18.70
3/4	14	24.259	24.00	24.20

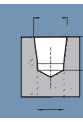
$W_{zyl.}$

Vorbohrung zylindrisch

ø	P	Grösstmass	Standard	kritische Mat.*
21.80	14	20.066	19.80	20.00
24.32	14	22.586	22.30	22.50

$W_{kon.}$

W kon 3:25 Bohrung konisch aufreiben mit Kegelreibahle 3:25

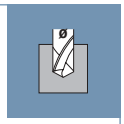


ø	P(TPI)	ø	D max	D min	L min
19.80	14	14.60	16.880	16.760	23.50
28.80	14	22.60	25.480	25.360	28.50

* angegebenes Mass liegt ausserhalb der Norm

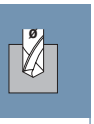
Kernlochbohrungen

UNC



ø	P	Grösstmass	Standard	kritische Mat.*
1	64	1.582	1.55	1.60 *
2	56	1.872	1.85	1.90 *
3	48	2.146	2.10	2.15 *
4	40	2.385	2.35	2.40 *
5	40	2.697	2.65	2.70 *
6	32	2.896	2.85	2.90 *
8	32	3.531	3.50	3.50
10	24	3.962	3.90	4.00 *
12	24	4.597	4.50	4.60 *
1/4	20	5.258	5.10	5.20
5/16	18	6.731	6.60	6.70
3/8	16	8.153	8.00	8.10
7/16	14	9.550	9.40	9.50
1/2	13	11.024	10.80	11.00
9/16	12	12.446	12.20	12.40
5/8	11	13.868	13.50	13.80
3/4	10	16.840	16.50	16.80
7/8	9	19.761	19.50	19.70
1	8	22.601	22.30	22.60

UNF

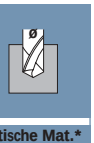


ø	P	Grösstmass	Standard	kritische Mat.*
0	80	1.306	1.25	1.30
1	72	1.613	1.55	1.60
2	64	1.913	1.85	1.90
3	56	2.197	2.15	2.20 *
4	48	2.459	2.40	2.45
5	44	2.741	2.70	2.75 *
6	40	3.023	2.95	3.00
8	36	3.607	3.50	3.60
10	32	4.166	4.10	4.20 *
12	28	4.727	4.60	4.70
1/4	28	5.588	5.50	5.60 *
5/16	24	7.036	6.90	7.00
3/8	24	8.636	8.50	8.60
7/16	20	10.033	9.90	10.00
1/2	20	11.608	11.50	11.60
9/16	18	13.081	12.90	13.00
5/8	18	14.681	14.50	14.70 *
3/4	16	17.678	17.50	17.70 *
7/8	14	20.675	20.50	20.70 *
1	12	23.571	23.30	23.50

UNJC

ø	P	Grösstmass	Standard	kritische Mat.*
4	40	2.392	2.30	2.40 *
6	32	2.938	2.85	2.90
8	32	3.599	3.50	3.60 *
10	24	4.064	3.90	4.00
1/4	20	5.387	5.25	5.40 *
5/16	18	6.832	6.70	6.80
3/8	16	8.257	8.10	8.20

UNJF



ø	P	Grösstmass	Standard	kritische Mat.*
6	40	3.053	3.00	3.05
8	36	3.662	3.55	3.60
10	32	4.254	4.15	4.20
1/4	28	5.661	5.55	5.60
5/16	24	7.109	7.00	7.10
3/8	24	8.679	8.60	8.70 *

UNEF

ø	P	Grösstmass	Standard	kritische Mat.*
1/4	32	5.689	5.60	5.70 *
5/16	32	7.264	7.20	7.30 *
3/8	32	8.864	8.80	8.90 *
7/16	28	10.337	10.20	10.30
1/2	28	11.938	11.80	11.90
9/16	24	13.385	13.20	13.40 *
5/8	24	14.986	14.80	15.00 *
11/16	24	16.560	16.40	16.50
3/4	20	17.957	17.80	18.00 *
7/8	20	21.132	21.00	21.10
1	20	24.307	24.20	24.30

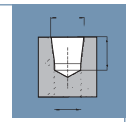
* angegebenes Mass liegt ausserhalb der Norm

i

Kernlochbohrungen

NPT

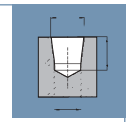
1:16 Bohrung konisch aufreiben mit Kegelreibahle 1:16



ø	P(TPI)	ø	D max	D min	L min
1/16	27	6.00	6.440	6.390	12.00
1/8	27	8.30	8.790	8.740	12.00
1/4	18	10.80	11.410	11.360	17.50
3/8	18	14.20	14.850	14.800	17.60
1/2	14	17.50	18.370	18.320	22.90
3/4	14	22.80	23.720	23.670	23.00
1	11.5	28.60	29.740	29.690	27.40

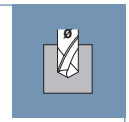
NPTF

1:16 Bohrung konisch aufreiben mit Kegelreibahle 1:16



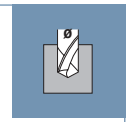
ø	P(TPI)	ø	D max	D min	L min
1/16	27	6.00	6.460	6.410	12.00
1/8	27	8.30	8.810	8.760	12.00
1/4	18	10.80	11.450	11.400	17.50
3/8	18	14.20	14.890	14.840	17.60
1/2	14	17.50	18.380	18.330	22.90
3/4	14	22.80	23.730	23.680	23.00
1	11.5	28.60	29.770	29.720	27.40

NPSM



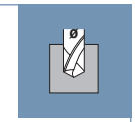
ø	P	Grösstmass	Standard	kritische Mat.*
1/8	27	9.246	9.10	9.20
1/4	18	12.217	12.00	12.20
3/8	18	15.545	15.50	15.50
1/2	14	19.279	19.00	19.20
3/4	14	24.638	24.50	24.60

PG



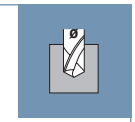
ø	P	Grösstmass	Standard	kritische Mat.*
7	20	11.430	11.40	11.40
9	18	14.010	14.00	14.00
11	18	17.410	17.30	17.40
13.5	18	19.210	19.10	19.20
16	18	21.310	21.25	21.30

EG M



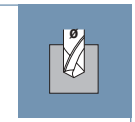
ø	P	Grösstmass	Standard	kritische Mat.*
2.0	0.40	2.177	2.15	2.20 *
2.5	0.45	2.697	2.65	2.70 *
3.0	0.50	3.220	3.15	3.20
4.0	0.70	4.292	4.20	4.30 *
5.0	0.80	5.334	5.25	5.30
6.0	1.00	6.407	6.30	6.40
8.0	1.25	8.483	8.40	8.50 *
10.0	1.50	10.560	10.40	10.50
12.0	1.75	12.644	12.50	12.60
14.0	2.00	14.733	14.50	14.70
16.0	2.00	16.733	16.50	16.70

EG MF



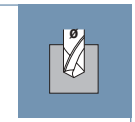
ø	P	Grösstmass	Standard	kritische Mat.*
8.0	1.00	8.407	8.30	8.40
10.0	1.00	10.407	10.30	10.40
12.0	1.50	12.560	12.50	12.50
14.0	1.50	14.560	14.50	14.50
16.0	1.50	16.560	16.50	16.50

EG UNC



ø	P	Grösstmass	Standard	kritische Mat.*
4	40	3.178	3.10	3.20 *
6	32	3.879	3.80	3.90 *
8	32	4.523	4.40	4.50
10	24	5.283	5.20	5.30 *
1/4	20	6.872	6.70	6.90 *
5/16	18	8.490	8.40	8.50 *
3/8	16	10.126	10.00	10.10
1/2	13	13.393	13.30	13.40 *

EG UNF



ø	P	Grösstmass	Standard	kritische Mat.*
6	40	3.815	3.70	3.80
8	36	4.496	4.40	4.50 *
10	32	5.184	5.10	5.20 *
1/4	28	6.720	6.60	6.70
5/16	24	8.351	8.30	8.40 *
3/8	24	9.931	9.80	9.90
7/16	20	11.587	11.50	11.60 *
1/2	20	13.176	13.10	13.20 *

* angegebenes Mass liegt ausserhalb der Norm

Härtevergleichstabelle (R_m → HV10 → HB → HRC)

R_m [N/mm²]	HV 10	HB	HRC		R_m [N/mm²]	HV 10	HB	HRC
240	75	71			920	287	273	28
255	80	76			940	293	278	29
270	85	81			970	302	287	30
285	90	86			995	310	295	31
305	95	90			1020	317	301	32
320	100	95			1050	327	311	33
335	105	100			1080	336	319	34
350	110	105			1110	345	328	35
370	115	109			1140	355	337	36
385	120	114			1170	364	346	37
400	125	119			1200	373	354	38
415	130	124			1230	382	363	39
430	135	128			1260	392	372	40
450	140	133			1300	403	383	41
465	145	138			1330	413	393	42
480	150	143			1360	423	402	43
495	155	147			1400	434	413	44
510	160	152			1440	446	424	45
530	165	157			1480	458	435	46
545	170	162			1530	473	449	47
560	175	166			1570	484	460	48
575	180	171			1620	497	472	49
595	185	176			1680	514	488	50
610	190	181			1730	527	501	51
625	195	185			1790	544	517	52
640	200	190			1845	560	532	53
660	205	195			1910	578	549	54
675	210	199			1980	596	567	55
690	215	204			2050	615	584	56
705	220	209			2140	639	607	57
720	225	214				655	622	58
740	230	219				675		59
755	235	223				698		60
770	240	228				720		61
785	245	233				745		62
800	250	238	22			773		63
820	255	242	23			800		64
835	260	247	24			829		65
860	268	255	25			864		66
870	272	258	26			900		67
900	280	266	27			940		68

Allgemeine Geschäftsbedingungen

1. Allgemeines

1.1 Der Vertrag ist mit der schriftlichen Bestätigung (Auftragsbestätigung) der Fraisa SA oder deren Schwestergesellschaften (im Folgenden kurz «Lieferant» genannt), dass sie die Bestellung annimmt, abgeschlossen.

1.2 Abweichungen von der Bestellung in der Auftragsbestätigung werden Vertragsinhalt, sofern ihnen der Besteller nicht binnen 5 Arbeitstagen ab Erhalt der Auftragsbestätigung schriftlich widerspricht. Angebote, insbesondere solche in Preislisten, Prospekten etc., die keine Annahmefrist enthalten, sind unverbindlich.

1.3 Diese Lieferbedingungen sind verbindlich, wenn sie im Angebot oder in der Auftragsbestätigung als anwendbar erklärt werden. Anders lautende Bedingungen des Bestellers haben nur Gültigkeit, soweit sie vom Lieferanten ausdrücklich und schriftlich angenommen worden sind.

1.4 Alle Vereinbarungen und rechtserheblichen Erklärungen der Vertragsparteien bedürfen zu ihrer Gültigkeit der Schriftform.

1.5 Sollte sich eine Bestimmung dieser Lieferbedingungen als ganz oder teilweise unwirksam erweisen, so werden die Vertragsparteien diese Bestimmung durch eine neue, ihrem rechtlichen und wirtschaftlichen Erfolg möglichst nahe kommende Vereinbarung ersetzen.

2. Umfang der Lieferungen und Leistungen

Die Lieferungen und Leistungen des Lieferanten sind in der Auftragsbestätigung einschliesslich eventueller Beilagen zu dieser abschliessend aufgeführt. Der Lieferant ist ermächtigt, Änderungen, die zu Verbesserungen führen, vorzunehmen, soweit diese keine Preiserhöhung bewirken.

3. Prospekte, Kataloge und technische Unterlagen

Prospekte und Kataloge sind ohne anderweitige Vereinbarungen nicht verbindlich. Angaben in technischen Unterlagen sind nur verbindlich, soweit sie ausdrücklich zugesichert sind.

4. Preise

4.1 Alle Preise verstehen sich – beim Fehlen anderweitiger Vereinbarung – netto, ab Werk, ohne Verpackung, in frei verfügbaren Schweizer Franken, oder der Landeswährung der Schwestergesellschaften ohne irgendwelche Abzüge.

4.2 Sämtliche Nebenkosten wie z.B. für Fracht, Versicherung, Ausfuhr-, Einfuhr- und andere Bewilligungen sowie Beurkundungen gehen zu Lasten des Bestellers.

4.3 Ebenso hat der Besteller alle Arten von Steuern (insbesondere Mehrwertsteuer), Abgaben, Gebühren, Zöllen und dergleichen zu tragen, die im Zusammenhang mit dem Vertrag erhoben werden, oder sie gegen entsprechenden Nachweis dem Lieferanten zurückzuerstatten, falls dieser hierfür leistungspflichtig ist.

5. Zahlungsbedingungen

5.1 Die Zahlungen sind vom Besteller entsprechend den vereinbarten Zahlungsbedingungen am Domizil des Lieferanten ohne Abzug von Skonto, Spesen, Steuern, Abgaben, Gebühren, Zöllen und dergleichen zu leisten. Die Zahlungspflicht ist erfüllt, soweit am Domizil des Lieferanten der vereinbarte Betrag zur freien Verfügung des Lieferanten gestellt worden sind. Die Zahlungsfrist beträgt 30 Tage ab Rechnungsdatum.

5.2 Die Zahlungsfrist bzw. die separat vereinbarten Zahlungstermine sind auch einzuhalten, wenn Transport, Ablieferung oder Annahme der Lieferung aus Gründen, die der Lieferant nicht zu vertreten hat, verzögert oder verunmöglicht werden oder wenn von der Lieferung unwesentliche Teile fehlen oder sich Nacharbeiten als notwendig erweisen, die den Gebrauch der Lieferung nicht verunmöglichen.

5.3 Hält der Besteller die Zahlungsfrist bzw. die separat vereinbarten Zahlungstermine nicht ein, so hat er ohne Mahnung vom Zeitpunkt der Fälligkeit an einen Zins zu entrichten, der sich nach den am Domizil des Bestellers üblichen Zinsverhältnissen richtet, jedoch mindestens 4% über dem jeweiligen Diskontsatz der Schweizerischen Nationalbank liegt. Der Ersatz weiteren Schadens bleibt vorbehalten.

6. Eigentumsvorbehalt

6.1 Der Lieferant bleibt Eigentümer seiner gesamten Lieferungen, bis er die Zahlungen gemäss Vertrag vollständig erhalten hat.

6.2 Der Besteller ist verpflichtet, bei Massnahmen, die zum Schutze des Eigentums des Lieferanten erforderlich sind, mitzuwirken; insbesondere ermächtigt er den Lieferanten mit Abschluss des Kaufvertrages, auf Kosten des Bestellers die Eintragung oder Vormerkung des Eigentumsvorbehalts in öffentlichen Registern, Büchern oder dergleichen gemäss den betreffenden Landesgesetzen vorzunehmen und alle diesbezüglichen Formalitäten zu erfüllen.

6.3 Der Besteller wird die gelieferten Gegenstände auf seine Kosten während der Dauer des Eigentumsvorbehalts instand halten und zu Gunsten des Lieferanten gegen Diebstahl, Bruch, Feuer, Wasser und sonstige Risiken versichern. Er wird ferner alle Massnahmen treffen, damit der Eigentumsanspruch des Lieferanten weder beeinträchtigt noch aufgehoben wird.

7. Lieferfrist

7.1 Der Lieferant bemüht sich, die in der Auftragsbestätigung festgehaltene Lieferfrist einzuhalten. Die Lieferfrist ist eingehalten, wenn bis zu ihrem Ablauf die Versandbereitschaftsmeldung an den Besteller abgesandt worden ist.

7.2 Die Einhaltung der Lieferfrist setzt die vollständige Erfüllung der Vertragspflichten durch den Besteller voraus.

7.3 Die Lieferfrist verlängert sich angemessen, wenn Hindernisse auftreten, die der Lieferant trotz Anwendung der gebotenen Sorgfalt nicht abwenden kann, ungeachtet, ob sie bei ihm, beim Besteller oder bei einem Dritten entstehen. Solche Hindernisse sind beispielsweise Epidemien, Mobilmachung, Krieg, Aufruhr, erhebliche Betriebsstörungen, Unfälle, Arbeitskonflikte, verspätete oder fehlerhafte Zulieferung der nötigen Rohmaterialien und Halbfabrikate, behördliche Massnahmen oder Unterlassungen sowie Naturereignisse.

7.4 Ist statt einer Lieferfrist ein bestimmter Termin vereinbart, ist dieser gleichbedeutend mit dem letzten Tag einer Lieferfrist, Ziff. 7.1 bis 7.3 sind analog anwendbar.

7.5 Wegen Verspätung der Lieferung hat der Besteller kein Anrecht auf Schadenersatz oder weitere Leistungen, ausser den in dieser Ziff. 7 ausdrücklich genannten oder in einer separaten Vereinbarung stipulierten. Diese Einschränkung gilt nicht für rechtswidrige Absicht oder grobe Fahrlässigkeit des Lieferanten.

8. Verpackung

Die Verpackung wird vom Lieferanten separat in Rechnung gestellt und nicht zurückgenommen.

9. Übergang von Nutzen und Gefahr

9.1 Nutzen und Gefahr gehen spätestens mit Abgang der Lieferung ab Werk auf den Besteller über.

9.2 Wird der Versand auf Begehren des Bestellers oder aus sonstigen Gründen, die der Lieferant nicht zu vertreten hat, verzögert, geht die Gefahr im ursprünglich für die Ablieferung ab Werk vorgesehenen Zeitpunkt auf den Besteller über. Von diesem Zeitpunkt an werden die Lieferungen auf Rechnung und Gefahr des Bestellers gelagert und versichert.

10. Versand, Transport und Versicherung

10.1 Besondere Wünsche betreffend Versand, Transport und Versicherung sind dem Lieferanten rechtzeitig bekannt zu geben. Der Transport erfolgt auf Rechnung und Gefahr des Bestellers.

10.2 Beanstandungen im Zusammenhang mit dem Versand oder Transport sind vom Besteller bei Erhalt der Lieferung oder Frachtdokumente unverzüglich an den letzten Frachtführer zu richten.

10.3 Die Versicherung gegen Schäden irgendwelcher Art obliegt dem Besteller.

11. Prüfung und Annahme der Lieferungen

11.1 Der Besteller hat die Lieferungen innert 8 Tagen nach Erhalt zu prüfen und dem Lieferanten eventuelle Mängel innerhalb derselben Frist schriftlich bekannt zu geben. Unterlässt er dies, gelten die Lieferungen als genehmigt.

11.2 Der Lieferant hat die ihm gemäss Ziff. 12.1 mitgeteilten Mängel so rasch wie möglich zu beheben oder – nach seiner Wahl – mangelhafte Ware auszutauschen.

11.3 Wegen Mängeln irgendwelcher Art an Lieferungen hat der Besteller keine Rechte und Ansprüche ausser den in Ziff. 12 und 13 (Gewährleistung, Haftung für Mängel) ausdrücklich genannten.

12. Gewährleistung, Haftung für Mängel

12.1 Die Gewährleistungsfrist beträgt 6 Monate. Sie beginnt mit dem Abgang der Lieferungen ab Werk. Für ersetzte oder reparierte Ware beginnt die Gewährleistungsfrist neu zu laufen und dauert 6 Monate ab Versand der Ersatzware durch den Lieferanten. Die Gewährleistung erlischt vorzeitig, wenn der Besteller oder Dritte unsachgemäss Änderungen oder Reparaturen vornehmen oder wenn der Besteller, falls ein Mangel aufgetreten ist, nicht umgehend alle geeigneten Massnahmen zur Schadensminderung trifft und dem Lieferanten Gelegenheit gibt, den Mangel zu beheben.

12.2 Von der Gewährleistung und Haftung des Lieferanten ausgeschlossen sind Schäden, die nicht nachweisbar infolge schlechten Materials, fehlerhafter Konstruktion oder mangelhafter Ausführung entstanden sind, z.B. infolge natürlicher Abnützung, mangelhafter Wartung, Missachtung von Betriebsvorschriften, übermässiger Beanspruchung, ungeeigneter Betriebsmittel, chemischer oder elektrolytischer Einflüsse sowie infolge anderer Gründe, die der Lieferant nicht zu vertreten hat.

12.3 Der Besteller hat ausschliesslich Anspruch auf Ersatz oder Reparatur der mangelhaften Ware. Weitere Ansprüche, insbesondere auf Ersatz von Schaden oder von Mangelfolgeschaden stehen dem Besteller nicht zu. In keinem Fall bestehen Ansprüche des Bestellers auf Ersatz von Schäden, die nicht am Liefergegenstand selbst entstanden sind, wie namentlich Produktionsausfall, Nutzungsverluste, Verlust von Aufträgen, entgangener Gewinn sowie von anderen mittelbaren oder unmittelbaren Schäden. Dieser Haftungsausschluss gilt nicht für rechtswidrige Absicht oder grobe Fahrlässigkeit des Lieferanten. Im Übrigen gilt dieser Haftungsausschluss nicht, soweit ihm zwingendes Recht entgegensteht.

13. Gerichtsstand und anwendbares Recht

13.1 Gerichtsstand für den Besteller und den Lieferanten ist Sitz des Lieferanten. Der Lieferant ist jedoch berechtigt, den Besteller an dessen Wohnsitz zu belangen.

13.2 Das Rechtsverhältnis untersteht ausschliesslich dem nationalen Handelsrecht des Lieferanten. Die Bestimmungen des UN-Kaufrechts finden keine Anwendung.

Vertriebsnetz

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Beispiel: Artikel B72015

Artikel-Nr.: B72015
Beschichtung: DURO-X
Seite: 21

Artikel-Nr.		Beschichtung						
INDEX		ohne	U-4XD	NANO-U²	DURO-X	DURO-SD	DURO-D²	DIAPLUS
Chemische Zusammensetzung			TiAlCN	AlTiN	TiAlN/TiN	AlTiN	AlTiN/TiN	C
Härte [HV]			3200	3700	3300	3600	3300	10000
max. Temp [°C]			650	1100	900	880	900	600
B52020	95					●		
B52111	75					●		
B52710	123							●
B52724	125	●						
B52801	121						●	
B52915	99						●	
B52920	101						●	
B52925	103						●	
B52930	105						●	
B53020	95					●		
B53111	75					●		
B57014	107					●		
B57015	113					●		
B57020	117					●		
B57710	127							●
B62011	81			●				
B62014	55			●				
B62015	37			●				
B63011	81			●				
B63014	55			●				
B63015	37			●				
B72011	65				●			
B72015	21				●			
B72020	85				●			
B92008	133		●					
B92020	131		●					
B92040	129		●					
B92300	135	●						
B92310	135		●					
B92360	134		●					

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Artikelverzeichnis Gewindewerkzeuge

Beispiel: Artikel EH0100

Artikel-Nr.: EH0100
Beschichtung: TiCN
Seite: 143

Artikel-Nr.		Beschichtung							
INDEX		E	EV	EH	ET	EI	EF	EL	EU
		ohne	vaporisiert	TiCN	TRIBO	INTEGRAL	F-DLC	LONGCUT	UNICUT-4X
Chemische Zusammensetzung				TiCN	TiAlN	TiAlN	DLC	AlCrN	TiAlCN
Härte [HV]				3000	3000	3500	2800	3200	3200
max. Temp [°C]				400	300	1000	500	1100	650
_ 0020	185					●			
_ 0021	185					●			
_ 0050	187					●			
_ 0051	187					●			
_ 0100	143			●					
_ 0101	143			●					
_ 0109	203			●					
_ 0110	205			●					
_ 0229	207			●					
_ 0230	209			●					
_ 0400	165				●				
_ 0401	165				●				
_ 0502	147			●					
_ 0503	147			●					
_ 0504	231			●					
_ 0505	231			●					
_ 0512	159			●					
_ 0513	159			●					
_ 0570	149			●					
_ 0570	167				●				
_ 0571	151			●					
_ 0571	167				●				
_ 0572	233			●					
_ 0573	233			●					
_ 0580	153			●					
_ 0580	169				●				
_ 0581	153			●					
_ 0581	169				●				
_ 0590	155			●					
_ 0590	171				●				
_ 0591	157			●					
_ 0591	173				●				
_ 0595	161			●					
_ 0596	161			●					
_ 0598	201	●							
_ 0599	243	●							
_ 0600	175			●					
_ 0601	175			●					
_ 0620	177			●					
_ 0621	177			●					
_ 0705	195				●				

Artikel-Nr.		Beschichtung							
INDEX		E	EV	EH	ET	EI	EF	EL	EU
		ohne	vaporisiert	TiCN	TRIBO	INTEGRAL	F-DLC	LONGCUT	UNICUT-4X
_ 0706	197				●				
_ 0755	199				●				
_ 0756	199				●				
_ 1229	269			●					
_ 1240	257				●				
_ 1241	259				●				
_ 1257	247			●					
_ 1258	249			●					
_ 1260	251			●					
_ 1260	261				●				
_ 1261	253			●					
_ 1261	263				●				
_ 1270	265			●					
_ 1271	267			●					
_ 1400	273			●					
_ 1402	293					●			
_ 1429	297			●					
_ 1440	287				●				
_ 1452	295					●			
_ 1472	277			●					
_ 1475	279			●					
_ 1475	289				●				
_ 1480	291			●					
_ 1482	281			●					
_ 1495	283			●					
_ 1602	321					●			
_ 1620	313				●				
_ 1621	315				●				
_ 1652	323					●			
_ 1687	305			●					
_ 1688	307			●					
_ 1690	309			●					
_ 1690	317				●				
_ 1691	311			●					
_ 1691	319				●				
_ 1699	325	●							
_ 1750	331				●				
_ 1751	331				●				
_ 1787	327			●					
_ 1788	327			●					
_ 1790	329			●					
_ 1790	333				●				
_ 1791	329			●					
_ 1791	333				●				
_ 1799	335	●							
_ 1830	339				●				
_ 2010	409								●
_ 2060	411								●
_ 2110	413								●
_ 2200	415								●
_ 2210	415								●
_ 6100	359			●					
_ 6101	359			●					
_ 6300	189			●					
_ 6301	191			●					
_ 6350	193			●					
_ 6351	193			●					
_ 6500	179			●					
_ 6501	181			●					
_ 6550	183			●					
_ 6551	183			●					
_ 6900	163			●					
_ 6901	163			●					
_ 6910	255			●					
_ 6911	255			●					
_ 6916	285			●					

Artikel-Nr.		Beschichtung							
INDEX		E	EV	EH	ET	EI	EF	EL	EU
		ohne	vaporisiert	TiCN	TRIBO	INTEGRAL	F-DLC	LONGCUT	UNICUT-4X
_ 10060	355						●		
_ 10061	357						●		
_ 10064	371						●		
_ 10065	371						●		
_ 10068	375						●		
_ 10070	365			●					
_ 10071	367			●					
_ 10072	369			●					
_ 10073	369			●					
_ 10074	373			●					
_ 10075	373			●					
_ 10078	377			●					
_ 10080	361							●	
_ 10081	363							●	
_ 10110	235	●							
_ 10114	239	●							
_ 10115	239	●							
_ 10118	227	●							
_ 10119	227	●							
_ 10122	223	●							
_ 10123	223	●							
_ 10214	237	●							
_ 10218	241	●							
_ 10219	241	●							
_ 10220	229	●							
_ 10221	229	●							
_ 10222	225	●							
_ 10223	225	●							
_ 10310	145			●					
_ 10311	145			●					
_ 10340	219	●							
_ 10350	221	●							
_ 10800	211	●	●						
_ 10801	213	●	●						
_ 10820	215	●	●						
_ 10821	217	●	●						
_ 11260	379						●		
_ 11261	379						●		
_ 11270	381			●					
_ 11271	381			●					
_ 11425	275			●					
_ 11480	299	●	●						
_ 11482	301	●	●						
_ 11820	341	●							
_ 11846	343	●							
_ 11950	385			●					
_ 11951	385			●					
_ 11960	383						●		
_ 11961	383						●		
_ 11970	347	●							
_ 11971	347	●							
_ 11980	349	●							
_ 11981	349	●							
_ 22200	391	●		●					
_ 22300	393	●		●					
_ 24200	395			●					
_ 24220	399			●					
_ 24300	397			●					
_ 24320	401			●					
_ 24340	403			●					
_ 24360	405			●					
_ 24370	407			●					
_ 26020	417			●					
_ 26040	419			●					
_ 28500	421	●							●

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