EMUGE

EF-DRILLS

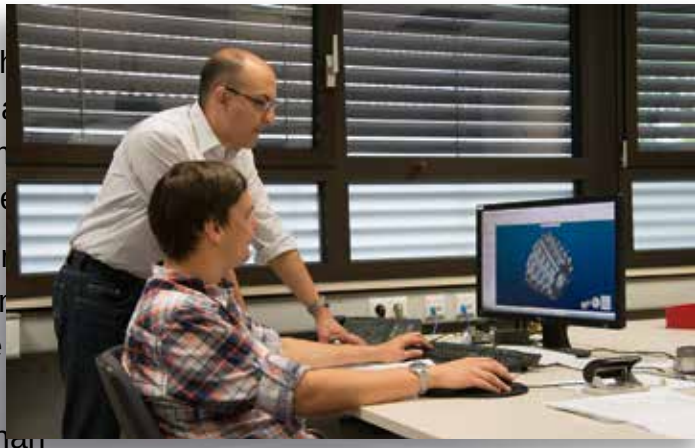
HIGH PERFORMANCE CARBIDE DRILLS

A Full Line of High Performance Drilling Tools

You Know EMUGE
Now Know their Drills

Now Emuge's legendary threadmaking tool quality is available in a complete line of NEW High Penetration Rate Carbide Drills making their North American debut. German made and engineered through years of expertise. Get to know the best drills for making the world's most accurate

INTRODUCING
EMUGE High Performance Drills!



Emuge is widely recognized in the industry as the leader in designing, engineering and manufacturing exceptionally high performance quality taps and thread mills. So it stands to rea that Emuge knows what is required to machine the world's m accurate holes, and how to design the best drills to make the

This is also why it's no surprise that new Emuge Drills featu a unique geometry, carbide grade and PVD coating design r found in other drills. Emuge Drills are the result of extensive development, incorporating the latest in drilling technology. And Emuge Drills have a 3-5 times faster penetration rate than conventional carbide and cobalt drills.

You trust Emuge Taps and Thread Mills for the highest quality threads. Now you can rely on Emuge Drills to make the best holes.

New Emuge EF Solid Carbide Drills feature:

- Double Margin Flute Design for added stability and rounder/ straighter holes, in addition to single margin design for stainless and titanium applications
- Unique Flute Construction Design for superb chip evacuation
- Self-Centering Design allows drilling in one shot, eliminating peck cycles and pre-spot operations.
- Special Sub-Micron Grain Carbide Grade for abrasion resistance and durability
- Unique Multi-Layer PVD Coating resists chipping/ cracking, for exceptionally long tool life
- Full Range of Product: 3XD, 5XD, 8XD drill styles in solid & coolant-fed designs, for convenience and application versatility

German engineered and made,
with unsurpassed Emuge quality

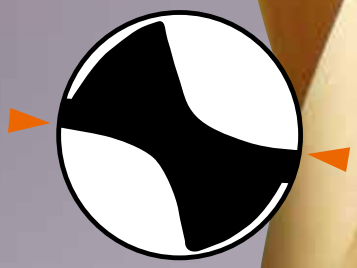
EMUGE EF-DRILLS

For Better Holes + Performance

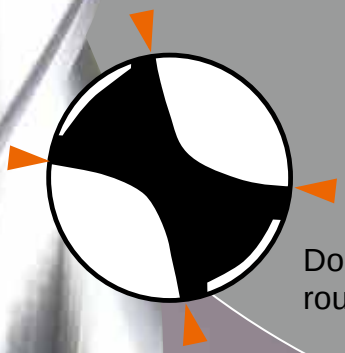
- Unique Geometry
- Unique Carbide Grade
- Emuge PVD Coating

Unique Flute Construction

- Enables uniform chip removal throughout the hole



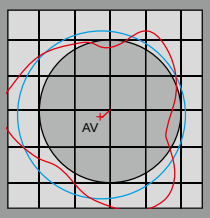
Single margin for Stainless Steel and Titanium Alloys



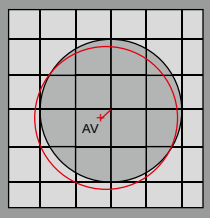
Double margin for rounder holes

Rounder Holes

- Double margin design produces better hole quality and tap performance



HSS & HSSE Drilling

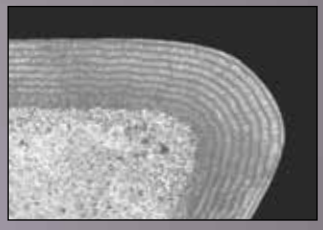


EMUGE Carbide EF-Drilling straighter rounder holes

- Double margins improve guiding and add stability during breakout

Longer Life

- Special carbide grade ar multi-layered PVD coatin for superb heat and wear resistance



- Highly polished coating surface maximizes chip ow

Eliminate Operations

- Chisel edge, self-centering design means one-shot ops with no spot or peck drilling

Higher Penetration

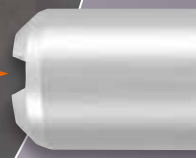
- 3 to 5+ times the penetration rate with less torque and power consumption than regular carbide drills

More Cutting Edge Support

- 4 facet point design

Enhanced Shank Design

- Conical slotted end for optimized coolant flow and reliable tool setting



Make Short, Consistent 6 & 9 Chips

- Short, consistent chips provide quick evacuation and eliminate bird nesting

Product nder and cutting data

Please note:
Drill suitability is identi ed in the respective columns as follows:

- $ = very suitable
-) = suitable

The appropriate cutting speeds (SFM) and feed per revolution values f (in/rev.) are to be found on pages 8-11.

Formulas:

RPM = (SFM/Dia. In.) x 3.82
IPM = IPR x RPM
m/min = SFM ÷ 3.28
mm/rev = IPR x 25.4

		Application – Material	Hardness Range HRC	BHN	N/mm²	Material Examples
P		**Steel materials**				
	1.1	Cold-extrusion steels, Construction steels, Free-cutting steels, etc.		180	600	1010 / 1018 / 1020 / 12L14 / 12L15 / A36 / T1
	2.1	Construction steels, Cementation steels, Steel castings, etc.	22	235	800	A36 / T1 / 1030-1095 / 4140 / 4340 / 8620
	3.1	Cementation steels, Heat-treatable steels, Cold work steels, etc.	31	295	1000	4140 / 4340 / 8620 / P20 / H13 / D2 / A2 / S7 / H1150
	4.1	Heat-treatable steels, Cold work steels, Nitriding steels, etc.	38	355	1200	4140 / 4340 / 8620 / P20 / H13 / D2 / 300M / 52100 / M1-M42
	5.1	High-alloyed steels, Cold work steels, Hot work steels, etc.	44	415	1400	4140 / 4340 / 8620 / P20 / H13 / D2 / 300M / 52100
M		**Stainless steel materials**				
	1.1	Ferritic, martensitic	29	280	950	410 / 440 / 440C / 17-4 PH
	2.1	Austenitic	29	280	950	303 / 304 / 316 / 316L / 321
	3.1	Austenitic-ferritic (Duplex)	35	325	1100	
	4.1	Austenitic-ferritic heat-resistant (Super Duplex)	39	370	1250	
K		**Cast materials**				
	1.1	Cast iron with lamellar graphite (GJL)		30 - 75	100 - 250	Grey cast irons G10-GG40
	1.2			75 - 135	250 - 450	
	2.1	Cast iron with nodular graphite (GJS)		105 - 150	350 - 500	Nodular GGG40-GGG70
	2.2			150 - 265	500 - 900	
	3.1	Cast iron with vermicular graphite (GJV)		90 - 120	300 - 400	
	3.2			120 - 150	400 - 500	Compact graphite iron (CGI)
	4.1	Malleable cast iron (GTMW, GTMB)		70 - 145	250 - 500	
	4.2			150 - 235	500 - 800	White iron
N		**Non ferrous materials**				
		Aluminium alloys				
	1.1	Aluminium wrought alloys		60	200	7075
	1.2			105	350	6061-T6 / 2024-T4
	1.3			165	550	
	1.4	Aluminium cast alloys Si 7%				
	1.5	Aluminium cast alloys 7% < Si 12%				
	1.6	Aluminium cast alloys 12% < Si 17%				
		Copper alloys				
	2.1	Pure copper, low-alloyed copper		120	400	
	2.2	Copper-zinc alloys (brass, long-chipping)		165	550	
	2.3	Copper-zinc alloys (brass, short-chipping)		165	550	
	2.4	Copper-aluminium alloys (alu bronze, long-chipping)		235	800	
	2.5	Copper-tin alloys (tin bronze, long-chipping)		205	700	
	2.6	Copper-tin alloys (tin bronze, short-chipping)		120	400	
	2.7	Special copper alloys		180	600	
	2.8		44	415	1400	
		Magnesium alloys				
	3.1	Magnesium wrought alloys		150	500	
	3.2	Magnesium cast alloys		150	500	
		Synthetics				
	4.1	Duroplastics (short-chipping)				
	4.2	Thermoplastics (long-chipping)				
	4.3	Fibre-reinforced synthetics (bre content 30%)				
	4.4	Fibre-reinforced synthetics (bre content > 30%)				
		Special materials				
	5.1	Graphite				
	5.2	Tungsten-copper alloys				
	5.3	Composite materials				
S		**Special materials**				
		Titanium alloys				
	1.1	Pure titanium		135	450	CP1 / CP2
	1.2	Titanium alloys	27	265	900	6AL4V
	1.3		39	370	1250	
		Nickel alloys, cobalt alloys and iron alloys				
	2.1	Pure nickel		180	600	
	2.2	Nickel-base alloys	31	295	1000	Monel 500
	2.3		49	475	1600	718 Inconel
	2.4	Cobalt-base alloys	31	295	1000	
	2.5		49	475	1600	Haynes 25
	2.6	Iron-base alloys	46	445	1500	Incoloy 925
H		**Hard materials**				
	1.1	High strength steels, hardened steels, hard castings	44 - 50			
	1.2		50 - 55			
	1.3		55 - 60			
	1.4		60 - 63			
	1.5		63 - 66			

Coolant-lubricant recommendation												
Emulsion	Oil	Minimum quantity lubrication (MQL)	Dry / Pressurized air	EF-Drill				EF-Drill-VA		HCUT	Type	
				3 x D	3 x D	5 x D	8 x D	3 x D	5 x D	4 x D	Drill depth	
				12-15	16-19	20-23	24-27	28-31	32-35	36	Page(s)	
$	$	)		$	$	$	$				1.1	P
$	$	)		)	$	$	$				2.1	
$	$	)		)	$	$	$				3.1	
$	$	)		)	$	$	$				4.1	
$	$	)		)	$	$	$				5.1	
$	)				$	$	$	$	$		1.1	M
$	)							$	$		2.1	
$	)							$	$		3.1	
$	)							$	$		4.1	
$		)	)	)	)	)	)				1.1	K
$		)	)	)	)	)	)				1.2	
$		)	)	)	)	)	)				2.1	
$		)	)	)	$	$	$				2.2	
$		)	)	)	)	)	)				3.1	
$		)	)	)	)	)	)				3.2	
$		)	)	)	)	)	)				4.1	
$		)	)	)	)	)	)				4.2	
$	)			)	)	)	)				1.1	N
$	)			)	)	)	)				1.2	
$	)			)	)	)	)				1.3	
$	)			)	)	)	)				1.4	
$	)			)	)	)	)				1.5	
											1.6	
$	)			)	$	$	$				2.1	
$	)			)	$	$	$				2.2	
$	)			)	$	$	$				2.3	
$	)			)	$	$	$				2.4	
$	)			)	$	$	$				2.5	
$	)			)	$	$	$				2.6	
$	)			)	$	$	$				2.7	
$	)			)	$	$	$				2.8	
											3.1	
											3.2	
											4.1	
											4.2	
											4.3	
											4.4	
			$	)							5.1	
											5.2	
											5.3	
$	)							)	)		1.1	S
$	)							)	)		1.2	
$	)							)	)		1.3	
											2.1	
$	)							)	)		2.2	
											2.3	
$	)							)	)		2.4	
											2.5	
$	)							)	)		2.6	
$	$	)	)	)	$	$				)	1.1	H
$	$	)	)	)	)	)				$	1.2	
$	$	)	)							$	1.3	
$	$	)	)							$	1.4	
$	$	)	)							$	1.5	

		EF-Drill 3 x D			EF-Drill 3 x D			EF-Drill 5 x D			EF-Drill 8 x D		
		Cutting speed v_c [SFM]											
		min.	rec.	max.	min.	rec.	max.	min.	rec.	max.	min.	rec.	max.
P	1.1	329	394	460	460	526	657	460	526	657	394	460	526
	2.1	279	329	378	394	476	558	394	476	558	312	378	443
	3.1	230	279	329	329	394	460	329	394	460	296	329	378
	4.1	197	230	263	263	329	394	263	329	394	230	279	329
	5.1	148	181	214	197	230	263	197	230	263	164	197	230
M	1.1				197	263	329	197	263	329	181	230	296
	2.1												
	3.1												
	4.1												
K	1.1	394	493	591	427	526	624	427	526	624	378	460	542
	1.2	329	427	493	361	460	526	361	460	526	312	411	460
	2.1	329	427	526	361	460	558	361	460	558	312	411	493
	2.2	329	394	460	394	460	526	394	460	526	345	411	460
	3.1	230	263	296	230	296	329	230	296	329	197	263	296
	3.2	230	263	296	230	296	329	230	296	329	197	263	296
	4.1	361	427	493	394	460	526	394	460	526	345	411	460
	4.2	296	361	427	329	394	460	329	394	460	296	345	411
N	1.1	690	788	887	723	854	920	723	854	920	641	756	805
	1.2	690	788	887	723	854	920	723	854	920	641	756	805
	1.3	591	657	723	657	756	854	657	756	854	575	657	756
	1.4	591	657	723	657	756	854	657	756	854	575	657	756
	1.5	493	558	591	542	608	657	542	608	657	476	542	575
	1.6												
	2.1	361	427	526	378	443	558	378	443	558	329	394	493
	2.2	493	526	558	526	575	624	526	575	624	460	509	542
	2.3	591	690	788	624	723	821	624	723	821	542	641	723
	2.4	197	263	296	230	296	361	230	296	361	197	263	312
	2.5												
	2.6	296	329	361	329	378	427	329	378	427	296	329	378
	2.7	164	181	197	197	214	230	197	214	230	164	181	197
	2.8	164	181	197	214	230	246	214	230	246	181	197	214
	3.1												
	3.2												
	4.1												
	4.2												
	4.3												
	4.4												
	5.1	230	296	394									
	5.2												
	5.3												
S	1.1												
	1.2												
	1.3												
	2.1												
	2.2												
	2.3												
	2.4												
	2.5												
	2.6												
H	1.1	99	115	131	115	131	148	115	131	148			
	1.2												
	1.3												
	1.4												
	1.5												

Cutting data

Please note that these data are standard values only.

- We recommend the standard values in bold print (rec.) for stable work conditions and for high-performance machine tools with suf cient speed capability.
- Correspondingly, the lower cutting speeds (min.) in connection with higher feed values (up to max.) should be used for machine tools with lower spindle speeds.
- For optimum workpiece conditions, and for machine tools with extremely high performance and high spindle speeds, the high cutting speeds (max.) in connection with possibly reduced feed values can be applied.

EF-Drill 8 x D:

- Preparatory centering with a pilot drill is recommended.
- Reduce the recommended feed per revolution value f [in/rev.] by 15%!

Formulas:

RPM = (SFM/Dia. In.) x 3.82
IPM = IPR x RPM
m/min = SFM ÷ 3.28
mm/rev = IPR x 25.4

DRILL DIAMETER

D = 3.0 mm			D = 5.0 mm			D = 8.0 mm			D = 10.0 mm			D = 12.0 mm			D = 16.0 mm			D = 20.0 mm				
D = 0.118 inch			D = 0.197 inch			D = 0.315 inch			D = 0.394 inch			D = 0.472 inch			D = 0.630 inch			D = 0.787 inch				
Feed per revolution f [inch/rev.]																						
min.	rec.	max.	min.	rec.	max.	min.	rec.	max.	min.	rec.	max.	min.	rec.	max.	min.	rec.	max.	min.	rec.	max.		
0.0031	0.0043	0.0051	0.0043	0.0059	0.0075	0.0055	0.0071	0.0098	0.0079	0.0094	0.0114	0.0087	0.0098	0.0126	0.0098	0.0122	0.0150	0.0114	0.0138	0.0165	1.1	P
0.0031	0.0039	0.0047	0.0035	0.0043	0.0055	0.0059	0.0071	0.0083	0.0067	0.0083	0.0094	0.0079	0.0094	0.0106	0.0094	0.0110	0.0126	0.0110	0.0126	0.0142	2.1	
0.0031	0.0039	0.0047	0.0035	0.0043	0.0055	0.0059	0.0071	0.0083	0.0067	0.0083	0.0094	0.0079	0.0094	0.0106	0.0094	0.0110	0.0126	0.0110	0.0126	0.0142	3.1	
0.0024	0.0031	0.0039	0.0031	0.0039	0.0055	0.0047	0.0063	0.0071	0.0059	0.0071	0.0083	0.0063	0.0079	0.0094	0.0071	0.0094	0.0118	0.0087	0.0110	0.0134	4.1	
0.0012	0.0024	0.0031	0.0024	0.0031	0.0039	0.0039	0.0047	0.0059	0.0043	0.0055	0.0067	0.0055	0.0063	0.0071	0.0067	0.0079	0.0091	0.0083	0.0094	0.0106	5.1	
0.0016	0.0024	0.0031	0.0028	0.0035	0.0039	0.0035	0.0043	0.0051	0.0043	0.0055	0.0067	0.0059	0.0075	0.0087	0.0071	0.0087	0.0102	0.0087	0.0102	0.0118	1.1	M
																					2.1	
																					3.1	
																					4.1	
0.0047	0.0063	0.0079	0.0069	0.0087	0.0102	0.0094	0.0118	0.0134	0.0106	0.0130	0.0154	0.0118	0.0142	0.0181	0.0138	0.0161	0.0205	0.0154	0.0177	0.0220	1.1	K
0.0039	0.0051	0.0063	0.0059	0.0075	0.0091	0.0079	0.0102	0.0126	0.0091	0.0114	0.0138	0.0102	0.0134	0.0165	0.0126	0.0150	0.0197	0.0142	0.0165	0.0213	1.2	
0.0039	0.0055	0.0067	0.0059	0.0079	0.0094	0.0083	0.0106	0.0130	0.0094	0.0118	0.0142	0.0106	0.0138	0.0169	0.0130	0.0154	0.0201	0.0146	0.0169	0.0217	2.1	
0.0035	0.0047	0.0059	0.0051	0.0067	0.0083	0.0063	0.0087	0.0110	0.0071	0.0091	0.0114	0.0079	0.0106	0.0126	0.0094	0.0122	0.0146	0.0110	0.0138	0.0161	2.2	
0.0039	0.0047	0.0055	0.0051	0.0059	0.0075	0.0067	0.0083	0.0102	0.0083	0.0102	0.0122	0.0106	0.0126	0.0146	0.0126	0.0146	0.0161	0.0142	0.0161	0.0177	3.1	
0.0039	0.0047	0.0055	0.0051	0.0059	0.0075	0.0067	0.0083	0.0102	0.0083	0.0102	0.0122	0.0106	0.0126	0.0146	0.0126	0.0146	0.0161	0.0142	0.0161	0.0177	3.2	
0.0039	0.0051	0.0063	0.0055	0.0067	0.0083	0.0071	0.0094	0.0118	0.0087	0.0118	0.0134	0.0094	0.0126	0.0157	0.0110	0.0150	0.0181	0.0126	0.0165	0.0197	4.1	
0.0035	0.0047	0.0059	0.0047	0.0063	0.0079	0.0063	0.0083	0.0106	0.0079	0.0106	0.0122	0.0087	0.0114	0.0142	0.0106	0.0134	0.0165	0.0122	0.0150	0.0181	4.2	
0.0047	0.0055	0.0067	0.0071	0.0087	0.0098	0.0094	0.0110	0.0126	0.0118	0.0138	0.0157	0.0150	0.0169	0.0189	0.0177	0.0205	0.0236	0.0193	0.0220	0.0252	1.1	N
0.0047	0.0055	0.0067	0.0071	0.0087	0.0098	0.0094	0.0110	0.0126	0.0118	0.0138	0.0157	0.0150	0.0169	0.0189	0.0177	0.0205	0.0236	0.0193	0.0220	0.0252	1.2	
0.0047	0.0055	0.0067	0.0071	0.0087	0.0098	0.0094	0.0110	0.0126	0.0118	0.0138	0.0157	0.0150	0.0169	0.0189	0.0177	0.0205	0.0236	0.0193	0.0220	0.0252	1.3	
0.0047	0.0055	0.0067	0.0071	0.0087	0.0098	0.0094	0.0110	0.0126	0.0118	0.0138	0.0157	0.0150	0.0169	0.0189	0.0177	0.0205	0.0236	0.0193	0.0220	0.0252	1.4	
0.0047	0.0055	0.0063	0.0063	0.0071	0.0087	0.0087	0.0102	0.0118	0.0114	0.0134	0.0150	0.0138	0.0154	0.0173	0.0157	0.0177	0.0197	0.0173	0.0193	0.0213	1.5	
																					1.6	
0.0028	0.0035	0.0055	0.0035	0.0047	0.0063	0.0051	0.0063	0.0071	0.0063	0.0075	0.0091	0.0071	0.0087	0.0106	0.0083	0.0102	0.0118	0.0098	0.0118	0.0134	2.1	
0.0024	0.0035	0.0043	0.0047	0.0055	0.0063	0.0063	0.0079	0.0094	0.0079	0.0094	0.0110	0.0094	0.0110	0.0126	0.0110	0.0130	0.0146	0.0126	0.0146	0.0161	2.2	
0.0047	0.0055	0.0063	0.0055	0.0063	0.0079	0.0079	0.0098	0.0118	0.0094	0.0118	0.0150	0.0110	0.0142	0.0161	0.0126	0.0150	0.0177	0.0142	0.0165	0.0193	2.3	
0.0020	0.0028	0.0031	0.0028	0.0035	0.0043	0.0047	0.0055	0.0063	0.0055	0.0063	0.0079	0.0063	0.0071	0.0087	0.0071	0.0079	0.0098	0.0087	0.0094	0.0114	2.4	
																					2.5	
0.0028	0.0035	0.0043	0.0035	0.0043	0.0051	0.0059	0.0067	0.0079	0.0071	0.0083	0.0091	0.0083	0.0094	0.0106	0.0094	0.0110	0.0126	0.0110	0.0126	0.0142	2.6	
0.0012	0.0016	0.0020	0.0016	0.0020	0.0028	0.0031	0.0035	0.0039	0.0035	0.0039	0.0047	0.0039	0.0047	0.0055	0.0047	0.0055	0.0063	0.0063	0.0071	0.0079	2.7	
0.0012	0.0016	0.0020	0.0016	0.0020	0.0028	0.0031	0.0035	0.0039	0.0035	0.0039	0.0047	0.0039	0.0047	0.0055	0.0047	0.0055	0.0063	0.0063	0.0071	0.0079	2.8	
																					3.1	
																					3.2	
																					4.1	
																					4.2	
																					4.3	
																					4.4	
0.0039	0.0047	0.0055	0.0047	0.0055	0.0063	0.0055	0.0063	0.0071	0.0063	0.0075	0.0083	0.0071	0.0083	0.0094	0.0079	0.0094	0.0110	0.0094	0.0110	0.0126	5.1	
																					5.2	
																					5.3	
																					1.1	S
																					1.2	
																					1.3	
																					2.1	
																					2.2	
																					2.3	
																					2.4	
																					2.5	
																					2.6	
0.0012	0.002	0.0024	0.0016	0.0024	0.0028	0.003	0.004	0.0047	0.004	0.0047	0.0055	0.0047	0.0055	0.0062	0.0055	0.0062	0.007	0.0055	0.0062	0.007	1.1	H
																					1.2	
																					1.3	
																					1.4	
																					1.5	

		EF-Drill-VA 3 x D			EF-Drill-VA 5 x D			HCUT 4 x D		
		Cutting speed v_c [SFM]								
		min.	rec.	max.	min.	rec.	max.	min.	rec.	max.
P	1.1									
	2.1									
	3.1									
	4.1									
	5.1									
M	1.1	197	263	329	197	263	329			
	2.1	131	164	197	131	164	197			
	3.1	115	131	148	115	131	148			
	4.1	99	115	131	99	115	131			
K	1.1									
	1.2									
	2.1									
	2.2									
	3.1									
	3.2									
	4.1									
	4.2									
N	1.1									
	1.2									
	1.3									
	1.4									
	1.5									
	1.6									
	2.1									
	2.2									
	2.3									
	2.4									
	2.5									
	2.6									
	2.7									
	2.8									
	3.1									
	3.2									
	4.1									
	4.2									
	4.3									
	4.4									
	5.1									
	5.2									
	5.3									
S	1.1	148	181	214	148	181	214			
	1.2	99	148	181	99	148	181			
	1.3	99	115	131	99	115	131			
	2.1									
	2.2	33	66	99	33	66	99			
	2.3									
	2.4	99	148	181	99	148	181			
	2.5									
	2.6	99	115	131	99	115	131			
H	1.1							99	115	131
	1.2							66	82	99
	1.3							49	66	82
	1.4							33	49	66
	1.5							26	39	49

Cutting data

Please note that these data are standard values only.

- We recommend the standard values in bold print (rec.) for stable work conditions and for high-performance machine tools with suf cient speed capability.
- Correspondingly, the lower cutting speeds (min.) in connection with higher feed values (up to max.) should be used for machine tools with lower spindle speeds.
- For optimum workpiece conditions, and for machine tools with extremely high performance and high spindle speeds, the high cutting speeds (max.) in connection with possibly reduced feed values can be applied.

DRILL DIAMETER

D = 3.0 mm			D = 5.0 mm			D = 8.0 mm			D = 10.0 mm			D = 12.0 mm			D = 16.0 mm			D = 20.0 mm				
D = 0.118 inch			D = 0.197 inch			D = 0.315 inch			D = 0.394 inch			D = 0.472 inch			D = 0.630 inch			D = 0.787 inch				
Feed per revolution f [inch/rev.]																						
min.	rec.	max.	min.	rec.	max.	min.	rec.	max.	min.	rec.	max.	min.	rec.	max.	min.	rec.	max.	min.	rec.	max.		
																					1.1	P
																					2.1	
																					3.1	
																					4.1	
																					5.1	
0.0020	0.0024	0.0031	0.0024	0.0031	0.0039	0.0031	0.0047	0.0063	0.0047	0.0067	0.0079	0.0055	0.0075	0.0091	0.0071	0.0087	0.0106	0.0087	0.0102	0.0122	1.1	M
0.0012	0.0020	0.0028	0.0020	0.0028	0.0035	0.0031	0.0039	0.0047	0.0039	0.0047	0.0055	0.0047	0.0055	0.0063	0.0055	0.0063	0.0079	0.0071	0.0079	0.0094	2.1	
0.0012	0.0020	0.0028	0.0020	0.0028	0.0035	0.0031	0.0039	0.0047	0.0039	0.0047	0.0055	0.0047	0.0055	0.0063	0.0055	0.0063	0.0079	0.0071	0.0079	0.0094	3.1	
0.0012	0.0020	0.0028	0.0020	0.0028	0.0035	0.0031	0.0039	0.0047	0.0039	0.0047	0.0055	0.0047	0.0055	0.0063	0.0055	0.0063	0.0079	0.0071	0.0079	0.0094	4.1	
																					1.1	K
																					1.2	
																					2.1	
																					2.2	
																					3.1	
																					3.2	
																					4.1	
																					4.2	
																					1.1	N
																					1.2	
																					1.3	
																					1.4	
																					1.5	
																					1.6	
																					2.1	
																					2.2	
																					2.3	
																					2.4	
																					2.5	
																					2.6	
																					2.7	
																					2.8	
																					3.1	
																					3.2	
																					4.1	
																					4.2	
																					4.3	
																					4.4	
																					5.1	
																					5.2	
																					5.3	
0.0012	0.0016	0.0024	0.0016	0.0024	0.0035	0.0024	0.0031	0.0039	0.0031	0.0039	0.0047	0.0039	0.0047	0.0055	0.0047	0.0055	0.0075	0.0063	0.0071	0.0091	1.1	S
0.0008	0.0012	0.0016	0.0016	0.0020	0.0024	0.0024	0.0028	0.0031	0.0028	0.0035	0.0043	0.0016	0.0035	0.0043	0.0035	0.0043	0.0051	0.0051	0.0059	0.0067	1.2	
0.0008	0.0012	0.0016	0.0016	0.0020	0.0024	0.0024	0.0028	0.0031	0.0028	0.0035	0.0043	0.0016	0.0035	0.0043	0.0035	0.0043	0.0051	0.0051	0.0059	0.0067	1.3	
																					2.1	
0.0012	0.0024	0.0031	0.0024	0.0031	0.0039	0.0020	0.0028	0.0043	0.0031	0.0043	0.0055	0.0039	0.0051	0.0063	0.0051	0.0059	0.0071	0.0067	0.0075	0.0087	2.2	
																					2.3	
0.0008	0.0012	0.0016	0.0016	0.0020	0.0024	0.0024	0.0028	0.0031	0.0028	0.0035	0.0043	0.0016	0.0035	0.0043	0.0035	0.0043	0.0051	0.0051	0.0059	0.0067	2.4	
																					2.5	
0.0008	0.0012	0.0016	0.0016	0.0020	0.0024	0.0024	0.0028	0.0031	0.0028	0.0035	0.0043	0.0016	0.0035	0.0043	0.0035	0.0043	0.0051	0.0051	0.0059	0.0067	2.6	
0.0012	0.0020	0.0024	0.0016	0.0024	0.0028	0.0031	0.0039	0.0047	0.0039	0.0047	0.0055	0.0047	0.0055	0.0063	0.0055	0.0063	0.0071	0.0071	0.0079	0.0087	1.1	H
0.0012	0.0020	0.0024	0.0016	0.0024	0.0028	0.0031	0.0039	0.0047	0.0039	0.0047	0.0055	0.0047	0.0055	0.0063	0.0055	0.0063	0.0071	0.0071	0.0079	0.0087	1.2	
0.0012	0.0016	0.0020	0.0012	0.0016	0.0020	0.0016	0.0024	0.0031	0.0024	0.0031	0.0039	0.0024	0.0031	0.0039	0.0031	0.0039	0.0047	0.0047	0.0055	0.0063	1.3	
0.0008	0.0012	0.0016	0.0012	0.0016	0.0020	0.0012	0.0016	0.0020	0.0016	0.0020	0.0024	0.0016	0.0020	0.0024	0.0020	0.0024	0.0028	0.0035	0.0039	0.0043	1.4	
0.0004	0.0008	0.0012	0.0008	0.0012	0.0016	0.0012	0.0016	0.0020	0.0016	0.0020	0.0024	0.0016	0.0020	0.0024	0.0020	0.0024	0.0028	0.0035	0.0039	0.0043	1.5	

Stub Length

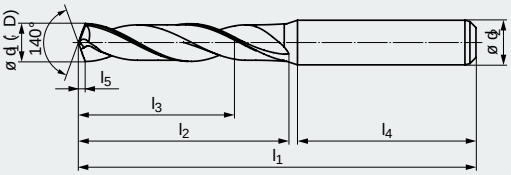
Carbide | TIALN T14

DIN 6537 K | R30

Z2 | 2FF

140° | IT9-IT10

DIN 653
HA
HE



l_3 = Max Effective Drill Depth

3 x D

Range of Application See Pgs. 6-9

P 1.1-5.1 | K 1.1-4.2 | N 1.1-5 | N 2.1-8 | N 5.1 | H 1.1-2

Nominal Size ø d_1 m7						mm						EF-Drill TA103324 HA SHANK	EF-Drill TA403324 HE SHANK
inch	Fraction	Wire letter	mm			l_1	l_2	l_3	l_4	l_5	ø d_2 h6		
0.1102			2.800	#6-32 UNC	M3	57	16	11	36	0.6	6	TA103324.0280	TA403324.0280
0.1142			2.900	#6-32 UNJC	#5-40 UNC	57	16	11	36	0.6	6	TA103324.0290	TA403324.0290
0.1150			2.920		#5-44 UNF	57	16	11	36	0.6	6	TA103324.0292	TA403324.0292
0.1181			3.000	#6-40 UNF		62	20	14	36	0.6	6	TA103324.0300	TA403324.0300
0.1220			3.100	STI-#4-40		62	20	14	36	0.6	6	TA103324.0310	TA403324.0310
0.1240			3.150	M3.5x0.35	#6-32 UNC	62	20	14	36	0.7	6	TA103324.0315	TA403324.0315
0.1250	1/8		3.175			62	20	14	36	0.7	6	TA103324.0318	TA403324.0318
0.1260			3.200	BSW 9/32-32	#6-40 UNF	62	20	14	36	0.7	6	TA103324.0320	TA403324.0320
0.1280			3.250		M3.5	62	20	14	36	0.7	6	TA103324.0325	TA403324.0325
0.1299			3.300	M4		62	20	14	36	0.7	6	TA103324.0330	TA403324.0330
0.1331			3.380		M3.5x0.35	62	20	14	36	0.7	6	TA103324.0338	TA403324.0338
0.1339			3.400	MJ4x0.7		62	20	14	36	0.7	6	TA103324.0340	TA403324.0340
0.1378			3.500	#8-32 UNC		62	20	14	36	0.7	6	TA103324.0350	TA403324.0350
0.1406	9/64	#28	3.571			62	20	14	36	0.7	6	TA103324.0357	TA403324.0357
0.1417			3.600	#8-36 UNJF		62	20	14	36	0.7	6	TA103324.0360	TA403324.0360
0.1457			3.700	M4.5	M4	62	20	14	36	0.8	6	TA103324.0370	TA403324.0370
0.1496		#25	3.800	STI-#6-32	#8-32 UNC	66	24	17	36	0.8	6	TA103324.0380	TA403324.0380
0.1516			3.850		#8-36 UNF	66	24	17	36	0.8	6	TA103324.0385	TA403324.0385
0.1535			3.900	#10-24 UNC		66	24	17	36	0.8	6	TA103324.0390	TA403324.0390
0.1563	5/32		3.970			66	24	17	36	0.8	6	TA103324.0397	TA403324.0397
0.1575			4.000	M4.5x0.5		66	24	17	36	0.8	6	TA103324.0400	TA403324.0400
0.1590		#21	4.038			66	24	17	36	0.8	6	TA103324.0404	TA403324.0404
0.1614			4.100	#10-32 UNF		66	24	17	36	0.8	6	TA103324.0410	TA403324.0410
0.1654			4.200	M5, STI-M4	M4.5	66	24	17	36	0.9	6	TA103324.0420	TA403324.0420
0.1693		#18	4.300	MJ5x0.8		66	24	17	36	0.9	6	TA103324.0430	TA403324.0430
0.1713			4.350		#10-24 UNC	66	24	17	36	0.9	6	TA103324.0435	TA403324.0435
0.1719	11/64		4.366			66	24	17	36	0.9	6	TA103324.0437	TA403324.0437
0.1732			4.400	M5x0.75		66	24	17	36	0.9	6	TA103324.0440	TA403324.0440
0.1752			4.450		#10-32 UNF	66	24	17	36	0.9	6	TA103324.0445	TA403324.0445
0.1772			4.500	#12-24 UNC		66	24	17	36	0.9	6	TA103324.0450	TA403324.0450
0.1811			4.600	#12-28 UNF		66	24	17	36	0.9	6	TA103324.0460	TA403324.0460
0.1831			4.650	#12-24 UNJC	M5	66	24	17	36	0.9	6	TA103324.0465	TA403324.0465
0.1850		#13	4.700	LK-UNC #12-24		66	24	17	36	1.0	6	TA103324.0470	TA403324.0470
0.1875	3/16		4.763	#12-28 UNJF		66	28	20	36	1.0	6	TA103324.0476	TA403324.0476
0.1890		#12	4.800	#12-32 UNEF	M5x0.5, STI-M5	66	28	20	36	1.0	6	TA103324.0480	TA403324.0480
0.1929			4.900			66	28	20	36	1.0	6	TA103324.0490	TA403324.0490
0.1969			5.000	M6	#12-24 UNC	66	28	20	36	1.0	6	TA103324.0500	TA403324.0500
0.2008			5.100	MJ6x1	#12-28 UNF	66	28	20	36	1.0	6	TA103324.0510	TA403324.0510
0.2010		#7	5.106			66	28	20	36	1.0	6	TA103324.0511	TA403324.0511
0.2031	13/64		5.159			66	28	20	36	1.0	6	TA103324.0516	TA403324.0516
0.2047			5.200	1/4-20 UNC		66	28	20	36	1.0	6	TA103324.0520	TA403324.0520
0.2087			5.300	1/4-20 UNJC		66	28	20	36	1.1	6	TA103324.0530	TA403324.0530
0.2126			5.400			66	28	20	36	1.1	6	TA103324.0540	TA403324.0540
0.2130		#3	5.410			66	28	20	36	1.1	6	TA103324.0541	TA403324.0541

Stub Length

Carbide | TIALN T14

DIN 6537 K | R30

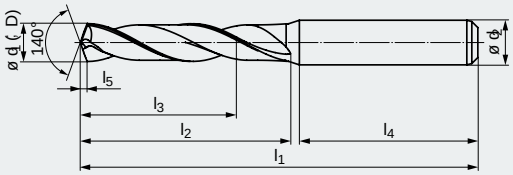
Z2 | 2FF

140° | IT9-IT10

DIN 653

HA

HE



l_3 = Max Effective Drill Depth

3 x D

Range of Application: See Pgs. 6-9

P 1.1-5.1 | K 1.1-4.2 | N 1.1-5 | N 2.1-8 | N 5.1 | H 1.1-2

Nominal Size ø d_1 m7						mm						EF-Drill TA103324 HA SHANK	EF-Drill TA403324 HE SHANK
inch	Fraction	Wire letter	mm			l_1	l_2	l_3	l_4	l_5	ø d_2 h6		
0.2165			5.500	1/4-28 UNF		66	28	20	36	1.1	6	TA103324.0550	TA403324.0550
0.2187	7/32		5.556	1/4-28 UNJF		66	28	20	36	1.1	6	TA103324.0556	TA403324.0556
0.2205			5.600	1/4-32 UNEF	M6	66	28	20	36	1.1	6	TA103324.0560	TA403324.0560
0.2264			5.750		1/4-20 UNC	66	28	20	36	1.1	6	TA103324.0575	TA403324.0575
0.2283			5.800		M6x0.5	66	28	20	36	1.2	6	TA103324.0580	TA403324.0580
0.2323			5.900			66	28	20	36	1.2	6	TA103324.0590	TA403324.0590
0.2344	15/64		5.954		1/4-28 UNF	66	28	20	36	1.2	6	TA103324.0595	TA403324.0595
0.2362			6.000	M7, Rd 8x10		66	28	20	36	1.2	6	TA103324.0600	TA403324.0600
0.2402			6.100	MJ7x1		79	34	24	36	1.2	8	TA103324.0610	TA403324.0610
0.2441			6.200	M7x0.75		79	34	24	36	1.2	8	TA103324.0620	TA403324.0620
0.2480			6.300	M7x0.5, STI-M6		79	34	24	36	1.3	8	TA103324.0630	TA403324.0630
0.2500	1/4	E	6.350	1/16-27 NPSF		79	34	24	36	1.3	8	TA103324.0635	TA403324.0635
0.2520			6.400			79	34	24	36	1.3	8	TA103324.0640	TA403324.0640
0.2559			6.500	BSW 9/16-18		79	34	24	36	1.3	8	TA103324.0650	TA403324.0650
0.2570		F	6.528			79	34	24	36	1.3	8	TA103324.0653	TA403324.0653
0.2598			6.600	5/16-18 UNC	M7	79	34	24	36	1.3	8	TA103324.0660	TA403324.0660
0.2638			6.700	5/16-18 UNJC	M7x0.75	79	34	24	36	1.3	8	TA103324.0670	TA403324.0670
0.2656	17/64		6.746			79	34	24	36	1.4	8	TA103324.0675	TA403324.0675
0.2677			6.800	M8, G 1/16		79	34	24	36	1.4	8	TA103324.0680	TA403324.0680
0.2717			6.900	5/16-24 UNF		79	34	24	36	1.4	8	TA103324.0690	TA403324.0690
0.2756			7.000	5/16-24 UNJF		79	34	24	36	1.4	8	TA103324.0700	TA403324.0700
0.2795			7.100	MJ8x1		79	41	29	36	1.4	8	TA103324.0710	TA403324.0710
0.2813	9/32	K	7.145			79	41	29	36	1.4	8	TA103324.0715	TA403324.0715
0.2835			7.200	5/16-32 UNEF		79	41	29	36	1.5	8	TA103324.0720	TA403324.0720
0.2854			7.250		5/16-18 UNC	79	41	29	36	1.5	8	TA103324.0725	TA403324.0725
0.2874			7.300			79	41	29	36	1.5	8	TA103324.0730	TA403324.0730
0.2913			7.400			79	41	29	36	1.5	8	TA103324.0740	TA403324.0740
0.2933			7.450		5/16-24 UNF, M8	79	41	29	36	1.5	8	TA103324.0745	TA403324.0745
0.2953			7.500	M8x0.5		79	41	29	36	1.5	8	TA103324.0750	TA403324.0750
0.2969	19/64		7.541			79	41	29	36	1.5	8	TA103324.0754	TA403324.0754
0.2992			7.600	Tr 9x1.5	M8x1, STI-M8	79	41	29	36	1.5	8	TA103324.0760	TA403324.0760
0.3031			7.700		M8x0.75	79	41	29	36	1.5	8	TA103324.0770	TA403324.0770
0.3071			7.800	M9		79	41	29	36	1.5	8	TA103324.0780	TA403324.0780
0.3110			7.900	BSW 3/8-16		79	41	29	36	1.6	8	TA103324.0790	TA403324.0790
0.3125	5/16		7.938			79	41	29	36	1.6	8	TA103324.0794	TA403324.0794
0.3150			8.000	3/8-16 UNC		79	41	29	36	1.6	8	TA103324.0800	TA403324.0800
0.3189			8.100	3/8-16 UNJC		89	47	35	40	1.6	10	TA103324.0810	TA403324.0810
0.3228			8.200	M9x0.75		89	47	35	40	1.6	10	TA103324.0820	TA403324.0820
0.3268			8.300	LK-UNC 3/8-16		89	47	35	40	1.6	10	TA103324.0830	TA403324.0830
0.3281	21/64		8.334			89	47	35	40	1.6	10	TA103324.0833	TA403324.0833
0.3307			8.400	STI-5/16-18		89	47	35	40	1.7	10	TA103324.0840	TA403324.0840
0.3346			8.500	3/8-24 UNF, M10		89	47	35	40	1.7	10	TA103324.0850	TA403324.0850
0.3386			8.600	3/8-24 UNJF	M9x1	89	47	35	40	1.7	10	TA103324.0860	TA403324.0860
0.3425			8.700	3/8-32 UNEF	M9x0.75	89	47	35	40	1.7	10	TA103324.0870	TA403324.0870

Stub Length

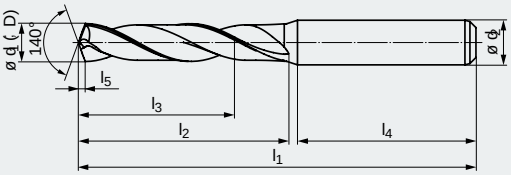
Carbide | TIALN T14

DIN 6537 K | R30

Z2 | 2FF

140° | IT9-IT10

DIN 653
HA
HE



l_3 = Max Effective Drill Depth

3 x D

Range of Application: See Pgs. 6-9

P 1.1-5.1 | K 1.1-4.2 | N 1.1-5 | N 2.1-8 | N 5.1 | H 1.1-2

Nominal Size ø d_1 m7 inch	Fraction	Wire letter	mm			mm l_1	l_2	l_3	l_4	l_5	ø d_2 h6	EF-Drill TA103324 HA SHANK	EF-Drill TA403324 HE SHANK
0.3438	11/32		8.733	1/8-27 NPSC		89	47	35	40	1.7	10	TA103324.0873	TA403324.0873
0.3465			8.800	M10x1.25	3/8-16 UNC	89	47	35	40	1.7	10	TA103324.0880	TA403324.0880
0.3504			8.900	MJ10x1.25		89	47	35	40	1.8	10	TA103324.0890	TA403324.0890
0.3543			9.000	M10x1		89	47	35	40	1.8	10	TA103324.0900	TA403324.0900
0.3563			9.050		3/8-24 UNF	89	47	35	40	1.8	10	TA103324.0905	TA403324.0905
0.3583			9.100	1/8-27 NPSM		89	47	35	40	1.8	10	TA103324.0910	TA403324.0910
0.3594	23/64		9.129			89	47	35	40	1.8	10	TA103324.0913	TA403324.0913
0.3622			9.200	M10x0.75		89	47	35	40	1.8	10	TA103324.0920	TA403324.0920
0.3642			9.250			89	47	35	40	1.8	10	TA103324.0925	TA403324.0925
0.3661			9.300			89	47	35	40	1.8	10	TA103324.0930	TA403324.0930
0.3681			9.350		M10	89	47	35	40	1.8	10	TA103324.0935	TA403324.0935
0.3701			9.400	7/16-14 UNC		89	47	35	40	1.9	10	TA103324.0940	TA403324.0940
0.3740			9.500	7/16-14 UNJC	STI-M10	89	47	35	40	1.9	10	TA103324.0950	TA403324.0950
0.3750	3/8		9.525			89	47	35	40	1.9	10	TA103324.0953	TA403324.0953
0.3780			9.600		M10x1	89	47	35	40	1.9	10	TA103324.0960	TA403324.0960
0.3819			9.700	LK-UNC-14	M10x0.75	89	47	35	40	1.9	10	TA103324.0970	TA403324.0970
0.3858			9.800	STI-3/8-24		89	47	35	40	1.9	10	TA103324.0980	TA403324.0980
0.3898			9.900	7/16-20 UNF		89	47	35	40	2.0	10	TA103324.0990	TA403324.0990
0.3906	25/64		9.921			89	47	35	40	2.0	10	TA103324.0992	TA403324.0992
0.3937			10.000	7/16-20 UNJF		89	47	35	40	2.0	10	TA103324.1000	TA403324.1000
0.3976			10.100			102	55	40	45	2.0	12	TA103324.1010	TA403324.1010
0.4016			10.200	7/16-28 UNEF		102	55	40	45	2.0	12	TA103324.1020	TA403324.1020
0.4035			10.250		7/16-14 UNC	102	55	40	45	2.0	12	TA103324.1025	TA403324.1025
0.4055			10.300			102	55	40	45	2.0	12	TA103324.1030	TA403324.1030
0.4063	13/32		10.320			102	55	40	45	2.0	12	TA103324.1032	TA403324.1032
0.4134			10.500	M12x1.5		102	55	40	45	2.1	12	TA103324.1050	TA403324.1050
0.4154			10.550		7/16-20 UNF	102	55	40	45	2.1	12	TA103324.1055	TA403324.1055
0.4213			10.700	LK-M12		102	55	40	45	2.1	12	TA103324.1070	TA403324.1070
0.4219	27/64		10.716	1/2-13 UNC		102	55	40	45	2.1	12	TA103324.1072	TA403324.1072
0.4252			10.800	M12x1.25		102	55	40	45	2.1	12	TA103324.1080	TA403324.1080
0.4291			10.900	1/2-13 UNJC		102	55	40	45	2.1	12	TA103324.1090	TA403324.1090
0.4331			11.000	M12x1		102	55	40	45	2.2	12	TA103324.1100	TA403324.1100
0.4370			11.100	BSF-1/2-16		102	55	40	45	2.2	12	TA103324.1110	TA403324.1110
0.4375	7/16		11.113	LK-UNC-13		102	55	40	45	2.2	12	TA103324.1111	TA403324.1111
0.4409			11.200			102	55	40	45	2.2	12	TA103324.1120	TA403324.1120
0.4429			11.250	M12x0.75	M12	102	55	40	45	2.2	12	TA103324.1125	TA403324.1125
0.4469			11.350	Pg 7	M12x1.5	102	55	40	45	2.2	12	TA103324.1135	TA403324.1135
0.4488			11.400	1/4-18 NPSC		102	55	40	45	2.2	12	TA103324.1140	TA403324.1140
0.4508			11.450		M12x1.25	102	55	40	45	2.2	12	TA103324.1145	TA403324.1145
0.4528			11.500	1/2-20 UNF		102	55	40	45	2.3	12	TA103324.1150	TA403324.1150
0.4531	29/64		11.509			102	55	40	45	2.3	12	TA103324.1151	TA403324.1151
0.4567			11.600	1/2-20 UNJF	M12x1	102	55	40	45	2.3	12	TA103324.1160	TA403324.1160
0.4606			11.700			102	55	40	45	2.3	12	TA103324.1170	TA403324.1170
0.4646			11.800	1/2-28 UNEF	1/2-13 UNC	102	55	40	45	2.3	12	TA103324.1180	TA403324.1180

Stub Length

Carbide | TIALN T14

DIN 6537 K | R30

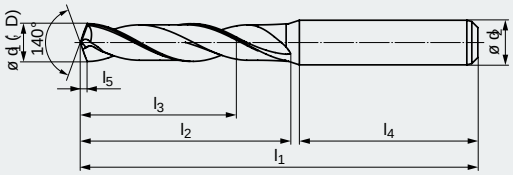
Z2 | 2FF

140° | IT9-IT10

DIN 653

HA

HE



l_3 = Max Effective Drill Depth

3 x D

Range of Application: See Pgs. 6-9

P 1.1-5.1 | K 1.1-4.2 | N 1.1-5 | N 2.1-8 | N 5.1 | H 1.1-2

Nominal Size ø d_1 m7						mm						EF-Drill TA103324 HA SHANK	EF-Drill TA403324 HE SHANK
inch	Fraction	Wire letter	mm			l_1	l_2	l_3	l_4	l_5	ø d_2 h6		
0.4685			11.900			102	55	40	45	2.3	12	TA103324.1190	TA403324.1190
0.4688	15/32		11.908			102	55	40	45	2.3	12	TA103324.1191	TA403324.1191
0.4724			12.000	M14		102	55	40	45	2.4	12	TA103324.1200	TA403324.1200
0.4783			12.150		1/2-20 UNF	102	55	40	45	2.4	12	TA103324.1215	TA403324.1215
0.4803			12.200	Tr 14x2		102	55	40	45	2.4	14	TA103324.1220	TA403324.1220
0.4844	31/64		12.304	9/16-12 UNC		102	55	40	45	2.4	14	TA103324.1230	TA403324.1230
0.4921			12.500	M14x1.5		102	55	40	45	2.4	14	TA103324.1250	TA403324.1250
0.4941			12.550		G1/4-19	102	55	40	45	2.4	14	TA103324.1255	TA403324.1255
0.5000	1/2		12.700	LK-UNC 9/16-12		102	55	40	45	2.5	14	TA103324.1270	TA403324.1270
0.5039			12.800	M14x1.25		102	55	40	45	2.5	14	TA103324.1280	TA403324.1280
0.5118			13.000	9/16-18 UNJF		102	55	40	45	2.5	14	TA103324.1300	TA403324.1300
0.5157			13.100	ST 1/2-20	M14	102	55	40	45	2.6	14	TA103324.1310	TA403324.1310
0.5236			13.300	9/16-24 UNEF	9/16-12 UNC	102	55	40	45	2.6	14	TA103324.1330	TA403324.1330
0.5256			13.350		M14x1.5	102	55	40	45	2.6	14	TA103324.1335	TA403324.1335
0.5295			13.450		M14x1.25	102	55	40	45	2.6	14	TA103324.1345	TA403324.1345
0.5313	17/32		13.495	5/8-11 UNC		102	55	40	45	2.6	14	TA103324.1349	TA403324.1349
0.5315			13.500			102	55	40	45	2.6	14	TA103324.1350	TA403324.1350
0.5374			13.650	5/8-11 UNJC	9/16-18 UNF	102	55	40	45	2.7	14	TA103324.1365	TA403324.1365
0.5394			13.700			102	55	40	45	2.7	14	TA103324.1370	TA403324.1370
0.5469	35/64		13.891			102	55	40	45	2.7	14	TA103324.1389	TA403324.1389
0.5512			14.000	M16, M15x1		102	55	40	45	2.7	14	TA103324.1400	TA403324.1400
0.5551			14.100			115	65	45	48	2.8	16	TA103324.1410	TA403324.1410
0.5625	9/16		14.288			115	65	45	48	2.8	16	TA103324.1429	TA403324.1429
0.5709			14.500	5/8-18 UNF		115	65	45	48	2.8	16	TA103324.1450	TA403324.1450
0.5748			14.600	5/8-18 UNJF	M15x1	115	65	45	48	2.9	16	TA103324.1460	TA403324.1460
0.5781	37/64		14.684	3/8-18 NPSC		115	65	45	48	2.9	16	TA103324.1468	TA403324.1468
0.5827			14.800		5/8-11 UNC	115	65	45	48	2.9	16	TA103324.1480	TA403324.1480
0.5906			15.000	M16x1		115	65	45	48	2.9	16	TA103324.1500	TA403324.1500
0.5938	19/32		15.083			115	65	45	48	2.9	16	TA103324.1508	TA403324.1508
0.5945			15.100		M16	115	65	45	48	2.9	16	TA103324.1510	TA403324.1510
0.6102			15.500	M18		115	65	45	48	3.0	16	TA103324.1550	TA403324.1550
0.6142			15.600		M16x1	115	65	45	48	3.0	16	TA103324.1560	TA403324.1560
0.6250	5/8		15.875			115	65	45	48	3.1	16	TA103324.1588	TA403324.1588
0.6299			16.000	M18x2		115	65	45	48	3.1	16	TA103324.1600	TA403324.1600
0.6406	41/64		16.272			123	73	51	48	3.1	18	TA103324.1627	TA403324.1627
0.6496			16.500	ST 5/8-11		123	73	51	48	3.2	18	TA103324.1650	TA403324.1650
0.6563	21/32		16.669	3/4-10 UNC		123	73	51	48	3.2	18	TA103324.1667	TA403324.1667
0.6693			17.000	M18x1		123	73	51	48	3.3	18	TA103324.1700	TA403324.1700
0.6875	11/16		17.463			123	73	51	48	3.3	18	TA103324.1746	TA403324.1746
0.6890			17.500	3/4-16 UNF, M20		123	73	51	48	3.4	18	TA103324.1750	TA403324.1750
0.7087			18.000	M20x2, LK-M16		123	73	51	48	3.5	18	TA103324.1800	TA403324.1800
0.7480			19.000	M20x1		131	79	55	50	3.7	20	TA103324.1900	TA403324.1900
0.7500	3/4		19.050			131	79	55	50	3.7	20	TA103324.1905	TA403324.1905
0.7874			20.000	M22x2	G1/2-14	131	79	55	50	3.9	20	TA103324.2000	TA403324.2000

Stub Length
Coolant Fed

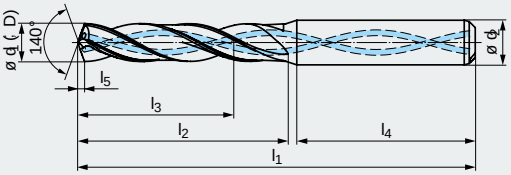
Carbide | TIALN T14

DIN 6537 K | R30

Z2 | 4FF

140° | IT8-IT10

DIN 653
HA
HE



l_3 = Max Effective Drill Depth

3 x D

Range of Application: See Pgs. 6-9

P 11-5.1 | M 1.1 | K 1.1-4.2 | N 1.1-5 | N 2.1-8 | H 1.1-2

Nominal Size ø d_1 m7						mm						EF-Drill TA203344 HA SHANK	EF-Drill TA503344 HE SHANK
inch	Fraction	Wire letter	mm			l_1	l_2	l_3	l_4	l_5	ø d_2 h6		
0.1102			2.800	#6-32 UNC	M3	57	16	11	36	0.6	6	TA203344.0280	TA503344.0280
0.1142			2.900	#6-32 UNJC	#5-40 UNC	57	16	11	36	0.6	6	TA203344.0290	TA503344.0290
0.1150			2.920		#5-44 UNF	57	16	11	36	0.6	6	TA203344.0292	TA503344.0292
0.1181			3.000	#6-40 UNF		62	20	14	36	0.6	6	TA203344.0300	TA503344.0300
0.1220			3.100	STI-#4-40		62	20	14	36	0.6	6	TA203344.0310	TA503344.0310
0.1240			3.150	M3.5x0.35	#6-32 UNC	62	20	14	36	0.7	6	TA203344.0315	TA503344.0315
0.1250	1/8		3.175			62	20	14	36	0.7	6	TA203344.0318	TA503344.0318
0.1260			3.200	BSW 9/32-32	#6-40 UNF	62	20	14	36	0.7	6	TA203344.0320	TA503344.0320
0.1280			3.250		M3.5	62	20	14	36	0.7	6	TA203344.0325	TA503344.0325
0.1299			3.300	M4		62	20	14	36	0.7	6	TA203344.0330	TA503344.0330
0.1331			3.380		M3.5x0.35	62	20	14	36	0.7	6	TA203344.0338	TA503344.0338
0.1339			3.400	MJ4x0.7		62	20	14	36	0.7	6	TA203344.0340	TA503344.0340
0.1378			3.500	#8-32 UNC		62	20	14	36	0.7	6	TA203344.0350	TA503344.0350
0.1406	9/64	#28	3.571			62	20	14	36	0.7	6	TA203344.0357	TA503344.0357
0.1417			3.600	#8-36 UNJF		62	20	14	36	0.7	6	TA203344.0360	TA503344.0360
0.1457			3.700	M4.5	M4	62	20	14	36	0.8	6	TA203344.0370	TA503344.0370
0.1496		#25	3.800	STI-#6-32	#8-32 UNC	66	24	17	36	0.8	6	TA203344.0380	TA503344.0380
0.1516			3.850		#8-36 UNF	66	24	17	36	0.8	6	TA203344.0385	TA503344.0385
0.1535			3.900	#10-24 UNC		66	24	17	36	0.8	6	TA203344.0390	TA503344.0390
0.1563	5/32		3.970			66	24	17	36	0.8	6	TA203344.0397	TA503344.0397
0.1575			4.000	M4.5x0.5		66	24	17	36	0.8	6	TA203344.0400	TA503344.0400
0.1590		#21	4.038			66	24	17	36	0.8	6	TA203344.0404	TA503344.0404
0.1614			4.100	#10-32 UNF		66	24	17	36	0.8	6	TA203344.0410	TA503344.0410
0.1654			4.200	M5, STI-M4	M4.5	66	24	17	36	0.9	6	TA203344.0420	TA503344.0420
0.1693		#18	4.300	MJ5x0.8		66	24	17	36	0.9	6	TA203344.0430	TA503344.0430
0.1713			4.350		#10-24 UNC	66	24	17	36	0.9	6	TA203344.0435	TA503344.0435
0.1719	11/64		4.366			66	24	17	36	0.9	6	TA203344.0437	TA503344.0437
0.1732			4.400	M5x0.75		66	24	17	36	0.9	6	TA203344.0440	TA503344.0440
0.1752			4.450		#10-32 UNF	66	24	17	36	0.9	6	TA203344.0445	TA503344.0445
0.1772			4.500	#12-24 UNC		66	24	17	36	0.9	6	TA203344.0450	TA503344.0450
0.1811			4.600	#12-28 UNF		66	24	17	36	0.9	6	TA203344.0460	TA503344.0460
0.1831			4.650	#12-24 UNJC	M5	66	24	17	36	0.9	6	TA203344.0465	TA503344.0465
0.1850		#13	4.700	LK-UNC #12-24		66	24	17	36	1.0	6	TA203344.0470	TA503344.0470
0.1875	3/16		4.763	#12-28 UNJF		66	28	20	36	1.0	6	TA203344.0476	TA503344.0476
0.1890		#12	4.800	#12-32 UNEF	M5x0.5, STI-M5	66	28	20	36	1.0	6	TA203344.0480	TA503344.0480
0.1929			4.900			66	28	20	36	1.0	6	TA203344.0490	TA503344.0490
0.1969			5.000	M6	#12-24 UNC	66	28	20	36	1.0	6	TA203344.0500	TA503344.0500
0.2008			5.100	MJ6x1	#12-28 UNF	66	28	20	36	1.0	6	TA203344.0510	TA503344.0510
0.2010		#7	5.106			66	28	20	36	1.0	6	TA203344.0511	TA503344.0511
0.2031	13/64		5.159			66	28	20	36	1.0	6	TA203344.0516	TA503344.0516
0.2047			5.200	1/4-20 UNC		66	28	20	36	1.0	6	TA203344.0520	TA503344.0520
0.2087			5.300	1/4-20 UNJC		66	28	20	36	1.1	6	TA203344.0530	TA503344.0530
0.2126			5.400			66	28	20	36	1.1	6	TA203344.0540	TA503344.0540
0.2130		#3	5.410			66	28	20	36	1.1	6	TA203344.0541	TA503344.0541

Stub Length
Coolant Fed

Carbide | TIALN T14

DIN 6537 K | R30

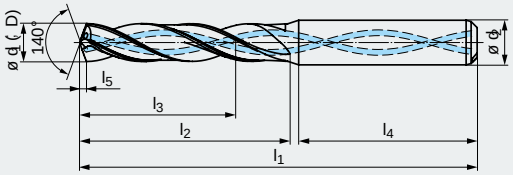
Z2 | 4FF

140° | IT8-IT10

DIN 653

HA

HE



l_3 = Max Effective Drill Depth

3 x D

Range of Application: See Pgs. 6-9

P 1.1-5.1 | M 1.1 | K 1.1-4.2

N 1.1-5 | N 2.1-8 | H 1.1-2

Nominal Size ø d_1 m7						mm						EF-Drill TA203344 HA SHANK	EF-Drill TA503344 HE SHANK
inch	Fraction	Wire letter	mm			l_1	l_2	l_3	l_4	l_5	ø d_2 h6		
0.2165			5.500	1/4-28 UNF		66	28	20	36	1.1	6	TA203344.0550	TA503344.0550
0.2187	7/32		5.556	1/4-28 UNJF		66	28	20	36	1.1	6	TA203344.0556	TA503344.0556
0.2205			5.600	1/4-32 UNEF	M6	66	28	20	36	1.1	6	TA203344.0560	TA503344.0560
0.2264			5.750		1/4-20 UNC	66	28	20	36	1.1	6	TA203344.0575	TA503344.0575
0.2283			5.800		M6x0.5	66	28	20	36	1.2	6	TA203344.0580	TA503344.0580
0.2323			5.900			66	28	20	36	1.2	6	TA203344.0590	TA503344.0590
0.2344	15/64		5.954		1/4-28 UNF	66	28	20	36	1.2	6	TA203344.0595	TA503344.0595
0.2362			6.000	M7, Rd 8/10		66	28	20	36	1.2	6	TA203344.0600	TA503344.0600
0.2402			6.100	MJ7x1		79	34	24	36	1.2	8	TA203344.0610	TA503344.0610
0.2441			6.200	M7x0.75		79	34	24	36	1.2	8	TA203344.0620	TA503344.0620
0.2480			6.300	M7x0.5, STI-M6		79	34	24	36	1.3	8	TA203344.0630	TA503344.0630
0.2500	1/4	E	6.350	1/16-27 NPSF		79	34	24	36	1.3	8	TA203344.0635	TA503344.0635
0.2520			6.400			79	34	24	36	1.3	8	TA203344.0640	TA503344.0640
0.2559			6.500	BSW 9/16-18		79	34	24	36	1.3	8	TA203344.0650	TA503344.0650
0.2570		F	6.528			79	34	24	36	1.3	8	TA203344.0653	TA503344.0653
0.2598			6.600	5/16-18 UNC	M7	79	34	24	36	1.3	8	TA203344.0660	TA503344.0660
0.2638			6.700	5/16-18 UNJC	M7x0.75	79	34	24	36	1.3	8	TA203344.0670	TA503344.0670
0.2656	17/64		6.746			79	34	24	36	1.4	8	TA203344.0675	TA503344.0675
0.2677			6.800	M8, G 1/16		79	34	24	36	1.4	8	TA203344.0680	TA503344.0680
0.2717			6.900	5/16-24 UNF		79	34	24	36	1.4	8	TA203344.0690	TA503344.0690
0.2756			7.000	5/16-24 UNJF		79	34	24	36	1.4	8	TA203344.0700	TA503344.0700
0.2795			7.100	MJ8x1		79	41	29	36	1.4	8	TA203344.0710	TA503344.0710
0.2813	9/32	K	7.145			79	41	29	36	1.4	8	TA203344.0715	TA503344.0715
0.2835			7.200	5/16-32 UNEF		79	41	29	36	1.5	8	TA203344.0720	TA503344.0720
0.2854			7.250		5/16-18 UNC	79	41	29	36	1.5	8	TA203344.0725	TA503344.0725
0.2874			7.300			79	41	29	36	1.5	8	TA203344.0730	TA503344.0730
0.2913			7.400			79	41	29	36	1.5	8	TA203344.0740	TA503344.0740
0.2933			7.450		5/16-24 UNF, M8	79	41	29	36	1.5	8	TA203344.0745	TA503344.0745
0.2953			7.500	M8x0.5		79	41	29	36	1.5	8	TA203344.0750	TA503344.0750
0.2969	19/64		7.541			79	41	29	36	1.5	8	TA203344.0754	TA503344.0754
0.2992			7.600	Tr 9x1.5	M8x1, STI-M8	79	41	29	36	1.5	8	TA203344.0760	TA503344.0760
0.3031			7.700		M8x0.75	79	41	29	36	1.5	8	TA203344.0770	TA503344.0770
0.3071			7.800	M9		79	41	29	36	1.5	8	TA203344.0780	TA503344.0780
0.3110			7.900	BSW 3/8-16		79	41	29	36	1.6	8	TA203344.0790	TA503344.0790
0.3125	5/16		7.938			79	41	29	36	1.6	8	TA203344.0794	TA503344.0794
0.3150			8.000	3/8-16 UNC		79	41	29	36	1.6	8	TA203344.0800	TA503344.0800
0.3189			8.100	3/8-16 UNJC		89	47	35	40	1.6	10	TA203344.0810	TA503344.0810
0.3228			8.200	M9x0.75		89	47	35	40	1.6	10	TA203344.0820	TA503344.0820
0.3268			8.300	LK-UNC 3/8-16		89	47	35	40	1.6	10	TA203344.0830	TA503344.0830
0.3281	21/64		8.334			89	47	35	40	1.6	10	TA203344.0833	TA503344.0833
0.3307			8.400	STI-5/16-18		89	47	35	40	1.7	10	TA203344.0840	TA503344.0840
0.3346			8.500	3/8-24 UNF, M10		89	47	35	40	1.7	10	TA203344.0850	TA503344.0850
0.3386			8.600	3/8-24 UNJF	M9x1	89	47	35	40	1.7	10	TA203344.0860	TA503344.0860
0.3425			8.700	3/8-32 UNEF	M9x0.75	89	47	35	40	1.7	10	TA203344.0870	TA503344.0870

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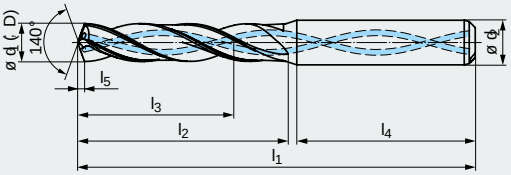

l_3 = Max Effective Drill Depth

3 x D

Range of Application: See Pgs. 6-9

P 1.1-5.1 | M 1.1 | K 1.1-4.2
N 1.1-5 | N 2.1-8 | H 1.1-2

Nominal Size ø d_1 m7						mm						EF-Drill TA203344 HA SHANK	EF-Drill TA503344 HE SHANK
inch	Fraction	Wire letter	mm			l_1	l_2	l_3	l_4	l_5	ø d_2 h6		
0.3438	11/32		8.733	1/8-27 NPSC		89	47	35	40	1.7	10	TA203344.0873	TA503344.0873
0.3465			8.800	M10x1.25	3/8-16 UNC	89	47	35	40	1.7	10	TA203344.0880	TA503344.0880
0.3504			8.900	MJ10x1.25		89	47	35	40	1.8	10	TA203344.0890	TA503344.0890
0.3543			9.000	M10x1		89	47	35	40	1.8	10	TA203344.0900	TA503344.0900
0.3563			9.050		3/8-24 UNF	89	47	35	40	1.8	10	TA203344.0905	TA503344.0905
0.3583			9.100	1/8-27 NPSM		89	47	35	40	1.8	10	TA203344.0910	TA503344.0910
0.3594	23/64		9.129			89	47	35	40	1.8	10	TA203344.0913	TA503344.0913
0.3622			9.200	M10x0.75		89	47	35	40	1.8	10	TA203344.0920	TA503344.0920
0.3642			9.250			89	47	35	40	1.8	10	TA203344.0925	TA503344.0925
0.3661			9.300			89	47	35	40	1.8	10	TA203344.0930	TA503344.0930
0.3681			9.350		M10	89	47	35	40	1.8	10	TA203344.0935	TA503344.0935
0.3701			9.400	7/16-14 UNC		89	47	35	40	1.9	10	TA203344.0940	TA503344.0940
0.3740			9.500	7/16-14 UNJC	STI-M10	89	47	35	40	1.9	10	TA203344.0950	TA503344.0950
0.3750	3/8		9.525			89	47	35	40	1.9	10	TA203344.0953	TA503344.0953
0.3780			9.600		M10x1	89	47	35	40	1.9	10	TA203344.0960	TA503344.0960
0.3819			9.700	LK-UNC 7/16-14	M10x0.75	89	47	35	40	1.9	10	TA203344.0970	TA503344.0970
0.3858			9.800	STI-3/8-24		89	47	35	40	1.9	10	TA203344.0980	TA503344.0980
0.3898			9.900	7/16-20 UNF		89	47	35	40	2.0	10	TA203344.0990	TA503344.0990
0.3906	25/64		9.921			89	47	35	40	2.0	10	TA203344.0992	TA503344.0992
0.3937			10.000	7/16-20 UNJF		89	47	35	40	2.0	10	TA203344.1000	TA503344.1000
0.3976			10.100			102	55	40	45	2.0	12	TA203344.1010	TA503344.1010
0.4016			10.200	7/16-28 UNEF		102	55	40	45	2.0	12	TA203344.1020	TA503344.1020
0.4035			10.250		7/16-14 UNC	102	55	40	45	2.0	12	TA203344.1025	TA503344.1025
0.4055			10.300			102	55	40	45	2.0	12	TA203344.1030	TA503344.1030
0.4063	13/32		10.320			102	55	40	45	2.0	12	TA203344.1032	TA503344.1032
0.4134			10.500	M12x1.5		102	55	40	45	2.1	12	TA203344.1050	TA503344.1050
0.4154			10.550		7/16-20 UNF	102	55	40	45	2.1	12	TA203344.1055	TA503344.1055
0.4213			10.700	LK-M12		102	55	40	45	2.1	12	TA203344.1070	TA503344.1070
0.4219	27/64		10.716	1/2-13 UNC		102	55	40	45	2.1	12	TA203344.1072	TA503344.1072
0.4252			10.800	M12x1.25		102	55	40	45	2.1	12	TA203344.1080	TA503344.1080
0.4291			10.900	1/2-13 UNJC		102	55	40	45	2.1	12	TA203344.1090	TA503344.1090
0.4331			11.000	M12x1		102	55	40	45	2.2	12	TA203344.1100	TA503344.1100
0.4370			11.100	BSP-1/2-16		102	55	40	45	2.2	12	TA203344.1110	TA503344.1110
0.4375	7/16		11.113	LK-UNC 1/2-13		102	55	40	45	2.2	12	TA203344.1111	TA503344.1111
0.4409			11.200			102	55	40	45	2.2	12	TA203344.1120	TA503344.1120
0.4429			11.250	M12x0.75	M12	102	55	40	45	2.2	12	TA203344.1125	TA503344.1125
0.4469			11.350	Pg 7	M12x1.5	102	55	40	45	2.2	12	TA203344.1135	TA503344.1135
0.4488			11.400	1/4-18 NPSC		102	55	40	45	2.2	12	TA203344.1140	TA503344.1140
0.4508			11.450		M12x1.25	102	55	40	45	2.2	12	TA203344.1145	TA503344.1145
0.4528			11.500	1/2-20 UNF		102	55	40	45	2.3	12	TA203344.1150	TA503344.1150
0.4531	29/64		11.509			102	55	40	45	2.3	12	TA203344.1151	TA503344.1151
0.4567			11.600	1/2-20 UNJF	M12x1	102	55	40	45	2.3	12	TA203344.1160	TA503344.1160
0.4606			11.700			102	55	40	45	2.3	12	TA203344.1170	TA503344.1170
0.4646			11.800	1/2-28 UNEF	1/2-13 UNC	102	55	40	45	2.3	12	TA203344.1180	TA503344.1180