



Standard programme

Solid carbide drills

MILLER
MAPAL GROUP

INNOVATIVE PRODUCTION STRATEGIES FOR YOUR TECHNICAL ADVANCE

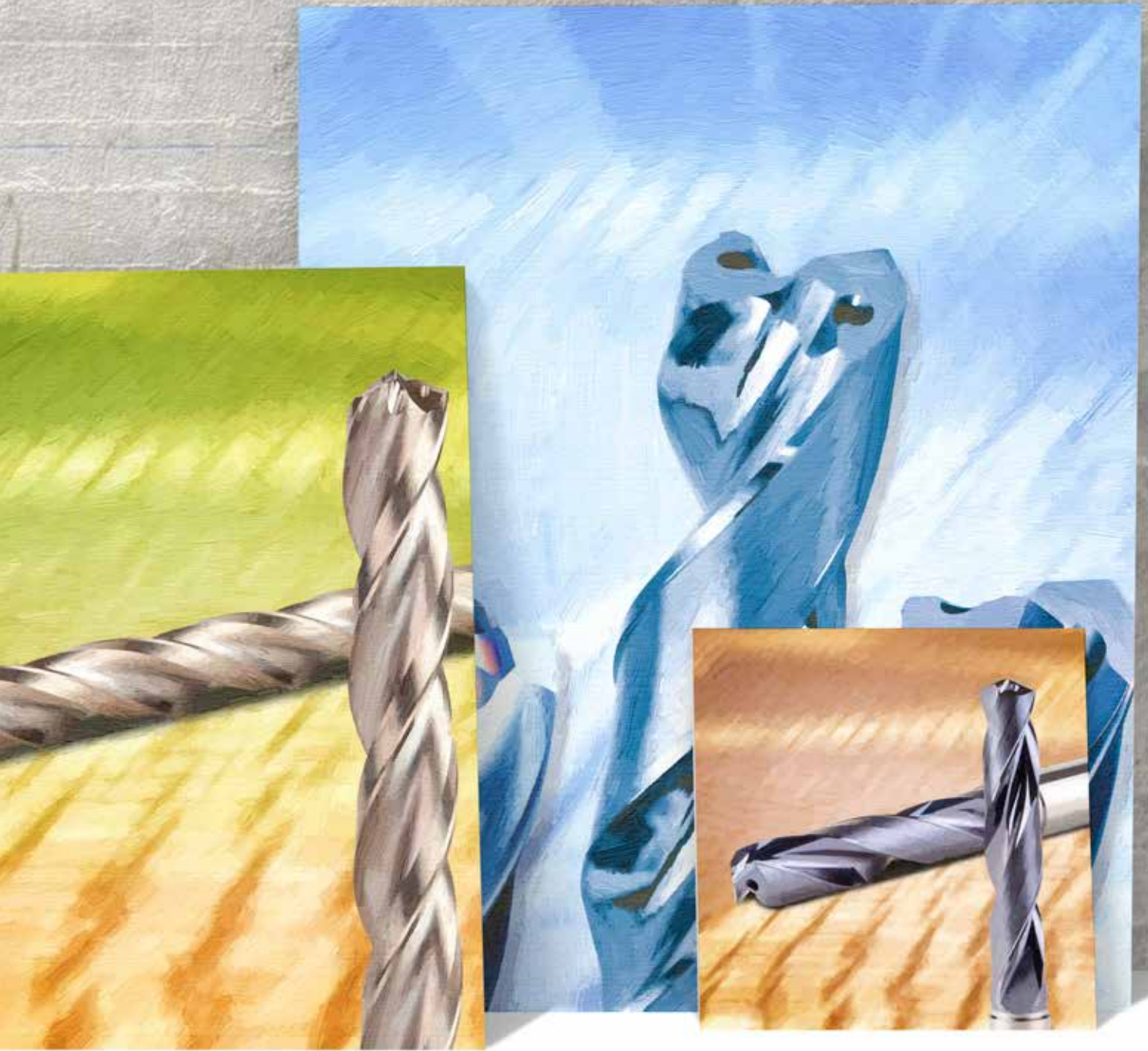
Miller GmbH & Co. KG, Präzisionswerkzeuge in Altenstadt produces solid carbide precision tools for drilling and milling with resounding success and an innovative production strategy. PCD tools for drilling into the solid round off the product portfolio.

The greatest strengths of MILLER are its extensive range of standard products with application-specific catalogue tools as well as its high degree of flexibility in developing outstanding complex special tools made of solid carbide.



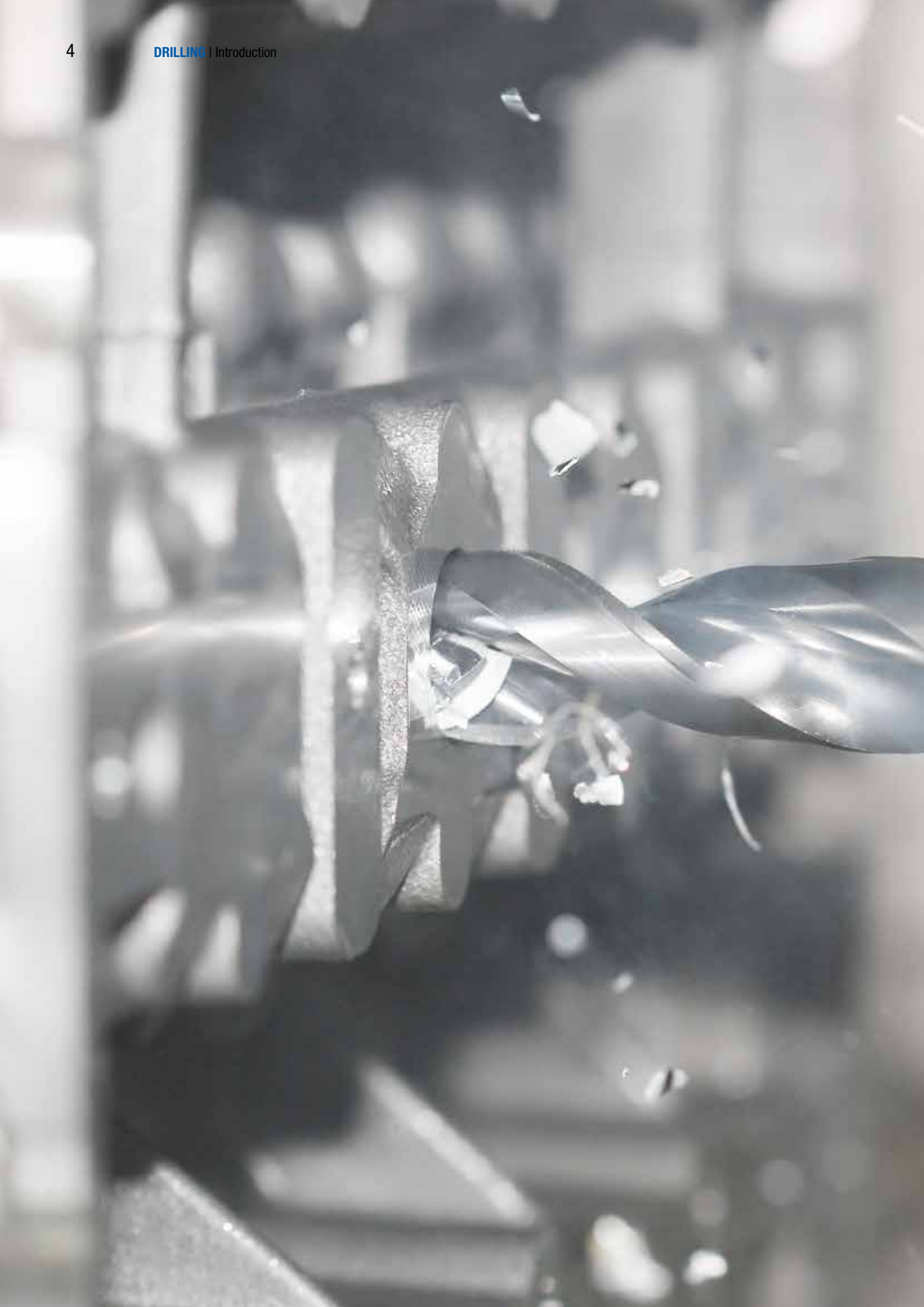
tool-tra

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CONTENTS

01 Introduction

Innovations Highlights	6
--------------------------------	---

02 Drilling

Product overview	10
Article overview solid carbide and replaceable head drills	12
Solid carbide drills	20
Replaceable head drills	238
Custom solutions	260

03 Technical appendix

General technical information	268
Cutting data recommendation	272

INNOVATIONS | HIGHLIGHTS

MEGA-Spike-Drill

With three cutting edges, operation in demanding drilling situations with up to twice the feed

► more from page 162



The triple edge drill MEGA-Spike-Drill achieves more bores, a longer tool life and lower machining costs compared to its double edge equivalent. The MEGA-Spike-Drill makes it possible to machine with a significantly higher feed rate. In both standard and special designs, it combines process reliability and high performance. It is a universal drill for a wide range of materials and provides rounder bores and reduced burr formation. These results are achieved thanks in part to

the innovative geometry that gives rise to optimum chip removal and a low cutting pressure. The MEGA-Spike-Drill is also convincing for long-chipping workpiece materials due to its special chip formation.

AT A GLANCE

- Innovative lead geometry for very good chip removal and low cutting pressure
- Ideal for through-drilling or on entry into cross bores
- Ideal for inclined bore entrances
- High feed despite demanding drilling situation

MEGA-Drill-Steel-Plus

50 percent longer drilling with significantly higher performance

► more from page 90



With modified cutting edges and chip flutes, the twin cutting edged MEGA-Drill-Steel drill is suitable for reliable and cost-effective drilling in steel materials. Now MILLER is presenting a new generation of this drill, the MEGA-Drill-Steel-Plus, that offers users a significant boost in wear resistance and performance.

On the one hand, the chip flute geometry has been optimised. On the other hand, a newly developed coating is used. In combination with the

modified cutting edge preparation, this offers a 50 percent longer tool life. Furthermore, the performance of the new drill has been significantly improved. Drilling is possible with a 15 percent higher cutting speed and a 15 percent higher feed rate compared with the predecessor model.

That means lower costs per part and hence more cost-effectiveness for the user.

AT A GLANCE

- Available in the diameter range from 3 to 25 mm with shank forms HA and HE for the steel machining
- With internal cooling available in lengths of 3x, 5x and 8xD, without internal cooling in 3x and 5xD
- Optimised chip flute geometry

Mono-Drill-Plastic

New level of performance on machining plastic

► [more from page 234](#)



The Mono-Drill-Plastic was specially developed for machining thermoplastics with poor thermal conductivity and relatively low melting temperatures such as PEEK, POM or PA 6.

With the geometry of the so-called single-lip drill, also called the spindle drill, the extremely sharp cutting edge geometry, the special point thinning and the large polished chip flute, a new level of performance for machining modern plastic work-

piece materials is achieved. Bore tolerances up to IT7 are realised. Along with the usage for machining plastics, the Mono-Drill-Plastic can also be used for machining aluminium.

AT A GLANCE

- Drilling of thermoplastics such as PEEK, POM or PA 6
- Also suitable for machining aluminium
- High stiffness and wear resistance
- No smear-up of the material
- Optimum chip transport and heat resistance due to the large polished chip flute

MEGA-180°-Drill

Drilling from solid with a flat bottom of the bore and drilling on inclined surfaces

► [more from page 194](#)



The MEGA-180°-Drill has a 180° point angle and a special geometry to produce a flat bottom of the bore.

Normally two machining processes are required to manufacture the bore and bottom of the bore. During the first step the bore would be produced to the required depth, followed in the second step by countersinking. These two steps are efficiently combined into one machining cycle on the MEGA-180°-Drill.

Thanks to the four-chamfer geometry and the therefore very good guidance in the bore, the MEGA-180°-Drill achieves optimum circularities and surface qualities in the bore. In addition, polished chip flutes ensure optimum chip removal.

The MEGA-180°-Drill is also suitable for drilling and piloting on inclined surfaces at an angle up to 45°. Compared to conventional 140° drill tips, the radial forces are reduced due to the flat tip.

AT A GLANCE

- 180° point angle and a special geometry
- Efficient combination of drilling and countersinking in one process
- Four-chamfer geometry ensures very good guidance in the bore
- Drilling and piloting on inclined surfaces at an angle up to 45°

DRILLING USING SOLID CARBIDE AND REPLACEABLE HEAD DRILLS

Optimal drills for almost all applications and workpiece materials







COMPETENCE IN DRILLING FROM SOLID USING SOLID CARBIDE AND REPLACEABLE HEAD SYSTEMS

Complete – available – powerful

For drilling MILLER offers a comprehensive standard programme of solid carbide drills and replaceable head drills for almost all machining operations. The programme includes universal drills as well as tools for machining cast iron, non-ferrous metals, steels, lightweight or difficult to machine materials. Solutions for high-speed and high-feed machining with three cutting edges form part of the range.

MILLER offers specially designed PCD-tipped drills for specific customer requirements. The

solid carbide and replaceable head drills can also be individually customised. The worldwide re-grinding service to original quality guarantees the highest cost-effectiveness for all tools.

ADVANTAGES

- High availability from stock
- Intermediate sizes and special solutions available at short notice
- For all materials
- Imperial dimensions from stock
- Worldwide re-grinding service
- The latest production technologies
- Also for minimum quantity lubrication



Competence in drilling from solid using solid carbide, PCD and replaceable head systems



Drilling from solid using solid carbide

MILLER offers a suitable solid carbide drill for practically all workpiece materials. The programme ranges from double edge and tripled edge drills, deep hole drills and drilling-reaming combinations. The drills are available as a universal design for a broad selection of workpiece materials and as specialists for the related workpiece materials in three different performance classes.



Replaceable head drills

The MILLER replaceable head drills impress due to good positioning accuracy as well as the best circularity and diameter tolerances. In addition, the connections guarantee not only high torque transmission and precision, they also permit optimal cooling of the cutting edges and therefore long tool lives. Simple, quick handling in combination with very good bore quality make them the cost-effective alternative to the solid carbide drill.



Custom solutions

Along with application-specific custom solutions in the area of solid carbide drills, for machining aluminium and increasingly also CFRP workpiece materials MILLER offers PCD-tipped drills optimally matched to the machining for drilling from solid. The portfolio ranges from the simple straight-fluted PCD-tipped drill to the twisted PCD-tipped step drills.

SELECTION OF A DRILL

Step-by-step to the right drill

The selection aid will lead you step-by-step to the right drill.

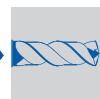


Drilling

1

Design

Select your preferred design.



Monolithic



Connection
TTS

2

Product class

Decide for a product class.



Basic Line:

Universal tools, broad application area,
low procurement costs

3

Material suitability

Identify your workpiece material as per the MMG
(MILLER machining group).



Steel



M

Stainless
steel

4.1

Part characteristics

Check the requirements that are placed on your tool
by the characteristics of the bore.



Maximum
drilling depth



Drilling
into the solid

4.2

Tool features

Check whether the geometric features meet your
requirements. Select internal cooling and drilling depth.



Diameter range

Number of cutting edges

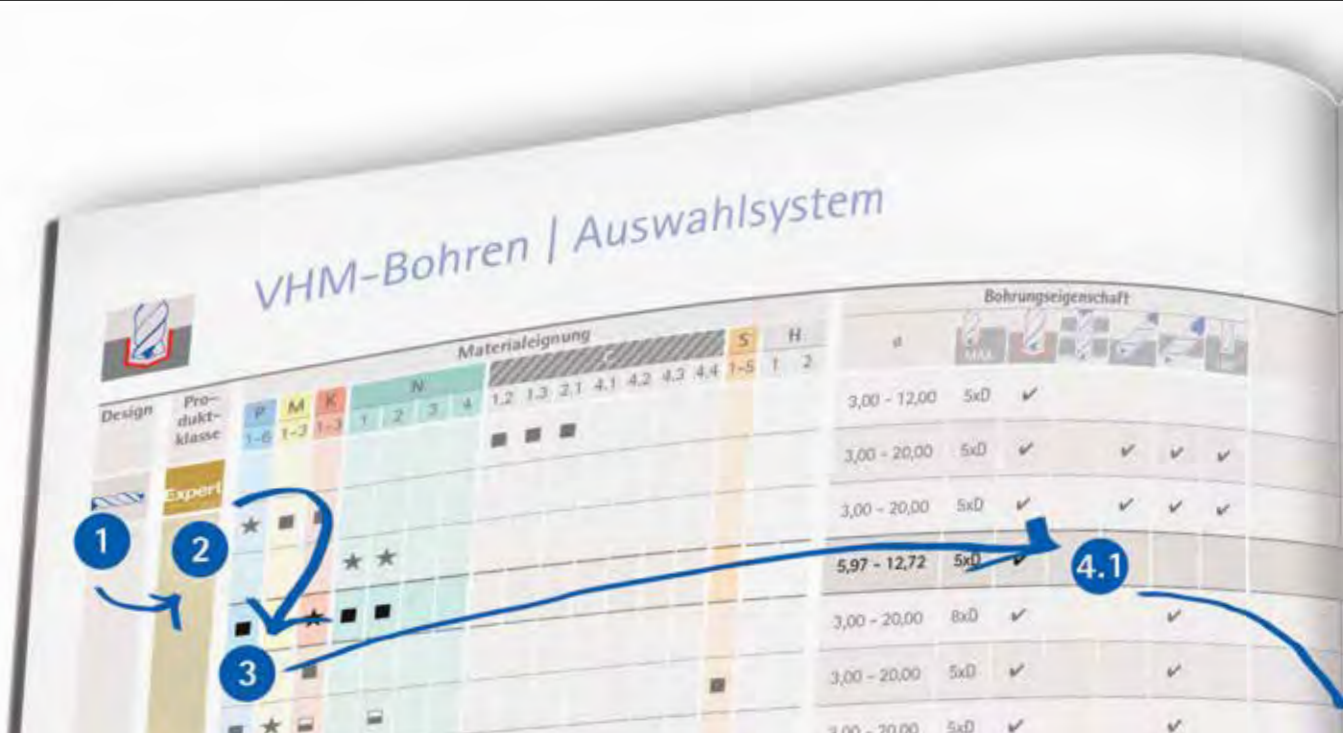
5

Product

Select your drill.



Specification





Performance Line:
High-performance tools, broad application area,
high productivity in series production manufacturing



Expert Line:
Specialist tools for selected applications,
maximum precision and productivity



Cast iron



Non-ferrous metals
and plastics



Composite
materials



Super alloys
and titanium



Hardened steel
and cast steel



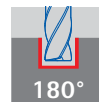
Interrupted
cut



Inclined
bore entrances



Inclined
bore exit



Flat 180° bottom
of the bore



Achievable bore
tolerance

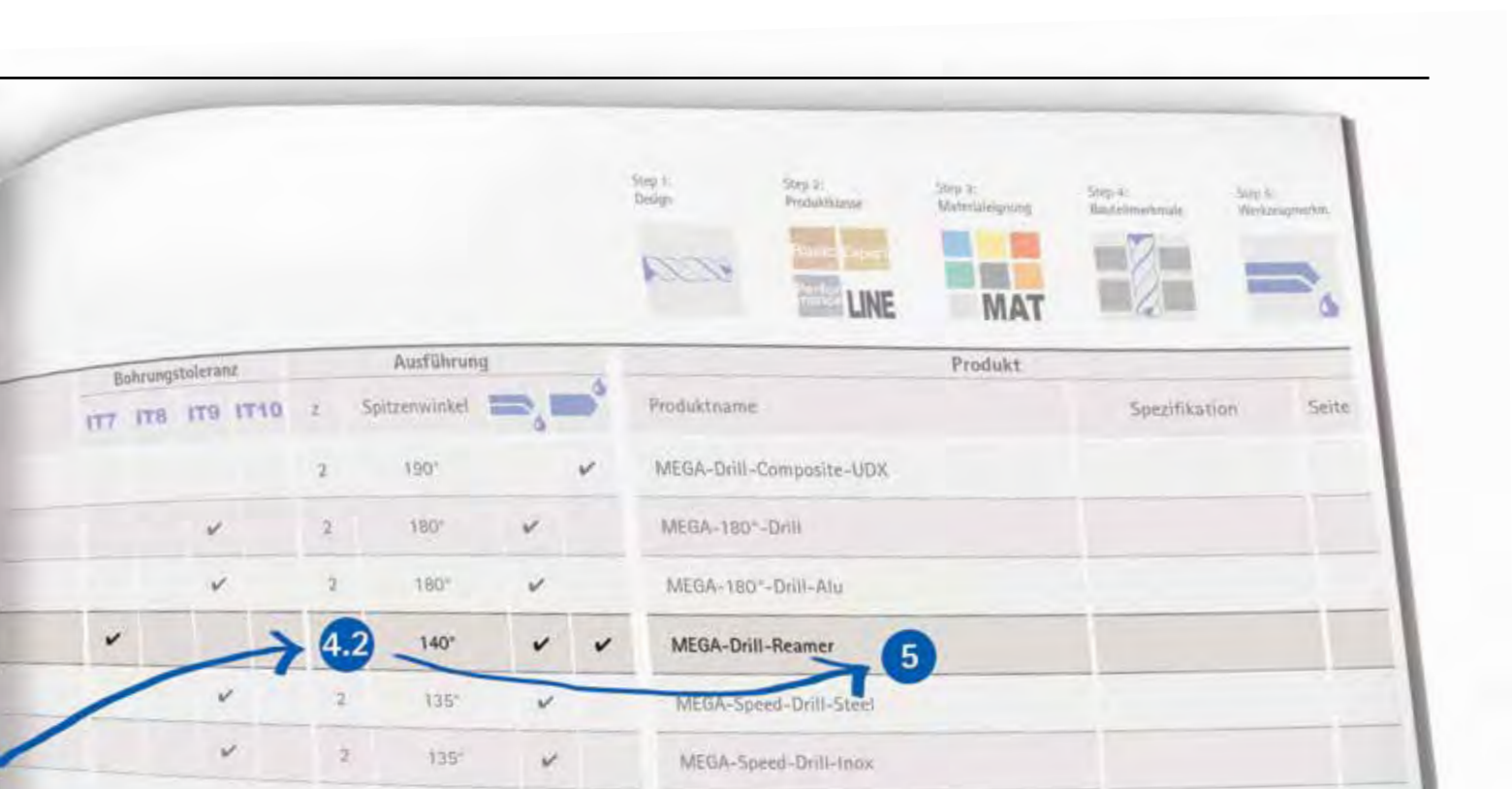
Point angle



Internal
cooling



External
cooling





Solid carbide drilling | Selection system (1/2)

Design	Product class	Material suitability																	Bore characteristic													
		P			M			K			N				C					S		H		Ø [mm]	 MAX.							180°
		1-6	1-3		1	2	3	1	2	3	4	1	2	3	4	5	1-5	1	2													
	Basic LINE																			1,00 - 20,00	6xD	✓										
																					1,00 - 20,00	12xD	✓									
																					3,00 - 20,00	12xD	✓									
																					0,50 - 6,30											
	Performance LINE																			2,80 - 20,00	12xD	✓										
		★																			3,00 - 25,00	8xD	✓									
																					2,50 - 14,00		✓									
																					2,80 - 20,00	8xD	✓									
							★	★													2,80 - 16,00	12xD	✓									
																					3,00 - 12,00	5xD	✓	✓			✓					
																				★	★	2,55 - 16,00	4xD	✓								
																					1,00 - 2,90	12xD	✓									
		★																			3,00 - 16,00	40xD	✓				✓					
							★	★													3,00 - 16,00	40xD	✓				✓					
		★																			5,00 - 20,00	8xD	✓	✓	✓	✓						
																					3,00 - 20,00	12xD	✓	✓			✓					
																					0,50 - 2,90	5xD	✓									
																					2,50 - 12,00	5xD	✓									

Step 1:
Design

Step 2:
Product class

Step 3:
Material suitability

Step 4:
Part characteristics

Step 5:
Tool features


Bore tolerance				Design				Product			
IT7	IT8	IT9	IT10	z	Point angle			Product name	Specification		Page
		✓		2	140°	✓	✓	ECU-Drill-Uni	M6704, M6804, M6806		28
		✓		2	135° / 140°	✓	✓	ECU-Drill-Steel	M6003, M6005, M6103, M6105, M6108, M6112		39
		✓		2	130°	✓		ECU-G-Drill	M2605, M2608, M2612		56
				2	120° / 60°		✓	ECU-Centre-Drill	M1200		65
		✓		2	140°	✓	✓	MEGA-Drill-Steel	M2003, M2005, M2103, M2105, M2108, M2112		70
		✓		2	140° / 135°	✓	✓	MEGA-Drill-Steel-Plus	M2003P, M2005P, M2103P, M2105P, M2108P		90
		✓		2	140°	✓	✓	MEGA-Step-Drill-Steel	M2303, M2403		88
		✓		2	140°	✓	✓	MEGA-Drill-Inox	M1703, M1705, M1803, M1805, M1808		109
		✓		2	140°	✓	✓	MEGA-Drill-Alu	M2705, M2803, M2805, M2808, M2812		124
		✓		2	140°	✓		MEGA-Drill-Inco	M9305		135
		✓		2	140°		✓	MEGA-Drill-Hardened	M1600		136
		✓		2	140°	✓		MEGA-SMART-Drill	M1905, M1908, M1912		148
		✓		2	130° / 135°	✓		MEGA-Deep-Drill	M2115, M2120, M2125, M2130, M2140		151
		✓		2	130° / 135°	✓		MEGA-Deep-Drill-Alu	M2815, M2820, M2825, M2830, M2840		156
		✓		3	135° / 140°	✓		MEGA-Spike-Drill-Uni	M9535, M9538		162
	✓			2	140°	✓	✓	MEGA-Quadro-Drill	M2075, M2175, M2178, M2182		172
		✓			90°	✓		MEGA-Drill-Composite-MD-Micro	M1985		139
		✓			90°		✓	MEGA-Drill-Composite-MD	M2925		140



Solid carbide drilling | Selection system (2/2)

Design	Product class	Material suitability																	Bore characteristic									
		P	M	K	N				C							S	H		Ø [mm]									
		1-6	1-3	1-3	1	2	3	4	1.2	1.3	2.1	4.1	4.2	4.3	4.4	1-5	1	2										
	Expert LINE							★	★	★									3,00 - 12,00	5xD	✓							
		★	■	■															3,00 - 20,00	5xD	✓			✓	✓	✓		
					★	★													3,00 - 20,00	5xD	✓			✓	✓	✓		
		■		★	■	■													5,97 - 12,72	5xD	✓							
		★		■															3,00 - 20,00	8xD	✓				✓			
		■	★													■			3,00 - 20,00	5xD	✓				✓			
				★															3,00 - 20,00	5xD	✓				✓			
																	■			3,00 - 12,00	5xD	✓				✓		
				■	■															6,00 - 20,00	8xD	✓						
								★	■											0,97 - 13,03	5xD	✓						
	Performance LINE	■		■													■		12,00 - 45,00	12xD	✓							
		■	★	■		■										■			12,00 - 45,00	12xD	✓							
					★	★													12,00 - 45,00	12xD	✓							
		★		■															12,00 - 45,00	12xD	✓							
				★															12,00 - 45,00	12xD	✓							
																			12,00 - 45,00	12xD	✓							

★ 1st choice

■ highly suitable

■ suitable in some situations

Step 1:
Design

Step 2:
Product class

Step 3:
Material suitability

Step 4:
Part characteristics

Step 5:
Tool features


	Bore tolerance				Design				Product			
	IT7	IT8	IT9	IT10	z	Point angle			Product name	Specification		Page
		✓			2	90°	✓	✓	MEGA-Drill-Composite-UDX	M2915, M2935		143
			✓		2	180°	✓		MEGA-180°-Drill	M9183, M9185		194
			✓		2	180°	✓		MEGA-180°-Drill-Alu	M9883, M9885		194
	✓				2	140°	✓	✓	MEGA-Drill-Reamer	M2253, M2263, M2265		186
			✓		2	135°	✓		MEGA-Speed-Drill-Steel	M9103, M9105, M9108		208
			✓		2	135°	✓		MEGA-Speed-Drill-Inox	M9405		208
			✓		2	130°	✓		MEGA-Speed-Drill-Iron	M9505		208
			✓		2	130°	✓		MEGA-Speed-Drill-Titan	M9205		208
			✓		4	140°	✓		GIGA-Drill	M2195, M2198		228
					1	120°		✓	Mono-Drill-Plastic	M2955		234

			✓		2	140°	✓		Replaceable head drill TTD	Type 01 - Uni		238
			✓		2	138°	✓		Replaceable head drill TTD	Type 02 - Inox		238
			✓		2	140°	✓		Replaceable head drill TTD	Type 03 - Alu		238
			✓		2	138°	✓		Replaceable head drill TTD	Type 04 - Steel		238
			✓		2	140°	✓		Replaceable head drill TTD	Type 05 - Iron		238

Model key

Solid carbide and replaceable head drills and holders

Solid carbide drills

M

2105

-

0300

-

A

-

Drill type

Solid carbide drill

Drill diameter
in 0,01 mm

Shank form

A Cylindrical shank
in accordance with DIN 6535 HA
B Cylindrical shank
in accordance with DIN 6535 HB
E Cylindrical shank
in accordance with DIN 6535 HE

Changing systems TTD

TTD

-

4F

01

-

2450

-

Series

Number of guiding chamfers

Type

Drill diameter
in 0,01 mm

TTD: Replaceable
head drill

4F 4 chamfers (Type 01, 03, 05)
3F 3 chamfers (Type 02, 04)

01 Uni
02 Inox
03 Alu
04 Steel
05 Iron

Holder range TTS for TTD

TTS

100

-

12

-

DR1

-

Holder system

Cylindrical design
with internal cooling

Interface size TTS

Minimum drilling
depth

12 teeth
18 teeth

DR1 1xD
DR3 3xD
DR5 5xD
DR8 8xD
DR12 12xD

E

Coating

A	Mx11	M	MxH	V	Mx5
E	MxF Mx8	P	MxM	W	Mx4
H	MxA	Q	Diamond coating		
J	MxB	R	MxP		
K	Mx2	U	Uncoated		Other coatings on request.

M x F

Coating

MxF	Standard Type 01/02
MxA	Standard Type 03
MxP	Standard Type 04
MxM	Standard Type 05

Other coatings on request.

1 2 0 0

Drill diameter
in mm

-

2 5

Shank diameter
in 0,01 mm

-

H A

Shank form

HA	Cylindrical shank in accordance with DIN 6535 HA
HB	Cylindrical shank in accordance with DIN 6535 HB
HE	Cylindrical shank in accordance with DIN 6535 HE



DRILLING USING SOLID CARBIDE

Introduction

Product overview	22
------------------	----

ECU-Drill

Product overview	26
ECU-Drill-Uni	28
ECU-Drill-Steel	39
ECU-G-Drill	56
ECU-Centre-Drill	65

MEGA-Drill

Product overview	68
MEGA-Drill-Steel	70
MEGA-Step-Drill-Steel	88
MEGA-Drill-Steel-Plus	90
MEGA-Drill-Inox	109
MEGA-Drill-Alu	124
MEGA-Drill-Inco	135
MEGA-Drill-Hardened	136
MEGA-Drill-Composite	139
MEGA-SMART-Drill	148
MEGA-Deep-Drill	151

MEGA-Spike-Drill

Product overview	164
MEGA-Spike-Drill-Uni	166

MEGA-Quadro-Drill

MEGA-Quadro-Drill	174
-------------------	-----

MEGA-Drill-Reamer

MEGA-Drill-Reamer	188
-------------------	-----

MEGA-180°-Drill

MEGA-180°-Drill	196
MEGA-180°-Drill-Alu	202

MEGA-Speed-Drill

Product overview	210
MEGA-Speed-Drill-Steel	212
MEGA-Speed-Drill-Inox	221
MEGA-Speed-Drill-Iron	224
MEGA-Speed-Drill-Titan	227

GIGA-Drill

GIGA-Drill	230
------------	-----

Mono-Drill-Plastic

Mono-Drill-Plastic	236
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PRODUCT OVERVIEW

The right tool for every material

MILLER has been researching intensively into the various challenges facing drilling operations for decades and as a consequence has gained extensive experience and competence. This work has produced, among others in the competence centre in Altenstadt, innovative tools made of solid carbide for almost all workpiece materials - for cast iron, non-ferrous metals, steels and difficult to machine materials. The standard programme of solid carbide tools in-

cludes double edge and triple edge drills of universal application, deep hole drills up to 40xD, drill reamers as well as other drilling tools for specific machining operations.



Basic Line:

Universal tools, broad application area, low procurement costs



Performance Line:

High-performance tools, broad application area, high productivity in series production manufacturing



Expert Line:

Specialist tools for selected applications, maximum precision and productivity

Drilling using solid carbide



ECU-Drill

Double edge twist drills with and without internal cooling for a broad range of workpiece materials.



Ø range: 1,00 - 20,00 mm

Drilling depth:



MEGA-Drill

Twist drills with two cutting edges, optimally matched to the material to be machined.



Ø range: 1,00 - 25,00 mm

Drilling depth:



MEGA-Step-Drill-Steel

Outstanding performance for core holes and chamfers for metric threads.



Ø range: 2,50 - 14,00 mm



MEGA-Deep-Drill

Efficient production of deep bores up to 40xD.



Ø range: 3,00 - 16,00 mm

Drilling depth:



MEGA-Spike-Drill-Uni

The new standard with three cutting edges - drilling with up to twice the feed rate where other drills fail.



Ø range: 5,00 - 20,00 mm

Drilling depth:





Re-grinding

To exploit the full potential of solid carbide tools, re-grinding and re-coating to original manufacturer quality are essential. Only then it is possible to guarantee reliable, consistent machining results and machining performance of up to 100 percent compared to the new tool. For this reason MILLER offers to recondition tools to original manufacturer quality. And that also worldwide with comprehensive service and uniform standards.

Drilling using solid carbide

					
MEGA-Quadro-Drill Four guiding chamfers for maximum bore quality, concentricity and positioning accuracy. Performance LINE Ø range: 3,00 - 20,00 mm Drilling depth: 5xD 8xD 12xD P M K	GIGA-Drill Four cutting edges and four guiding chamfers for optimum guiding and perfect bore quality. Expert LINE Ø range: 6,00 - 20,00 mm Drilling depth: 5xD 8xD K N	MEGA-Drill-Reamer Two processes - drilling and reaming - combined in one tool. Expert LINE Ø range: 4,00 - 16,00 mm Drilling depth: 3xD 5xD P K N	MEGA-180°-Drill Drilling with a flat bottom of the bore and drilling on inclined surfaces. Expert LINE Ø range: 3,00 - 20,00 mm Drilling depth: 3xD 5xD P M K N	MEGA-Speed-Drill Three guiding chamfers for high performance and process reliability. Expert LINE Ø range: 3,00 - 20,00 mm Drilling depth: 3xD 5xD 8xD P M K S	Mono-Drill-Plastic Specialist with single-lip geometry for machining thermoplastics and aluminium. Expert LINE Ø range: 0,97 - 13,03 mm Drilling depth: 5xD N C
Page 172	Page 228	Page 186	Page 194	Page 208	Page 234





ECU-DRILL

Introduction

Product overview	26
------------------------	----

ECU-Drill-Uni

ECU-Drill-Uni, 4xD - internal cooling	28
ECU-Drill-Uni, 4xD - external cooling	32
ECU-Drill-Uni, 6xD - internal cooling	36

ECU-Drill-Steel

ECU-Drill-Steel, 3xD - internal cooling	39
ECU-Drill-Steel, 3xD - external cooling	42
ECU-Drill-Steel, 5xD - internal cooling	45
ECU-Drill-Steel, 5xD - external cooling	48
ECU-Drill-Steel, 8xD - internal cooling	51
ECU-Drill-Steel, 12xD - internal cooling	54

ECU-G-Drill

ECU-G-Drill, 5xD - internal cooling	56
ECU-G-Drill, 8xD - internal cooling	59
ECU-G-Drill, 12xD - internal cooling	62

ECU-Centre-Drill

ECU-Centre-Drill	65
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PRODUCT OVERVIEW

ECU-Drill: Uni, Steel, G-Drill and Centre-Drill

With the ECU-Drill series, MILLER presents a range of drills featuring versatile use in different materials. Use of the latest production technologies makes it possible to offer an excellent, impressive and extremely economical programme selection with a good price-to-performance ratio. MILLER relies on its proven geometries here. Combined with special cutting materials and coatings, they stand for maximum precision and process reliability.

The range is supplemented by straight-fluted drills that always have guiding chamfers for support in the bore.



ECU-Drill-Uni

Due to its geometry and coating the ECU-Drill-Uni is ideally suited to universal usage. In this way steel, inox and cast iron can be drilled cost-effectively and reliably. The ECU-Drill-Uni is available as a coated variant both for internal and for external coolant supply.

Basic
LINE

Ø range: 1,00 - 20,00 mm

Drilling depth:

4xD 6xD

P M K



ECU-Drill-Steel

The ECU-Drill-Steel is optimally designed for machining steel due to the cutting edge design. The ECU-Drill-Steel is available with a coating as a variant for both internal and also external coolant supply.

Basic
LINE

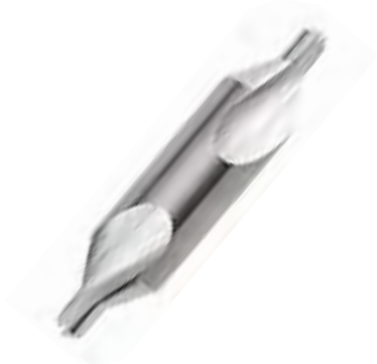
Ø range: 1,00 - 20,00 mm

Drilling depth:

3xD 5xD 8xD 12xD

P K



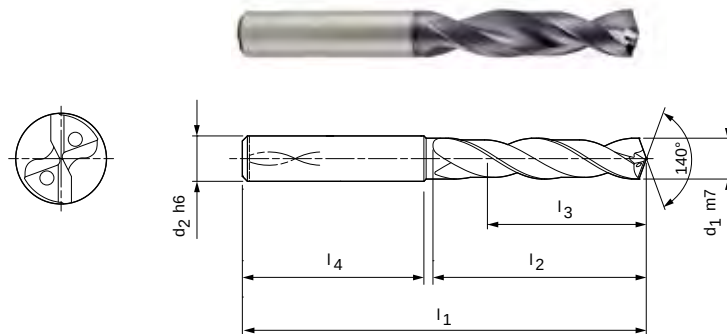
	
ECU-G-Drill The drilling tools with straight chip flutes supplement the ECU-Drill range. The straight-fluted ECU-G-Drills have four guiding chamfers for support in the bore and are suitable for machining grey cast iron and non-ferrous metals. Basic LINE ø range: 3,00 - 20,00 mm Drilling depth: 5xD 8xD 12xD K N	ECU-Centre-Drill The ideal solid carbide tool for producing centring bores to DIN standards in rotationally symmetrical parts. Basic LINE ø range: 0,50 - 6,30 mm P M
Page 56	Page 65

ECU-Drill-Uni

4xD, internal cooling
M6804

Design:

Drill diameter: 1,00 - 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: Mx5
Number of cutting edges: 2
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
1,00	4	45	6	5	32	M6804-0100AV	30513784
1,10	4	45	6,5	5	31,5	M6804-0110AV	30513785
1,20	4	45	7	5	31	M6804-0120AV	30513786
1,30	4	45	8	6	30,5	M6804-0130AV	30513787
1,40	4	45	8,5	6	30	M6804-0140AV	30513788
1,50	4	50	9	7	35	M6804-0150AV	30513789
1,60	4	50	9,5	7	34,5	M6804-0160AV	30513790
1,70	4	50	10	8	34	M6804-0170AV	30513791
1,80	4	50	11	8	33,5	M6804-0180AV	30513792
1,90	4	50	11,5	9	33	M6804-0190AV	30513793
2,00	4	50	12	9	33	M6804-0200AV	30513794
2,10	4	55	12,5	9	37,5	M6804-0210AV	30513795
2,20	4	55	13	10	37	M6804-0220AV	30513796
2,30	4	55	14	10	36,5	M6804-0230AV	30513797
2,40	4	55	14,5	11	36	M6804-0240AV	30513798
2,50	4	55	15	11	35,5	M6804-0250AV	30513799
2,60	4	55	15,5	12	35,5	M6804-0260AV	30513800
2,70	4	55	16	12	35	M6804-0270AV	30513801
*2,80	4	55	17	13	34,5	M6804-0280AV	30513802
2,90	4	55	17,5	13	34	M6804-0290AV	30513803
3,00	6	62	22	16	36	M6804-0300AV	30246405
3,10	6	62	22	16	36	M6804-0310AV	30246406
3,20	6	62	22	16	36	M6804-0320AV	30246407
3,30	6	62	22	16	36	M6804-0330AV	30246408
3,40	6	62	22	16	36	M6804-0340AV	30246409
3,50	6	62	22	16	36	M6804-0350AV	30246410
3,60	6	62	22	16	36	M6804-0360AV	30246411
*3,70	6	62	22	16	36	M6804-0370AV	30246412
3,80	6	66	26	22	36	M6804-0380AV	30246413
3,90	6	66	26	22	36	M6804-0390AV	30246414
4,00	6	66	26	22	36	M6804-0400AV	30246415
4,10	6	66	26	22	36	M6804-0410AV	30246416
4,20	6	66	26	22	36	M6804-0420AV	30246417
4,30	6	66	26	22	36	M6804-0430AV	30246418
4,40	6	66	26	22	36	M6804-0440AV	30246419

ECU-Drill-Uni | M6804, 4xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
4,50	6	66	26	22	36	M6804-0450AV	30246420
4,60	6	66	26	22	36	M6804-0460AV	30246421
*4,65	6	66	26	22	36	M6804-0465AV	30296630
4,70	6	66	26	22	36	M6804-0470AV	30246422
4,80	6	66	30	24	36	M6804-0480AV	30246423
4,90	6	66	30	24	36	M6804-0490AV	30246424
5,00	6	66	30	24	36	M6804-0500AV	30246425
5,10	6	66	30	24	36	M6804-0510AV	30246426
5,20	6	66	30	24	36	M6804-0520AV	30246427
5,30	6	66	30	24	36	M6804-0530AV	30246428
5,40	6	66	30	24	36	M6804-0540AV	30246429
5,50	6	66	30	24	36	M6804-0550AV	30246430
*5,55	6	66	30	24	36	M6804-0555AV	30296631
5,60	6	66	30	24	36	M6804-0560AV	30246431
5,70	6	66	30	24	36	M6804-0570AV	30246432
5,80	6	66	30	24	36	M6804-0580AV	30246433
5,90	6	66	30	24	36	M6804-0590AV	30246434
6,00	6	66	30	24	36	M6804-0600AV	30246435
6,10	8	79	38	30	36	M6804-0610AV	30246436
6,20	8	79	38	30	36	M6804-0620AV	30246437
6,30	8	79	38	30	36	M6804-0630AV	30246438
6,40	8	79	38	30	36	M6804-0640AV	30246439
6,50	8	79	38	30	36	M6804-0650AV	30246440
6,60	8	79	38	30	36	M6804-0660AV	30246441
6,70	8	79	38	30	36	M6804-0670AV	30246442
6,80	8	79	38	30	36	M6804-0680AV	30246443
6,90	8	79	38	30	36	M6804-0690AV	30246444
7,00	8	79	38	30	36	M6804-0700AV	30246445
7,10	8	79	42	34	36	M6804-0710AV	30246446
7,20	8	79	42	34	36	M6804-0720AV	30246447
7,30	8	79	42	34	36	M6804-0730AV	30246448
7,40	8	79	42	34	36	M6804-0740AV	30246449
*7,45	8	79	42	34	36	M6804-0745AV	30530768
7,50	8	79	42	34	36	M6804-0750AV	30246450
7,60	8	79	42	34	36	M6804-0760AV	30246451
7,70	8	79	42	34	36	M6804-0770AV	30246452
7,80	8	79	42	34	36	M6804-0780AV	30246453
7,90	8	79	42	34	36	M6804-0790AV	30246454
8,00	8	79	42	34	36	M6804-0800AV	30246455
8,10	10	89	49	38	40	M6804-0810AV	30246456
8,20	10	89	49	38	40	M6804-0820AV	30246457
8,30	10	89	49	38	40	M6804-0830AV	30246458
8,40	10	89	49	38	40	M6804-0840AV	30246459
8,50	10	89	49	38	40	M6804-0850AV	30246460
8,60	10	89	49	38	40	M6804-0860AV	30246461
8,70	10	89	49	38	40	M6804-0870AV	30246462
8,80	10	89	49	38	40	M6804-0880AV	30246463
8,90	10	89	49	38	40	M6804-0890AV	30246464
9,00	10	89	49	38	40	M6804-0900AV	30246465
9,10	10	89	49	38	40	M6804-0910AV	30246466
9,20	10	89	49	38	40	M6804-0920AV	30246467
*9,30	10	89	49	40	40	M6804-0930AV	30246468
9,40	10	89	49	40	40	M6804-0940AV	30246469
9,50	10	89	49	40	40	M6804-0950AV	30246470
9,60	10	89	49	40	40	M6804-0960AV	30246471

Continued on next page.

ECU-Drill-Uni | M6804, 4xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
9,70	10	89	49	40	40	M6804-0970AV	30246472
9,80	10	89	49	40	40	M6804-0980AV	30246473
9,90	10	89	49	40	40	M6804-0990AV	30246474
10,00	10	89	49	40	40	M6804-1000AV	30246475
10,10	12	102	56	45	45	M6804-1010AV	30294596
10,20	12	102	56	45	45	M6804-1020AV	30246476
10,30	12	102	56	45	45	M6804-1030AV	30246477
10,40	12	102	56	45	45	M6804-1040AV	30294597
10,50	12	102	56	45	45	M6804-1050AV	30246478
10,60	12	102	56	45	45	M6804-1060AV	30294598
10,70	12	102	56	45	45	M6804-1070AV	30294599
10,80	12	102	56	45	45	M6804-1080AV	30246479
10,90	12	102	56	45	45	M6804-1090AV	30294600
11,00	12	102	56	45	45	M6804-1100AV	30246480
11,10	12	102	56	45	45	M6804-1110AV	30294601
*11,20	12	102	56	45	45	M6804-1120AV	30246481
11,30	12	102	56	45	45	M6804-1130AV	30294602
11,40	12	102	56	45	45	M6804-1140AV	30294603
11,50	12	102	56	45	45	M6804-1150AV	30246482
11,60	12	102	56	45	45	M6804-1160AV	30294604
11,70	12	102	56	45	45	M6804-1170AV	30294605
11,80	12	102	56	45	45	M6804-1180AV	30246483
11,90	12	102	56	45	45	M6804-1190AV	30294606
12,00	12	102	56	45	45	M6804-1200AV	30246484
12,20	14	107	61	50	45	M6804-1220AV	30246485
12,50	14	107	61	50	45	M6804-1250AV	30246486
12,70	14	107	61	50	45	M6804-1270AV	30303991
12,80	14	107	61	50	45	M6804-1280AV	30246487
13,00	14	107	61	50	45	M6804-1300AV	30246488
13,20	14	107	61	50	45	M6804-1320AV	30414072
13,50	14	107	61	50	45	M6804-1350AV	30246489
13,70	14	107	61	50	45	M6804-1370AV	30345480
13,80	14	107	61	50	45	M6804-1380AV	30246490
14,00	14	107	61	50	45	M6804-1400AV	30246491
14,20	16	115	65	51	48	M6804-1420AV	30246492
14,50	16	115	65	51	48	M6804-1450AV	30246493
14,70	16	115	65	51	48	M6804-1470AV	30463684
14,80	16	115	65	51	48	M6804-1480AV	30246495
15,00	16	115	65	51	48	M6804-1500AV	30246496
15,10	16	115	65	51	48	M6804-1510AV	30246497
15,20	16	115	65	51	48	M6804-1520AV	30246498
15,50	16	115	65	51	48	M6804-1550AV	30246499
15,70	16	115	65	51	48	M6804-1570AV	30328796
15,80	16	115	65	51	48	M6804-1580AV	30246500
16,00	16	115	65	51	48	M6804-1600AV	30246501
16,50	18	123	73	53	48	M6804-1650AV	30246502
16,80	18	123	73	53	48	M6804-1680AV	30513804
17,00	18	123	73	53	48	M6804-1700AV	30246503
17,30	18	123	73	53	48	M6804-1730AV	30246504
17,50	18	123	73	53	48	M6804-1750AV	30246505
17,70	18	123	73	53	48	M6804-1770AV	30246506
17,80	18	123	73	53	48	M6804-1780AV	30530769
18,00	18	123	73	53	48	M6804-1800AV	30246507
18,50	20	131	79	55	50	M6804-1850AV	30246508
18,80	20	131	79	55	50	M6804-1880AV	30530770

ECU-Drill-Uni | M6804, 4xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
19,00	20	131	79	55	50	M6804-1900AV	30246509
19,50	20	131	79	55	50	M6804-1950AV	30246511
19,80	20	131	79	55	50	M6804-1980AV	30530771
20,00	20	131	79	55	50	M6804-2000AV	30246512

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

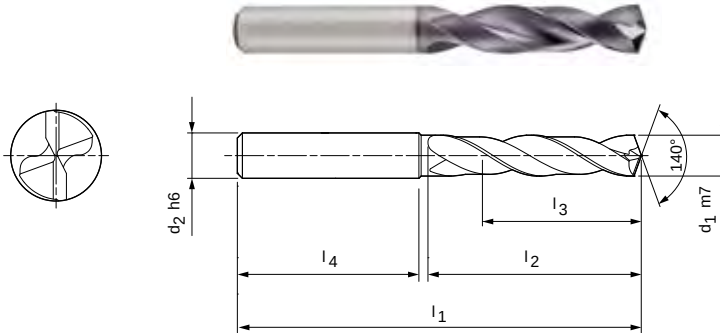
Special designs and other coatings on request.

ECU-Drill-Uni

4xD, external cooling
M6704

Design:

Drill diameter: 1,00 - 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: Mx5
Number of cutting edges: 2
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
1,00	4	45	6	5	32	M6704-0100AV	30514644
1,10	4	45	6,5	5	31,5	M6704-0110AV	30514645
1,20	4	45	7	5	31	M6704-0120AV	30514646
1,30	4	45	8	6	30,5	M6704-0130AV	30514647
1,40	4	45	8,5	6	30	M6704-0140AV	30514648
1,50	4	50	9	7	35	M6704-0150AV	30514650
1,60	4	50	9,5	7	34,5	M6704-0160AV	30514651
1,70	4	50	10	8	34	M6704-0170AV	30514652
1,80	4	50	11	8	33,5	M6704-0180AV	30514653
1,90	4	50	11,5	9	33	M6704-0190AV	30514654
2,00	6	58	16	11	36	M6704-0200AV	30246288
2,10	6	58	16	11	36	M6704-0210AV	30246289
2,20	6	58	16	11	36	M6704-0220AV	30246290
2,30	6	58	16	11	36	M6704-0230AV	30246291
2,40	6	58	16	11	36	M6704-0240AV	30246292
2,50	6	58	16	11	36	M6704-0250AV	30246293
2,60	6	58	16	11	36	M6704-0260AV	30246294
2,70	6	58	16	11	36	M6704-0270AV	30246295
*2,80	6	58	16	11	36	M6704-0280AV	30246296
2,90	6	58	16	11	36	M6704-0290AV	30246297
3,00	6	62	22	16	36	M6704-0300AV	30246298
3,10	6	62	22	16	36	M6704-0310AV	30246299
3,20	6	62	22	16	36	M6704-0320AV	30246300
3,30	6	62	22	16	36	M6704-0330AV	30246301
3,40	6	62	22	16	36	M6704-0340AV	30246302
3,50	6	62	22	16	36	M6704-0350AV	30246303
3,60	6	62	22	16	36	M6704-0360AV	30246304
*3,70	6	62	22	16	36	M6704-0370AV	30246305
3,80	6	66	26	22	36	M6704-0380AV	30246306
3,90	6	66	26	22	36	M6704-0390AV	30246307
4,00	6	66	26	22	36	M6704-0400AV	30246308
4,10	6	66	26	22	36	M6704-0410AV	30246309
4,20	6	66	26	22	36	M6704-0420AV	30246310
4,30	6	66	26	22	36	M6704-0430AV	30246311
4,40	6	66	26	22	36	M6704-0440AV	30246312

ECU-Drill-Uni | M6704, 4xD, external cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
4,50	6	66	26	22	36	M6704-0450AV	30246313
4,60	6	66	26	22	36	M6704-0460AV	30246314
*4,65	6	66	26	22	36	M6704-0465AV	30296622
4,70	6	66	26	22	36	M6704-0470AV	30246315
4,80	6	66	30	24	36	M6704-0480AV	30246316
4,90	6	66	30	24	36	M6704-0490AV	30246317
5,00	6	66	30	24	36	M6704-0500AV	30246318
5,10	6	66	30	24	36	M6704-0510AV	30246319
5,20	6	66	30	24	36	M6704-0520AV	30246320
5,30	6	66	30	24	36	M6704-0530AV	30246321
5,40	6	66	30	24	36	M6704-0540AV	30246322
5,50	6	66	30	24	36	M6704-0550AV	30246323
*5,55	6	66	30	24	36	M6704-0555AV	30296623
5,60	6	66	30	24	36	M6704-0560AV	30246324
5,70	6	66	30	24	36	M6704-0570AV	30246325
5,80	6	66	30	24	36	M6704-0580AV	30246326
5,90	6	66	30	24	36	M6704-0590AV	30246327
6,00	6	66	30	24	36	M6704-0600AV	30246328
6,10	8	79	38	30	36	M6704-0610AV	30246329
6,20	8	79	38	30	36	M6704-0620AV	30246330
6,30	8	79	38	30	36	M6704-0630AV	30246331
6,40	8	79	38	30	36	M6704-0640AV	30246332
6,50	8	79	38	30	36	M6704-0650AV	30246333
6,60	8	79	38	30	36	M6704-0660AV	30246334
6,70	8	79	38	30	36	M6704-0670AV	30246335
6,80	8	79	38	30	36	M6704-0680AV	30246336
6,90	8	79	38	30	36	M6704-0690AV	30246337
7,00	8	79	38	30	36	M6704-0700AV	30246338
7,10	8	79	42	34	36	M6704-0710AV	30246339
7,20	8	79	42	34	36	M6704-0720AV	30246340
7,30	8	79	42	34	36	M6704-0730AV	30246341
7,40	8	79	42	34	36	M6704-0740AV	30246342
*7,45	8	79	42	34	36	M6704-0745AV	30530758
7,50	8	79	42	34	36	M6704-0750AV	30246343
7,60	8	79	42	34	36	M6704-0760AV	30246344
7,70	8	79	42	34	36	M6704-0770AV	30246345
7,80	8	79	42	34	36	M6704-0780AV	30246346
7,90	8	79	42	34	36	M6704-0790AV	30246347
8,00	8	79	42	34	36	M6704-0800AV	30246348
8,10	10	89	49	38	40	M6704-0810AV	30246349
8,20	10	89	49	38	40	M6704-0820AV	30246350
8,30	10	89	49	38	40	M6704-0830AV	30246351
8,40	10	89	49	38	40	M6704-0840AV	30246352
8,50	10	89	49	38	40	M6704-0850AV	30246353
8,60	10	89	49	38	40	M6704-0860AV	30246354
8,70	10	89	49	38	40	M6704-0870AV	30246355
8,80	10	89	49	38	40	M6704-0880AV	30246356
8,90	10	89	49	38	40	M6704-0890AV	30246357
9,00	10	89	49	38	40	M6704-0900AV	30246358
9,10	10	89	49	38	40	M6704-0910AV	30246359
9,20	10	89	49	38	40	M6704-0920AV	30246360
*9,30	10	89	49	40	40	M6704-0930AV	30246361
9,40	10	89	49	40	40	M6704-0940AV	30246362
9,50	10	89	49	40	40	M6704-0950AV	30246363
9,60	10	89	49	40	40	M6704-0960AV	30246364

Continued on next page.

ECU-Drill-Uni | M6704, 4xD, external cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
9,70	10	89	49	40	40	M6704-0970AV	30246365
9,80	10	89	49	40	40	M6704-0980AV	30246366
9,90	10	89	49	40	40	M6704-0990AV	30246367
10,00	10	89	49	40	40	M6704-1000AV	30246368
10,10	12	102	56	45	45	M6704-1010AV	30294574
10,20	12	102	56	45	45	M6704-1020AV	30246369
10,30	12	102	56	45	45	M6704-1030AV	30246370
10,40	12	102	56	45	45	M6704-1040AV	30294575
10,50	12	102	56	45	45	M6704-1050AV	30246371
10,60	12	102	56	45	45	M6704-1060AV	30294576
10,70	12	102	56	45	45	M6704-1070AV	30294577
10,80	12	102	56	45	45	M6704-1080AV	30246372
10,90	12	102	56	45	45	M6704-1090AV	30294578
11,00	12	102	56	45	45	M6704-1100AV	30246373
11,10	12	102	56	45	45	M6704-1110AV	30294579
*11,20	12	102	56	45	45	M6704-1120AV	30246374
11,30	12	102	56	45	45	M6704-1130AV	30294580
11,40	12	102	56	45	45	M6704-1140AV	30294581
11,50	12	102	56	45	45	M6704-1150AV	30246375
11,60	12	102	56	45	45	M6704-1160AV	30294582
11,70	12	102	56	45	45	M6704-1170AV	30294583
11,80	12	102	56	45	45	M6704-1180AV	30246376
11,90	12	102	56	45	45	M6704-1190AV	30294584
12,00	12	102	56	45	45	M6704-1200AV	30246377
12,20	14	107	61	50	45	M6704-1220AV	30246378
12,50	14	107	61	50	45	M6704-1250AV	30246379
12,70	14	107	61	50	45	M6704-1270AV	30303997
12,80	14	107	61	50	45	M6704-1280AV	30246380
13,00	14	107	61	50	45	M6704-1300AV	30246381
13,20	14	107	61	50	45	M6704-1320AV	30530763
13,50	14	107	61	50	45	M6704-1350AV	30246382
13,70	14	107	61	50	45	M6704-1370AV	30303994
13,80	14	107	61	50	45	M6704-1380AV	30246383
14,00	14	107	61	50	45	M6704-1400AV	30246384
14,20	16	115	65	51	48	M6704-1420AV	30246385
14,50	16	115	65	51	48	M6704-1450AV	30246386
14,70	16	115	65	51	48	M6704-1470AV	30369737
14,80	16	115	65	51	48	M6704-1480AV	30246387
15,00	16	115	65	51	48	M6704-1500AV	30246388
15,10	16	115	65	51	48	M6704-1510AV	30246389
15,20	16	115	65	51	48	M6704-1520AV	30246390
15,50	16	115	65	51	48	M6704-1550AV	30246391
15,70	16	115	65	51	48	M6704-1570AV	30404969
15,80	16	115	65	51	48	M6704-1580AV	30246392
16,00	16	115	65	51	48	M6704-1600AV	30246393
16,50	18	123	73	53	48	M6704-1650AV	30246394
16,80	18	123	73	53	48	M6704-1680AV	30530764
17,00	18	123	73	53	48	M6704-1700AV	30246395
17,30	18	123	73	53	48	M6704-1730AV	30246396
17,50	18	123	73	53	48	M6704-1750AV	30246397
17,70	18	123	73	53	48	M6704-1770AV	30246398
17,80	18	123	73	53	48	M6704-1780AV	30530765
18,00	18	123	73	53	48	M6704-1800AV	30246399
18,50	20	131	79	55	50	M6704-1850AV	30246400
18,80	20	131	79	55	50	M6704-1880AV	30530766

ECU-Drill-Uni | M6704, 4xD, external cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
19,00	20	131	79	55	50	M6704-1900AV	30246401
19,50	20	131	79	55	50	M6704-1950AV	30246403
19,80	20	131	79	55	50	M6704-1980AV	30530767
20,00	20	131	79	55	50	M6704-2000AV	30246404

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

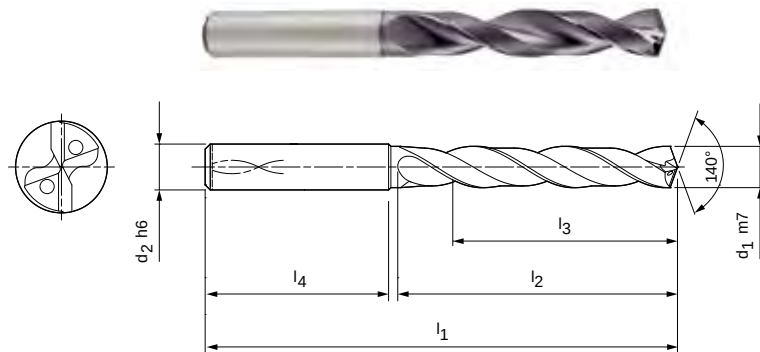
Special designs and other coatings on request.

ECU-Drill-Uni

6xD, internal cooling
M6806

Design:

Drill diameter: 1,00 - 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: Mx5
Number of cutting edges: 2
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
1,00	4	45	8	7	30	M6806-0100AV	30513805
1,10	4	45	9	7	29,5	M6806-0110AV	30513806
1,20	4	45	9,5	8	28,5	M6806-0120AV	30513807
1,30	4	45	10,5	8	28	M6806-0130AV	30513808
1,40	4	45	11	9	27,5	M6806-0140AV	30513809
1,50	4	50	12	10	32	M6806-0150AV	30513810
1,60	4	50	13	10	31	M6806-0160AV	30513811
1,70	4	50	13,5	11	30,5	M6806-0170AV	30513812
1,80	4	50	14,5	12	30	M6806-0180AV	30513813
1,90	4	50	15	12	29,5	M6806-0190AV	30513814
2,00	4	50	16	13	29	M6806-0200AV	30513815
2,10	4	55	17	14	33	M6806-0210AV	30513816
2,20	4	55	17,5	14	32,5	M6806-0220AV	30513817
2,30	4	55	18,5	15	32	M6806-0230AV	30513818
2,40	4	55	19	16	31,5	M6806-0240AV	30513819
2,50	4	55	20	16	30,5	M6806-0250AV	30513820
2,60	4	55	21	17	30	M6806-0260AV	30513821
2,70	4	55	21,5	18	29,5	M6806-0270AV	30513822
*2,80	4	55	22,5	18	29	M6806-0280AV	30513823
2,90	4	55	23	19	28	M6806-0290AV	30513824
3,00	6	66	28	23	36	M6806-0300AV	30246513
3,10	6	66	28	23	36	M6806-0310AV	30246514
3,20	6	66	28	23	36	M6806-0320AV	30246515
3,30	6	66	28	23	36	M6806-0330AV	30246516
3,40	6	66	28	23	36	M6806-0340AV	30246517
3,50	6	66	28	23	36	M6806-0350AV	30246518
3,60	6	66	28	23	36	M6806-0360AV	30246519
*3,70	6	66	28	23	36	M6806-0370AV	30246520
3,80	6	74	36	29	36	M6806-0380AV	30246521
3,90	6	74	36	29	36	M6806-0390AV	30246522
4,00	6	74	36	29	36	M6806-0400AV	30246523
4,10	6	74	36	29	36	M6806-0410AV	30246524
4,20	6	74	36	29	36	M6806-0420AV	30246525
4,30	6	74	36	29	36	M6806-0430AV	30246526
4,40	6	74	36	29	36	M6806-0440AV	30246527
4,50	6	74	36	29	36	M6806-0450AV	30246528

ECU-Drill-Uni | M6806, 6xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
4,60	6	74	36	29	36	M6806-0460AV	30246529
*4,65	6	74	36	29	36	M6806-0465AV	30296638
4,70	6	74	36	29	36	M6806-0470AV	30246530
4,80	6	82	44	35	36	M6806-0480AV	30246531
4,90	6	82	44	35	36	M6806-0490AV	30246532
5,00	6	82	44	35	36	M6806-0500AV	30246533
5,10	6	82	44	35	36	M6806-0510AV	30246534
5,20	6	82	44	35	36	M6806-0520AV	30246535
5,30	6	82	44	35	36	M6806-0530AV	30246536
5,40	6	82	44	35	36	M6806-0540AV	30246537
5,50	6	82	44	35	36	M6806-0550AV	30246538
*5,55	6	82	44	35	36	M6806-0555AV	30296639
5,60	6	82	44	35	36	M6806-0560AV	30246539
5,70	6	82	44	35	36	M6806-0570AV	30246540
5,80	6	82	44	35	36	M6806-0580AV	30246541
5,90	6	82	44	35	36	M6806-0590AV	30246542
6,00	6	82	44	35	36	M6806-0600AV	30246543
6,10	8	91	53	43	36	M6806-0610AV	30246544
6,20	8	91	53	43	36	M6806-0620AV	30246545
6,30	8	91	53	43	36	M6806-0630AV	30246546
6,40	8	91	53	43	36	M6806-0640AV	30246547
6,50	8	91	53	43	36	M6806-0650AV	30246548
6,60	8	91	53	43	36	M6806-0660AV	30246549
6,70	8	91	53	43	36	M6806-0670AV	30246550
6,80	8	91	53	43	36	M6806-0680AV	30246551
6,90	8	91	53	43	36	M6806-0690AV	30246552
7,00	8	91	53	43	36	M6806-0700AV	30246553
7,10	8	91	53	43	36	M6806-0710AV	30295483
7,20	8	91	53	43	36	M6806-0720AV	30295484
7,30	8	91	53	43	36	M6806-0730AV	30295485
7,40	8	91	53	43	36	M6806-0740AV	30246554
*7,45	8	91	53	43	36	M6806-0745AV	30530792
7,50	8	91	53	43	36	M6806-0750AV	30246555
7,60	8	91	53	43	36	M6806-0760AV	30295486
7,70	8	91	53	43	36	M6806-0770AV	30246556
7,80	8	91	53	43	36	M6806-0780AV	30246557
7,90	8	91	53	43	36	M6806-0790AV	30246558
8,00	8	91	53	43	36	M6806-0800AV	30246559
8,10	10	103	61	49	40	M6806-0810AV	30246560
8,20	10	103	61	49	40	M6806-0820AV	30246561
8,30	10	103	61	49	40	M6806-0830AV	30246562
8,40	10	103	61	49	40	M6806-0840AV	30295512
8,50	10	103	61	49	40	M6806-0850AV	30246563
8,60	10	103	61	49	40	M6806-0860AV	30246564
8,70	10	103	61	49	40	M6806-0870AV	30246565
8,80	10	103	61	49	40	M6806-0880AV	30246566
8,90	10	103	61	49	40	M6806-0890AV	30246567
9,00	10	103	61	49	40	M6806-0900AV	30246568
9,10	10	103	61	49	40	M6806-0910AV	30246569
9,20	10	103	61	49	40	M6806-0920AV	30295515
*9,30	10	103	61	49	40	M6806-0930AV	30246570
9,40	10	103	61	49	40	M6806-0940AV	30246571
9,50	10	103	61	49	40	M6806-0950AV	30246572
9,60	10	103	61	49	40	M6806-0960AV	30246573
9,70	10	103	61	49	40	M6806-0970AV	30295517
9,80	10	103	61	49	40	M6806-0980AV	30246574
9,90	10	103	61	49	40	M6806-0990AV	30246575

Continued on next page.

ECU-Drill-Uni | M6806, 6xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
10,00	10	103	61	49	40	M6806-1000AV	30246576
10,10	12	118	71	56	45	M6806-1010AV	30246577
10,20	12	118	71	56	45	M6806-1020AV	30246578
10,30	12	118	71	56	45	M6806-1030AV	30294618
10,40	12	118	71	56	45	M6806-1040AV	30294619
10,50	12	118	71	56	45	M6806-1050AV	30246579
10,60	12	118	71	56	45	M6806-1060AV	30294620
10,70	12	118	71	56	45	M6806-1070AV	30294621
10,80	12	118	71	56	45	M6806-1080AV	30246580
10,90	12	118	71	56	45	M6806-1090AV	30294622
11,00	12	118	71	56	45	M6806-1100AV	30246581
11,10	12	118	71	56	45	M6806-1110AV	30294623
*11,20	12	118	71	56	45	M6806-1120AV	30246582
11,30	12	118	71	56	45	M6806-1130AV	30294624
11,40	12	118	71	56	45	M6806-1140AV	30294625
11,50	12	118	71	56	45	M6806-1150AV	30246583
11,60	12	118	71	56	45	M6806-1160AV	30294626
11,70	12	118	71	56	45	M6806-1170AV	30294627
11,80	12	118	71	56	45	M6806-1180AV	30246584
11,90	12	118	71	56	45	M6806-1190AV	30294628
12,00	12	118	71	56	45	M6806-1200AV	30246585
12,20	14	124	77	60	45	M6806-1220AV	30246586
12,50	14	124	77	60	45	M6806-1250AV	30246587
12,70	14	124	77	60	45	M6806-1270AV	30303979
12,80	14	124	77	60	45	M6806-1280AV	30246588
13,00	14	124	77	60	45	M6806-1300AV	30246589
13,20	14	124	77	60	45	M6806-1320AV	30530793
13,50	14	124	77	60	45	M6806-1350AV	30246590
13,70	14	124	77	60	45	M6806-1370AV	30303980
13,80	14	124	77	60	45	M6806-1380AV	30246591
14,00	14	124	77	60	45	M6806-1400AV	30246592
14,20	16	133	83	63	48	M6806-1420AV	30246593
14,50	16	133	83	63	48	M6806-1450AV	30246594
14,70	16	133	83	63	48	M6806-1470AV	30403815
14,80	16	133	83	63	48	M6806-1480AV	30246595
15,00	16	133	83	63	48	M6806-1500AV	30246596
15,30	16	133	83	63	48	M6806-1530AV	30246597
15,50	16	133	83	63	48	M6806-1550AV	30246598
15,80	16	133	83	63	48	M6806-1580AV	30246599
16,00	16	133	83	63	48	M6806-1600AV	30246600
16,50	18	143	93	71	48	M6806-1650AV	30246601
16,80	18	143	93	71	48	M6806-1680AV	30531286
17,00	18	143	93	71	48	M6806-1700AV	30246602
17,50	18	143	93	71	48	M6806-1750AV	30246603
17,80	18	143	93	71	48	M6806-1780AV	30530795
18,00	18	143	93	71	48	M6806-1800AV	30246604
18,50	20	153	101	77	50	M6806-1850AV	30246605
18,80	20	153	101	77	50	M6806-1880AV	30569234
19,00	20	153	101	77	50	M6806-1900AV	30246606
19,50	20	153	101	77	50	M6806-1950AV	30246607
19,80	20	153	101	77	50	M6806-1980AV	30530797
20,00	20	153	101	77	50	M6806-2000AV	30246608

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

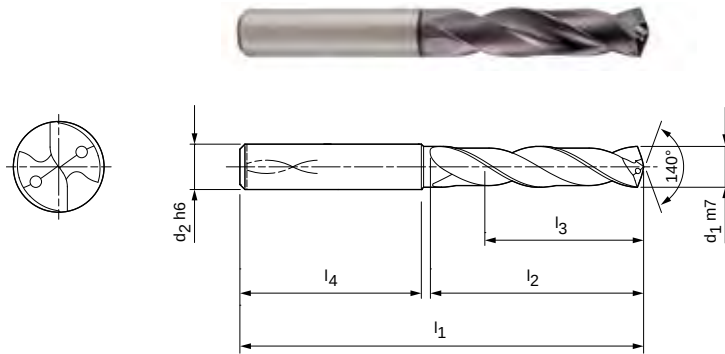
Special designs and other coatings on request.

ECU-Drill-Steel

3xD, internal cooling
M6103

Design:

Drill diameter: 1,00 - 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: Mx4
Number of cutting edges: 2
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
1,00	4	45	5	4	33	M6103-0100AW	30585618
1,10	4	45	5,5	4	32,5	M6103-0110AW	30585619
1,20	4	45	6	4	32,5	M6103-0120AW	30585621
1,30	4	45	6,5	5	32	M6103-0130AW	30585623
1,40	4	45	7	5	31,5	M6103-0140AW	30585624
1,50	4	50	7,5	5	36,5	M6103-0150AW	30585626
1,60	4	50	8	6	36	M6103-0160AW	30585627
1,70	4	50	8,5	6	35,5	M6103-0170AW	30585629
1,80	4	50	9	6	35,5	M6103-0180AW	30585632
1,90	4	50	9,5	7	35	M6103-0190AW	30585633
2,00	4	50	10	7	35	M6103-0200AW	30585635
2,10	4	55	10,5	7	39,5	M6103-0210AW	30585636
2,20	4	55	11	8	39	M6103-0220AW	30585637
2,30	4	55	11,5	8	39	M6103-0230AW	30585638
2,40	4	55	12	8	38,5	M6103-0240AW	30585639
2,50	4	55	12,5	9	38	M6103-0250AW	30585641
2,60	4	55	13	9	38	M6103-0260AW	30585642
2,70	4	55	13,5	9	37,5	M6103-0270AW	30585643
*2,80	4	55	14	10	37,5	M6103-0280AW	30585644
2,90	4	55	14,5	10	37	M6103-0290AW	30585647
3,00	6	62	20	14	36	M6103-0300AW	30245710
3,10	6	62	20	14	36	M6103-0310AW	30245712
3,20	6	62	20	14	36	M6103-0320AW	30245714
3,30	6	62	20	14	36	M6103-0330AW	30245717
3,40	6	62	20	14	36	M6103-0340AW	30245719
3,50	6	62	20	14	36	M6103-0350AW	30245721
3,60	6	62	20	14	36	M6103-0360AW	30245723
*3,70	6	62	20	14	36	M6103-0370AW	30245725
3,80	6	66	24	17	36	M6103-0380AW	30245727
3,90	6	66	24	17	36	M6103-0390AW	30245729
4,00	6	66	24	17	36	M6103-0400AW	30245731
4,10	6	66	24	17	36	M6103-0410AW	30245733
4,20	6	66	24	17	36	M6103-0420AW	30245735
4,30	6	66	24	17	36	M6103-0430AW	30245738
4,40	6	66	24	17	36	M6103-0440AW	30245740
4,50	6	66	24	17	36	M6103-0450AW	30245742

ECU-Drill-Steel | M6103, 3xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
4,60	6	66	24	17	36	M6103-0460AW	30245744
*4,65	6	66	24	17	36	M6103-0465AW	30245746
4,70	6	66	24	17	36	M6103-0470AW	30245748
4,80	6	66	28	20	36	M6103-0480AW	30245750
4,90	6	66	28	20	36	M6103-0490AW	30245752
5,00	6	66	28	20	36	M6103-0500AW	30245755
5,10	6	66	28	20	36	M6103-0510AW	30245758
5,20	6	66	28	20	36	M6103-0520AW	30245760
5,30	6	66	28	20	36	M6103-0530AW	30245762
5,40	6	66	28	20	36	M6103-0540AW	30245764
5,50	6	66	28	20	36	M6103-0550AW	30245766
*5,55	6	66	28	20	36	M6103-0555AW	30245769
5,60	6	66	28	20	36	M6103-0560AW	30245770
5,70	6	66	28	20	36	M6103-0570AW	30245772
5,80	6	66	28	20	36	M6103-0580AW	30245775
5,90	6	66	28	20	36	M6103-0590AW	30245777
6,00	6	66	28	20	36	M6103-0600AW	30245779
6,10	8	79	34	24	36	M6103-0610AW	30245781
6,20	8	79	34	24	36	M6103-0620AW	30245783
6,30	8	79	34	24	36	M6103-0630AW	30245785
6,40	8	79	34	24	36	M6103-0640AW	30245787
6,50	8	79	34	24	36	M6103-0650AW	30245789
6,60	8	79	34	24	36	M6103-0660AW	30245791
6,70	8	79	34	24	36	M6103-0670AW	30245793
6,80	8	79	34	24	36	M6103-0680AW	30245795
6,90	8	79	34	24	36	M6103-0690AW	30245797
7,00	8	79	34	24	36	M6103-0700AW	30245799
7,10	8	79	41	29	36	M6103-0710AW	30245801
7,20	8	79	41	29	36	M6103-0720AW	30245803
7,30	8	79	41	29	36	M6103-0730AW	30245805
7,40	8	79	41	29	36	M6103-0740AW	30245807
*7,45	8	79	41	29	36	M6103-0745AW	30245809
7,50	8	79	41	29	36	M6103-0750AW	30245810
7,60	8	79	41	29	36	M6103-0760AW	30245812
7,70	8	79	41	29	36	M6103-0770AW	30245814
7,80	8	79	41	29	36	M6103-0780AW	30245816
7,90	8	79	41	29	36	M6103-0790AW	30245818
8,00	8	79	41	29	36	M6103-0800AW	30245820
8,10	10	89	47	35	40	M6103-0810AW	30245822
8,20	10	89	47	35	40	M6103-0820AW	30245824
8,30	10	89	47	35	40	M6103-0830AW	30245826
8,40	10	89	47	35	40	M6103-0840AW	30245828
8,50	10	89	47	35	40	M6103-0850AW	30245830
8,60	10	89	47	35	40	M6103-0860AW	30245832
8,70	10	89	47	35	40	M6103-0870AW	30245834
8,80	10	89	47	35	40	M6103-0880AW	30245836
8,90	10	89	47	35	40	M6103-0890AW	30245838
9,00	10	89	47	35	40	M6103-0900AW	30245840
9,10	10	89	47	35	40	M6103-0910AW	30245842
9,20	10	89	47	35	40	M6103-0920AW	30245844
*9,30	10	89	47	35	40	M6103-0930AW	30245846
9,40	10	89	47	35	40	M6103-0940AW	30245849
9,50	10	89	47	35	40	M6103-0950AW	30245851
9,60	10	89	47	35	40	M6103-0960AW	30245853
9,70	10	89	47	35	40	M6103-0970AW	30245855
9,80	10	89	47	35	40	M6103-0980AW	30245857
9,90	10	89	47	35	40	M6103-0990AW	30245859

ECU-Drill-Steel | M6103, 3xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
10,00	10	89	47	35	40	M6103-1000AW	30245861
10,10	12	102	55	40	45	M6103-1010AW	30245863
10,20	12	102	55	40	45	M6103-1020AW	30245865
10,30	12	102	55	40	45	M6103-1030AW	30245867
10,40	12	102	55	40	45	M6103-1040AW	30245869
10,50	12	102	55	40	45	M6103-1050AW	30245871
10,60	12	102	55	40	45	M6103-1060AW	30245874
10,70	12	102	55	40	45	M6103-1070AW	30245876
10,80	12	102	55	40	45	M6103-1080AW	30245880
10,90	12	102	55	40	45	M6103-1090AW	30245882
11,00	12	102	55	40	45	M6103-1100AW	30245884
11,10	12	102	55	40	45	M6103-1110AW	30245886
*11,20	12	102	55	40	45	M6103-1120AW	30245888
11,30	12	102	55	40	45	M6103-1130AW	30245890
11,40	12	102	55	40	45	M6103-1140AW	30245892
11,50	12	102	55	40	45	M6103-1150AW	30245894
11,60	12	102	55	40	45	M6103-1160AW	30245896
11,70	12	102	55	40	45	M6103-1170AW	30245898
11,80	12	102	55	40	45	M6103-1180AW	30245900
11,90	12	102	55	40	45	M6103-1190AW	30245902
12,00	12	102	55	40	45	M6103-1200AW	30245904
12,20	14	107	60	43	45	M6103-1220AW	30530755
12,50	14	107	60	43	45	M6103-1250AW	30245908
12,70	14	107	60	43	45	M6103-1270AW	30245910
12,80	14	107	60	43	45	M6103-1280AW	30245912
13,00	14	107	60	43	45	M6103-1300AW	30245916
13,20	14	107	60	43	45	M6103-1320AW	30245920
13,50	14	107	60	43	45	M6103-1350AW	30245922
13,70	14	107	60	43	45	M6103-1370AW	30245924
13,80	14	107	60	43	45	M6103-1380AW	30245926
14,00	14	107	60	43	45	M6103-1400AW	30245928
14,20	16	115	65	45	48	M6103-1420AW	30245930
14,50	16	115	65	45	48	M6103-1450AW	30245932
14,70	16	115	65	45	48	M6103-1470AW	30250948
14,80	16	115	65	45	48	M6103-1480AW	30245934
15,00	16	115	65	45	48	M6103-1500AW	30245936
15,50	16	115	65	45	48	M6103-1550AW	30245944
15,70	16	115	65	45	48	M6103-1570AW	30250949
15,80	16	115	65	45	48	M6103-1580AW	30245947
16,00	16	115	65	45	48	M6103-1600AW	30245949
16,50	18	123	73	51	48	M6103-1650AW	30245951
16,80	18	123	73	51	48	M6103-1680AW	30245953
17,00	18	123	73	51	48	M6103-1700AW	30245956
17,50	18	123	73	51	48	M6103-1750AW	30245958
17,80	18	123	73	51	48	M6103-1780AW	30245961
18,00	18	123	73	51	48	M6103-1800AW	30245963
18,50	20	131	79	55	50	M6103-1850AW	30245965
18,80	20	131	79	55	50	M6103-1880AW	30245967
19,00	20	131	79	55	50	M6103-1900AW	30245970
19,50	20	131	79	55	50	M6103-1950AW	30245972
19,80	20	131	79	55	50	M6103-1980AW	30245975
20,00	20	131	79	55	50	M6103-2000AW	30245977

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

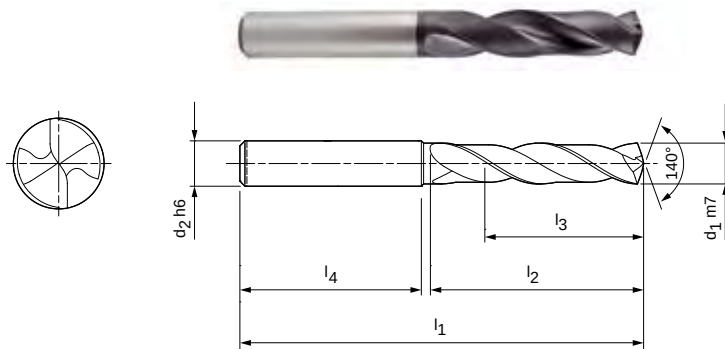
Special designs and other coatings on request.

ECU-Drill-Steel

3xD, external cooling
M6003

Design:

Drill diameter: 1,00 - 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: Mx4
Number of cutting edges: 2
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
1,00	4	45	5	4	33	M6003-0100AW	30585599
1,10	4	45	5,5	4	32,5	M6003-0110AW	30585602
1,20	4	45	6	4	32,5	M6003-0120AW	30585604
1,30	4	45	6,5	5	32	M6003-0130AW	30585606
1,40	4	45	7	5	31,5	M6003-0140AW	30585608
1,50	4	50	7,5	5	36,5	M6003-0150AW	30585610
1,60	4	50	8	6	36	M6003-0160AW	30585612
1,70	4	50	8,5	6	35,5	M6003-0170AW	30585613
1,80	4	50	9	6	35,5	M6003-0180AW	30585615
1,90	4	50	9,5	7	35	M6003-0190AW	30585616
2,00	6	58	14	9	36	M6003-0200AW	30296646
2,10	6	58	14	9	36	M6003-0210AW	30296647
2,20	6	58	14	9	36	M6003-0220AW	30296648
2,30	6	58	14	9	36	M6003-0230AW	30296649
2,40	6	58	14	9	36	M6003-0240AW	30296650
2,50	6	58	14	9	36	M6003-0250AW	30296651
2,60	6	58	14	9	36	M6003-0260AW	30296652
2,70	6	58	14	9	36	M6003-0270AW	30296653
*2,80	6	58	14	9	36	M6003-0280AW	30296654
2,90	6	58	14	9	36	M6003-0290AW	30296655
3,00	6	62	20	14	36	M6003-0300AW	30245178
3,10	6	62	20	14	36	M6003-0310AW	30245180
3,20	6	62	20	14	36	M6003-0320AW	30245182
3,30	6	62	20	14	36	M6003-0330AW	30245184
3,40	6	62	20	14	36	M6003-0340AW	30245186
3,50	6	62	20	14	36	M6003-0350AW	30245188
3,60	6	62	20	14	36	M6003-0360AW	30245190
*3,70	6	62	20	14	36	M6003-0370AW	30245192
3,80	6	66	24	17	36	M6003-0380AW	30245194
3,90	6	66	24	17	36	M6003-0390AW	30245196
4,00	6	66	24	17	36	M6003-0400AW	30245198
4,10	6	66	24	17	36	M6003-0410AW	30245200
4,20	6	66	24	17	36	M6003-0420AW	30245202
4,30	6	66	24	17	36	M6003-0430AW	30245204
4,40	6	66	24	17	36	M6003-0440AW	30245206
4,50	6	66	24	17	36	M6003-0450AW	30245208

ECU-Drill-Steel | M6003, 3xD, external cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
4,60	6	66	24	17	36	M6003-0460AW	30245210
*4,65	6	66	24	17	36	M6003-0465AW	30245212
4,70	6	66	24	17	36	M6003-0470AW	30245214
4,80	6	66	28	20	36	M6003-0480AW	30245216
4,90	6	66	28	20	36	M6003-0490AW	30245218
5,00	6	66	28	20	36	M6003-0500AW	30245220
5,10	6	66	28	20	36	M6003-0510AW	30245222
5,20	6	66	28	20	36	M6003-0520AW	30245224
5,30	6	66	28	20	36	M6003-0530AW	30245226
5,40	6	66	28	20	36	M6003-0540AW	30245228
5,50	6	66	28	20	36	M6003-0550AW	30245230
*5,55	6	66	28	20	36	M6003-0555AW	30245232
5,60	6	66	28	20	36	M6003-0560AW	30245234
5,70	6	66	28	20	36	M6003-0570AW	30245236
5,80	6	66	28	20	36	M6003-0580AW	30245238
5,90	6	66	28	20	36	M6003-0590AW	30245240
6,00	6	66	28	20	36	M6003-0600AW	30245242
6,10	8	79	34	24	36	M6003-0610AW	30245244
6,20	8	79	34	24	36	M6003-0620AW	30245246
6,30	8	79	34	24	36	M6003-0630AW	30245248
6,40	8	79	34	24	36	M6003-0640AW	30245250
6,50	8	79	34	24	36	M6003-0650AW	30245252
6,60	8	79	34	24	36	M6003-0660AW	30245254
6,70	8	79	34	24	36	M6003-0670AW	30245256
6,80	8	79	34	24	36	M6003-0680AW	30245258
6,90	8	79	34	24	36	M6003-0690AW	30245260
7,00	8	79	34	24	36	M6003-0700AW	30245262
7,10	8	79	41	29	36	M6003-0710AW	30245264
7,20	8	79	41	29	36	M6003-0720AW	30245266
7,30	8	79	41	29	36	M6003-0730AW	30245268
7,40	8	79	41	29	36	M6003-0740AW	30245270
*7,45	8	79	41	29	36	M6003-0745AW	30530751
7,50	8	79	41	29	36	M6003-0750AW	30245272
7,60	8	79	41	29	36	M6003-0760AW	30245274
7,70	8	79	41	29	36	M6003-0770AW	30245276
7,80	8	79	41	29	36	M6003-0780AW	30245278
7,90	8	79	41	29	36	M6003-0790AW	30245280
8,00	8	79	41	29	36	M6003-0800AW	30245282
8,10	10	89	47	35	40	M6003-0810AW	30245284
8,20	10	89	47	35	40	M6003-0820AW	30245286
8,30	10	89	47	35	40	M6003-0830AW	30245288
8,40	10	89	47	35	40	M6003-0840AW	30245290
8,50	10	89	47	35	40	M6003-0850AW	30245292
8,60	10	89	47	35	40	M6003-0860AW	30245294
8,70	10	89	47	35	40	M6003-0870AW	30245296
8,80	10	89	47	35	40	M6003-0880AW	30245298
8,90	10	89	47	35	40	M6003-0890AW	30245300
9,00	10	89	47	35	40	M6003-0900AW	30245302
9,10	10	89	47	35	40	M6003-0910AW	30245304
9,20	10	89	47	35	40	M6003-0920AW	30245306
*9,30	10	89	47	35	40	M6003-0930AW	30245308
9,40	10	89	47	35	40	M6003-0940AW	30245310
9,50	10	89	47	35	40	M6003-0950AW	30245312
9,60	10	89	47	35	40	M6003-0960AW	30245314
9,70	10	89	47	35	40	M6003-0970AW	30245316
9,80	10	89	47	35	40	M6003-0980AW	30245318
9,90	10	89	47	35	40	M6003-0990AW	30245320

Continued on next page.

ECU-Drill-Steel | M6003, 3xD, external cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
10,00	10	89	47	35	40	M6003-1000AW	30245322
10,10	12	102	55	40	45	M6003-1010AW	30245324
10,20	12	102	55	40	45	M6003-1020AW	30245326
10,30	12	102	55	40	45	M6003-1030AW	30245328
10,40	12	102	55	40	45	M6003-1040AW	30245330
10,50	12	102	55	40	45	M6003-1050AW	30245332
10,60	12	102	55	40	45	M6003-1060AW	30245334
10,70	12	102	55	40	45	M6003-1070AW	30245336
10,80	12	102	55	40	45	M6003-1080AW	30245340
10,90	12	102	55	40	45	M6003-1090AW	30245342
11,00	12	102	55	40	45	M6003-1100AW	30245344
11,10	12	102	55	40	45	M6003-1110AW	30245346
*11,20	12	102	55	40	45	M6003-1120AW	30245348
11,30	12	102	55	40	45	M6003-1130AW	30245350
11,40	12	102	55	40	45	M6003-1140AW	30245352
11,50	12	102	55	40	45	M6003-1150AW	30245354
11,60	12	102	55	40	45	M6003-1160AW	30245356
11,70	12	102	55	40	45	M6003-1170AW	30245358
11,80	12	102	55	40	45	M6003-1180AW	30245360
11,90	12	102	55	40	45	M6003-1190AW	30245362
12,00	12	102	55	40	45	M6003-1200AW	30245364
12,20	14	107	60	43	45	M6003-1220AW	30455870
12,50	14	107	60	43	45	M6003-1250AW	30245368
12,70	14	107	60	43	45	M6003-1270AW	30245370
12,80	14	107	60	43	45	M6003-1280AW	30245372
13,00	14	107	60	43	45	M6003-1300AW	30245376
13,20	14	107	60	43	45	M6003-1320AW	30245380
13,50	14	107	60	43	45	M6003-1350AW	30245382
13,70	14	107	60	43	45	M6003-1370AW	30245384
13,80	14	107	60	43	45	M6003-1380AW	30245386
14,00	14	107	60	43	45	M6003-1400AW	30245388
14,20	16	115	65	45	48	M6003-1420AW	30245390
14,50	16	115	65	45	48	M6003-1450AW	30245392
14,70	16	115	65	45	48	M6003-1470AW	30250941
14,80	16	115	65	45	48	M6003-1480AW	30245394
15,00	16	115	65	45	48	M6003-1500AW	30245396
15,50	16	115	65	45	48	M6003-1550AW	30245404
15,70	16	115	65	45	48	M6003-1570AW	30250942
15,80	16	115	65	45	48	M6003-1580AW	30245406
16,00	16	115	65	45	48	M6003-1600AW	30245408
16,50	18	123	73	51	48	M6003-1650AW	30245410
16,80	18	123	73	51	48	M6003-1680AW	30245412
17,00	18	123	73	51	48	M6003-1700AW	30245414
17,50	18	123	73	51	48	M6003-1750AW	30245416
17,80	18	123	73	51	48	M6003-1780AW	30245418
18,00	18	123	73	51	48	M6003-1800AW	30245420
18,50	20	131	79	55	50	M6003-1850AW	30245422
18,80	20	131	79	55	50	M6003-1880AW	30245424
19,00	20	131	79	55	50	M6003-1900AW	30245426
19,50	20	131	79	55	50	M6003-1950AW	30245428
19,80	20	131	79	55	50	M6003-1980AW	30245430
20,00	20	131	79	55	50	M6003-2000AW	30245432

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

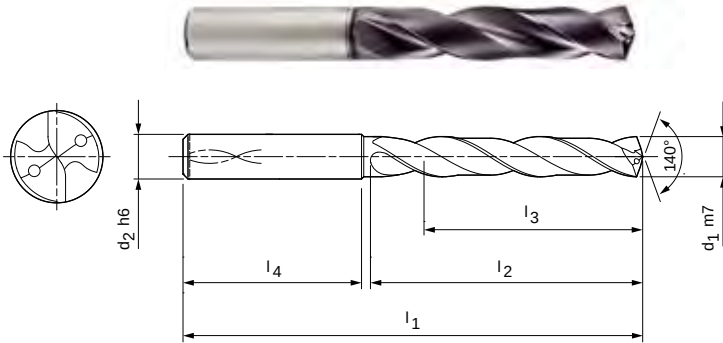
Special designs and other coatings on request.

ECU-Drill-Steel

5xD, internal cooling
M6105

Design:

Drill diameter: 1,00 - 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: Mx4
Number of cutting edges: 2
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
1,00	4	45	7	6	31	M6105-0100AW	30585649
1,10	4	45	7,5	6	30,5	M6105-0110AW	30585650
1,20	4	45	8,5	7	30	M6105-0120AW	30585651
1,30	4	45	9	7	29,5	M6105-0130AW	30585652
1,40	4	45	10	8	29	M6105-0140AW	30585653
1,50	4	50	10,5	8	33,5	M6105-0150AW	30585654
1,60	4	50	11	9	33	M6105-0160AW	30585655
1,70	4	50	12	9	32,5	M6105-0170AW	30585656
1,80	4	50	12,5	10	32	M6105-0180AW	30585657
1,90	4	50	13,5	10	31,5	M6105-0190AW	30585658
2,00	4	50	14	11	31	M6105-0200AW	30585660
2,10	4	55	14,5	12	35,5	M6105-0210AW	30585661
2,20	4	55	15,5	12	34,5	M6105-0220AW	30585662
2,30	4	55	16	13	34	M6105-0230AW	30585663
2,40	4	55	17	13	33,5	M6105-0240AW	30585666
2,50	4	55	17,5	14	33	M6105-0250AW	30585667
2,60	4	55	18	14	32,5	M6105-0260AW	30585668
2,70	4	55	19	15	32	M6105-0270AW	30585670
*2,80	4	55	19,5	15	31,5	M6105-0280AW	30585671
2,90	4	55	20,5	16	31	M6105-0290AW	30585673
3,00	6	66	28	23	36	M6105-0300AW	30245999
3,10	6	66	28	23	36	M6105-0310AW	30246001
3,20	6	66	28	23	36	M6105-0320AW	30246003
3,30	6	66	28	23	36	M6105-0330AW	30246006
3,40	6	66	28	23	36	M6105-0340AW	30246008
3,50	6	66	28	23	36	M6105-0350AW	30246010
3,60	6	66	28	23	36	M6105-0360AW	30246012
*3,70	6	66	28	23	36	M6105-0370AW	30246014
3,80	6	74	36	29	36	M6105-0380AW	30246016
3,90	6	74	36	29	36	M6105-0390AW	30246018
4,00	6	74	36	29	36	M6105-0400AW	30246020
4,10	6	74	36	29	36	M6105-0410AW	30246022
4,20	6	74	36	29	36	M6105-0420AW	30246024
4,30	6	74	36	29	36	M6105-0430AW	30246027
4,40	6	74	36	29	36	M6105-0440AW	30246029
4,50	6	74	36	29	36	M6105-0450AW	30246031

ECU-Drill-Steel | M6105, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
4,60	6	74	36	29	36	M6105-0460AW	30246033
*4,65	6	74	36	29	36	M6105-0465AW	30246035
4,70	6	74	36	29	36	M6105-0470AW	30246037
4,80	6	82	44	35	36	M6105-0480AW	30246039
4,90	6	82	44	35	36	M6105-0490AW	30246041
5,00	6	82	44	35	36	M6105-0500AW	30246044
5,10	6	82	44	35	36	M6105-0510AW	30246047
5,20	6	82	44	35	36	M6105-0520AW	30246049
5,30	6	82	44	35	36	M6105-0530AW	30246051
5,40	6	82	44	35	36	M6105-0540AW	30246053
5,50	6	82	44	35	36	M6105-0550AW	30246055
*5,55	6	82	44	35	36	M6105-0555AW	30246057
5,60	6	82	44	35	36	M6105-0560AW	30246059
5,70	6	82	44	35	36	M6105-0570AW	30246061
5,80	6	82	44	35	36	M6105-0580AW	30246064
5,90	6	82	44	35	36	M6105-0590AW	30246066
6,00	6	82	44	35	36	M6105-0600AW	30246068
6,10	8	91	53	43	36	M6105-0610AW	30246070
6,20	8	91	53	43	36	M6105-0620AW	30246072
6,30	8	91	53	43	36	M6105-0630AW	30246074
6,40	8	91	53	43	36	M6105-0640AW	30246076
6,50	8	91	53	43	36	M6105-0650AW	30246078
6,60	8	91	53	43	36	M6105-0660AW	30246080
6,70	8	91	53	43	36	M6105-0670AW	30246082
6,80	8	91	53	43	36	M6105-0680AW	30246084
6,90	8	91	53	43	36	M6105-0690AW	30246086
7,00	8	91	53	43	36	M6105-0700AW	30246088
7,10	8	91	53	43	36	M6105-0710AW	30246090
7,20	8	91	53	43	36	M6105-0720AW	30246092
7,30	8	91	53	43	36	M6105-0730AW	30246094
7,40	8	91	53	43	36	M6105-0740AW	30246096
*7,45	8	91	53	43	36	M6105-0750AW	30246099
7,50	8	91	53	43	36	M6105-0750AW	30246099
7,60	8	91	53	43	36	M6105-0760AW	30246101
7,70	8	91	53	43	36	M6105-0770AW	30246103
7,80	8	91	53	43	36	M6105-0780AW	30246105
7,90	8	91	53	43	36	M6105-0790AW	30246107
8,00	8	91	53	43	36	M6105-0800AW	30246109
8,10	10	103	61	49	40	M6105-0810AW	30246111
8,20	10	103	61	49	40	M6105-0820AW	30246113
8,30	10	103	61	49	40	M6105-0830AW	30246115
8,40	10	103	61	49	40	M6105-0840AW	30246117
8,50	10	103	61	49	40	M6105-0850AW	30246119
8,60	10	103	61	49	40	M6105-0860AW	30246121
8,70	10	103	61	49	40	M6105-0870AW	30246123
8,80	10	103	61	49	40	M6105-0880AW	30246125
8,90	10	103	61	49	40	M6105-0890AW	30246127
9,00	10	103	61	49	40	M6105-0900AW	30246129
9,10	10	103	61	49	40	M6105-0910AW	30246131
9,20	10	103	61	49	40	M6105-0920AW	30246133
*9,30	10	103	61	49	40	M6105-0930AW	30246135
9,40	10	103	61	49	40	M6105-0940AW	30246138
9,50	10	103	61	49	40	M6105-0950AW	30246140
9,60	10	103	61	49	40	M6105-0960AW	30246142
9,70	10	103	61	49	40	M6105-0970AW	30246144
9,80	10	103	61	49	40	M6105-0980AW	30246146
9,90	10	103	61	49	40	M6105-0990AW	30246148

ECU-Drill-Steel | M6105, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
10,00	10	103	61	49	40	M6105-1000AW	30246150
10,10	12	118	71	56	45	M6105-1010AW	30246152
10,20	12	118	71	56	45	M6105-1020AW	30246154
10,30	12	118	71	56	45	M6105-1030AW	30246156
10,40	12	118	71	56	45	M6105-1040AW	30246158
10,50	12	118	71	56	45	M6105-1050AW	30246160
10,60	12	118	71	56	45	M6105-1060AW	30246163
10,70	12	118	71	56	45	M6105-1070AW	30246165
10,80	12	118	71	56	45	M6105-1080AW	30246169
10,90	12	118	71	56	45	M6105-1090AW	30246171
11,00	12	118	71	56	45	M6105-1100AW	30246173
11,10	12	118	71	56	45	M6105-1110AW	30246175
*11,20	12	118	71	56	45	M6105-1120AW	30246177
11,30	12	118	71	56	45	M6105-1130AW	30246179
11,40	12	118	71	56	45	M6105-1140AW	30246181
11,50	12	118	71	56	45	M6105-1150AW	30246183
11,60	12	118	71	56	45	M6105-1160AW	30246185
11,70	12	118	71	56	45	M6105-1170AW	30246187
11,80	12	118	71	56	45	M6105-1180AW	30246189
11,90	12	118	71	56	45	M6105-1190AW	30246191
12,00	12	118	71	56	45	M6105-1200AW	30246193
12,20	14	124	77	60	45	M6105-1220AW	30530756
12,50	14	124	77	60	45	M6105-1250AW	30246197
12,70	14	124	77	60	45	M6105-1270AW	30246199
12,80	14	124	77	60	45	M6105-1280AW	30246201
13,00	14	124	77	60	45	M6105-1300AW	30246205
13,10	14	124	77	60	45	M6105-1310AW	30246207
13,20	14	124	77	60	45	M6105-1320AW	30246209
13,50	14	124	77	60	45	M6105-1350AW	30246211
13,70	14	124	77	60	45	M6105-1370AW	30246213
13,80	14	124	77	60	45	M6105-1380AW	30246215
14,00	14	124	77	60	45	M6105-1400AW	30246217
14,20	16	133	83	63	48	M6105-1420AW	30246219
14,50	16	133	83	63	48	M6105-1450AW	30246221
14,70	16	133	83	63	48	M6105-1470AW	30250906
14,80	16	133	83	63	48	M6105-1480AW	30246223
15,00	16	133	83	63	48	M6105-1500AW	30246225
15,10	16	133	83	63	48	M6105-1510AW	30246227
15,50	16	133	83	63	48	M6105-1550AW	30246233
15,70	16	133	83	63	48	M6105-1570AW	30250907
15,80	16	133	83	63	48	M6105-1580AW	30246236
16,00	16	133	83	63	48	M6105-1600AW	30246238
16,50	18	143	93	71	48	M6105-1650AW	30246240
16,80	18	143	93	71	48	M6105-1680AW	30246242
17,00	18	143	93	71	48	M6105-1700AW	30246245
17,50	18	143	93	71	48	M6105-1750AW	30246247
17,80	18	143	93	71	48	M6105-1780AW	30246250
18,00	18	143	93	71	48	M6105-1800AW	30246252
18,50	20	153	101	77	50	M6105-1850AW	30246254
18,80	20	153	101	77	50	M6105-1880AW	30246256
19,00	20	153	101	77	50	M6105-1900AW	30246259
19,50	20	153	101	77	50	M6105-1950AW	30246261
19,80	20	153	101	77	50	M6105-1980AW	30246264
20,00	20	153	101	77	50	M6105-2000AW	30246266

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

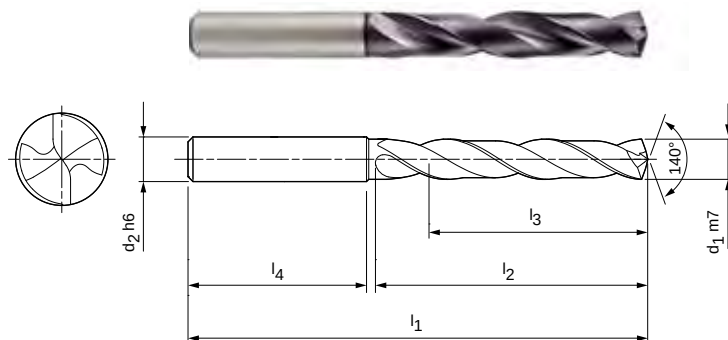
Special designs and other coatings on request.

ECU-Drill-Steel

5xD, external cooling
M6005

Design:

Drill diameter: 3,00 - 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: Mx4
Number of cutting edges: 2
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	66	28	23	36	M6005-0300AW	30245454
3,10	6	66	28	23	36	M6005-0310AW	30245456
3,20	6	66	28	23	36	M6005-0320AW	30245458
3,30	6	66	28	23	36	M6005-0330AW	30245460
3,40	6	66	28	23	36	M6005-0340AW	30245462
3,50	6	66	28	23	36	M6005-0350AW	30245464
3,60	6	66	28	23	36	M6005-0360AW	30245466
*3,70	6	66	28	23	36	M6005-0370AW	30245468
3,80	6	74	36	29	36	M6005-0380AW	30245470
3,90	6	74	36	29	36	M6005-0390AW	30245472
4,00	6	74	36	29	36	M6005-0400AW	30245474
4,10	6	74	36	29	36	M6005-0410AW	30245476
4,20	6	74	36	29	36	M6005-0420AW	30245478
4,30	6	74	36	29	36	M6005-0430AW	30245480
4,40	6	74	36	29	36	M6005-0440AW	30245482
4,50	6	74	36	29	36	M6005-0450AW	30245484
4,60	6	74	36	29	36	M6005-0460AW	30245486
*4,65	6	74	36	29	36	M6005-0465AW	30245488
4,70	6	74	36	29	36	M6005-0470AW	30245490
4,80	6	82	44	35	36	M6005-0480AW	30245492
4,90	6	82	44	35	36	M6005-0490AW	30245494
5,00	6	82	44	35	36	M6005-0500AW	30245496
5,10	6	82	44	35	36	M6005-0510AW	30245498
5,20	6	82	44	35	36	M6005-0520AW	30245500
5,30	6	82	44	35	36	M6005-0530AW	30245502
5,40	6	82	44	35	36	M6005-0540AW	30245504
5,50	6	82	44	35	36	M6005-0550AW	30245506
*5,55	6	82	44	35	36	M6005-0555AW	30245508
5,60	6	82	44	35	36	M6005-0560AW	30245510
5,70	6	82	44	35	36	M6005-0570AW	30245512
5,80	6	82	44	35	36	M6005-0580AW	30245514
5,90	6	82	44	35	36	M6005-0590AW	30245516
6,00	6	82	44	35	36	M6005-0600AW	30245518
6,10	8	91	53	43	36	M6005-0610AW	30245520
6,20	8	91	53	43	36	M6005-0620AW	30245522
6,30	8	91	53	43	36	M6005-0630AW	30245524

ECU-Drill-Steel | M6005, 5xD, external cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,40	8	91	53	43	36	M6005-0640AW	30245526
6,50	8	91	53	43	36	M6005-0650AW	30245528
6,60	8	91	53	43	36	M6005-0660AW	30245530
6,70	8	91	53	43	36	M6005-0670AW	30245532
6,80	8	91	53	43	36	M6005-0680AW	30245534
6,90	8	91	53	43	36	M6005-0690AW	30245536
7,00	8	91	53	43	36	M6005-0700AW	30245538
7,10	8	91	53	43	36	M6005-0710AW	30245540
7,20	8	91	53	43	36	M6005-0720AW	30245542
7,30	8	91	53	43	36	M6005-0730AW	30245544
7,40	8	91	53	43	36	M6005-0740AW	30245546
*7,45	8	91	53	43	36	M6005-0745AW	30530752
7,50	8	91	53	43	36	M6005-0750AW	30245548
7,60	8	91	53	43	36	M6005-0760AW	30245550
7,70	8	91	53	43	36	M6005-0770AW	30245552
7,80	8	91	53	43	36	M6005-0780AW	30245554
7,90	8	91	53	43	36	M6005-0790AW	30245556
8,00	8	91	53	43	36	M6005-0800AW	30245558
8,10	10	103	61	49	40	M6005-0810AW	30245560
8,20	10	103	61	49	40	M6005-0820AW	30245562
8,30	10	103	61	49	40	M6005-0830AW	30245564
8,40	10	103	61	49	40	M6005-0840AW	30245566
8,50	10	103	61	49	40	M6005-0850AW	30245568
8,60	10	103	61	49	40	M6005-0860AW	30245570
8,70	10	103	61	49	40	M6005-0870AW	30245572
8,80	10	103	61	49	40	M6005-0880AW	30245574
8,90	10	103	61	49	40	M6005-0890AW	30245576
9,00	10	103	61	49	40	M6005-0900AW	30245578
9,10	10	103	61	49	40	M6005-0910AW	30245580
9,20	10	103	61	49	40	M6005-0920AW	30245582
*9,30	10	103	61	49	40	M6005-0930AW	30245584
9,40	10	103	61	49	40	M6005-0940AW	30245586
9,50	10	103	61	49	40	M6005-0950AW	30245588
9,60	10	103	61	49	40	M6005-0960AW	30245590
9,70	10	103	61	49	40	M6005-0970AW	30245592
9,80	10	103	61	49	40	M6005-0980AW	30245594
9,90	10	103	61	49	40	M6005-0990AW	30245596
10,00	10	103	61	49	40	M6005-1000AW	30245598
10,10	12	118	71	56	45	M6005-1010AW	30245600
10,20	12	118	71	56	45	M6005-1020AW	30245602
10,30	12	118	71	56	45	M6005-1030AW	30245604
10,40	12	118	71	56	45	M6005-1040AW	30245606
10,50	12	118	71	56	45	M6005-1050AW	30245608
10,60	12	118	71	56	45	M6005-1060AW	30245610
10,70	12	118	71	56	45	M6005-1070AW	30245612
10,80	12	118	71	56	45	M6005-1080AW	30245616
10,90	12	118	71	56	45	M6005-1090AW	30245618
11,00	12	118	71	56	45	M6005-1100AW	30245620
11,10	12	118	71	56	45	M6005-1110AW	30245622
*11,20	12	118	71	56	45	M6005-1120AW	30245624
11,30	12	118	71	56	45	M6005-1130AW	30245626
11,40	12	118	71	56	45	M6005-1140AW	30245628
11,50	12	118	71	56	45	M6005-1150AW	30245630
11,60	12	118	71	56	45	M6005-1160AW	30245632
11,70	12	118	71	56	45	M6005-1170AW	30245634
11,80	12	118	71	56	45	M6005-1180AW	30245636
11,90	12	118	71	56	45	M6005-1190AW	30245638

Continued on next page.

ECU-Drill-Steel | M6005, 5xD, external cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
12,00	12	118	71	56	45	M6005-1200AW	30245640
12,20	14	124	77	60	45	M6005-1220AW	30530754
12,50	14	124	77	60	45	M6005-1250AW	30245644
12,70	14	124	77	60	45	M6005-1270AW	30245646
12,80	14	124	77	60	45	M6005-1280AW	30245648
13,00	14	124	77	60	45	M6005-1300AW	30245652
13,10	14	124	77	60	45	M6005-1310AW	30245654
13,20	14	124	77	60	45	M6005-1320AW	30245656
13,50	14	124	77	60	45	M6005-1350AW	30245658
13,70	14	124	77	60	45	M6005-1370AW	30245660
13,80	14	124	77	60	45	M6005-1380AW	30245662
14,00	14	124	77	60	45	M6005-1400AW	30245664
14,20	16	133	83	63	48	M6005-1420AW	30245666
14,50	16	133	83	63	48	M6005-1450AW	30245668
14,70	16	133	83	63	48	M6005-1470AW	30250932
14,80	16	133	83	63	48	M6005-1480AW	30245670
15,00	16	133	83	63	48	M6005-1500AW	30245672
15,10	16	133	83	63	48	M6005-1510AW	30245674
15,50	16	133	83	63	48	M6005-1550AW	30245680
15,70	16	133	83	63	48	M6005-1570AW	30250933
15,80	16	133	83	63	48	M6005-1580AW	30245682
16,00	16	133	83	63	48	M6005-1600AW	30245684
16,50	18	143	93	71	48	M6005-1650AW	30245686
16,80	18	143	93	71	48	M6005-1680AW	30245688
17,00	18	143	93	71	48	M6005-1700AW	30245690
17,50	18	143	93	71	48	M6005-1750AW	30245692
17,80	18	143	93	71	48	M6005-1780AW	30245694
18,00	18	143	93	71	48	M6005-1800AW	30245696
18,50	20	153	101	77	50	M6005-1850AW	30245698
18,80	20	153	101	77	50	M6005-1880AW	30245700
19,00	20	153	101	77	50	M6005-1900AW	30245702
19,50	20	153	101	77	50	M6005-1950AW	30245704
19,80	20	153	101	77	50	M6005-1980AW	30245706
20,00	20	153	101	77	50	M6005-2000AW	30245708

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

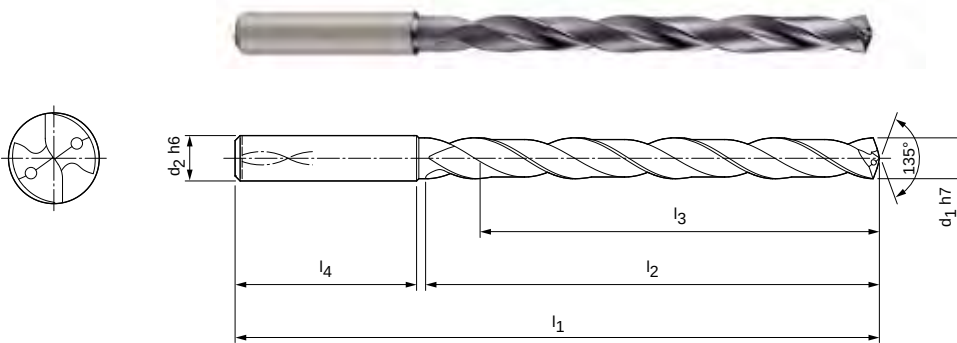
Special designs and other coatings on request.

ECU-Drill-Steel

8xD, internal cooling
M6108

Design:

Drill diameter: 3,00 - 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Point angle: 135°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	72	34	29	36	M6108-0300AE	30440502
3,10	6	72	34	29	36	M6108-0310AE	30440503
3,20	6	72	34	29	36	M6108-0320AE	30440504
3,30	6	72	34	29	36	M6108-0330AE	30440505
3,40	6	72	34	29	36	M6108-0340AE	30440507
3,50	6	72	34	29	36	M6108-0350AE	30440508
3,60	6	72	34	29	36	M6108-0360AE	30440509
3,70	6	72	34	29	36	M6108-0370AE	30440510
3,80	6	81	43	36	36	M6108-0380AE	30440511
3,90	6	81	43	36	36	M6108-0390AE	30440512
4,00	6	81	43	36	36	M6108-0400AE	30440513
4,10	6	81	43	36	36	M6108-0410AE	30440514
4,20	6	81	43	36	36	M6108-0420AE	30440516
4,30	6	81	43	36	36	M6108-0430AE	30440517
4,40	6	81	43	36	36	M6108-0440AE	30440518
4,50	6	81	43	36	36	M6108-0450AE	30440520
4,60	6	81	43	36	36	M6108-0460AE	30440521
4,70	6	81	43	36	36	M6108-0470AE	30440522
4,80	6	95	57	48	36	M6108-0480AE	30440523
4,90	6	95	57	48	36	M6108-0490AE	30440526
5,00	6	95	57	48	36	M6108-0500AE	30440527
5,10	6	95	57	48	36	M6108-0510AE	30440528
5,20	6	95	57	48	36	M6108-0520AE	30440529
5,30	6	95	57	48	36	M6108-0530AE	30440534
5,40	6	95	57	48	36	M6108-0540AE	30440531
5,50	6	95	57	48	36	M6108-0550AE	30440536
5,60	6	95	57	48	36	M6108-0560AE	30521095
5,70	6	95	57	48	36	M6108-0570AE	30531658
5,80	6	95	57	48	36	M6108-0580AE	30440537
5,90	6	95	57	48	36	M6108-0590AE	30440538
6,00	6	95	57	48	36	M6108-0600AE	30440540
6,10	8	114	76	64	36	M6108-0610AE	30440560
6,20	8	114	76	64	36	M6108-0620AE	30440561
6,30	8	114	76	64	36	M6108-0630AE	30440563
6,40	8	114	76	64	36	M6108-0640AE	30531660
6,50	8	114	76	64	36	M6108-0650AE	30440564

ECU-Drill-Steel | M6108, 8xD, internal cooling

Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,60	8	114	76	64	36	M6108-0660AE	30440565
6,70	8	114	76	64	36	M6108-0670AE	30531661
6,80	8	114	76	64	36	M6108-0680AE	30440567
6,90	8	114	76	64	36	M6108-0690AE	30531663
7,00	8	114	76	64	36	M6108-0700AE	30440570
7,10	8	114	76	64	36	M6108-0710AE	30531664
7,20	8	114	76	64	36	M6108-0720AE	30531665
7,30	8	114	76	64	36	M6108-0730AE	30531666
7,40	8	114	76	64	36	M6108-0740AE	30440571
7,50	8	114	76	64	36	M6108-0750AE	30440573
7,60	8	114	76	64	36	M6108-0760AE	30531667
7,70	8	114	76	64	36	M6108-0770AE	30440574
7,80	8	114	76	64	36	M6108-0780AE	30440577
7,90	8	114	76	64	36	M6108-0790AE	30440580
8,00	8	114	76	64	36	M6108-0800AE	30440583
8,10	10	142	95	80	40	M6108-0810AE	30440585
8,20	10	142	95	80	40	M6108-0820AE	30440587
8,30	10	142	95	80	40	M6108-0830AE	30440589
8,40	10	142	95	80	40	M6108-0840AE	30531668
8,50	10	142	95	80	40	M6108-0850AE	30440590
8,60	10	142	95	80	40	M6108-0860AE	30440591
8,65	10	142	95	80	40	M6108-0865AE	30600126
8,70	10	142	95	80	40	M6108-0870AE	30440593
8,80	10	142	95	80	40	M6108-0880AE	30440601
8,90	10	142	95	80	40	M6108-0890AE	30531669
9,00	10	142	95	80	40	M6108-0900AE	30440604
9,10	10	142	95	80	40	M6108-0910AE	30440606
9,20	10	142	95	80	40	M6108-0920AE	30440608
9,30	10	142	95	80	40	M6108-0930AE	30440611
9,40	10	142	95	80	40	M6108-0940AE	30440612
9,50	10	142	95	80	40	M6108-0950AE	30440613
9,60	10	142	95	80	40	M6108-0960AE	30531670
9,70	10	142	95	80	40	M6108-0970AE	30440614
9,80	10	142	95	80	40	M6108-0980AE	30440615
9,90	10	142	95	80	40	M6108-0990AE	30440618
10,00	10	142	95	80	40	M6108-1000AE	30440620
10,10	12	162	114	96	45	M6108-1010AE	30531671
10,20	12	162	114	96	45	M6108-1020AE	30440624
10,30	12	162	114	96	45	M6108-1030AE	30531672
10,40	12	162	114	96	45	M6108-1040AE	30531673
10,50	12	162	114	96	45	M6108-1050AE	30440625
10,60	12	162	114	96	45	M6108-1060AE	30531674
10,70	12	162	114	96	45	M6108-1070AE	30531675
10,80	12	162	114	96	45	M6108-1080AE	30440626
10,90	12	162	114	96	45	M6108-1090AE	30531676
11,00	12	162	114	96	45	M6108-1100AE	30440628
11,10	12	162	114	96	45	M6108-1110AE	30531677
11,20	12	162	114	96	45	M6108-1120AE	30440630
11,30	12	162	114	96	45	M6108-1130AE	30531678
11,40	12	162	114	96	45	M6108-1140AE	30531679
11,50	12	162	114	96	45	M6108-1150AE	30440631
11,60	12	162	114	96	45	M6108-1160AE	30531681
11,70	12	162	114	96	45	M6108-1170AE	30531683
11,80	12	162	114	96	45	M6108-1180AE	30440632
11,90	12	162	114	96	45	M6108-1190AE	30531684
12,00	12	162	114	96	45	M6108-1200AE	30440634
12,20	14	178	133	112	45	M6108-1220AE	30520277

ECU-Drill-Steel | M6108, 8xD, internal cooling

Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
12,50	14	178	133	112	45	M6108-1250AE	30440635
12,80	14	178	133	112	45	M6108-1280AE	30507087
13,00	14	178	133	112	45	M6108-1300AE	30440636
13,10	14	178	133	112	45	M6108-1310AE	30529208
13,50	14	178	133	112	45	M6108-1350AE	30440637
13,80	14	178	133	112	45	M6108-1380AE	30531685
14,00	14	178	133	112	45	M6108-1400AE	30440638
14,20	16	203	152	128	48	M6108-1420AE	30561680
14,50	16	203	152	128	48	M6108-1450AE	30440640
14,80	16	203	152	128	48	M6108-1480AE	30529139
15,00	16	203	152	128	48	M6108-1500AE	30440642
15,50	16	203	152	128	48	M6108-1550AE	30440643
15,80	16	203	152	128	48	M6108-1580AE	30508538
16,00	16	203	152	128	48	M6108-1600AE	30440644
16,50	18	222	171	144	48	M6108-1650AE	30440645
17,00	18	222	171	144	48	M6108-1700AE	30440647
17,50	18	222	171	144	48	M6108-1750AE	30440648
18,00	18	222	171	144	48	M6108-1800AE	30440649
18,50	20	243	190	160	50	M6108-1850AE	30440650
19,00	20	243	190	160	50	M6108-1900AE	30440651
19,50	20	243	190	160	50	M6108-1950AE	30531686
20,00	20	243	190	160	50	M6108-2000AE	30440652

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

ECU-Drill-Steel

12xD, internal cooling
M6112

Design:

Drill diameter:

3,00 - 20,00 mm

Bore tolerance:

≥ IT 9

Coating:

MxF

Number of cutting edges:

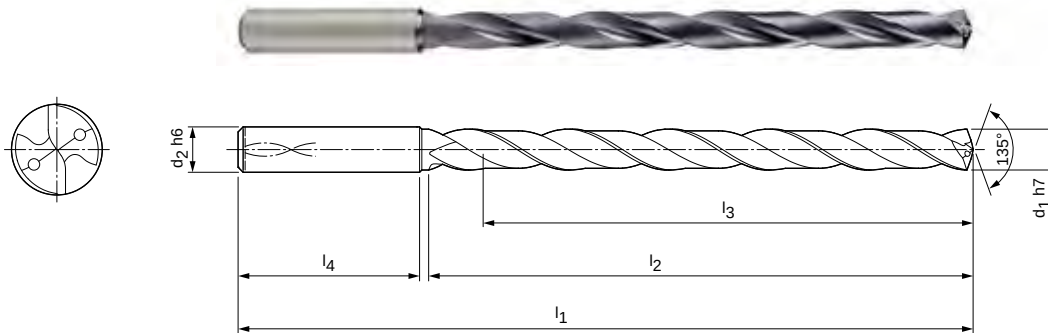
2

Point angle:

135°

Helix angle:

30°



Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	92	54	48	36	M6112-0300AE	30440772
3,10	6	92	54	48	36	M6112-0310AE	30440774
3,20	6	92	54	48	36	M6112-0320AE	30440775
3,30	6	92	54	48	36	M6112-0330AE	30440776
3,40	6	92	54	48	36	M6112-0340AE	30440777
3,50	6	92	54	48	36	M6112-0350AE	30440781
3,60	6	92	54	48	36	M6112-0360AE	30440783
3,70	6	92	54	48	36	M6112-0370AE	30440786
3,80	6	102	64	58	36	M6112-0380AE	30440790
3,90	6	102	64	58	36	M6112-0390AE	30440791
4,00	6	102	64	58	36	M6112-0400AE	30440792
4,10	6	102	64	58	36	M6112-0410AE	30440794
4,20	6	102	64	58	36	M6112-0420AE	30440795
4,30	6	102	64	58	36	M6112-0430AE	30440796
4,40	6	102	64	58	36	M6112-0440AE	30440797
4,50	6	102	64	58	36	M6112-0450AE	30440798
4,60	6	102	64	58	36	M6112-0460AE	30440799
4,70	6	102	64	58	36	M6112-0470AE	30440800
4,80	6	116	78	70	36	M6112-0480AE	30440801
4,90	6	116	78	70	36	M6112-0490AE	30440802
5,00	6	116	78	70	36	M6112-0500AE	30440803
5,10	6	116	78	70	36	M6112-0510AE	30564194
5,20	6	116	78	70	36	M6112-0520AE	30533817
5,30	6	116	78	70	36	M6112-0530AE	30564218
5,50	6	116	78	70	36	M6112-0550AE	30440804
5,80	6	116	78	70	36	M6112-0580AE	30440806
5,90	6	116	78	70	36	M6112-0590AE	30564362
6,00	6	116	78	70	36	M6112-0600AE	30440807
6,10	8	146	108	94	36	M6112-0610AE	30564367
6,20	8	146	108	94	36	M6112-0620AE	30533816
6,30	8	146	108	94	36	M6112-0630AE	30440808
6,50	8	146	108	94	36	M6112-0650AE	30440829
6,60	8	146	108	94	36	M6112-0660AE	30440830
6,80	8	146	108	94	36	M6112-0680AE	30440831
7,00	8	146	108	94	36	M6112-0700AE	30440832
7,40	8	146	108	94	36	M6112-0740AE	30564376

ECU-Drill-Steel | M6112, 12xD, internal cooling

Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
7,50	8	146	108	94	36	M6112-0750AE	30440833
7,70	8	146	108	94	36	M6112-0770AE	30564383
7,80	8	146	108	94	36	M6112-0780AE	30440834
7,90	8	146	108	94	36	M6112-0790AE	30564387
8,00	8	146	108	94	36	M6112-0800AE	30440835
8,10	10	162	120	110	40	M6112-0810AE	30564389
8,20	10	162	120	110	40	M6112-0820AE	30440837
8,30	10	162	120	110	40	M6112-0830AE	30564398
8,40	10	162	120	110	40	M6112-0840AE	30590704
8,50	10	162	120	110	40	M6112-0850AE	30440838
8,60	10	162	120	110	40	M6112-0860AE	30564433
8,70	10	162	120	110	40	M6112-0870AE	30564436
8,80	10	162	120	110	40	M6112-0880AE	30564442
9,00	10	162	120	110	40	M6112-0900AE	30440839
9,10	10	162	120	110	40	M6112-0910AE	30538635
9,20	10	162	120	110	40	M6112-0920AE	30564450
9,30	10	162	120	110	40	M6112-0930AE	30564454
9,40	10	162	120	110	40	M6112-0940AE	30564458
9,50	10	162	120	110	40	M6112-0950AE	30440840
9,70	10	162	120	110	40	M6112-0970AE	30564463
9,80	10	162	120	110	40	M6112-0980AE	30440841
9,90	10	162	120	110	40	M6112-0990AE	30564465
10,00	10	162	120	110	40	M6112-1000AE	30440842
10,20	12	204	156	142	45	M6112-1020AE	30564466
10,50	12	204	156	142	45	M6112-1050AE	30440843
10,80	12	204	156	142	45	M6112-1080AE	30564469
11,00	12	204	156	142	45	M6112-1100AE	30440844
11,20	12	204	156	142	45	M6112-1120AE	30564472
11,50	12	204	156	142	45	M6112-1150AE	30440845
11,80	12	204	156	142	45	M6112-1180AE	30538636
12,00	12	204	156	142	45	M6112-1200AE	30440846
12,50	14	230	182	166	45	M6112-1250AE	30564480
13,00	14	230	182	166	45	M6112-1300AE	30440847
13,20	14	230	182	166	45	M6112-1320AE	30493610
13,50	14	230	182	166	45	M6112-1350AE	30538637
14,00	14	230	182	166	45	M6112-1400AE	30440848
14,50	16	260	208	192	48	M6112-1450AE	30564485
14,80	16	260	208	192	48	M6112-1480AE	30538640
15,00	16	260	208	192	48	M6112-1500AE	30440850
15,50	16	260	208	192	48	M6112-1550AE	30564488
15,80	16	260	208	192	48	M6112-1580AE	30508540
16,00	16	260	208	192	48	M6112-1600AE	30440851
16,50	18	285	234	216	48	M6112-1650AE	30564490
17,00	18	285	234	216	48	M6112-1700AE	30564491
17,50	18	285	234	216	48	M6112-1750AE	30505010
18,00	18	285	234	216	48	M6112-1800AE	30440852
18,50	20	310	258	240	50	M6112-1850AE	30564496
19,00	20	310	258	240	50	M6112-1900AE	30564506
20,00	20	310	258	240	50	M6112-2000AE	30564509

Dimensions in mm.

Cutting data recommendations from page 272.

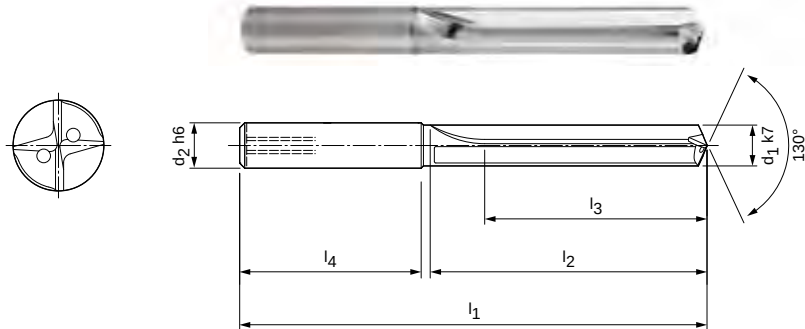
Special designs and other coatings on request.

ECU-G-Drill

Straight fluted, 5xD, internal cooling
M2605

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: Uncoated
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 130°



Dimensions						Specification	Order No.
d ₁ k7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	66	28	23	36	M2605-0300AU	30060575
3,10	6	66	28	23	36	M2605-0310AU	30060576
3,20	6	66	28	23	36	M2605-0320AU	30060577
3,30	6	66	28	23	36	M2605-0330AU	30072691
3,40	6	66	28	23	36	M2605-0340AU	30060580
3,50	6	66	28	23	36	M2605-0350AU	30060582
3,60	6	66	28	23	36	M2605-0360AU	30060583
3,70	6	66	28	23	36	M2605-0370AU	30073611
3,80	6	74	36	29	36	M2605-0380AU	30073633
3,90	6	74	36	29	36	M2605-0390AU	30060585
4,00	6	74	36	29	36	M2605-0400AU	30060587
4,10	6	74	36	29	36	M2605-0410AU	30060588
4,20	6	74	36	29	36	M2605-0420AU	30060590
4,30	6	74	36	29	36	M2605-0430AU	30060592
4,40	6	74	36	29	36	M2605-0440AU	30060594
4,50	6	74	36	29	36	M2605-0450AU	30060595
4,60	6	74	36	29	36	M2605-0460AU	30060596
4,70	6	74	36	29	36	M2605-0470AU	30060598
4,80	6	82	44	35	36	M2605-0480AU	30060601
4,90	6	82	44	35	36	M2605-0490AU	30072693
5,00	6	82	44	35	36	M2605-0500AU	30060602
5,10	6	82	44	35	36	M2605-0510AU	30060603
5,20	6	82	44	35	36	M2605-0520AU	30060606
5,30	6	82	44	35	36	M2605-0530AU	30060607
5,40	6	82	44	35	36	M2605-0540AU	30060610
5,50	6	82	44	35	36	M2605-0550AU	30072699
5,60	6	82	44	35	36	M2605-0560AU	30060611
5,70	6	82	44	35	36	M2605-0570AU	30060612
5,80	6	82	44	35	36	M2605-0580AU	30073818
5,90	6	82	44	35	36	M2605-0590AU	30073827
6,00	6	82	44	35	36	M2605-0600AU	30063207
6,10	8	91	53	43	36	M2605-0610AU	30060618
6,20	8	91	53	43	36	M2605-0620AU	30072702
6,30	8	91	53	43	36	M2605-0630AU	30060619
6,40	8	91	53	43	36	M2605-0640AU	30060622
6,50	8	91	53	43	36	M2605-0650AU	30060624

ECU-G-Drill | M2605, 5xD, straight fluted, internal cooling

Dimensions						Specification	Order No.
d ₁ k7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,60	8	91	53	43	36	M2605-0660AU	30060625
6,70	8	91	53	43	36	M2605-0670AU	30060626
6,80	8	91	53	43	36	M2605-0680AU	30072205
6,90	8	91	53	43	36	M2605-0690AU	30060629
7,00	8	91	53	43	36	M2605-0700AU	30060630
7,10	8	91	53	43	36	M2605-0710AU	30060633
7,20	8	91	53	43	36	M2605-0720AU	30060635
7,30	8	91	53	43	36	M2605-0730AU	30060636
7,40	8	91	53	43	36	M2605-0740AU	30063212
7,50	8	91	53	43	36	M2605-0750AU	30072831
7,60	8	91	53	43	36	M2605-0760AU	30072832
7,70	8	91	53	43	36	M2605-0770AU	30060638
7,80	8	91	53	43	36	M2605-0780AU	30060639
7,90	8	91	53	43	36	M2605-0790AU	30072814
8,00	8	91	53	43	36	M2605-0800AU	30072709
8,10	10	103	61	49	40	M2605-0810AU	30072952
8,20	10	103	61	49	40	M2605-0820AU	30072710
8,30	10	103	61	49	40	M2605-0830AU	30060642
8,40	10	103	61	49	40	M2605-0840AU	30060643
8,50	10	103	61	49	40	M2605-0850AU	30063223
8,60	10	103	61	49	40	M2605-0860AU	30060644
8,70	10	103	61	49	40	M2605-0870AU	30063215
8,80	10	103	61	49	40	M2605-0880AU	30072951
8,90	10	103	61	49	40	M2605-0890AU	30063216
9,00	10	103	61	49	40	M2605-0900AU	30063253
9,10	10	103	61	49	40	M2605-0910AU	30072815
9,20	10	103	61	49	40	M2605-0920AU	30063217
9,30	10	103	61	49	40	M2605-0930AU	30063218
9,40	10	103	61	49	40	M2605-0940AU	30072712
9,50	10	103	61	49	40	M2605-0950AU	30060653
9,60	10	103	61	49	40	M2605-0960AU	30060655
9,70	10	103	61	49	40	M2605-0970AU	30060656
9,80	10	103	61	49	40	M2605-0980AU	30060658
9,90	10	103	61	49	40	M2605-0990AU	30060661
10,00	10	103	61	49	40	M2605-1000AU	30072109
10,10	12	118	71	56	45	M2605-1010AU	30060662
10,20	12	118	71	56	45	M2605-1020AU	30074232
10,30	12	118	71	56	45	M2605-1030AU	30060664
10,40	12	118	71	56	45	M2605-1040AU	30060667
10,50	12	118	71	56	45	M2605-1050AU	30060669
10,60	12	118	71	56	45	M2605-1060AU	30060671
10,70	12	118	71	56	45	M2605-1070AU	30060673
10,80	12	118	71	56	45	M2605-1080AU	30060674
10,90	12	118	71	56	45	M2605-1090AU	30060675
11,00	12	118	71	56	45	M2605-1100AU	30072716
11,10	12	118	71	56	45	M2605-1110AU	30074303
11,20	12	118	71	56	45	M2605-1120AU	30074311
11,30	12	118	71	56	45	M2605-1130AU	30074322
11,40	12	118	71	56	45	M2605-1140AU	30074329
11,50	12	118	71	56	45	M2605-1150AU	30074338
11,60	12	118	71	56	45	M2605-1160AU	30060681
11,70	12	118	71	56	45	M2605-1170AU	30073285
11,80	12	118	71	56	45	M2605-1180AU	30060682
11,90	12	118	71	56	45	M2605-1190AU	30060684
12,00	12	118	71	56	45	M2605-1200AU	30060686
12,50	14	124	77	60	45	M2605-1250AU	30072877
13,00	14	124	77	60	45	M2605-1300AU	30060691

Continued on next page.

ECU-G-Drill | M2605, 5xD, straight fluted, internal cooling

Dimensions						Specification	Order No.
d ₁ k7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
13,50	14	124	77	60	45	M2605-1350AU	30072719
14,00	14	124	77	60	45	M2605-1400AU	30072890
14,50	16	133	83	63	48	M2605-1450AU	30060698
15,00	16	133	83	63	48	M2605-1500AU	30072720
15,50	16	133	83	63	48	M2605-1550AU	30060702
16,00	16	133	83	63	48	M2605-1600AU	30060705
16,50	18	143	93	71	48	M2605-1650AU	30072722
17,00	18	143	93	71	48	M2605-1700AU	30060708
18,00	18	143	93	71	48	M2605-1800AU	30060711
18,50	20	153	101	77	50	M2605-1850AU	30072726
19,00	20	153	101	77	50	M2605-1900AU	30072728
19,50	20	153	101	77	50	M2605-1950AU	30060714
20,00	20	153	101	77	50	M2605-2000AU	30060716

Dimensions in mm.

Cutting data recommendations from page 272.

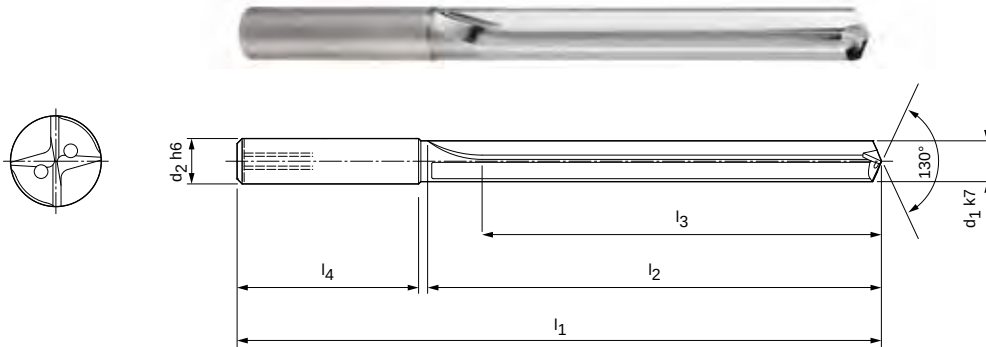
Special designs and other coatings on request.

ECU-G-Drill

Straight fluted, 8xD, internal cooling
M2608

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: Uncoated
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 130°



Dimensions						Specification	Order No.
d ₁ k7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	72	34	29	36	M2608-0300AU	30060719
3,10	6	72	34	29	36	M2608-0310AU	30072895
3,20	6	72	34	29	36	M2608-0320AU	30060721
3,30	6	72	34	29	36	M2608-0330AU	30060722
3,40	6	72	34	29	36	M2608-0340AU	30072891
3,50	6	72	34	29	36	M2608-0350AU	30072897
3,60	6	72	34	29	36	M2608-0360AU	30072893
3,70	6	72	34	29	36	M2608-0370AU	30072899
3,80	6	81	43	36	36	M2608-0380AU	30060724
3,90	6	81	43	36	36	M2608-0390AU	30060725
4,00	6	81	43	36	36	M2608-0400AU	30060726
4,10	6	81	43	36	36	M2608-0410AU	30072900
4,20	6	81	43	36	36	M2608-0420AU	30060727
4,30	6	81	43	36	36	M2608-0430AU	30072901
4,40	6	81	43	36	36	M2608-0440AU	30072961
4,50	6	81	43	36	36	M2608-0450AU	30060729
4,60	6	81	43	36	36	M2608-0460AU	30072757
4,70	6	81	43	36	36	M2608-0470AU	30063294
4,80	6	95	57	48	36	M2608-0480AU	30060733
4,90	6	95	57	48	36	M2608-0490AU	30073731
5,00	6	95	57	48	36	M2608-0500AU	30060735
5,10	6	95	57	48	36	M2608-0510AU	30072903
5,20	6	95	57	48	36	M2608-0520AU	30060736
5,30	6	95	57	48	36	M2608-0530AU	30060737
5,40	6	95	57	48	36	M2608-0540AU	30060738
5,50	6	95	57	48	36	M2608-0550AU	30060739
5,60	6	95	57	48	36	M2608-0560AU	30072906
5,70	6	95	57	48	36	M2608-0570AU	30060740
5,80	6	95	57	48	36	M2608-0580AU	30060741
5,90	6	95	57	48	36	M2608-0590AU	30072907
6,00	6	95	57	48	36	M2608-0600AU	30060744
6,10	8	114	76	64	36	M2608-0610AU	30060745
6,20	8	114	76	64	36	M2608-0620AU	30060746
6,30	8	114	76	64	36	M2608-0630AU	30060748
6,40	8	114	76	64	36	M2608-0640AU	30060749
6,50	8	114	76	64	36	M2608-0650AU	30060750

ECU-G-Drill | M2608, 8xD, straight fluted, internal cooling

Dimensions						Specification	Order No.
d ₁ k7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,60	8	114	76	64	36	M2608-0660AU	30060751
6,70	8	114	76	64	36	M2608-0670AU	30060753
6,80	8	114	76	64	36	M2608-0680AU	30060755
6,90	8	114	76	64	36	M2608-0690AU	30060756
7,00	8	114	76	64	36	M2608-0700AU	30060758
7,10	8	114	76	64	36	M2608-0710AU	30073937
7,20	8	114	76	64	36	M2608-0720AU	30073944
7,30	8	114	76	64	36	M2608-0730AU	30073951
7,40	8	114	76	64	36	M2608-0740AU	30073960
7,50	8	114	76	64	36	M2608-0750AU	30073974
7,60	8	114	76	64	36	M2608-0760AU	30073987
7,70	8	114	76	64	36	M2608-0770AU	30073993
7,80	8	114	76	64	36	M2608-0780AU	30073999
7,90	8	114	76	64	36	M2608-0790AU	30060764
8,00	8	114	76	64	36	M2608-0800AU	30060765
8,10	10	142	95	80	40	M2608-0810AU	30060766
8,20	10	142	95	80	40	M2608-0820AU	30074043
8,30	10	142	95	80	40	M2608-0830AU	30074051
8,40	10	142	95	80	40	M2608-0840AU	30074059
8,50	10	142	95	80	40	M2608-0850AU	30072908
8,60	10	142	95	80	40	M2608-0860AU	30060768
8,70	10	142	95	80	40	M2608-0870AU	30074087
8,80	10	142	95	80	40	M2608-0880AU	30074095
8,90	10	142	95	80	40	M2608-0890AU	30074106
9,00	10	142	95	80	40	M2608-0900AU	30072942
9,10	10	142	95	80	40	M2608-0910AU	30060769
9,20	10	142	95	80	40	M2608-0920AU	30060770
9,30	10	142	95	80	40	M2608-0930AU	30060772
9,40	10	142	95	80	40	M2608-0940AU	30060774
9,50	10	142	95	80	40	M2608-0950AU	30060776
9,60	10	142	95	80	40	M2608-0960AU	30060777
9,70	10	142	95	80	40	M2608-0970AU	30060778
9,80	10	142	95	80	40	M2608-0980AU	30060779
9,90	10	142	95	80	40	M2608-0990AU	30060781
10,00	10	142	95	80	40	M2608-1000AU	30060782
10,10	12	162	114	96	45	M2608-1010AU	30060784
10,20	12	162	114	96	45	M2608-1020AU	30060786
10,30	12	162	114	96	45	M2608-1030AU	30060787
10,40	12	162	114	96	45	M2608-1040AU	30060790
10,50	12	162	114	96	45	M2608-1050AU	30060792
10,60	12	162	114	96	45	M2608-1060AU	30060793
10,70	12	162	114	96	45	M2608-1070AU	30060794
10,80	12	162	114	96	45	M2608-1080AU	30060795
10,90	12	162	114	96	45	M2608-1090AU	30060796
11,00	12	162	114	96	45	M2608-1100AU	30060798
11,10	12	162	114	96	45	M2608-1110AU	30060799
11,20	12	162	114	96	45	M2608-1120AU	30060800
11,30	12	162	114	96	45	M2608-1130AU	30060801
11,40	12	162	114	96	45	M2608-1140AU	30060802
11,50	12	162	114	96	45	M2608-1150AU	30060804
11,60	12	162	114	96	45	M2608-1160AU	30060806
11,70	12	162	114	96	45	M2608-1170AU	30060807
11,80	12	162	114	96	45	M2608-1180AU	30060808
11,90	12	162	114	96	45	M2608-1190AU	30060809
12,00	12	162	114	96	45	M2608-1200AU	30074389
12,50	14	178	133	112	45	M2608-1250AU	30060811
13,00	14	178	133	112	45	M2608-1300AU	30074426

ECU-G-Drill | M2608, 8xD, straight fluted, internal cooling

Dimensions						Specification	Order No.
d ₁ k7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
13,50	14	178	133	112	45	M2608-1350AU	30074440
14,00	14	178	133	112	45	M2608-1400AU	30060820
14,50	16	203	152	128	48	M2608-1450AU	30060821
15,00	16	203	152	128	48	M2608-1500AU	30060822
15,50	16	203	152	128	48	M2608-1550AU	30072910
16,00	16	203	152	128	48	M2608-1600AU	30060824
16,50	18	222	171	144	48	M2608-1650AU	30072911
17,00	18	222	171	144	48	M2608-1700AU	30060828
17,50	18	222	171	144	48	M2608-1750AU	30060829
18,00	18	222	171	144	48	M2608-1800AU	30060831
18,50	20	243	190	160	50	M2608-1850AU	30060832
19,00	20	243	190	160	50	M2608-1900AU	30060835
19,50	20	243	190	160	50	M2608-1950AU	30072912
20,00	20	243	190	160	50	M2608-2000AU	30060837

Dimensions in mm.

Cutting data recommendations from page 272.

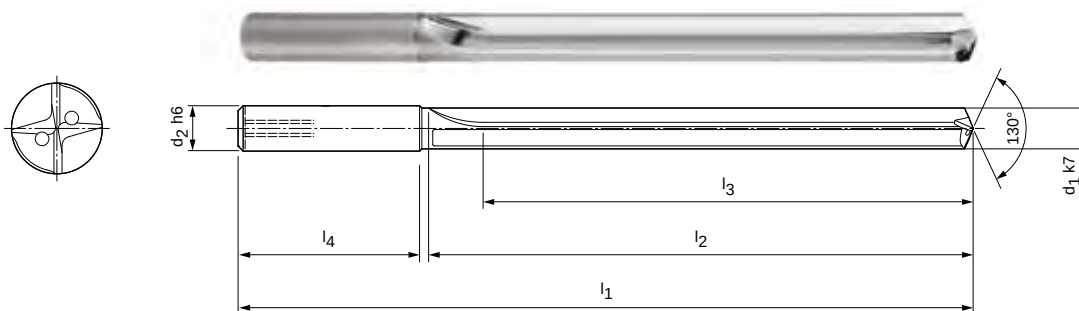
Special designs and other coatings on request.

ECU-G-Drill

Straight fluted, 12xD, internal cooling
M2612

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: Uncoated
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 130°



Dimensions						Specification	Order No.
d ₁ k7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	92	54	48	36	M2612-0300AU	30142400
3,10	6	92	54	48	36	M2612-0310AU	30060840
3,20	6	92	54	48	36	M2612-0320AU	30060841
3,30	6	92	54	48	36	M2612-0330AU	30060842
3,40	6	92	54	48	36	M2612-0340AU	30060843
3,50	6	92	54	48	36	M2612-0350AU	30142405
3,60	6	92	54	48	36	M2612-0360AU	30142406
3,70	6	92	54	48	36	M2612-0370AU	30060844
3,80	6	102	64	58	36	M2612-0380AU	30142408
3,90	6	102	64	58	36	M2612-0390AU	30060846
4,00	6	102	64	58	36	M2612-0400AU	30074902
4,10	6	102	64	58	36	M2612-0410AU	30142411
4,20	6	102	64	58	36	M2612-0420AU	30142412
4,30	6	102	64	58	36	M2612-0430AU	30142413
4,40	6	102	64	58	36	M2612-0440AU	30142415
4,50	6	102	64	58	36	M2612-0450AU	30142417
4,60	6	102	64	58	36	M2612-0460AU	30060854
4,70	6	102	64	58	36	M2612-0470AU	30142420
4,80	6	116	78	70	36	M2612-0480AU	30075069
4,90	6	116	78	70	36	M2612-0490AU	30142423
5,00	6	116	78	70	36	M2612-0500AU	30074903
5,10	6	116	78	70	36	M2612-0510AU	30142424
5,20	6	116	78	70	36	M2612-0520AU	30142425
5,30	6	116	78	70	36	M2612-0530AU	30142427
5,40	6	116	78	70	36	M2612-0540AU	30142429
5,50	6	116	78	70	36	M2612-0550AU	30060863
5,60	6	116	78	70	36	M2612-0560AU	30060865
5,70	6	116	78	70	36	M2612-0570AU	30060866
5,80	6	116	78	70	36	M2612-0580AU	30060869
5,90	6	116	78	70	36	M2612-0590AU	30142432
6,00	6	116	78	70	36	M2612-0600AU	30060873
6,10	8	146	108	94	36	M2612-0610AU	30094661
6,20	8	146	108	94	36	M2612-0620AU	30142435
6,30	8	146	108	94	36	M2612-0630AU	30142437
6,40	8	146	108	94	36	M2612-0640AU	30142439
6,50	8	146	108	94	36	M2612-0650AU	30076711

ECU-G-Drill | M2612, 12xD, straight fluted, internal cooling

Dimensions						Specification	Order No.
d ₁ k7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,60	8	146	108	94	36	M2612-0660AU	30142442
6,70	8	146	108	94	36	M2612-0670AU	30142444
6,80	8	146	108	94	36	M2612-0680AU	30142446
6,90	8	146	108	94	36	M2612-0690AU	30060883
7,00	8	146	108	94	36	M2612-0700AU	30060885
7,10	8	146	108	94	36	M2612-0710AU	30118859
7,20	8	146	108	94	36	M2612-0720AU	30142450
7,30	8	146	108	94	36	M2612-0730AU	30060888
7,40	8	146	108	94	36	M2612-0740AU	30060889
7,50	8	146	108	94	36	M2612-0750AU	30060890
7,60	8	146	108	94	36	M2612-0760AU	30060891
7,70	8	146	108	94	36	M2612-0770AU	30060892
7,80	8	146	108	94	36	M2612-0780AU	30060893
7,90	8	146	108	94	36	M2612-0790AU	30060895
8,00	8	146	108	94	36	M2612-0800AU	30060896
8,10	10	162	120	110	40	M2612-0810AU	30060897
8,20	10	162	120	110	40	M2612-0820AU	30060898
8,30	10	162	120	110	40	M2612-0830AU	30060901
8,40	10	162	120	110	40	M2612-0840AU	30076713
8,50	10	162	120	110	40	M2612-0850AU	30060904
8,60	10	162	120	110	40	M2612-0860AU	30060906
8,70	10	162	120	110	40	M2612-0870AU	30142460
8,80	10	162	120	110	40	M2612-0880AU	30060908
8,90	10	162	120	110	40	M2612-0890AU	30142462
9,00	10	162	120	110	40	M2612-0900AU	30060922
9,10	10	162	120	110	40	M2612-0910AU	30142464
9,20	10	162	120	110	40	M2612-0920AU	30060925
9,30	10	162	120	110	40	M2612-0930AU	30142466
9,40	10	162	120	110	40	M2612-0940AU	30142468
9,50	10	162	120	110	40	M2612-0950AU	30142470
9,60	10	162	120	110	40	M2612-0960AU	30060930
9,70	10	162	120	110	40	M2612-0970AU	30060931
9,80	10	162	120	110	40	M2612-0980AU	30060932
9,90	10	162	120	110	40	M2612-0990AU	30060933
10,00	10	162	120	110	40	M2612-1000AU	30072011
10,10	12	204	156	142	45	M2612-1010AU	30060935
10,20	12	204	156	142	45	M2612-1020AU	30060936
10,30	12	204	156	142	45	M2612-1030AU	30060937
10,40	12	204	156	142	45	M2612-1040AU	30142479
10,50	12	204	156	142	45	M2612-1050AU	30072013
10,60	12	204	156	142	45	M2612-1060AU	30060939
10,70	12	204	156	142	45	M2612-1070AU	30060940
10,80	12	204	156	142	45	M2612-1080AU	30060941
10,90	12	204	156	142	45	M2612-1090AU	30060942
11,00	12	204	156	142	45	M2612-1100AU	30060944
11,10	12	204	156	142	45	M2612-1110AU	30142486
11,20	12	204	156	142	45	M2612-1120AU	30074904
11,30	12	204	156	142	45	M2612-1130AU	30142488
11,40	12	204	156	142	45	M2612-1140AU	30142490
11,50	12	204	156	142	45	M2612-1150AU	30142492
11,60	12	204	156	142	45	M2612-1160AU	30142493
11,70	12	204	156	142	45	M2612-1170AU	30140273
11,80	12	204	156	142	45	M2612-1180AU	30142496
11,90	12	204	156	142	45	M2612-1190AU	30142498
12,00	12	204	156	142	45	M2612-1200AU	30072014
12,50	14	230	182	166	45	M2612-1250AU	30060951
13,00	14	230	182	166	45	M2612-1300AU	30060953

Continued on next page.

ECU-G-Drill | M2612, 12xD, straight fluted, internal cooling

Dimensions						Specification	Order No.
d ₁ k7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
13,50	14	230	182	166	45	M2612-1350AU	30060955
14,00	14	230	182	166	45	M2612-1400AU	30142504
14,50	16	260	208	192	48	M2612-1450AU	30142506
15,00	16	260	208	192	48	M2612-1500AU	30142509
15,50	16	260	208	192	48	M2612-1550AU	30142510
16,00	16	260	208	192	48	M2612-1600AU	30142514
17,00	18	285	234	216	48	M2612-1700AU	30079079
17,50	18	285	234	216	48	M2612-1750AU	30142523
18,00	18	285	234	216	48	M2612-1800AU	30142528
18,50	20	310	258	240	50	M2612-1850AU	30142531
19,00	20	310	258	240	50	M2612-1900AU	30142537
19,50	20	310	258	240	50	M2612-1950AU	30142540
20,00	20	310	258	240	50	M2612-2000AU	30060967

Dimensions in mm.

Cutting data recommendations from page 272.

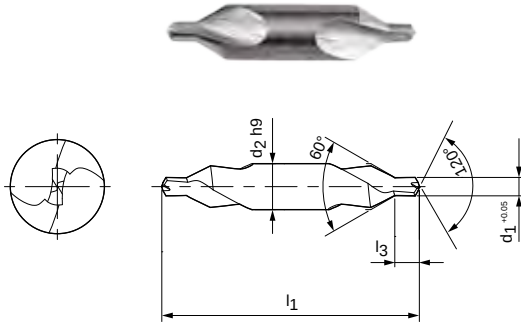
Special designs and other coatings on request.

ECU-Centre-Drill

Centre drill made of solid carbide
M1200

Design:

Drill diameter: 0,50 – 6,30 mm
Coating: Uncoated
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 120°/60°
Helix angle: 5°



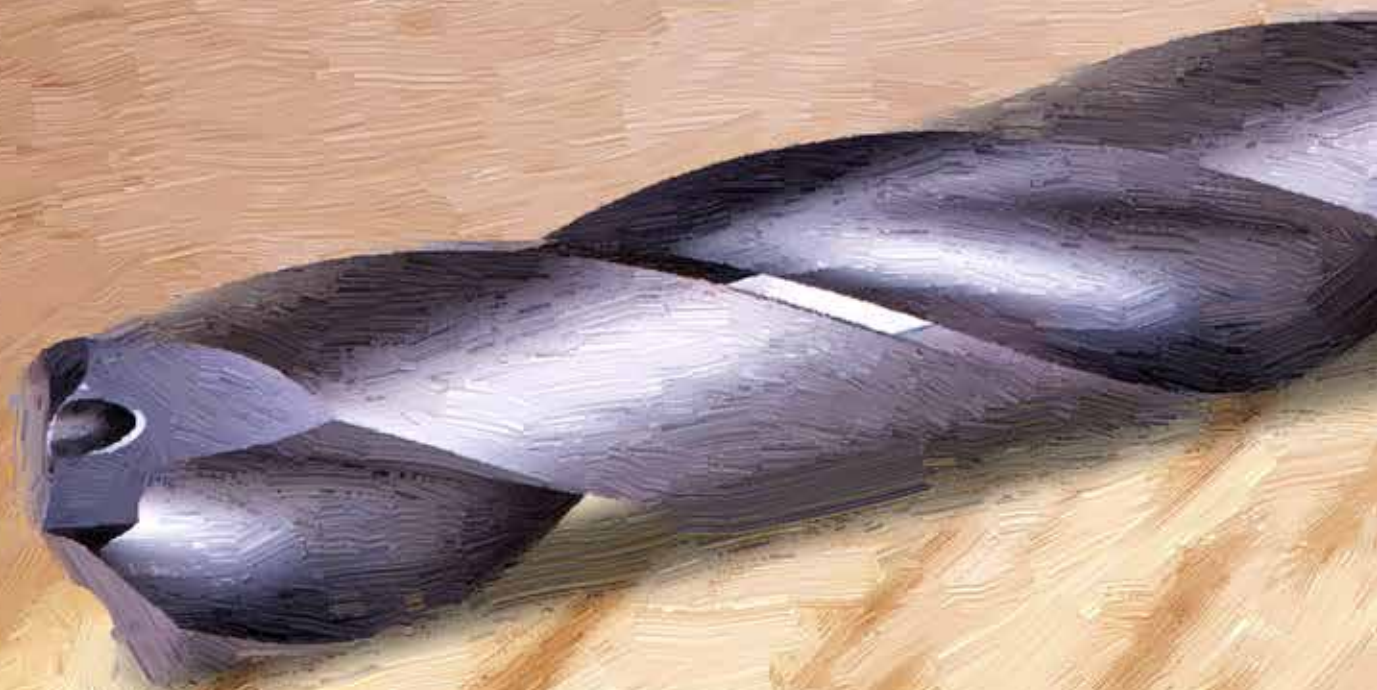
Dimensions				Specification	Order No.
d ₁ (0 +0,05)	d ₂ h9	l ₁	l ₃		
0,50*	3,15	20,0	0,80	M1200-0050AU	30050399
0,80*	3,15	20,0	1,10	M1200-0080AU	30050402
1,00	3,15	31,5	1,30	M1200-0100AU	30050405
1,25	3,15	31,5	1,60	M1200-0125AU	30050407
1,60	4,00	35,5	2,00	M1200-0160AU	30050410
2,00	5,00	40,0	2,50	M1200-0200AU	30050413
2,50	6,30	45,0	3,10	M1200-0250AU	30050417
3,15	8,00	50,0	3,90	M1200-0315AU	30050420
4,00	10,00	56,0	5,00	M1200-0400AU	30050424
5,00	12,50	63,0	6,30	M1200-0500AU	30050427
6,30	16,00	71,0	8,00	M1200-0630AU	30050430

Dimensions in mm.

* Single-side cutting.

Cutting data recommendations from page 272.

Special designs and other coatings on request.



MEGA-DRILL

Introduction

Product overview	68
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MEGA-Drill-Steel

MEGA-Drill-Steel, 3xD - external + internal cooling	70
MEGA-Drill-Steel, 5xD - external + internal cooling	76
MEGA-Drill-Steel, 8xD - internal cooling	82
MEGA-Drill-Steel, 12xD - internal cooling	85
MEGA-Step-Drill-Steel - external + internal cooling	88

MEGA-Drill-Steel-Plus

MEGA-Drill-Steel-Plus, 3xD - external + internal cooling	90
MEGA-Drill-Steel-Plus, 5xD - external + internal cooling	98
MEGA-Drill-Steel-Plus, 8xD - internal cooling	106

MEGA-Drill-Inox

MEGA-Drill-Inox, 3xD - external + internal cooling	109
MEGA-Drill-Inox, 5xD - external + internal cooling	115
MEGA-Drill-Inox, 8xD - internal cooling	121

MEGA-Drill-Alu

MEGA-Drill-Alu, 3xD - internal cooling	124
MEGA-Drill-Alu, 5xD - external + internal cooling	125
MEGA-Drill-Alu, 8xD - internal cooling	129
MEGA-Drill-Alu, 12xD - internal cooling	132

MEGA-Drill-Inco

MEGA-Drill-Inco, 5xD - internal cooling	135
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MEGA-Drill-Hardened

MEGA-Drill-Hardened, 4xD - external cooling	136
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MEGA-Drill-Composite

MEGA-Drill-Composite-MD-Micro, 5xD - external cooling	139
MEGA-Drill-Composite-MD, 5xD - external cooling	140
MEGA-Drill-Composite-UDX, 5xD - external cooling	143
MEGA-Drill-Composite-UDX, 5xD - internal cooling	146

MEGA-SMART-Drill

MEGA-SMART-Drill, 5xD - internal cooling	148
MEGA-SMART-Drill, 8xD - internal cooling	149
MEGA-SMART-Drill, 12xD - internal cooling	150

MEGA-Deep-Drill

MEGA-Deep-Drill, 15xD - internal cooling	151
MEGA-Deep-Drill, 20xD - internal cooling	152
MEGA-Deep-Drill, 25xD - internal cooling	153
MEGA-Deep-Drill, 30xD - internal cooling	154
MEGA-Deep-Drill, 40xD - internal cooling	155

MEGA-Deep-Drill-Alu

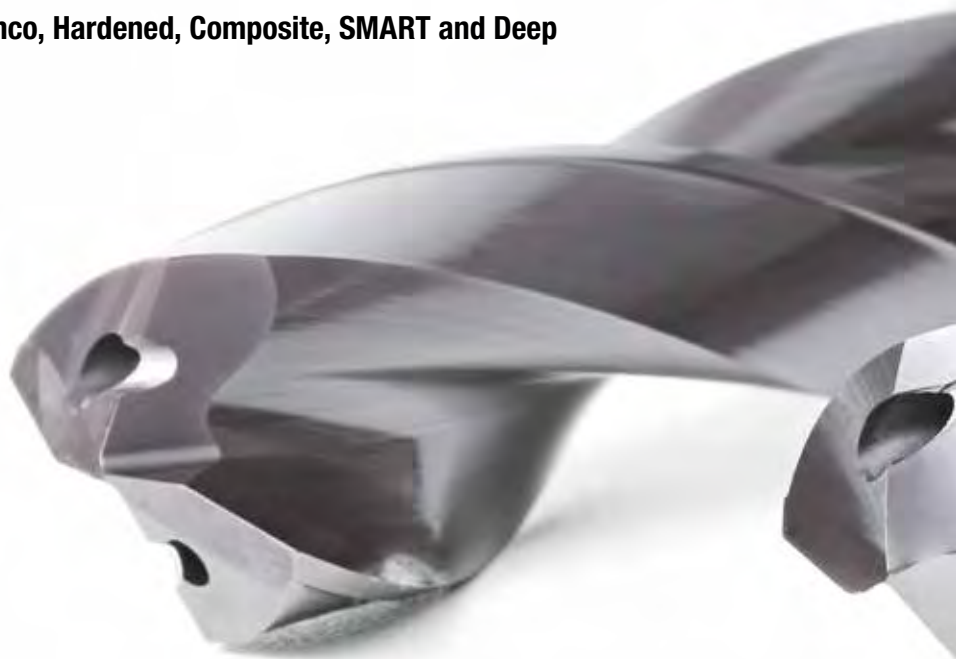
MEGA-Deep-Drill-Alu, 15xD - internal cooling	156
MEGA-Deep-Drill-Alu, 20xD - internal cooling	157
MEGA-Deep-Drill-Alu, 25xD - internal cooling	158
MEGA-Deep-Drill-Alu, 30xD - internal cooling	159
MEGA-Deep-Drill-Alu, 40xD - internal cooling	160

PRODUCT OVERVIEW

MEGA-Drill: Steel, Steel-Plus, Inox, Alu, Inco, Hardened, Composite, SMART and Deep

With the drills in the MEGA-Drill series, both the requirement for tools of universal application and the wish for special tools designed for the related workpiece material are met.

The series includes drills, also as step solutions, with special cutting edge geometries and chip flutes, as a well as with matched coatings. Along with steel, inox, aluminium and hardened materials, the drills are also available for machining modern materials. Deep hole drills for bores up to 40xD complete the MEGA-Drill series.



					
MEGA-Drill-Steel Due to the special design of the cutting edges and the chip flutes, the MEGA-Drill-Steel is adapted and optimised for machining steel.	MEGA-Drill-Steel-Plus Advanced version of the MEGA-Drill-Steel. With its advanced wear resistance and performance the MEGA-Drill-Steel-Plus establishes the next generation in drilling steel.	MEGA-Drill-Inox In addition to its very sharp cutting edge with special cutting edge preparation, the MEGA-Drill-Inox also has an optimised chip flute with a rounded geometry.	MEGA-Drill-Alu The spiral fluted high-performance drill MEGA-Drill-Alu with its large chip flutes, the special radial geometry and the highly polished chip flutes meets very high requirements on the drilling quality.	MEGA-Drill-Inco The MEGA-Drill-Inco has four guiding chamfers. The special solid carbide substrate for pronounced cutting edge ductility as well as the highly polished chip flutes ensure controlled chip removal.	
 ø range: 3,00 - 25,00 mm Drilling depth: 3xD 5xD 8xD 12xD P K	 ø range: 3,00 - 25,00 mm Drilling depth: 3xD 5xD 8xD P K	 ø range: 3,00 - 20,00 mm Drilling depth: 3xD 5xD 8xD P M K N S	 ø range: 3,00 - 19,00 mm Drilling depth: 3xD 5xD 8xD 12xD N	 ø range: 3,00 - 12,00 mm Drilling depth: 5xD S	
Page 70	Page 90	Page 109	Page 124	Page 135	



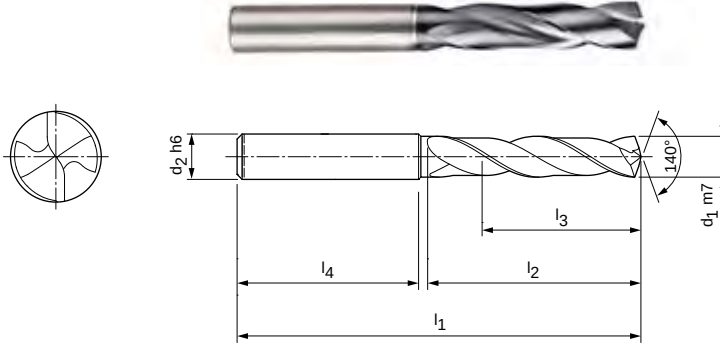
			
MEGA-Drill-Hardened For machining hardened materials in the range from 50 – 65 HRC, the MEGA-Drill-Hardened has a high helical pitch and a special chip flute geometry. Performance LINE Ø range: 2,50 - 16,00 mm Drilling depth: 4xD H	MEGA-Drill-Composite The MD variants are individually designed for unidirectional and multidirectional CFRP composite materials respectively. The UDX is suitable for all CFRP materials and acts as a problem solver. Performance LINE Ø range: 0,50 - 12,00 mm Drilling depth: 5xD N C	MEGA-SMART-Drill For bore diameters even in the range from 1.00 to 2.90 mm and depths of bore up to 12xD the MEGA-SMART-Drill is equipped with internal coolant supply. Performance LINE Ø range: 1,00 - 2,90 mm Drilling depth: 5xD 8xD 12xD P M K N	MEGA-Deep-Drill The MEGA-Deep-Drill and the MEGA-Deep-Drill-Alu open up new opportunities for the particularly efficient and reliable production of deep bores up to 40xD. Performance LINE Ø range: 3,00 - 16,00 mm Drilling depth: 15xD 20xD 25xD 30xD 40xD P K
Page 136	Page 139	Page 148	Page 151

MEGA-Drill-Steel

3xD, external cooling
M2003

Design:

Drill diameter: 2,80 – 25,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
*2,80	6	62	20	14	36	M2003-0280AE	30225762	M2003-0280EE	30178709
3,00	6	62	20	14	36	M2003-0300AE	30059366	M2003-0300EE	30053150
3,10	6	62	20	14	36	M2003-0310AE	30074830	M2003-0310EE	30053153
3,20	6	62	20	14	36	M2003-0320AE	30059368	M2003-0320EE	30053156
3,30	6	62	20	14	36	M2003-0330AE	30074815	M2003-0330EE	30053159
3,40	6	62	20	14	36	M2003-0340AE	30074849	M2003-0340EE	30053162
3,50	6	62	20	14	36	M2003-0350AE	30059370	M2003-0350EE	30053165
3,60	6	62	20	14	36	M2003-0360AE	30059371	M2003-0360EE	30053168
*3,70	6	62	20	14	36	M2003-0370AE	30059373	M2003-0370EE	30053171
3,80	6	66	24	17	36	M2003-0380AE	30059375	M2003-0380EE	30053174
3,90	6	66	24	17	36	M2003-0390AE	30074847	M2003-0390EE	30053177
4,00	6	66	24	17	36	M2003-0400AE	30072341	M2003-0400EE	30053180
4,10	6	66	24	17	36	M2003-0410AE	30059378	M2003-0410EE	30053183
4,20	6	66	24	17	36	M2003-0420AE	30059380	M2003-0420EE	30053186
4,30	6	66	24	17	36	M2003-0430AE	30073071	M2003-0430EE	30053189
4,40	6	66	24	17	36	M2003-0440AE	30059382	M2003-0440EE	30053192
4,50	6	66	24	17	36	M2003-0450AE	30059384	M2003-0450EE	30053195
4,60	6	66	24	17	36	M2003-0460AE	30075705	M2003-0460EE	30053198
*4,65	6	66	24	17	36	M2003-0465AE	30100661	M2003-0465EE	30075501
4,70	6	66	24	17	36	M2003-0470AE	30073050	M2003-0470EE	30053201
4,80	6	66	28	20	36	M2003-0480AE	30075706	M2003-0480EE	30053204
4,90	6	66	28	20	36	M2003-0490AE	30059387	M2003-0490EE	30053207
5,00	6	66	28	20	36	M2003-0500AE	30073628	M2003-0500EE	30053210
5,10	6	66	28	20	36	M2003-0510AE	30059389	M2003-0510EE	30053213
5,20	6	66	28	20	36	M2003-0520AE	30072759	M2003-0520EE	30053216
5,30	6	66	28	20	36	M2003-0530AE	30074812	M2003-0530EE	30053219
5,40	6	66	28	20	36	M2003-0540AE	30074769	M2003-0540EE	30053222
5,50	6	66	28	20	36	M2003-0550AE	30073051	M2003-0550EE	30053225
*5,55	6	66	28	20	36	M2003-0555AE	30093957	M2003-0555EE	30072669
5,60	6	66	28	20	36	M2003-0560AE	30062567	M2003-0560EE	30053228
5,70	6	66	28	20	36	M2003-0570AE	30059394	M2003-0570EE	30053231
5,80	6	66	28	20	36	M2003-0580AE	30074817	M2003-0580EE	30053234
5,90	6	66	28	20	36	M2003-0590AE	30059395	M2003-0590EE	30053237
6,00	6	66	28	20	36	M2003-0600AE	30059396	M2003-0600EE	30053240
6,10	8	79	34	24	36	M2003-0610AE	30062518	M2003-0610EE	30053243
6,20	8	79	34	24	36	M2003-0620AE	30059398	M2003-0620EE	30053246

MEGA-Drill-Steel | M2003, 3xD, external cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
6,30	8	79	34	24	36	M2003-0630AE	30059400	M2003-0630EE	30053249
6,40	8	79	34	24	36	M2003-0640AE	30074899	M2003-0640EE	30053253
6,50	8	79	34	24	36	M2003-0650AE	30059402	M2003-0650EE	30053255
6,60	8	79	34	24	36	M2003-0660AE	30059403	M2003-0660EE	30053259
6,70	8	79	34	24	36	M2003-0670AE	30059405	M2003-0670EE	30053262
6,80	8	79	34	24	36	M2003-0680AE	30059406	M2003-0680EE	30053265
6,90	8	79	34	24	36	M2003-0690AE	30062569	M2003-0690EE	30053268
7,00	8	79	34	24	36	M2003-0700AE	30074811	M2003-0700EE	30053271
7,10	8	79	41	29	36	M2003-0710AE	30059409	M2003-0710EE	30053274
7,20	8	79	41	29	36	M2003-0720AE	30059412	M2003-0720EE	30053277
7,30	8	79	41	29	36	M2003-0730AE	30059413	M2003-0730EE	30053280
7,40	8	79	41	29	36	M2003-0740AE	30059414	M2003-0740EE	30053283
*7,45	8	79	41	29	36	M2003-0745AE	30322914	M2003-0745EE	30376066
7,50	8	79	41	29	36	M2003-0750AE	30059415	M2003-0750EE	30053286
7,60	8	79	41	29	36	M2003-0760AE	30075707	M2003-0760EE	30053289
7,70	8	79	41	29	36	M2003-0770AE	30059417	M2003-0770EE	30053292
7,80	8	79	41	29	36	M2003-0780AE	30059418	M2003-0780EE	30053295
7,90	8	79	41	29	36	M2003-0790AE	30074809	M2003-0790EE	30053298
8,00	8	79	41	29	36	M2003-0800AE	30059420	M2003-0800EE	30053301
8,10	10	89	47	35	40	M2003-0810AE	30059421	M2003-0810EE	30053304
8,20	10	89	47	35	40	M2003-0820AE	30062527	M2003-0820EE	30053307
8,30	10	89	47	35	40	M2003-0830AE	30059424	M2003-0830EE	30053310
8,40	10	89	47	35	40	M2003-0840AE	30059427	M2003-0840EE	30053314
8,50	10	89	47	35	40	M2003-0850AE	30072873	M2003-0850EE	30053317
8,60	10	89	47	35	40	M2003-0860AE	30059428	M2003-0860EE	30053319
8,70	10	89	47	35	40	M2003-0870AE	30059429	M2003-0870EE	30053322
8,80	10	89	47	35	40	M2003-0880AE	30059431	M2003-0880EE	30053325
8,90	10	89	47	35	40	M2003-0890AE	30059433	M2003-0890EE	30053328
9,00	10	89	47	35	40	M2003-0900AE	30073424	M2003-0900EE	30053331
9,10	10	89	47	35	40	M2003-0910AE	30059434	M2003-0910EE	30053334
9,20	10	89	47	35	40	M2003-0920AE	30059435	M2003-0920EE	30053337
*9,30	10	89	47	35	40	M2003-0930AE	30059437	M2003-0930EE	30053340
9,40	10	89	47	35	40	M2003-0940AE	30059438	M2003-0940EE	30053343
9,50	10	89	47	35	40	M2003-0950AE	30062532	M2003-0950EE	30053346
9,60	10	89	47	35	40	M2003-0960AE	30059440	M2003-0960EE	30053350
9,70	10	89	47	35	40	M2003-0970AE	30059441	M2003-0970EE	30053353
9,80	10	89	47	35	40	M2003-0980AE	30073385	M2003-0980EE	30053356
9,90	10	89	47	35	40	M2003-0990AE	30075708	M2003-0990EE	30053359
10,00	10	89	47	35	40	M2003-1000AE	30072063	M2003-1000EE	30053362
10,10	12	102	55	40	45	M2003-1010AE	30059442	M2003-1010EE	30053365
10,20	12	102	55	40	45	M2003-1020AE	30059443	M2003-1020EE	30053368
10,30	12	102	55	40	45	M2003-1030AE	30072999	M2003-1030EE	30053371
10,40	12	102	55	40	45	M2003-1040AE	30059446	M2003-1040EE	30053374
10,50	12	102	55	40	45	M2003-1050AE	30059448	M2003-1050EE	30053377
10,60	12	102	55	40	45	M2003-1060AE	30059449	M2003-1060EE	30053380
10,70	12	102	55	40	45	M2003-1070AE	30059450	M2003-1070EE	30053383
10,80	12	102	55	40	45	M2003-1080AE	30059452	M2003-1080EE	30053386
10,90	12	102	55	40	45	M2003-1090AE	30059453	M2003-1090EE	30053389
11,00	12	102	55	40	45	M2003-1100AE	30059454	M2003-1100EE	30053392
11,10	12	102	55	40	45	M2003-1110AE	30073387	M2003-1110EE	30053395
*11,20	12	102	55	40	45	M2003-1120AE	30059456	M2003-1120EE	30053398
11,30	12	102	55	40	45	M2003-1130AE	30059457	M2003-1130EE	30053401
11,40	12	102	55	40	45	M2003-1140AE	30073388	M2003-1140EE	30053404
11,50	12	102	55	40	45	M2003-1150AE	30059458	M2003-1150EE	30053407
11,60	12	102	55	40	45	M2003-1160AE	30059459	M2003-1160EE	30053410
11,70	12	102	55	40	45	M2003-1170AE	30059461	M2003-1170EE	30053413
11,80	12	102	55	40	45	M2003-1180AE	30059462	M2003-1180EE	30053416

Continued on next page.

MEGA-Drill-Steel | M2003, 3xD, external cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
11,90	12	102	55	40	45	M2003-1190AE	30059464	M2003-1190EE	30053419
12,00	12	102	55	40	45	M2003-1200AE	30059466	M2003-1200EE	30053422
12,50	14	107	60	43	45	M2003-1250AE	30059471	M2003-1250EE	30053425
12,80	14	107	60	43	45	M2003-1280AE	30059475	M2003-1280EE	30053428
13,00	14	107	60	43	45	M2003-1300AE	30059477	M2003-1300EE	30053431
13,50	14	107	60	43	45	M2003-1350AE	30073067	M2003-1350EE	30053434
13,80	14	107	60	43	45	M2003-1380AE	30072777	M2003-1380EE	30053437
14,00	14	107	60	43	45	M2003-1400AE	30073059	M2003-1400EE	30053440
14,50	16	115	65	45	48	M2003-1450AE	30059482	M2003-1450EE	30053443
14,80	16	115	65	45	48	M2003-1480AE	30059485	M2003-1480EE	30053446
15,00	16	115	65	45	48	M2003-1500AE	30072029	M2003-1500EE	30053449
15,50	16	115	65	45	48	M2003-1550AE	30073265	M2003-1550EE	30053452
15,80	16	115	65	45	48	M2003-1580AE	30073624	M2003-1580EE	30053455
16,00	16	115	65	45	48	M2003-1600AE	30074805	M2003-1600EE	30053458
16,50	18	123	73	51	48	M2003-1650AE	30072643	M2003-1650EE	30053461
16,80	18	123	73	51	48	M2003-1680AE	30073392	M2003-1680EE	30053464
17,00	18	123	73	51	48	M2003-1700AE	30072642	M2003-1700EE	30053467
17,50	18	123	73	51	48	M2003-1750AE	30059495	M2003-1750EE	30053470
17,80	18	123	73	51	48	M2003-1780AE	30059496	M2003-1780EE	30053473
18,00	18	123	73	51	48	M2003-1800AE	30072644	M2003-1800EE	30053476
18,50	20	131	79	55	50	M2003-1850AE	30059499	M2003-1850EE	30053479
18,80	20	131	79	55	50	M2003-1880AE	30059500	M2003-1880EE	30053482
19,00	20	131	79	55	50	M2003-1900AE	30075709	M2003-1900EE	30053485
19,50	20	131	79	55	50	M2003-1950AE	30073393	M2003-1950EE	30053488
19,80	20	131	79	55	50	M2003-1980AE	30075710	M2003-1980EE	30053491
20,00	20	131	79	55	50	M2003-2000AE	30059502	M2003-2000EE	30053494
20,50	25	151	93	66	56	M2003-2050AE	30141356	M2003-2050EE	30053497
21,00	25	151	93	66	56	M2003-2100AE	30093953	M2003-2100EE	30053500
21,50	25	151	93	66	56	M2003-2150AE	30072929	M2003-2150EE	30053503
22,00	25	151	93	66	56	M2003-2200AE	30072922	M2003-2200EE	30053506
22,50	25	153	96	72	56	M2003-2250AE	30141357	M2003-2250EE	30053509
23,00	25	153	96	72	56	M2003-2300AE	30081105	M2003-2300EE	30053512
23,50	25	153	96	72	56	M2003-2350AE	30141358	M2003-2350EE	30053515
24,00	25	153	96	72	56	M2003-2400AE	30059503	M2003-2400EE	30053518
24,50	25	153	96	75	56	M2003-2450AE	30141359	M2003-2450EE	30053521
25,00	25	153	96	75	56	M2003-2500AE	30072928	M2003-2500EE	30053524

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

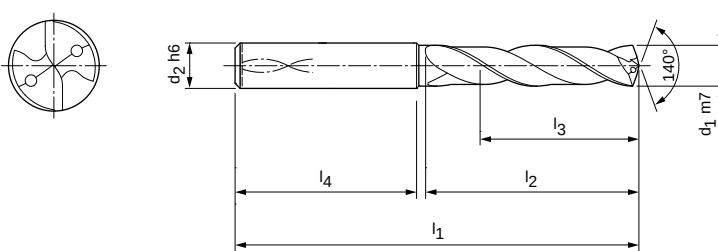
Special designs and other coatings on request.

MEGA-Drill-Steel

3xD, internal cooling
M2103

Design:

Drill diameter: 2,80 – 25,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
*2,80	6	62	20	14	36	M2103-0280AE	30379920	M2103-0280EE	30059689
3,00	6	62	20	14	36	M2103-0300AE	30059690	M2103-0300EE	30054271
3,10	6	62	20	14	36	M2103-0310AE	30073034		
3,20	6	62	20	14	36	M2103-0320AE	30059691	M2103-0320EE	30054277
3,30	6	62	20	14	36	M2103-0330AE	30072092	M2103-0330EE	30054280
3,40	6	62	20	14	36	M2103-0340AE	30073035		
3,50	6	62	20	14	36	M2103-0350AE	30059692	M2103-0350EE	30054286
3,60	6	62	20	14	36	M2103-0360AE	30059694		
*3,70	6	62	20	14	36	M2103-0370AE	30073036	M2103-0370EE	30054292
3,80	6	66	24	17	36	M2103-0380AE	30059695	M2103-0380EE	30054295
3,90	6	66	24	17	36	M2103-0390AE	30059696	M2103-0390EE	30054298
4,00	6	66	24	17	36	M2103-0400AE	30072093	M2103-0400EE	30054301
4,10	6	66	24	17	36	M2103-0410AE	30059697		
4,20	6	66	24	17	36	M2103-0420AE	30059698	M2103-0420EE	30054307
4,30	6	66	24	17	36	M2103-0430AE	30073037	M2103-0430EE	30054310
4,40	6	66	24	17	36	M2103-0440AE	30059701	M2103-0440EE	30054313
4,50	6	66	24	17	36	M2103-0450AE	30073038	M2103-0450EE	30054316
4,60	6	66	24	17	36	M2103-0460AE	30059702	M2103-0460EE	30054319
*4,65	6	66	24	17	36	M2103-0465AE	30078542	M2103-0465EE	30062714
4,70	6	66	24	17	36	M2103-0470AE	30059703	M2103-0470EE	30054322
4,80	6	66	28	20	36	M2103-0480AE	30059704	M2103-0480EE	30054325
4,90	6	66	28	20	36	M2103-0490AE	30071998		
5,00	6	66	28	20	36	M2103-0500AE	30059705	M2103-0500EE	30054331
5,10	6	66	28	20	36	M2103-0510AE	30073039	M2103-0510EE	30054334
5,20	6	66	28	20	36	M2103-0520AE	30059706	M2103-0520EE	30054337
5,30	6	66	28	20	36	M2103-0530AE	30073090	M2103-0530EE	30054340
5,40	6	66	28	20	36	M2103-0540AE	30073091		
5,50	6	66	28	20	36	M2103-0550AE	30059707	M2103-0550EE	30054346
*5,55	6	66	28	20	36	M2103-0555AE	30078545	M2103-0555EE	30072861
5,60	6	66	28	20	36	M2103-0560AE	30059708		
5,70	6	66	28	20	36	M2103-0570AE	30059709	M2103-0570EE	30054352
5,80	6	66	28	20	36	M2103-0580AE	30059710	M2103-0580EE	30054355
5,90	6	66	28	20	36	M2103-0590AE	30059711		
6,00	6	66	28	20	36	M2103-0600AE	30073052	M2103-0600EE	30054361
6,10	8	79	34	24	36	M2103-0610AE	30073058	M2103-0610EE	30054364
6,20	8	79	34	24	36	M2103-0620AE	30072866	M2103-0620EE	30054367

MEGA-Drill-Steel | M2103, 3xD, internal cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
6,30	8	79	34	24	36	M2103-0630AE	30059714	M2103-0630EE	30054371
6,40	8	79	34	24	36	M2103-0640AE	30073092	M2103-0640EE	30054374
6,50	8	79	34	24	36	M2103-0650AE	30059717	M2103-0650EE	30054377
6,60	8	79	34	24	36	M2103-0660AE	30059719		
6,70	8	79	34	24	36	M2103-0670AE	30059720	M2103-0670EE	30054383
6,80	8	79	34	24	36	M2103-0680AE	30072142	M2103-0680EE	30054386
6,90	8	79	34	24	36	M2103-0690AE	30073093	M2103-0690EE	30054389
7,00	8	79	34	24	36	M2103-0700AE	30059723	M2103-0700EE	30054392
7,10	8	79	41	29	36	M2103-0710AE	30059725	M2103-0710EE	30054395
7,20	8	79	41	29	36	M2103-0720AE	30059727		
7,30	8	79	41	29	36	M2103-0730AE	30059728		
7,40	8	79	41	29	36	M2103-0740AE	30072118	M2103-0740EE	30054404
*7,45	8	79	41	29	36	M2103-0745AE	30078547	M2103-0745EE	30376067
7,50	8	79	41	29	36	M2103-0750AE	30073094	M2103-0750EE	30054407
7,60	8	79	41	29	36	M2103-0760AE	30059729		
7,70	8	79	41	29	36	M2103-0770AE	30059730		
7,80	8	79	41	29	36	M2103-0780AE	30059731	M2103-0780EE	30054416
7,90	8	79	41	29	36	M2103-0790AE	30059732		
8,00	8	79	41	29	36	M2103-0800AE	30073095	M2103-0800EE	30054422
8,10	10	89	47	35	40	M2103-0810AE	30059733		
8,20	10	89	47	35	40	M2103-0820AE	30059735		
8,30	10	89	47	35	40	M2103-0830AE	30059736	M2103-0830EE	30054431
8,40	10	89	47	35	40	M2103-0840AE	30073096	M2103-0840EE	30054434
8,50	10	89	47	35	40	M2103-0850AE	30059737	M2103-0850EE	30054437
8,60	10	89	47	35	40	M2103-0860AE	30059738	M2103-0860EE	30054440
8,70	10	89	47	35	40	M2103-0870AE	30059740	M2103-0870EE	30054443
8,80	10	89	47	35	40	M2103-0880AE	30059741		
8,90	10	89	47	35	40	M2103-0890AE	30073097		
9,00	10	89	47	35	40	M2103-0900AE	30059742	M2103-0900EE	30054452
9,10	10	89	47	35	40	M2103-0910AE	30059743		
9,20	10	89	47	35	40	M2103-0920AE	30059744		
*9,30	10	89	47	35	40	M2103-0930AE	30073098	M2103-0930EE	30054461
9,40	10	89	47	35	40	M2103-0940AE	30059745		
9,50	10	89	47	35	40	M2103-0950AE	30059746	M2103-0950EE	30054467
9,60	10	89	47	35	40	M2103-0960AE	30059747	M2103-0960EE	30054470
9,70	10	89	47	35	40	M2103-0970AE	30059748	M2103-0970EE	30054473
9,80	10	89	47	35	40	M2103-0980AE	30059749	M2103-0980EE	30054476
9,90	10	89	47	35	40	M2103-0990AE	30059750	M2103-0990EE	30054479
10,00	10	89	47	35	40	M2103-1000AE	30059751	M2103-1000EE	30054482
10,10	12	102	55	40	45	M2103-1010AE	30059752		
10,20	12	102	55	40	45	M2103-1020AE	30059753	M2103-1020EE	30054488
10,30	12	102	55	40	45	M2103-1030AE	30073099	M2103-1030EE	30054491
10,40	12	102	55	40	45	M2103-1040AE	30059754		
10,50	12	102	55	40	45	M2103-1050AE	30059756	M2103-1050EE	30054497
10,60	12	102	55	40	45	M2103-1060AE	30059757	M2103-1060EE	30054500
10,70	12	102	55	40	45	M2103-1070AE	30059758		
10,80	12	102	55	40	45	M2103-1080AE	30059761	M2103-1080EE	30054506
10,90	12	102	55	40	45	M2103-1090AE	30073100		
11,00	12	102	55	40	45	M2103-1100AE	30059764	M2103-1100EE	30054512
11,10	12	102	55	40	45	M2103-1110AE	30059766		
*11,20	12	102	55	40	45	M2103-1120AE	30059767	M2103-1120EE	30054518
11,30	12	102	55	40	45	M2103-1130AE	30059768		
11,40	12	102	55	40	45	M2103-1140AE	30059770		
11,50	12	102	55	40	45	M2103-1150AE	30059771	M2103-1150EE	30054527
11,60	12	102	55	40	45	M2103-1160AE	30073101		
11,70	12	102	55	40	45	M2103-1170AE	30073102		
11,80	12	102	55	40	45	M2103-1180AE	30059772	M2103-1180EE	30054536

MEGA-Drill-Steel | M2103, 3xD, internal cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
11,90	12	102	55	40	45	M2103-1190AE	30059773		
12,00	12	102	55	40	45	M2103-1200AE	30073103	M2103-1200EE	30054542
12,50	14	107	60	43	45	M2103-1250AE	30072864	M2103-1250EE	30054545
12,80	14	107	60	43	45	M2103-1280AE	30073104		
13,00	14	107	60	43	45	M2103-1300AE	30072775	M2103-1300EE	30054551
13,50	14	107	60	43	45	M2103-1350AE	30073072		
13,80	14	107	60	43	45	M2103-1380AE	30059787	M2103-1380EE	30054557
14,00	14	107	60	43	45	M2103-1400AE	30072776	M2103-1400EE	30054560
14,50	16	115	65	45	48	M2103-1450AE	30072094	M2103-1450EE	30054563
14,80	16	115	65	45	48	M2103-1480AE	30073105		
15,00	16	115	65	45	48	M2103-1500AE	30073106	M2103-1500EE	30054569
15,50	16	115	65	45	48	M2103-1550AE	30059795		
15,80	16	115	65	45	48	M2103-1580AE	30059798	M2103-1580EE	30054575
16,00	16	115	65	45	48	M2103-1600AE	30073108	M2103-1600EE	30054578
16,50	18	123	73	51	48	M2103-1650AE	30059799		
16,80	18	123	73	51	48	M2103-1680AE	30059802		
17,00	18	123	73	51	48	M2103-1700AE	30072294	M2103-1700EE	30054587
17,50	18	123	73	51	48	M2103-1750AE	30059805	M2103-1750EE	30054590
17,80	18	123	73	51	48	M2103-1780AE	30073109		
18,00	18	123	73	51	48	M2103-1800AE	30073110	M2103-1800EE	30054596
18,50	20	131	79	55	50	M2103-1850AE	30059807		
18,80	20	131	79	55	50	M2103-1880AE	30073084		
19,00	20	131	79	55	50	M2103-1900AE	30059810		
19,50	20	131	79	55	50	M2103-1950AE	30059811		
19,80	20	131	79	55	50	M2103-1980AE	30073085		
20,00	20	131	79	55	50	M2103-2000AE	30073087		
20,50	25	151	93	66	56	M2103-2050AE	30075977		
21,00	25	151	93	66	56	M2103-2100AE	30089563		
21,50	25	151	93	66	56	M2103-2150AE	30073527		
22,00	25	151	93	66	56	M2103-2200AE	30059815		
23,00	25	153	96	72	56	M2103-2300AE	30072998		
23,50	25	153	96	72	56	M2103-2350AE	30080708		
24,00	25	153	96	72	56	M2103-2400AE	30074942		
25,00	25	153	96	75	56	M2103-2500AE	30073041		

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

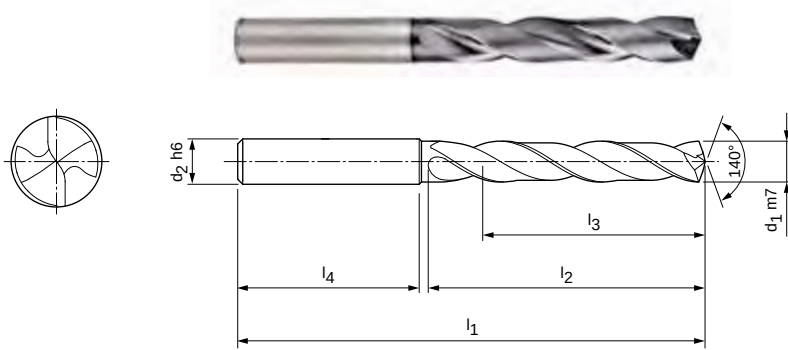
Special designs and other coatings on request.

MEGA-Drill-Steel

5xD, external cooling
M2005

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
3,00	6	66	28	23	36	M2005-0300AE	30072327	M2005-0300EE	30053527
3,10	6	66	28	23	36	M2005-0310AE	30059505		
3,20	6	66	28	23	36	M2005-0320AE	30059506	M2005-0320EE	30053533
3,30	6	66	28	23	36	M2005-0330AE	30073210	M2005-0330EE	30053536
3,40	6	66	28	23	36	M2005-0340AE	30059509	M2005-0340EE	30053539
3,50	6	66	28	23	36	M2005-0350AE	30075112	M2005-0350EE	30053542
3,60	6	66	28	23	36	M2005-0360AE	30059510		
3,70	6	66	28	23	36	M2005-0370AE	30059511	M2005-0370EE	30053548
3,80	6	74	36	29	36	M2005-0380AE	30073409	M2005-0380EE	30053551
3,90	6	74	36	29	36	M2005-0390AE	30075711	M2005-0390EE	30053554
4,00	6	74	36	29	36	M2005-0400AE	30072183	M2005-0400EE	30053557
4,10	6	74	36	29	36	M2005-0410AE	30073410		
4,20	6	74	36	29	36	M2005-0420AE	30073212	M2005-0420EE	30053563
4,30	6	74	36	29	36	M2005-0430AE	30059512	M2005-0430EE	30053566
4,40	6	74	36	29	36	M2005-0440AE	30074861	M2005-0440EE	30053569
4,50	6	74	36	29	36	M2005-0450AE	30059514	M2005-0450EE	30053572
4,60	6	74	36	29	36	M2005-0460AE	30059515	M2005-0460EE	30053575
4,70	6	74	36	29	36	M2005-0470AE	30059516		
4,80	6	82	44	35	36	M2005-0480AE	30059517	M2005-0480EE	30053581
4,90	6	82	44	35	36	M2005-0490AE	30075712	M2005-0490EE	30053584
5,00	6	82	44	35	36	M2005-0500AE	30072065	M2005-0500EE	30053587
5,10	6	82	44	35	36	M2005-0510AE	30059519	M2005-0510EE	30053590
5,20	6	82	44	35	36	M2005-0520AE	30073411	M2005-0520EE	30053593
5,30	6	82	44	35	36	M2005-0530AE	30059522	M2005-0530EE	30053596
5,40	6	82	44	35	36	M2005-0540AE	30059523		
5,50	6	82	44	35	36	M2005-0550AE	30072774	M2005-0550EE	30053602
5,60	6	82	44	35	36	M2005-0560AE	30073310	M2005-0560EE	30053605
5,70	6	82	44	35	36	M2005-0570AE	30059524		
5,80	6	82	44	35	36	M2005-0580AE	30059525	M2005-0580EE	30053611
5,90	6	82	44	35	36	M2005-0590AE	30062626	M2005-0590EE	30053614
6,00	6	82	44	35	36	M2005-0600AE	30072896	M2005-0600EE	30053617
6,10	8	91	53	43	36	M2005-0610AE	30062627	M2005-0610EE	30053620
6,20	8	91	53	43	36	M2005-0620AE	30059527	M2005-0620EE	30053623
6,30	8	91	53	43	36	M2005-0630AE	30059528		
6,40	8	91	53	43	36	M2005-0640AE	30059529		
6,50	8	91	53	43	36	M2005-0650AE	30059530	M2005-0650EE	30053632

MEGA-Drill-Steel | M2005, 5xD, external cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
6,60	8	91	53	43	36	M2005-0660AE	30075713		
6,70	8	91	53	43	36	M2005-0670AE	30074818		
6,80	8	91	53	43	36	M2005-0680AE	30059531	M2005-0680EE	30053641
6,90	8	91	53	43	36	M2005-0690AE	30059532	M2005-0690EE	30053644
7,00	8	91	53	43	36	M2005-0700AE	30059533	M2005-0700EE	30053648
7,10	8	91	53	43	36	M2005-0710AE	30059535		
7,20	8	91	53	43	36	M2005-0720AE	30059537		
7,30	8	91	53	43	36	M2005-0730AE	30059538		
7,40	8	91	53	43	36	M2005-0740AE	30059540	M2005-0740EE	30053660
7,50	8	91	53	43	36	M2005-0750AE	30059541	M2005-0750EE	30053663
7,60	8	91	53	43	36	M2005-0760AE	30059542	M2005-0760EE	30053666
7,70	8	91	53	43	36	M2005-0770AE	30059543	M2005-0770EE	30053669
7,80	8	91	53	43	36	M2005-0780AE	30059544	M2005-0780EE	30053672
7,90	8	91	53	43	36	M2005-0790AE	30059545	M2005-0790EE	30053675
8,00	8	91	53	43	36	M2005-0800AE	30059546	M2005-0800EE	30053678
8,10	10	103	61	49	40	M2005-0810AE	30059547	M2005-0810EE	30053681
8,20	10	103	61	49	40	M2005-0820AE	30072834	M2005-0820EE	30053684
8,30	10	103	61	49	40	M2005-0830AE	30062631	M2005-0830EE	30053687
8,40	10	103	61	49	40	M2005-0840AE	30059549	M2005-0840EE	30053690
8,50	10	103	61	49	40	M2005-0850AE	30059550	M2005-0850EE	30053693
8,60	10	103	61	49	40	M2005-0860AE	30075714	M2005-0860EE	30053696
8,70	10	103	61	49	40	M2005-0870AE	30059551	M2005-0870EE	30053699
8,80	10	103	61	49	40	M2005-0880AE	30059552	M2005-0880EE	30053702
8,90	10	103	61	49	40	M2005-0890AE	30059553	M2005-0890EE	30053705
9,00	10	103	61	49	40	M2005-0900AE	30062637	M2005-0900EE	30053708
9,10	10	103	61	49	40	M2005-0910AE	30072997	M2005-0910EE	30053711
9,20	10	103	61	49	40	M2005-0920AE	30059554	M2005-0920EE	30053714
9,30	10	103	61	49	40	M2005-0930AE	30073412	M2005-0930EE	30053717
9,40	10	103	61	49	40	M2005-0940AE	30059555	M2005-0940EE	30053720
9,50	10	103	61	49	40	M2005-0950AE	30059556	M2005-0950EE	30053723
9,60	10	103	61	49	40	M2005-0960AE	30059558	M2005-0960EE	30053726
9,70	10	103	61	49	40	M2005-0970AE	30059559	M2005-0970EE	30053729
9,80	10	103	61	49	40	M2005-0980AE	30059560	M2005-0980EE	30053732
9,90	10	103	61	49	40	M2005-0990AE	30059561	M2005-0990EE	30053735
10,00	10	103	61	49	40	M2005-1000AE	30072797	M2005-1000EE	30053738
10,10	12	118	71	56	45	M2005-1010AE	30059563	M2005-1010EE	30053741
10,20	12	118	71	56	45	M2005-1020AE	30059564	M2005-1020EE	30053744
10,30	12	118	71	56	45	M2005-1030AE	30064171	M2005-1030EE	30053747
10,40	12	118	71	56	45	M2005-1040AE	30059565	M2005-1040EE	30053750
10,50	12	118	71	56	45	M2005-1050AE	30072986	M2005-1050EE	30053753
10,60	12	118	71	56	45	M2005-1060AE	30059566	M2005-1060EE	30053756
10,70	12	118	71	56	45	M2005-1070AE	30059567	M2005-1070EE	30053759
10,80	12	118	71	56	45	M2005-1080AE	30073413	M2005-1080EE	30053762
10,90	12	118	71	56	45	M2005-1090AE	30059568	M2005-1090EE	30053765
11,00	12	118	71	56	45	M2005-1100AE	30073414	M2005-1100EE	30053768
11,10	12	118	71	56	45	M2005-1110AE	30059570	M2005-1110EE	30053771
11,20	12	118	71	56	45	M2005-1120AE	30073415	M2005-1120EE	30053774
11,30	12	118	71	56	45	M2005-1130AE	30059571	M2005-1130EE	30053777
11,40	12	118	71	56	45	M2005-1140AE	30059572	M2005-1140EE	30053780
11,50	12	118	71	56	45	M2005-1150AE	30059573	M2005-1150EE	30053783
11,60	12	118	71	56	45	M2005-1160AE	30059574	M2005-1160EE	30053786
11,70	12	118	71	56	45	M2005-1170AE	30059575	M2005-1170EE	30053789
11,80	12	118	71	56	45	M2005-1180AE	30059576	M2005-1180EE	30053792
11,90	12	118	71	56	45	M2005-1190AE	30059577	M2005-1190EE	30053795
12,00	12	118	71	56	45	M2005-1200AE	30073068	M2005-1200EE	30053798
12,50	14	124	77	60	45	M2005-1250AE	30073066	M2005-1250EE	30053801
12,80	14	124	77	60	45	M2005-1280AE	30059586	M2005-1280EE	30053802

Continued on next page.

MEGA-Drill-Steel | M2005, 5xD, external cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
13,00	14	124	77	60	45	M2005-1300AE	30073416	M2005-1300EE	30053805
13,50	14	124	77	60	45	M2005-1350AE	30075715	M2005-1350EE	30053808
13,80	14	124	77	60	45	M2005-1380AE	30059590	M2005-1380EE	30053811
14,00	14	124	77	60	45	M2005-1400AE	30059591	M2005-1400EE	30053814
14,50	16	133	83	63	48	M2005-1450AE	30074833	M2005-1450EE	30053817
14,80	16	133	83	63	48	M2005-1480AE	30059599	M2005-1480EE	30053820
15,00	16	133	83	63	48	M2005-1500AE	30059601	M2005-1500EE	30053823
15,50	16	133	83	63	48	M2005-1550AE	30059602	M2005-1550EE	30053826
15,80	16	133	83	63	48	M2005-1580AE	30059603	M2005-1580EE	30053829
16,00	16	133	83	63	48	M2005-1600AE	30059604	M2005-1600EE	30053832
16,50	18	143	93	71	48	M2005-1650AE	30059607	M2005-1650EE	30053835
16,80	18	143	93	71	48	M2005-1680AE	30059608	M2005-1680EE	30053838
17,00	18	143	93	71	48	M2005-1700AE	30059609	M2005-1700EE	30053841
17,50	18	143	93	71	48	M2005-1750AE	30073417	M2005-1750EE	30053844
17,80	18	143	93	71	48	M2005-1780AE	30059611	M2005-1780EE	30053847
18,00	18	143	93	71	48	M2005-1800AE	30059612	M2005-1800EE	30053850
18,50	20	153	101	77	50	M2005-1850AE	30059614	M2005-1850EE	30053853
18,80	20	153	101	77	50	M2005-1880AE	30059615		
19,00	20	153	101	77	50	M2005-1900AE	30059617	M2005-1900EE	30053859
19,50	20	153	101	77	50	M2005-1950AE	30075716	M2005-1950EE	30053862
19,80	20	153	101	77	50	M2005-1980AE	30059619	M2005-1980EE	30053865
20,00	20	153	101	77	50	M2005-2000AE	30059621	M2005-2000EE	30053868

Dimensions in mm.

Cutting data recommendations from page 272.

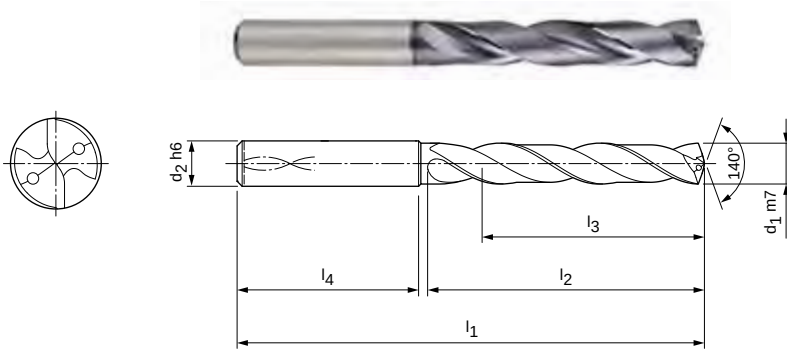
Special designs and other coatings on request.

MEGA-Drill-Steel

5xD, internal cooling
M2105

Design:

Drill diameter: 2,80 – 25,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
*2,80	6	66	28	23	36	M2105-0280AE	30080678	M2105-0280EE	30062779
3,00	6	66	28	23	36	M2105-0300AE	30073019	M2105-0300EE	30054647
3,10	6	66	28	23	36	M2105-0310AE	30059816	M2105-0310EE	30054650
3,20	6	66	28	23	36	M2105-0320AE	30059817	M2105-0320EE	30054653
3,30	6	66	28	23	36	M2105-0330AE	30059818	M2105-0330EE	30054656
3,40	6	66	28	23	36	M2105-0340AE	30072870	M2105-0340EE	30054659
3,50	6	66	28	23	36	M2105-0350AE	30064172	M2105-0350EE	30054662
3,60	6	66	28	23	36	M2105-0360AE	30059819	M2105-0360EE	30054665
*3,70	6	66	28	23	36	M2105-0370AE	30059820	M2105-0370EE	30054668
3,80	6	74	36	29	36	M2105-0380AE	30059821	M2105-0380EE	30054671
3,90	6	74	36	29	36	M2105-0390AE	30059822	M2105-0390EE	30054674
4,00	6	74	36	29	36	M2105-0400AE	30059823	M2105-0400EE	30054677
4,10	6	74	36	29	36	M2105-0410AE	30073088	M2105-0410EE	30054680
4,20	6	74	36	29	36	M2105-0420AE	30059824	M2105-0420EE	30054683
4,30	6	74	36	29	36	M2105-0430AE	30059826	M2105-0430EE	30054686
4,40	6	74	36	29	36	M2105-0440AE	30059828	M2105-0440EE	30054689
4,50	6	74	36	29	36	M2105-0450AE	30072305	M2105-0450EE	30054692
4,60	6	74	36	29	36	M2105-0460AE	30073089	M2105-0460EE	30054695
*4,65	6	74	36	29	36	M2105-0465AE	30078558	M2105-0465EE	30072904
4,70	6	74	36	29	36	M2105-0470AE	30059829	M2105-0470EE	30054698
4,80	6	82	44	35	36	M2105-0480AE	30059830	M2105-0480EE	30054701
4,90	6	82	44	35	36	M2105-0490AE	30059831	M2105-0490EE	30054704
5,00	6	82	44	35	36	M2105-0500AE	30062816	M2105-0500EE	30054707
5,10	6	82	44	35	36	M2105-0510AE	30059833	M2105-0510EE	30054710
5,20	6	82	44	35	36	M2105-0520AE	30072915	M2105-0520EE	30054713
5,30	6	82	44	35	36	M2105-0530AE	30073120	M2105-0530EE	30054716
5,40	6	82	44	35	36	M2105-0540AE	30073121	M2105-0540EE	30054719
5,50	6	82	44	35	36	M2105-0550AE	30073122	M2105-0550EE	30054722
*5,55	6	82	44	35	36	M2105-0555AE	30073028	M2105-0555EE	30072807
5,60	6	82	44	35	36	M2105-0560AE	30059834	M2105-0560EE	30054726
5,70	6	82	44	35	36	M2105-0570AE	30059835	M2105-0570EE	30054729
5,80	6	82	44	35	36	M2105-0580AE	30059836	M2105-0580EE	30054732
5,90	6	82	44	35	36	M2105-0590AE	30064173	M2105-0590EE	30054735
6,00	6	82	44	35	36	M2105-0600AE	30059837	M2105-0600EE	30054738
6,10	8	91	53	43	36	M2105-0610AE	30059838	M2105-0610EE	30054741
6,20	8	91	53	43	36	M2105-0620AE	30059839	M2105-0620EE	30054744

Continued on next page.

MEGA-Drill-Steel | M2105, 5xD, internal cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
6,30	8	91	53	43	36	M2105-0630AE	30059840	M2105-0630EE	30054747
6,40	8	91	53	43	36	M2105-0640AE	30059841	M2105-0640EE	30054750
6,50	8	91	53	43	36	M2105-0650AE	30073123	M2105-0650EE	30054753
6,60	8	91	53	43	36	M2105-0660AE	30073124	M2105-0660EE	30054756
6,70	8	91	53	43	36	M2105-0670AE	30059842	M2105-0670EE	30054759
6,80	8	91	53	43	36	M2105-0680AE	30059843	M2105-0680EE	30054762
6,90	8	91	53	43	36	M2105-0690AE	30072823	M2105-0690EE	30054765
7,00	8	91	53	43	36	M2105-0700AE	30064174	M2105-0700EE	30054768
7,10	8	91	53	43	36	M2105-0710AE	30059845		
7,20	8	91	53	43	36	M2105-0720AE	30059846	M2105-0720EE	30054774
7,30	8	91	53	43	36	M2105-0730AE	30059847	M2105-0730EE	30054777
7,40	8	91	53	43	36	M2105-0740AE	30059848	M2105-0740EE	30054780
*7,45	8	91	53	43	36	M2105-0745AE	30078561	M2105-0745EE	30290275
7,50	8	91	53	43	36	M2105-0750AE	30059849	M2105-0750EE	30054783
7,60	8	91	53	43	36	M2105-0760AE	30059850		
7,70	8	91	53	43	36	M2105-0770AE	30059851	M2105-0770EE	30054789
7,80	8	91	53	43	36	M2105-0780AE	30073125	M2105-0780EE	30054792
7,90	8	91	53	43	36	M2105-0790AE	30059853	M2105-0790EE	30054795
8,00	8	91	53	43	36	M2105-0800AE	30059855	M2105-0800EE	30054798
8,10	10	103	61	49	40	M2105-0810AE	30064175	M2105-0810EE	30054801
8,20	10	103	61	49	40	M2105-0820AE	30059856	M2105-0820EE	30054804
8,30	10	103	61	49	40	M2105-0830AE	30059857	M2105-0830EE	30054807
8,40	10	103	61	49	40	M2105-0840AE	30073126	M2105-0840EE	30054810
8,50	10	103	61	49	40	M2105-0850AE	30072798	M2105-0850EE	30054813
8,60	10	103	61	49	40	M2105-0860AE	30059858	M2105-0860EE	30054816
8,70	10	103	61	49	40	M2105-0870AE	30059859	M2105-0870EE	30054819
8,80	10	103	61	49	40	M2105-0880AE	30059860	M2105-0880EE	30054822
8,90	10	103	61	49	40	M2105-0890AE	30059861		
9,00	10	103	61	49	40	M2105-0900AE	30072916	M2105-0900EE	30054828
9,10	10	103	61	49	40	M2105-0910AE	30059862		
9,20	10	103	61	49	40	M2105-0920AE	30059863		
*9,30	10	103	61	49	40	M2105-0930AE	30073127	M2105-0930EE	30054837
9,40	10	103	61	49	40	M2105-0940AE	30059864	M2105-0940EE	30054840
9,50	10	103	61	49	40	M2105-0950AE	30059865	M2105-0950EE	30054843
9,60	10	103	61	49	40	M2105-0960AE	30059866	M2105-0960EE	30054846
9,70	10	103	61	49	40	M2105-0970AE	30059868	M2105-0970EE	30054849
9,80	10	103	61	49	40	M2105-0980AE	30059870	M2105-0980EE	30054852
9,90	10	103	61	49	40	M2105-0990AE	30059871	M2105-0990EE	30054855
10,00	10	103	61	49	40	M2105-1000AE	30059873	M2105-1000EE	30054858
10,10	12	118	71	56	45	M2105-1010AE	30059874	M2105-1010EE	30054861
10,20	12	118	71	56	45	M2105-1020AE	30059875	M2105-1020EE	30054864
10,30	12	118	71	56	45	M2105-1030AE	30059876	M2105-1030EE	30054867
10,40	12	118	71	56	45	M2105-1040AE	30059877	M2105-1040EE	30054870
10,50	12	118	71	56	45	M2105-1050AE	30072329	M2105-1050EE	30054873
10,60	12	118	71	56	45	M2105-1060AE	30072842	M2105-1060EE	30054876
10,70	12	118	71	56	45	M2105-1070AE	30059878	M2105-1070EE	30054879
10,80	12	118	71	56	45	M2105-1080AE	30059881	M2105-1080EE	30054882
10,90	12	118	71	56	45	M2105-1090AE	30059882		
11,00	12	118	71	56	45	M2105-1100AE	30059885	M2105-1100EE	30054888
11,10	12	118	71	56	45	M2105-1110AE	30073128	M2105-1110EE	30054891
*11,20	12	118	71	56	45	M2105-1120AE	30059889	M2105-1120EE	30054894
11,30	12	118	71	56	45	M2105-1130AE	30072876		
11,40	12	118	71	56	45	M2105-1140AE	30059890		
11,50	12	118	71	56	45	M2105-1150AE	30059892	M2105-1150EE	30054903
11,60	12	118	71	56	45	M2105-1160AE	30059893	M2105-1160EE	30054906
11,70	12	118	71	56	45	M2105-1170AE	30059895	M2105-1170EE	30054909
11,80	12	118	71	56	45	M2105-1180AE	30072995	M2105-1180EE	30054912

MEGA-Drill-Steel | M2105, 5xD, internal cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
11,90	12	118	71	56	45	M2105-1190AE	30059897		
12,00	12	118	71	56	45	M2105-1200AE	30059899	M2105-1200EE	30054918
12,50	14	124	77	60	45	M2105-1250AE	30059904	M2105-1250EE	30054920
12,80	14	124	77	60	45	M2105-1280AE	30073130	M2105-1280EE	30054922
13,00	14	124	77	60	45	M2105-1300AE	30067627	M2105-1300EE	30054924
13,50	14	124	77	60	45	M2105-1350AE	30073131	M2105-1350EE	30054926
13,80	14	124	77	60	45	M2105-1380AE	30059916	M2105-1380EE	30054928
14,00	14	124	77	60	45	M2105-1400AE	30059918	M2105-1400EE	30054930
14,50	16	133	83	63	48	M2105-1450AE	30059922	M2105-1450EE	30054932
14,80	16	133	83	63	48	M2105-1480AE	30059926	M2105-1480EE	30054934
15,00	16	133	83	63	48	M2105-1500AE	30059928	M2105-1500EE	30054936
15,50	16	133	83	63	48	M2105-1550AE	30059929	M2105-1550EE	30054938
15,80	16	133	83	63	48	M2105-1580AE	30059931	M2105-1580EE	30054940
16,00	16	133	83	63	48	M2105-1600AE	30072853	M2105-1600EE	30054943
16,50	18	143	93	71	48	M2105-1650AE	30059935	M2105-1650EE	30054945
16,80	18	143	93	71	48	M2105-1680AE	30073133		
17,00	18	143	93	71	48	M2105-1700AE	30059939	M2105-1700EE	30054949
17,50	18	143	93	71	48	M2105-1750AE	30073134	M2105-1750EE	30054951
17,80	18	143	93	71	48	M2105-1780AE	30059944		
18,00	18	143	93	71	48	M2105-1800AE	30059945	M2105-1800EE	30054955
18,50	20	153	101	77	50	M2105-1850AE	30059947		
18,80	20	153	101	77	50	M2105-1880AE	30059948		
19,00	20	153	101	77	50	M2105-1900AE	30059949	M2105-1900EE	30054961
19,50	20	153	101	77	50	M2105-1950AE	30059951		
19,80	20	153	101	77	50	M2105-1980AE	30073135		
20,00	20	153	101	77	50	M2105-2000AE	30073137	M2105-2000EE	30054967
20,50	25	200	135	110	56	M2105-2050AE	30073516		
21,00	25	200	135	110	56	M2105-2100AE	30062828		
21,50	25	200	135	110	56	M2105-2150AE	30073271		
22,00	25	200	135	110	56	M2105-2200AE	30059954		
22,50	25	200	140	120	56	M2105-2250AE	30074860		
23,00	25	200	140	120	56	M2105-2300AE	30089566		
23,50	25	200	140	120	56	M2105-2350AE	30089567		
24,00	25	200	140	120	56	M2105-2400AE	30073219		
24,50	25	200	140	120	56	M2105-2450AE	30089568		
25,00	25	200	140	120	56	M2105-2500AE	30089569		

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

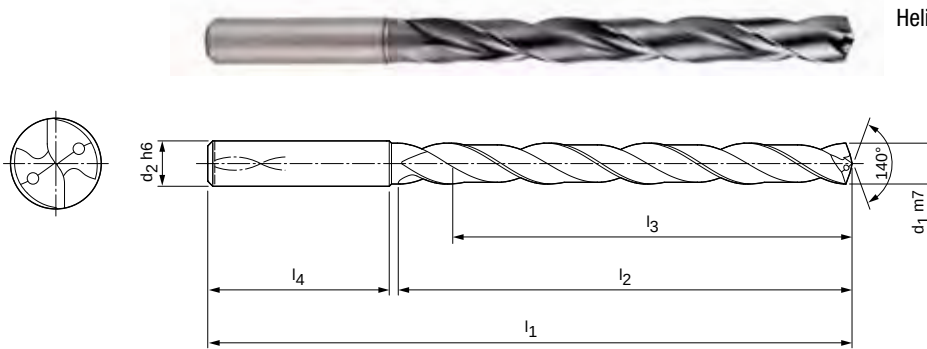
Special designs and other coatings on request.

MEGA-Drill-Steel

8xD, internal cooling
M2108

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq$ IT 9
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	72	34	29	36	M2108-0300AE	30059956
3,10	6	72	34	29	36	M2108-0310AE	30059957
3,20	6	72	34	29	36	M2108-0320AE	30059959
3,30	6	72	34	29	36	M2108-0330AE	30074753
3,40	6	72	34	29	36	M2108-0340AE	30059961
3,50	6	72	34	29	36	M2108-0350AE	30072171
3,60	6	72	34	29	36	M2108-0360AE	30059962
3,70	6	72	34	29	36	M2108-0370AE	30059964
3,80	6	81	43	36	36	M2108-0380AE	30059965
3,90	6	81	43	36	36	M2108-0390AE	30075717
4,00	6	81	43	36	36	M2108-0400AE	30071969
4,10	6	81	43	36	36	M2108-0410AE	30072996
4,20	6	81	43	36	36	M2108-0420AE	30074842
4,30	6	81	43	36	36	M2108-0430AE	30059967
4,40	6	81	43	36	36	M2108-0440AE	30059969
4,50	6	81	43	36	36	M2108-0450AE	30074845
4,60	6	81	43	36	36	M2108-0460AE	30059971
4,70	6	81	43	36	36	M2108-0470AE	30074803
4,80	6	95	57	48	36	M2108-0480AE	30074848
4,90	6	95	57	48	36	M2108-0490AE	30059972
5,00	6	95	57	48	36	M2108-0500AE	30073029
5,10	6	95	57	48	36	M2108-0510AE	30064214
5,20	6	95	57	48	36	M2108-0520AE	30059973
5,30	6	95	57	48	36	M2108-0530AE	30059974
5,40	6	95	57	48	36	M2108-0540AE	30073309
5,50	6	95	57	48	36	M2108-0550AE	30059975
5,60	6	95	57	48	36	M2108-0560AE	30072043
5,70	6	95	57	48	36	M2108-0570AE	30072930
5,80	6	95	57	48	36	M2108-0580AE	30073054
5,90	6	95	57	48	36	M2108-0590AE	30062880
6,00	6	95	57	48	36	M2108-0600AE	30073069
6,10	8	114	76	64	36	M2108-0610AE	30062881
6,20	8	114	76	64	36	M2108-0620AE	30073306
6,30	8	114	76	64	36	M2108-0630AE	30074846
6,40	8	114	76	64	36	M2108-0640AE	30075718
6,50	8	114	76	64	36	M2108-0650AE	30073308

MEGA-Drill-Steel | M2108, 8xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,60	8	114	76	64	36	M2108-0660AE	30059980
6,70	8	114	76	64	36	M2108-0670AE	30062862
6,80	8	114	76	64	36	M2108-0680AE	30074754
6,90	8	114	76	64	36	M2108-0690AE	30062863
7,00	8	114	76	64	36	M2108-0700AE	30072933
7,10	8	114	76	64	36	M2108-0710AE	30059981
7,20	8	114	76	64	36	M2108-0720AE	30059982
7,30	8	114	76	64	36	M2108-0730AE	30059983
7,40	8	114	76	64	36	M2108-0740AE	30059985
7,50	8	114	76	64	36	M2108-0750AE	30059986
7,60	8	114	76	64	36	M2108-0760AE	30059987
7,70	8	114	76	64	36	M2108-0770AE	30059988
7,80	8	114	76	64	36	M2108-0780AE	30059989
7,90	8	114	76	64	36	M2108-0790AE	30059990
8,00	8	114	76	64	36	M2108-0800AE	30072932
8,10	10	142	95	80	40	M2108-0810AE	30059991
8,20	10	142	95	80	40	M2108-0820AE	30059992
8,30	10	142	95	80	40	M2108-0830AE	30059993
8,40	10	142	95	80	40	M2108-0840AE	30075719
8,50	10	142	95	80	40	M2108-0850AE	30059996
8,60	10	142	95	80	40	M2108-0860AE	30062871
8,70	10	142	95	80	40	M2108-0870AE	30059998
8,80	10	142	95	80	40	M2108-0880AE	30059999
8,90	10	142	95	80	40	M2108-0890AE	30060000
9,00	10	142	95	80	40	M2108-0900AE	30064215
9,10	10	142	95	80	40	M2108-0910AE	30075720
9,20	10	142	95	80	40	M2108-0920AE	30060003
9,30	10	142	95	80	40	M2108-0930AE	30060004
9,40	10	142	95	80	40	M2108-0940AE	30074800
9,50	10	142	95	80	40	M2108-0950AE	30075721
9,60	10	142	95	80	40	M2108-0960AE	30060007
9,70	10	142	95	80	40	M2108-0970AE	30073311
9,80	10	142	95	80	40	M2108-0980AE	30060008
9,90	10	142	95	80	40	M2108-0990AE	30075722
10,00	10	142	95	80	40	M2108-1000AE	30060010
10,10	12	162	114	96	45	M2108-1010AE	30073269
10,20	12	162	114	96	45	M2108-1020AE	30073064
10,30	12	162	114	95	45	M2108-1030AE	30071979
10,40	12	162	114	96	45	M2108-1040AE	30075723
10,50	12	162	114	96	45	M2108-1050AE	30067626
10,60	12	162	114	96	45	M2108-1060AE	30075724
10,70	12	162	114	96	45	M2108-1070AE	30074373
10,80	12	162	114	96	45	M2108-1080AE	30060014
10,90	12	162	114	96	45	M2108-1090AE	30075725
11,00	12	162	114	96	45	M2108-1100AE	30060017
11,10	12	162	114	96	45	M2108-1110AE	30075726
11,20	12	162	114	96	45	M2108-1120AE	30060019
11,30	12	162	114	96	45	M2108-1130AE	30060021
11,40	12	162	114	96	45	M2108-1140AE	30075727
11,50	12	162	114	96	45	M2108-1150AE	30075728
11,60	12	162	114	96	45	M2108-1160AE	30060023
11,70	12	162	114	96	45	M2108-1170AE	30060024
11,80	12	162	114	96	45	M2108-1180AE	30060026
11,90	12	162	114	96	45	M2108-1190AE	30060027
12,00	12	162	114	96	45	M2108-1200AE	30060029
12,50	14	178	133	112	45	M2108-1250AE	30072097
12,80	14	178	133	112	45	M2108-1280AE	30060033

Continued on next page.

MEGA-Drill-Steel | M2108, 8xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
13,00	14	178	133	112	45	M2108-1300AE	30073060
13,50	14	178	133	112	45	M2108-1350AE	30060035
13,80	14	178	133	112	45	M2108-1380AE	30075729
14,00	14	178	133	112	45	M2108-1400AE	30060037
14,50	16	203	152	128	48	M2108-1450AE	30072098
14,80	16	203	152	128	48	M2108-1480AE	30060040
15,00	16	203	152	128	48	M2108-1500AE	30072253
15,50	16	203	152	128	48	M2108-1550AE	30060043
15,80	16	203	152	128	48	M2108-1580AE	30074837
16,00	16	203	152	128	48	M2108-1600AE	30060044
16,50	18	222	171	144	48	M2108-1650AE	30074843
16,80	18	222	171	144	48	M2108-1680AE	30075730
17,00	18	222	171	144	48	M2108-1700AE	30074755
17,50	18	222	171	144	48	M2108-1750AE	30060048
17,80	18	222	171	144	48	M2108-1780AE	30075731
18,00	18	222	171	144	48	M2108-1800AE	30060052
18,50	20	243	190	160	50	M2108-1850AE	30074840
18,80	20	243	190	160	50	M2108-1880AE	30075732
19,00	20	243	190	160	50	M2108-1900AE	30060054
19,50	20	243	190	160	50	M2108-1950AE	30064216
19,80	20	243	190	160	50	M2108-1980AE	30074763
20,00	20	243	190	160	50	M2108-2000AE	30073370

Dimensions in mm.

Cutting data recommendations from page 272.

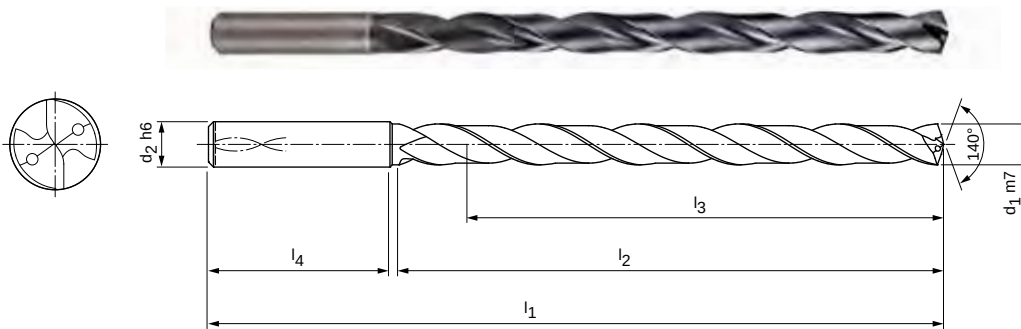
Special designs and other coatings on request.

MEGA-Drill-Steel

12xD, internal cooling
M2112

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	92	54	48	36	M2112-0300AE	30072641
3,10	6	92	54	48	36	M2112-0310AE	30075733
3,20	6	92	54	48	36	M2112-0320AE	30074836
3,30	6	92	54	48	36	M2112-0330AE	30060060
3,40	6	92	54	48	36	M2112-0340AE	30060061
3,50	6	92	54	48	36	M2112-0350AE	30072311
3,60	6	92	54	48	36	M2112-0360AE	30075734
3,70	6	92	54	48	36	M2112-0370AE	30060063
3,80	6	102	64	58	36	M2112-0380AE	30060064
3,90	6	102	64	58	36	M2112-0390AE	30060065
4,00	6	102	64	58	36	M2112-0400AE	30072104
4,10	6	102	64	58	36	M2112-0410AE	30060066
4,20	6	102	64	58	36	M2112-0420AE	30060067
4,30	6	102	64	58	36	M2112-0430AE	30060068
4,40	6	102	64	58	36	M2112-0440AE	30060069
4,50	6	102	64	58	36	M2112-0450AE	30060070
4,60	6	102	64	58	36	M2112-0460AE	30060071
4,70	6	102	64	58	36	M2112-0470AE	30060074
4,80	6	116	78	70	36	M2112-0480AE	30060076
4,90	6	116	78	70	36	M2112-0490AE	30060077
5,00	6	116	78	70	36	M2112-0500AE	30074806
5,10	6	116	78	70	36	M2112-0510AE	30060078
5,20	6	116	78	70	36	M2112-0520AE	30073057
5,30	6	116	78	70	36	M2112-0530AE	30060080
5,40	6	116	78	70	36	M2112-0540AE	30060081
5,50	6	116	78	70	36	M2112-0550AE	30074841
5,60	6	116	78	70	36	M2112-0560AE	30060082
5,70	6	116	78	70	36	M2112-0570AE	30073053
5,80	6	116	78	70	36	M2112-0580AE	30060083
5,90	6	116	78	70	36	M2112-0590AE	30075735
6,00	6	116	78	70	36	M2112-0600AE	30060084
6,10	8	146	108	94	36	M2112-0610AE	30073253

MEGA-Drill-Steel | M2112, 12xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,20	8	146	108	94	36	M2112-0620AE	30075736
6,30	8	146	108	94	36	M2112-0630AE	30060085
6,40	8	146	108	94	36	M2112-0640AE	30060086
6,50	8	146	108	94	36	M2112-0650AE	30073626
6,60	8	146	108	94	36	M2112-0660AE	30073621
6,70	8	146	108	94	36	M2112-0670AE	30060087
6,80	8	146	108	94	36	M2112-0680AE	30060088
6,90	8	146	108	94	36	M2112-0690AE	30075737
7,00	8	146	108	94	36	M2112-0700AE	30060089
7,10	8	146	108	94	36	M2112-0710AE	30060090
7,20	8	146	108	94	36	M2112-0720AE	30060091
7,30	8	146	108	94	36	M2112-0730AE	30060092
7,40	8	146	108	94	36	M2112-0740AE	30060093
7,50	8	146	108	94	36	M2112-0750AE	30060094
7,60	8	146	108	94	36	M2112-0760AE	30060095
7,70	8	146	108	94	36	M2112-0770AE	30060096
7,80	8	146	108	94	36	M2112-0780AE	30073070
7,90	8	146	108	94	36	M2112-0790AE	30060097
8,00	8	146	108	94	36	M2112-0800AE	30060098
8,10	10	162	120	110	40	M2112-0810AE	30075738
8,20	10	162	120	110	40	M2112-0820AE	30075739
8,30	10	162	120	110	40	M2112-0830AE	30074804
8,40	10	162	120	110	40	M2112-0840AE	30074765
8,50	10	162	120	110	40	M2112-0850AE	30072302
8,60	10	162	120	110	40	M2112-0860AE	30075740
8,70	10	162	120	110	40	M2112-0870AE	30074766
8,80	10	162	120	110	40	M2112-0880AE	30072865
8,90	10	162	120	110	40	M2112-0890AE	30075741
9,00	10	162	120	110	40	M2112-0900AE	30062937
9,10	10	162	120	110	40	M2112-0910AE	30075742
9,20	10	162	120	110	40	M2112-0920AE	30075743
9,30	10	162	120	110	40	M2112-0930AE	30074771
9,40	10	162	120	110	40	M2112-0940AE	30075744
9,50	10	162	120	110	40	M2112-0950AE	30075745
9,60	10	162	120	110	40	M2112-0960AE	30075746
9,70	10	162	120	110	40	M2112-0970AE	30075747
9,80	10	162	120	110	40	M2112-0980AE	30060116
9,90	10	162	120	110	40	M2112-0990AE	30075748
10,00	10	162	120	110	40	M2112-1000AE	30072230
10,10	12	204	156	142	45	M2112-1010AE	30075749
10,20	12	204	156	142	45	M2112-1020AE	30060120
10,30	12	204	156	142	45	M2112-1030AE	30075750
10,40	12	204	156	142	45	M2112-1040AE	30075751
10,50	12	204	156	142	45	M2112-1050AE	30072162
10,60	12	204	156	142	45	M2112-1060AE	30074810
10,70	12	204	156	142	45	M2112-1070AE	30073065
10,80	12	204	156	142	45	M2112-1080AE	30073061
10,90	12	204	156	142	45	M2112-1090AE	30075752
11,00	12	204	156	142	45	M2112-1100AE	30060127
11,10	12	204	156	142	45	M2112-1110AE	30075753
11,20	12	204	156	142	45	M2112-1120AE	30075754
11,30	12	204	156	142	45	M2112-1130AE	30075755
11,40	12	204	156	142	45	M2112-1140AE	30075756
11,50	12	204	156	142	45	M2112-1150AE	30075757
11,60	12	204	156	142	45	M2112-1160AE	30075758
11,70	12	204	156	142	45	M2112-1170AE	30075759
11,80	12	204	156	142	45	M2112-1180AE	30074772

MEGA-Drill-Steel | M2112, 12xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
12,00	12	204	156	142	45	M2112-1200AE	30075760
12,50	14	230	182	166	45	M2112-1250AE	30060132
13,00	14	230	182	166	45	M2112-1300AE	30060137
13,50	14	230	182	166	45	M2112-1350AE	30074832
13,80	14	230	182	166	45	M2112-1380AE	30075762
14,00	14	230	182	166	45	M2112-1400AE	30060139
14,50	16	260	208	192	48	M2112-1450AE	30075763
15,00	16	260	208	192	48	M2112-1500AE	30060145
15,50	16	260	208	192	48	M2112-1550AE	30075765
16,00	16	260	208	192	48	M2112-1600AE	30060150
16,50	18	285	234	216	48	M2112-1650AE	30075767
17,00	18	285	234	216	48	M2112-1700AE	30075769
17,50	18	285	234	216	48	M2112-1750AE	30075770
18,00	18	285	234	216	48	M2112-1800AE	30060157
18,50	20	310	258	240	50	M2112-1850AE	30075773
19,00	20	310	258	240	50	M2112-1900AE	30075775
19,50	20	310	258	240	50	M2112-1950AE	30075776
20,00	20	310	258	240	50	M2112-2000AE	30075778

Dimensions in mm.

Cutting data recommendations from page 272.

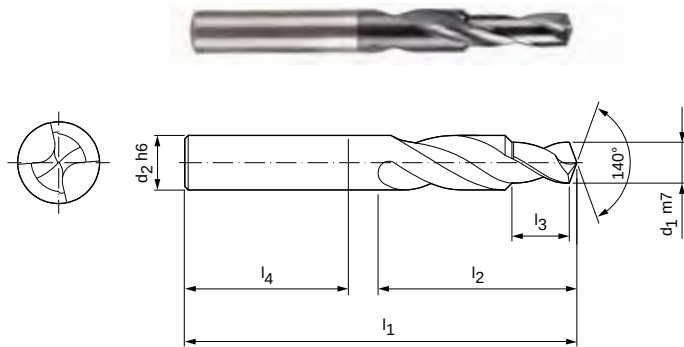
Special designs and other coatings on request.

MEGA-Step-Drill-Steel

External cooling
M2303

Design:

Drill diameter: 2,50 – 14,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions								Specification	Order No.
d	Art	d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
M3	GB	2,50	6	62	20	8,80	36	M2303-0250AE	30059648
M3	F0	2,80	6	62	20	8,80	36	M2303-0280AE	30159500
M4	GB	3,30	6	62	24	11,40	36	M2303-0330AE	30059649
M4	F0	3,70	6	62	24	11,40	36	M2303-0370AE	30159501
M5	GB	4,20	6	66	28	13,60	36	M2303-0420AE	30073671
M5	F0	4,65	6	66	28	13,60	36	M2303-0465AE	30159502
M6	GB	5,00	8	79	34	16,50	36	M2303-0500AE	30059651
M6	F0	5,55	8	79	34	16,50	36	M2303-0555AE	30159503
M8	GB	6,80	10	89	47	21,00	40	M2303-0680AE	30073907
M8	F0	7,45	10	89	47	21,00	40	M2303-0745AE	30482811
M10	GB	8,50	12	102	55	25,50	45	M2303-0850AE	30062678
M10	F0	9,30	12	102	55	25,50	45	M2303-0930AE	30159505
M12	GB	10,20	14	107	60	30,00	45	M2303-1020AE	30059654
M12	F0	11,20	14	107	60	30,00	45	M2303-1120AE	30159506
M16	GB	14,00	18	123	73	38,50	48	M2303-1400AE	30074461

GB: Core hole tapping

F0: Core hole thread forming / thread grooving

Dimensions in mm.

Cutting data recommendations from page 272.

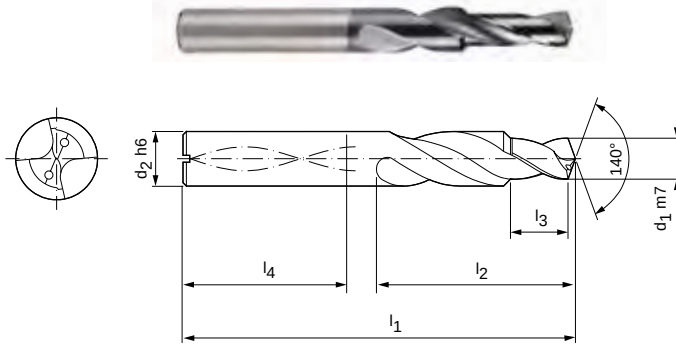
Special designs and other coatings on request.

MEGA-Step-Drill-Steel

Internal cooling
M2403

Design:

Drill diameter: 2,50 – 14,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions								Shank form HA		Shank form HE	
d	Art	d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
M3	GB	2,50	6	62	20	8,80	36	M2403-0250AE	30171664	M2403-0250EE	30056201
M3	FO	2,80	6	62	20	8,80	36	M2403-0280AE	30234095	M2403-0280EE	30378584
M4	GB	3,30	6	62	24	11,40	36	M2403-0330AE	30117541	M2403-0330EE	30056202
M4	FO	3,70	6	62	24	11,40	36	M2403-0370AE	30234096	M2403-0370EE	30378586
M5	GB	4,20	6	66	28	13,60	36	M2403-0420AE	30091375	M2403-0420EE	30056203
M5	FO	4,65	6	66	28	13,60	36	M2403-0465AE	30234097	M2403-0465EE	30178296
M6	GB	5,00	8	79	34	16,50	36	M2403-0500AE	30084235	M2403-0500EE	30056204
M6	FO	5,55	8	79	34	16,50	36	M2403-0555AE	30378587	M2403-0555EE	30482812
M8	GB	6,80	10	89	47	21,00	40	M2403-0680AE	30087302	M2403-0680EE	30056205
M8	FO	7,45	10	89	47	21,00	40	M2403-0745AE	30378632	M2403-0745EE	30378634
M10	GB	8,50	12	102	55	25,50	45	M2403-0850AE	30082407	M2403-0850EE	30056206
M10	FO	9,30	12	102	55	25,50	45	M2403-0930AE	30378639	M2403-0930EE	30378642
M12	GB	10,20	14	107	60	30,00	45	M2403-1020AE	30060167	M2403-1020EE	30056207
M12	FO	11,20	14	107	60	30,00	45	M2403-1120AE	30291423	M2403-1120EE	30482815
M16	GB	14,00	18	123	73	38,50	48	M2403-1400AE	30060169	M2403-1400EE	30056209

GB: Core hole tapping
FO: Core hole thread forming / thread grooving

Dimensions in mm.
Cutting data recommendations from page 272.
Special designs and other coatings on request.

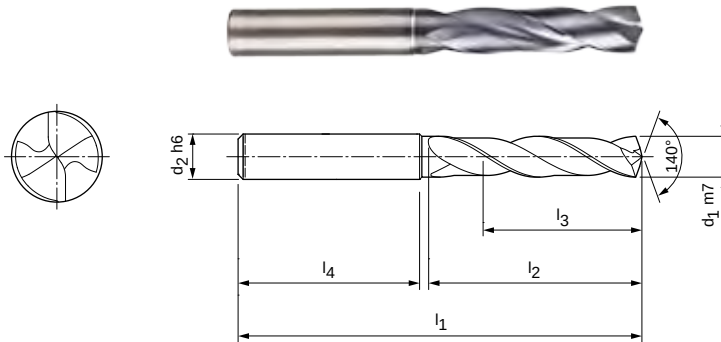
MEGA-Drill-Steel-Plus

3xD, external cooling

M2003P – follow-up product of MEGA-Drill-Steel (M2003)

Design:

Drill diameter:	3,00 – 25,00 mm
Bore tolerance:	≥ IT 9
Coating:	MxP
Number of cutting edges:	2
Number of guiding chamfers:	2
Point geometry:	Specific geometry
Point angle:	140°
Helix angle:	30°



Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
3,00	6	62	20	14	36	M2003P-0300AR	30683755	M2003P-0300ER	30683925
3,10	6	62	20	14	36	M2003P-0310AR	30683756	M2003P-0310ER	30683926
3,15	6	62	20	14	36	M2003P-0315AR	30683757	M2003P-0315ER	30683927
3,20	6	62	20	14	36	M2003P-0320AR	30683759	M2003P-0320ER	30683928
3,22	6	62	20	14	36	M2003P-0322AR	30683760	M2003P-0322ER	30683929
3,25	6	62	20	14	36	M2003P-0325AR	30683761	M2003P-0325ER	30683930
3,30	6	62	20	14	36	M2003P-0330AR	30683762	M2003P-0330ER	30683931
3,40	6	62	20	14	36	M2003P-0340AR	30683763	M2003P-0340ER	30683932
3,50	6	62	20	14	36	M2003P-0350AR	30683764	M2003P-0350ER	30683933
3,60	6	62	20	14	36	M2003P-0360AR	30683765	M2003P-0360ER	30683934
*3,70	6	62	20	14	36	M2003P-0370AR	30683766	M2003P-0370ER	30683935
3,80	6	66	24	17	36	M2003P-0380AR	30683767	M2003P-0380ER	30683936
3,85	6	66	24	17	36	M2003P-0385AR	30683768	M2003P-0385ER	30683937
3,90	6	66	24	17	36	M2003P-0390AR	30683769	M2003P-0390ER	30683938
4,00	6	66	24	17	36	M2003P-0400AR	30683770	M2003P-0400ER	30683939
4,10	6	66	24	17	36	M2003P-0410AR	30683771	M2003P-0410ER	30683940
4,20	6	66	24	17	36	M2003P-0420AR	30683772	M2003P-0420ER	30683941
4,25	6	66	24	17	36	M2003P-0425AR	30683773	M2003P-0425ER	30683942
4,30	6	66	24	17	36	M2003P-0430AR	30683774	M2003P-0430ER	30683943
4,35	6	66	24	17	36	M2003P-0435AR	30683775	M2003P-0435ER	30683944
4,40	6	66	24	17	36	M2003P-0440AR	30683776	M2003P-0440ER	30683945
4,45	6	66	24	17	36	M2003P-0445AR	30683777	M2003P-0445ER	30683946
4,50	6	66	24	17	36	M2003P-0450AR	30683778	M2003P-0450ER	30683947
4,60	6	66	24	17	36	M2003P-0460AR	30683779	M2003P-0460ER	30683948
*4,65	6	66	24	17	36	M2003P-0465AR	30683780	M2003P-0465ER	30683949
4,70	6	66	24	17	36	M2003P-0470AR	30683781	M2003P-0470ER	30683950
4,80	6	66	28	20	36	M2003P-0480AR	30683782	M2003P-0480ER	30683951
4,90	6	66	28	20	36	M2003P-0490AR	30683783	M2003P-0490ER	30683952
4,95	6	66	28	20	36	M2003P-0495AR	30683784	M2003P-0495ER	30683953
5,00	6	66	28	20	36	M2003P-0500AR	30683785	M2003P-0500ER	30683954
5,05	6	66	28	20	36	M2003P-0505AR	30683786	M2003P-0505ER	30683955
5,10	6	66	28	20	36	M2003P-0510AR	30683787	M2003P-0510ER	30683956
5,20	6	66	28	20	36	M2003P-0520AR	30683788	M2003P-0520ER	30683957
5,30	6	66	28	20	36	M2003P-0530AR	30683789	M2003P-0530ER	30683958
5,40	6	66	28	20	36	M2003P-0540AR	30683790	M2003P-0540ER	30683959
5,50	6	66	28	20	36	M2003P-0550AR	30683791	M2003P-0550ER	30683960

MEGA-Drill-Steel-Plus | M2003P, 3xD, external cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
*5,55	6	66	28	20	36	M2003P-0555AR	30683792	M2003P-0555ER	30683961
5,60	6	66	28	20	36	M2003P-0560AR	30683793	M2003P-0560ER	30683962
5,70	6	66	28	20	36	M2003P-0570AR	30683794	M2003P-0570ER	30683963
5,75	6	66	28	20	36	M2003P-0575AR	30683795	M2003P-0575ER	30683964
5,80	6	66	28	20	36	M2003P-0580AR	30683796	M2003P-0580ER	30683965
5,90	6	66	28	20	36	M2003P-0590AR	30683797	M2003P-0590ER	30683966
5,95	6	66	28	20	36	M2003P-0595AR	30683798	M2003P-0595ER	30683967
6,00	6	66	28	20	36	M2003P-0600AR	30683799	M2003P-0600ER	30683968
6,10	8	79	34	24	36	M2003P-0610AR	30683800	M2003P-0610ER	30683969
6,20	8	79	34	24	36	M2003P-0620AR	30683801	M2003P-0620ER	30683970
6,30	8	79	34	24	36	M2003P-0630AR	30683802	M2003P-0630ER	30683971
6,40	8	79	34	24	36	M2003P-0640AR	30683803	M2003P-0640ER	30683972
6,50	8	79	34	24	36	M2003P-0650AR	30683804	M2003P-0650ER	30683973
6,60	8	79	34	24	36	M2003P-0660AR	30683805	M2003P-0660ER	30683974
6,70	8	79	34	24	36	M2003P-0670AR	30683806	M2003P-0670ER	30683975
6,80	8	79	34	24	36	M2003P-0680AR	30683807	M2003P-0680ER	30683976
6,90	8	79	34	24	36	M2003P-0690AR	30683808	M2003P-0690ER	30683977
7,00	8	79	34	24	36	M2003P-0700AR	30683809	M2003P-0700ER	30683978
7,10	8	79	41	29	36	M2003P-0710AR	30683810	M2003P-0710ER	30683979
7,20	8	79	41	29	36	M2003P-0720AR	30683811	M2003P-0720ER	30683980
7,30	8	79	41	29	36	M2003P-0730AR	30683812	M2003P-0730ER	30683981
7,40	8	79	41	29	36	M2003P-0740AR	30683813	M2003P-0740ER	30683982
*7,45	8	79	41	29	36	M2003P-0745AR	30683814	M2003P-0745ER	30683983
7,50	8	79	41	29	36	M2003P-0750AR	30683815	M2003P-0750ER	30683984
7,60	8	79	41	29	36	M2003P-0760AR	30683816	M2003P-0760ER	30683985
7,70	8	79	41	29	36	M2003P-0770AR	30683817	M2003P-0770ER	30683986
7,80	8	79	41	29	36	M2003P-0780AR	30683818	M2003P-0780ER	30683987
7,90	8	79	41	29	36	M2003P-0790AR	30683819	M2003P-0790ER	30683988
8,00	8	79	41	29	36	M2003P-0800AR	30683820	M2003P-0800ER	30683989
8,10	10	89	47	35	40	M2003P-0810AR	30683821	M2003P-0810ER	30683990
8,20	10	89	47	35	40	M2003P-0820AR	30683822	M2003P-0820ER	30683992
8,30	10	89	47	35	40	M2003P-0830AR	30683823	M2003P-0830ER	30683993
8,40	10	89	47	35	40	M2003P-0840AR	30683824	M2003P-0840ER	30683994
8,50	10	89	47	35	40	M2003P-0850AR	30683825	M2003P-0850ER	30683995
8,60	10	89	47	35	40	M2003P-0860AR	30683827	M2003P-0860ER	30683996
8,70	10	89	47	35	40	M2003P-0870AR	30683828	M2003P-0870ER	30683997
8,80	10	89	47	35	40	M2003P-0880AR	30683829	M2003P-0880ER	30683998
8,90	10	89	47	35	40	M2003P-0890AR	30683830	M2003P-0890ER	30683999
9,00	10	89	47	35	40	M2003P-0900AR	30683831	M2003P-0900ER	30684000
9,10	10	89	47	35	40	M2003P-0910AR	30683832	M2003P-0910ER	30684001
9,20	10	89	47	35	40	M2003P-0920AR	30683833	M2003P-0920ER	30684002
*9,30	10	89	47	35	40	M2003P-0930AR	30683834	M2003P-0930ER	30684003
9,35	10	89	47	35	40	M2003P-0935AR	30683835	M2003P-0935ER	30684004
9,40	10	89	47	35	40	M2003P-0940AR	30683836	M2003P-0940ER	30684005
9,45	10	89	47	35	40	M2003P-0945AR	30683837	M2003P-0945ER	30684006
9,50	10	89	47	35	40	M2003P-0950AR	30683838	M2003P-0950ER	30684007
9,60	10	89	47	35	40	M2003P-0960AR	30683839	M2003P-0960ER	30684008
9,70	10	89	47	35	40	M2003P-0970AR	30683840	M2003P-0970ER	30684009
9,80	10	89	47	35	40	M2003P-0980AR	30683841	M2003P-0980ER	30684010
9,90	10	89	47	35	40	M2003P-0990AR	30683842	M2003P-0990ER	30684011
10,00	10	89	47	35	40	M2003P-1000AR	30683843	M2003P-1000ER	30684012
10,10	12	102	55	40	45	M2003P-1010AR	30683844	M2003P-1010ER	30684013
10,20	12	102	55	40	45	M2003P-1020AR	30683845	M2003P-1020ER	30684014
10,30	12	102	55	40	45	M2003P-1030AR	30683846	M2003P-1030ER	30684015
10,40	12	102	55	40	45	M2003P-1040AR	30683847	M2003P-1040ER	30684016
10,50	12	102	55	40	45	M2003P-1050AR	30683848	M2003P-1050ER	30684017
10,55	12	102	55	40	45	M2003P-1055AR	30683849	M2003P-1055ER	30684018

Continued on next page.

MEGA-Drill-Steel-Plus | M2003P, 3xD, external cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
10,60	12	102	55	40	45	M2003P-1060AR	30683850	M2003P-1060ER	30684019
10,70	12	102	55	40	45	M2003P-1070AR	30683851	M2003P-1070ER	30684020
10,75	12	102	55	40	45	M2003P-1075AR	30683852	M2003P-1075ER	30684021
10,80	12	102	55	40	45	M2003P-1080AR	30683853	M2003P-1080ER	30684022
10,90	12	102	55	40	45	M2003P-1090AR	30683854	M2003P-1090ER	30684023
11,00	12	102	55	40	45	M2003P-1100AR	30683855	M2003P-1100ER	30684024
11,10	12	102	55	40	45	M2003P-1110AR	30683856	M2003P-1110ER	30684025
*11,20	12	102	55	40	45	M2003P-1120AR	30683857	M2003P-1120ER	30684026
11,25	12	102	55	40	45	M2003P-1125AR	30683858	M2003P-1125ER	30684027
11,30	12	102	55	40	45	M2003P-1130AR	30683859	M2003P-1130ER	30684028
11,35	12	102	55	40	45	M2003P-1135AR	30683860	M2003P-1135ER	30684029
11,40	12	102	55	40	45	M2003P-1140AR	30683861	M2003P-1140ER	30684030
11,45	12	102	55	40	45	M2003P-1145AR	30683862	M2003P-1145ER	30684031
11,50	12	102	55	40	45	M2003P-1150AR	30683863	M2003P-1150ER	30684032
11,60	12	102	55	40	45	M2003P-1160AR	30683864	M2003P-1160ER	30684033
11,70	12	102	55	40	45	M2003P-1170AR	30683865	M2003P-1170ER	30684035
11,80	12	102	55	40	45	M2003P-1180AR	30683866	M2003P-1180ER	30684036
11,90	12	102	55	40	45	M2003P-1190AR	30683867	M2003P-1190ER	30684037
12,00	12	102	55	40	45	M2003P-1200AR	30683868	M2003P-1200ER	30684038
12,15	14	107	60	43	45	M2003P-1215AR	30683869	M2003P-1215ER	30684039
12,25	14	107	60	43	45	M2003P-1225AR	30683870	M2003P-1225ER	30684040
12,50	14	107	60	43	45	M2003P-1250AR	30683871	M2003P-1250ER	30684041
12,55	14	107	60	43	45	M2003P-1255AR	30683872	M2003P-1255ER	30684042
12,70	14	107	60	43	45	M2003P-1270AR	30683873	M2003P-1270ER	30684043
12,80	14	107	60	43	45	M2003P-1280AR	30683874	M2003P-1280ER	30684044
12,90	14	107	60	43	45	M2003P-1290AR	30683875	M2003P-1290ER	30684045
13,00	14	107	60	43	45	M2003P-1300AR	30683876	M2003P-1300ER	30684046
13,10	14	107	60	43	45	M2003P-1310AR	30683877	M2003P-1310ER	30684047
13,30	14	107	60	43	45	M2003P-1330AR	30683878	M2003P-1330ER	30684048
13,35	14	107	60	43	45	M2003P-1335AR	30683879	M2003P-1335ER	30684049
13,50	14	107	60	43	45	M2003P-1350AR	30683880	M2003P-1350ER	30684050
13,70	14	107	60	43	45	M2003P-1370AR	30683881	M2003P-1370ER	30684051
13,80	14	107	60	43	45	M2003P-1380AR	30683882	M2003P-1380ER	30684052
14,00	14	107	60	43	45	M2003P-1400AR	30683883	M2003P-1400ER	30684053
14,20	16	115	65	45	48	M2003P-1420AR	30683884	M2003P-1420ER	30684054
14,50	16	115	65	45	48	M2003P-1450AR	30683885	M2003P-1450ER	30684055
14,80	16	115	65	45	48	M2003P-1480AR	30683886	M2003P-1480ER	30684056
15,00	16	115	65	45	48	M2003P-1500AR	30683887	M2003P-1500ER	30684057
15,10	16	115	65	45	48	M2003P-1510AR	30683888	M2003P-1510ER	30684058
15,25	16	115	65	45	48	M2003P-1525AR	30683889	M2003P-1525ER	30684059
15,30	16	115	65	45	48	M2003P-1530AR	30683890	M2003P-1530ER	30684060
15,35	16	115	65	45	48	M2003P-1535AR	30683891	M2003P-1535ER	30684061
15,50	16	115	65	45	48	M2003P-1550AR	30683892	M2003P-1550ER	30684062
15,60	16	115	65	45	48	M2003P-1560AR	30683893	M2003P-1560ER	30684063
15,80	16	115	65	45	48	M2003P-1580AR	30683894	M2003P-1580ER	30684064
16,00	16	115	65	45	48	M2003P-1600AR	30683895	M2003P-1600ER	30684065
16,05	18	123	73	51	48	M2003P-1605AR	30683896	M2003P-1605ER	30684066
16,50	18	123	73	51	48	M2003P-1650AR	30683897	M2003P-1650ER	30684067
16,80	18	123	73	51	48	M2003P-1680AR	30683898	M2003P-1680ER	30684068
16,90	18	123	73	51	48	M2003P-1690AR	30683900	M2003P-1690ER	30684069
17,00	18	123	73	51	48	M2003P-1700AR	30683901	M2003P-1700ER	30684070
17,50	18	123	73	51	48	M2003P-1750AR	30683902	M2003P-1750ER	30684071
17,60	18	123	73	51	48	M2003P-1760AR	30683903	M2003P-1760ER	30684072
17,80	18	123	73	51	48	M2003P-1780AR	30683904	M2003P-1780ER	30684073
18,00	18	123	73	51	48	M2003P-1800AR	30683905	M2003P-1800ER	30684074
18,50	20	131	79	55	50	M2003P-1850AR	30683906	M2003P-1850ER	30684075
18,80	20	131	79	55	50	M2003P-1880AR	30683907	M2003P-1880ER	30684076

MEGA-Drill-Steel-Plus | M2003P, 3xD, external cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
18,90	20	131	79	55	50	M2003P-1890AR	30683908	M2003P-1890ER	30684077
19,00	20	131	79	55	50	M2003P-1900AR	30683909	M2003P-1900ER	30684078
19,35	20	131	79	55	50	M2003P-1935AR	30683910	M2003P-1935ER	30684079
19,50	20	131	79	55	50	M2003P-1950AR	30683911	M2003P-1950ER	30684080
19,60	20	131	79	55	50	M2003P-1960AR	30683912	M2003P-1960ER	30684081
19,80	20	131	79	55	50	M2003P-1980AR	30683913	M2003P-1980ER	30684082
20,00	20	131	79	55	50	M2003P-2000AR	30683914	M2003P-2000ER	30684083
20,50	25	151	93	66	56	M2003P-2050AR	30683915	M2003P-2050ER	30684084
21,00	25	151	93	66	56	M2003P-2100AR	30683916	M2003P-2100ER	30684085
21,50	25	151	93	66	56	M2003P-2150AR	30683917	M2003P-2150ER	30684086
22,00	25	151	93	66	56	M2003P-2200AR	30683918	M2003P-2200ER	30684087
22,50	25	153	96	72	56	M2003P-2250AR	30683919	M2003P-2250ER	30684088
23,00	25	153	96	72	56	M2003P-2300AR	30683920	M2003P-2300ER	30684089
23,50	25	153	96	72	56	M2003P-2350AR	30683921	M2003P-2350ER	30684090
24,00	25	153	96	72	56	M2003P-2400AR	30683922	M2003P-2400ER	30684091
24,50	25	153	96	72	56	M2003P-2450AR	30683923	M2003P-2450ER	30684092
25,00	25	153	96	72	56	M2003P-2500AR	30683924	M2003P-2500ER	30684094

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

MEGA-Drill-Steel-Plus

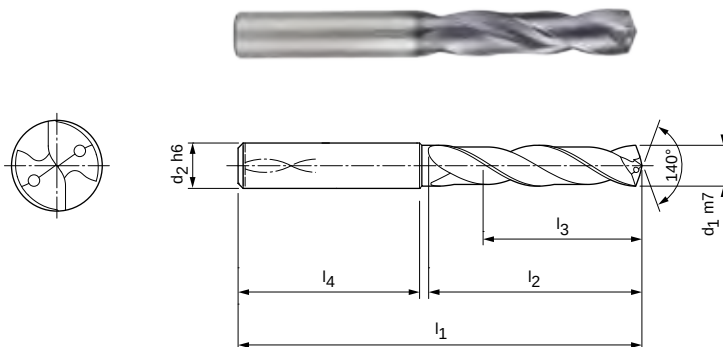
3xD, internal cooling

M2103P – follow-up product of MEGA-Drill-Steel (M2103)

Suitable for use as pilot drill for MEGA-Deep-Drill

Design:

Drill diameter:	3,00 – 25,00 mm
Bore tolerance:	≥ IT 9
Coating:	MxP
Number of cutting edges:	2
Number of guiding chamfers:	2
Point geometry:	Specific geometry
Point angle:	140°
Helix angle:	30°



Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
3,00	6	62	20	14	36	M2103P-0300AR	30682354	M2103P-0300ER	30682523
3,10	6	62	20	14	36	M2103P-0310AR	30682355	M2103P-0310ER	30682524
3,15	6	62	20	14	36	M2103P-0315AR	30682356	M2103P-0315ER	30682525
3,20	6	62	20	14	36	M2103P-0320AR	30682357	M2103P-0320ER	30682526
3,22	6	62	20	14	36	M2103P-0322AR	30682358	M2103P-0322ER	30682527
3,25	6	62	20	14	36	M2103P-0325AR	30682359	M2103P-0325ER	30682528
3,30	6	62	20	14	36	M2103P-0330AR	30682360	M2103P-0330ER	30682529
3,40	6	62	20	14	36	M2103P-0340AR	30682361	M2103P-0340ER	30682530
3,50	6	62	20	14	36	M2103P-0350AR	30682362	M2103P-0350ER	30682531
3,60	6	62	20	14	36	M2103P-0360AR	30682363	M2103P-0360ER	30682532
*3,70	6	62	20	14	36	M2103P-0370AR	30682364	M2103P-0370ER	30682533
3,80	6	66	24	17	36	M2103P-0380AR	30682365	M2103P-0380ER	30682534
3,85	6	66	24	17	36	M2103P-0385AR	30682366	M2103P-0385ER	30682535
3,90	6	66	24	17	36	M2103P-0390AR	30682367	M2103P-0390ER	30682536
4,00	6	66	24	17	36	M2103P-0400AR	30682368	M2103P-0400ER	30682537
4,10	6	66	24	17	36	M2103P-0410AR	30682369	M2103P-0410ER	30682538
4,20	6	66	24	17	36	M2103P-0420AR	30682370	M2103P-0420ER	30682539
4,25	6	66	24	17	36	M2103P-0425AR	30682371	M2103P-0425ER	30682540
4,30	6	66	24	17	36	M2103P-0430AR	30682372	M2103P-0430ER	30682541
4,35	6	66	24	17	36	M2103P-0435AR	30682373	M2103P-0435ER	30682542
4,40	6	66	24	17	36	M2103P-0440AR	30682374	M2103P-0440ER	30682543
4,45	6	66	24	17	36	M2103P-0445AR	30682375	M2103P-0445ER	30682544
4,50	6	66	24	17	36	M2103P-0450AR	30682376	M2103P-0450ER	30682545
4,60	6	66	24	17	36	M2103P-0460AR	30682377	M2103P-0460ER	30682546
*4,65	6	66	24	17	36	M2103P-0465AR	30682378	M2103P-0465ER	30682547
4,70	6	66	24	17	36	M2103P-0470AR	30682379	M2103P-0470ER	30682548
4,80	6	66	28	20	36	M2103P-0480AR	30682380	M2103P-0480ER	30682549
4,90	6	66	28	20	36	M2103P-0490AR	30682381	M2103P-0490ER	30682550
4,95	6	66	28	20	36	M2103P-0495AR	30682382	M2103P-0495ER	30682551
5,00	6	66	28	20	36	M2103P-0500AR	30682383	M2103P-0500ER	30682552
5,05	6	66	28	20	36	M2103P-0505AR	30682384	M2103P-0505ER	30682553
5,10	6	66	28	20	36	M2103P-0510AR	30682385	M2103P-0510ER	30682554
5,20	6	66	28	20	36	M2103P-0520AR	30682386	M2103P-0520ER	30682555
5,30	6	66	28	20	36	M2103P-0530AR	30682387	M2103P-0530ER	30682556
5,40	6	66	28	20	36	M2103P-0540AR	30682388	M2103P-0540ER	30682557
5,50	6	66	28	20	36	M2103P-0550AR	30682389	M2103P-0550ER	30682558

MEGA-Drill-Steel-Plus | M2103P, 3xD, internal cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
*5,55	6	66	28	20	36	M2103P-0555AR	30682390	M2103P-0555ER	30682559
5,60	6	66	28	20	36	M2103P-0560AR	30682391	M2103P-0560ER	30682560
5,70	6	66	28	20	36	M2103P-0570AR	30682392	M2103P-0570ER	30682561
5,75	6	66	28	20	36	M2103P-0575AR	30682393	M2103P-0575ER	30682562
5,80	6	66	28	20	36	M2103P-0580AR	30682394	M2103P-0580ER	30682563
5,90	6	66	28	20	36	M2103P-0590AR	30682395	M2103P-0590ER	30682564
5,95	6	66	28	20	36	M2103P-0595AR	30682396	M2103P-0595ER	30682565
6,00	6	66	28	20	36	M2103P-0600AR	30682397	M2103P-0600ER	30682566
6,10	8	79	34	24	36	M2103P-0610AR	30682398	M2103P-0610ER	30682567
6,20	8	79	34	24	36	M2103P-0620AR	30682399	M2103P-0620ER	30682568
6,30	8	79	34	24	36	M2103P-0630AR	30682400	M2103P-0630ER	30682569
6,40	8	79	34	24	36	M2103P-0640AR	30682401	M2103P-0640ER	30682570
6,50	8	79	34	24	36	M2103P-0650AR	30682402	M2103P-0650ER	30682571
6,60	8	79	34	24	36	M2103P-0660AR	30682403	M2103P-0660ER	30682572
6,70	8	79	34	24	36	M2103P-0670AR	30682404	M2103P-0670ER	30682573
6,80	8	79	34	24	36	M2103P-0680AR	30682405	M2103P-0680ER	30682574
6,90	8	79	34	24	36	M2103P-0690AR	30682406	M2103P-0690ER	30682575
7,00	8	79	34	24	36	M2103P-0700AR	30682407	M2103P-0700ER	30682576
7,10	8	79	41	29	36	M2103P-0710AR	30682408	M2103P-0710ER	30682577
7,20	8	79	41	29	36	M2103P-0720AR	30682409	M2103P-0720ER	30682578
7,30	8	79	41	29	36	M2103P-0730AR	30682410	M2103P-0730ER	30682579
7,40	8	79	41	29	36	M2103P-0740AR	30682411	M2103P-0740ER	30682580
*7,45	8	79	41	29	36	M2103P-0745AR	30682412	M2103P-0745ER	30682581
7,50	8	79	41	29	36	M2103P-0750AR	30682414	M2103P-0750ER	30682582
7,60	8	79	41	29	36	M2103P-0760AR	30682415	M2103P-0760ER	30682583
7,70	8	79	41	29	36	M2103P-0770AR	30682416	M2103P-0770ER	30682584
7,80	8	79	41	29	36	M2103P-0780AR	30682417	M2103P-0780ER	30682585
7,90	8	79	41	29	36	M2103P-0790AR	30682418	M2103P-0790ER	30682586
8,00	8	79	41	29	36	M2103P-0800AR	30682419	M2103P-0800ER	30682587
8,10	10	89	47	35	40	M2103P-0810AR	30682420	M2103P-0810ER	30682588
8,20	10	89	47	35	40	M2103P-0820AR	30682421	M2103P-0820ER	30682589
8,30	10	89	47	35	40	M2103P-0830AR	30682422	M2103P-0830ER	30682590
8,40	10	89	47	35	40	M2103P-0840AR	30682423	M2103P-0840ER	30682591
8,50	10	89	47	35	40	M2103P-0850AR	30682424	M2103P-0850ER	30682592
8,60	10	89	47	35	40	M2103P-0860AR	30682425	M2103P-0860ER	30682593
8,70	10	89	47	35	40	M2103P-0870AR	30682426	M2103P-0870ER	30682594
8,80	10	89	47	35	40	M2103P-0880AR	30682427	M2103P-0880ER	30682595
8,90	10	89	47	35	40	M2103P-0890AR	30682428	M2103P-0890ER	30682596
9,00	10	89	47	35	40	M2103P-0900AR	30682429	M2103P-0900ER	30682597
9,10	10	89	47	35	40	M2103P-0910AR	30682430	M2103P-0910ER	30682598
9,20	10	89	47	35	40	M2103P-0920AR	30682431	M2103P-0920ER	30682599
*9,30	10	89	47	35	40	M2103P-0930AR	30682432	M2103P-0930ER	30682600
9,35	10	89	47	35	40	M2103P-0935AR	30682433	M2103P-0935ER	30682601
9,40	10	89	47	35	40	M2103P-0940AR	30682434	M2103P-0940ER	30682602
9,45	10	89	47	35	40	M2103P-0945AR	30682435	M2103P-0945ER	30682603
9,50	10	89	47	35	40	M2103P-0950AR	30682436	M2103P-0950ER	30682604
9,60	10	89	47	35	40	M2103P-0960AR	30682437	M2103P-0960ER	30682605
9,70	10	89	47	35	40	M2103P-0970AR	30682438	M2103P-0970ER	30682606
9,80	10	89	47	35	40	M2103P-0980AR	30682439	M2103P-0980ER	30682607
9,90	10	89	47	35	40	M2103P-0990AR	30682440	M2103P-0990ER	30682608
10,00	10	89	47	35	40	M2103P-1000AR	30682441	M2103P-1000ER	30682609
10,10	12	102	55	40	45	M2103P-1010AR	30682442	M2103P-1010ER	30682610
10,20	12	102	55	40	45	M2103P-1020AR	30682443	M2103P-1020ER	30682611
10,30	12	102	55	40	45	M2103P-1030AR	30682444	M2103P-1030ER	30682612
10,40	12	102	55	40	45	M2103P-1040AR	30682445	M2103P-1040ER	30682613
10,50	12	102	55	40	45	M2103P-1050AR	30682446	M2103P-1050ER	30682614
10,55	12	102	55	40	45	M2103P-1055AR	30682447	M2103P-1055ER	30682615

Continued on next page.

MEGA-Drill-Steel-Plus | M2103P, 3xD, internal cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
10,60	12	102	55	40	45	M2103P-1060AR	30682448	M2103P-1060ER	30682616
10,70	12	102	55	40	45	M2103P-1070AR	30682449	M2103P-1070ER	30682617
10,75	12	102	55	40	45	M2103P-1075AR	30682450	M2103P-1075ER	30682618
10,80	12	102	55	40	45	M2103P-1080AR	30682451	M2103P-1080ER	30682619
10,90	12	102	55	40	45	M2103P-1090AR	30682452	M2103P-1090ER	30682620
11,00	12	102	55	40	45	M2103P-1100AR	30682453	M2103P-1100ER	30682621
11,10	12	102	55	40	45	M2103P-1110AR	30682454	M2103P-1110ER	30682622
*11,20	12	102	55	40	45	M2103P-1120AR	30682455	M2103P-1120ER	30682623
11,25	12	102	55	40	45	M2103P-1125AR	30682456	M2103P-1125ER	30682624
11,30	12	102	55	40	45	M2103P-1130AR	30682457	M2103P-1130ER	30682625
11,35	12	102	55	40	45	M2103P-1135AR	30682458	M2103P-1135ER	30682626
11,40	12	102	55	40	45	M2103P-1140AR	30682459	M2103P-1140ER	30682627
11,45	12	102	55	40	45	M2103P-1145AR	30682460	M2103P-1145ER	30682628
11,50	12	102	55	40	45	M2103P-1150AR	30682461	M2103P-1150ER	30682629
11,60	12	102	55	40	45	M2103P-1160AR	30682462	M2103P-1160ER	30682630
11,70	12	102	55	40	45	M2103P-1170AR	30682463	M2103P-1170ER	30682631
11,80	12	102	55	40	45	M2103P-1180AR	30682464	M2103P-1180ER	30682632
11,90	12	102	55	40	45	M2103P-1190AR	30682465	M2103P-1190ER	30682633
12,00	12	102	55	40	45	M2103P-1200AR	30682466	M2103P-1200ER	30682634
12,15	14	107	60	43	45	M2103P-1215AR	30682467	M2103P-1215ER	30682635
12,25	14	107	60	43	45	M2103P-1225AR	30682468	M2103P-1225ER	30682636
12,50	14	107	60	43	45	M2103P-1250AR	30682469	M2103P-1250ER	30682637
12,55	14	107	60	43	45	M2103P-1255AR	30682470	M2103P-1255ER	30682638
12,70	14	107	60	43	45	M2103P-1270AR	30682471	M2103P-1270ER	30682639
12,80	14	107	60	43	45	M2103P-1280AR	30682472	M2103P-1280ER	30682640
12,90	14	107	60	43	45	M2103P-1290AR	30682473	M2103P-1290ER	30682641
13,00	14	107	60	43	45	M2103P-1300AR	30682474	M2103P-1300ER	30682642
13,10	14	107	60	43	45	M2103P-1310AR	30682475	M2103P-1310ER	30682643
13,30	14	107	60	43	45	M2103P-1330AR	30682476	M2103P-1330ER	30682644
13,35	14	107	60	43	45	M2103P-1335AR	30682477	M2103P-1335ER	30682645
13,50	14	107	60	43	45	M2103P-1350AR	30682478	M2103P-1350ER	30682646
13,70	14	107	60	43	45	M2103P-1370AR	30682479	M2103P-1370ER	30682647
13,80	14	107	60	43	45	M2103P-1380AR	30682480	M2103P-1380ER	30682648
14,00	14	107	60	43	45	M2103P-1400AR	30682481	M2103P-1400ER	30682649
14,20	16	115	65	45	48	M2103P-1420AR	30682482	M2103P-1420ER	30682650
14,50	16	115	65	45	48	M2103P-1450AR	30682483	M2103P-1450ER	30682651
14,80	16	115	65	45	48	M2103P-1480AR	30682484	M2103P-1480ER	30682652
15,00	16	115	65	45	48	M2103P-1500AR	30682485	M2103P-1500ER	30682653
15,10	16	115	65	45	48	M2103P-1510AR	30682486	M2103P-1510ER	30682654
15,25	16	115	65	45	48	M2103P-1525AR	30682487	M2103P-1525ER	30682655
15,30	16	115	65	45	48	M2103P-1530AR	30682488	M2103P-1530ER	30682656
15,35	16	115	65	45	48	M2103P-1535AR	30682489	M2103P-1535ER	30682657
15,50	16	115	65	45	48	M2103P-1550AR	30682490	M2103P-1550ER	30682658
15,60	16	115	65	45	48	M2103P-1560AR	30682491	M2103P-1560ER	30682659
15,80	16	115	65	45	48	M2103P-1580AR	30682492	M2103P-1580ER	30682660
16,00	16	115	65	45	48	M2103P-1600AR	30682493	M2103P-1600ER	30682661
16,05	18	123	73	51	48	M2103P-1605AR	30682494	M2103P-1605ER	30682662
16,50	18	123	73	51	48	M2103P-1650AR	30682495	M2103P-1650ER	30682663
16,80	18	123	73	51	48	M2103P-1680AR	30682496	M2103P-1680ER	30682664
16,90	18	123	73	51	48	M2103P-1690AR	30682497	M2103P-1690ER	30682665
17,00	18	123	73	51	48	M2103P-1700AR	30682498	M2103P-1700ER	30682666
17,50	18	123	73	51	48	M2103P-1750AR	30682499	M2103P-1750ER	30682667
17,60	18	123	73	51	48	M2103P-1760AR	30682500	M2103P-1760ER	30682668
17,80	18	123	73	51	48	M2103P-1780AR	30682501	M2103P-1780ER	30682669
18,00	18	123	73	51	48	M2103P-1800AR	30682502	M2103P-1800ER	30682670
18,50	20	131	79	55	50	M2103P-1850AR	30682503	M2103P-1850ER	30682671
18,80	20	131	79	55	50	M2103P-1880AR	30682504	M2103P-1880ER	30682672

MEGA-Drill-Steel-Plus | M2103P, 3xD, internal cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
18,90	20	131	79	55	50	M2103P-1890AR	30682505	M2103P-1890ER	30682673
19,00	20	131	79	55	50	M2103P-1900AR	30682506	M2103P-1900ER	30682674
19,35	20	131	79	55	50	M2103P-1935AR	30682507	M2103P-1935ER	30682675
19,50	20	131	79	55	50	M2103P-1950AR	30682508	M2103P-1950ER	30682676
19,60	20	131	79	55	50	M2103P-1960AR	30682509	M2103P-1960ER	30682677
19,80	20	131	79	55	50	M2103P-1980AR	30682510	M2103P-1980ER	30682678
20,00	20	131	79	55	50	M2103P-2000AR	30682511	M2103P-2000ER	30682679
20,50	25	151	93	66	56	M2103P-2050AR	30682513	M2103P-2050ER	30682680
21,00	25	151	93	66	56	M2103P-2100AR	30682514	M2103P-2100ER	30682681
21,50	25	151	93	66	56	M2103P-2150AR	30682515	M2103P-2150ER	30682682
22,00	25	151	93	66	56	M2103P-2200AR	30682516	M2103P-2200ER	30682683
22,50	25	151	93	66	56	M2103P-2250AR	30682517	M2103P-2250ER	30682684
23,00	25	151	93	66	56	M2103P-2300AR	30682518	M2103P-2300ER	30682685
23,50	25	151	93	66	56	M2103P-2350AR	30682519	M2103P-2350ER	30682686
24,00	25	151	93	66	56	M2103P-2400AR	30682520	M2103P-2400ER	30682687
24,50	25	151	93	66	56	M2103P-2450AR	30682521	M2103P-2450ER	30682688
25,00	25	151	93	66	56	M2103P-2500AR	30682522	M2103P-2500ER	30682689

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

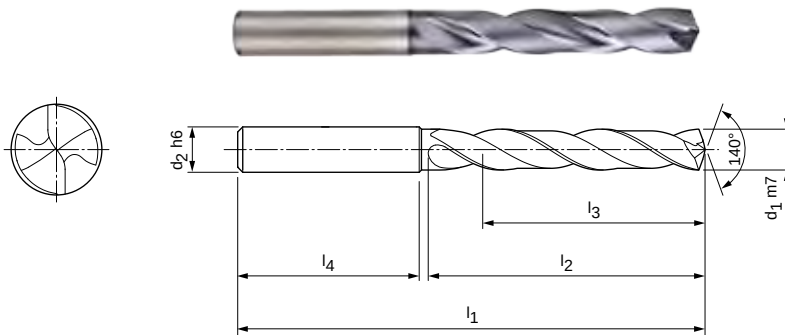
MEGA-Drill-Steel-Plus

5xD, external cooling

M2005P – follow-up product of MEGA-Drill-Steel (M2005)

Design:

Drill diameter:	3,00 – 20,00 mm
Bore tolerance:	≥ IT 9
Coating:	MxP
Number of cutting edges:	2
Number of guiding chamfers:	2
Point geometry:	Specific geometry
Point angle:	140°
Helix angle:	30°



Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
3,00	6	66	28	23	36	M2005P-0300AR	30684264	M2005P-0300ER	30684422
3,10	6	66	28	23	36	M2005P-0310AR	30684265	M2005P-0310ER	30684423
3,15	6	66	28	23	36	M2005P-0315AR	30684266	M2005P-0315ER	30684424
3,20	6	66	28	23	36	M2005P-0320AR	30684267	M2005P-0320ER	30684425
3,22	6	66	28	23	36	M2005P-0322AR	30684268	M2005P-0322ER	30684426
3,25	6	66	28	23	36	M2005P-0325AR	30684269	M2005P-0325ER	30684427
3,30	6	66	28	23	36	M2005P-0330AR	30684270	M2005P-0330ER	30684428
3,40	6	66	28	23	36	M2005P-0340AR	30684271	M2005P-0340ER	30684429
3,50	6	66	28	23	36	M2005P-0350AR	30684272	M2005P-0350ER	30684430
3,60	6	66	28	23	36	M2005P-0360AR	30684273	M2005P-0360ER	30684431
3,70	6	66	28	23	36	M2005P-0370AR	30684274	M2005P-0370ER	30684432
3,80	6	74	36	29	36	M2005P-0380AR	30684275	M2005P-0380ER	30684433
3,85	6	74	36	29	36	M2005P-0385AR	30684276	M2005P-0385ER	30684434
3,90	6	74	36	29	36	M2005P-0390AR	30684277	M2005P-0390ER	30684435
4,00	6	74	36	29	36	M2005P-0400AR	30684278	M2005P-0400ER	30684436
4,10	6	74	36	29	36	M2005P-0410AR	30684279	M2005P-0410ER	30684437
4,20	6	74	36	29	36	M2005P-0420AR	30684280	M2005P-0420ER	30684438
4,25	6	74	36	29	36	M2005P-0425AR	30684281	M2005P-0425ER	30684439
4,30	6	74	36	29	36	M2005P-0430AR	30684282	M2005P-0430ER	30684440
4,35	6	74	36	29	36	M2005P-0435AR	30684283	M2005P-0435ER	30684441
4,40	6	74	36	29	36	M2005P-0440AR	30684285	M2005P-0440ER	30684442
4,45	6	74	36	29	36	M2005P-0445AR	30684286	M2005P-0445ER	30684443
4,50	6	74	36	29	36	M2005P-0450AR	30684287	M2005P-0450ER	30684444
4,60	6	74	36	29	36	M2005P-0460AR	30684288	M2005P-0460ER	30684445
4,65	6	74	36	29	36	M2005P-0465AR	30684289	M2005P-0465ER	30684446
4,70	6	74	36	29	36	M2005P-0470AR	30684290	M2005P-0470ER	30684447
4,80	6	82	44	35	36	M2005P-0480AR	30684291	M2005P-0480ER	30684448
4,90	6	82	44	35	36	M2005P-0490AR	30684292	M2005P-0490ER	30684449
4,95	6	82	44	35	36	M2005P-0495AR	30684293	M2005P-0495ER	30684450
5,00	6	82	44	35	36	M2005P-0500AR	30684294	M2005P-0500ER	30684451
5,05	6	82	44	35	36	M2005P-0505AR	30684295	M2005P-0505ER	30684452
5,10	6	82	44	35	36	M2005P-0510AR	30684296	M2005P-0510ER	30684453
5,20	6	82	44	35	36	M2005P-0520AR	30684297	M2005P-0520ER	30684454
5,30	6	82	44	35	36	M2005P-0530AR	30684298	M2005P-0530ER	30684455
5,40	6	82	44	35	36	M2005P-0540AR	30684299	M2005P-0540ER	30684456
5,50	6	82	44	35	36	M2005P-0550AR	30684300	M2005P-0550ER	30684457

MEGA-Drill-Steel-Plus | M2005P, 5xD, external cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
5,55	6	82	44	35	36	M2005P-0555AR	30684301	M2005P-0555ER	30684458
5,60	6	82	44	35	36	M2005P-0560AR	30684302	M2005P-0560ER	30684459
5,70	6	82	44	35	36	M2005P-0570AR	30684303	M2005P-0570ER	30684460
5,75	6	82	44	35	36	M2005P-0575AR	30684304	M2005P-0575ER	30684461
5,80	6	82	44	35	36	M2005P-0580AR	30684305	M2005P-0580ER	30684462
5,90	6	82	44	35	36	M2005P-0590AR	30684306	M2005P-0590ER	30684463
5,95	6	82	44	35	36	M2005P-0595AR	30684307	M2005P-0595ER	30684464
6,00	6	82	44	35	36	M2005P-0600AR	30684308	M2005P-0600ER	30684465
6,10	8	91	53	43	36	M2005P-0610AR	30684309	M2005P-0610ER	30684466
6,20	8	91	53	43	36	M2005P-0620AR	30684310	M2005P-0620ER	30684467
6,30	8	91	53	43	36	M2005P-0630AR	30684311	M2005P-0630ER	30684468
6,40	8	91	53	43	36	M2005P-0640AR	30684312	M2005P-0640ER	30684469
6,50	8	91	53	43	36	M2005P-0650AR	30684313	M2005P-0650ER	30684470
6,60	8	91	53	43	36	M2005P-0660AR	30684314	M2005P-0660ER	30684471
6,70	8	91	53	43	36	M2005P-0670AR	30684315	M2005P-0670ER	30684472
6,80	8	91	53	43	36	M2005P-0680AR	30684316	M2005P-0680ER	30684473
6,90	8	91	53	43	36	M2005P-0690AR	30684317	M2005P-0690ER	30684474
7,00	8	91	53	43	36	M2005P-0700AR	30684318	M2005P-0700ER	30684475
7,10	8	91	53	43	36	M2005P-0710AR	30684319	M2005P-0710ER	30684476
7,20	8	91	53	43	36	M2005P-0720AR	30684320	M2005P-0720ER	30684477
7,30	8	91	53	43	36	M2005P-0730AR	30684321	M2005P-0730ER	30684478
7,40	8	91	53	43	36	M2005P-0740AR	30684322	M2005P-0740ER	30684479
7,45	8	91	53	43	36	M2005P-0745AR	30684323	M2005P-0745ER	30684480
7,50	8	91	53	43	36	M2005P-0750AR	30684324	M2005P-0750ER	30684481
7,60	8	91	53	43	36	M2005P-0760AR	30684325	M2005P-0760ER	30684482
7,70	8	91	53	43	36	M2005P-0770AR	30684326	M2005P-0770ER	30684483
7,80	8	91	53	43	36	M2005P-0780AR	30684327	M2005P-0780ER	30684484
7,90	8	91	53	43	36	M2005P-0790AR	30684328	M2005P-0790ER	30684485
8,00	8	91	53	43	36	M2005P-0800AR	30684329	M2005P-0800ER	30684486
8,10	10	103	61	49	40	M2005P-0810AR	30684330	M2005P-0810ER	30684487
8,20	10	103	61	49	40	M2005P-0820AR	30684331	M2005P-0820ER	30684488
8,30	10	103	61	49	40	M2005P-0830AR	30684332	M2005P-0830ER	30684489
8,40	10	103	61	49	40	M2005P-0840AR	30684333	M2005P-0840ER	30684490
8,50	10	103	61	49	40	M2005P-0850AR	30684334	M2005P-0850ER	30684491
8,60	10	103	61	49	40	M2005P-0860AR	30684335	M2005P-0860ER	30684492
8,70	10	103	61	49	40	M2005P-0870AR	30684336	M2005P-0870ER	30684493
8,80	10	103	61	49	40	M2005P-0880AR	30684337	M2005P-0880ER	30684494
8,90	10	103	61	49	40	M2005P-0890AR	30684338	M2005P-0890ER	30684495
9,00	10	103	61	49	40	M2005P-0900AR	30684339	M2005P-0900ER	30684496
9,10	10	103	61	49	40	M2005P-0910AR	30684340	M2005P-0910ER	30684497
9,20	10	103	61	49	40	M2005P-0920AR	30684341	M2005P-0920ER	30684498
9,30	10	103	61	49	40	M2005P-0930AR	30684342	M2005P-0930ER	30684499
9,35	10	103	61	49	40	M2005P-0935AR	30684343	M2005P-0935ER	30684500
9,40	10	103	61	49	40	M2005P-0940AR	30684344	M2005P-0940ER	30684501
9,45	10	103	61	49	40	M2005P-0945AR	30684345	M2005P-0945ER	30684502
9,50	10	103	61	49	40	M2005P-0950AR	30684346	M2005P-0950ER	30684503
9,60	10	103	61	49	40	M2005P-0960AR	30684347	M2005P-0960ER	30684504
9,70	10	103	61	49	40	M2005P-0970AR	30684348	M2005P-0970ER	30684505
9,80	10	103	61	49	40	M2005P-0980AR	30684349	M2005P-0980ER	30684506
9,90	10	103	61	49	40	M2005P-0990AR	30684350	M2005P-0990ER	30684507
10,00	10	103	61	49	40	M2005P-1000AR	30684351	M2005P-1000ER	30684508
10,10	12	118	71	56	45	M2005P-1010AR	30684352	M2005P-1010ER	30684509
10,20	12	118	71	56	45	M2005P-1020AR	30684353	M2005P-1020ER	30684510
10,30	12	118	71	56	45	M2005P-1030AR	30684354	M2005P-1030ER	30684511
10,40	12	118	71	56	45	M2005P-1040AR	30684355	M2005P-1040ER	30684512
10,50	12	118	71	56	45	M2005P-1050AR	30684356	M2005P-1050ER	30684513
10,55	12	118	71	56	45	M2005P-1055AR	30684357	M2005P-1055ER	30684514

Continued on next page.

MEGA-Drill-Steel-Plus | M2005P, 5xD, external cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
10,60	12	118	71	56	45	M2005P-1060AR	30684358	M2005P-1060ER	30684515
10,70	12	118	71	56	45	M2005P-1070AR	30684359	M2005P-1070ER	30684516
10,75	12	118	71	56	45	M2005P-1075AR	30684360	M2005P-1075ER	30684517
10,80	12	118	71	56	45	M2005P-1080AR	30684361	M2005P-1080ER	30684518
10,90	12	118	71	56	45	M2005P-1090AR	30684362	M2005P-1090ER	30684519
11,00	12	118	71	56	45	M2005P-1100AR	30684363	M2005P-1100ER	30684520
11,10	12	118	71	56	45	M2005P-1110AR	30684364	M2005P-1110ER	30684521
11,20	12	118	71	56	45	M2005P-1120AR	30684365	M2005P-1120ER	30684522
11,25	12	118	71	56	45	M2005P-1125AR	30684366	M2005P-1125ER	30684523
11,30	12	118	71	56	45	M2005P-1130AR	30684367	M2005P-1130ER	30684524
11,35	12	118	71	56	45	M2005P-1135AR	30684368	M2005P-1135ER	30684525
11,40	12	118	71	56	45	M2005P-1140AR	30684369	M2005P-1140ER	30684526
11,45	12	118	71	56	45	M2005P-1145AR	30684370	M2005P-1145ER	30684527
11,50	12	118	71	56	45	M2005P-1150AR	30684371	M2005P-1150ER	30684528
11,60	12	118	71	56	45	M2005P-1160AR	30684372	M2005P-1160ER	30684529
11,70	12	118	71	56	45	M2005P-1170AR	30684373	M2005P-1170ER	30684530
11,80	12	118	71	56	45	M2005P-1180AR	30684374	M2005P-1180ER	30684531
11,90	12	118	71	56	45	M2005P-1190AR	30684375	M2005P-1190ER	30684532
12,00	12	118	71	56	45	M2005P-1200AR	30684376	M2005P-1200ER	30684533
12,15	14	124	77	60	45	M2005P-1215AR	30684377	M2005P-1215ER	30684534
12,25	14	124	77	60	45	M2005P-1225AR	30684378	M2005P-1225ER	30684535
12,50	14	124	77	60	45	M2005P-1250AR	30684379	M2005P-1250ER	30684536
12,55	14	124	77	60	45	M2005P-1255AR	30684380	M2005P-1255ER	30684537
12,70	14	124	77	60	45	M2005P-1270AR	30684381	M2005P-1270ER	30684538
12,80	14	124	77	60	45	M2005P-1280AR	30684382	M2005P-1280ER	30684539
12,90	14	124	77	60	45	M2005P-1290AR	30684383	M2005P-1290ER	30684540
13,00	14	124	77	60	45	M2005P-1300AR	30684384	M2005P-1300ER	30684541
13,10	14	124	77	60	45	M2005P-1310AR	30684385	M2005P-1310ER	30684542
13,30	14	124	77	60	45	M2005P-1330AR	30684386	M2005P-1330ER	30684543
13,35	14	124	77	60	45	M2005P-1335AR	30684387	M2005P-1335ER	30684544
13,50	14	124	77	60	45	M2005P-1350AR	30684388	M2005P-1350ER	30684545
13,70	14	124	77	60	45	M2005P-1370AR	30684389	M2005P-1370ER	30684546
13,80	14	124	77	60	45	M2005P-1380AR	30684390	M2005P-1380ER	30684547
14,00	14	124	77	60	45	M2005P-1400AR	30684391	M2005P-1400ER	30684548
14,20	16	133	83	63	48	M2005P-1420AR	30684392	M2005P-1420ER	30684549
14,50	16	133	83	63	48	M2005P-1450AR	30684393	M2005P-1450ER	30684550
14,80	16	133	83	63	48	M2005P-1480AR	30684394	M2005P-1480ER	30684551
15,00	16	133	83	63	48	M2005P-1500AR	30684395	M2005P-1500ER	30684552
15,10	16	133	83	63	48	M2005P-1510AR	30684396	M2005P-1510ER	30684553
15,25	16	133	83	63	48	M2005P-1525AR	30684397	M2005P-1525ER	30684554
15,30	16	133	83	63	48	M2005P-1530AR	30684398	M2005P-1530ER	30684555
15,35	16	133	83	63	48	M2005P-1535AR	30684399	M2005P-1535ER	30684556
15,50	16	133	83	63	48	M2005P-1550AR	30684400	M2005P-1550ER	30684557
15,60	16	133	83	63	48	M2005P-1560AR	30684401	M2005P-1560ER	30684558
15,80	16	133	83	63	48	M2005P-1580AR	30684402	M2005P-1580ER	30684559
16,00	16	133	83	63	48	M2005P-1600AR	30684403	M2005P-1600ER	30684560
16,05	18	143	93	71	48	M2005P-1605AR	30684404	M2005P-1605ER	30684561
16,50	18	143	93	71	48	M2005P-1650AR	30684405	M2005P-1650ER	30684562
16,80	18	143	93	71	48	M2005P-1680AR	30684406	M2005P-1680ER	30684563
16,90	18	143	93	71	48	M2005P-1690AR	30684407	M2005P-1690ER	30684564
17,00	18	143	93	71	48	M2005P-1700AR	30684408	M2005P-1700ER	30684565
17,50	18	143	93	71	48	M2005P-1750AR	30684409	M2005P-1750ER	30684566
17,60	18	143	93	71	48	M2005P-1760AR	30684410	M2005P-1760ER	30684567
17,80	18	143	93	71	48	M2005P-1780AR	30684411	M2005P-1780ER	30684568
18,00	18	143	93	71	48	M2005P-1800AR	30684412	M2005P-1800ER	30684569
18,50	20	153	101	77	50	M2005P-1850AR	30684413	M2005P-1850ER	30684570
18,80	20	153	101	77	50	M2005P-1880AR	30684414	M2005P-1880ER	30684571

MEGA-Drill-Steel-Plus | M2005P, 5xD, external cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
18,90	20	153	101	77	50	M2005P-1890AR	30684415	M2005P-1890ER	30684572
19,00	20	153	101	77	50	M2005P-1900AR	30684416	M2005P-1900ER	30684573
19,35	20	153	101	77	50	M2005P-1935AR	30684417	M2005P-1935ER	30684574
19,50	20	153	101	77	50	M2005P-1950AR	30684418	M2005P-1950ER	30684575
19,60	20	153	101	77	50	M2005P-1960AR	30684419	M2005P-1960ER	30684576
19,80	20	153	101	77	50	M2005P-1980AR	30684420	M2005P-1980ER	30684577
20,00	20	153	101	77	50	M2005P-2000AR	30684421	M2005P-2000ER	30684578

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

MEGA-Drill-Steel-Plus

5xD, internal cooling

M2105P – follow-up product of MEGA-Drill-Steel (M2105)

Design:

Drill diameter: 3,00 – 25,00 mm

Bore tolerance: $\geq IT\ 9$

Coating: MxP

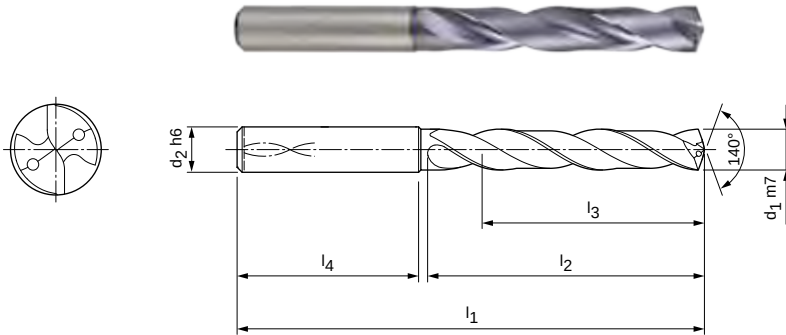
Number of cutting edges: 2

Number of guiding chamfers: 2

Point geometry: Specific geometry

Point angle: 140°

Helix angle: 30°



Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
3,00	6	66	28	23	36	M2105P-0300AR	30682857	M2105P-0300ER	30683025
3,10	6	66	28	23	36	M2105P-0310AR	30682858	M2105P-0310ER	30683026
3,15	6	66	28	23	36	M2105P-0315AR	30682859	M2105P-0315ER	30683027
3,20	6	66	28	23	36	M2105P-0320AR	30682860	M2105P-0320ER	30683028
3,22	6	66	28	23	36	M2105P-0322AR	30682861	M2105P-0322ER	30683029
3,25	6	66	28	23	36	M2105P-0325AR	30682862	M2105P-0325ER	30683030
3,30	6	66	28	23	36	M2105P-0330AR	30682863	M2105P-0330ER	30683031
3,40	6	66	28	23	36	M2105P-0340AR	30682864	M2105P-0340ER	30683032
3,50	6	66	28	23	36	M2105P-0350AR	30682865	M2105P-0350ER	30683033
3,60	6	66	28	23	36	M2105P-0360AR	30682866	M2105P-0360ER	30683034
*3,70	6	66	28	23	36	M2105P-0370AR	30682867	M2105P-0370ER	30683035
3,80	6	74	36	29	36	M2105P-0380AR	30682868	M2105P-0380ER	30683036
3,85	6	74	36	29	36	M2105P-0385AR	30682869	M2105P-0385ER	30683037
3,90	6	74	36	29	36	M2105P-0390AR	30682870	M2105P-0390ER	30683038
4,00	6	74	36	29	36	M2105P-0400AR	30682871	M2105P-0400ER	30683039
4,10	6	74	36	29	36	M2105P-0410AR	30682872	M2105P-0410ER	30683040
4,20	6	74	36	29	36	M2105P-0420AR	30682873	M2105P-0420ER	30683041
4,25	6	74	36	29	36	M2105P-0425AR	30682874	M2105P-0425ER	30683042
4,30	6	74	36	29	36	M2105P-0430AR	30682875	M2105P-0430ER	30683043
4,35	6	74	36	29	36	M2105P-0435AR	30682876	M2105P-0435ER	30683044
4,40	6	74	36	29	36	M2105P-0440AR	30682877	M2105P-0440ER	30683045
4,45	6	74	36	29	36	M2105P-0445AR	30682878	M2105P-0445ER	30683046
4,50	6	74	36	29	36	M2105P-0450AR	30682879	M2105P-0450ER	30683047
4,60	6	74	36	29	36	M2105P-0460AR	30682880	M2105P-0460ER	30683048
*4,65	6	74	36	29	36	M2105P-0465AR	30682881	M2105P-0465ER	30683049
4,70	6	74	36	29	36	M2105P-0470AR	30682882	M2105P-0470ER	30683050
4,80	6	82	44	35	36	M2105P-0480AR	30682883	M2105P-0480ER	30683051
4,90	6	82	44	35	36	M2105P-0490AR	30682884	M2105P-0490ER	30683052
4,95	6	82	44	35	36	M2105P-0495AR	30682885	M2105P-0495ER	30683053
5,00	6	82	44	35	36	M2105P-0500AR	30682886	M2105P-0500ER	30683054
5,05	6	82	44	35	36	M2105P-0505AR	30682887	M2105P-0505ER	30683055
5,10	6	82	44	35	36	M2105P-0510AR	30682888	M2105P-0510ER	30683056
5,20	6	82	44	35	36	M2105P-0520AR	30682889	M2105P-0520ER	30683057
5,30	6	82	44	35	36	M2105P-0530AR	30682890	M2105P-0530ER	30683058
5,40	6	82	44	35	36	M2105P-0540AR	30682891	M2105P-0540ER	30683059
5,50	6	82	44	35	36	M2105P-0550AR	30682892	M2105P-0550ER	30683060

MEGA-Drill-Steel-Plus | M2105P, 5xD, internal cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
*5,55	6	82	44	35	36	M2105P-0555AR	30682893	M2105P-0555ER	30683061
5,60	6	82	44	35	36	M2105P-0560AR	30682894	M2105P-0560ER	30683062
5,70	6	82	44	35	36	M2105P-0570AR	30682895	M2105P-0570ER	30683063
5,75	6	82	44	35	36	M2105P-0575AR	30682896	M2105P-0575ER	30683064
5,80	6	82	44	35	36	M2105P-0580AR	30682897	M2105P-0580ER	30683065
5,90	6	82	44	35	36	M2105P-0590AR	30682898	M2105P-0590ER	30683066
5,95	6	82	44	35	36	M2105P-0595AR	30682899	M2105P-0595ER	30683067
6,00	6	82	44	35	36	M2105P-0600AR	30682900	M2105P-0600ER	30683068
6,10	8	91	53	43	36	M2105P-0610AR	30682901	M2105P-0610ER	30683069
6,20	8	91	53	43	36	M2105P-0620AR	30682902	M2105P-0620ER	30683070
6,30	8	91	53	43	36	M2105P-0630AR	30682903	M2105P-0630ER	30683071
6,40	8	91	53	43	36	M2105P-0640AR	30682904	M2105P-0640ER	30683072
6,50	8	91	53	43	36	M2105P-0650AR	30682905	M2105P-0650ER	30683073
6,60	8	91	53	43	36	M2105P-0660AR	30682906	M2105P-0660ER	30683074
6,70	8	91	53	43	36	M2105P-0670AR	30682907	M2105P-0670ER	30683075
6,80	8	91	53	43	36	M2105P-0680AR	30682908	M2105P-0680ER	30683076
6,90	8	91	53	43	36	M2105P-0690AR	30682909	M2105P-0690ER	30683077
7,00	8	91	53	43	36	M2105P-0700AR	30682910	M2105P-0700ER	30683078
7,10	8	91	53	43	36	M2105P-0710AR	30682911	M2105P-0710ER	30683079
7,20	8	91	53	43	36	M2105P-0720AR	30682912	M2105P-0720ER	30683080
7,30	8	91	53	43	36	M2105P-0730AR	30682913	M2105P-0730ER	30683081
7,40	8	91	53	43	36	M2105P-0740AR	30682914	M2105P-0740ER	30683082
*7,45	8	91	53	43	36	M2105P-0745AR	30682915	M2105P-0745ER	30683083
7,50	8	91	53	43	36	M2105P-0750AR	30682916	M2105P-0750ER	30683084
7,60	8	91	53	43	36	M2105P-0760AR	30682917	M2105P-0760ER	30683085
7,70	8	91	53	43	36	M2105P-0770AR	30682918	M2105P-0770ER	30683086
7,80	8	91	53	43	36	M2105P-0780AR	30682919	M2105P-0780ER	30683087
7,90	8	91	53	43	36	M2105P-0790AR	30682920	M2105P-0790ER	30683088
8,00	8	91	53	43	36	M2105P-0800AR	30682921	M2105P-0800ER	30683089
8,10	10	103	61	49	40	M2105P-0810AR	30682922	M2105P-0810ER	30683090
8,20	10	103	61	49	40	M2105P-0820AR	30682923	M2105P-0820ER	30683091
8,30	10	103	61	49	40	M2105P-0830AR	30682924	M2105P-0830ER	30683092
8,40	10	103	61	49	40	M2105P-0840AR	30682925	M2105P-0840ER	30683093
8,50	10	103	61	49	40	M2105P-0850AR	30682926	M2105P-0850ER	30683094
8,60	10	103	61	49	40	M2105P-0860AR	30682927	M2105P-0860ER	30683095
8,70	10	103	61	49	40	M2105P-0870AR	30682928	M2105P-0870ER	30683096
8,80	10	103	61	49	40	M2105P-0880AR	30682929	M2105P-0880ER	30683097
8,90	10	103	61	49	40	M2105P-0890AR	30682930	M2105P-0890ER	30683098
9,00	10	103	61	49	40	M2105P-0900AR	30682931	M2105P-0900ER	30683099
9,10	10	103	61	49	40	M2105P-0910AR	30682932	M2105P-0910ER	30683100
9,20	10	103	61	49	40	M2105P-0920AR	30682933	M2105P-0920ER	30683101
*9,30	10	103	61	49	40	M2105P-0930AR	30682934	M2105P-0930ER	30683102
9,35	10	103	61	49	40	M2105P-0935AR	30682935	M2105P-0935ER	30683103
9,40	10	103	61	49	40	M2105P-0940AR	30682936	M2105P-0940ER	30683104
9,45	10	103	61	49	40	M2105P-0945AR	30682937	M2105P-0945ER	30683105
9,50	10	103	61	49	40	M2105P-0950AR	30682938	M2105P-0950ER	30683106
9,60	10	103	61	49	40	M2105P-0960AR	30682939	M2105P-0960ER	30683107
9,70	10	103	61	49	40	M2105P-0970AR	30682940	M2105P-0970ER	30683108
9,80	10	103	61	49	40	M2105P-0980AR	30682941	M2105P-0980ER	30683109
9,90	10	103	61	49	40	M2105P-0990AR	30682942	M2105P-0990ER	30683110
10,00	10	103	61	49	40	M2105P-1000AR	30682943	M2105P-1000ER	30683111
10,10	12	118	71	56	45	M2105P-1010AR	30682944	M2105P-1010ER	30683112
10,20	12	118	71	56	45	M2105P-1020AR	30682945	M2105P-1020ER	30683113
10,30	12	118	71	56	45	M2105P-1030AR	30682946	M2105P-1030ER	30683114
10,40	12	118	71	56	45	M2105P-1040AR	30682947	M2105P-1040ER	30683115
10,50	12	118	71	56	45	M2105P-1050AR	30682948	M2105P-1050ER	30683116
10,55	12	118	71	56	45	M2105P-1055AR	30682949	M2105P-1055ER	30683117

Continued on next page.

MEGA-Drill-Steel-Plus | M2105P, 5xD, internal cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
10,60	12	118	71	56	45	M2105P-1060AR	30682950	M2105P-1060ER	30683118
10,70	12	118	71	56	45	M2105P-1070AR	30682951	M2105P-1070ER	30683119
10,75	12	118	71	56	45	M2105P-1075AR	30682952	M2105P-1075ER	30683120
10,80	12	118	71	56	45	M2105P-1080AR	30682953	M2105P-1080ER	30683121
10,90	12	118	71	56	45	M2105P-1090AR	30682954	M2105P-1090ER	30683122
11,00	12	118	71	56	45	M2105P-1100AR	30682955	M2105P-1100ER	30683123
11,10	12	118	71	56	45	M2105P-1110AR	30682956	M2105P-1110ER	30683124
*11,20	12	118	71	56	45	M2105P-1120AR	30682957	M2105P-1120ER	30683125
11,25	12	118	71	56	45	M2105P-1125AR	30682958	M2105P-1125ER	30683126
11,30	12	118	71	56	45	M2105P-1130AR	30682959	M2105P-1130ER	30683127
11,35	12	118	71	56	45	M2105P-1135AR	30682960	M2105P-1135ER	30683128
11,40	12	118	71	56	45	M2105P-1140AR	30682962	M2105P-1140ER	30683129
11,45	12	118	71	56	45	M2105P-1145AR	30682963	M2105P-1145ER	30683130
11,50	12	118	71	56	45	M2105P-1150AR	30682964	M2105P-1150ER	30683131
11,60	12	118	71	56	45	M2105P-1160AR	30682965	M2105P-1160ER	30683132
11,70	12	118	71	56	45	M2105P-1170AR	30682966	M2105P-1170ER	30683133
11,80	12	118	71	56	45	M2105P-1180AR	30682967	M2105P-1180ER	30683134
11,90	12	118	71	56	45	M2105P-1190AR	30682968	M2105P-1190ER	30683135
12,00	12	118	71	56	45	M2105P-1200AR	30682969	M2105P-1200ER	30683136
12,15	14	124	77	60	45	M2105P-1215AR	30682970	M2105P-1215ER	30683137
12,25	14	124	77	60	45	M2105P-1225AR	30682971	M2105P-1225ER	30683138
12,50	14	124	77	60	45	M2105P-1250AR	30682972	M2105P-1250ER	30683139
12,55	14	124	77	60	45	M2105P-1255AR	30682973	M2105P-1255ER	30683140
12,70	14	124	77	60	45	M2105P-1270AR	30682974	M2105P-1270ER	30683141
12,80	14	124	77	60	45	M2105P-1280AR	30682975	M2105P-1280ER	30683142
12,90	14	124	77	60	45	M2105P-1290AR	30682976	M2105P-1290ER	30683143
13,00	14	124	77	60	45	M2105P-1300AR	30682977	M2105P-1300ER	30683144
13,10	14	124	77	60	45	M2105P-1310AR	30682978	M2105P-1310ER	30683145
13,30	14	124	77	60	45	M2105P-1330AR	30682979	M2105P-1330ER	30683146
13,35	14	124	77	60	45	M2105P-1335AR	30682980	M2105P-1335ER	30683147
13,50	14	124	77	60	45	M2105P-1350AR	30682981	M2105P-1350ER	30683148
13,70	14	124	77	60	45	M2105P-1370AR	30682982	M2105P-1370ER	30683149
13,80	14	124	77	60	45	M2105P-1380AR	30682983	M2105P-1380ER	30683150
14,00	14	124	77	60	45	M2105P-1400AR	30682984	M2105P-1400ER	30683151
14,20	16	133	83	63	48	M2105P-1420AR	30682985	M2105P-1420ER	30683152
14,50	16	133	83	63	48	M2105P-1450AR	30682986	M2105P-1450ER	30683153
14,80	16	133	83	63	48	M2105P-1480AR	30682987	M2105P-1480ER	30683154
15,00	16	133	83	63	48	M2105P-1500AR	30682988	M2105P-1500ER	30683155
15,10	16	133	83	63	48	M2105P-1510AR	30682989	M2105P-1510ER	30683156
15,25	16	133	83	63	48	M2105P-1525AR	30682990	M2105P-1525ER	30683157
15,30	16	133	83	63	48	M2105P-1530AR	30682991	M2105P-1530ER	30683158
15,35	16	133	83	63	48	M2105P-1535AR	30682992	M2105P-1535ER	30683159
15,50	16	133	83	63	48	M2105P-1550AR	30682993	M2105P-1550ER	30683160
15,60	16	133	83	63	48	M2105P-1560AR	30682994	M2105P-1560ER	30683161
15,80	16	133	83	63	48	M2105P-1580AR	30682995	M2105P-1580ER	30683162
16,00	16	133	83	63	48	M2105P-1600AR	30682996	M2105P-1600ER	30683163
16,05	18	143	93	71	48	M2105P-1605AR	30682997	M2105P-1605ER	30683165
16,50	18	143	93	71	48	M2105P-1650AR	30682998	M2105P-1650ER	30683166
16,80	18	143	93	71	48	M2105P-1680AR	30682999	M2105P-1680ER	30683167
16,90	18	143	93	71	48	M2105P-1690AR	30683000	M2105P-1690ER	30683168
17,00	18	143	93	71	48	M2105P-1700AR	30683001	M2105P-1700ER	30683169
17,50	18	143	93	71	48	M2105P-1750AR	30683002	M2105P-1750ER	30683170
17,60	18	143	93	71	48	M2105P-1760AR	30683003	M2105P-1760ER	30683171
17,80	18	143	93	71	48	M2105P-1780AR	30683004	M2105P-1780ER	30683172
18,00	18	143	93	71	48	M2105P-1800AR	30683005	M2105P-1800ER	30683173
18,50	20	153	101	77	50	M2105P-1850AR	30683006	M2105P-1850ER	30683174
18,80	20	153	101	77	50	M2105P-1880AR	30683007	M2105P-1880ER	30683175

MEGA-Drill-Steel-Plus | M2105P, 5xD, internal cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
18,90	20	153	101	77	50	M2105P-1890AR	30683008	M2105P-1890ER	30683176
19,00	20	153	101	77	50	M2105P-1900AR	30683009	M2105P-1900ER	30683177
19,35	20	153	101	77	50	M2105P-1935AR	30683010	M2105P-1935ER	30683178
19,50	20	153	101	77	50	M2105P-1950AR	30683011	M2105P-1950ER	30683179
19,60	20	153	101	77	50	M2105P-1960AR	30683012	M2105P-1960ER	30683180
19,80	20	153	101	77	50	M2105P-1980AR	30683013	M2105P-1980ER	30683181
20,00	20	153	101	77	50	M2105P-2000AR	30683014	M2105P-2000ER	30683182
20,50	25	200	135	110	56	M2105P-2050AR	30683015	M2105P-2050ER	30683183
21,00	25	200	135	110	56	M2105P-2100AR	30683016	M2105P-2100ER	30683184
21,50	25	200	135	110	56	M2105P-2150AR	30683017	M2105P-2150ER	30683185
22,00	25	200	135	110	56	M2105P-2200AR	30683018	M2105P-2200ER	30683186
22,50	25	200	140	120	56	M2105P-2250AR	30683019	M2105P-2250ER	30683187
23,00	25	200	140	120	56	M2105P-2300AR	30683020	M2105P-2300ER	30683188
23,50	25	200	140	120	56	M2105P-2350AR	30683021	M2105P-2350ER	30683189
24,00	25	200	140	120	56	M2105P-2400AR	30683022	M2105P-2400ER	30683190
24,50	25	200	140	120	56	M2105P-2450AR	30683023	M2105P-2450ER	30683191
25,00	25	200	140	120	56	M2105P-2500AR	30683024	M2105P-2500ER	30683192

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

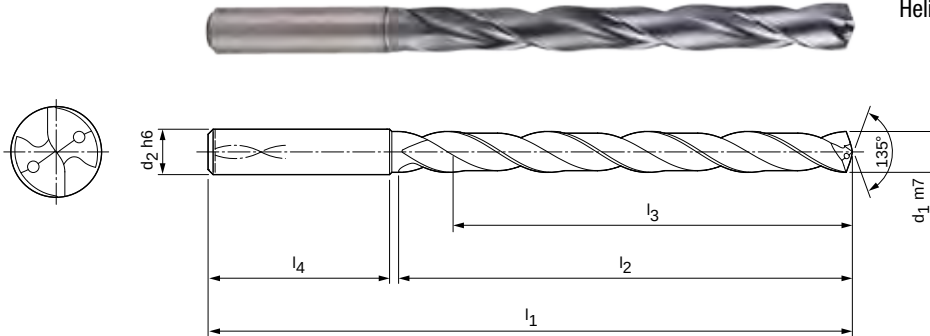
MEGA-Drill-Steel-Plus

8xD, internal cooling

M2108P – follow-up product of MEGA-Drill-Steel (M2108)

Design:

Drill diameter:	3,00 – 20,00 mm
Bore tolerance:	≥ IT 9
Coating:	MxP
Number of cutting edges:	2
Number of guiding chamfers:	2
Point geometry:	Specific geometry
Point angle:	135°
Helix angle:	30°



Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
3,00	6	72	34	29	36	M2108P-0300AR	30683363	M2108P-0300ER	30683483
3,10	6	72	34	29	36	M2108P-0310AR	30683364	M2108P-0310ER	30683484
3,20	6	72	34	29	36	M2108P-0320AR	30683365	M2108P-0320ER	30683485
3,30	6	72	34	29	36	M2108P-0330AR	30683366	M2108P-0330ER	30683486
3,40	6	72	34	29	36	M2108P-0340AR	30683367	M2108P-0340ER	30683487
3,50	6	72	34	29	36	M2108P-0350AR	30683368	M2108P-0350ER	30683488
3,60	6	72	34	29	36	M2108P-0360AR	30683369	M2108P-0360ER	30683489
3,70	6	72	34	29	36	M2108P-0370AR	30683371	M2108P-0370ER	30683490
3,80	6	81	43	36	36	M2108P-0380AR	30683372	M2108P-0380ER	30683491
3,90	6	81	43	36	36	M2108P-0390AR	30683373	M2108P-0390ER	30683492
4,00	6	81	43	36	36	M2108P-0400AR	30683374	M2108P-0400ER	30683493
4,10	6	81	43	36	36	M2108P-0410AR	30683376	M2108P-0410ER	30683494
4,20	6	81	43	36	36	M2108P-0420AR	30683377	M2108P-0420ER	30683495
4,30	6	81	43	36	36	M2108P-0430AR	30683378	M2108P-0430ER	30683496
4,40	6	81	43	36	36	M2108P-0440AR	30683379	M2108P-0440ER	30683497
4,50	6	81	43	36	36	M2108P-0450AR	30683380	M2108P-0450ER	30683498
4,60	6	81	43	36	36	M2108P-0460AR	30683381	M2108P-0460ER	30683499
4,70	6	81	43	36	36	M2108P-0470AR	30683382	M2108P-0470ER	30683500
4,80	6	95	57	48	36	M2108P-0480AR	30683383	M2108P-0480ER	30683501
4,90	6	95	57	48	36	M2108P-0490AR	30683384	M2108P-0490ER	30683502
5,00	6	95	57	48	36	M2108P-0500AR	30683385	M2108P-0500ER	30683503
5,10	6	95	57	48	36	M2108P-0510AR	30683386	M2108P-0510ER	30683504
5,20	6	95	57	48	36	M2108P-0520AR	30683387	M2108P-0520ER	30683505
5,30	6	95	57	48	36	M2108P-0530AR	30683388	M2108P-0530ER	30683506
5,40	6	95	57	48	36	M2108P-0540AR	30683389	M2108P-0540ER	30683507
5,50	6	95	57	48	36	M2108P-0550AR	30683390	M2108P-0550ER	30683508
5,60	6	95	57	48	36	M2108P-0560AR	30683391	M2108P-0560ER	30683509
5,70	6	95	57	48	36	M2108P-0570AR	30683392	M2108P-0570ER	30683510
5,80	6	95	57	48	36	M2108P-0580AR	30683393	M2108P-0580ER	30683511
5,90	6	95	57	48	36	M2108P-0590AR	30683394	M2108P-0590ER	30683512
6,00	6	95	57	48	36	M2108P-0600AR	30683395	M2108P-0600ER	30683513
6,10	8	114	76	64	36	M2108P-0610AR	30683396	M2108P-0610ER	30683514
6,20	8	114	76	64	36	M2108P-0620AR	30683397	M2108P-0620ER	30683515
6,30	8	114	76	64	36	M2108P-0630AR	30683398	M2108P-0630ER	30683516
6,40	8	114	76	64	36	M2108P-0640AR	30683399	M2108P-0640ER	30683517
6,50	8	114	76	64	36	M2108P-0650AR	30683400	M2108P-0650ER	30683518

MEGA-Drill-Steel-Plus | M2108P, 8xD, internal cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
6,60	8	114	76	64	36	M2108P-0660AR	30683401	M2108P-0660ER	30683519
6,70	8	114	76	64	36	M2108P-0670AR	30683402	M2108P-0670ER	30683520
6,80	8	114	76	64	36	M2108P-0680AR	30683403	M2108P-0680ER	30683521
6,90	8	114	76	64	36	M2108P-0690AR	30683404	M2108P-0690ER	30683522
7,00	8	114	76	64	36	M2108P-0700AR	30683405	M2108P-0700ER	30683524
7,10	8	114	76	64	36	M2108P-0710AR	30683406	M2108P-0710ER	30683525
7,20	8	114	76	64	36	M2108P-0720AR	30683407	M2108P-0720ER	30683526
7,30	8	114	76	64	36	M2108P-0730AR	30683408	M2108P-0730ER	30683527
7,40	8	114	76	64	36	M2108P-0740AR	30683409	M2108P-0740ER	30683528
7,50	8	114	76	64	36	M2108P-0750AR	30683410	M2108P-0750ER	30683529
7,60	8	114	76	64	36	M2108P-0760AR	30683411	M2108P-0760ER	30683530
7,70	8	114	76	64	36	M2108P-0770AR	30683412	M2108P-0770ER	30683531
7,80	8	114	76	64	36	M2108P-0780AR	30683413	M2108P-0780ER	30683532
7,90	8	114	76	64	36	M2108P-0790AR	30683414	M2108P-0790ER	30683533
8,00	8	114	76	64	36	M2108P-0800AR	30683415	M2108P-0800ER	30683534
8,10	10	142	95	80	40	M2108P-0810AR	30683416	M2108P-0810ER	30683535
8,20	10	142	95	80	40	M2108P-0820AR	30683417	M2108P-0820ER	30683536
8,30	10	142	95	80	40	M2108P-0830AR	30683418	M2108P-0830ER	30683537
8,40	10	142	95	80	40	M2108P-0840AR	30683419	M2108P-0840ER	30683538
8,50	10	142	95	80	40	M2108P-0850AR	30683420	M2108P-0850ER	30683539
8,60	10	142	95	80	40	M2108P-0860AR	30683421	M2108P-0860ER	30683540
8,70	10	142	95	80	40	M2108P-0870AR	30683422	M2108P-0870ER	30683541
8,80	10	142	95	80	40	M2108P-0880AR	30683424	M2108P-0880ER	30683542
8,90	10	142	95	80	40	M2108P-0890AR	30683425	M2108P-0890ER	30683543
9,00	10	142	95	80	40	M2108P-0900AR	30683426	M2108P-0900ER	30683544
9,10	10	142	95	80	40	M2108P-0910AR	30683427	M2108P-0910ER	30683545
9,20	10	142	95	80	40	M2108P-0920AR	30683428	M2108P-0920ER	30683546
9,30	10	142	95	80	40	M2108P-0930AR	30683429	M2108P-0930ER	30683547
9,40	10	142	95	80	40	M2108P-0940AR	30683430	M2108P-0940ER	30683548
9,50	10	142	95	80	40	M2108P-0950AR	30683431	M2108P-0950ER	30683549
9,60	10	142	95	80	40	M2108P-0960AR	30683432	M2108P-0960ER	30683550
9,70	10	142	95	80	40	M2108P-0970AR	30683433	M2108P-0970ER	30683551
9,80	10	142	95	80	40	M2108P-0980AR	30683434	M2108P-0980ER	30683552
9,90	10	142	95	80	40	M2108P-0990AR	30683435	M2108P-0990ER	30683553
10,00	10	142	95	80	40	M2108P-1000AR	30683436	M2108P-1000ER	30683554
10,10	12	162	114	96	45	M2108P-1010AR	30683437	M2108P-1010ER	30683555
10,20	12	162	114	96	45	M2108P-1020AR	30683438	M2108P-1020ER	30683556
10,30	12	162	114	96	45	M2108P-1030AR	30683439	M2108P-1030ER	30683557
10,40	12	162	114	96	45	M2108P-1040AR	30683440	M2108P-1040ER	30683558
10,50	12	162	114	96	45	M2108P-1050AR	30683441	M2108P-1050ER	30683559
10,60	12	162	114	96	45	M2108P-1060AR	30683442	M2108P-1060ER	30683560
10,70	12	162	114	96	45	M2108P-1070AR	30683443	M2108P-1070ER	30683561
10,80	12	162	114	96	45	M2108P-1080AR	30683444	M2108P-1080ER	30683562
10,90	12	162	114	96	45	M2108P-1090AR	30683445	M2108P-1090ER	30683563
11,00	12	162	114	96	45	M2108P-1100AR	30683446	M2108P-1100ER	30683564
11,10	12	162	114	96	45	M2108P-1110AR	30683447	M2108P-1110ER	30683565
11,20	12	162	114	96	45	M2108P-1120AR	30683449	M2108P-1120ER	30683566
11,30	12	162	114	96	45	M2108P-1130AR	30683450	M2108P-1130ER	30683567
11,40	12	162	114	96	45	M2108P-1140AR	30683451	M2108P-1140ER	30683568
11,50	12	162	114	96	45	M2108P-1150AR	30683452	M2108P-1150ER	30683569
11,60	12	162	114	96	45	M2108P-1160AR	30683453	M2108P-1160ER	30683570
11,70	12	162	114	96	45	M2108P-1170AR	30683454	M2108P-1170ER	30683571
11,80	12	162	114	96	45	M2108P-1180AR	30683455	M2108P-1180ER	30683572
11,90	12	162	114	96	45	M2108P-1190AR	30683456	M2108P-1190ER	30683573
12,00	12	162	114	96	45	M2108P-1200AR	30683457	M2108P-1200ER	30683574
12,50	14	178	133	112	45	M2108P-1250AR	30683458	M2108P-1250ER	30683575
12,80	14	178	133	112	45	M2108P-1280AR	30683459	M2108P-1280ER	30683576

Continued on next page.

MEGA-Drill-Steel-Plus | M2108P, 8xD, internal cooling

Dimensions						Shank form HA		Shank form HE	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
13,00	14	178	133	112	45	M2108P-1300AR	30683460	M2108P-1300ER	30683577
13,50	14	178	133	112	45	M2108P-1350AR	30683461	M2108P-1350ER	30683578
13,80	14	178	133	112	45	M2108P-1380AR	30683462	M2108P-1380ER	30683579
14,00	14	178	133	112	45	M2108P-1400AR	30683463	M2108P-1400ER	30683580
14,50	16	203	152	128	48	M2108P-1450AR	30683464	M2108P-1450ER	30683581
14,80	16	203	152	128	48	M2108P-1480AR	30683465	M2108P-1480ER	30683582
15,00	16	203	152	128	48	M2108P-1500AR	30683466	M2108P-1500ER	30683583
15,50	16	203	152	128	48	M2108P-1550AR	30683467	M2108P-1550ER	30683584
15,80	16	203	152	128	48	M2108P-1580AR	30683468	M2108P-1580ER	30683585
16,00	16	203	152	128	48	M2108P-1600AR	30683469	M2108P-1600ER	30683586
16,50	18	222	171	144	48	M2108P-1650AR	30683470	M2108P-1650ER	30683587
16,80	18	222	171	144	48	M2108P-1680AR	30683471	M2108P-1680ER	30683588
17,00	18	222	171	144	48	M2108P-1700AR	30683472	M2108P-1700ER	30683589
17,50	18	222	171	144	48	M2108P-1750AR	30683473	M2108P-1750ER	30683590
17,80	18	222	171	144	48	M2108P-1780AR	30683474	M2108P-1780ER	30683591
18,00	18	222	171	144	48	M2108P-1800AR	30683475	M2108P-1800ER	30683592
18,50	20	243	190	160	50	M2108P-1850AR	30683476	M2108P-1850ER	30683593
18,80	20	243	190	160	50	M2108P-1880AR	30683477	M2108P-1880ER	30683594
19,00	20	243	190	160	50	M2108P-1900AR	30683478	M2108P-1900ER	30683595
19,50	20	243	190	160	50	M2108P-1950AR	30683480	M2108P-1950ER	30683596
19,80	20	243	190	160	50	M2108P-1980AR	30683481	M2108P-1980ER	30683597
20,00	20	243	190	160	50	M2108P-2000AR	30683482	M2108P-2000ER	30683598

Dimensions in mm.

Cutting data recommendations from page 272.

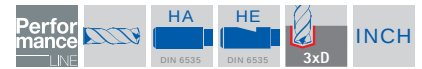
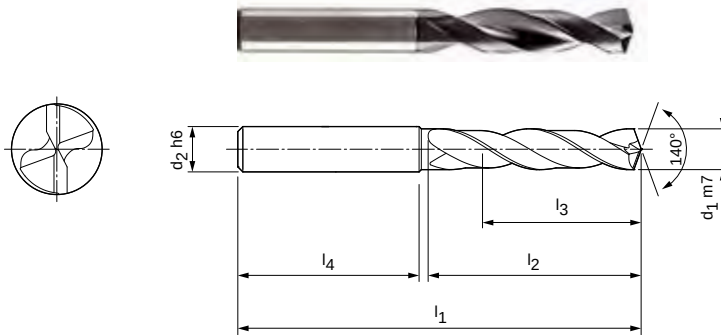
Special designs and other coatings on request.

MEGA-Drill-Inox

3xD, external cooling
M1703

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry, surfaces
Point angle: 140°
Helix angle: 30°



Dimensions							Shank form HA		Shank form HE	
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
3,00		6	62	22	14	36	M1703-0300AE	30058987	M1703-0300EE	30051670
3,10		6	62	22	14	36	M1703-0310AE	30058988	M1703-0310EE	30051673
3,18	1/8	6	62	22	14	36	M1703-0318AE	30180082		
3,20		6	62	22	14	36	M1703-0320AE	30141143	M1703-0320EE	30051677
3,30		6	62	22	14	36	M1703-0330AE	30058989	M1703-0330EE	30051681
3,40		6	62	22	14	36	M1703-0340AE	30058990	M1703-0340EE	30051685
3,50		6	62	22	14	36	M1703-0350AE	30075976	M1703-0350EE	30051689
3,57	9/64	6	62	22	14	36	M1703-0357AE	30180112		
3,60		6	62	22	14	36	M1703-0360AE	30141144	M1703-0360EE	30051693
3,70		6	62	22	14	36	M1703-0370AE	30058993	M1703-0370EE	30051697
3,80		6	66	26	17	36	M1703-0380AE	30140639	M1703-0380EE	30051701
3,90		6	66	26	17	36	M1703-0390AE	30115800	M1703-0390EE	30051705
3,97	5/32	6	66	26	17	36	M1703-0397AE	30180114		
4,00		6	66	26	17	36	M1703-0400AE	30073043	M1703-0400EE	30051709
4,10		6	66	26	17	36	M1703-0410AE	30080711	M1703-0410EE	30051713
4,20		6	66	26	17	36	M1703-0420AE	30078111	M1703-0420EE	30051717
4,30		6	66	26	17	36	M1703-0430AE	30080214	M1703-0430EE	30051721
4,37	11/64	6	66	26	17	36	M1703-0437AE	30180116		
4,40		6	66	26	17	36	M1703-0440AE	30058997	M1703-0440EE	30051725
4,50		6	66	26	17	36	M1703-0450AE	30058999	M1703-0450EE	30051729
4,60		6	66	26	17	36	M1703-0460AE	30075972	M1703-0460EE	30051733
4,70		6	66	26	17	36	M1703-0470AE	30059001	M1703-0470EE	30051737
4,76	3/16	6	66	26	17	36	M1703-0476AE	30180118		
4,80		6	66	30	20	36	M1703-0480AE	30072812	M1703-0480EE	30051741
4,90		6	66	30	20	36	M1703-0490AE	30059003	M1703-0490EE	30051745
5,00		6	66	30	20	36	M1703-0500AE	30059004	M1703-0500EE	30051749
5,10		6	66	30	20	36	M1703-0510AE	30059006	M1703-0510EE	30051752
5,16	13/64	6	66	30	20	36	M1703-0516AE	30180119		
5,20		6	66	30	20	36	M1703-0520AE	30073045	M1703-0520EE	30051756
5,30		6	66	30	20	36	M1703-0530AE	30059007	M1703-0530EE	30051760
5,40		6	66	30	20	36	M1703-0540AE	30073326	M1703-0540EE	30051764
5,50		6	66	30	20	36	M1703-0550AE	30062335	M1703-0550EE	30051768
5,56	7/32	6	66	30	20	36	M1703-0556AE	30180130		
5,60		6	66	30	20	36	M1703-0560AE	30059008	M1703-0560EE	30051772
5,70		6	66	30	20	36	M1703-0570AE	30141145	M1703-0570EE	30051775
5,80		6	66	30	20	36	M1703-0580AE	30075979	M1703-0580EE	30051779

MEGA-Drill-Inox | M1703, 3xD, external cooling

Dimensions							Shank form HA		Shank form HE	
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
5,90		6	66	30	20	36	M1703-0590AE	30141146	M1703-0590EE	30051783
5,95	15/64	6	66	30	20	36	M1703-0595AE	30180131		
6,00		6	66	30	20	36	M1703-0600AE	30086931	M1703-0600EE	30051787
6,10		8	79	38	24	36	M1703-0610AE	30073046	M1703-0610EE	30051791
6,20		8	79	38	24	36	M1703-0620AE	30141147	M1703-0620EE	30051794
6,30		8	79	38	24	36	M1703-0630AE	30059012	M1703-0630EE	30051798
6,35	1/4	8	79	38	24	36	M1703-0635AE	30180132		
6,40		8	79	38	24	36	M1703-0640AE	30141148	M1703-0640EE	30051801
6,50		8	79	38	24	36	M1703-0650AE	30098246	M1703-0650EE	30051805
6,60		8	79	38	24	36	M1703-0660AE	30101378	M1703-0660EE	30051809
6,70		8	79	38	24	36	M1703-0670AE	30141149	M1703-0670EE	30051813
6,75	17/64	8	79	38	24	36	M1703-0675AE	30180135		
6,80		8	79	38	24	36	M1703-0680AE	30059016	M1703-0680EE	30051817
6,90		8	79	38	24	36	M1703-0690AE	30059017	M1703-0690EE	30051821
7,00		8	79	38	24	36	M1703-0700AE	30098248	M1703-0700EE	30051824
7,10		8	79	42	29	36	M1703-0710AE	30072813	M1703-0710EE	30051828
7,14	9/32	8	79	42	29	36	M1703-0714AE	30180136		
7,20		8	79	42	29	36	M1703-0720AE	30141170	M1703-0720EE	30051831
7,30		8	79	42	29	36	M1703-0730AE	30141171	M1703-0730EE	30051835
7,40		8	79	42	29	36	M1703-0740AE	30059022	M1703-0740EE	30051839
7,50		8	79	42	29	36	M1703-0750AE	30089773	M1703-0750EE	30051842
7,54	19/64	8	79	42	29	36	M1703-0754AE	30180137		
7,60		8	79	42	29	36	M1703-0760AE	30141172	M1703-0760EE	30051846
7,70		8	79	42	29	36	M1703-0770AE	30059025	M1703-0770EE	30051850
7,80		8	79	42	29	36	M1703-0780AE	30059026	M1703-0780EE	30051854
7,90		8	79	42	29	36	M1703-0790AE	30059027	M1703-0790EE	30051858
7,94	5/16	8	79	42	29	36	M1703-0794AE	30180138		
8,00		8	79	42	29	36	M1703-0800AE	30078738	M1703-0800EE	30051862
8,10		10	89	49	35	40	M1703-0810AE	30141173	M1703-0810EE	30051866
8,20		10	89	49	35	40	M1703-0820AE	30136765	M1703-0820EE	30051870
8,30		10	89	49	35	40	M1703-0830AE	30141174	M1703-0830EE	30051874
8,33	21/64	10	89	49	35	40	M1703-0833AE	30180139		
8,40		10	89	49	35	40	M1703-0840AE	30141175	M1703-0840EE	30051878
8,50		10	89	49	35	40	M1703-0850AE	30059031	M1703-0850EE	30051882
8,60		10	89	49	35	40	M1703-0860AE	30099758	M1703-0860EE	30051886
8,70		10	89	49	35	40	M1703-0870AE	30059034	M1703-0870EE	30051890
8,73	11/32	10	89	49	35	40	M1703-0873AE	30180141		
8,80		10	89	49	35	40	M1703-0880AE	30141176	M1703-0880EE	30051894
8,90		10	89	49	35	40	M1703-0890AE	30137106	M1703-0890EE	30051898
9,00		10	89	49	35	40	M1703-0900AE	30059036	M1703-0900EE	30051902
9,10		10	89	49	35	40	M1703-0910AE	30141177	M1703-0910EE	30051906
9,13	23/64	10	89	49	35	40	M1703-0913AE	30180142		
9,20		10	89	49	35	40	M1703-0920AE	30101379	M1703-0920EE	30051910
9,30		10	89	49	35	40	M1703-0930AE	30059038	M1703-0930EE	30051914
9,40		10	89	49	35	40	M1703-0940AE	30141178	M1703-0940EE	30051918
9,50		10	89	49	35	40	M1703-0950AE	30098249	M1703-0950EE	30051922
9,53	3/8	10	89	49	35	40	M1703-0953AE	30180144		
9,60		10	89	49	35	40	M1703-0960AE	30141179	M1703-0960EE	30051926
9,70		10	89	49	35	40	M1703-0970AE	30141180	M1703-0970EE	30051930
9,80		10	89	49	35	40	M1703-0980AE	30141181	M1703-0980EE	30051934
9,90		10	89	49	35	40	M1703-0990AE	30141182	M1703-0990EE	30051938
9,92	25/64	10	89	49	35	40	M1703-0992AE	30180145		
10,00		10	89	49	35	40	M1703-1000AE	30075973	M1703-1000EE	30051942
10,10		12	102	56	40	45	M1703-1010AE	30141183	M1703-1010EE	30051947
10,20		12	102	56	40	45	M1703-1020AE	30059042	M1703-1020EE	30051950
10,30		12	102	56	40	45	M1703-1030AE	30099759	M1703-1030EE	30051954
10,32	13/32	12	102	56	40	45	M1703-1032AE	30180147		

MEGA-Drill-Inox | M1703, 3xD, external cooling

Dimensions							Shank form HA		Shank form HE	
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
10,40		12	102	56	40	45	M1703-1040AE	30141184	M1703-1040EE	30051957
10,50		12	102	56	40	45	M1703-1050AE	30073328	M1703-1050EE	30051961
10,60		12	102	56	40	45	M1703-1060AE	30141185	M1703-1060EE	30051965
10,70		12	102	56	40	45	M1703-1070AE	30141186	M1703-1070EE	30051969
10,72	27/64	12	102	56	40	45	M1703-1072AE	30180148		
10,80		12	102	56	40	45	M1703-1080AE	30141187	M1703-1080EE	30051973
10,90		12	102	56	40	45	M1703-1090AE	30137105	M1703-1090EE	30051976
11,00		12	102	56	40	45	M1703-1100AE	30079522	M1703-1100EE	30051980
11,10		12	102	56	40	45	M1703-1110AE	30141188	M1703-1110EE	30051984
11,11	7/16	12	102	56	40	45	M1703-1111AE	30180149		
11,20		12	102	56	40	45	M1703-1120AE	30101146	M1703-1120EE	30051988
11,30		12	102	56	40	45	M1703-1130AE	30141189	M1703-1130EE	30051992
11,40		12	102	56	40	45	M1703-1140AE	30141190	M1703-1140EE	30051996
11,50		12	102	56	40	45	M1703-1150AE	30059052	M1703-1150EE	30052000
11,60		12	102	56	40	45	M1703-1160AE	30141191	M1703-1160EE	30052005
11,70		12	102	56	40	45	M1703-1170AE	30141192	M1703-1170EE	30052008
11,80		12	102	56	40	45	M1703-1180AE	30141193	M1703-1180EE	30052013
11,90		12	102	56	40	45	M1703-1190AE	30141194	M1703-1190EE	30052017
12,00		12	102	56	40	45	M1703-1200AE	30059056	M1703-1200EE	30052021
12,50		14	107	61	43	45	M1703-1250AE	30141195	M1703-1250EE	30052025
13,00		14	107	61	43	45	M1703-1300AE	30141197	M1703-1300EE	30052033
13,50		14	107	61	43	45	M1703-1350AE	30090835	M1703-1350EE	30052037
14,00		14	107	61	43	45	M1703-1400AE	30088983	M1703-1400EE	30052044
14,50		16	115	65	45	48	M1703-1450AE	30141199	M1703-1450EE	30052048
14,68	37/64	16	115	65	45	48	M1703-1468AE	30180155		
15,00		16	115	65	45	48	M1703-1500AE	30141201	M1703-1500EE	30052056
15,08	19/32	16	115	65	45	48	M1703-1508AE	30180156		
15,50		16	115	65	45	48	M1703-1550AE	30141202	M1703-1550EE	30052060
15,88	21/32	16	115	65	45	48	M1703-1588AE	30180157		
16,00		16	115	65	45	48	M1703-1600AE	30141204	M1703-1600EE	30052066
16,50		18	123	73	51	48	M1703-1650AE	30141205	M1703-1650EE	30052069
16,67	11/16	18	123	73	51	48	M1703-1667AE	30180158		
17,00		18	123	73	51	48	M1703-1700AE	30141206	M1703-1700EE	30052076
17,46	2/3	18	123	73	51	48	M1703-1746AE	30180159		
17,50		18	123	73	51	48	M1703-1750AE	30141207	M1703-1750EE	30052079
17,86	45/64	18	123	73	51	48	M1703-1786AE	30180160		
18,00		18	123	73	51	48	M1703-1800AE	30141208	M1703-1800EE	30052085
18,26	23/32	20	131	79	55	50	M1703-1826AE	30180161		
18,50		20	131	79	55	50	M1703-1850AE	30141209	M1703-1850EE	30052088
19,00		20	131	79	55	50	M1703-1900AE	30141211	M1703-1900EE	30052094
19,05	3/4	20	131	79	55	50	M1703-1905AE	30180162		
19,50		20	131	79	55	50	M1703-1950AE	30141212	M1703-1950EE	30052098
20,00		20	131	79	55	50	M1703-2000AE	30126251	M1703-2000EE	30052104

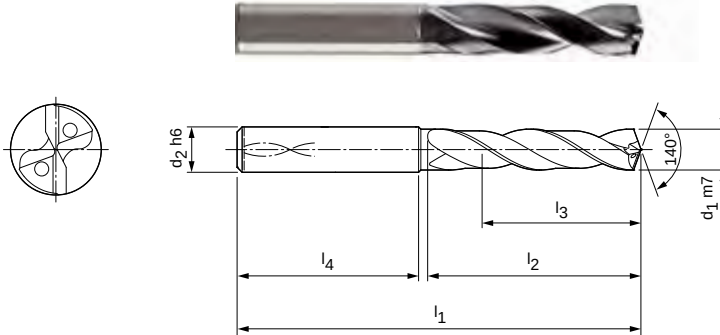
Dimensions in mm.
Cutting data recommendations from page 272.
Special designs and other coatings on request.

MEGA-Drill-Inox

3xD, internal cooling
M1803

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq$ IT 9
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry, surfaces
Point angle: 140°
Helix angle: 30°



Dimensions							Shank form HA		Shank form HE	
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
3,00		6	62	22	14	36	M1803-0300AE	30059162	M1803-0300EE	30052456
3,10		6	62	22	14	36	M1803-0310AE	30094018	M1803-0310EE	30052459
3,18	1/8	6	62	22	14	36	M1803-0318AE	30180894	–	–
3,20		6	62	22	14	36	M1803-0320AE	30059165	M1803-0320EE	30052462
3,30		6	62	22	14	36	M1803-0330AE	30072646	M1803-0330EE	30052465
3,40		6	62	22	14	36	M1803-0340AE	30099780	M1803-0340EE	30052468
3,50		6	62	22	14	36	M1803-0350AE	30072069	M1803-0350EE	30052471
3,57	9/64	6	62	22	14	36	M1803-0357AE	30180921	–	–
3,60		6	62	22	14	36	M1803-0360AE	30059167	M1803-0360EE	30052474
3,70		6	62	22	14	36	M1803-0370AE	30099781	M1803-0370EE	30052477
3,80		6	66	26	17	36	M1803-0380AE	30095300	M1803-0380EE	30052480
3,90		6	66	26	17	36	M1803-0390AE	30091067	M1803-0390EE	30052483
3,97	5/32	6	66	26	17	36	M1803-0397AE	30180923	–	–
4,00		6	66	26	17	36	M1803-0400AE	30072091	M1803-0400EE	30052486
4,10		6	66	26	17	36	M1803-0410AE	30078059	M1803-0410EE	30052489
4,20		6	66	26	17	36	M1803-0420AE	30073332	M1803-0420EE	30052492
4,30		6	66	26	17	36	M1803-0430AE	30062408	M1803-0430EE	30052495
4,37	11/64	6	66	26	17	36	M1803-0437AE	30180925	–	–
4,40		6	66	26	17	36	M1803-0440AE	30059173	M1803-0440EE	30052498
4,50		6	66	26	17	36	M1803-0450AE	30073381	M1803-0450EE	30052501
4,60		6	66	26	17	36	M1803-0460AE	30073040	M1803-0460EE	30052504
4,70		6	66	26	17	36	M1803-0470AE	30059176	M1803-0470EE	30052507
4,76	3/16	6	66	26	17	36	M1803-0476AE	30180927	–	–
4,80		6	66	30	20	36	M1803-0480AE	30099221	M1803-0480EE	30052510
4,90		6	66	30	20	36	M1803-0490AE	30059177	M1803-0490EE	30052513
5,00		6	66	30	20	36	M1803-0500AE	30072778	M1803-0500EE	30052517
5,10		6	66	30	20	36	M1803-0510AE	30072248	M1803-0510EE	30052520
5,16	13/64	6	66	30	20	36	M1803-0516AE	30180928	–	–
5,20		6	66	30	20	36	M1803-0520AE	30059180	M1803-0520EE	30052523
5,30		6	66	30	20	36	M1803-0530AE	30059181	M1803-0530EE	30052526
5,40		6	66	30	20	36	M1803-0540AE	30059182	M1803-0540EE	30052529
5,50		6	66	30	20	36	M1803-0550AE	30079530	M1803-0550EE	30052532
5,56	7/32	6	66	30	20	36	M1803-0556AE	30180929	–	–
5,60		6	66	30	20	36	M1803-0560AE	30059183	M1803-0560EE	30052535
5,70		6	66	30	20	36	M1803-0570AE	30141274	M1803-0570EE	30052538
5,80		6	66	30	20	36	M1803-0580AE	30059186	M1803-0580EE	30052541

MEGA-Drill-Inox | M1803, 3xD, internal cooling

Dimensions							Shank form HA		Shank form HE	
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
5,90		6	66	30	20	36	M1803-0590AE	30099223	M1803-0590EE	30052544
5,95	15/64	6	66	30	20	36	M1803-0595AE	30180930	—	—
6,00		6	66	30	20	36	M1803-0600AE	30059189	M1803-0600EE	30052547
6,10		8	79	38	24	36	M1803-0610AE	30118134	M1803-0610EE	30052550
6,20		8	79	38	24	36	M1803-0620AE	30139995	M1803-0620EE	30052553
6,30		8	79	38	24	36	M1803-0630AE	30062430	M1803-0630EE	30052556
6,35	1/4	8	79	38	24	36	M1803-0635AE	30180932		
6,40		8	79	38	24	36	M1803-0640AE	30139996	M1803-0640EE	30052559
6,50		8	79	38	24	36	M1803-0650AE	30059192	M1803-0650EE	30052561
6,60		8	79	38	24	36	M1803-0660AE	30062439	M1803-0660EE	30052564
6,70		8	79	38	24	36	M1803-0670AE	30085029	M1803-0670EE	30052567
6,75	17/64	8	79	38	24	36	M1803-0675AE	30134098		
6,80		8	79	38	24	36	M1803-0680AE	30062431	M1803-0680EE	30052570
6,90		8	79	38	24	36	M1803-0690AE	30059195	M1803-0690EE	30052573
7,00		8	79	38	24	36	M1803-0700AE	30059196	M1803-0700EE	30052576
7,10		8	79	42	29	36	M1803-0710AE	30077660	M1803-0710EE	30052579
7,14	9/32	8	79	42	29	36	M1803-0714AE	30180935		
7,20		8	79	42	29	36	M1803-0720AE	30072833	M1803-0720EE	30052582
7,30		8	79	42	29	36	M1803-0730AE	30141275	M1803-0730EE	30052585
7,40		8	79	42	29	36	M1803-0740AE	30078210	M1803-0740EE	30052588
7,50		8	79	42	29	36	M1803-0750AE	30094019	M1803-0750EE	30052591
7,54	19/64	8	79	42	29	36	M1803-0754AE	30180936		
7,60		8	79	42	29	36	M1803-0760AE	30059201	M1803-0760EE	30052594
7,70		8	79	42	29	36	M1803-0770AE	30073042	M1803-0770EE	30052597
7,80		8	79	42	29	36	M1803-0780AE	30141276	M1803-0780EE	30052600
7,90		8	79	42	29	36	M1803-0790AE	30059203	M1803-0790EE	30052603
7,94	5/16	8	79	42	29	36	M1803-0794AE	30180937		
8,00		8	79	42	29	36	M1803-0800AE	30072260	M1803-0800EE	30052606
8,10		10	89	49	35	40	M1803-0810AE	30059204	M1803-0810EE	30052609
8,20		10	89	49	35	40	M1803-0820AE	30075971	M1803-0820EE	30052612
8,30		10	89	49	35	40	M1803-0830AE	30090518	M1803-0830EE	30052615
8,33	21/64	10	89	49	35	40	M1803-0833AE	30180938		
8,40		10	89	49	35	40	M1803-0840AE	30093399	M1803-0840EE	30052618
8,50		10	89	49	35	40	M1803-0850AE	30059206	M1803-0850EE	30052621
8,60		10	89	49	35	40	M1803-0860AE	30062441	M1803-0860EE	30052624
8,70		10	89	49	35	40	M1803-0870AE	30059209	M1803-0870EE	30052627
8,73	11/32	10	89	49	35	40	M1803-0873AE	30180940		
8,80		10	89	49	35	40	M1803-0880AE	30079075	M1803-0880EE	30052630
8,90		10	89	49	35	40	M1803-0890AE	30059210	M1803-0890EE	30052633
9,00		10	89	49	35	40	M1803-0900AE	30059211	M1803-0900EE	30052636
9,10		10	89	49	35	40	M1803-0910AE	30059212	M1803-0910EE	30052639
9,13	23/64	10	89	49	35	40	M1803-0913AE	30180941		
9,20		10	89	49	35	40	M1803-0920AE	30079769	M1803-0920EE	30052642
9,30		10	89	49	35	40	M1803-0930AE	30073335	M1803-0930EE	30052645
9,40		10	89	49	35	40	M1803-0940AE	30141277	M1803-0940EE	30052648
9,50		10	89	49	35	40	M1803-0950AE	30059214	M1803-0950EE	30052651
9,53	3/8	10	89	49	35	40	M1803-0953AE	30180943		
9,60		10	89	49	35	40	M1803-0960AE	30118537	M1803-0960EE	30052654
9,70		10	89	49	35	40	M1803-0970AE	30078076	M1803-0970EE	30052657
9,80		10	89	49	35	40	M1803-0980AE	30141278	M1803-0980EE	30052660
9,90		10	89	49	35	40	M1803-0990AE	30141279	M1803-0990EE	30052663
9,92	25/64	10	89	49	35	40	M1803-0992AE	30180944		
10,00		10	89	49	35	40	M1803-1000AE	30095228	M1803-1000EE	30052666
10,10		12	102	56	40	45	M1803-1010AE	30059220	M1803-1010EE	30052669
10,20		12	102	56	40	45	M1803-1020AE	30079770	M1803-1020EE	30052672
10,30		12	102	56	40	45	M1803-1030AE	30059222	M1803-1030EE	30052675
10,32	13/32	12	102	56	40	45	M1803-1032AE	30180946		

Continued on next page.

MEGA-Drill-Inox | M1803, 3xD, internal cooling

Dimensions							Shank form HA		Shank form HE	
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
10,40		12	102	56	40	45	M1803-1040AE	30073422	M1803-1040EE	30052678
10,50		12	102	56	40	45	M1803-1050AE	30059225	M1803-1050EE	30052681
10,60		12	102	56	40	45	M1803-1060AE	30087301	M1803-1060EE	30052684
10,70		12	102	56	40	45	M1803-1070AE	30141280	M1803-1070EE	30052687
10,72	27/64	12	102	56	40	45	M1803-1072AE	30180947		
10,80		12	102	56	40	45	M1803-1080AE	30078099	M1803-1080EE	30052690
10,90		12	102	56	40	45	M1803-1090AE	30088465	M1803-1090EE	30052693
11,00		12	102	56	40	45	M1803-1100AE	30059229	M1803-1100EE	30052696
11,10		12	102	56	40	45	M1803-1110AE	30075367	M1803-1110EE	30052699
11,11	7/16	12	102	56	40	45	M1803-1111AE	30180948		
11,20		12	102	56	40	45	M1803-1120AE	30077030	M1803-1120EE	30052702
11,30		12	102	56	40	45	M1803-1130AE	30077777	M1803-1130EE	30052705
11,40		12	102	56	40	45	M1803-1140AE	30141281	M1803-1140EE	30052708
11,50		12	102	56	40	45	M1803-1150AE	30072039	M1803-1150EE	30052711
11,60		12	102	56	40	45	M1803-1160AE	30141282	M1803-1160EE	30052714
11,70		12	102	56	40	45	M1803-1170AE	30075802	M1803-1170EE	30052717
11,80		12	102	56	40	45	M1803-1180AE	30059236	M1803-1180EE	30052720
11,90		12	102	56	40	45	M1803-1190AE	30141283	M1803-1190EE	30052723
12,00		12	102	56	40	45	M1803-1200AE	30080709	M1803-1200EE	30052726
12,50		14	107	61	43	45	M1803-1250AE	30073336	M1803-1250EE	30052729
13,00		14	107	61	43	45	M1803-1300AE	30075996	M1803-1300EE	30052735
13,50		14	107	61	43	45	M1803-1350AE	30075974	M1803-1350EE	30052738
14,00		14	107	61	43	45	M1803-1400AE	30080341	M1803-1400EE	30052744
14,50		16	115	65	45	48	M1803-1450AE	30072340	M1803-1450EE	30052747
14,68	37/64	16	115	65	45	48	M1803-1468AE	30180953		
15,00		16	115	65	45	48	M1803-1500AE	30059246	M1803-1500EE	30052753
15,08	19/32	16	115	65	45	48	M1803-1508AE	30180954		
15,50		16	115	65	45	48	M1803-1550AE	30059249	M1803-1550EE	30052756
15,88	5/8	16	115	65	45	48	M1803-1588AE	30180955		
16,00		16	115	65	45	48	M1803-1600AE	30085045	M1803-1600EE	30052762
16,50		18	123	73	51	48	M1803-1650AE	30141288	M1803-1650EE	30052765
16,67	21/32	18	123	73	51	48	M1803-1667AE	30180956		
17,00		18	123	73	51	48	M1803-1700AE	30141290	M1803-1700EE	30052771
17,46	11/16	18	123	73	51	48	M1803-1746AE	30180957		
17,50		18	123	73	51	48	M1803-1750AE	30078812	M1803-1750EE	30052774
17,86	45/64	18	123	73	51	48	M1803-1786AE	30180958		
18,00		18	123	73	51	48	M1803-1800AE	30080710	M1803-1800EE	30052780
18,26	23/32	20	131	79	55	50	M1803-1826AE	30180959		
18,50		20	131	79	55	50	M1803-1850AE	30141292	M1803-1850EE	30052783
19,00		20	131	79	55	50	M1803-1900AE	30141294	M1803-1900EE	30052789
19,05	3/4	20	131	79	55	50	M1803-1905AE	30180960		
19,50		20	131	79	55	50	M1803-1950AE	30141295	M1803-1950EE	30052792
20,00		20	131	79	55	50	M1803-2000AE	30118133	M1803-2000EE	30052798

Dimensions in mm.

Cutting data recommendations from page 272.

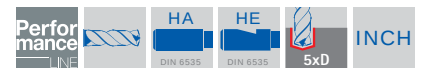
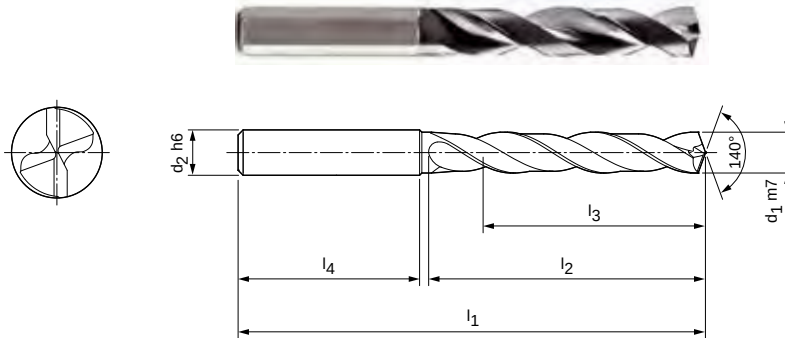
Special designs and other coatings on request.

MEGA-Drill-Inox

5xD, external cooling
M1705

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry, surfaces
Point angle: 140°
Helix angle: 30°



Dimensions							Shank form HA		Shank form HE	
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
3,00		6	66	28	23	36	M1705-0300AE	30078093	M1705-0300EE	30052107
3,10		6	66	28	23	36	M1705-0310AE	30141214	M1705-0310EE	30052110
3,18	1/8	6	66	28	23	36	M1705-0318AE	30180163		
3,20		6	66	28	23	36	M1705-0320AE	30141215	M1705-0320EE	30052113
3,30		6	66	28	23	36	M1705-0330AE	30098247	M1705-0330EE	30052116
3,40		6	66	28	23	36	M1705-0340AE	30059082	M1705-0340EE	30052119
3,50		6	66	28	23	36	M1705-0350AE	30079743	M1705-0350EE	30052122
3,57	9/64	6	66	28	23	36	M1705-0397AE	30180167		
3,60		6	66	28	23	36	M1705-0360AE	30133970	M1705-0360EE	30052125
3,70		6	66	28	23	36	M1705-0370AE	30075110	M1705-0370EE	30052128
3,80		6	74	36	29	36	M1705-0380AE	30059087	M1705-0380EE	30052131
3,90		6	74	36	29	36	M1705-0390AE	30059089	M1705-0390EE	30052134
3,97	5/32	6	74	36	29	36	M1705-0397AE	30180167		
4,00		6	74	36	29	36	M1705-0400AE	30085517	M1705-0400EE	30052137
4,10		6	74	36	29	36	M1705-0410AE	30136747	M1705-0410EE	30052140
4,20		6	74	36	29	36	M1705-0420AE	30073330	M1705-0420EE	30052144
4,30		6	74	36	29	36	M1705-0430AE	30099782	M1705-0430EE	30052146
4,37	11/64	6	74	36	29	36	M1705-0437AE	30180169		
4,40		6	74	36	29	36	M1705-0440AE	30141216	M1705-0440EE	30052149
4,50		6	74	36	29	36	M1705-0450AE	30078058	M1705-0450EE	30052152
4,60		6	74	36	29	36	M1705-0460AE	30075111	M1705-0460EE	30052155
4,70		6	74	36	29	36	M1705-0470AE	30133971	M1705-0470EE	30052158
4,76	3/16	6	82	44	35	36	M1705-0476AE	30180171		
4,80		6	82	44	35	36	M1705-0480AE	30141217	M1705-0480EE	30052161
4,90		6	82	44	35	36	M1705-0490AE	30059096	M1705-0490EE	30052164
5,00		6	82	44	35	36	M1705-0500AE	30059097	M1705-0500EE	30052167
5,10		6	82	44	35	36	M1705-0510AE	30062391	M1705-0510EE	30052170
5,16	13/64	6	82	44	35	36	M1705-0516AE	30180172		
5,20		6	82	44	35	36	M1705-0520AE	30079744	M1705-0520EE	30052173
5,30		6	82	44	35	36	M1705-0530AE	30059098	M1705-0530EE	30052176
5,40		6	82	44	35	36	M1705-0540AE	30141218	M1705-0540EE	30052179
5,50		6	82	44	35	36	M1705-0550AE	30059100	M1705-0550EE	30052182
5,56	7/32	6	82	44	35	36	M1705-0556AE	30180173		
5,60		6	82	44	35	36	M1705-0560AE	30141219	M1705-0560EE	30052185
5,70		6	82	44	35	36	M1705-0570AE	30141220	M1705-0570EE	30052188
5,80		6	82	44	35	36	M1705-0580AE	30059103	M1705-0580EE	30052191

MEGA-Drill-Inox | M1705, 5xD, external cooling

Dimensions							Shank form HA		Shank form HE	
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
5,90		6	82	44	35	36	M1705-0590AE	30141221	M1705-0590EE	30052194
5,95	15/64	6	82	44	35	36	M1705-0595AE	30180174		
6,00		6	82	44	35	36	M1705-0600AE	30059105	M1705-0600EE	30052197
6,10		8	91	53	43	36	M1705-0610AE	30059106	M1705-0610EE	30052200
6,20		8	91	53	43	36	M1705-0620AE	30141222	M1705-0620EE	30052203
6,30		8	91	53	43	36	M1705-0630AE	30141223	M1705-0630EE	30052206
6,35	1/4	8	91	53	43	36	M1705-0635AE	30180176		
6,40		8	91	53	43	36	M1705-0640AE	30141224	M1705-0640EE	30052209
6,50		8	91	53	43	36	M1705-0650AE	30080707	M1705-0650EE	30052213
6,60		8	91	53	43	36	M1705-0660AE	30074660	M1705-0660EE	30052216
6,70		8	91	53	43	36	M1705-0670AE	30141225	M1705-0670EE	30052219
6,75	17/64	8	91	53	43	36	M1705-0675AE	30180179		
6,80		8	91	53	43	36	M1705-0680AE	30059110	M1705-0680EE	30052222
6,90		8	91	53	43	36	M1705-0690AE	30059112	M1705-0690EE	30052225
7,00		8	91	53	43	36	M1705-0700AE	30077784	M1705-0700EE	30052228
7,10		8	91	53	43	36	M1705-0710AE	30141226	M1705-0710EE	30052231
7,14	9/32	8	91	53	43	36	M1705-0714AE	30180180		
7,20		8	91	53	43	36	M1705-0720AE	30141227	M1705-0720EE	30052234
7,30		8	91	53	43	36	M1705-0730AE	30141228	M1705-0730EE	30052237
7,40		8	91	53	43	36	M1705-0740AE	30099783	M1705-0740EE	30052240
7,50		8	91	53	43	36	M1705-0750AE	30098260	M1705-0750EE	30052243
7,54	19/64	8	91	53	43	36	M1705-0754AE	30180182		
7,60		8	91	53	43	36	M1705-0760AE	30141229	M1705-0760EE	30052246
7,70		8	91	53	43	36	M1705-0770AE	30141230	M1705-0770EE	30052249
7,80		8	91	53	43	36	M1705-0780AE	30091590	M1705-0780EE	30052252
7,90		8	91	53	43	36	M1705-0790AE	30091591	M1705-0790EE	30052255
7,94	5/16	8	91	53	43	36	M1705-0794AE	30180183		
8,00		8	91	53	43	36	M1705-0800AE	30098261	M1705-0800EE	30052258
8,10		10	103	61	49	40	M1705-0810AE	30141231	M1705-0810EE	30052261
8,20		10	103	61	49	40	M1705-0820AE	30141232	M1705-0820EE	30052264
8,30		10	103	61	49	40	M1705-0830AE	30141233	M1705-0830EE	30052267
8,33	21/64	10	103	61	49	40	M1705-0833AE	30180184		
8,40		10	103	61	49	40	M1705-0840AE	30141234	M1705-0840EE	30052270
8,50		10	103	61	49	40	M1705-0850AE	30079078	M1705-0850EE	30052273
8,60		10	103	61	49	40	M1705-0860AE	30099785	M1705-0860EE	30052276
8,70		10	103	61	49	40	M1705-0870AE	30141235	M1705-0870EE	30052278
8,73	11/32	10	103	61	49	40	M1705-0873AE	30180186		
8,80		10	103	61	49	40	M1705-0880AE	30141236	M1705-0880EE	30052281
8,90		10	103	61	49	40	M1705-0890AE	30141237	M1705-0890EE	30052285
9,00		10	103	61	49	40	M1705-0900AE	30059127	M1705-0900EE	30052288
9,10		10	103	61	49	40	M1705-0910AE	30141238	M1705-0910EE	30052291
9,13	23/64	10	103	61	49	40	M1705-0913AE	30180187		
9,20		10	103	61	49	40	M1705-0920AE	30141239	M1705-0920EE	30052294
9,30		10	103	61	49	40	M1705-0930AE	30099786	M1705-0930EE	30052297
9,40		10	103	61	49	40	M1705-0940AE	30141240	M1705-0940EE	30052300
9,50		10	103	61	49	40	M1705-0950AE	30098262	M1705-0950EE	30052303
9,53	3/8	10	103	61	49	40	M1705-0953AE	30180189		
9,60		10	103	61	49	40	M1705-0960AE	30141241	M1705-0960EE	30052306
9,70		10	103	61	49	40	M1705-0970AE	30141242	M1705-0970EE	30052309
9,80		10	103	61	49	40	M1705-0980AE	30141243	M1705-0980EE	30052312
9,90		10	103	61	49	40	M1705-0990AE	30078685	M1705-0990EE	30052315
9,92	25/64	10	103	61	49	40	M1705-0992AE	30180190		
10,00		10	103	61	49	40	M1705-1000AE	30098263	M1705-1000EE	30052318
10,10		12	118	71	56	45	M1705-1010AE	30141244	M1705-1010EE	30052321
10,20		12	118	71	56	45	M1705-1020AE	30098264	M1705-1020EE	30052324
10,30		12	118	71	56	45	M1705-1030AE	30099787	M1705-1030EE	30052327
10,32	13/32	12	118	71	56	45	M1705-1032AE	30180192		

MEGA-Drill-Inox | M1705, 5xD, external cooling

Dimensions							Shank form HA		Shank form HE	
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
10,40		12	118	71	56	45	M1705-1040AE	30141245	M1705-1040EE	30052330
10,50		12	118	71	56	45	M1705-1050AE	30098265	M1705-1050EE	30052333
10,60		12	118	71	56	45	M1705-1060AE	30141246	M1705-1060EE	30052336
10,70		12	118	71	56	45	M1705-1070AE	30141247	M1705-1070EE	30052339
10,72	27/64	12	118	71	56	45	M1705-1072AE	30180193		
10,80		12	118	71	56	45	M1705-1080AE	30141248	M1705-1080EE	30052343
10,90		12	118	71	56	45	M1705-1090AE	30141249	M1705-1090EE	30052346
11,00		12	118	71	56	45	M1705-1100AE	30098266	M1705-1100EE	30052349
11,10		12	118	71	56	45	M1705-1110AE	30141250	M1705-1110EE	30052352
11,11	7/16	12	118	71	56	45	M1705-1111AE	30180194		
11,20		12	118	71	56	45	M1705-1120AE	30141251	M1705-1120EE	30052355
11,30		12	118	71	56	45	M1705-1130AE	30141252	M1705-1130EE	30052358
11,40		12	118	71	56	45	M1705-1140AE	30141253	M1705-1140EE	30052361
11,50		12	118	71	56	45	M1705-1150AE	30098267	M1705-1150EE	30052364
11,60		12	118	71	56	45	M1705-1160AE	30141254	M1705-1160EE	30052367
11,70		12	118	71	56	45	M1705-1170AE	30141255	M1705-1170EE	30052370
11,80		12	118	71	56	45	M1705-1180AE	30141256	M1705-1180EE	30052373
11,90		12	118	71	56	45	M1705-1190AE	30141257	M1705-1190EE	30052376
12,00		12	118	71	56	45	M1705-1200AE	30098268	M1705-1200EE	30052379
12,50		14	124	77	60	45	M1705-1250AE	30137585	M1705-1250EE	30052382
12,80		14	124	77	60	45		30089461	M1705-1280EE	30052385
13,00		14	124	77	60	45	M1705-1300AE	30073331	M1705-1300EE	30052388
13,50		14	124	77	60	45	M1705-1350AE	30094138	M1705-1350EE	30052391
13,80		14	124	77	60	45		30074661	M1705-1380EE	30052394
14,00		14	124	77	60	45	M1705-1400AE	30180200	M1705-1400EE	30052397
14,50		16	133	83	63	48	M1705-1450AE	30141260	M1705-1450EE	30052400
14,68	37/64	16	133	83	63	48	M1705-1468AE	30180201		
14,80		16	133	83	63	48		30141260	M1705-1480EE	30052403
15,00		16	133	83	63	48	M1705-1500AE	30180202	M1705-1500EE	30052406
15,08	19/32	16	133	83	63	48	M1705-1508AE	30101143		
15,50		16	133	83	63	48	M1705-1550AE	30180203	M1705-1550EE	30052409
15,88	5/8	16	133	83	63	48	M1705-1588AE	30141265		
16,00		16	133	83	63	48	M1705-1600AE	30180204	M1705-1600EE	30052415
16,50		18	143	93	71	48		30141266	M1705-1650EE	30052420
16,67	21/32	18	143	93	71	48	M1705-1667AE	30180205		
16,80		18	143	93	71	48		30141268	M1705-1680EE	30052423
17,00		18	143	93	71	48	M1705-1700AE	30180206	M1705-1700EE	30052426
17,46	11/16	18	143	93	71	48	M1705-1746AE	30141269		
17,50		18	143	93	71	48	M1705-1750AE	30059160	M1705-1750EE	30052429
17,80		18	143	93	71	48		30180207	M1705-1780EE	30052432
17,86	45/64	18	143	93	71	48	M1705-1786AE	30141271		
18,00		18	143	93	71	48	M1705-1800AE	30141273	M1705-1800EE	30052435
18,26	23/32	20	153	101	77	50	M1705-1826AE	30450638		
18,50		20	153	101	77	50	M1705-1850AE	30390832	M1705-1850EE	30052438
18,80		20	153	101	77	50		–	M1705-1880EE	30052441
19,00		20	153	101	77	50	M1705-1900AE	30390833	M1705-1900EE	30052444
19,05	3/4	20	153	101	77	50	M1705-1905AE	30450639		
19,50		20	153	101	77	50	M1705-1950AE	30390834	M1705-1950EE	30052447
19,80		20	153	101	77	50		–	M1705-1980EE	30052450
20,00		20	153	101	77	50	M1705-2000AE	30390835	M1705-2000EE	30052453

Dimensions in mm.

Cutting data recommendations from page 272.

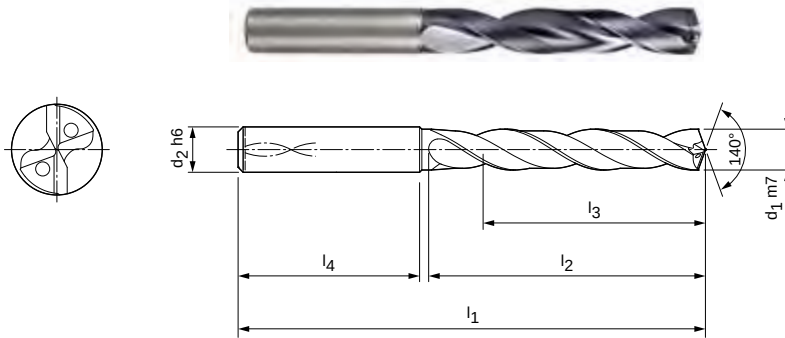
Special designs and other coatings on request.

MEGA-Drill-Inox

5xD, internal cooling
M1805

Design:

Drill diameter:	2,80 – 20,00 mm
Bore tolerance:	≥ IT 9
Coating:	MxF
Number of cutting edges:	2
Number of guiding chamfers:	2
Point geometry:	Specific geometry, surfaces
Point angle:	140°
Helix angle:	30°



Dimensions							Shank form HA		Shank form HE	
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
*2,80		6	66	28	23	36	M1805-0280AE	30378652	M1805-0280EE	30378654
3,00		6	66	28	23	36	M1805-0300AE	30059273	M1805-0300EE	30052801
3,10		6	66	28	23	36	M1805-0310AE	30074862	M1805-0310EE	30052804
3,18	1/8	6	66	28	23	36	M1805-0318AE	30180961		
3,20		6	66	28	23	36	M1805-0320AE	30075692	M1805-0320EE	30052807
3,30		6	66	28	23	36	M1805-0330AE	30059277	M1805-0330EE	30052810
3,40		6	66	28	23	36	M1805-0340AE	30074801	M1805-0340EE	30052813
3,50		6	66	28	23	36	M1805-0350AE	30059278	M1805-0350EE	30052816
3,57	9/64	6	66	28	23	36	M1805-0357AE	30180963		
3,60		6	66	28	23	36	M1805-0360AE	30059279	M1805-0360EE	30052819
*3,70		6	66	28	23	36	M1805-0370AE	30074807	M1805-0370EE	30052822
3,80		6	74	36	29	36	M1805-0380AE	30073337	M1805-0380EE	30052825
3,90		6	74	36	29	36	M1805-0390AE	30073338	M1805-0390EE	30052828
3,97	5/32	6	74	36	29	36	M1805-0397AE	30180965		
4,00		6	74	36	29	36	M1805-0400AE	30074819	M1805-0400EE	30052831
4,10		6	74	36	29	36	M1805-0410AE	30074863	M1805-0410EE	30052834
4,20		6	74	36	29	36	M1805-0420AE	30059280	M1805-0420EE	30052837
4,30		6	74	36	29	36	M1805-0430AE	30074864	M1805-0430EE	30052840
4,37	11/64	6	74	36	29	36	M1805-0437AE	30180967		
4,40		6	74	36	29	36	M1805-0440AE	30074814	M1805-0440EE	30052843
4,50		6	74	36	29	36	M1805-0450AE	30059281	M1805-0450EE	30052846
4,60		6	74	36	29	36	M1805-0460AE	30074813	M1805-0460EE	30052850
4,65		6	74	36	29	36	M1805-0465AE	30322842	M1805-0465EE	30140690
4,70		6	74	36	29	36	M1805-0470AE	30059283	M1805-0470EE	30052853
4,76	3/16	6	82	44	35	36	M1805-0476AE	30180969		
4,80		6	82	44	35	36	M1805-0480AE	30062471	M1805-0480EE	30052856
4,90		6	82	44	35	36	M1805-0490AE	30062489	M1805-0490EE	30052859
5,00		6	82	44	35	36	M1805-0500AE	30062490	M1805-0500EE	30052862
5,10		6	82	44	35	36	M1805-0510AE	30073340	M1805-0510EE	30052865
5,16	13/64	6	82	44	35	36	M1805-0516AE	30180970		
5,20		6	82	44	35	36	M1805-0520AE	30062491	M1805-0520EE	30052868
5,30		6	82	44	35	36	M1805-0530AE	30074865	M1805-0530EE	30052871
5,40		6	82	44	35	36	M1805-0540AE	30073341	M1805-0540EE	30052874
5,50		6	82	44	35	36	M1805-0550AE	30059287	M1805-0550EE	30052877
5,55		6	82	44	35	36	M1805-0555AE	30139992	M1805-0555EE	30126351
5,56	7/32	6	82	44	35	36	M1805-0556AE	30180971		
5,60		6	82	44	35	36	M1805-0560AE	30059289	M1805-0560EE	30052880

MEGA-Drill-Inox | M1805, 5xD, internal cooling

Dimensions							Shank form HA		Shank form HE	
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
5,70		6	82	44	35	36	M1805-0570AE	30059290	M1805-0570EE	30052883
5,80		6	82	44	35	36	M1805-0580AE	30074844	M1805-0580EE	30052886
5,90		6	82	44	35	36	M1805-0590AE	30074866	M1805-0590EE	30052889
5,95	15/64	6	82	44	35	36	M1805-0595AE	30180972		
6,00		6	82	44	35	36	M1805-0600AE	30064179	M1805-0600EE	30052892
6,10		8	91	53	43	36	M1805-0610AE	30062473	M1805-0610EE	30052895
6,20		8	91	53	43	36	M1805-0620AE	30062474	M1805-0620EE	30052898
6,30		8	91	53	43	36	M1805-0630AE	30062475	M1805-0630EE	30052901
6,35	1/4	8	91	53	43	36	M1805-0635AE	30180974		
6,40		8	91	53	43	36	M1805-0640AE	30062497	M1805-0640EE	30052904
6,50		8	91	53	43	36	M1805-0650AE	30073342	M1805-0650EE	30052907
6,60		8	91	53	43	36	M1805-0660AE	30074662	M1805-0660EE	30052910
6,70		8	91	53	43	36	M1805-0670AE	30075693	M1805-0670EE	30052913
6,75	17/64	8	91	53	43	36	M1805-0675AE	30180977		
6,80		8	91	53	43	36	M1805-0680AE	30059297	M1805-0680EE	30052916
6,90		8	91	53	43	36	M1805-0690AE	30074867	M1805-0690EE	30052919
7,00		8	91	53	43	36	M1805-0700AE	30059298	M1805-0700EE	30052922
7,10		8	91	53	43	36	M1805-0710AE	30075694	M1805-0710EE	30052925
7,14	9/32	8	91	53	43	36	M1805-0714AE	30180978		
7,20		8	91	53	43	36	M1805-0720AE	30075695	M1805-0720EE	30052928
7,30		8	91	53	43	36	M1805-0730AE	30062502	M1805-0730EE	30052931
7,40		8	91	53	43	36	M1805-0740AE	30075696	M1805-0740EE	30052934
7,45		8	91	53	43	36	M1805-0745AE	30322845	M1805-0745EE	30378657
7,50		8	91	53	43	36	M1805-0750AE	30062478	M1805-0750EE	30052938
7,54	19/64	8	91	53	43	36	M1805-0754AE	30180979		
7,60		8	91	53	43	36	M1805-0760AE	30062479	M1805-0760EE	30052941
7,70		8	91	53	43	36	M1805-0770AE	30062480	M1805-0770EE	30052944
7,80		8	91	53	43	36	M1805-0780AE	30059305	M1805-0780EE	30052947
7,90		8	91	53	43	36	M1805-0790AE	30059307	M1805-0790EE	30052950
7,94	5/16	8	91	53	43	36	M1805-0794AE	30180980		
8,00		8	91	53	43	36	M1805-0800AE	30073346	M1805-0800EE	30052953
8,10		10	103	61	49	40	M1805-0810AE	30059310	M1805-0810EE	30052956
8,20		10	103	61	49	40	M1805-0820AE	30062508	M1805-0820EE	30052959
8,30		10	103	61	49	40	M1805-0830AE	30075697	M1805-0830EE	30052962
8,33	21/64	10	103	61	49	40	M1805-0833AE	30180981		
8,40		10	103	61	49	40	M1805-0840AE	30074868	M1805-0840EE	30052965
8,50		10	103	61	49	40	M1805-0850AE	30062481	M1805-0850EE	30052968
8,60		10	103	61	49	40	M1805-0860AE	30074802	M1805-0860EE	30052971
8,70		10	103	61	49	40	M1805-0870AE	30059315	M1805-0870EE	30052974
8,73	11/32	10	103	61	49	40	M1805-0873AE	30180983		
8,80		10	103	61	49	40	M1805-0880AE	30075698	M1805-0880EE	30052977
8,90		10	103	61	49	40	M1805-0890AE	30075699	M1805-0890EE	30052980
9,00		10	103	61	49	40	M1805-0900AE	30073347	M1805-0900EE	30052983
9,10		10	103	61	49	40	M1805-0910AE	30075700	M1805-0910EE	30052987
9,13	23/64	10	103	61	49	40	M1805-0913AE	30180984		
9,20		10	103	61	49	40	M1805-0920AE	30062512	M1805-0920EE	30052990
*9,30		10	103	61	49	40	M1805-0930AE	30062513	M1805-0930EE	30052993
9,40		10	103	61	49	40	M1805-0940AE	30062514	M1805-0940EE	30052996
9,50		10	103	61	49	40	M1805-0950AE	30059322	M1805-0950EE	30052999
9,53	3/8	10	103	61	49	40	M1805-0953AE	30180986		
9,60		10	103	61	49	40	M1805-0960AE	30073348	M1805-0960EE	30053002
9,70		10	103	61	49	40	M1805-0970AE	30062483	M1805-0970EE	30053005
9,80		10	103	61	49	40	M1805-0980AE	30074767	M1805-0980EE	30053008
9,90		10	103	61	49	40	M1805-0990AE	30059323	M1805-0990EE	30053011
9,92	25/64	10	103	61	49	40	M1805-0992AE	30180987		
10,00		10	103	61	49	40	M1805-1000AE	30074768	M1805-1000EE	30053014
10,10		12	118	71	56	45	M1805-1010AE	30074869	M1805-1010EE	30053017

Continued on next page.

MEGA-Drill-Inox | M1805, 5xD, internal cooling

Dimensions							Shank form HA		Shank form HE	
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄	Specification	Order No.	Specification	Order No.
10,20		12	118	71	56	45	M1805-1020AE	30074910	M1805-1020EE	30053019
10,30		12	118	71	56	45	M1805-1030AE	30059324	M1805-1030EE	30053022
10,32	13/32	12	118	71	56	45	M1805-1032AE	30180989		
10,40		12	118	71	56	45	M1805-1040AE	30059326	M1805-1040EE	30053025
10,50		12	118	71	56	45	M1805-1050AE	30059327	M1805-1050EE	30053028
10,60		12	118	71	56	45	M1805-1060AE	30074911	M1805-1060EE	30053031
10,70		12	118	71	56	45	M1805-1070AE	30074912	M1805-1070EE	30053034
10,72	27/64	12	118	71	56	45	M1805-1072AE	30180990		
10,80		12	118	71	56	45	M1805-1080AE	30074913	M1805-1080EE	30053037
10,90		12	118	71	56	45	M1805-1090AE	30074839	M1805-1090EE	30053040
11,00		12	118	71	56	45	M1805-1100AE	30059330	M1805-1100EE	30053043
11,10		12	118	71	56	45	M1805-1110AE	30074914	M1805-1110EE	30053046
11,11	7/16	12	118	71	56	45	M1805-1111AE	30180991		
*11,20		12	118	71	56	45	M1805-1120AE	30074915	M1805-1120EE	30053050
11,30		12	118	71	56	45	M1805-1130AE	30073349	M1805-1130EE	30053053
11,40		12	118	71	56	45	M1805-1140AE	30074916	M1805-1140EE	30053056
11,50		12	118	71	56	45	M1805-1150AE	30074917	M1805-1150EE	30053059
11,60		12	118	71	56	45	M1805-1160AE	30059334	M1805-1160EE	30053062
11,70		12	118	71	56	45	M1805-1170AE	30073351	M1805-1170EE	30053065
11,80		12	118	71	56	45	M1805-1180AE	30073352	M1805-1180EE	30053068
11,90		12	118	71	56	45	M1805-1190AE	30075701	M1805-1190EE	30053071
12,00		12	118	71	56	45	M1805-1200AE	30059337	M1805-1200EE	30053074
12,50		14	124	77	60	45	M1805-1250AE	30075702	M1805-1250EE	30053077
12,80		14	124	77	60	45	M1805-1280AE	30075703		
13,00		14	124	77	60	45	M1805-1300AE	30059343	M1805-1300EE	30053083
13,50		14	124	77	60	45	M1805-1350AE	30073353		
13,80		14	124	77	60	45	M1805-1380AE	30074918		
14,00		14	124	77	60	45	M1805-1400AE	30074919	M1805-1400EE	30053092
14,50		16	133	83	63	48	M1805-1450AE	30074834	M1805-1450EE	30053095
14,68	37/64	16	133	83	63	48	M1805-1468AE	30180996		
14,80		16	133	83	63	48	M1805-1480AE	30074920		
15,00		16	133	83	63	48	M1805-1500AE	30074835	M1805-1500EE	30053102
15,08	19/32	16	133	83	63	48	M1805-1508AE	30180997		
15,50		16	133	83	63	48	M1805-1550AE	30073372		
15,80		16	133	83	63	48	M1805-1580AE	30074922	M1805-1580EE	30053108
15,88	5/8	16	133	83	63	48	M1805-1588AE	30180998		
16,00		16	133	83	63	48	M1805-1600AE	30074923	M1805-1600EE	30053111
16,50		18	143	93	71	48	M1805-1650AE	30074924	M1805-1650EE	30053114
16,67	21/32	18	143	93	71	48	M1805-1667AE	30180999		
16,80		18	143	93	71	48	M1805-1680AE	30074925		
17,00		18	143	93	71	48	M1805-1700AE	30074926	M1805-1700EE	30053120
17,46	11/16	18	143	93	71	48	M1805-1746AE	30181000		
17,50		18	143	93	71	48	M1805-1750AE	30074927	M1805-1750EE	30053123
17,80		18	143	93	71	48	M1805-1780AE	30074838		
17,86	45/64	18	143	93	71	48	M1805-1786AE	30181001		
18,00		18	143	93	71	48	M1805-1800AE	30074831	M1805-1800EE	30053129
18,26	23/32	20	153	101	77	50	M1805-1826AE	30181002		
18,50		20	153	101	77	50	M1805-1850AE	30074928	M1805-1850EE	30053132
18,80		20	153	101	77	50	M1805-1880AE	30074929		
19,00		20	153	101	77	50	M1805-1900AE	30075704	M1805-1900EE	30053139
19,05	3/4	20	153	101	77	50	M1805-1905AE	30181003		
19,50		20	153	101	77	50	M1805-1950AE	30074940		
19,80		20	153	101	77	50	M1805-1980AE	30074764		
20,00		20	153	101	77	50	M1805-2000AE	30074941	M1805-2000EE	30053147

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

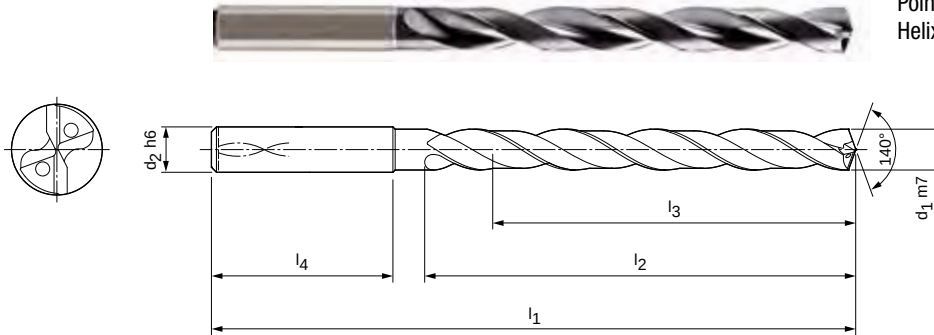
Special designs and other coatings on request.

MEGA-Drill-Inox

8xD, internal cooling
M1808

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry, surfaces
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	72	34	29	36	M1808-0300AE	30214840
3,10	6	72	34	29	36	M1808-0310AE	30229430
3,20	6	72	34	29	36	M1808-0320AE	30211908
3,30	6	72	34	29	36	M1808-0330AE	30091668
3,40	6	72	34	29	36	M1808-0340AE	30229435
3,50	6	72	34	29	36	M1808-0350AE	30229436
3,60	6	72	34	29	36	M1808-0360AE	30229437
3,70	6	72	34	29	36	M1808-0370AE	30229438
3,80	6	81	43	36	36	M1808-0380AE	30229439
3,90	6	81	43	36	36	M1808-0390AE	30229441
4,00	6	81	43	36	36	M1808-0400AE	30072862
4,10	6	81	43	36	36	M1808-0410AE	30160430
4,20	6	81	43	36	36	M1808-0420AE	30081828
4,30	6	81	43	36	36	M1808-0430AE	30229442
4,40	6	81	43	36	36	M1808-0440AE	30086811
4,50	6	81	43	36	36	M1808-0450AE	30214841
4,60	6	81	43	36	36	M1808-0460AE	30229443
4,70	6	81	43	36	36	M1808-0470AE	30088874
4,80	6	95	57	48	36	M1808-0480AE	30190439
4,90	6	95	57	48	36	M1808-0490AE	30072966
5,00	6	95	57	48	36	M1808-0500AE	30214847
5,10	6	95	57	48	36	M1808-0510AE	30229462
5,20	6	95	57	48	36	M1808-0520AE	30229463
5,30	6	95	57	48	36	M1808-0530AE	30229465
5,40	6	95	57	48	36	M1808-0540AE	30229466
5,50	6	95	57	48	36	M1808-0550AE	30073397
5,60	6	95	57	48	36	M1808-0560AE	30229467
5,70	6	95	57	48	36	M1808-0570AE	30229468
5,80	6	95	57	48	36	M1808-0580AE	30204864
5,90	6	95	57	48	36	M1808-0590AE	30229470
6,00	6	95	57	48	36	M1808-0600AE	30214848
6,10	8	114	76	64	36	M1808-0610AE	30229485
6,20	8	114	76	64	36	M1808-0620AE	30229486
6,30	8	114	76	64	36	M1808-0630AE	30229487
6,40	8	114	76	64	36	M1808-0640AE	30229489
6,50	8	114	76	64	36	M1808-0650AE	30073396

MEGA-Drill-Inox | M1808, 8xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,60	8	114	76	64	36	M1808-0660AE	30229490
6,70	8	114	76	64	36	M1808-0670AE	30229491
6,80	8	114	76	64	36	M1808-0680AE	30229492
6,90	8	114	76	64	36	M1808-0690AE	30229493
7,00	8	114	76	64	36	M1808-0700AE	30214846
7,10	8	114	76	64	36	M1808-0710AE	30229495
7,20	8	114	76	64	36	M1808-0720AE	30229496
7,30	8	114	76	64	36	M1808-0730AE	30229497
7,40	8	114	76	64	36	M1808-0740AE	30229498
7,50	8	114	76	64	36	M1808-0750AE	30229499
7,60	8	114	76	64	36	M1808-0760AE	30229500
7,70	8	114	76	64	36	M1808-0770AE	30229501
7,80	8	114	76	64	36	M1808-0780AE	30229503
7,90	8	114	76	64	36	M1808-0790AE	30229505
8,00	8	114	76	64	36	M1808-0800AE	30214845
8,10	10	142	95	80	40	M1808-0810AE	30229515
8,20	10	142	95	80	40	M1808-0820AE	30229516
8,30	10	142	95	80	40	M1808-0830AE	30229517
8,40	10	142	95	80	40	M1808-0840AE	30229518
8,50	10	142	95	80	40	M1808-0850AE	30204865
8,60	10	142	95	80	40	M1808-0860AE	30229433
8,70	10	142	95	80	40	M1808-0870AE	30229434
8,80	10	142	95	80	40	M1808-0880AE	30229440
8,90	10	142	95	80	40	M1808-0890AE	30072769
9,00	10	142	95	80	40	M1808-0900AE	30063972
9,10	10	142	95	80	40	M1808-0910AE	30229447
9,20	10	142	95	80	40	M1808-0920AE	30229449
9,30	10	142	95	80	40	M1808-0930AE	30229450
9,40	10	142	95	80	40	M1808-0940AE	30229453
9,50	10	142	95	80	40	M1808-0950AE	30229454
9,60	10	142	95	80	40	M1808-0960AE	30229457
9,70	10	142	95	80	40	M1808-0970AE	30229458
9,80	10	142	95	80	40	M1808-0980AE	30229459
9,90	10	142	95	80	40	M1808-0990AE	30229461
10,00	10	142	95	80	40	M1808-1000AE	30179572
10,10	12	162	114	96	45	M1808-1010AE	30229472
10,20	12	162	114	96	45	M1808-1020AE	30214844
10,30	12	162	114	96	45	M1808-1030AE	30229475
10,40	12	162	114	96	45	M1808-1040AE	30229477
10,50	12	162	114	96	45	M1808-1050AE	30178989
10,60	12	162	114	96	45	M1808-1060AE	30229482
10,70	12	162	114	96	45	M1808-1070AE	30229483
10,80	12	162	114	96	45	M1808-1080AE	30229488
10,90	12	162	114	96	45	M1808-1090AE	30229494
11,00	12	162	114	96	45	M1808-1100AE	30214843
11,10	12	162	114	96	45	M1808-1110AE	30229502
11,20	12	162	114	96	45	M1808-1120AE	30229509
11,30	12	162	114	96	45	M1808-1130AE	30229510
11,40	12	162	114	96	45	M1808-1140AE	30229511
11,50	12	162	114	96	45	M1808-1150AE	30229512
11,60	12	162	114	96	45	M1808-1160AE	30229513
11,70	12	162	114	96	45	M1808-1170AE	30229514
11,80	12	162	114	96	45	M1808-1180AE	30229536
11,90	12	162	114	96	45	M1808-1190AE	30229538
12,00	12	162	114	96	45	M1808-1200AE	30214842
12,50	14	178	133	112	45	M1808-1250AE	30229543
12,80	14	178	133	112	45	M1808-1280AE	30229544

MEGA-Drill-Inox | M1808, 8xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
13,00	14	178	133	112	45	M1808-1300AE	30204791
13,50	14	178	133	112	45	M1808-1350AE	30229549
13,80	14	178	133	112	45	M1808-1380AE	30229551
14,00	14	178	133	112	45	M1808-1400AE	30229553
14,50	16	203	152	128	48	M1808-1450AE	30229554
14,80	16	203	152	128	48	M1808-1480AE	30229556
15,00	16	203	152	128	48	M1808-1500AE	30229558
15,50	16	203	152	128	48	M1808-1550AE	30229559
15,80	16	203	152	128	48	M1808-1580AE	30229562
16,00	16	203	152	128	48	M1808-1600AE	30229563
16,50	18	222	171	144	48	M1808-1650AE	30229565
16,80	18	222	171	144	48	M1808-1680AE	30229566
17,00	18	222	171	144	48	M1808-1700AE	30229569
17,50	18	222	171	144	48	M1808-1750AE	30229570
17,80	18	222	171	144	48	M1808-1780AE	30229571
18,00	18	222	171	144	48	M1808-1800AE	30229572
18,50	20	243	190	160	50	M1808-1850AE	30229574
18,80	20	243	190	160	50	M1808-1880AE	30229575
19,00	20	243	190	160	50	M1808-1900AE	30229576
19,50	20	243	190	160	50	M1808-1950AE	30229561
19,80	20	243	190	160	50	M1808-1980AE	30210720
20,00	20	243	190	160	50	M1808-2000AE	30229564

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

MEGA-Drill-Alu

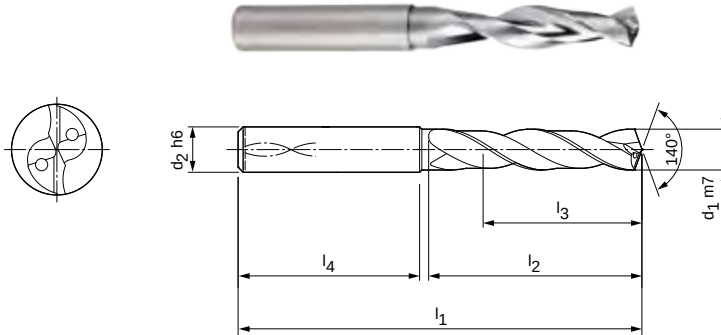
3xD, internal cooling

M2803

Suitable for use as pilot drill for MEGA-Deep-Drill-Alu

Design:

Drill diameter:	3,00 – 16,00 mm
Bore tolerance:	≥ IT 9
Coating:	Uncoated
Number of cutting edges:	2
Number of guiding chamfers:	2
Point geometry:	Specific geometry
Point angle:	140°
Helix angle:	30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	62	20	14	36	M2803-0300AU	30143065
3,50	6	62	20	14	36	M2803-0350AU	30143086
4,00	6	66	24	17	36	M2803-0400AU	30143092
4,50	6	66	24	17	36	M2803-0450AU	30143101
5,00	6	66	28	20	36	M2803-0500AU	30143105
5,50	6	66	28	20	36	M2803-0550AU	30143114
6,00	6	66	28	20	36	M2803-0600AU	30073623
6,50	8	79	34	24	36	M2803-0650AU	30143130
7,00	8	79	34	24	36	M2803-0700AU	30143139
7,50	8	79	41	29	36	M2803-0750AU	30143150
8,00	8	79	41	29	36	M2803-0800AU	30120769
8,50	10	89	47	35	40	M2803-0850AU	30143167
9,00	10	89	47	35	40	M2803-0900AU	30143176
10,00	10	89	47	35	40	M2803-1000AU	30120790
11,00	12	102	55	40	45	M2803-1100AU	30143216
12,00	12	102	55	40	45	M2803-1200AU	30143237
13,00	14	107	60	43	45	M2803-1300AU	30080700
14,00	14	107	60	43	45	M2803-1400AU	30143244
15,00	16	115	65	45	48	M2803-1500AU	30061217
16,00	16	115	65	45	48	M2803-1600AU	30143254

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

Drill diameter:	3,00 – 12,00 mm
Bore tolerance:	≥ IT 9
Coating:	Uncoated
Number of cutting edges:	2
Number of guiding chamfers:	2
Point geometry:	Specific geometry
Point angle:	140°
Helix angle:	30°

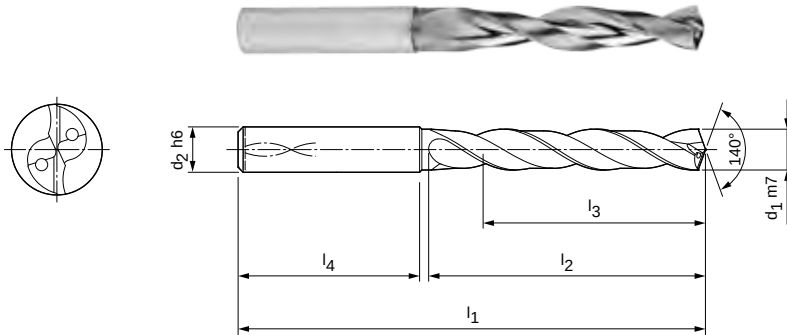
Dimensions in mm.
Cutting data recommendations from page 272.
Special designs and other coatings on request.

MEGA-Drill-Alu

5xD, internal cooling
M2805

Design:

Drill diameter: 2,80 – 19,05 mm
Bore tolerance: $\geq IT 9$
Coating: Uncoated
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions							Specification	Order No.
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
*2,80		6	66	28	23	36	M2805-0280AU	30378665
3,00		6	66	28	23	36	M2805-0300AU	30143279
3,10		6	66	28	23	36	M2805-0310AU	30143281
3,18	1/8	6	66	28	23	36	M2805-0318AU	30181472
3,20		6	66	28	23	36	M2805-0320AU	30143283
3,30		6	66	28	23	36	M2805-0330AU	30095975
3,40		6	66	28	23	36	M2805-0340AU	30061235
3,50		6	66	28	23	36	M2805-0350AU	30143286
3,57	9/64	6	66	28	23	36	M2805-0357AU	30181474
3,60		6	66	28	23	36	M2805-0360AU	30143287
*3,70		6	66	28	23	36	M2805-0370AU	30143289
3,80		6	74	36	29	36	M2805-0380AU	30143290
3,90		6	74	36	29	36	M2805-0390AU	30143292
3,97	5/32	6	74	36	29	36	M2805-0397AU	30181476
4,00		6	74	36	29	36	M2805-0400AU	30143294
4,10		6	74	36	29	36	M2805-0410AU	30143296
4,20		6	74	36	29	36	M2805-0420AU	30143298
4,30		6	74	36	29	36	M2805-0430AU	30143300
4,37	11/64	6	74	36	29	36	M2805-0437AU	30181478
4,40		6	74	36	29	36	M2805-0440AU	30143301
4,50		6	74	36	29	36	M2805-0450AU	30061240
4,60		6	74	36	29	36	M2805-0460AU	30143304
*4,65		6	74	36	29	36	M2805-0465AU	30300238
4,70		6	74	36	29	36	M2805-0470AU	30143305
4,76	3/16	6	82	44	35	36	M2805-0476AU	30181480
4,80		6	82	44	35	36	M2805-0480AU	30143307
4,90		6	82	44	35	36	M2805-0490AU	30061244
5,00		6	82	44	35	36	M2805-0500AU	30075688
5,10		6	82	44	35	36	M2805-0510AU	30061247
5,16	13/64	6	82	44	35	36	M2805-0516AU	30181481
5,20		6	82	44	35	36	M2805-0520AU	30143308
5,30		6	82	44	35	36	M2805-0530AU	30143311
5,40		6	82	44	35	36	M2805-0540AU	30143314
5,50		6	82	44	35	36	M2805-0550AU	30143316
*5,55		6	82	44	35	36	M2805-0555AU	30482816
5,56	7/32	6	82	44	35	36	M2805-0556AU	30181482

MEGA-Drill-Alu | M2805, 5xD, internal cooling

Dimensions							Specification	Order No.
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
5,60		6	82	44	35	36	M2805-0560AU	30143317
5,70		6	82	44	35	36	M2805-0570AU	30061253
5,80		6	82	44	35	36	M2805-0580AU	30143321
5,90		6	82	44	35	36	M2805-0590AU	30143323
5,95	15/64	6	82	44	35	36	M2805-0595AU	30181483
6,00		6	82	44	35	36	M2805-0600AU	30143324
6,10		8	91	53	43	36	M2805-0610AU	30143325
6,20		8	91	53	43	36	M2805-0620AU	30143326
6,30		8	91	53	43	36	M2805-0630AU	30061260
6,35	1/4	8	91	53	43	36	M2805-0635AU	30181485
6,40		8	91	53	43	36	M2805-0640AU	30143329
6,50		8	91	53	43	36	M2805-0650AU	30143330
6,60		8	91	53	43	36	M2805-0660AU	30143331
6,70		8	91	53	43	36	M2805-0670AU	30061263
6,75	17/64	8	91	53	43	36	M2805-0675AU	30181488
6,80		8	91	53	43	36	M2805-0680AU	30143333
6,90		8	91	53	43	36	M2805-0690AU	30143334
7,00		8	91	53	43	36	M2805-0700AU	30073382
7,10		8	91	53	43	36	M2805-0710AU	30143337
7,14	9/32	8	91	53	43	36	M2805-0714AU	30181489
7,20		8	91	53	43	36	M2805-0720AU	30143339
7,30		8	91	53	43	36	M2805-0730AU	30143342
7,40		8	91	53	43	36	M2805-0740AU	30143343
*7,45		8	91	53	43	36	M2805-0745AU	30378667
7,50		8	91	53	43	36	M2805-0750AU	30143345
7,54	19/64	8	91	53	43	36	M2805-0754AU	30181490
7,60		8	91	53	43	36	M2805-0760AU	30143347
7,70		8	91	53	43	36	M2805-0770AU	30143350
7,80		8	91	53	43	36	M2805-0780AU	30143351
7,90		8	91	53	43	36	M2805-0790AU	30143354
7,94	5/16	8	91	53	43	36	M2805-0794AU	30181491
8,00		8	91	53	43	36	M2805-0800AU	30143355
8,10		10	103	61	49	40	M2805-0810AU	30143357
8,20		10	103	61	49	40	M2805-0820AU	30143359
8,30		10	103	61	49	40	M2805-0830AU	30143361
8,33	21/64	10	103	61	49	40	M2805-0833AU	30181492
8,40		10	103	61	49	40	M2805-0840AU	30143363
8,50		10	103	61	49	40	M2805-0850AU	30143364
8,60		10	103	61	49	40	M2805-0860AU	30143366
8,70		10	103	61	49	40	M2805-0870AU	30061276
8,73	11/32	10	103	61	49	40	M2805-0873AU	30181494
8,80		10	103	61	49	40	M2805-0880AU	30143370
8,90		10	103	61	49	40	M2805-0890AU	30143372
9,00		10	103	61	49	40	M2805-0900AU	30061280
9,10		10	103	61	49	40	M2805-0910AU	30143373
9,13	23/64	10	103	61	49	40	M2805-0913AU	30181495
9,20		10	103	61	49	40	M2805-0920AU	30143376
*9,30		10	103	61	49	40	M2805-0930AU	30061284
9,40		10	103	61	49	40	M2805-0940AU	30143378
9,50		10	103	61	49	40	M2805-0950AU	30097044
9,53	3/8	10	103	61	49	40	M2805-0953AU	30181497
9,60		10	103	61	49	40	M2805-0960AU	30143381
9,70		10	103	61	49	40	M2805-0970AU	30143383
9,80		10	103	61	49	40	M2805-0980AU	30143384
9,90		10	103	61	49	40	M2805-0990AU	30143387
9,92	25/64	10	103	61	49	40	M2805-0992AU	30181498
10,00		10	103	61	49	40	M2805-1000AU	30143388

Continued on next page.

MEGA-Drill-Alu | M2805, 5xD, internal cooling

Dimensions							Specification	Order No.
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
10,10		12	118	71	56	45	M2805-1010AU	30061292
10,20		12	118	71	56	45	M2805-1020AU	30143391
10,30		12	118	71	56	45	M2805-1030AU	30143393
10,32	13/32	12	118	71	56	45	M2805-1032AU	30181500
10,40		12	118	71	56	45	M2805-1040AU	30143395
10,50		12	118	71	56	45	M2805-1050AU	30143396
10,60		12	118	71	56	45	M2805-1060AU	30143398
10,70		12	118	71	56	45	M2805-1070AU	30143401
10,72	27/64	12	118	71	56	45	M2805-1072AU	30181501
10,80		12	118	71	56	45	M2805-1080AU	30143403
10,90		12	118	71	56	45	M2805-1090AU	30143405
11,00		12	118	71	56	45	M2805-1100AU	30061301
11,11	7/16	12	118	71	56	45	M2805-1111AU	30181502
*11,20		12	118	71	56	45	M2805-1120AU	30143409
11,50		12	118	71	56	45	M2805-1150AU	30143413
12,00		12	118	71	56	45	M2805-1200AU	30143424
12,50		14	124	77	60	45	M2805-1250AU	30143425
13,00		14	124	77	60	45	M2805-1300AU	30143428
13,50		14	124	77	60	45	M2805-1350AU	30061313
14,00		14	124	77	60	45	M2805-1400AU	30143431
14,50		16	133	83	63	48	M2805-1450AU	30143433
14,68	37/64	16	133	83	63	48	M2805-1468AU	30181508
14,80		16	133	83	63	48	M2805-1480AU	30143435
15,00		16	133	83	63	48	M2805-1500AU	30143436
15,08	19/32	16	133	83	63	48	M2805-1508AU	30181509
15,50		16	133	83	63	48	M2805-1550AU	30143437
15,80		16	133	83	63	48	M2805-1580AU	30143439
15,88	5/8	16	133	83	63	48	M2805-1588AU	30181510
16,00		16	133	83	63	48	M2805-1600AU	30143440
16,67	21/32	18	143	93	71	48	M2805-1667AU	30181511
17,46	11/16	18	143	93	71	48	M2805-1746AU	30181512
17,86	45/64	18	143	93	71	48	M2805-1786AU	30181513
18,26	23/32	20	153	101	77	50	M2805-1826AU	30181514
19,05	3/4	20	153	101	77	50	M2805-1905AU	30181515

Dimensions in mm.

* Especially suitable for the prefabrication of core holes of thread forming taps.

Cutting data recommendations from page 272.

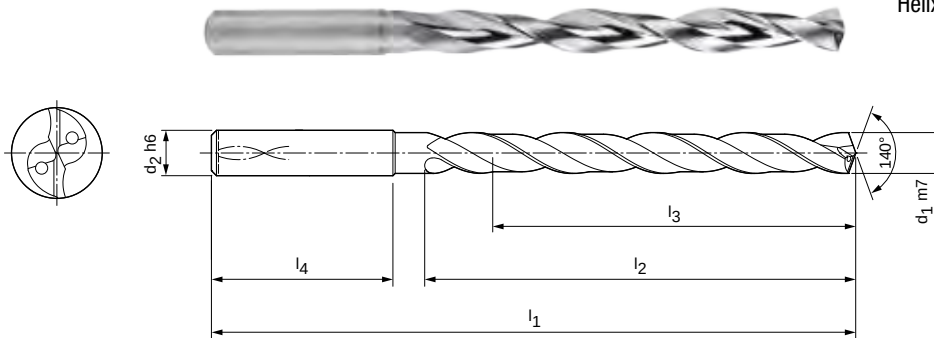
Special designs and other coatings on request.

MEGA-Drill-Alu

8xD, internal cooling
M2808

Design:

Drill diameter: 3,00 – 16,00 mm
Bore tolerance: $\geq IT 9$
Coating: Uncoated
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	72	34	29	36	M2808-0300AU	30076900
3,10	6	72	34	29	36	M2808-0310AU	30143468
3,20	6	72	34	29	36	M2808-0320AU	30061333
3,30	6	72	34	29	36	M2808-0330AU	30143469
3,40	6	72	34	29	36	M2808-0340AU	30143470
3,50	6	72	34	29	36	M2808-0350AU	30143472
3,60	6	72	34	29	36	M2808-0360AU	30061336
3,70	6	72	34	29	36	M2808-0370AU	30143474
3,80	6	81	43	36	36	M2808-0380AU	30143476
3,90	6	81	43	36	36	M2808-0390AU	30143478
4,00	6	81	43	36	36	M2808-0400AU	30143480
4,10	6	81	43	36	36	M2808-0410AU	30061337
4,20	6	81	43	36	36	M2808-0420AU	30061338
4,30	6	81	43	36	36	M2808-0430AU	30061340
4,40	6	81	43	36	36	M2808-0440AU	30061341
4,50	6	81	43	36	36	M2808-0450AU	30061342
4,60	6	81	43	36	36	M2808-0460AU	30143490
4,70	6	81	43	36	36	M2808-0470AU	30061343
4,80	6	95	57	48	36	M2808-0480AU	30143493
4,90	6	95	57	48	36	M2808-0490AU	30061344
5,00	6	95	57	48	36	M2808-0500AU	30096652
5,10	6	95	57	48	36	M2808-0510AU	30061345
5,20	6	95	57	48	36	M2808-0520AU	30061346
5,30	6	95	57	48	36	M2808-0530AU	30061347
5,40	6	95	57	48	36	M2808-0540AU	30143501
5,50	6	95	57	48	36	M2808-0550AU	30063592
5,60	6	95	57	48	36	M2808-0560AU	30061349
5,70	6	95	57	48	36	M2808-0570AU	30061350
5,80	6	95	57	48	36	M2808-0580AU	30061351
5,90	6	95	57	48	36	M2808-0590AU	30061352
6,00	6	95	57	48	36	M2808-0600AU	30061354
6,10	8	114	76	64	36	M2808-0610AU	30143510
6,20	8	114	76	64	36	M2808-0620AU	30061356
6,30	8	114	76	64	36	M2808-0630AU	30061357
6,40	8	114	76	64	36	M2808-0640AU	30061358
6,50	8	114	76	64	36	M2808-0650AU	30143516

MEGA-Drill-Alu | M2808, 8xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,60	8	114	76	64	36	M2808-0660AU	30061359
6,70	8	114	76	64	36	M2808-0670AU	30061360
6,80	8	114	76	64	36	M2808-0680AU	30143520
6,90	8	114	76	64	36	M2808-0690AU	30061361
7,00	8	114	76	64	36	M2808-0700AU	30143522
7,10	8	114	76	64	36	M2808-0710AU	30143523
7,20	8	114	76	64	36	M2808-0720AU	30061364
7,30	8	114	76	64	36	M2808-0730AU	30061365
7,40	8	114	76	64	36	M2808-0740AU	30061366
7,50	8	114	76	64	36	M2808-0750AU	30061367
7,60	8	114	76	64	36	M2808-0760AU	30061368
7,70	8	114	76	64	36	M2808-0770AU	30061369
7,80	8	114	76	64	36	M2808-0780AU	30143534
7,90	8	114	76	64	36	M2808-0790AU	30061370
8,00	8	114	76	64	36	M2808-0800AU	30143537
8,10	10	142	95	80	40	M2808-0810AU	30143539
8,20	10	142	95	80	40	M2808-0820AU	30061372
8,30	10	142	95	80	40	M2808-0830AU	30143542
8,40	10	142	95	80	40	M2808-0840AU	30061374
8,50	10	142	95	80	40	M2808-0850AU	30143546
8,60	10	142	95	80	40	M2808-0860AU	30061375
8,70	10	142	95	80	40	M2808-0870AU	30061376
8,80	10	142	95	80	40	M2808-0880AU	30143549
9,00	10	142	95	80	40	M2808-0900AU	30061379
9,10	10	142	95	80	40	M2808-0910AU	30143553
9,20	10	142	95	80	40	M2808-0920AU	30143556
9,30	10	142	95	80	40	M2808-0930AU	30061380
9,40	10	142	95	80	40	M2808-0940AU	30061381
9,50	10	142	95	80	40	M2808-0950AU	30143561
9,60	10	142	95	80	40	M2808-0960AU	30061383
9,70	10	142	95	80	40	M2808-0970AU	30061384
9,90	10	142	95	80	40	M2808-0990AU	30061387
10,00	10	142	95	80	40	M2808-1000AU	30061390
10,10	12	162	114	96	45	M2808-1010AU	30061391
10,20	12	162	114	96	45	M2808-1020AU	30061393
10,30	12	162	114	96	45	M2808-1030AU	30061394
10,40	12	162	114	96	45	M2808-1040AU	30061395
10,50	12	162	114	96	45	M2808-1050AU	30061396
10,60	12	162	114	96	45	M2808-1060AU	30143573
10,70	12	162	114	96	45	M2808-1070AU	30061397
10,80	12	162	114	96	45	M2808-1080AU	30061398
10,90	12	162	114	96	45	M2808-1090AU	30061399
11,00	12	162	114	96	45	M2808-1100AU	30061400
11,10	12	162	114	96	45	M2808-1110AU	30143582
11,20	12	162	114	96	45	M2808-1120AU	30143584
11,30	12	162	114	96	45	M2808-1130AU	30143587
11,40	12	162	114	96	45	M2808-1140AU	30143590
11,50	12	162	114	96	45	M2808-1150AU	30143592
11,60	12	162	114	96	45	M2808-1160AU	30143595
11,70	12	162	114	96	45	M2808-1170AU	30143597
11,80	12	162	114	96	45	M2808-1180AU	30143599
11,90	12	162	114	96	45	M2808-1190AU	30143602
12,00	12	162	114	96	45	M2808-1200AU	30061401
12,50	14	178	133	112	45	M2808-1250AU	30143604
13,00	14	178	133	112	45	M2808-1300AU	30061403
13,50	14	178	133	112	45	M2808-1350AU	30143610
14,00	14	178	133	112	45	M2808-1400AU	30143614

MEGA-Drill-Alu | M2808, 8xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
14,50	16	203	152	128	48	M2808-1450AU	30143616
15,00	16	203	152	128	48	M2808-1500AU	30061405
15,50	16	203	152	128	48	M2808-1550AU	30143621
16,00	16	203	152	128	48	M2808-1600AU	30061408

Dimensions in mm.

Cutting data recommendations from page 272.

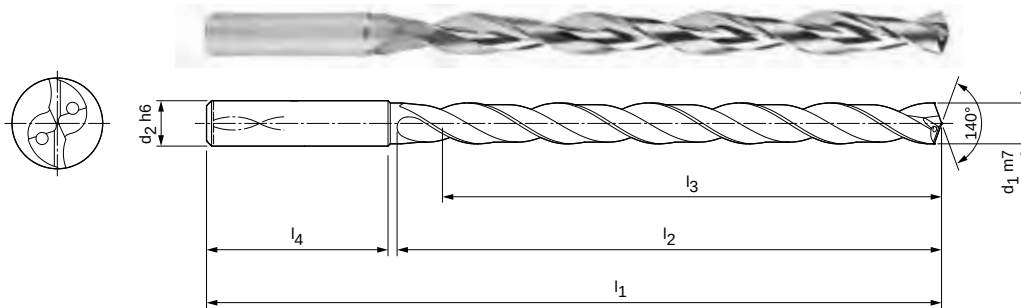
Special designs and other coatings on request.

MEGA-Drill-Alu

12xD, internal cooling
M2812

Design:

Drill diameter: 3,00 – 19,05 mm
Bore tolerance: $\geq IT 9$
Coating: Uncoated
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions							Specification	Order No.
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00		6	92	54	48	36	M2812-0300AU	30076901
3,10		6	92	54	48	36	M2812-0310AU	30143661
3,18	1/8	6	92	54	48	36	M2812-0318AU	30181559
3,20		6	92	54	48	36	M2812-0320AU	30143663
3,30		6	92	54	48	36	M2812-0330AU	30143666
3,40		6	92	54	48	36	M2812-0340AU	30143668
3,50		6	92	54	48	36	M2812-0350AU	30143670
3,57	9/64	6	92	54	48	36	M2812-0357AU	30181561
3,60		6	92	54	48	36	M2812-0360AU	30143672
3,70		6	92	54	48	36	M2812-0370AU	30061411
3,80		6	102	64	58	36	M2812-0380AU	30143675
3,90		6	102	64	58	36	M2812-0390AU	30061412
3,97	5/32	6	102	64	58	36	M2812-0397AU	30181563
4,00		6	102	64	58	36	M2812-0400AU	30061413
4,10		6	102	64	58	36	M2812-0410AU	30143678
4,20		6	102	64	58	36	M2812-0420AU	30143679
4,30		6	102	64	58	36	M2812-0430AU	30143681
4,37	11/64	6	102	64	58	36	M2812-0437AU	30181565
4,40		6	102	64	58	36	M2812-0440AU	30061415
4,50		6	102	64	58	36	M2812-0450AU	30061418
4,60		6	102	64	58	36	M2812-0460AU	30143686
4,70		6	102	64	58	36	M2812-0470AU	30063638
4,76	3/16	6	116	78	70	36	M2812-0476AU	30181567
4,80		6	116	78	70	36	M2812-0480AU	30143689
4,90		6	116	78	70	36	M2812-0490AU	30063639
5,00		6	116	78	70	36	M2812-0500AU	30061422
5,10		6	116	78	70	36	M2812-0510AU	30063641
5,16	13/64	6	116	78	70	36	M2812-0516AU	30181568
5,20		6	116	78	70	36	M2812-0520AU	30063642
5,30		6	116	78	70	36	M2812-0530AU	30063643
5,40		6	116	78	70	36	M2812-0540AU	30063644
5,50		6	116	78	70	36	M2812-0550AU	30143698
5,56	7/32	6	116	78	70	36	M2812-0556AU	30181569
5,60		6	116	78	70	36	M2812-0560AU	30063645
5,70		6	116	78	70	36	M2812-0570AU	30063646
5,80		6	116	78	70	36	M2812-0580AU	30143702

MEGA-Drill-Alu | M2812, 12xD, internal cooling

Dimensions							Specification	Order No.
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
5,90		6	116	78	70	36	M2812-0590AU	30063647
5,95	15/64	6	116	78	70	36	M2812-0595AU	30181570
6,00		6	116	78	70	36	M2812-0600AU	30063648
6,10		8	146	108	94	36	M2812-0610AU	30143706
6,20		8	146	108	94	36	M2812-0620AU	30063649
6,30		8	146	108	94	36	M2812-0630AU	30063650
6,35	1/4	8	146	108	94	36	M2812-0635AU	30181572
6,40		8	146	108	94	36	M2812-0640AU	30057414
6,50		8	146	108	94	36	M2812-0650AU	30143713
6,60		8	146	108	94	36	M2812-0660AU	30143715
6,70		8	146	108	94	36	M2812-0670AU	30063652
6,75	17/64	8	146	108	94	36	M2812-0675AU	30181575
6,90		8	146	108	94	36	M2812-0690AU	30063654
7,00		8	146	108	94	36	M2812-0700AU	30143720
7,10		8	146	108	94	36	M2812-0710AU	30143721
7,14	9/32	8	146	108	94	36	M2812-0714AU	30181576
7,20		8	146	108	94	36	M2812-0720AU	30143724
7,30		8	146	108	94	36	M2812-0730AU	30063656
7,40		8	146	108	94	36	M2812-0740AU	30063657
7,50		8	146	108	94	36	M2812-0750AU	30063658
7,54	19/64	8	146	108	94	36	M2812-0754AU	30181577
7,60		8	146	108	94	36	M2812-0760AU	30063659
7,70		8	146	108	94	36	M2812-0770AU	30063660
7,80		8	146	108	94	36	M2812-0780AU	30143732
7,90		8	146	108	94	36	M2812-0790AU	30063661
7,94	5/16	8	146	108	94	36	M2812-0794AU	30181578
8,00		8	146	108	94	36	M2812-0800AU	30143736
8,10		10	162	120	110	40	M2812-0810AU	30143737
8,20		10	162	120	110	40	M2812-0820AU	30063662
8,30		10	162	120	110	40	M2812-0830AU	30063663
8,33	21/64	10	162	120	110	40	M2812-0833AU	30181579
8,40		10	162	120	110	40	M2812-0840AU	30063664
8,50		10	162	120	110	40	M2812-0850AU	30063665
8,70		10	162	120	110	40	M2812-0870AU	30143745
8,73	11/32	10	162	120	110	40	M2812-0873AU	30181581
8,80		10	162	120	110	40	M2812-0880AU	30063667
8,90		10	162	120	110	40	M2812-0890AU	30063668
9,00		10	162	120	110	40	M2812-0900AU	30074972
9,10		10	162	120	110	40	M2812-0910AU	30063669
9,13	23/64	10	162	120	110	40	M2812-0913AU	30181582
9,20		10	162	120	110	40	M2812-0920AU	30063670
9,30		10	162	120	110	40	M2812-0930AU	30088466
9,40		10	162	120	110	40	M2812-0940AU	30063671
9,50		10	162	120	110	40	M2812-0950AU	30063672
9,53	3/8	10	162	120	110	40	M2812-0953AU	30181584
9,60		10	162	120	110	40	M2812-0960AU	30063673
9,70		10	162	120	110	40	M2812-0970AU	30143760
9,80		10	162	120	110	40	M2812-0980AU	30143762
9,90		10	162	120	110	40	M2812-0990AU	30063674
9,92	25/64	10	162	120	110	40	M2812-0992AU	30181585
10,00		10	162	120	110	40	M2812-1000AU	30092384
10,10		12	204	156	142	45	M2812-1010AU	30061473
10,20		12	204	156	142	45	M2812-1020AU	30061474
10,30		12	204	156	142	45	M2812-1030AU	30143766
10,32	13/32	12	204	156	142	45	M2812-1032AU	30181587
10,40		12	204	156	142	45	M2812-1040AU	30143768
10,50		12	204	156	142	45	M2812-1050AU	30143770

Continued on next page.

MEGA-Drill-Alu | M2812, 12xD, internal cooling

Dimensions							Specification	Order No.
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
10,60		12	204	156	142	45	M2812-1060AU	30143771
10,70		12	204	156	142	45	M2812-1070AU	30143774
10,72	27/64	12	204	156	142	45	M2812-1072AU	30181588
10,80		12	204	156	142	45	M2812-1080AU	30143776
10,90		12	204	156	142	45	M2812-1090AU	30143779
11,00		12	204	156	142	45	M2812-1100AU	30143781
11,10		12	204	156	142	45	M2812-1110AU	30143783
11,11	7/16	12	204	156	142	45	M2812-1111AU	30181589
11,20		12	204	156	142	45	M2812-1120AU	30143785
11,30		12	204	156	142	45	M2812-1130AU	30143788
11,40		12	204	156	142	45	M2812-1140AU	30143791
11,50		12	204	156	142	45	M2812-1150AU	30143793
11,60		12	204	156	142	45	M2812-1160AU	30143795
11,70		12	204	156	142	45	M2812-1170AU	30143798
11,80		12	204	156	142	45	M2812-1180AU	30143801
11,90		12	204	156	142	45	M2812-1190AU	30143803
12,00		12	204	156	142	45	M2812-1200AU	30061483
14,68	37/64	16	260	208	192	48	M2812-1468AU	30181594
15,08	19/32	16	260	208	192	48	M2812-1508AU	30181595
15,88	5/8	16	260	208	192	48	M2812-1588AU	30181596
16,67	21/32	18	285	234	216	48	M2812-1667AU	30181597
17,46	11/16	18	285	234	216	48	M2812-1746AU	30181598
17,86	45/64	18	285	234	216	48	M2812-1786AU	30181599
18,26	23/32	20	310	258	240	50	M2812-1826AU	30181600
19,05	3/4	20	310	258	240	50	M2812-1905AU	30181601

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

MEGA-Drill-Inco

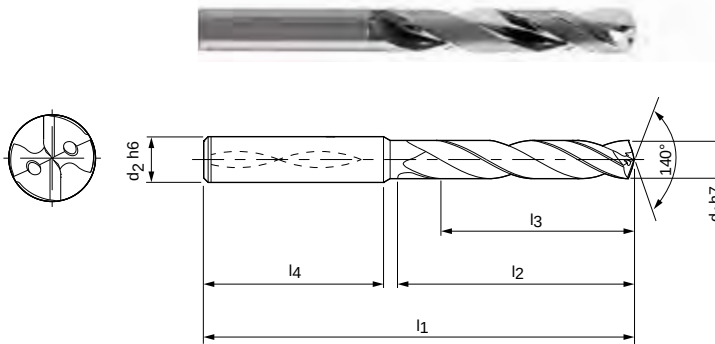
5xD, internal cooling
M9305

Design:

Drill diameter: 3,00 – 12,00 mm
Bore tolerance: $\geq IT 9$
Coating: Uncoated
Number of cutting edges: 2
Point angle: 140°
Number of guiding chamfers: 4
Helix angle: 30°

Application:

Nickel based alloys



Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	66	28	23	36	M9305-0300AU	30388263
4,00	6	74	36	29	36	M9305-0400AU	30388265
5,00	6	82	44	35	36	M9305-0500AU	30388266
6,00	6	82	44	35	36	M9305-0600AU	30388267
7,00	8	91	53	43	36	M9305-0700AU	30388269
8,00	8	91	53	43	40	M9305-0800AU	30388270
9,00	10	103	61	49	40	M9305-0900AU	30388272
10,00	10	103	61	49	40	M9305-1000AU	30388273
11,00	12	118	71	56	45	M9305-1100AU	30388276
12,00	12	118	71	56	45	M9305-1200AU	30388277

Dimensions in mm.

Cutting data recommendations from page 272.

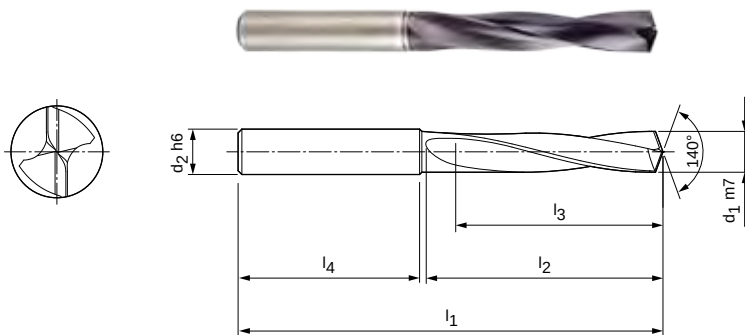
Special designs and other coatings on request.

MEGA-Drill-Hardened

4xD, external cooling
M1600

Design:

Drill diameter: 2,55 – 16,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry, surfaces
Point angle: 140°
Helix angle: 15°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
2,55	3	44	12	6	30	M1600-0255AE	30051304
3,00	3	46	14	6	30	M1600-0300AE	30051307
3,10	4	48	14	6	30	M1600-0310AE	30051310
3,20	4	48	14	6	30	M1600-0320AE	30051313
3,30	4	48	16	8	30	M1600-0330AE	30051316
3,40	4	50	18	10	30	M1600-0340AE	30051319
3,50	4	50	18	10	30	M1600-0350AE	30051322
3,60	4	50	18	10	30	M1600-0360AE	30051325
3,70	4	50	18	10	30	M1600-0370AE	30051328
3,80	4	52	20	12	30	M1600-0380AE	30051331
3,90	4	52	20	12	30	M1600-0390AE	30051334
4,00	4	52	20	12	30	M1600-0400AE	30051337
4,10	6	65	23	15	40	M1600-0410AE	30051340
4,20	6	65	23	15	40	M1600-0420AE	30051343
4,30	6	68	26	15	40	M1600-0430AE	30051346
4,40	6	68	26	15	40	M1600-0440AE	30051349
4,50	6	68	26	15	40	M1600-0450AE	30051352
4,60	6	68	26	15	40	M1600-0460AE	30051355
4,70	6	68	26	15	40	M1600-0470AE	30051358
4,80	6	72	30	18	40	M1600-0480AE	30051361
4,90	6	72	30	18	40	M1600-0490AE	30051364
5,00	6	72	30	18	40	M1600-0500AE	30051367
5,10	6	72	30	18	40	M1600-0510AE	30051370
5,20	6	72	30	18	40	M1600-0520AE	30051373
5,30	6	72	30	18	40	M1600-0530AE	30051376
5,40	6	75	33	18	40	M1600-0540AE	30051379
5,50	6	75	33	18	40	M1600-0550AE	30051382
5,60	6	75	33	18	40	M1600-0560AE	30051385
5,70	6	75	33	18	40	M1600-0570AE	30051388
5,80	6	75	33	18	40	M1600-0580AE	30051391
5,90	6	75	33	18	40	M1600-0590AE	30051394
6,00	6	75	33	18	40	M1600-0600AE	30051397
6,10	8	80	38	25	40	M1600-0610AE	30051400
6,20	8	80	38	25	40	M1600-0620AE	30051403
6,30	8	80	38	25	40	M1600-0630AE	30051406
6,40	8	80	38	25	40	M1600-0640AE	30051409

MEGA-Drill-Hardened | M1600, 4xD, external cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,50	8	80	38	25	40	M1600-0650AE	30051412
6,60	8	80	38	25	40	M1600-0660AE	30051415
6,70	8	80	38	25	40	M1600-0670AE	30051418
6,80	8	85	43	30	40	M1600-0680AE	30051421
6,90	8	85	43	30	40	M1600-0690AE	30051424
7,00	8	85	43	30	40	M1600-0700AE	30051427
7,10	8	85	43	30	40	M1600-0710AE	30051430
7,20	8	85	43	30	40	M1600-0720AE	30051433
7,30	8	85	43	30	40	M1600-0730AE	30051436
7,40	8	85	43	30	40	M1600-0740AE	30051439
7,50	8	85	43	30	40	M1600-0750AE	30051442
7,60	8	98	48	35	48	M1600-0760AE	30051445
7,70	8	98	48	35	48	M1600-0770AE	30051448
7,80	8	98	48	35	48	M1600-0780AE	30051451
7,90	8	98	48	35	48	M1600-0790AE	30051454
8,00	8	98	48	35	48	M1600-0800AE	30051457
8,10	10	98	48	35	48	M1600-0810AE	30051460
8,20	10	98	48	35	48	M1600-0820AE	30051463
8,30	10	98	48	35	48	M1600-0830AE	30051466
8,40	10	98	48	35	48	M1600-0840AE	30051469
8,50	10	98	48	35	48	M1600-0850AE	30051472
8,60	10	105	55	42	48	M1600-0860AE	30051475
8,70	10	105	55	42	48	M1600-0870AE	30051479
8,80	10	105	55	42	48	M1600-0880AE	30051483
8,90	10	105	55	42	48	M1600-0890AE	30051486
9,00	10	105	55	42	48	M1600-0900AE	30051490
9,10	10	105	55	42	48	M1600-0910AE	30051494
9,20	10	105	55	42	48	M1600-0920AE	30051498
9,30	10	105	55	42	48	M1600-0930AE	30051502
9,40	10	105	55	42	48	M1600-0940AE	30051505
9,50	10	105	55	42	48	M1600-0950AE	30051509
9,60	10	111	61	45	48	M1600-0960AE	30051513
9,70	10	111	61	45	48	M1600-0970AE	30051517
9,80	10	111	61	45	48	M1600-0980AE	30051521
9,90	10	111	61	45	48	M1600-0990AE	30051525
10,00	10	111	61	45	48	M1600-1000AE	30051528
10,10	12	111	61	45	48	M1600-1010AE	30051532
10,20	12	111	61	45	48	M1600-1020AE	30051536
10,30	12	111	61	45	48	M1600-1030AE	30051540
10,40	12	111	61	45	48	M1600-1040AE	30051543
10,50	12	111	61	45	48	M1600-1050AE	30051547
10,60	12	111	61	45	48	M1600-1060AE	30051551
10,70	12	119	69	50	48	M1600-1070AE	30051554
10,80	12	119	69	50	48	M1600-1080AE	30051558
10,90	12	119	69	50	48	M1600-1090AE	30051562
11,00	12	119	69	50	48	M1600-1100AE	30051566
11,10	12	119	69	50	48	M1600-1110AE	30051570
11,20	12	119	69	50	48	M1600-1120AE	30051573
11,30	12	119	69	50	48	M1600-1130AE	30051576
11,40	12	119	69	50	48	M1600-1140AE	30051580
11,50	12	119	69	50	48	M1600-1150AE	30051584
11,60	12	119	69	50	48	M1600-1160AE	30051587
11,70	12	119	69	50	48	M1600-1170AE	30051590
11,80	12	119	69	50	48	M1600-1180AE	30051594
11,90	12	119	69	50	48	M1600-1190AE	30051597
12,00	12	119	69	50	48	M1600-1200AE	30051601
12,50	14	125	75	55	50	M1600-1250AE	30051605

Continued on next page.

MEGA-Drill-Hardened I M1600, 4xD, external cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
13,00	14	125	75	55	50	M1600-1300AE	30051609
13,50	14	125	75	55	50	M1600-1350AE	30051613
14,00	14	125	75	55	50	M1600-1400AE	30051617
14,50	16	133	81	60	50	M1600-1450AE	30051621
15,00	16	133	81	60	50	M1600-1500AE	30051625
16,00	16	133	81	60	50	M1600-1600AE	30051633

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

MEGA-Drill-Composite-MD-Micro

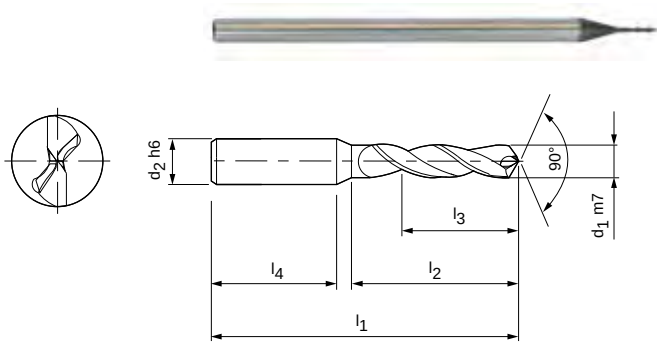
5xD, external cooling
M1985

Design:

Drill diameter: 0,50 – 2,90 mm
Bore tolerance: $\geq IT 9$
Coating: Diamond coating
Number of cutting edges: 2
Point angle: 90°
Number of guiding chamfers: 2
Helix angle: 35°

Application:

CFRP with multidirectional fibres



N	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	4.1	4.2	4.3	C	1.1	1.2	1.3	2.1	3.1	4.1	4.2	4.3	4.4	5.1	5.2



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
0,50	3	55	4,5	3	46	M1985-0050AQ	30467692
0,60	3	55	4,5	3	46	M1985-0060AQ	30467693
0,70	3	55	5,5	4	45	M1985-0070AQ	30467694
0,80	3	55	5,5	4	45	M1985-0080AQ	30467695
0,90	3	55	7	5	44	M1985-0090AQ	30467696
1,00	3	55	7	5	44	M1985-0100AQ	30467697
1,10	3	55	10	8	41	M1985-0110AQ	30467698
1,20	3	55	10	8	41	M1985-0120AQ	30467699
1,30	3	55	10	8	41	M1985-0130AQ	30467700
1,40	3	55	10	8	41	M1985-0140AQ	30467701
1,50	3	55	10	8	41	M1985-0150AQ	30467702
1,60	3	68	14	11	51	M1985-0160AQ	30467703
1,70	3	68	14	11	51	M1985-0170AQ	30467704
1,80	3	68	14	11	51	M1985-0180AQ	30467705
1,90	3	68	14	11	51	M1985-0190AQ	30467706
2,00	3	68	14	11	51	M1985-0200AQ	30467707
2,10	3	74	18	14	54	M1985-0210AQ	30467708
2,20	3	74	18	14	54	M1985-0220AQ	30467709
2,30	3	74	18	14	54	M1985-0230AQ	30467710
2,40	3	74	18	14	54	M1985-0240AQ	30467711
2,50	3	74	18	14	54	M1985-0250AQ	30467712
2,60	3	81	20	16	60	M1985-0260AQ	30467713
2,70	3	81	20	16	60	M1985-0270AQ	30467714
2,80	3	81	20	16	60	M1985-0280AQ	30467715
2,90	3	81	20	16	60	M1985-0290AQ	30467716

Dimensions in mm.
Cutting data recommendations from page 272.
Special designs and other coatings on request.

MEGA-Drill-Composite-MD

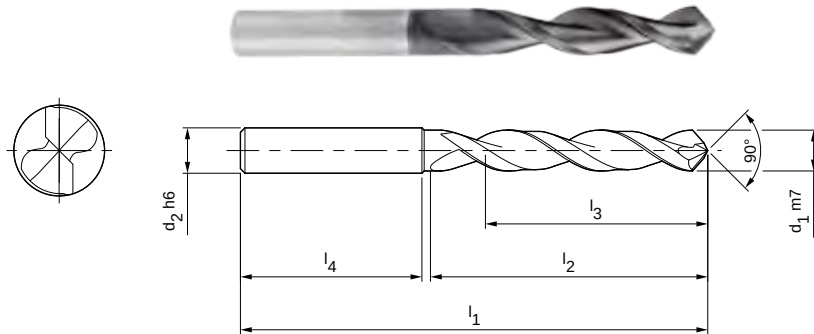
5xD, external cooling
M2925

Design:

Drill diameter: 2,50 – 12,00 mm
Bore tolerance: $\geq IT 9$
Coating: Diamond coating
Number of cutting edges: 2
Point angle: 90°
Number of guiding chamfers: 2
Helix angle: 35°

Application:

CFRP with multidirectional fibres



N	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	4.1	4.2	4.3	C	1.1	1.2	1.3	2.1	3.1	4.1	4.2	4.3	4.4	5.1	5.2



Dimensions							Specification	Order No.
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
2,50		6	66	24	19	36	M2925-0250AQ	30335268
2,60		6	66	24	19	36	M2925-0260AQ	30335269
2,70		6	66	24	19	36	M2925-0270AQ	30335270
2,80		6	66	24	19	36	M2925-0280AQ	30335272
2,90		6	66	24	19	36	M2925-0290AQ	30335273
3,00		6	66	28	23	36	M2925-0300AQ	30290565
3,10		6	66	28	23	36	M2925-0310AQ	30290566
3,175	1/8	6	66	28	23	36	M2925-03175AQ	30290567
3,20		6	66	28	23	36	M2925-0320AQ	30290568
3,30		6	66	28	23	36	M2925-0330AQ	30290569
3,40		6	66	28	23	36	M2925-0340AQ	30290570
3,50		6	66	28	23	36	M2925-0350AQ	30290571
3,60		6	66	28	23	36	M2925-0360AQ	30290572
3,70		6	66	28	23	36	M2925-0370AQ	30290573
3,80		6	66	28	23	36	M2925-0380AQ	30290574
3,90		6	66	28	23	36	M2925-0390AQ	30290575
4,00		6	74	36	29	36	M2925-0400AQ	30290576
4,10		6	74	36	29	36	M2925-0410AQ	30290577
4,20		6	74	36	29	36	M2925-0420AQ	30290578
4,30		6	74	36	29	36	M2925-0430AQ	30290579
4,40		6	74	36	29	36	M2925-0440AQ	30290580
4,50		6	74	36	29	36	M2925-0450AQ	30290581
4,60		6	74	36	29	36	M2925-0460AQ	30290582
4,70		6	74	36	29	36	M2925-0470AQ	30290583
4,763	3/16	6	74	36	29	36	M2925-04763AQ	30290584
4,80		6	74	36	29	36	M2925-0480AQ	30290585
4,90		6	74	36	29	36	M2925-0490AQ	30290586
5,00		6	82	44	35	36	M2925-0500AQ	30290587
5,10		6	82	44	35	36	M2925-0510AQ	30290588
5,20		6	82	44	35	36	M2925-0520AQ	30290589
5,30		6	82	44	35	36	M2925-0530AQ	30290590
5,40		6	82	44	35	36	M2925-0540AQ	30290591
5,50		6	82	44	35	36	M2925-0550AQ	30290592
5,60		6	82	44	35	36	M2925-0560AQ	30290593
5,70		6	82	44	35	36	M2925-0570AQ	30290594
5,80		6	82	44	35	36	M2925-0580AQ	30290595

MEGA-Drill-Composite-MD | M2925, 5xD, external cooling

Dimensions							Specification	Order No.
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
5,90		6	82	44	35	36	M2925-0590AQ	30290596
6,00		6	82	44	35	36	M2925-0600AQ	30290597
6,10		8	91	53	43	36	M2925-0610AQ	30290598
6,20		8	91	53	43	36	M2925-0620AQ	30290599
6,30		8	91	53	43	36	M2925-0630AQ	30290600
6,35	1/4	8	91	53	43	36	M2925-0635AQ	30290601
6,40		8	91	53	43	36	M2925-0640AQ	30290602
6,50		8	91	53	43	36	M2925-0650AQ	30290603
6,60		8	91	53	43	36	M2925-0660AQ	30290604
6,70		8	91	53	43	36	M2925-0670AQ	30290605
6,80		8	91	53	43	36	M2925-0680AQ	30290606
6,90		8	91	53	43	36	M2925-0690AQ	30290607
7,00		8	91	53	43	36	M2925-0700AQ	30290608
7,10		8	91	53	43	36	M2925-0710AQ	30290609
7,20		8	91	53	43	36	M2925-0720AQ	30290610
7,30		8	91	53	43	36	M2925-0730AQ	30290611
7,40		8	91	53	43	36	M2925-0740AQ	30290612
7,50		8	91	53	43	36	M2925-0750AQ	30290613
7,60		8	91	53	43	36	M2925-0760AQ	30290614
7,70		8	91	53	43	36	M2925-0770AQ	30290615
7,80		8	91	53	43	36	M2925-0780AQ	30290616
7,90		8	91	53	43	36	M2925-0790AQ	30290617
7,938	5/16	8	91	53	43	36	M2925-07938AQ	30290618
8,00		8	91	53	43	40	M2925-0800AQ	30290619
8,10		10	103	61	49	40	M2925-0810AQ	30290620
8,20		10	103	61	49	40	M2925-0820AQ	30290621
8,30		10	103	61	49	40	M2925-0830AQ	30290622
8,40		10	103	61	49	40	M2925-0840AQ	30290623
8,50		10	103	61	49	40	M2925-0850AQ	30290624
8,60		10	103	61	49	40	M2925-0860AQ	30290625
8,70		10	103	61	49	40	M2925-0870AQ	30290626
8,80		10	103	61	49	40	M2925-0880AQ	30290627
8,90		10	103	61	49	40	M2925-0890AQ	30290628
9,00		10	103	61	49	40	M2925-0900AQ	30290629
9,10		10	103	61	49	40	M2925-0910AQ	30290630
9,20		10	103	61	49	40	M2925-0920AQ	30290631
9,30		10	103	61	49	40	M2925-0930AQ	30290632
9,40		10	103	61	49	40	M2925-0940AQ	30290633
9,50		10	103	61	49	40	M2925-0950AQ	30290634
9,525	3/8	10	103	61	49	40	M2925-09525AQ	30290635
9,60		10	103	61	49	40	M2925-0960AQ	30290636
9,70		10	103	61	49	40	M2925-0970AQ	30290637
9,80		10	103	61	49	40	M2925-0980AQ	30290638
9,90		10	103	61	49	40	M2925-0990AQ	30290639
10,00		10	103	61	49	40	M2925-1000AQ	30290640
10,10		12	118	71	56	45	M2925-1010AQ	30290641
10,20		12	118	71	56	45	M2925-1020AQ	30290642
10,30		12	118	71	56	45	M2925-1030AQ	30290643
10,40		12	118	71	56	45	M2925-1040AQ	30290644
10,50		12	118	71	56	45	M2925-1050AQ	30290645
10,60		12	118	71	56	45	M2925-1060AQ	30290646
10,70		12	118	71	56	45	M2925-1070AQ	30290647
10,80		12	118	71	56	45	M2925-1080AQ	30290648
10,90		12	118	71	56	45	M2925-1090AQ	30290649
11,00		12	118	71	56	45	M2925-1100AQ	30290650
11,10		12	118	71	56	45	M2925-1110AQ	30290651
11,111	7/16	12	118	71	56	45	M2925-11111AQ	30290652

Continued on next page.

MEGA-Drill-Composite-MD | M2925, 5xD, external cooling

Dimensions							Specification	Order No.
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
11,20		12	118	71	56	45	M2925-1120AQ	30290653
11,30		12	118	71	56	45	M2925-1130AQ	30290654
11,40		12	118	71	56	45	M2925-1140AQ	30290655
11,50		12	118	71	56	45	M2925-1150AQ	30290656
11,60		12	118	71	56	45	M2925-1160AQ	30290657
11,70		12	118	71	56	45	M2925-1170AQ	30290658
11,80		12	118	71	56	45	M2925-1180AQ	30290659
11,90		12	118	71	56	45	M2925-1190AQ	30290660
12,00		12	118	71	56	45	M2925-1200AQ	30290661

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

MEGA-Drill-Composite-UDX

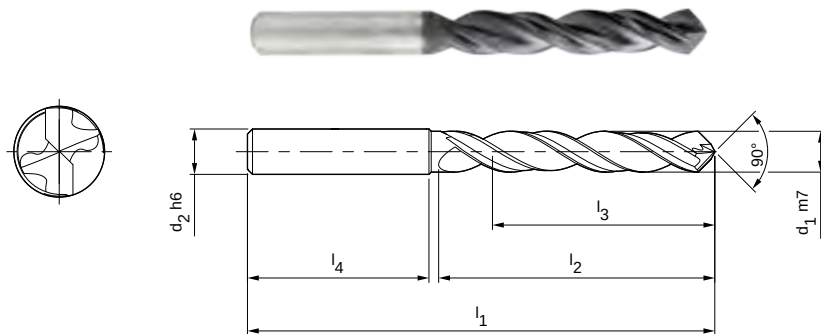
5xD, external cooling
M2915

Design:

Drill diameter: 3,00 – 12,00 mm
Bore tolerance: $\geq IT 8$
Coating: Diamond coating
Number of cutting edges: 2
Point angle: 90°
Number of guiding chamfers: 4
Helix angle: 35°

Application:

For all CFRP materials / problem solver in unstable clamping situations or for thin-walled parts



N	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	4.1	4.2	4.3	C	1.1	1.2	1.3	2.1	3.1	4.1	4.2	4.3	4.4	5.1	5.2



Dimensions							Specification	Order No.
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00		6	66	26	20	36	M2915-0300AQ	30396132
3,10		6	66	26	20	36	M2915-0310AQ	30396137
3,175	1/8	6	66	26	20	36	M2915-03175AQ	30396141
3,20		6	66	26	20	36	M2915-0320AQ	30396142
3,30		6	66	26	20	36	M2915-0330AQ	30396143
3,40		6	66	26	20	36	M2915-0340AQ	30396148
3,50		6	66	26	20	36	M2915-0350AQ	30396149
3,60		6	66	26	20	36	M2915-0360AQ	30396150
3,70		6	66	26	20	36	M2915-0370AQ	30396151
3,80		6	66	26	20	36	M2915-0380AQ	30396152
3,90		6	66	26	20	36	M2915-0390AQ	30396154
4,00		6	74	35	27	36	M2915-0400AQ	30396155
4,10		6	74	35	27	36	M2915-0410AQ	30396156
4,20		6	74	35	27	36	M2915-0420AQ	30396158
4,30		6	74	35	27	36	M2915-0430AQ	30396159
4,40		6	74	35	27	36	M2915-0440AQ	30396162
4,50		6	74	35	27	36	M2915-0450AQ	30396163
4,60		6	74	35	27	36	M2915-0460AQ	30396164
4,70		6	74	35	27	36	M2915-0470AQ	30396165
4,763	3/16	6	74	35	27	36	M2915-04763AQ	30396166
4,80		6	74	35	27	36	M2915-0480AQ	30396168
4,90		6	74	35	27	36	M2915-0490AQ	30396169
5,00		6	82	44	35	36	M2915-0500AQ	30396174
5,10		6	82	44	35	36	M2915-0510AQ	30396175
5,20		6	82	44	35	36	M2915-0520AQ	30396176
5,30		6	82	44	35	36	M2915-0530AQ	30396177
5,40		6	82	44	35	36	M2915-0540AQ	30396179
5,50		6	82	44	35	36	M2915-0550AQ	30396182
5,60		6	82	44	35	36	M2915-0560AQ	30396183
5,70		6	82	44	35	36	M2915-0570AQ	30396184
5,80		6	82	44	35	36	M2915-0580AQ	30396185
5,90		6	82	44	35	36	M2915-0590AQ	30396186
6,00		6	82	44	35	36	M2915-0600AQ	30705789
6,10		8	91	52	40	36	M2915-0610AQ	30705790
6,20		8	91	52	40	36	M2915-0620AQ	30705791
6,30		8	91	52	40	36	M2915-0630AQ	30705792

MEGA-Drill-Composite-UDX | M2915, 5xD, external cooling

Dimensions							Specification	Order No.
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,35	1/4	8	91	52	40	36	M2915-0635AQ	30705793
6,40		8	91	52	40	36	M2915-0640AQ	30705794
6,50		8	91	52	40	36	M2915-0650AQ	30705795
6,60		8	91	52	40	36	M2915-0660AQ	30705796
6,70		8	91	52	40	36	M2915-0670AQ	30705797
6,80		8	91	52	40	36	M2915-0680AQ	30705798
6,90		8	91	52	40	36	M2915-0690AQ	30705799
7,00		8	91	52	40	36	M2915-0700AQ	30705800
7,10		8	91	52	40	36	M2915-0710AQ	30705801
7,20		8	91	52	40	36	M2915-0720AQ	30705802
7,30		8	91	52	40	36	M2915-0730AQ	30705803
7,40		8	91	52	40	36	M2915-0740AQ	30705804
7,50		8	91	52	40	36	M2915-0750AQ	30705805
7,60		8	91	52	40	36	M2915-0760AQ	30705806
7,70		8	91	52	40	36	M2915-0770AQ	30705807
7,80		8	91	52	40	36	M2915-0780AQ	30705808
7,90		8	91	52	40	36	M2915-0790AQ	30705809
7,938	5/16	8	91	52	40	36	M2915-07938AQ	30705810
8,00		8	91	52	40	40	M2915-0800AQ	30705811
8,10		10	103	60	45	40	M2915-0810AQ	30705812
8,20		10	103	60	45	40	M2915-0820AQ	30705813
8,30		10	103	60	45	40	M2915-0830AQ	30705814
8,40		10	103	60	45	40	M2915-0840AQ	30705815
8,50		10	103	60	45	40	M2915-0850AQ	30705817
8,60		10	103	60	45	40	M2915-0860AQ	30705818
8,70		10	103	60	45	40	M2915-0870AQ	30705819
8,80		10	103	60	45	40	M2915-0880AQ	30705820
8,90		10	103	60	45	40	M2915-0890AQ	30705821
9,00		10	103	60	45	40	M2915-0900AQ	30705822
9,10		10	103	60	45	40	M2915-0910AQ	30705823
9,20		10	103	60	45	40	M2915-0920AQ	30705824
9,30		10	103	60	45	40	M2915-0930AQ	30705825
9,40		10	103	60	45	40	M2915-0940AQ	30705826
9,50		10	103	60	45	40	M2915-0950AQ	30705827
9,525	3/8	10	103	60	45	40	M2915-09525AQ	30705828
9,60		10	103	60	45	40	M2915-0960AQ	30705829
9,70		10	103	60	45	40	M2915-0970AQ	30705830
9,80		10	103	60	45	40	M2915-0980AQ	30705831
9,90		10	103	60	45	40	M2915-0990AQ	30705832
10,00		10	103	60	45	40	M2915-1000AQ	30705833
10,10		12	118	70	52	45	M2915-1010AQ	30705834
10,20		12	118	70	52	45	M2915-1020AQ	30705835
10,30		12	118	70	52	45	M2915-1030AQ	30705836
10,40		12	118	70	52	45	M2915-1040AQ	30705837
10,50		12	118	70	52	45	M2915-1050AQ	30705838
10,60		12	118	70	52	45	M2915-1060AQ	30705839
10,70		12	118	70	52	45	M2915-1070AQ	30705840
10,80		12	118	70	52	45	M2915-1080AQ	30705841
10,90		12	118	70	52	45	M2915-1090AQ	30705842
11,00		12	118	70	52	45	M2915-1100AQ	30705843
11,10		12	118	70	52	45	M2915-1110AQ	30705844
11,111	7/16	12	118	70	52	45	M2915-11111AQ	30705845
11,20		12	118	70	52	45	M2915-1120AQ	30705846
11,30		12	118	70	52	45	M2915-1130AQ	30705847
11,40		12	118	70	52	45	M2915-1140AQ	30705848
11,50		12	118	70	52	45	M2915-1150AQ	30705849
11,60		12	118	70	52	45	M2915-1160AQ	30705850

MEGA-Drill-Composite-UDX | M2915, 5xD, external cooling

Dimensions							Specification	Order No.
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
11,70		12	118	70	52	45	M2915-1170AQ	30705851
11,80		12	118	70	52	45	M2915-1180AQ	30705852
11,90		12	118	70	52	45	M2915-1190AQ	30705853
12,00		12	118	70	52	45	M2915-1200AQ	30705854

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

MEGA-Drill-Composite-UDX

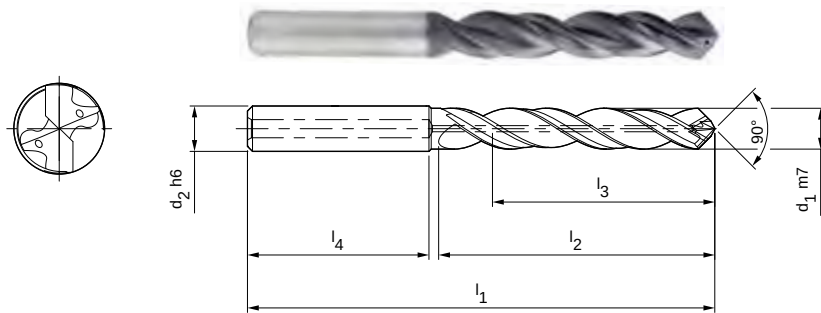
5xD, internal cooling
M2935

Design:

Drill diameter: 6,00 – 12,00 mm
Bore tolerance: $\geq IT 8$
Coating: Diamond coating
Number of cutting edges: 2
Point angle: 90°
Number of guiding chamfers: 4
Helix angle: 35°

Application:

For all CFRP materials / problem solver in unstable clamping situations or for thin-walled parts



N	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	4.1	4.2	4.3	C	1.1	1.2	1.3	2.1	3.1	4.1	4.2	4.3	4.4	5.1	5.2



Dimensions							Specification	Order No.
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,00		6	82	44	35	36	M2935-0600AQ	30352042
6,10		8	91	53	43	36	M2935-0610AQ	30352043
6,20		8	91	53	43	36	M2935-0620AQ	30352044
6,30		8	91	53	43	36	M2935-0630AQ	30352045
6,35	1/4	8	91	53	43	36	M2935-0635AQ	30352046
6,40		8	91	53	43	36	M2935-0640AQ	30352047
6,50		8	91	53	43	36	M2935-0650AQ	30352048
6,60		8	91	53	43	36	M2935-0660AQ	30352049
6,70		8	91	53	43	36	M2935-0670AQ	30352050
6,80		8	91	53	43	36	M2935-0680AQ	30352052
6,90		8	91	53	43	36	M2935-0690AQ	30352053
7,00		8	91	53	43	36	M2935-0700AQ	30352054
7,10		8	91	53	43	36	M2935-0710AQ	30352055
7,20		8	91	53	43	36	M2935-0720AQ	30352057
7,30		8	91	53	43	36	M2935-0730AQ	30352058
7,40		8	91	53	43	36	M2935-0740AQ	30352059
7,50		8	91	53	43	36	M2935-0750AQ	30352060
7,60		8	91	53	43	36	M2935-0760AQ	30352061
7,70		8	91	53	43	36	M2935-0770AQ	30352062
7,80		8	91	53	43	36	M2935-0780AQ	30352063
7,90		8	91	53	43	36	M2935-0790AQ	30352064
7,938	5/16	8	91	53	43	36	M2935-07938AQ	30352065
8,00		8	91	53	43	40	M2935-0800AQ	30352066
8,10		10	103	61	49	40	M2935-0810AQ	30352067
8,20		10	103	61	49	40	M2935-0820AQ	30352068
8,30		10	103	61	49	40	M2935-0830AQ	30352069
8,40		10	103	61	49	40	M2935-0840AQ	30352070
8,50		10	103	61	49	40	M2935-0850AQ	30352071
8,60		10	103	61	49	40	M2935-0860AQ	30352072
8,70		10	103	61	49	40	M2935-0870AQ	30352073
8,80		10	103	61	49	40	M2935-0880AQ	30352074
8,90		10	103	61	49	40	M2935-0890AQ	30352075
9,00		10	103	61	49	40	M2935-0900AQ	30352076
9,10		10	103	61	49	40	M2935-0910AQ	30352077

MEGA-Drill-Composite-UDX | M2935, 5xD, internal cooling

Dimensions							Specification	Order No.
d ₁ m7 [mm]	d ₁ m7 [inch]	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
9,20		10	103	61	49	40	M2935-0920AQ	30352078
9,30		10	103	61	49	40	M2935-0930AQ	30352079
9,40		10	103	61	49	40	M2935-0940AQ	30352080
9,50		10	103	61	49	40	M2935-0950AQ	30352081
9,525	3/8	10	103	61	49	40	M2935-09525AQ	30352082
9,60		10	103	61	49	40	M2935-0960AQ	30352083
9,70		10	103	61	49	40	M2935-0970AQ	30352084
9,80		10	103	61	49	40	M2935-0980AQ	30352085
9,90		10	103	61	49	40	M2935-0990AQ	30352086
10,00		10	103	61	49	40	M2935-1000AQ	30342828
10,10		12	118	71	56	45	M2935-1010AQ	30352087
10,20		12	118	71	56	45	M2935-1020AQ	30352088
10,30		12	118	71	56	45	M2935-1030AQ	30352089
10,40		12	118	71	56	45	M2935-1040AQ	30352090
10,50		12	118	71	56	45	M2935-1050AQ	30352091
10,60		12	118	71	56	45	M2935-1060AQ	30352092
10,70		12	118	71	56	45	M2935-1070AQ	30352093
10,80		12	118	71	56	45	M2935-1080AQ	30352094
10,90		12	118	71	56	45	M2935-1090AQ	30352095
11,00		12	118	71	56	45	M2935-1100AQ	30352096
11,10		12	118	71	56	45	M2935-1110AQ	30352097
11,111	7/16	12	118	71	56	45	M2935-11111AQ	30352098
11,20		12	118	71	56	45	M2935-1120AQ	30352099
11,30		12	118	71	56	45	M2935-1130AQ	30352100
11,40		12	118	71	56	45	M2935-1140AQ	30352101
11,50		12	118	71	56	45	M2935-1150AQ	30352102
11,60		12	118	71	56	45	M2935-1160AQ	30352103
11,70		12	118	71	56	45	M2935-1170AQ	30352104
11,80		12	118	71	56	45	M2935-1180AQ	30352105
11,90		12	118	71	56	45	M2935-1190AQ	30352106
12,00		12	118	71	56	45	M2935-1200AQ	30352107

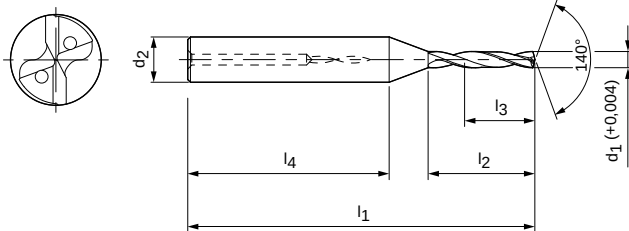
Dimensions in mm.
Cutting data recommendations from page 272.
Special designs and other coatings on request.

MEGA-SMART-Drill

5xD, internal cooling
M1905

Design:

Drill diameter: 1,00 – 2,90 mm
Bore tolerance: $\geq IT 9$
Coating: Mx8
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 10° to 25°
(diameter-dependent)



Dimensions						Specification	Order No.
$d_1 (+0,004)$	$d_2 (-0,002/-0,005)$	l_1	l_2	l_3	l_4		
1,00	3	55	8	5	40	M1905-0100AE	30063981
1,10	3	55	12	8	34	M1905-0110AE	30063982
1,20	3	55	12	8	35	M1905-0120AE	30063983
1,30	3	55	12	8	35	M1905-0130AE	30063984
1,40	3	55	12	8	35	M1905-0140AE	30063985
1,50	3	55	12	8	35	M1905-0150AE	30063986
1,60	3	68	16	11	43	M1905-0160AE	30063987
1,70	3	68	16	11	44	M1905-0170AE	30063988
1,80	3	68	16	11	44	M1905-0180AE	30063989
1,90	3	68	16	11	44	M1905-0190AE	30063990
2,00	3	68	16	11	44	M1905-0200AE	30063991
2,10	3	74	20	14	44	M1905-0210AE	30063992
2,20	3	74	20	14	45	M1905-0220AE	30063993
2,30	3	74	20	14	45	M1905-0230AE	30063994
2,40	3	74	20	14	45	M1905-0240AE	30063995
2,50	3	74	20	14	45	M1905-0250AE	30063996
2,60	3	81	23	16	48	M1905-0260AE	30063997
2,70	3	81	23	16	48	M1905-0270AE	30063998
2,80	3	81	23	16	48	M1905-0280AE	30063999
2,90	3	81	23	16	48	M1905-0290AE	30064000

Dimensions in mm.

Cutting data recommendations from page 272.

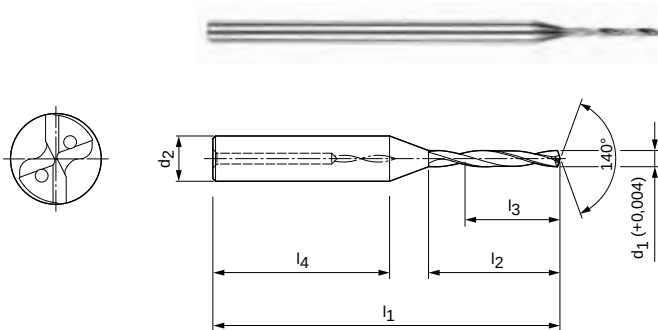
Special designs and other coatings on request.

MEGA-SMART-Drill

8xD, internal cooling
M1908

Design:

Drill diameter: 1,00 – 2,90 mm
Bore tolerance: $\geq IT 9$
Coating: Mx8
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 10° to 25°
(diameter-dependent)



Dimensions						Specification	Order No.
$d_1 (+0,004)$	$d_2 (-0,002/-0,005)$	l_1	l_2	l_3	l_4		
1,00	3	55	11	8	40	M1908-0100AE	30064001
1,10	3	55	17	13	34	M1908-0110AE	30064002
1,20	3	55	17	13	35	M1908-0120AE	30064003
1,30	3	55	17	13	35	M1908-0130AE	30064004
1,40	3	55	17	13	35	M1908-0140AE	30064005
1,50	3	68	22	13	35	M1908-0150AE	30064006
1,60	3	68	22	17	43	M1908-0160AE	30064007
1,70	3	68	22	17	44	M1908-0170AE	30064008
1,80	3	68	22	17	44	M1908-0180AE	30064009
1,90	3	68	22	17	44	M1908-0190AE	30064010
2,00	3	68	22	17	44	M1908-0200AE	30064011
2,10	3	74	28	22	44	M1908-0210AE	30064012
2,20	3	74	28	22	45	M1908-0220AE	30064013
2,30	3	74	28	22	45	M1908-0230AE	30064014
2,40	3	74	28	22	45	M1908-0240AE	30064015
2,50	3	74	28	22	45	M1908-0250AE	30064016
2,60	3	81	32	25	48	M1908-0260AE	30064017
2,70	3	81	32	25	48	M1908-0270AE	30064018
2,80	3	81	32	25	48	M1908-0280AE	30064019
2,90	3	81	32	25	48	M1908-0290AE	30064020

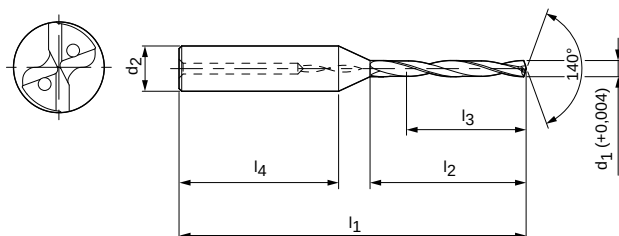
Dimensions in mm.
Cutting data recommendations from page 272.
Special designs and other coatings on request.

MEGA-SMART-Drill

12xD, internal cooling
M1912

Design:

Drill diameter: 1,00 – 2,90 mm
Bore tolerance: $\geq IT 9$
Coating: Mx8
Number of cutting edges: 2
Number of guiding chamfers: 2
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 10° to 25°
(diameter-dependent)



Dimensions						Specification	Order No.
$d_1 (+0,004)$	$d_2 (-0,002/-0,005)$	l_1	l_2	l_3	l_4		
1,00	3	55	15	12	28	M1912-0100AE	30064021
1,10	3	55	23	19	28	M1912-0110AE	30064022
1,20	3	55	23	19	29	M1912-0120AE	30064023
1,30	3	55	23	19	29	M1912-0130AE	30064024
1,40	3	55	23	19	29	M1912-0140AE	30064025
1,50	3	55	23	19	29	M1912-0150AE	30064026
1,60	3	68	30	25	35	M1912-0160AE	30064027
1,70	3	68	30	25	36	M1912-0170AE	30064028
1,80	3	68	30	25	36	M1912-0180AE	30064029
1,90	3	68	30	25	36	M1912-0190AE	30064030
2,00	3	68	30	25	36	M1912-0200AE	30064031
2,10	3	74	38	32	34	M1912-0210AE	30064032
2,20	3	74	38	32	35	M1912-0220AE	30064033
2,30	3	74	38	32	35	M1912-0230AE	30064034
2,40	3	74	38	32	35	M1912-0240AE	30064035
2,50	3	74	38	32	35	M1912-0250AE	30064036
2,60	3	81	44	37	36	M1912-0260AE	30064037
2,70	3	81	44	37	36	M1912-0270AE	30064038
2,80	3	81	44	37	36	M1912-0280AE	30064039
2,90	3	81	44	37	36	M1912-0290AE	30064040

Dimensions in mm.

Cutting data recommendations from page 272.

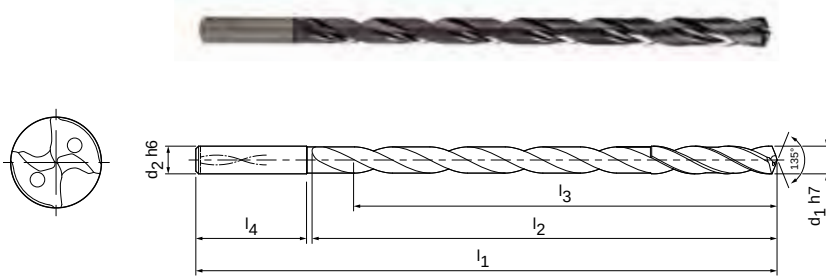
Special designs and other coatings on request.

MEGA-Deep-Drill

15xD, internal cooling
M2115

Design:

Drill diameter: 3,00 – 16,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 135°
Helix angle: 30°



Dimensions							Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	L/d ratio	l ₄		
3,00	4	90	56	52	17	32	M2115-0300AE	30213695
3,50	4	100	66	61	17	32	M2115-0350AE	30213696
4,00	4	100	66	60	15	32	M2115-0400AE	30213697
4,50	5	110	74	67	15	34	M2115-0450AE	30213698
5,00	5	120	84	77	15	34	M2115-0500AE	30213699
5,50	6	130	92	84	15	36	M2115-0550AE	30213700
6,00	6	140	102	93	16	36	M2115-0600AE	30213701
7,00	7	155	115	105	15	38	M2115-0700AE	30213703
8,00	8	175	133	121	15	40	M2115-0800AE	30213705
9,00	9	190	148	135	15	40	M2115-0900AE	30213707
10,00	10	210	168	153	15	40	M2115-1000AE	30213708
11,00	11	230	183	167	15	45	M2115-1100AE	30213709
12,00	12	250	203	185	15	45	M2115-1200AE	30213710
13,00	13	265	218	199	15	45	M2115-1300AE	30213711
14,00	14	285	233	212	15	50	M2115-1400AE	30213712
15,00	15	305	253	231	15	50	M2115-1500AE	30213713
16,00	16	320	268	244	15	50	M2115-1600AE	30213714

Recommendation for pilot drills:

For the pilot drill please use the MEGA-Drill-Steel-Plus M2103P / 3xD with internal cooling with the same nominal diameter.
Point angle and diameter tolerances are matched for optimal functionality, as well as for the interaction of pilot drill and deep hole drill.

You will find application notes on deep hole drilling in the section Technical appendix.

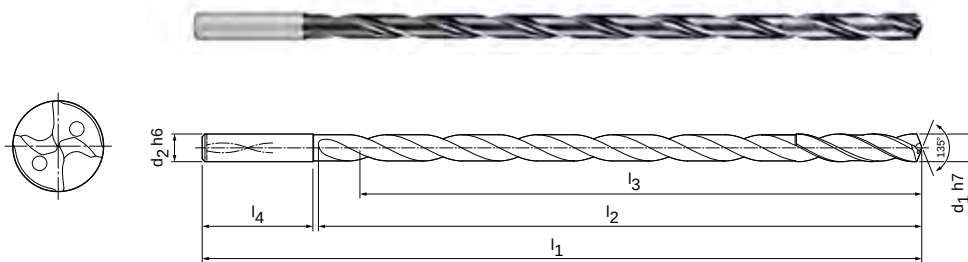
Dimensions in mm.
Cutting data recommendations from page 272.
Special designs and other coatings on request.

MEGA-Deep-Drill

20xD, internal cooling
M2120

Design:

Drill diameter: 3,00 – 16,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 135°
Helix angle: 30°



Dimensions							Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	L/d ratio	l ₄		
3,00	4	110	74	70	23	32	M2120-0300AE	30213715
3,50	4	120	86	81	23	32	M2120-0350AE	30213716
4,00	4	120	86	80	20	32	M2120-0400AE	30213717
4,50	5	135	98	91	20	34	M2120-0450AE	30213718
5,00	5	145	109	102	20	34	M2120-0500AE	30213719
5,50	6	160	120	112	20	36	M2120-0550AE	30213720
6,00	6	170	130	121	20	36	M2120-0600AE	30213721
7,00	7	190	150	140	20	38	M2120-0700AE	30213723
8,00	8	215	173	161	20	40	M2120-0800AE	30213725
9,00	9	240	196	183	20	40	M2120-0900AE	30213727
10,00	10	260	218	203	20	40	M2120-1000AE	30213728
11,00	11	285	238	222	20	45	M2120-1100AE	30213729
12,00	12	305	258	240	20	45	M2120-1200AE	30213730
13,00	13	330	283	264	20	45	M2120-1300AE	30213731
14,00	14	355	303	282	20	50	M2120-1400AE	30213732
15,00	15	375	323	301	20	50	M2120-1500AE	30213733
16,00	16	400	348	324	20	50	M2120-1600AE	30213734

Recommendation for pilot drills:

For the pilot drill please use the MEGA-Drill-Steel-Plus M2103P / 3xD with internal cooling with the same nominal diameter.
Point angle and diameter tolerances are matched for optimal functionality, as well as for the interaction of pilot drill and deep hole drill.

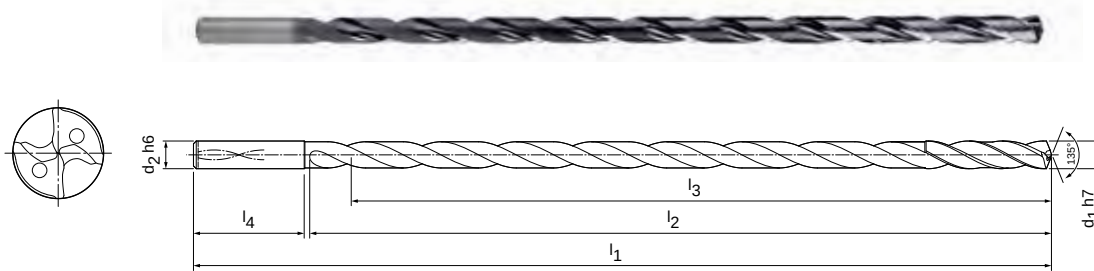
You will find application notes on deep hole drilling in the section Technical appendix.

MEGA-Deep-Drill

25xD, internal cooling
M2125

Design:

Drill diameter: 3,00 – 14,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 135°
Helix angle: 30°



Dimensions							Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	L/d ratio	l ₄		
3,00	4	125	91	87	29	32	M2125-0300AE	30213735
3,50	4	140	106	101	29	32	M2125-0350AE	30213736
4,00	4	140	106	100	25	32	M2125-0400AE	30213737
4,50	5	155	119	112	25	34	M2125-0450AE	30213738
5,00	5	170	134	127	25	34	M2125-0500AE	30213739
5,50	6	185	147	139	25	36	M2125-0550AE	30213740
6,00	6	200	160	151	25	36	M2125-0600AE	30213741
7,00	7	225	185	175	25	38	M2125-0700AE	30213743
8,00	8	255	213	201	25	40	M2125-0800AE	30213745
9,00	9	280	238	225	25	40	M2125-0900AE	30213747
10,00	10	310	268	253	25	40	M2125-1000AE	30213748
11,00	11	340	293	277	25	45	M2125-1100AE	30213749
12,00	12	365	318	300	25	45	M2125-1200AE	30213750
13,00	13	390	343	324	25	45	M2125-1300AE	30213751
14,00	14	425	373	352	25	50	M2125-1400AE	30213752

Recommendation for pilot drills:

For the pilot drill please use the MEGA-Drill-Steel-Plus M2103P / 3xD with internal cooling with the same nominal diameter.
Point angle and diameter tolerances are matched for optimal functionality, as well as for the interaction of pilot drill and deep hole drill.

You will find application notes on deep hole drilling in the section Technical appendix.

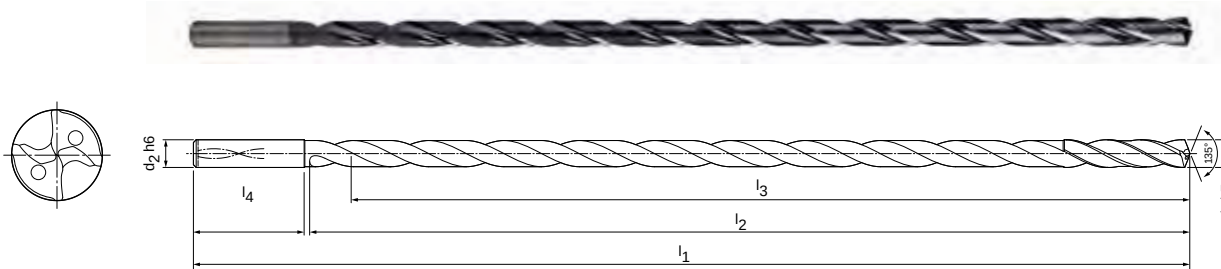
Dimensions in mm.
Cutting data recommendations from page 272.
Special designs and other coatings on request.

MEGA-Deep-Drill

30xD, internal cooling
M2130

Design:

Drill diameter: 3,00 – 12,00 mm
Bore tolerance: $\geq$ IT 9
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 135°
Helix angle: 30°



Dimensions							Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	L/d ratio	l ₄		
3,00	4	145	110	106	35	32	M2130-0300AE	30213753
3,50	4	160	126	121	35	32	M2130-0350AE	30213754
4,00	4	160	126	120	30	32	M2130-0400AE	30213755
4,50	5	180	144	137	31	34	M2130-0450AE	30213756
5,00	5	195	159	152	30	34	M2130-0500AE	30213757
5,50	6	210	172	164	30	36	M2130-0550AE	30213758
6,00	6	230	192	183	31	36	M2130-0600AE	30213759
7,00	7	260	220	210	30	38	M2130-0700AE	30213761
8,00	8	295	253	241	30	40	M2130-0800AE	30213763
9,00	9	325	283	270	30	40	M2130-0900AE	30213765
10,00	10	360	318	303	30	40	M2130-1000AE	30213766
11,00	11	400	353	337	31	45	M2130-1100AE	30213767
12,00	12	430	383	365	30	45	M2130-1200AE	30213768

Recommendation for pilot drills:

For the pilot drill please use the MEGA-Drill-Steel-Plus M2103P / 3xD with internal cooling with the same nominal diameter.

Point angle and diameter tolerances are matched for optimal functionality, as well as for the interaction of pilot drill and deep hole drill.

You will find application notes on deep hole drilling in the section Technical appendix.

Dimensions in mm.

Cutting data recommendations from page 272.

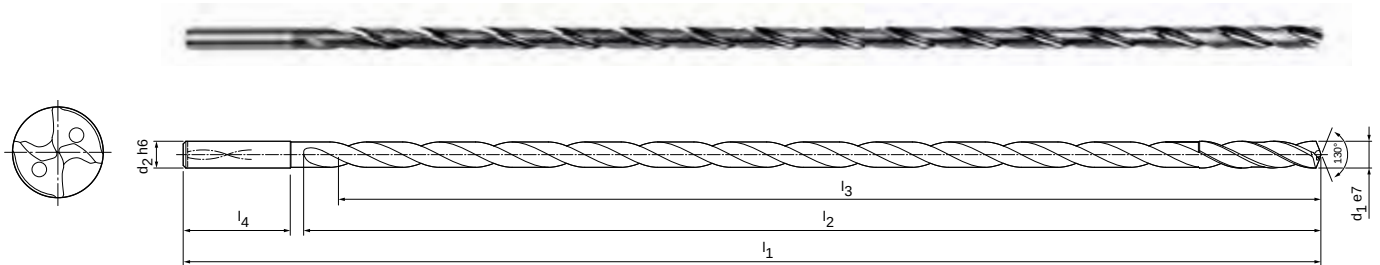
Special designs and other coatings on request.

MEGA-Deep-Drill

40xD, internal cooling
M2140

Design:

Drill diameter: 3,00 – 9,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 130°
Helix angle: 30°



Dimensions							Specification	Order No.
d ₁ e7	d ₂ h6	l ₁	l ₂	l ₃	L/d ratio	l ₄		
3,00	4	180	145	141	48	32	M2140-0300AE	30549898
3,50	4	205	170	165	49	32	M2140-0350AE	30549899
4,00	4	205	170	164	43	32	M2140-0400AE	30549900
4,50	5	226	190	184	42	34	M2140-0450AE	30549901
5,00	5	245	208	201	42	34	M2140-0500AE	30549902
5,50	6	270	230	222	42	36	M2140-0550AE	30549903
6,00	6	290	250	241	42	36	M2140-0600AE	30549904
7,00	7	330	290	280	41	38	M2140-0700AE	30549905
8,00	8	380	335	323	42	40	M2140-0800AE	30549906
9,00	9	425	380	367	42	40	M2140-0900AE	30549907

Recommendation for pilot drills:

For the pilot drill please use the MEGA-Drill-Steel-Plus M2103P / 3xD with the same nominal diameter. Then pre-drill using the MEGA-Deep-Drill M2120 / 20xD also with the same nominal diameter. Point angle and diameter tolerance are matched for optimal functionality, as well as for the interaction of pilot drill and deep hole drill.

You will find application notes on deep hole drilling in the section Technical appendix.

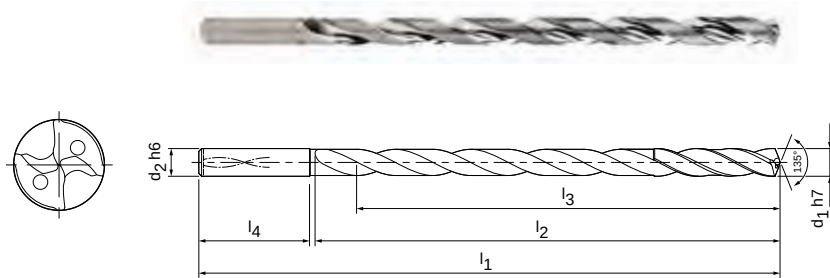
Dimensions in mm.
Cutting data recommendations from page 272.
Special designs and other coatings on request.

MEGA-Deep-Drill-Alu

15xD, internal cooling
M2815

Design:

Drill diameter:	3,00 – 16,00 mm
Bore tolerance:	≥ IT 9
Coating:	Uncoated
Number of cutting edges:	2
Number of guiding chamfers:	4
Point geometry:	Specific geometry
Point angle:	135°
Helix angle:	30°



Dimensions							Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	L/d ratio	l ₄		
3,00	4	90	56	52	17	32	M2815-0300AU	30286747
3,50	4	100	66	61	17	32	M2815-0350AU	30286748
4,00	4	100	66	60	15	32	M2815-0400AU	30286749
4,50	5	110	74	67	15	34	M2815-0450AU	30286750
5,00	5	120	84	77	15	34	M2815-0500AU	30286751
5,50	6	130	92	84	15	36	M2815-0550AU	30286752
6,00	6	140	102	93	16	36	M2815-0600AU	30286753
7,00	7	155	115	105	15	38	M2815-0700AU	30286754
8,00	8	175	133	121	15	40	M2815-0800AU	30286755
9,00	9	190	148	135	15	40	M2815-0900AU	30286756
10,00	10	210	168	153	15	40	M2815-1000AU	30286757
11,00	11	230	183	167	15	45	M2815-1100AU	30286758
12,00	12	250	203	185	15	45	M2815-1200AU	30286759
13,00	13	265	218	199	15	45	M2815-1300AU	30286760
14,00	14	285	233	212	15	50	M2815-1400AU	30286761
15,00	15	305	253	231	15	50	M2815-1500AU	30286762
16,00	16	320	268	244	15	50	M2815-1600AU	30286763

Recommendation for pilot drills:

For the pilot drill please use the MEGA-Drill-Alu, M2803 / 3xD with internal cooling with the same nominal diameter.

Point angle and diameter tolerances are matched for optimal functionality, as well as for the interaction of pilot drill and deep hole drill.

You will find application notes on deep hole drilling in the section Technical appendix.

Dimensions in mm.

Cutting data recommendations from page 272.

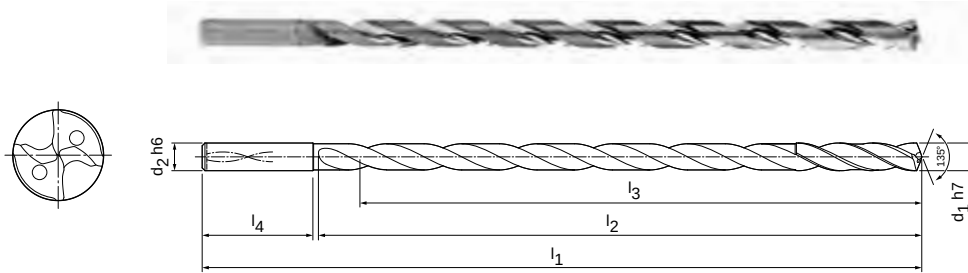
Special designs and other coatings on request.

MEGA-Deep-Drill-Alu

20xD, internal cooling
M2820

Design:

Drill diameter: 3,00 – 16,00 mm
Bore tolerance: $\geq IT 9$
Coating: Uncoated
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 135°
Helix angle: 30°



Dimensions							Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	L/d ratio	l ₄		
3,00	4	110	74	70	23	32	M2820-0300AU	30286764
3,50	4	120	86	81	23	32	M2820-0350AU	30286765
4,00	4	120	86	80	20	32	M2820-0400AU	30286766
4,50	5	135	98	91	20	34	M2820-0450AU	30286767
5,00	5	145	109	102	20	34	M2820-0500AU	30286768
5,50	6	160	120	112	20	36	M2820-0550AU	30286769
6,00	6	170	130	121	20	36	M2820-0600AU	30286770
7,00	7	190	150	140	20	38	M2820-0700AU	30286771
8,00	8	215	173	161	20	40	M2820-0800AU	30286772
9,00	9	240	196	183	20	40	M2820-0900AU	30286773
10,00	10	260	218	203	20	40	M2820-1000AU	30286774
11,00	11	285	238	222	20	45	M2820-1100AU	30286775
12,00	12	305	258	240	20	45	M2820-1200AU	30286776
13,00	13	330	283	264	20	45	M2820-1300AU	30286777
14,00	14	355	303	282	20	50	M2820-1400AU	30286778
15,00	15	375	323	301	20	50	M2820-1500AU	30286779
16,00	16	400	348	324	20	50	M2820-1600AU	30286780

Recommendation for pilot drills:

For the pilot drill please use the MEGA-Drill-Alu M2803 / 3xD with internal cooling with the same nominal diameter.

Point angle and diameter tolerances are matched for optimal functionality, as well as for the interaction of pilot drill and deep hole drill.

You will find application notes on deep hole drilling in the section Technical appendix.

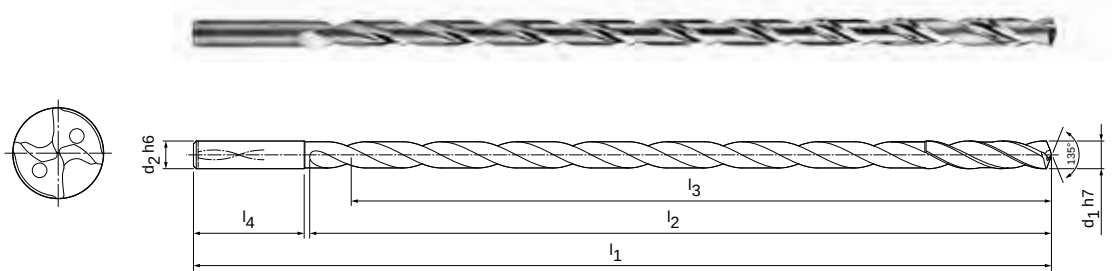
Dimensions in mm.
Cutting data recommendations from page 272.
Special designs and other coatings on request.

MEGA-Deep-Drill-Alu

25xD, internal cooling
M2825

Design:

Drill diameter:	3,00 – 14,00 mm
Bore tolerance:	≥ IT 9
Coating:	Uncoated
Number of cutting edges:	2
Number of guiding chamfers:	4
Point geometry:	Specific geometry
Point angle:	135°
Helix angle:	30°



Dimensions							Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	L/d ratio	l ₄		
3,00	4	125	91	87	29	32	M2825-0300AU	30286781
3,50	4	140	106	101	29	32	M2825-0350AU	30286782
4,00	4	140	106	100	25	32	M2825-0400AU	30286783
4,50	5	155	119	112	25	34	M2825-0450AU	30286784
5,00	5	170	134	127	25	34	M2825-0500AU	30286785
5,50	6	185	147	139	25	36	M2825-0550AU	30286786
6,00	6	200	160	151	25	36	M2825-0600AU	30286787
7,00	7	225	185	175	25	38	M2825-0700AU	30286788
8,00	8	255	213	201	25	40	M2825-0800AU	30286789
9,00	9	280	238	225	25	40	M2825-0900AU	30286790
10,00	10	310	268	253	25	40	M2825-1000AU	30286791
11,00	11	340	293	277	25	45	M2825-1100AU	30286792
12,00	12	365	318	300	25	45	M2825-1200AU	30286793
13,00	13	390	343	324	25	45	M2825-1300AU	30286794
14,00	14	425	373	352	25	50	M2825-1400AU	30286795

Recommendation for pilot drills:

For the pilot drill please use the MEGA-Drill-Alu M2803 / 3xD with internal cooling with the same nominal diameter.

Point angle and diameter tolerances are matched for optimal functionality, as well as for the interaction of pilot drill and deep hole drill.

You will find application notes on deep hole drilling in the section Technical appendix.

Dimensions in mm.

Cutting data recommendations from page 272.

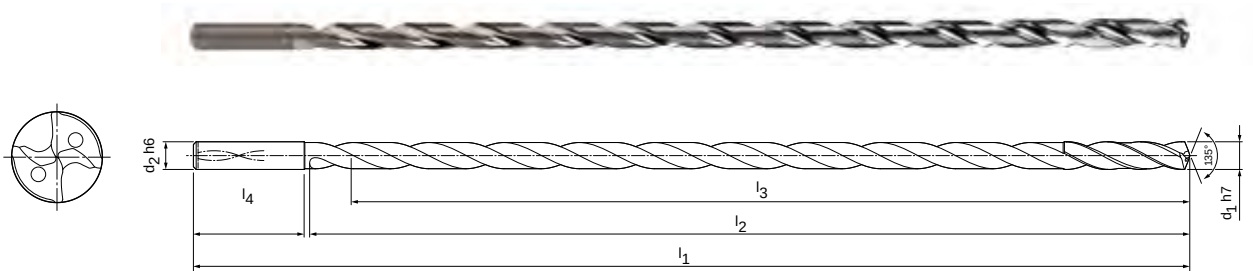
Special designs and other coatings on request.

MEGA-Deep-Drill-Alu

30xD, internal cooling
M2830

Design:

Drill diameter: 3,00 – 12,00 mm
Bore tolerance: $\geq IT 9$
Coating: Uncoated
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 135°
Helix angle: 30°



Dimensions							Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	L/d ratio	l ₄		
3,00	4	145	110	106	35	32	M2830-0300AU	30286796
3,50	4	160	126	121	35	32	M2830-0350AU	30286797
4,00	4	160	126	120	30	32	M2830-0400AU	30286798
4,50	5	180	144	137	31	34	M2830-0450AU	30286799
5,00	5	195	159	152	30	34	M2830-0500AU	30286800
5,50	6	210	172	164	30	36	M2830-0550AU	30286801
6,00	6	230	192	183	31	36	M2830-0600AU	30286802
7,00	7	260	220	210	30	38	M2830-0700AU	30286803
8,00	8	295	253	241	30	40	M2830-0800AU	30286804
9,00	9	325	283	270	30	40	M2830-0900AU	30286805
10,00	10	360	318	303	30	40	M2830-1000AU	30286806
11,00	11	400	353	337	31	45	M2830-1100AU	30286807
12,00	12	430	383	365	30	45	M2830-1200AU	30286808

Recommendation for pilot drills:

For the pilot drill please use the MEGA-Drill-Alu M2803 / 3xD with internal cooling with the same nominal diameter.

Point angle and diameter tolerances are matched for optimal functionality, as well as for the interaction of pilot drill and deep hole drill.

You will find application notes on deep hole drilling in the section Technical appendix.

Dimensions in mm.

Cutting data recommendations from page 272.

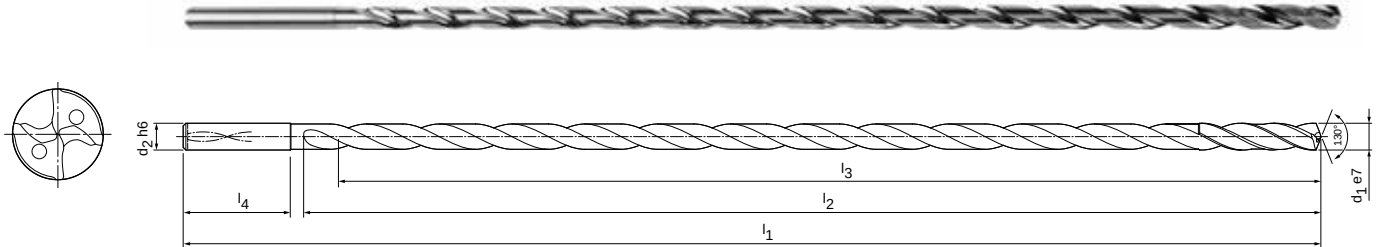
Special designs and other coatings on request.

MEGA-Deep-Drill-Alu

40xD, internal cooling
M2840

Design:

Drill diameter:	3,00 – 9,00 mm
Bore tolerance:	≥ IT 9
Coating:	Uncoated
Number of cutting edges:	2
Number of guiding chamfers:	4
Point geometry:	Specific geometry
Point angle:	130°
Helix angle:	30°



Dimensions							Specification	Order No.
d ₁ e7	d ₂ h6	l ₁	l ₂	l ₃	L/d ratio	l ₄		
3,00	4	180	145	141	48	32	M2840-0300AU	30549908
3,50	4	205	170	165	49	32	M2840-0350AU	30549909
4,00	4	205	170	164	43	32	M2840-0400AU	30549910
4,50	5	226	190	184	42	34	M2840-0450AU	30549911
5,00	5	245	208	201	42	34	M2840-0500AU	30549912
5,50	6	270	230	222	42	36	M2840-0550AU	30549913
6,00	6	290	250	241	42	36	M2840-0600AU	30549914
7,00	7	330	290	280	41	38	M2840-0700AU	30549915
8,00	8	380	335	323	42	40	M2840-0800AU	30549916
9,00	9	425	380	367	42	40	M2840-0900AU	30549917

Recommendation for pilot drills:

For the pilot drill for the MEGA-Deep-Drill-Alu please use the MEGA-Drill-Alu M2803 / 3xD with the same nominal diameter. Then pre-drill using the MEGA-Deep-Drill-Alu M2820 / 20xD and also the same nominal diameter. Point angle and diameter tolerance are matched for optimal functionality, as well as for the interaction of pilot drill and deep hole drill.

You will find application notes on deep hole drilling in the section Technical appendix.





MEGA-SPIKE-DRILL

Introduction

Product description	164
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MEGA-Spike-Drill-Uni

MEGA-Spike-Drill-Uni, 5xD - internal cooling	166
MEGA-Spike-Drill-Uni, 8xD - internal cooling	169



THREE CUTTING EDGES FOR OPTIMAL RESULTS

Highest performance and process reliability also in difficult boring situations

In demanding boring situations where other drills fail, the triple edge drill demonstrates its strength and masters the situation reliably. Examples are accurately positioned and deep bores up to 8xD, through bores or bores with inclined bore entrance and bore exit. Three positive cutting edges and a self-centring tip give the MEGA-Spike-Drill the highest possible performance and optimal positioning accuracy. The point thinning on the drill is very stable in the centre, but becomes increasingly positive with increasing distance from the centre with a transition to the chip flute that is almost continuous. The friction between chip and drill is significantly reduced as a result. The positive rake angle in conjunction with the sharp main cutting edges on the MEGA-Spike-Drill reduce the cutting pressure and therefore the process temperature compared to conventional solid carbide drills.

Along with the standard designs of the MEGA-Spike-Drill, customer-specific special designs can be prepared at short notice. As such, other deep hole drills and drill reamers are available with the Tritan geometry. In addition, special designs of the MEGA-Spike-Drill, for example with special point thinning, edge preparation and coating can be individually adapted to the requirements of different workpiece materials.

Along with the variants for machining steel and cast iron, drills for machining aluminium, titanium or austenitic steels are available at short notice.

AT A GLANCE

- For difficult bore machining operations
- Special triple edge geometry
- Highly suitable for inclined bore entrances
- Perfect for through-drilling or on entry into cross bores
- Innovative lead geometry for very good chip removal and low cutting pressure
- Significantly more performance, up to twice the feed rate

Tool features in detail



1 Special geometry

- Improved centring

2 High-performance coating

- Perfect chip removal
- Extremely wear-resistant

3 Triple cutting edge geometry

- Highest feeds



MEGA-Spike-Drill-Uni

The new standard with three cutting edges - drilling with up to twice the feed rate where other drills fail.



Ø range: 5,00 - 20,00 mm

Drilling depth:



Special geometries and process solutions

Customer-specific special geometries are available at short notice for the MEGA-Spike-Drill.

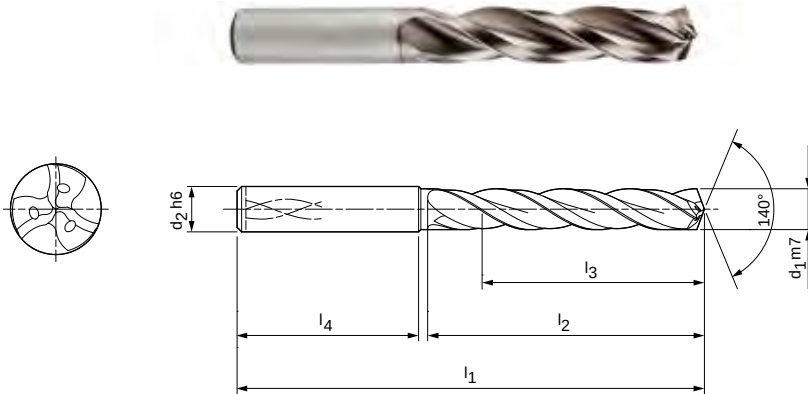
Customer-specific requirements are met optimally by means of special point thinning, edge preparation and coatings matched to the workpiece material or step variants.

MEGA-Spike-Drill-Uni

5xD, internal cooling
M9535

Design:

Drill diameter: 5,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxB
Number of cutting edges: 3
Number of guiding chamfers: 3
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
5,00	6	82	44	35	36	M9535-0500AJ	30550236
5,10	6	82	44	35	36	M9535-0510AJ	30550237
5,20	6	82	44	35	36	M9535-0520AJ	30550238
5,30	6	82	44	35	36	M9535-0530AJ	30550239
5,40	6	82	44	35	36	M9535-0540AJ	30550240
5,50	6	82	44	35	36	M9535-0550AJ	30550241
5,55	6	82	44	35	36	M9535-0555AJ	30550242
5,60	6	82	44	35	36	M9535-0560AJ	30550243
5,70	6	82	44	35	36	M9535-0570AJ	30550244
5,80	6	82	44	35	36	M9535-0580AJ	30550245
5,90	6	82	44	35	36	M9535-0590AJ	30550246
6,00	6	82	44	35	36	M9535-0600AJ	30550247
6,10	8	91	53	43	36	M9535-0610AJ	30550248
6,20	8	91	53	43	36	M9535-0620AJ	30550249
6,30	8	91	53	43	36	M9535-0630AJ	30550250
6,40	8	91	53	43	36	M9535-0640AJ	30550251
6,50	8	91	53	43	36	M9535-0650AJ	30550252
6,60	8	91	53	43	36	M9535-0660AJ	30550253
6,70	8	91	53	43	36	M9535-0670AJ	30550254
6,80	8	91	53	43	36	M9535-0680AJ	30550255
6,90	8	91	53	43	36	M9535-0690AJ	30550256
7,00	8	91	53	43	36	M9535-0700AJ	30550257
7,10	8	91	53	43	36	M9535-0710AJ	30550258
7,20	8	91	53	43	36	M9535-0720AJ	30550259
7,30	8	91	53	43	36	M9535-0730AJ	30550260
7,40	8	91	53	43	36	M9535-0740AJ	30550261
7,50	8	91	53	43	36	M9535-0750AJ	30550262
7,60	8	91	53	43	36	M9535-0760AJ	30550263
7,70	8	91	53	43	36	M9535-0770AJ	30550264
7,80	8	91	53	43	36	M9535-0780AJ	30550265
7,90	8	91	53	43	36	M9535-0790AJ	30550266
8,00	8	91	53	43	36	M9535-0800AJ	30550267
8,10	10	103	61	49	40	M9535-0810AJ	30550268
8,20	10	103	61	49	40	M9535-0820AJ	30550269
8,30	10	103	61	49	40	M9535-0830AJ	30550270
8,40	10	103	61	49	40	M9535-0840AJ	30550271

MEGA-Spike-Drill-Uni | M9535, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
8,50	10	103	61	49	40	M9535-0850AJ	30550272
8,60	10	103	61	49	40	M9535-0860AJ	30550273
8,70	10	103	61	49	40	M9535-0870AJ	30550274
8,80	10	103	61	49	40	M9535-0880AJ	30550275
8,90	10	103	61	49	40	M9535-0890AJ	30550276
9,00	10	103	61	49	40	M9535-0900AJ	30550277
9,10	10	103	61	49	40	M9535-0910AJ	30550278
9,20	10	103	61	49	40	M9535-0920AJ	30550279
9,30	10	103	61	49	40	M9535-0930AJ	30550280
9,40	10	103	61	49	40	M9535-0940AJ	30550281
9,50	10	103	61	49	40	M9535-0950AJ	30550282
9,60	10	103	61	49	40	M9535-0960AJ	30550283
9,70	10	103	61	49	40	M9535-0970AJ	30550284
9,80	10	103	61	49	40	M9535-0980AJ	30550285
9,90	10	103	61	49	40	M9535-0990AJ	30550286
10,00	10	103	61	49	40	M9535-1000AJ	30550287
10,10	12	118	71	56	45	M9535-1010AJ	30550288
10,20	12	118	71	56	45	M9535-1020AJ	30550289
10,30	12	118	71	56	45	M9535-1030AJ	30550290
10,40	12	118	71	56	45	M9535-1040AJ	30550291
10,50	12	118	71	56	45	M9535-1050AJ	30550292
10,60	12	118	71	56	45	M9535-1060AJ	30550293
10,70	12	118	71	56	45	M9535-1070AJ	30550294
10,80	12	118	71	56	45	M9535-1080AJ	30550295
10,90	12	118	71	56	45	M9535-1090AJ	30550296
11,00	12	118	71	56	45	M9535-1100AJ	30550297
11,10	12	118	71	56	45	M9535-1110AJ	30550298
11,20	12	118	71	56	45	M9535-1120AJ	30550299
11,30	12	118	71	56	45	M9535-1130AJ	30550300
11,40	12	118	71	56	45	M9535-1140AJ	30550301
11,50	12	118	71	56	45	M9535-1150AJ	30550302
11,60	12	118	71	56	45	M9535-1160AJ	30550303
11,70	12	118	71	56	45	M9535-1170AJ	30550304
11,80	12	118	71	56	45	M9535-1180AJ	30550305
11,90	12	118	71	56	45	M9535-1190AJ	30550306
12,00	12	118	71	56	45	M9535-1200AJ	30550307
12,50	14	124	77	60	45	M9535-1250AJ	30550309
12,80	14	124	77	60	45	M9535-1280AJ	30550311
13,00	14	124	77	60	45	M9535-1300AJ	30550312
13,50	14	124	77	60	45	M9535-1350AJ	30550313
13,80	14	124	77	60	45	M9535-1380AJ	30550314
14,00	14	124	77	60	45	M9535-1400AJ	30550315
14,50	16	133	83	63	48	M9535-1450AJ	30550316
14,80	16	133	83	63	48	M9535-1480AJ	30550317
15,00	16	133	83	63	48	M9535-1500AJ	30550318
15,50	16	133	83	63	48	M9535-1550AJ	30550319
15,80	16	133	83	63	48	M9535-1580AJ	30550320
16,00	16	133	83	63	48	M9535-1600AJ	30550321
16,50	18	143	93	71	48	M9535-1650AJ	30550322
16,80	18	143	93	71	48	M9535-1680AJ	30550323
17,00	18	143	93	71	48	M9535-1700AJ	30550324
17,50	18	143	93	71	48	M9535-1750AJ	30550325
17,80	18	143	93	71	48	M9535-1780AJ	30550326
18,00	18	143	93	71	48	M9535-1800AJ	30550327
18,50	20	153	101	77	50	M9535-1850AJ	30550328
18,80	20	153	101	77	50	M9535-1880AJ	30550329
19,00	20	153	101	77	50	M9535-1900AJ	30550330

Continued on next page.

MEGA-Spike-Drill-Uni | M9535, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
19,50	20	153	101	77	50	M9535-1950AJ	30550331
19,80	20	153	101	77	50	M9535-1980AJ	30550332
20,00	20	153	101	77	50	M9535-2000AJ	30550333

Dimensions in mm.

Cutting data recommendations from page 272.

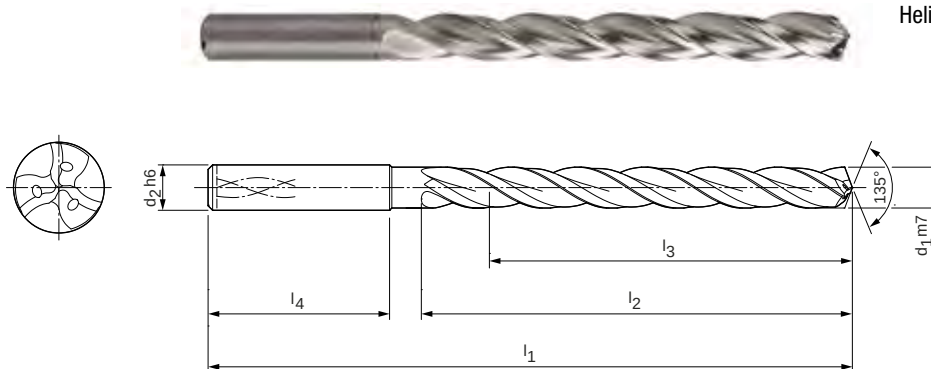
Special designs and other coatings on request.

MEGA-Spike-Drill-Uni

8xD, internal cooling
M9538

Design:

Drill diameter: 5,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxB
Number of cutting edges: 3
Number of guiding chamfers: 3
Point angle: 135°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
5,00	6	95	57	48	36	M9538-0500AJ	30694450
5,10	6	95	57	48	36	M9538-0510AJ	30694451
5,20	6	95	57	48	36	M9538-0520AJ	30694452
5,30	6	95	57	48	36	M9538-0530AJ	30694453
5,40	6	95	57	48	36	M9538-0540AJ	30694454
5,50	6	95	57	48	36	M9538-0550AJ	30694455
5,55	6	95	57	48	36	M9538-0555AJ	30694456
5,60	6	95	57	48	36	M9538-0560AJ	30694457
5,70	6	95	57	48	36	M9538-0570AJ	30694458
5,80	6	95	57	48	36	M9538-0580AJ	30694459
5,90	6	95	57	48	36	M9538-0590AJ	30694460
6,00	6	95	57	48	36	M9538-0600AJ	30694461
6,10	8	114	76	64	36	M9538-0610AJ	30694462
6,20	8	114	76	64	36	M9538-0620AJ	30694463
6,30	8	114	76	64	36	M9538-0630AJ	30694464
6,40	8	114	76	64	36	M9538-0640AJ	30694465
6,50	8	114	76	64	36	M9538-0650AJ	30694466
6,60	8	114	76	64	36	M9538-0660AJ	30694467
6,70	8	114	76	64	36	M9538-0670AJ	30694468
6,80	8	114	76	64	36	M9538-0680AJ	30694469
6,90	8	114	76	64	36	M9538-0690AJ	30694470
7,00	8	114	76	64	36	M9538-0700AJ	30694471
7,10	8	114	76	64	36	M9538-0710AJ	30694472
7,20	8	114	76	64	36	M9538-0720AJ	30694473
7,30	8	114	76	64	36	M9538-0730AJ	30694474
7,40	8	114	76	64	36	M9538-0740AJ	30694475
7,50	8	114	76	64	36	M9538-0750AJ	30694476
7,60	8	114	76	64	36	M9538-0760AJ	30694477
7,70	8	114	76	64	36	M9538-0770AJ	30694478
7,80	8	114	76	64	36	M9538-0780AJ	30694479
7,90	8	114	76	64	36	M9538-0790AJ	30694480
8,00	8	114	76	64	36	M9538-0800AJ	30694481
8,10	10	142	95	80	40	M9538-0810AJ	30694482
8,20	10	142	95	80	40	M9538-0820AJ	30694483
8,30	10	142	95	80	40	M9538-0830AJ	30694484
8,40	10	142	95	80	40	M9538-0840AJ	30694485

Continued on next page.

MEGA-Spike-Drill-Uni | M9538, 8xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
8,50	10	142	95	80	40	M9538-0850AJ	30694486
8,60	10	142	95	80	40	M9538-0860AJ	30694487
8,70	10	142	95	80	40	M9538-0870AJ	30694488
8,80	10	142	95	80	40	M9538-0880AJ	30694489
8,90	10	142	95	80	40	M9538-0890AJ	30694490
9,00	10	142	95	80	40	M9538-0900AJ	30694491
9,10	10	142	95	80	40	M9538-0910AJ	30694492
9,20	10	142	95	80	40	M9538-0920AJ	30694493
9,30	10	142	95	80	40	M9538-0930AJ	30694494
9,40	10	142	95	80	40	M9538-0940AJ	30694495
9,50	10	142	95	80	40	M9538-0950AJ	30694496
9,60	10	142	95	80	40	M9538-0960AJ	30694497
9,70	10	142	95	80	40	M9538-0970AJ	30694498
9,80	10	142	95	80	40	M9538-0980AJ	30694499
9,90	10	142	95	80	40	M9538-0990AJ	30694500
10,00	10	142	95	80	40	M9538-1000AJ	30694501
10,10	12	162	114	96	45	M9538-1010AJ	30694502
10,20	12	162	114	96	45	M9538-1020AJ	30694503
10,30	12	162	114	96	45	M9538-1030AJ	30694504
10,40	12	162	114	96	45	M9538-1040AJ	30694505
10,50	12	162	114	96	45	M9538-1050AJ	30694506
10,60	12	162	114	96	45	M9538-1060AJ	30694507
10,70	12	162	114	96	45	M9538-1070AJ	30694508
10,80	12	162	114	96	45	M9538-1080AJ	30694509
10,90	12	162	114	96	45	M9538-1090AJ	30694510
11,00	12	162	114	96	45	M9538-1100AJ	30694511
11,10	12	162	114	96	45	M9538-1110AJ	30694512
11,20	12	162	114	96	45	M9538-1120AJ	30694513
11,30	12	162	114	96	45	M9538-1130AJ	30694514
11,40	12	162	114	96	45	M9538-1140AJ	30694515
11,50	12	162	114	96	45	M9538-1150AJ	30694516
11,60	12	162	114	96	45	M9538-1160AJ	30694517
11,70	12	162	114	96	45	M9538-1170AJ	30694518
11,80	12	162	114	96	45	M9538-1180AJ	30694519
11,90	12	162	114	96	45	M9538-1190AJ	30694520
12,00	12	162	114	96	45	M9538-1200AJ	30694521
12,50	14	178	133	112	45	M9538-1250AJ	30694522
12,80	14	178	133	112	45	M9538-1280AJ	30694523
13,00	14	178	133	112	45	M9538-1300AJ	30694524
13,50	14	178	133	112	45	M9538-1350AJ	30694525
13,80	14	178	133	112	45	M9538-1380AJ	30694526
14,00	14	178	133	112	45	M9538-1400AJ	30694528
14,50	16	203	152	128	48	M9538-1450AJ	30694529
14,80	16	203	152	128	48	M9538-1480AJ	30694530
15,00	16	203	152	128	48	M9538-1500AJ	30694531
15,50	16	203	152	128	48	M9538-1550AJ	30694532
15,80	16	203	152	128	48	M9538-1580AJ	30694533
16,00	16	203	152	128	48	M9538-1600AJ	30694534
16,50	18	222	171	144	48	M9538-1650AJ	30694535
16,80	18	222	171	144	48	M9538-1680AJ	30694536
17,00	18	222	171	144	48	M9538-1700AJ	30694537
17,50	18	222	171	144	48	M9538-1750AJ	30694538
17,80	18	222	171	144	48	M9538-1780AJ	30694539
18,00	18	222	171	144	48	M9538-1800AJ	30694540
18,50	20	243	190	160	50	M9538-1850AJ	30694541
18,80	20	243	190	160	50	M9538-1880AJ	30694542
19,00	20	243	190	160	50	M9538-1900AJ	30694543

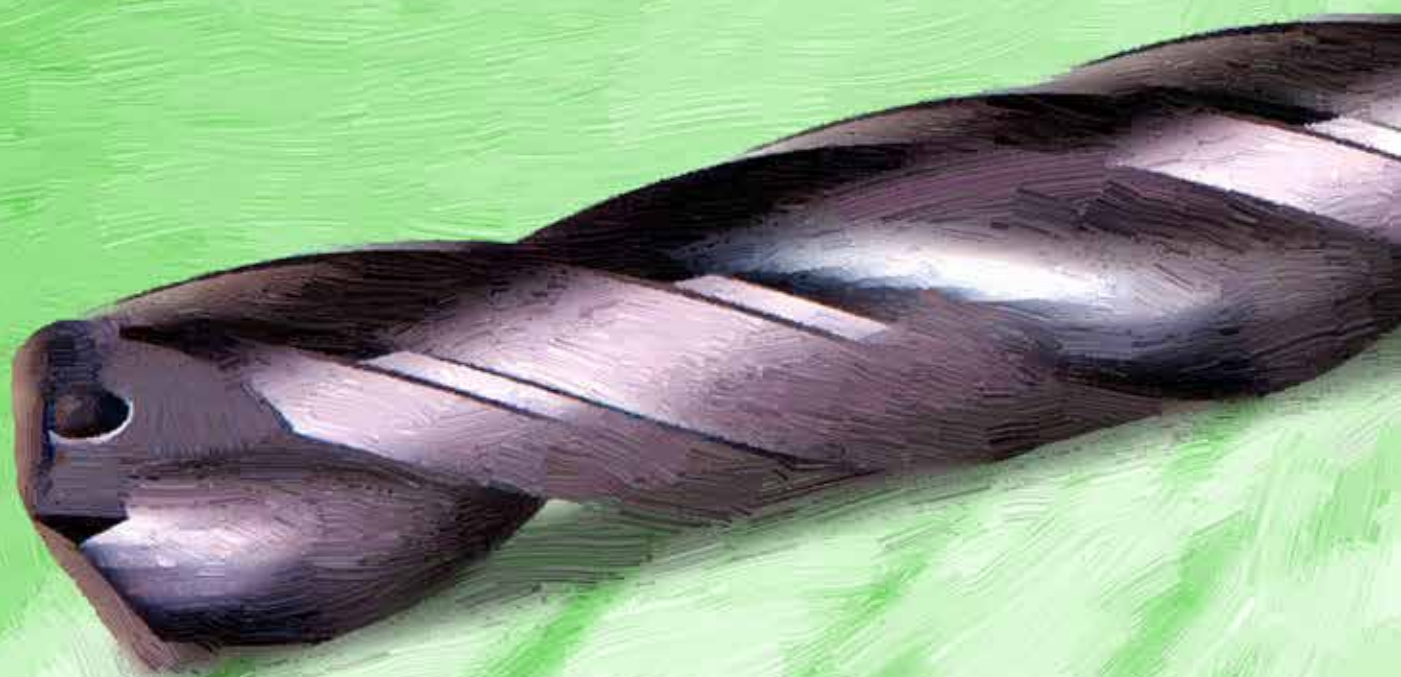
MEGA-Spike-Drill-Uni | M9538, 8xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
19,50	20	243	190	160	50	M9538-1950AJ	30694544
19,80	20	243	190	160	50	M9538-1980AJ	30694545
20,00	20	243	190	160	50	M9538-2000AJ	30694546

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.





MEGA-QUADRO-DRILL

The drills in the MEGA-Quadro-Drill series are equipped with two cutting edges and two additional guiding chamfers. The total of four guiding chamfers ensures maximum bore quality in relation to accuracy of alignment, concentricity and positioning accuracy. Drills in the Quadro-Drill series also impress in relation to circularity and diameter tolerance.

MEGA-Quadro-Drill

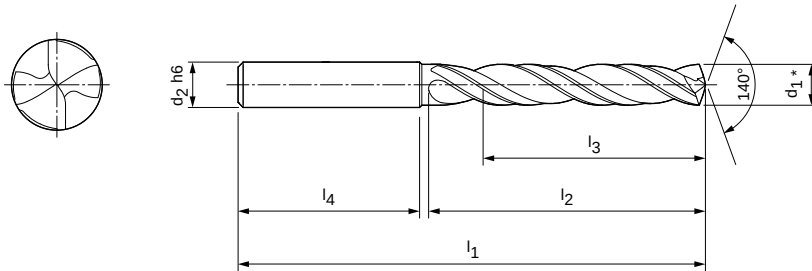
MEGA-Quadro-Drill, 5xD - external cooling	174
MEGA-Quadro-Drill, 5xD - internal cooling	177
MEGA-Quadro-Drill, 8xD - internal cooling	180
MEGA-Quadro-Drill, 12xD - internal cooling	183

MEGA-Quadro-Drill

5xD, external cooling
M2075

Design:

Drill diameter: 3,00 – 16,00 mm
Bore tolerance: $\geq$ IT 8
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ *	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	66	28	23	36	M2075-0300AE	30056219
3,10	6	66	28	23	36	M2075-0310AE	30056220
3,20	6	66	28	23	36	M2075-0320AE	30056221
3,30	6	66	28	23	36	M2075-0330AE	30056222
3,40	6	66	28	23	36	M2075-0340AE	30056223
3,50	6	66	28	23	36	M2075-0350AE	30056224
3,60	6	66	28	23	36	M2075-0360AE	30056225
3,70	6	66	28	23	36	M2075-0370AE	30056226
3,80	6	74	36	29	36	M2075-0380AE	30056227
3,90	6	74	36	29	36	M2075-0390AE	30056228
4,00	6	74	36	29	36	M2075-0400AE	30056229
4,10	6	74	36	29	36	M2075-0410AE	30056230
4,20	6	74	36	29	36	M2075-0420AE	30056231
4,30	6	74	36	29	36	M2075-0430AE	30056232
4,40	6	74	36	29	36	M2075-0440AE	30056233
4,50	6	74	36	29	36	M2075-0450AE	30056234
4,60	6	74	36	29	36	M2075-0460AE	30056235
4,70	6	74	36	29	36	M2075-0470AE	30056236
4,80	6	82	44	35	36	M2075-0480AE	30056237
4,90	6	82	44	35	36	M2075-0490AE	30056238
5,00	6	82	44	35	36	M2075-0500AE	30056239
5,10	6	82	44	35	36	M2075-0510AE	30056240
5,20	6	82	44	35	36	M2075-0520AE	30056241
5,30	6	82	44	35	36	M2075-0530AE	30056242
5,40	6	82	44	35	36	M2075-0540AE	30056243
5,50	6	82	44	35	36	M2075-0550AE	30056244
5,60	6	82	44	35	36	M2075-0560AE	30056245
5,70	6	82	44	35	36	M2075-0570AE	30056246
5,80	6	82	44	35	36	M2075-0580AE	30056247
5,90	6	82	44	35	36	M2075-0590AE	30056248
6,00	6	82	44	35	36	M2075-0600AE	30056249
6,10	8	91	53	43	36	M2075-0610AE	30056250
6,20	8	91	53	43	36	M2075-0620AE	30056251
6,30	8	91	53	43	36	M2075-0630AE	30056252
6,40	8	91	53	43	36	M2075-0640AE	30056253
6,50	8	91	53	43	36	M2075-0650AE	30056254

MEGA-Quadro-Drill | M2075, 5xD, external cooling

Dimensions						Specification	Order No.
d ₁ *	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,60	8	91	53	43	36	M2075-0660AE	30056255
6,70	8	91	53	43	36	M2075-0670AE	30056256
6,80	8	91	53	43	36	M2075-0680AE	30056257
6,90	8	91	53	43	36	M2075-0690AE	30056258
7,00	8	91	53	43	36	M2075-0700AE	30056259
7,10	8	91	53	43	36	M2075-0710AE	30056260
7,20	8	91	53	43	36	M2075-0720AE	30056261
7,30	8	91	53	43	36	M2075-0730AE	30056262
7,40	8	91	53	43	36	M2075-0740AE	30056263
7,50	8	91	53	43	36	M2075-0750AE	30056264
7,60	8	91	53	43	36	M2075-0760AE	30056265
7,70	8	91	53	43	36	M2075-0770AE	30056266
7,80	8	91	53	43	36	M2075-0780AE	30056267
7,90	8	91	53	43	36	M2075-0790AE	30056268
8,00	8	91	53	43	36	M2075-0800AE	30056269
8,10	10	103	61	49	40	M2075-0810AE	30056270
8,20	10	103	61	49	40	M2075-0820AE	30056271
8,30	10	103	61	49	40	M2075-0830AE	30056272
8,40	10	103	61	49	40	M2075-0840AE	30056273
8,50	10	103	61	49	40	M2075-0850AE	30056274
8,60	10	103	61	49	40	M2075-0860AE	30056275
8,70	10	103	61	49	40	M2075-0870AE	30056276
8,80	10	103	61	49	40	M2075-0880AE	30056277
8,90	10	103	61	49	40	M2075-0890AE	30056278
9,00	10	103	61	49	40	M2075-0900AE	30056279
9,10	10	103	61	49	40	M2075-0910AE	30056280
9,20	10	103	61	49	40	M2075-0920AE	30056281
9,30	10	103	61	49	40	M2075-0930AE	30056282
9,40	10	103	61	49	40	M2075-0940AE	30056283
9,50	10	103	61	49	40	M2075-0950AE	30056284
9,60	10	103	61	49	40	M2075-0960AE	30056285
9,70	10	103	61	49	40	M2075-0970AE	30056286
9,80	10	103	61	49	40	M2075-0980AE	30056287
9,90	10	103	61	49	40	M2075-0990AE	30056288
10,00	10	103	61	49	40	M2075-1000AE	30056289
10,10	12	118	71	56	45	M2075-1010AE	30056290
10,20	12	118	71	56	45	M2075-1020AE	30056291
10,30	12	118	71	56	45	M2075-1030AE	30056292
10,40	12	118	71	56	45	M2075-1040AE	30056293
10,50	12	118	71	56	45	M2075-1050AE	30056294
10,60	12	118	71	56	45	M2075-1060AE	30056295
10,70	12	118	71	56	45	M2075-1070AE	30056296
10,80	12	118	71	56	45	M2075-1080AE	30056297
10,90	12	118	71	56	45	M2075-1090AE	30056298
11,00	12	118	71	56	45	M2075-1100AE	30056299
11,10	12	118	71	56	45	M2075-1110AE	30056300
11,20	12	118	71	56	45	M2075-1120AE	30056301
11,30	12	118	71	56	45	M2075-1130AE	30056302
11,40	12	118	71	56	45	M2075-1140AE	30056303
11,50	12	118	71	56	45	M2075-1150AE	30056304
11,60	12	118	71	56	45	M2075-1160AE	30056305
11,70	12	118	71	56	45	M2075-1170AE	30056306
11,80	12	118	71	56	45	M2075-1180AE	30056307
11,90	12	118	71	56	45	M2075-1190AE	30056308
12,00	12	118	71	56	45	M2075-1200AE	30056309
12,50	14	124	77	60	45	M2075-1250AE	30056310
12,80	14	124	77	60	45	M2075-1280AE	30056311

Continued on next page.

MEGA-Quadro-Drill | M2075, 5xD, external cooling

Dimensions						Specification	Order No.
d ₁ *	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
13,00	14	124	77	60	45	M2075-1300AE	30056312
13,50	14	124	77	60	45	M2075-1350AE	30056313
13,80	14	124	77	60	45	M2075-1380AE	30056314
14,00	14	124	77	60	45	M2075-1400AE	30056315
14,50	16	133	83	63	48	M2075-1450AE	30056316
14,80	16	133	83	63	48	M2075-1480AE	30056317
15,00	16	133	83	63	48	M2075-1500AE	30056318
15,50	16	133	83	63	48	M2075-1550AE	30056319
15,80	16	133	83	63	48	M2075-1580AE	30056320
16,00	16	133	83	63	48	M2075-1600AE	30056321

* The bore diameter tolerance d1 is within bore tolerance field H7.

Dimensions in mm.

Cutting data recommendations from page 272.

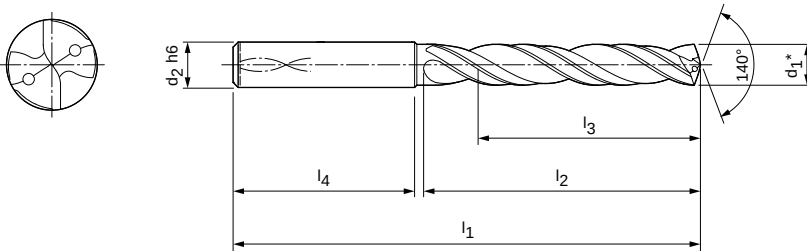
Special designs and other coatings on request.

MEGA-Quadro-Drill

5xD, internal cooling
M2175

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 8$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions							Specification	Order No.
d ₁ [mm] *	d ₁ [inch] *	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00		6	66	28	23	36	M2175-0300AE	30056334
3,10		6	66	28	23	36	M2175-0310AE	30056335
3,18	1/8	6	66	28	23	36	M2175-0318AE	30181193
3,20		6	66	28	23	36	M2175-0320AE	30056336
3,30		6	66	28	23	36	M2175-0330AE	30056337
3,40		6	66	28	23	36	M2175-0340AE	30056338
3,50		6	66	28	23	36	M2175-0350AE	30056339
3,57	9/64	6	66	28	23	36	M2175-0357AE	30181195
3,60		6	66	28	23	36	M2175-0360AE	30056340
3,70		6	66	28	23	36	M2175-0370AE	30056341
3,80		6	74	36	29	36	M2175-0380AE	30056342
3,90		6	74	36	29	36	M2175-0390AE	30056343
3,97	5/32	6	74	36	29	36	M2175-0397AE	30181197
4,00		6	74	36	29	36	M2175-0400AE	30056344
4,10		6	74	36	29	36	M2175-0410AE	30056345
4,20		6	74	36	29	36	M2175-0420AE	30056346
4,30		6	74	36	29	36	M2175-0430AE	30056347
4,37	11/64	6	74	36	29	36	M2175-0437AE	30091318
4,40		6	74	36	29	36	M2175-0440AE	30056348
4,50		6	74	36	29	36	M2175-0450AE	30056349
4,60		6	74	36	29	36	M2175-0460AE	30056350
4,70		6	74	36	29	36	M2175-0470AE	30056351
4,76	3/16	6	82	44	35	36	M2175-0476AE	30181200
4,80		6	82	44	35	36	M2175-0480AE	30056352
4,90		6	82	44	35	36	M2175-0490AE	30056353
5,00		6	82	44	35	36	M2175-0500AE	30056354
5,10		6	82	44	35	36	M2175-0510AE	30056355
5,16	13/64	6	82	44	35	36	M2175-0516AE	30181201
5,20		6	82	44	35	36	M2175-0520AE	30056356
5,30		6	82	44	35	36	M2175-0530AE	30056357
5,40		6	82	44	35	36	M2175-0540AE	30056358
5,50		6	82	44	35	36	M2175-0550AE	30056359
5,56	7/32	6	82	44	35	36	M2175-0556AE	30181202
5,60		6	82	44	35	36	M2175-0560AE	30056360
5,70		6	82	44	35	36	M2175-0570AE	30056361
5,80		6	82	44	35	36	M2175-0580AE	30056362

MEGA-Quadro-Drill | M2175, 5xD, internal cooling

Dimensions							Specification	Order No.
d ₁ [mm]*	d ₁ [inch]*	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
5,90		6	82	44	35	36	M2175-0590AE	30056363
5,95	15/64	6	82	44	35	36	M2175-0595AE	30181203
6,00		6	82	44	35	36	M2175-0600AE	30056364
6,10		8	91	53	43	36	M2175-0610AE	30056365
6,20		8	91	53	43	36	M2175-0620AE	30056366
6,30		8	91	53	43	36	M2175-0630AE	30056367
6,35	1/4	8	91	53	43	36	M2175-0635AE	30079728
6,40		8	91	53	43	36	M2175-0640AE	30056368
6,50		8	91	53	43	36	M2175-0650AE	30056369
6,60		8	91	53	43	36	M2175-0660AE	30056370
6,70		8	91	53	43	36	M2175-0670AE	30056371
6,75	17/64	8	91	53	43	36	M2175-0675AE	30181206
6,80		8	91	53	43	36	M2175-0680AE	30056372
6,90		8	91	53	43	36	M2175-0690AE	30056373
7,00		8	91	53	43	36	M2175-0700AE	30056374
7,10		8	91	53	43	36	M2175-0710AE	30056375
7,14	9/32	8	91	53	43	36	M2175-0714AE	30181207
7,20		8	91	53	43	36	M2175-0720AE	30056376
7,30		8	91	53	43	36	M2175-0730AE	30056377
7,40		8	91	53	43	36	M2175-0740AE	30056378
7,50		8	91	53	43	36	M2175-0750AE	30056379
7,54	19/64	8	91	53	43	36	M2175-0754AE	30181208
7,60		8	91	53	43	36	M2175-0760AE	30056380
7,70		8	91	53	43	36	M2175-0770AE	30056381
7,80		8	91	53	43	36	M2175-0780AE	30056382
7,90		8	91	53	43	36	M2175-0790AE	30056383
7,94	5/16	8	91	53	43	36	M2175-0794AE	30101509
8,00		8	91	53	43	36	M2175-0800AE	30056384
8,10		10	103	61	49	40	M2175-0810AE	30056385
8,20		10	103	61	49	40	M2175-0820AE	30056386
8,30		10	103	61	49	40	M2175-0830AE	30056387
8,33	21/64	10	103	61	49	40	M2175-0833AE	30181209
8,40		10	103	61	49	40	M2175-0840AE	30056388
8,50		10	103	61	49	40	M2175-0850AE	30056389
8,60		10	103	61	49	40	M2175-0860AE	30056390
8,70		10	103	61	49	40	M2175-0870AE	30056391
8,73	11/32	10	103	61	49	40	M2175-0873AE	30181211
8,80		10	103	61	49	40	M2175-0880AE	30056392
8,90		10	103	61	49	40	M2175-0890AE	30056393
9,00		10	103	61	49	40	M2175-0900AE	30056394
9,10		10	103	61	49	40	M2175-0910AE	30056395
9,13	23/64	10	103	61	49	40	M2175-0913AE	30181212
9,20		10	103	61	49	40	M2175-0920AE	30056396
9,30		10	103	61	49	40	M2175-0930AE	30056397
9,40		10	103	61	49	40	M2175-0940AE	30056398
9,50		10	103	61	49	40	M2175-0950AE	30056399
9,53	3/8	10	103	61	49	40	M2175-0953AE	30181215
9,60		10	103	61	49	40	M2175-0960AE	30056400
9,70		10	103	61	49	40	M2175-0970AE	30056401
9,80		10	103	61	49	40	M2175-0980AE	30056402
9,90		10	103	61	49	40	M2175-0990AE	30056403
9,92	25/64	10	103	61	49	40	M2175-0992AE	30181216
10,00		10	103	61	49	40	M2175-1000AE	30056404
10,10		12	118	71	56	45	M2175-1010AE	30056405
10,20		12	118	71	56	45	M2175-1020AE	30056406
10,30		12	118	71	56	45	M2175-1030AE	30056407
10,32	13/32	12	118	71	56	45	M2175-1032AE	30181218

MEGA-Quadro-Drill | M2175, 5xD, internal cooling

Dimensions							Specification	Order No.
d ₁ [mm]*	d ₁ [inch]*	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
10,40		12	118	71	56	45	M2175-1040AE	30056408
10,50		12	118	71	56	45	M2175-1050AE	30056409
10,60		12	118	71	56	45	M2175-1060AE	30056410
10,70		12	118	71	56	45	M2175-1070AE	30056411
10,72	27/64	12	118	71	56	45	M2175-1072AE	30181219
10,80		12	118	71	56	45	M2175-1080AE	30056412
10,90		12	118	71	56	45	M2175-1090AE	30056413
11,00		12	118	71	56	45	M2175-1100AE	30056414
11,10		12	118	71	56	45	M2175-1110AE	30056415
11,11	7/16	12	118	71	56	45	M2175-1111AE	30181220
11,20		12	118	71	56	45	M2175-1120AE	30056416
11,30		12	118	71	56	45	M2175-1130AE	30056417
11,40		12	118	71	56	45	M2175-1140AE	30056418
11,50		12	118	71	56	45	M2175-1150AE	30056419
11,60		12	118	71	56	45	M2175-1160AE	30056420
11,70		12	118	71	56	45	M2175-1170AE	30056421
11,80		12	118	71	56	45	M2175-1180AE	30056422
11,90		12	118	71	56	45	M2175-1190AE	30056423
12,00		12	118	71	56	45	M2175-1200AE	30056424
12,50		14	124	77	60	45	M2175-1250AE	30056425
12,80		14	124	77	60	45	M2175-1280AE	30056426
13,00		14	124	77	60	45	M2175-1300AE	30056427
13,50		14	124	77	60	45	M2175-1350AE	30056428
14,00		14	124	77	60	45	M2175-1400AE	30056430
14,29	9/16	16	133	83	63	48	M2175-1429AE	30181223
14,50		16	133	83	63	48	M2175-1450AE	30056431
14,68	37/64	16	133	83	63	48	M2175-1468AE	30181224
14,80		16	133	83	63	48	M2175-1480AE	30056432
15,00		16	133	83	63	48	M2175-1500AE	30056433
15,08	19/32	16	133	83	63	48	M2175-1508AE	30181225
15,50		16	133	83	63	48	M2175-1550AE	30056434
15,80		16	133	83	63	48	M2175-1580AE	30056435
15,88	5/8	16	133	83	63	48	M2175-1588AE	30181226
16,00		16	133	83	63	48	M2175-1600AE	30056436
16,50		18	143	93	71	48	M2175-1650AE	30056437
16,67	21/32	18	143	93	71	48	M2175-1667AE	30181227
16,80		18	143	93	71	48	M2175-1680AE	30056438
17,00		18	143	93	71	48	M2175-1700AE	30056439
17,46	11/16	18	143	93	71	48	M2175-1746AE	30181228
17,50		18	143	93	71	48	M2175-1750AE	30056440
17,86	45/64	18	143	93	71	48	M2175-1786AE	30181229
18,00		18	143	93	71	48	M2175-1800AE	30056442
18,26	23/32	20	153	101	77	50	M2175-1826AE	30181230
18,50		20	153	101	77	50	M2175-1850AE	30056443
18,80		20	153	101	77	50	M2175-1880AE	30056444
19,00		20	153	101	77	50	M2175-1900AE	30056445
19,05	3/4	20	153	101	77	50	M2175-1905AE	30181231
19,50		20	153	101	77	50	M2175-1950AE	30056446
19,80		20	153	101	77	50	M2175-1980AE	30056447
20,00		20	153	101	77	50	M2175-2000AE	30056448

* The bore diameter tolerance d1 is within bore tolerance field H7.

Dimensions in mm.

Cutting data recommendations from page 272.

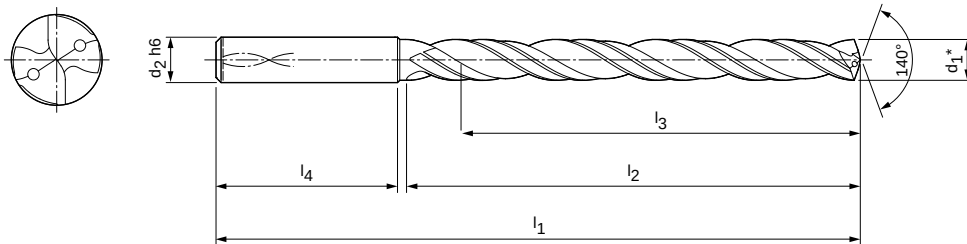
Special designs and other coatings on request.

MEGA-Quadro-Drill

8xD, internal cooling
M2178

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq$ IT 8
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions							Specification	Order No.
d ₁ [mm]*	d ₁ [inch]*	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00		6	72	34	29	36	M2178-0300AE	30050301
3,10		6	72	34	29	36	M2178-0310AE	30050303
3,18	1/8	6	72	34	29	36	M2178-0318AE	30181232
3,20		6	72	34	29	36	M2178-0320AE	30050305
3,30		6	72	34	29	36	M2178-0330AE	30050307
3,40		6	72	34	29	36	M2178-0340AE	30050309
3,50		6	72	34	29	36	M2178-0350AE	30050311
3,57	9/64	6	72	34	29	36	M2178-0357AE	30181234
3,60		6	72	34	29	36	M2178-0360AE	30050313
3,70		6	72	34	29	36	M2178-0370AE	30050315
3,80		6	81	43	36	36	M2178-0380AE	30050317
3,90		6	81	43	36	36	M2178-0390AE	30050319
3,97	5/32	6	81	43	36	36	M2178-0397AE	30181236
4,00		6	81	43	36	36	M2178-0400AE	30050321
4,10		6	81	43	36	36	M2178-0410AE	30050323
4,20		6	81	43	36	36	M2178-0420AE	30050325
4,30		6	81	43	36	36	M2178-0430AE	30050327
4,37	11/64	6	81	43	36	36	M2178-0437AE	30181238
4,40		6	81	43	36	36	M2178-0440AE	30050329
4,50		6	81	43	36	36	M2178-0450AE	30050331
4,60		6	81	43	36	36	M2178-0460AE	30050333
4,70		6	81	43	36	36	M2178-0470AE	30050335
4,76	3/16	6	95	57	48	36	M2178-0476AE	30181240
4,80		6	95	57	48	36	M2178-0480AE	30050337
4,90		6	95	57	48	36	M2178-0490AE	30050339
5,00		6	95	57	48	36	M2178-0500AE	30050341
5,10		6	95	57	48	36	M2178-0510AE	30050343
5,16	13/64	6	95	57	48	36	M2178-0516AE	30181241
5,20		6	95	57	48	36	M2178-0520AE	30050345
5,30		6	95	57	48	36	M2178-0530AE	30050347
5,40		6	95	57	48	36	M2178-0540AE	30050349
5,50		6	95	57	48	36	M2178-0550AE	30050351
5,56	7/32	6	95	57	48	36	M2178-0556AE	30181242
5,60		6	95	57	48	36	M2178-0560AE	30050353
5,70		6	95	57	48	36	M2178-0570AE	30050355
5,80		6	95	57	48	36	M2178-0580AE	30050357

MEGA-Quadro-Drill | M2178, 8xD, internal cooling

Dimensions							Specification	Order No.
d ₁ [mm]*	d ₁ [inch]*	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
5,90		6	95	57	48	36	M2178-0590AE	30050359
5,95	15/64	6	95	57	48	36	M2178-0595AE	30181243
6,00		6	95	57	48	36	M2178-0600AE	30050361
6,10		8	114	76	64	36	M2178-0610AE	30050363
6,20		8	114	76	64	36	M2178-0620AE	30050365
6,30		8	114	76	64	36	M2178-0630AE	30050367
6,35	1/4	8	114	76	64	36	M2178-0635AE	30181245
6,40		8	114	76	64	36	M2178-0640AE	30050369
6,50		8	114	76	64	36	M2178-0650AE	30050371
6,60		8	114	76	64	36	M2178-0660AE	30050373
6,70		8	114	76	64	36	M2178-0670AE	30050375
6,75	17/64	8	114	76	64	36	M2178-0675AE	30174591
6,80		8	114	76	64	36	M2178-0680AE	30050377
6,90		8	114	76	64	36	M2178-0690AE	30050379
7,00		8	114	76	64	36	M2178-0700AE	30050381
7,10		8	114	76	64	36	M2178-0710AE	30050382
7,14	9/32	8	114	76	64	36	M2178-0714AE	30181248
7,20		8	114	76	64	36	M2178-0720AE	30050384
7,30		8	114	76	64	36	M2178-0730AE	30050386
7,40		8	114	76	64	36	M2178-0740AE	30050388
7,50		8	114	76	64	36	M2178-0750AE	30050390
7,54	19/64	8	114	76	64	36	M2178-0754AE	30181249
7,60		8	114	76	64	36	M2178-0760AE	30050392
7,70		8	114	76	64	36	M2178-0770AE	30050395
7,80		8	114	76	64	36	M2178-0780AE	30050398
7,90		8	114	76	64	36	M2178-0790AE	30050401
7,94	5/16	8	114	76	64	36	M2178-0794AE	30181250
8,00		8	114	76	64	36	M2178-0800AE	30050404
8,10		10	142	95	80	40	M2178-0810AE	30050408
8,20		10	142	95	80	40	M2178-0820AE	30050411
8,30		10	142	95	80	40	M2178-0830AE	30050414
8,33	21/64	10	142	95	80	40	M2178-0833AE	30181251
8,40		10	142	95	80	40	M2178-0840AE	30050416
8,50		10	142	95	80	40	M2178-0850AE	30050419
8,60		10	142	95	80	40	M2178-0860AE	30050422
8,70		10	142	95	80	40	M2178-0870AE	30050425
8,73	11/32	10	142	95	80	40	M2178-0873AE	30181253
8,80		10	142	95	80	40	M2178-0880AE	30050428
8,90		10	142	95	80	40	M2178-0890AE	30050431
9,00		10	142	95	80	40	M2178-0900AE	30050434
9,10		10	142	95	80	40	M2178-0910AE	30050437
9,13	23/64	10	142	95	80	40	M2178-0913AE	30181254
9,20		10	142	95	80	40	M2178-0920AE	30050440
9,30		10	142	95	80	40	M2178-0930AE	30050443
9,40		10	142	95	80	40	M2178-0940AE	30050446
9,50		10	142	95	80	40	M2178-0950AE	30050449
9,53	3/8	10	142	95	80	40	M2178-0953AE	30181256
9,60		10	142	95	80	40	M2178-0960AE	30050452
9,70		10	142	95	80	40	M2178-0970AE	30050455
9,80		10	142	95	80	40	M2178-0980AE	30050458
9,90		10	142	95	80	40	M2178-0990AE	30050461
9,92	25/64	10	142	95	80	40	M2178-0992AE	30181257
10,00		10	142	95	80	40	M2178-1000AE	30050464
10,10		12	162	114	96	45	M2178-1010AE	30050467
10,20		12	162	114	96	45	M2178-1020AE	30050470
10,30		12	162	114	96	45	M2178-1030AE	30050473
10,32	13/32	12	162	114	96	45	M2178-1032AE	30181259

Continued on next page.

MEGA-Quadro-Drill | M2178, 8xD, internal cooling

Dimensions							Specification	Order No.
d ₁ [mm]*	d ₁ [inch]*	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
10,40		12	162	114	96	45	M2178-1040AE	30050476
10,50		12	162	114	96	45	M2178-1050AE	30050479
10,60		12	162	114	96	45	M2178-1060AE	30050482
10,70		12	162	114	96	45	M2178-1070AE	30050485
10,72	27/64	12	162	114	96	45	M2178-1072AE	30181260
10,80		12	162	114	96	45	M2178-1080AE	30050488
10,90		12	162	114	96	45	M2178-1090AE	30050491
11,00		12	162	114	96	45	M2178-1100AE	30050494
11,10		12	162	114	96	45	M2178-1110AE	30050497
11,11	7/16	12	162	114	96	45	M2178-1111AE	30181261
11,20		12	162	114	96	45	M2178-1120AE	30050500
11,30		12	162	114	96	45	M2178-1130AE	30050503
11,40		12	162	114	96	45	M2178-1140AE	30050506
11,50		12	162	114	96	45	M2178-1150AE	30050509
11,60		12	162	114	96	45	M2178-1160AE	30050512
11,70		12	162	114	96	45	M2178-1170AE	30050515
11,80		12	162	114	96	45	M2178-1180AE	30050518
11,90		12	162	114	96	45	M2178-1190AE	30050521
12,00		12	162	114	96	45	M2178-1200AE	30050524
12,50		14	178	133	112	45	M2178-1250AE	30050527
12,80		14	178	133	112	45	M2178-1280AE	30050530
13,00		14	178	133	112	45	M2178-1300AE	30050533
13,50		14	178	133	112	45	M2178-1350AE	30050536
13,80		14	178	133	112	45	M2178-1380AE	30050539
14,00		14	178	133	112	45	M2178-1400AE	30050542
14,29	9/16	16	203	152	128	48	M2178-1429AE	30181264
14,50		16	203	152	128	48	M2178-1450AE	30050545
14,68	37/64	16	203	152	128	48	M2178-1468AE	30181265
14,80		16	203	152	128	48	M2178-1480AE	30050548
15,00		16	203	152	128	48	M2178-1500AE	30050551
15,08	19/32	16	203	152	128	48	M2178-1508AE	30181266
15,50		16	203	152	128	48	M2178-1550AE	30050554
15,80		16	203	152	128	48	M2178-1580AE	30050557
15,88	5/8	16	203	152	128	48	M2178-1588AE	30181267
16,00		16	203	152	128	48	M2178-1600AE	30050560
16,50		18	222	171	144	48	M2178-1650AE	30050563
16,67	21/32	18	222	171	144	48	M2178-1667AE	30181268
16,80		18	222	171	144	48	M2178-1680AE	30050566
17,00		18	222	171	144	48	M2178-1700AE	30050569
17,46	11/16	18	222	171	144	48	M2178-1746AE	30181269
17,50		18	222	171	144	48	M2178-1750AE	30050572
17,80		18	222	171	144	48	M2178-1780AE	30050574
17,86	45/54	18	222	171	144	48	M2178-1786AE	30181270
18,00		18	222	171	144	48	M2178-1800AE	30050577
18,26	23/32	20	243	190	160	50	M2178-1826AE	30181271
18,50		20	243	190	160	50	M2178-1850AE	30050580
18,80		20	243	190	160	50	M2178-1880AE	30050583
19,00		20	243	190	160	50	M2178-1900AE	30050586
19,05	3/4	20	243	190	160	50	M2178-1905AE	30181272
19,50		20	243	190	160	50	M2178-1950AE	30050589
19,80		20	243	190	160	50	M2178-1980AE	30050592
20,00		20	243	190	160	50	M2178-2000AE	30050595

* The bore diameter tolerance d1 is within bore tolerance field H7.

Dimensions in mm.

Cutting data recommendations from page 272.

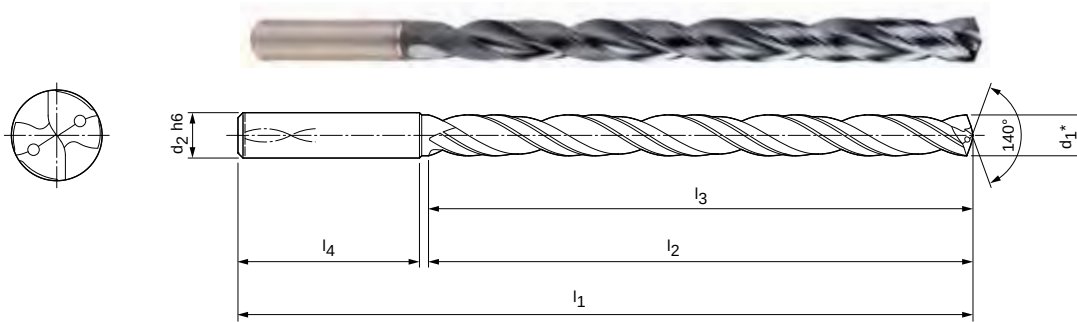
Special designs and other coatings on request.

MEGA-Quadro-Drill

12xD, internal cooling
M2182

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 8$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions							Specification	Order No.
d ₁ [mm]*	d ₁ [inch]*	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00		6	92	54	48	36	M2182-0300AE	30050598
3,10		6	92	54	48	36	M2182-0310AE	30050601
3,18	1/8	6	92	54	48	36	M2182-0318AE	30181273
3,20		6	92	54	48	36	M2182-0320AE	30050604
3,30		6	92	54	48	36	M2182-0330AE	30050607
3,40		6	92	54	48	36	M2182-0340AE	30050610
3,50		6	92	54	48	36	M2182-0350AE	30050613
3,57	9/64	6	92	54	48	36	M2182-0357AE	30181275
3,60		6	92	54	48	36	M2182-0360AE	30050616
3,70		6	92	54	48	36	M2182-0370AE	30050619
3,80		6	102	64	58	36	M2182-0380AE	30050622
3,90		6	102	64	58	36	M2182-0390AE	30050625
3,97	5/32	6	102	64	58	36	M2182-0397AE	30181277
4,00		6	102	64	58	36	M2182-0400AE	30050628
4,10		6	102	64	58	36	M2182-0410AE	30050630
4,20		6	102	64	58	36	M2182-0420AE	30050633
4,30		6	102	64	58	36	M2182-0430AE	30050636
4,37	11/64	6	102	64	58	36	M2182-0437AE	30181279
4,40		6	102	64	58	36	M2182-0440AE	30050639
4,50		6	102	64	58	36	M2182-0450AE	30050642
4,60		6	102	64	58	36	M2182-0460AE	30050645
4,70		6	102	64	58	36	M2182-0470AE	30050648
4,76	3/16	6	116	78	70	36	M2182-0476AE	30181281
4,80		6	116	78	70	36	M2182-0480AE	30050651
4,90		6	116	78	70	36	M2182-0490AE	30050654
5,00		6	116	78	70	36	M2182-0500AE	30050657
5,10		6	116	78	70	36	M2182-0510AE	30050660
5,16	13/64	6	116	78	70	36	M2182-0516AE	30181282
5,20		6	116	78	70	36	M2182-0520AE	30050663
5,30		6	116	78	70	36	M2182-0530AE	30050666
5,40		6	116	78	70	36	M2182-0540AE	30050669
5,50		6	116	78	70	36	M2182-0550AE	30050672
5,56	7/32	6	116	78	70	36	M2182-0556AE	30181283
5,60		6	116	78	70	36	M2182-0560AE	30050675
5,70		6	116	78	70	36	M2182-0570AE	30050678
5,80		6	116	78	70	36	M2182-0580AE	30050681

Continued on next page.

MEGA-Quadro-Drill | M2182, 12xD, internal cooling

Dimensions							Specification	Order No.
d ₁ [mm]*	d ₁ [inch]*	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
5,90		6	116	78	70	36	M2182-0590AE	30050684
5,95	15/64	6	116	78	70	36	M2182-0595AE	30181284
6,00		6	116	78	70	36	M2182-0600AE	30050687
6,10		8	146	108	94	36	M2182-0610AE	30050690
6,20		8	146	108	94	36	M2182-0620AE	30050693
6,30		8	146	108	94	36	M2182-0630AE	30050696
6,35	1/4	8	146	108	94	36	M2182-0635AE	30118240
6,40		8	146	108	94	36	M2182-0640AE	30050699
6,50		8	146	108	94	36	M2182-0650AE	30050702
6,60		8	146	108	94	36	M2182-0660AE	30050705
6,70		8	146	108	94	36	M2182-0670AE	30050708
6,75	17/64	8	146	108	94	36	M2182-0675AE	30181288
6,80		8	146	108	94	36	M2182-0680AE	30050711
6,90		8	146	108	94	36	M2182-0690AE	30050715
7,00		8	146	108	94	36	M2182-0700AE	30050718
7,10		8	146	108	94	36	M2182-0710AE	30050721
7,14	9/32	8	146	108	94	36	M2182-0714AE	30181289
7,20		8	146	108	94	36	M2182-0720AE	30050724
7,30		8	146	108	94	36	M2182-0730AE	30050727
7,40		8	146	108	94	36	M2182-0740AE	30050730
7,50		8	146	108	94	36	M2182-0750AE	30050733
7,54	19/64	8	146	108	94	36	M2182-0754AE	30181290
7,60		8	146	108	94	36	M2182-0760AE	30050736
7,70		8	146	108	94	36	M2182-0770AE	30050739
7,80		8	146	108	94	36	M2182-0780AE	30050742
7,90		8	146	108	94	36	M2182-0790AE	30050745
7,94	5/16	8	146	108	94	36	M2182-0794AE	30181291
8,00		8	146	108	94	36	M2182-0800AE	30050748
8,10		10	162	120	110	40	M2182-0810AE	30050751
8,20		10	162	120	110	40	M2182-0820AE	30050754
8,30		10	162	120	110	40	M2182-0830AE	30050757
8,33	21/64	10	162	120	110	40	M2182-0833AE	30181292
8,40		10	162	120	110	40	M2182-0840AE	30050760
8,50		10	162	120	110	40	M2182-0850AE	30050763
8,60		10	162	120	110	40	M2182-0860AE	30050766
8,70		10	162	120	110	40	M2182-0870AE	30050769
8,73	11/32	10	162	120	110	40	M2182-0873AE	30181294
8,80		10	162	120	110	40	M2182-0880AE	30050772
8,90		10	162	120	110	40	M2182-0890AE	30050775
9,00		10	162	120	110	40	M2182-0900AE	30050778
9,10		10	162	120	110	40	M2182-0910AE	30050781
9,13	23/64	10	162	120	110	40	M2182-0913AE	30181295
9,20		10	162	120	110	40	M2182-0920AE	30050784
9,30		10	162	120	110	40	M2182-0930AE	30050787
9,40		10	162	120	110	40	M2182-0940AE	30050790
9,50		10	162	120	110	40	M2182-0950AE	30050793
9,53	3/8	10	162	120	110	40	M2182-0953AE	30181297
9,60		10	162	120	110	40	M2182-0960AE	30050796
9,70		10	162	120	110	40	M2182-0970AE	30050799
9,80		10	162	120	110	40	M2182-0980AE	30050802
9,90		10	162	120	110	40	M2182-0990AE	30050805
9,92	25/64	10	162	120	110	40	M2182-0992AE	30181298
10,00		10	162	120	110	40	M2182-1000AE	30050808
10,10		12	204	156	142	45	M2182-1010AE	30050811
10,20		12	204	156	142	45	M2182-1020AE	30050814
10,30		12	204	156	142	45	M2182-1030AE	30050817
10,32	13/32	12	204	156	142	45	M2182-1032AE	30181300

MEGA-Quadro-Drill | M2182, 12xD, internal cooling

Dimensions							Specification	Order No.
d ₁ [mm]*	d ₁ [inch]*	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
10,40		12	204	156	142	45	M2182-1040AE	30050820
10,50		12	204	156	142	45	M2182-1050AE	30050823
10,60		12	204	156	142	45	M2182-1060AE	30050826
10,70		12	204	156	142	45	M2182-1070AE	30050829
10,72	27/64	12	204	156	142	45	M2182-1072AE	30181301
10,80		12	204	156	142	45	M2182-1080AE	30050832
10,90		12	204	156	142	45	M2182-1090AE	30050835
11,00		12	204	156	142	45	M2182-1100AE	30050838
11,10		12	204	156	142	45	M2182-1110AE	30050841
11,11	7/16	12	204	156	142	45	M2182-1111AE	30181302
11,20		12	204	156	142	45	M2182-1120AE	30050844
11,30		12	204	156	142	45	M2182-1130AE	30050847
11,40		12	204	156	142	45	M2182-1140AE	30050850
11,50		12	204	156	142	45	M2182-1150AE	30050853
11,60		12	204	156	142	45	M2182-1160AE	30050856
11,70		12	204	156	142	45	M2182-1170AE	30050859
11,80		12	204	156	142	45	M2182-1180AE	30050862
11,90		12	204	156	142	45	M2182-1190AE	30050865
12,00		12	204	156	142	45	M2182-1200AE	30050868
12,50		14	230	182	166	45	M2182-1250AE	30050871
12,80		14	230	182	166	45	M2182-1280AE	30050874
13,00		14	230	182	166	45	M2182-1300AE	30050877
13,50		14	230	182	166	45	M2182-1350AE	30050880
13,80		14	230	182	166	45	M2182-1380AE	30050883
14,00		14	230	182	166	45	M2182-1400AE	30050886
14,29	9/16	16	260	208	192	48	M2182-1429AE	30181306
14,50		16	260	208	192	48	M2182-1450AE	30050889
14,68	37/64	16	260	208	192	48	M2182-1468AE	30181307
14,80		16	260	208	192	48	M2182-1480AE	30050892
15,00		16	260	208	192	48	M2182-1500AE	30050895
15,08	19/32	16	260	208	192	48	M2182-1508AE	30181308
15,50		16	260	208	192	48	M2182-1550AE	30050898
15,80		16	260	208	192	48	M2182-1580AE	30050901
15,88	5/8	16	260	208	192	48	M2182-1588AE	30181309
16,00		16	260	208	192	48	M2182-1600AE	30050904
16,50		18	285	234	216	48	M2182-1650AE	30050907
16,67	21/32	18	285	234	216	48	M2182-1667AE	30181310
16,80		18	285	234	216	48	M2182-1680AE	30050910
17,00		18	285	234	216	48	M2182-1700AE	30050913
17,46	11/16	18	285	234	216	48	M2182-1746AE	30181311
17,50		18	285	234	216	48	M2182-1750AE	30050916
17,80		18	285	234	216	48	M2182-1780AE	30050919
17,86	45/64	18	285	234	216	48	M2182-1786AE	30181312
18,00		18	285	234	216	48	M2182-1800AE	30050922
18,26	23/32	20	310	258	240	50	M2182-1826AE	30181313
18,50		20	310	258	240	50	M2182-1850AE	30050925
18,80		20	310	258	240	50	M2182-1880AE	30050928
19,00		20	310	258	240	50	M2182-1900AE	30050931
19,05	3/4	20	310	258	240	50	M2182-1905AE	30181314
19,50		20	310	258	240	50	M2182-1950AE	30050934
19,80		20	310	258	240	50	M2182-1980AE	30050937
20,00		20	310	258	240	50	M2182-2000AE	30050940

* The bore diameter tolerance d1 is within bore tolerance field H7.

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.





MEGA-DRILL-REAMER

The MEGA-Drill-Reamer combines two processes in one tool: Drilling and reaming

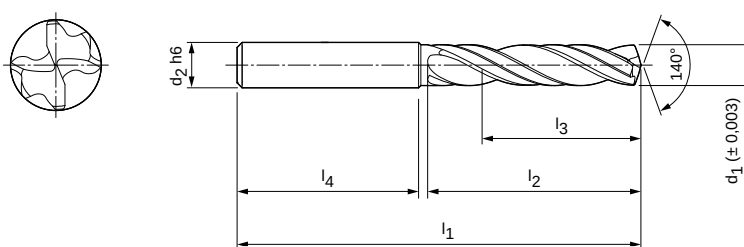
Using the MEGA-Drill-Reamers the drilling and reaming is realised in one processes. In this way bores can be machined faster and more efficiently and the productive and non-productive times significantly reduced. Two drill cutting edges on the coated tool initially undertake the bore machining into the solid. Four slightly axially offset reaming cutting edges provide the fine machining and safeguard the required surface finishes, the dimensional accuracy as well as the circularity in reamed quality.

MEGA-Drill-Reamer

MEGA-Drill-Reamer, 3xD - external cooling	_____	188
MEGA-Drill-Reamer, 3xD - internal cooling	_____	189
MEGA-Drill-Reamer, 5xD - internal cooling	_____	191

MEGA-Drill-Reamer

3xD, external cooling
M2253



Design:

Drill diameter:	5,97 – 12,02 mm
Bore tolerance:	≥ IT 7
Coating:	MxF
Number of cutting edges:	2
Number of guiding chamfers:	4
Point geometry:	Specific geometry
Point angle:	140°
Helix angle:	30°



Dimensions							Specification	Order No.
d ₁ (±0.003)	Bore diameter * min. - max.	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
5,97	5,965 - 5,980	6	79	34	24	36	M2253-0597AE ±0.003	30179014
5,98	5,975 - 5,990	6	79	34	24	36	M2253-0598AE ±0.003	30211380
5,99	5,985 - 6,000	6	79	34	24	36	M2253-0599AE ±0.003	30184711
6,00	5,995 - 6,010	6	79	34	24	36	M2253-0600AE ±0.003	30099666
6,01	6,005 - 6,020	6	79	34	24	36	M2253-0601AE ±0.003	30158303
6,02	6,015 - 6,030	6	79	34	24	36	M2253-0602AE ±0.003	30219852
7,97	7,965 - 7,980	8	79	34	24	36	M2253-0797AE ±0.003	30218108
7,98	7,975 - 7,990	8	79	34	24	36	M2253-0798AE ±0.003	30218109
7,99	7,985 - 8,000	8	79	34	24	36	M2253-0799AE ±0.003	30078182
8,00	7,995 - 8,010	8	79	34	24	36	M2253-0800AE ±0.003	30175468
8,01	8,005 - 8,020	8	79	34	24	36	M2253-0801AE ±0.003	30209762
8,02	8,015 - 8,030	8	79	34	24	36	M2253-0802AE ±0.003	30096454
9,97	9,965 - 9,980	10	89	47	35	40	M2253-0997AE ±0.003	30218110
9,98	9,975 - 9,990	10	89	47	35	40	M2253-0998AE ±0.003	30174736
9,99	9,985 - 10,000	10	89	47	35	40	M2253-0999AE ±0.003	30175469
10,00	9,995 - 10,010	10	89	47	35	40	M2253-1000AE ±0.003	30099665
10,01	10,005 - 10,020	10	89	47	35	40	M2253-1001AE ±0.003	30218111
10,02	10,015 - 10,030	10	89	47	35	40	M2253-1002AE ±0.003	30218112
11,97	11,964 - 11,982	12	102	55	40	45	M2253-1197AE ±0.003	30218113
11,98	11,974 - 11,992	12	102	55	40	45	M2253-1198AE ±0.003	30151652
11,99	11,984 - 12,002	12	102	55	40	45	M2253-1199AE ±0.003	30176856
12,00	11,994 - 12,012	12	102	55	40	45	M2253-1200AE ±0.003	30099664
12,01	12,004 - 12,022	12	102	55	40	45	M2253-1201AE ±0.003	30214889
12,02	12,014 - 12,032	12	102	55	40	45	M2253-1202AE ±0.003	30182014

* The tool tolerances stated can only be guaranteed under perfect usage conditions and at radial runout error < 10 µm.

Component, work material and coolant can also influence the hole diameter.

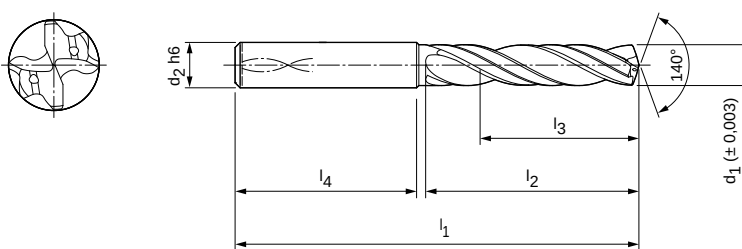
Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

MEGA-Drill-Reamer

3xD, internal cooling
M2263



Design:

Drill diameter: 5,97 – 12,72 mm
Bore tolerance: $\geq IT 7$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions							Specification	Order No.
$d_1 (\pm 0,003)$	Bore diameter * min. - max.	$d_2 h6$	l_1	l_2	l_3	l_4		
5,97	5,965 - 5,980	6	79	34	24	36	M2263-0597AE ± 0.003	30120040
5,98	5,975 - 5,990	6	79	34	24	36	M2263-0598AE ± 0.003	30120041
5,99	5,985 - 6,000	6	79	34	24	36	M2263-0599AE ± 0.003	30120042
6,00	5,995 - 6,010	6	79	34	24	36	M2263-0600AE ± 0.003	30119701
6,01	6,005 - 6,020	6	79	34	24	36	M2263-0601AE ± 0.003	30119702
6,02	6,015 - 6,030	6	79	34	24	36	M2263-0602AE ± 0.003	30119703
6,32	6,315 - 6,330	8	79	34	24	36	M2263-0632AE ± 0.003	30078773
6,33	6,325 - 6,340	8	79	34	24	36	M2263-0633AE ± 0.003	30221632
6,34	6,335 - 6,350	8	79	34	24	36	M2263-0634AE ± 0.003	30221633
6,35	6,345 - 6,360	8	79	34	24	36	M2263-0635AE ± 0.003	30221634
6,36	6,355 - 6,370	8	79	34	24	36	M2263-0636AE ± 0.003	30221635
6,37	6,365 - 6,380	8	79	34	24	36	M2263-0637AE ± 0.003	30221636
7,97	7,965 - 7,980	8	79	34	24	36	M2263-0797AE ± 0.003	30084334
7,98	7,975 - 7,990	8	79	34	24	36	M2263-0798AE ± 0.003	30119739
7,99	7,985 - 8,000	8	79	34	24	36	M2263-0799AE ± 0.003	30093430
8,00	7,995 - 8,010	8	79	34	24	36	M2263-0800AE ± 0.003	30095195
8,01	8,005 - 8,020	8	79	34	24	36	M2263-0801AE ± 0.003	30119740
8,02	8,015 - 8,030	8	79	34	24	36	M2263-0802AE ± 0.003	30119741
9,48	9,475 - 9,490	10	89	47	35	40	M2263-0948AE ± 0.003	30221640
9,49	9,485 - 9,500	10	89	47	35	40	M2263-0949AE ± 0.003	30221638
9,50	9,495 - 9,510	10	89	47	35	40	M2263-0950AE ± 0.003	30119771
9,52	9,515 - 9,530	10	89	47	35	40	M2263-0952AE ± 0.003	30221641
9,53	9,525 - 9,540	10	89	47	35	40	M2263-0953AE ± 0.003	30221642
9,54	9,535 - 9,550	10	89	47	35	40	M2263-0954AE ± 0.003	30221643
9,97	9,965 - 9,980	10	89	47	35	40	M2263-0997AE ± 0.003	30119778
9,98	9,975 - 9,990	10	89	47	35	40	M2263-0998AE ± 0.003	30119779
9,99	9,985 - 10,000	10	89	47	35	40	M2263-0999AE ± 0.003	30119780
10,00	9,995 - 10,010	10	89	47	35	40	M2263-1000AE ± 0.003	30119781
10,01	10,005 - 10,020	10	89	47	35	40	M2263-1001AE ± 0.003	30119782
10,02	10,015 - 10,030	10	89	47	35	40	M2263-1002AE ± 0.003	30119783
11,97	11,964 - 11,982	12	102	55	40	45	M2263-1197AE ± 0.003	30119829
11,98	11,974 - 11,992	12	102	55	40	45	M2263-1198AE ± 0.003	30119830
11,99	11,984 - 12,002	12	102	55	40	45	M2263-1199AE ± 0.003	30119831
12,00	11,994 - 12,012	12	102	55	40	45	M2263-1200AE ± 0.003	30119832
12,01	12,004 - 12,022	12	102	55	40	45	M2263-1201AE ± 0.003	30073018
12,02	12,014 - 12,032	12	102	55	40	45	M2263-1202AE ± 0.003	30089695

MEGA-Drill-Reamer | M2263, 3xD, internal cooling

Dimensions							Specification	Order No.
d ₁ (±0,003)	Bore diameter * min. - max.	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
12,67	12,664 - 12,682	14	107	60	43	45	M2263-1267AE ±0.003	30221647
12,68	12,674 - 12,692	14	107	60	43	45	M2263-1268AE ±0.003	30221646
12,69	12,684 - 12,702	14	107	60	43	45	M2263-1269AE ±0.003	30221645
12,70	12,694 - 12,712	14	107	60	43	45	M2263-1270AE ±0.003	30119842
12,71	12,704 - 12,722	14	107	60	43	45	M2263-1271AE ±0.003	30221650
12,72	12,714 - 12,732	14	107	60	43	45	M2263-1272AE ±0.003	30221652

* The tool tolerances stated can only be guaranteed under perfect usage conditions and at radial runout error < 10 µm.

Component, work material and coolant can also influence the hole diameter.

Further special designs at a minimum order quantity of 3 pieces can be supplied on request.

Drill reamers for basic holes with tolerance H7

Dimensions							Specification	Order No.
d ₁	Bore diameter min. - max.	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
4 ^{H7}	4,000 - 4,012	6	66	24	17	36	M2263-0400AE H7	30115438
5 ^{H7}	5,000 - 5,012	6	79	34	24	36	M2263-0500AE H7	30095401
6 ^{H7}	6,000 - 6,012	6	79	34	24	36	M2263-0600AE H7	30072761
7 ^{H7}	7,000 - 7,015	8	79	34	24	36	M2263-0700AE H7	30076509
8 ^{H7}	8,000 - 8,015	8	79	34	24	36	M2263-0800AE H7	30072737
9 ^{H7}	9,000 - 9,015	10	89	47	35	40	M2263-0900AE H7	30076510
10 ^{H7}	10,000 - 10,015	10	89	47	35	40	M2263-1000AE H7	30072858
12 ^{H7}	12,000 - 12,018	12	102	55	40	45	M2263-1200AE H7	30072857
14 ^{H7}	14,000 - 14,018	14	107	60	43	45	M2263-1400AE H7	30060346
16 ^{H7}	16,000 - 16,018	16	115	65	45	48	M2263-1600AE H7	30060347

Dimensions in mm.

Cutting data recommendations from page 272.

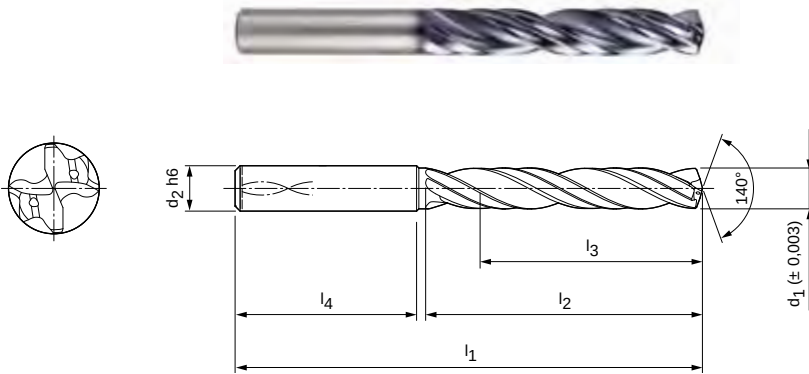
Special designs and other coatings on request.

MEGA-Drill-Reamer

5xD, internal cooling
M2265

Design:

Drill diameter: 5,97 – 12,72 mm
Bore tolerance: $\geq IT 7$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions							Specification	Order No.
$d_1 (\pm 0,003)$	Bore diameter * min. - max.	$d_2 h6$	l_1	l_2	l_3	l_4		
5,97	5,965 - 5,980	6	91	53	43	36	M2265-0597AE ± 0.003	30120150
5,98	5,975 - 5,990	6	91	53	43	36	M2265-0598AE ± 0.003	30120151
5,99	5,985 - 6,000	6	91	53	43	36	M2265-0599AE ± 0.003	30089316
6,00	5,995 - 6,010	6	91	53	43	36	M2265-0600AE ± 0.003	30120152
6,01	6,005 - 6,020	6	91	53	43	36	M2265-0601AE ± 0.003	30120153
6,02	6,015 - 6,030	6	91	53	43	36	M2265-0602AE ± 0.003	30120154
6,32	6,315 - 6,330	8	91	53	43	36	M2265-0632AE ± 0.003	30221676
6,33	6,325 - 6,340	8	91	53	43	36	M2265-0633AE ± 0.003	30221674
6,34	6,335 - 6,350	8	91	53	43	36	M2265-0634AE ± 0.003	30221673
6,35	6,345 - 6,360	8	91	53	43	36	M2265-0635AE ± 0.003	30221672
6,36	6,355 - 6,370	8	91	53	43	36	M2265-0636AE ± 0.003	30221671
6,37	6,365 - 6,380	8	91	53	43	36	M2265-0637AE ± 0.003	30221670
7,97	7,965 - 7,980	8	91	53	43	36	M2265-0797AE ± 0.003	30120190
7,98	7,975 - 7,990	8	91	53	43	36	M2265-0798AE ± 0.003	30120191
7,99	7,985 - 8,000	8	91	53	43	36	M2265-0799AE ± 0.003	30120192
8,00	7,995 - 8,010	8	91	53	43	36	M2265-0800AE ± 0.003	30099663
8,01	8,005 - 8,020	8	91	53	43	36	M2265-0801AE ± 0.003	30120194
8,02	8,015 - 8,030	8	91	53	43	36	M2265-0802AE ± 0.003	30120195
9,48	9,475 - 9,490	10	103	61	49	40	M2265-0948AE ± 0.003	30221668
9,49	9,485 - 9,500	10	103	61	49	40	M2265-0949AE ± 0.003	30221667
9,50	9,495 - 9,510	10	103	61	49	40	M2265-0950AE ± 0.003	30120223
9,52	9,515 - 9,530	10	103	61	49	40	M2265-0952AE ± 0.003	30221664
9,53	9,525 - 9,540	10	103	61	49	40	M2265-0953AE ± 0.003	30221665
9,54	9,535 - 9,550	10	103	61	49	40	M2265-0954AE ± 0.003	30221666
9,97	9,965 - 9,980	10	103	61	49	40	M2265-0997AE ± 0.003	30082992
9,98	9,975 - 9,990	10	103	61	49	40	M2265-0998AE ± 0.003	30120231
9,99	9,985 - 10,000	10	103	61	49	40	M2265-0999AE ± 0.003	30089317
10,00	9,995 - 10,010	10	103	61	49	40	M2265-1000AE ± 0.003	30120232
10,01	10,005 - 10,020	10	103	61	49	40	M2265-1001AE ± 0.003	30120233
10,02	10,015 - 10,030	10	103	61	49	40	M2265-1002AE ± 0.003	30120234
11,97	11,964 - 11,982	12	118	71	56	45	M2265-1197AE ± 0.003	30120270
11,98	11,974 - 11,992	12	118	71	56	45	M2265-1198AE ± 0.003	30120271
11,99	11,984 - 12,002	12	118	71	56	45	M2265-1199AE ± 0.003	30089318
12,00	11,994 - 12,012	12	118	71	56	45	M2265-1200AE ± 0.003	30120272
12,01	12,004 - 12,022	12	118	71	56	45	M2265-1201AE ± 0.003	30120273
12,02	12,014 - 12,032	12	118	71	56	45	M2265-1202AE ± 0.003	30120274

Continued on next page.

MEGA-Drill-Reamer | M2265, 5xD, internal cooling

Dimensions							Specification	Order No.
d ₁ (±0,003)	Bore diameter * min. - max.	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
12,67	12,664 - 12,682	14	124	77	60	45	M2265-1267AE ±0.003	30221658
12,68	12,674 - 12,692	14	124	77	60	45	M2265-1268AE ±0.003	30221657
12,69	12,684 - 12,702	14	124	77	60	45	M2265-1269AE ±0.003	30221656
12,70	12,694 - 12,712	14	124	77	60	45	M2265-1270AE ±0.003	30101086
12,71	12,704 - 12,722	14	124	77	60	45	M2265-1271AE ±0.003	30221654
12,72	12,714 - 12,732	14	124	77	60	45	M2265-1272AE ±0.003	30221655

* The tool tolerances stated can only be guaranteed under perfect usage conditions and at radial runout error < 10 µm.

Component, work material and coolant can also influence the hole diameter.

Further special designs at a minimum order quantity of 3 pieces can be supplied on request.

Drill reamers for basic holes with tolerance H7

Dimensions							Specification	Order No.
d ₁	Bore diameter min. - max.	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
4 ^{H7}	4,000 - 4,012	6	74	36	29	36	M2265-0400AE H7	30134903
5 ^{H7}	5,000 - 5,012	6	91	53	43	36	M2265-0500AE H7	30157641
6 ^{H7}	6,000 - 6,012	6	91	53	43	36	M2265-0600AE H7	30060348
7 ^{H7}	7,000 - 7,015	8	91	53	43	36	M2265-0700AE H7	30076515
8 ^{H7}	8,000 - 8,015	8	91	53	43	36	M2265-0800AE H7	30072738
9 ^{H7}	9,000 - 9,015	10	103	61	49	40	M2265-0900AE H7	30076516
10 ^{H7}	10,000 - 10,015	10	103	61	49	40	M2265-1000AE H7	30072099
12 ^{H7}	12,000 - 12,018	12	118	71	56	45	M2265-1200AE H7	30060349
14 ^{H7}	14,000 - 14,018	14	124	77	60	45	M2265-1400AE H7	30060350
16 ^{H7}	16,000 - 16,018	16	133	83	63	48	M2265-1600AE H7	30060351

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.





MEGA-180°-DRILL

Drilling from solid with a flat bottom of the bore and drilling on inclined surfaces

The MEGA-180°-Drill has a 180° point angle and a special geometry to produce a flat bottom of the bore.

Normally two machining processes are required to manufacture the bore and bottom of the bore. During the first step the bore would be produced to the required depth, followed in the second step by countersinking. These two steps are efficiently combined into one machining cycle on the MEGA-180°-Drill.

Thanks to the four-chamfer geometry and the therefore very good guidance in the bore, the MEGA-180°-Drill achieves optimum circularities and surface qualities in the bore. In addition, polished chip flutes ensure optimum chip removal.

The MEGA-180°-Drill is also suitable for drilling and piloting on inclined surfaces at an angle up to 45°. Compared to conventional 140° drill tips, the radial forces are reduced due to the flat tip.

MEGA-180°-Drill

MEGA-180°-Drill, 3xD - internal cooling	196
MEGA-180°-Drill, 5xD - internal cooling	199

MEGA-180°-Drill-Alu

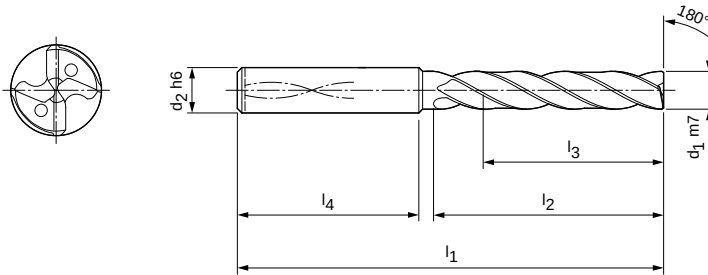
MEGA-180°-Drill-Alu, 3xD - internal cooling	202
MEGA-180°-Drill-Alu, 5xD - internal cooling	205

MEGA-180°-Drill

3xD, internal cooling
M9183

Design:

Drill diameter:	3,00 – 20,00 mm
Bore tolerance:	≥ IT 9
Coating:	MxF
Number of cutting edges:	2
Number of guiding chamfers:	4
Point geometry:	Specific geometry
Point angle:	180°
Helix angle:	30°



Dimensions						Specification	Order No.
d_1 m7	d_2 h6	l_1	l_2	l_3	l_4		
3,00	6	62	20	14	36	M9183-0300AE	30286325
3,10	6	62	20	14	36	M9183-0310AE	30286443
3,20	6	62	20	14	36	M9183-0320AE	30286326
3,30	6	62	20	14	36	M9183-0330AE	30286327
3,40	6	62	20	14	36	M9183-0340AE	30286328
3,50	6	62	20	14	36	M9183-0350AE	30286329
3,60	6	62	20	14	36	M9183-0360AE	30286444
3,70	6	62	20	14	36	M9183-0370AE	30286330
3,80	6	66	24	17	36	M9183-0380AE	30286331
3,90	6	66	24	17	36	M9183-0390AE	30286332
4,00	6	66	24	17	36	M9183-0400AE	30286333
4,10	6	66	24	17	36	M9183-0410AE	30286445
4,20	6	66	24	17	36	M9183-0420AE	30286334
4,30	6	66	24	17	36	M9183-0430AE	30286335
4,40	6	66	24	17	36	M9183-0440AE	30286446
4,50	6	66	24	17	36	M9183-0450AE	30286336
4,60	6	66	24	17	36	M9183-0460AE	30286447
4,65	6	66	24	17	36	M9183-0465AE	30286337
4,70	6	66	24	17	36	M9183-0470AE	30286448
4,80	6	66	28	20	36	M9183-0480AE	30286338
4,90	6	66	28	20	36	M9183-0490AE	30286449
5,00	6	66	28	20	36	M9183-0500AE	30286339
5,10	6	66	28	20	36	M9183-0510AE	30286340
5,20	6	66	28	20	36	M9183-0520AE	30286341
5,30	6	66	28	20	36	M9183-0530AE	30286342
5,40	6	66	28	20	36	M9183-0540AE	30286450
5,50	6	66	28	20	36	M9183-0550AE	30286343
5,55	6	66	28	20	36	M9183-0555AE	30286344
5,60	6	66	28	20	36	M9183-0560AE	30286345
5,70	6	66	28	20	36	M9183-0570AE	30286451
5,80	6	66	28	20	36	M9183-0580AE	30286346
5,90	6	66	28	20	36	M9183-0590AE	30286452
6,00	6	66	28	20	36	M9183-0600AE	30286347
6,10	8	79	34	24	36	M9183-0610AE	30286348
6,20	8	79	34	24	36	M9183-0620AE	30286349
6,30	8	79	34	24	36	M9183-0630AE	30286350

MEGA-180°-Drill | M9183, 3xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,40	8	79	34	24	36	M9183-0640AE	30286453
6,50	8	79	34	24	36	M9183-0650AE	30286351
6,60	8	79	34	24	36	M9183-0660AE	30286352
6,70	8	79	34	24	36	M9183-0670AE	30286454
6,80	8	79	34	24	36	M9183-0680AE	30286353
6,90	8	79	34	24	36	M9183-0690AE	30286354
7,00	8	79	34	24	36	M9183-0700AE	30286355
7,10	8	79	41	29	36	M9183-0710AE	30286455
7,20	8	79	41	29	36	M9183-0720AE	30286456
7,30	8	79	41	29	36	M9183-0730AE	30286457
7,40	8	79	41	29	36	M9183-0740AE	30286356
7,50	8	79	41	29	36	M9183-0750AE	30286357
7,60	8	79	41	29	36	M9183-0760AE	30286458
7,70	8	79	41	29	36	M9183-0770AE	30286459
7,80	8	79	41	29	36	M9183-0780AE	30286358
7,90	8	79	41	29	36	M9183-0790AE	30286359
8,00	8	79	41	29	36	M9183-0800AE	30286360
8,10	10	89	47	35	40	M9183-0810AE	30286361
8,20	10	89	47	35	40	M9183-0820AE	30286362
8,30	10	89	47	35	40	M9183-0830AE	30286461
8,40	10	89	47	35	40	M9183-0840AE	30286462
8,50	10	89	47	35	40	M9183-0850AE	30286363
8,60	10	89	47	35	40	M9183-0860AE	30286364
8,70	10	89	47	35	40	M9183-0870AE	30286365
8,80	10	89	47	35	40	M9183-0880AE	30286366
8,90	10	89	47	35	40	M9183-0890AE	30286463
9,00	10	89	47	35	40	M9183-0900AE	30286367
9,10	10	89	47	35	40	M9183-0910AE	30286464
9,20	10	89	47	35	40	M9183-0920AE	30286465
9,30	10	89	47	35	40	M9183-0930AE	30286368
9,40	10	89	47	35	40	M9183-0940AE	30286466
9,50	10	89	47	35	40	M9183-0950AE	30286369
9,60	10	89	47	35	40	M9183-0960AE	30286467
9,70	10	89	47	35	40	M9183-0970AE	30286468
9,80	10	89	47	35	40	M9183-0980AE	30286370
9,90	10	89	47	35	40	M9183-0990AE	30286469
10,00	10	89	47	35	40	M9183-1000AE	30286371
10,10	12	100	53	38	45	M9183-1010AE	30286372
10,20	12	100	53	38	45	M9183-1020AE	30286373
10,30	12	100	53	38	45	M9183-1030AE	30286374
10,40	12	100	53	38	45	M9183-1040AE	30286470
10,50	12	100	53	38	45	M9183-1050AE	30286375
10,60	12	100	53	38	45	M9183-1060AE	30286471
10,70	12	100	53	38	45	M9183-1070AE	30286472
10,80	12	100	53	38	45	M9183-1080AE	30286473
10,90	12	100	53	38	45	M9183-1090AE	30286474
11,00	12	100	53	38	45	M9183-1100AE	30286376
11,10	12	100	53	38	45	M9183-1110AE	30286475
11,20	12	100	53	38	45	M9183-1120AE	30286377
11,30	12	100	53	38	45	M9183-1130AE	30286476
11,40	12	100	53	38	45	M9183-1140AE	30286477
11,50	12	100	53	38	45	M9183-1150AE	30286378
11,60	12	100	53	38	45	M9183-1160AE	30286478
11,70	12	100	53	38	45	M9183-1170AE	30286479
11,80	12	100	53	38	45	M9183-1180AE	30286379
11,90	12	100	53	38	45	M9183-1190AE	30286480
12,00	12	100	53	38	45	M9183-1200AE	30286380

Continued on next page.

MEGA-180°-Drill | M9183, 3xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
12,50	14	105	58	41	45	M9183-1250AE	30286381
12,80	14	105	58	41	45	M9183-1280AE	30286481
13,00	14	105	58	41	45	M9183-1300AE	30286382
13,50	14	105	58	41	45	M9183-1350AE	30286383
13,80	14	105	58	41	45	M9183-1380AE	30286482
14,00	14	105	58	41	45	M9183-1400AE	30286384
14,50	16	113	63	43	48	M9183-1450AE	30286385
14,80	16	113	63	43	48	M9183-1480AE	30286483
15,00	16	113	63	43	48	M9183-1500AE	30286386
15,50	16	113	63	43	48	M9183-1550AE	30286484
15,80	16	113	63	43	48	M9183-1580AE	30286485
16,00	16	113	63	43	48	M9183-1600AE	30286387
16,50	18	121	71	49	48	M9183-1650AE	30286486
16,80	18	121	71	49	48	M9183-1680AE	30286487
17,00	18	121	71	49	48	M9183-1700AE	30286388
17,50	18	121	71	49	48	M9183-1750AE	30286389
17,80	18	121	71	49	48	M9183-1780AE	30286488
18,00	18	121	71	49	48	M9183-1800AE	30286490
18,50	20	129	77	53	50	M9183-1850AE	30286491
18,80	20	129	77	53	50	M9183-1880AE	30286492
19,00	20	129	77	53	50	M9183-1900AE	30286493
19,50	20	129	77	53	50	M9183-1950AE	30286494
19,80	20	129	77	53	50	M9183-1980AE	30286495
20,00	20	129	77	53	50	M9183-2000AE	30286496

Dimensions in mm.

Cutting data recommendations from page 272.

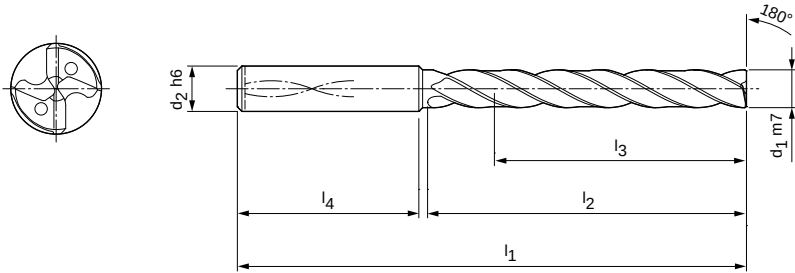
Special designs and other coatings on request.

MEGA-180°-Drill

5xD, internal cooling
M9185

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 180°
Helix angle: 30°



Dimensions						Specification	Order No.
d_1 m7	d_2 h6	l_1	l_2	l_3	l_4		
3,00	6	66	28	23	36	M9185-0300AE	30286260
3,10	6	66	28	23	36	M9185-0310AE	30286390
3,20	6	66	28	23	36	M9185-0320AE	30286261
3,30	6	66	28	23	36	M9185-0330AE	30286262
3,40	6	66	28	23	36	M9185-0340AE	30286263
3,50	6	66	28	23	36	M9185-0350AE	30286264
3,60	6	66	28	23	36	M9185-0360AE	30286391
3,70	6	66	28	23	36	M9185-0370AE	30286265
3,80	6	74	36	29	36	M9185-0380AE	30286266
3,90	6	74	36	29	36	M9185-0390AE	30286267
4,00	6	74	36	29	36	M9185-0400AE	30286268
4,10	6	74	36	29	36	M9185-0410AE	30286392
4,20	6	74	36	29	36	M9185-0420AE	30286269
4,30	6	74	36	29	36	M9185-0430AE	30286270
4,40	6	74	36	29	36	M9185-0440AE	30286393
4,50	6	74	36	29	36	M9185-0450AE	30286271
4,60	6	74	36	29	36	M9185-0460AE	30286394
4,65	6	74	36	29	36	M9185-0465AE	30286272
4,70	6	74	36	29	36	M9185-0470AE	30286395
4,80	6	82	44	35	36	M9185-0480AE	30286273
4,90	6	82	44	35	36	M9185-0490AE	30286396
5,00	6	82	44	35	36	M9185-0500AE	30286274
5,10	6	82	44	35	36	M9185-0510AE	30286275
5,20	6	82	44	35	36	M9185-0520AE	30286276
5,30	6	82	44	35	36	M9185-0530AE	30286277
5,40	6	82	44	35	36	M9185-0540AE	30286397
5,50	6	82	44	35	36	M9185-0550AE	30286278
5,55	6	82	44	35	36	M9185-0555AE	30286279
5,60	6	82	44	35	36	M9185-0560AE	30286280
5,70	6	82	44	35	36	M9185-0570AE	30286398
5,80	6	82	44	35	36	M9185-0580AE	30286281
5,90	6	82	44	35	36	M9185-0590AE	30286399
6,00	6	82	44	35	36	M9185-0600AE	30286282
6,10	8	91	53	43	36	M9185-0610AE	30286283
6,20	8	91	53	43	36	M9185-0620AE	30286284
6,30	8	91	53	43	36	M9185-0630AE	30286285

MEGA-180°-Drill | M9185, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,40	8	91	53	43	36	M9185-0640AE	30286400
6,50	8	91	53	43	36	M9185-0650AE	30286286
6,60	8	91	53	43	36	M9185-0660AE	30286287
6,70	8	91	53	43	36	M9185-0670AE	30286401
6,80	8	91	53	43	36	M9185-0680AE	30286288
6,90	8	91	53	43	36	M9185-0690AE	30286289
7,00	8	91	53	43	36	M9185-0700AE	30286290
7,10	8	91	53	43	36	M9185-0710AE	30286402
7,20	8	91	53	43	36	M9185-0720AE	30286403
7,30	8	91	53	43	36	M9185-0730AE	30286404
7,40	8	91	53	43	36	M9185-0740AE	30286291
7,50	8	91	53	43	36	M9185-0750AE	30286292
7,60	8	91	53	43	36	M9185-0760AE	30286405
7,70	8	91	53	43	36	M9185-0770AE	30286406
7,80	8	91	53	43	36	M9185-0780AE	30286293
7,90	8	91	53	43	36	M9185-0790AE	30286294
8,00	8	91	53	43	36	M9185-0800AE	30286295
8,10	10	103	61	49	40	M9185-0810AE	30286296
8,20	10	103	61	49	40	M9185-0820AE	30286297
8,30	10	103	61	49	40	M9185-0830AE	30286407
8,40	10	103	61	49	40	M9185-0840AE	30286408
8,50	10	103	61	49	40	M9185-0850AE	30286298
8,60	10	103	61	49	40	M9185-0860AE	30286299
8,70	10	103	61	49	40	M9185-0870AE	30286300
8,80	10	103	61	49	40	M9185-0880AE	30286301
8,90	10	103	61	49	40	M9185-0890AE	30286409
9,00	10	103	61	49	40	M9185-0900AE	30286302
9,10	10	103	61	49	40	M9185-0910AE	30286410
9,20	10	103	61	49	40	M9185-0920AE	30286411
9,30	10	103	61	49	40	M9185-0930AE	30286303
9,40	10	103	61	49	40	M9185-0940AE	30286412
9,50	10	103	61	49	40	M9185-0950AE	30286304
9,60	10	103	61	49	40	M9185-0960AE	30286413
9,70	10	103	61	49	40	M9185-0970AE	30286414
9,80	10	103	61	49	40	M9185-0980AE	30286305
9,90	10	103	61	49	40	M9185-0990AE	30286415
10,00	10	103	61	49	40	M9185-1000AE	30286306
10,10	12	116	69	54	45	M9185-1010AE	30286307
10,20	12	116	69	54	45	M9185-1020AE	30286308
10,30	12	116	69	54	45	M9185-1030AE	30286309
10,40	12	116	69	54	45	M9185-1040AE	30286416
10,50	12	116	69	54	45	M9185-1050AE	30286310
10,60	12	116	69	54	45	M9185-1060AE	30286417
10,70	12	116	69	54	45	M9185-1070AE	30286418
10,80	12	116	69	54	45	M9185-1080AE	30286419
10,90	12	116	69	54	45	M9185-1090AE	30286420
11,00	12	116	69	54	45	M9185-1100AE	30286311
11,10	12	116	69	54	45	M9185-1110AE	30286421
11,20	12	116	69	54	45	M9185-1120AE	30286312
11,30	12	116	69	54	45	M9185-1130AE	30286422
11,40	12	116	69	54	45	M9185-1140AE	30286423
11,50	12	116	69	54	45	M9185-1150AE	30286313
11,60	12	116	69	54	45	M9185-1160AE	30286424
11,70	12	116	69	54	45	M9185-1170AE	30286425
11,80	12	116	69	54	45	M9185-1180AE	30286314
11,90	12	116	69	54	45	M9185-1190AE	30286426
12,00	12	116	69	54	45	M9185-1200AE	30286315

MEGA-180°-Drill | M9185, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
12,50	14	122	75	58	45	M9185-1250AE	30286316
12,80	14	122	75	58	45	M9185-1280AE	30286427
13,00	14	122	75	58	45	M9185-1300AE	30286317
13,50	14	122	75	58	45	M9185-1350AE	30286318
13,80	14	122	75	58	45	M9185-1380AE	30286428
14,00	14	122	75	58	45	M9185-1400AE	30286319
14,50	16	131	81	61	48	M9185-1450AE	30286320
14,80	16	131	81	61	48	M9185-1480AE	30286430
15,00	16	131	81	61	48	M9185-1500AE	30286321
15,50	16	131	81	61	48	M9185-1550AE	30286431
15,80	16	131	81	61	48	M9185-1580AE	30286432
16,00	16	131	81	61	48	M9185-1600AE	30286322
16,50	18	141	91	69	48	M9185-1650AE	30286433
16,80	18	141	91	69	48	M9185-1680AE	30286434
17,00	18	141	91	69	48	M9185-1700AE	30286323
17,50	18	141	91	69	48	M9185-1750AE	30286324
17,80	18	141	91	69	48	M9185-1780AE	30286435
18,00	18	141	91	69	48	M9185-1800AE	30286436
18,50	20	151	99	75	50	M9185-1850AE	30286437
18,80	20	151	99	75	50	M9185-1880AE	30286438
19,00	20	151	99	75	50	M9185-1900AE	30286439
19,50	20	151	99	75	50	M9185-1950AE	30286440
19,80	20	151	99	75	50	M9185-1980AE	30286441
20,00	20	151	99	75	50	M9185-2000AE	30286442

Dimensions in mm.

Cutting data recommendations from page 272.

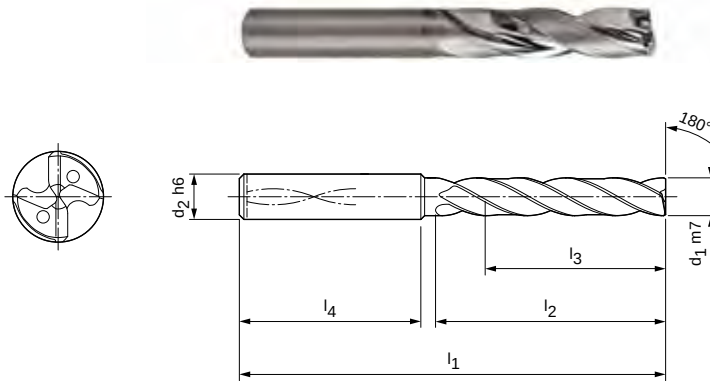
Special designs and other coatings on request.

MEGA-180°-Drill-Alu

3xD, internal cooling
M9883

Design:

Drill diameter:	3,00 – 20,00 mm
Bore tolerance:	≥ IT 9
Coating:	Uncoated
Number of cutting edges:	2
Number of guiding chamfers:	4
Point geometry:	Specific geometry
Point angle:	180°
Helix angle:	30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	62	20	14	36	M9883-0300AU	30286617
3,10	6	62	20	14	36	M9883-0310AU	30286618
3,20	6	62	20	14	36	M9883-0320AU	30286619
3,30	6	62	20	14	36	M9883-0330AU	30286620
3,40	6	62	20	14	36	M9883-0340AU	30286621
3,50	6	62	20	14	36	M9883-0350AU	30286622
3,60	6	62	20	14	36	M9883-0360AU	30286623
3,70	6	62	20	14	36	M9883-0370AU	30286624
3,80	6	66	24	17	36	M9883-0380AU	30286625
3,90	6	66	24	17	36	M9883-0390AU	30286626
4,00	6	66	24	17	36	M9883-0400AU	30286627
4,10	6	66	24	17	36	M9883-0410AU	30286628
4,20	6	66	24	17	36	M9883-0420AU	30286629
4,30	6	66	24	17	36	M9883-0430AU	30286630
4,40	6	66	24	17	36	M9883-0440AU	30286631
4,50	6	66	24	17	36	M9883-0450AU	30286632
4,60	6	66	24	17	36	M9883-0460AU	30286633
4,65	6	66	24	17	36	M9883-0465AU	30286634
4,70	6	66	24	17	36	M9883-0470AU	30286635
4,80	6	66	28	20	36	M9883-0480AU	30286636
4,90	6	66	28	20	36	M9883-0490AU	30286637
5,00	6	66	28	20	36	M9883-0500AU	30286638
5,10	6	66	28	20	36	M9883-0510AU	30286639
5,20	6	66	28	20	36	M9883-0520AU	30286640
5,30	6	66	28	20	36	M9883-0530AU	30286641
5,40	6	66	28	20	36	M9883-0540AU	30286642
5,50	6	66	28	20	36	M9883-0550AU	30286643
5,55	6	66	28	20	36	M9883-0555AU	30286644
5,60	6	66	28	20	36	M9883-0560AU	30286645
5,70	6	66	28	20	36	M9883-0570AU	30286646
5,80	6	66	28	20	36	M9883-0580AU	30286647
5,90	6	66	28	20	36	M9883-0590AU	30286648
6,00	6	66	28	20	36	M9883-0600AU	30286649
6,10	8	79	34	24	36	M9883-0610AU	30286650
6,20	8	79	34	24	36	M9883-0620AU	30286651
6,30	8	79	34	24	36	M9883-0630AU	30286652

MEGA-180°-Drill-Alu | M9883, 3xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,40	8	79	34	24	36	M9883-0640AU	30286653
6,50	8	79	34	24	36	M9883-0650AU	30286654
6,60	8	79	34	24	36	M9883-0660AU	30286655
6,70	8	79	34	24	36	M9883-0670AU	30286656
6,80	8	79	34	24	36	M9883-0680AU	30286657
6,90	8	79	34	24	36	M9883-0690AU	30286658
7,00	8	79	34	24	36	M9883-0700AU	30286659
7,10	8	79	41	29	36	M9883-0710AU	30286660
7,20	8	79	41	29	36	M9883-0720AU	30286661
7,30	8	79	41	29	36	M9883-0730AU	30286662
7,40	8	79	41	29	36	M9883-0740AU	30286663
7,50	8	79	41	29	36	M9883-0750AU	30286664
7,60	8	79	41	29	36	M9883-0760AU	30286665
7,70	8	79	41	29	36	M9883-0770AU	30286666
7,80	8	79	41	29	36	M9883-0780AU	30286667
7,90	8	79	41	29	36	M9883-0790AU	30286668
8,00	8	79	41	29	36	M9883-0800AU	30286669
8,10	10	89	47	35	40	M9883-0810AU	30286670
8,20	10	89	47	35	40	M9883-0820AU	30286671
8,30	10	89	47	35	40	M9883-0830AU	30286672
8,40	10	89	47	35	40	M9883-0840AU	30286673
8,50	10	89	47	35	40	M9883-0850AU	30286674
8,60	10	89	47	35	40	M9883-0860AU	30286675
8,70	10	89	47	35	40	M9883-0870AU	30286676
8,80	10	89	47	35	40	M9883-0880AU	30286677
8,90	10	89	47	35	40	M9883-0890AU	30286678
9,00	10	89	47	35	40	M9883-0900AU	30286679
9,10	10	89	47	35	40	M9883-0910AU	30286680
9,20	10	89	47	35	40	M9883-0920AU	30286681
9,30	10	89	47	35	40	M9883-0930AU	30286682
9,40	10	89	47	35	40	M9883-0940AU	30286683
9,50	10	89	47	35	40	M9883-0950AU	30286684
9,60	10	89	47	35	40	M9883-0960AU	30286685
9,70	10	89	47	35	40	M9883-0970AU	30286686
9,80	10	89	47	35	40	M9883-0980AU	30286687
9,90	10	89	47	35	40	M9883-0990AU	30286688
10,00	10	89	47	35	40	M9883-1000AU	30286689
10,10	12	100	53	38	45	M9883-1010AU	30286690
10,20	12	100	53	38	45	M9883-1020AU	30286691
10,30	12	100	53	38	45	M9883-1030AU	30286692
10,40	12	100	53	38	45	M9883-1040AU	30286693
10,50	12	100	53	38	45	M9883-1050AU	30286694
10,60	12	100	53	38	45	M9883-1060AU	30286695
10,70	12	100	53	38	45	M9883-1070AU	30286696
10,80	12	100	53	38	45	M9883-1080AU	30286697
10,90	12	100	53	38	45	M9883-1090AU	30286698
11,00	12	100	53	38	45	M9883-1100AU	30286699
11,10	12	100	53	38	45	M9883-1110AU	30286700
11,20	12	100	53	38	45	M9883-1120AU	30286701
11,30	12	100	53	38	45	M9883-1130AU	30286702
11,40	12	100	53	38	45	M9883-1140AU	30286703
11,50	12	100	53	38	45	M9883-1150AU	30286704
11,60	12	100	53	38	45	M9883-1160AU	30286705
11,70	12	100	53	38	45	M9883-1170AU	30286706
11,80	12	100	53	38	45	M9883-1180AU	30286707
11,90	12	100	53	38	45	M9883-1190AU	30286708
12,00	12	100	53	38	45	M9883-1200AU	30286709

Continued on next page.

MEGA-180°-Drill-Alu | M9883, 3xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
12,50	14	105	58	41	45	M9883-1250AU	30286710
12,80	14	105	58	41	45	M9883-1280AU	30286711
13,00	14	105	58	41	45	M9883-1300AU	30286712
13,50	14	105	58	41	45	M9883-1350AU	30286713
13,80	14	105	58	41	45	M9883-1380AU	30286714
14,00	14	105	58	41	45	M9883-1400AU	30286715
14,50	16	113	63	43	48	M9883-1450AU	30286716
14,80	16	113	63	43	48	M9883-1480AU	30286717
15,00	16	113	63	43	48	M9883-1500AU	30286718
15,50	16	113	63	43	48	M9883-1550AU	30286719
15,80	16	113	63	43	48	M9883-1580AU	30286720
16,00	16	113	63	43	48	M9883-1600AU	30286721
16,50	18	121	71	49	48	M9883-1650AU	30286722
16,80	18	121	71	49	48	M9883-1680AU	30286723
17,00	18	121	71	49	48	M9883-1700AU	30286724
17,50	18	121	71	49	48	M9883-1750AU	30286725
17,80	18	121	71	49	48	M9883-1780AU	30286726
18,00	18	121	71	49	48	M9883-1800AU	30286727
18,50	20	129	77	53	50	M9883-1850AU	30286728
18,80	20	129	77	53	50	M9883-1880AU	30286729
19,00	20	129	77	53	50	M9883-1900AU	30286730
19,50	20	129	77	53	50	M9883-1950AU	30286731
19,80	20	129	77	53	50	M9883-1980AU	30286732
20,00	20	129	77	53	50	M9883-2000AU	30286733

Dimensions in mm.

Cutting data recommendations from page 272.

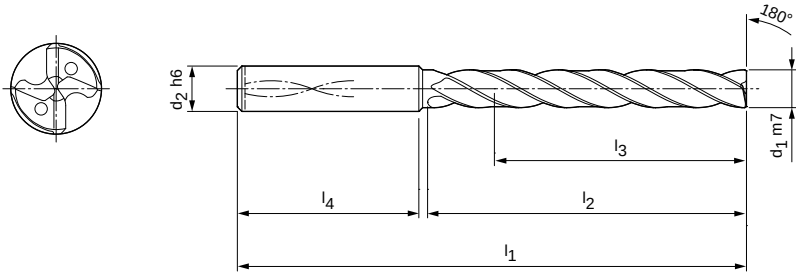
Special designs and other coatings on request.

MEGA-180°-Drill-Alu

5xD, internal cooling
M9885

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: Uncoated
Number of cutting edges: 2
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 180°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	66	28	23	36	M9885-0300AU	30286497
3,10	6	66	28	23	36	M9885-0310AU	30286498
3,20	6	66	28	23	36	M9885-0320AU	30286499
3,30	6	66	28	23	36	M9885-0330AU	30286500
3,40	6	66	28	23	36	M9885-0340AU	30286501
3,50	6	66	28	23	36	M9885-0350AU	30286502
3,60	6	66	28	23	36	M9885-0360AU	30286503
3,70	6	66	28	23	36	M9885-0370AU	30286504
3,80	6	74	36	29	36	M9885-0380AU	30286505
3,90	6	74	36	29	36	M9885-0390AU	30286506
4,00	6	74	36	29	36	M9885-0400AU	30286507
4,10	6	74	36	29	36	M9885-0410AU	30286508
4,20	6	74	36	29	36	M9885-0420AU	30286509
4,30	6	74	36	29	36	M9885-0430AU	30286510
4,40	6	74	36	29	36	M9885-0440AU	30286511
4,50	6	74	36	29	36	M9885-0450AU	30286512
4,60	6	74	36	29	36	M9885-0460AU	30286513
4,65	6	74	36	29	36	M9885-0465AU	30286515
4,70	6	74	36	29	36	M9885-0470AU	30286516
4,80	6	82	44	35	36	M9885-0480AU	30286517
4,90	6	82	44	35	36	M9885-0490AU	30286518
5,00	6	82	44	35	36	M9885-0500AU	30286519
5,10	6	82	44	35	36	M9885-0510AU	30286520
5,20	6	82	44	35	36	M9885-0520AU	30286521
5,30	6	82	44	35	36	M9885-0530AU	30286522
5,40	6	82	44	35	36	M9885-0540AU	30286523
5,50	6	82	44	35	36	M9885-0550AU	30286524
5,55	6	82	44	35	36	M9885-0555AU	30286525
5,60	6	82	44	35	36	M9885-0560AU	30286526
5,70	6	82	44	35	36	M9885-0570AU	30286527
5,80	6	82	44	35	36	M9885-0580AU	30286528
5,90	6	82	44	35	36	M9885-0590AU	30286529
6,00	6	82	44	35	36	M9885-0600AU	30286530
6,10	8	91	53	43	36	M9885-0610AU	30286531
6,20	8	91	53	43	36	M9885-0620AU	30286532
6,30	8	91	53	43	36	M9885-0630AU	30286533

Continued on next page.

MEGA-180°-Drill-Alu | M9885, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,40	8	91	53	43	36	M9885-0640AU	30286534
6,50	8	91	53	43	36	M9885-0650AU	30286535
6,60	8	91	53	43	36	M9885-0660AU	30286536
6,70	8	91	53	43	36	M9885-0670AU	30286537
6,80	8	91	53	43	36	M9885-0680AU	30286538
6,90	8	91	53	43	36	M9885-0690AU	30286539
7,00	8	91	53	43	36	M9885-0700AU	30286540
7,10	8	91	53	43	36	M9885-0710AU	30286542
7,20	8	91	53	43	36	M9885-0720AU	30286543
7,30	8	91	53	43	36	M9885-0730AU	30286544
7,40	8	91	53	43	36	M9885-0740AU	30286545
7,50	8	91	53	43	36	M9885-0750AU	30286546
7,60	8	91	53	43	36	M9885-0760AU	30286547
7,70	8	91	53	43	36	M9885-0770AU	30286548
7,80	8	91	53	43	36	M9885-0780AU	30286549
7,90	8	91	53	43	36	M9885-0790AU	30286550
8,00	8	91	53	43	36	M9885-0800AU	30286551
8,10	10	103	61	49	40	M9885-0810AU	30286552
8,20	10	103	61	49	40	M9885-0820AU	30286553
8,30	10	103	61	49	40	M9885-0830AU	30286554
8,40	10	103	61	49	40	M9885-0840AU	30286555
8,50	10	103	61	49	40	M9885-0850AU	30286556
8,60	10	103	61	49	40	M9885-0860AU	30286557
8,70	10	103	61	49	40	M9885-0870AU	30286558
8,80	10	103	61	49	40	M9885-0880AU	30286559
8,90	10	103	61	49	40	M9885-0890AU	30286560
9,00	10	103	61	49	40	M9885-0900AU	30286561
9,10	10	103	61	49	40	M9885-0910AU	30286562
9,20	10	103	61	49	40	M9885-0920AU	30286563
9,30	10	103	61	49	40	M9885-0930AU	30286564
9,40	10	103	61	49	40	M9885-0940AU	30286565
9,50	10	103	61	49	40	M9885-0950AU	30286566
9,60	10	103	61	49	40	M9885-0960AU	30286567
9,70	10	103	61	49	40	M9885-0970AU	30286568
9,80	10	103	61	49	40	M9885-0980AU	30286569
9,90	10	103	61	49	40	M9885-0990AU	30286570
10,00	10	103	61	49	40	M9885-1000AU	30286571
10,10	12	116	69	54	45	M9885-1010AU	30286572
10,20	12	116	69	54	45	M9885-1020AU	30286573
10,30	12	116	69	54	45	M9885-1030AU	30286574
10,40	12	116	69	54	45	M9885-1040AU	30286575
10,50	12	116	69	54	45	M9885-1050AU	30286576
10,60	12	116	69	54	45	M9885-1060AU	30286577
10,70	12	116	69	54	45	M9885-1070AU	30286578
10,80	12	116	69	54	45	M9885-1080AU	30286579
10,90	12	116	69	54	45	M9885-1090AU	30286580
11,00	12	116	69	54	45	M9885-1100AU	30286581
11,10	12	116	69	54	45	M9885-1110AU	30286582
11,20	12	116	69	54	45	M9885-1120AU	30286583
11,30	12	116	69	54	45	M9885-1130AU	30286584
11,40	12	116	69	54	45	M9885-1140AU	30286585
11,50	12	116	69	54	45	M9885-1150AU	30286586
11,60	12	116	69	54	45	M9885-1160AU	30286587
11,70	12	116	69	54	45	M9885-1170AU	30286588
11,80	12	116	69	54	45	M9885-1180AU	30286589
11,90	12	116	69	54	45	M9885-1190AU	30286590
12,00	12	116	69	54	45	M9885-1200AU	30286591

MEGA-180°-Drill-Alu | M9885, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
12,50	14	122	75	58	45	M9885-1250AU	30286592
12,80	14	122	75	58	45	M9885-1280AU	30286593
13,00	14	122	75	58	45	M9885-1300AU	30286594
13,50	14	122	75	58	45	M9885-1350AU	30286595
13,80	14	122	75	58	45	M9885-1380AU	30286597
14,00	14	122	75	58	45	M9885-1400AU	30286598
14,50	16	131	81	61	48	M9885-1450AU	30286599
14,80	16	131	81	61	48	M9885-1480AU	30286600
15,00	16	131	81	61	48	M9885-1500AU	30286601
15,50	16	131	81	61	48	M9885-1550AU	30286602
15,80	16	131	81	61	48	M9885-1580AU	30286603
16,00	16	131	81	61	48	M9885-1600AU	30286604
16,50	18	141	91	69	48	M9885-1650AU	30286605
16,80	18	141	91	69	48	M9885-1680AU	30286606
17,00	18	141	91	69	48	M9885-1700AU	30286607
17,50	18	141	91	69	48	M9885-1750AU	30286608
17,80	18	141	91	69	48	M9885-1780AU	30286609
18,00	18	141	91	69	48	M9885-1800AU	30286610
18,50	20	151	99	75	50	M9885-1850AU	30286611
18,80	20	151	99	75	50	M9885-1880AU	30286612
19,00	20	151	99	75	50	M9885-1900AU	30286613
19,50	20	151	99	75	50	M9885-1950AU	30286614
19,80	20	151	99	75	50	M9885-1980AU	30286615
20,00	20	151	99	75	50	M9885-2000AU	30286616

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.





MEGA-SPEED-DRILL

Introduction

Product overview	210
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MEGA-Speed-Drill-Steel

MEGA-Speed-Drill-Steel, 3xD - internal cooling	212
MEGA-Speed-Drill-Steel, 5xD - internal cooling	215
MEGA-Speed-Drill-Steel, 8xD - internal cooling	218

MEGA-Speed-Drill-Inox

MEGA-Speed-Drill-Inox, 5xD - internal cooling	221
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MEGA-Speed-Drill-Iron

MEGA-Speed-Drill-Iron, 5xD - internal cooling	224
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MEGA-Speed-Drill-Titan

MEGA-Speed-Drill-Titan, 5xD - internal cooling	227
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MEGA-SPEED-DRILL

Three times faster and reliable

The cutting edges on the MEGA-Speed-Drill have an unequal spacing. The drill also has three guiding chamfers. This prevents vibration and reduces friction. The highly polished chip flutes guarantee optimal chip flow.

These features of the drill combined with the lead geometries and cutting materials geared specially to the workpiece materials cast iron, steel and stainless steel allow the MEGA-Speed-Drill to produce bores with 30 % higher feed rates than is possible with conventional drills.

AT A GLANCE

- Significantly higher cutting speeds
- Polished chip flute guarantees optimal chip removal
- Powerful in cast iron, steel and stainless steel

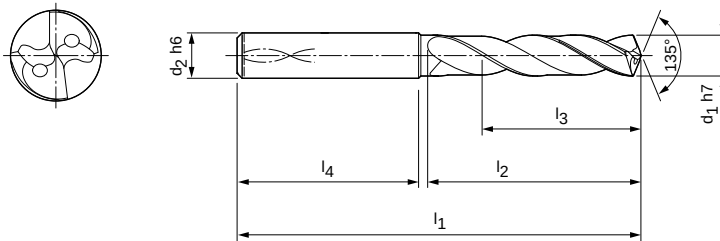
Tool features in detail



Programme			
			
MEGA-Speed-Drill-Steel	MEGA-Speed-Drill-Inox	MEGA-Speed-Drill-Iron	MEGA-Speed-Drill-Titan
 ø range: 3,00 - 20,00 mm Drilling depth:    	 ø range: 3,00 - 20,00 mm Drilling depth:  	 ø range: 3,00 - 20,00 mm Drilling depth:  	 ø range: 3,00 - 12,00 mm Drilling depth:  
Page 212	Page 221	Page 224	Page 227

MEGA-Speed-Drill-Steel

3xD, internal cooling
M9103



Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: Mx2
Number of cutting edges: 2
Number of guiding chamfers: 3
Point geometry: Specific geometry
Point angle: 135°
Helix angle: 30°

Application:

For high-speed machining



Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	62	20	14	36	M9103-0300AK	30265089
3,10	6	62	20	14	36	M9103-0310AK	30265090
3,20	6	62	20	14	36	M9103-0320AK	30265091
3,30	6	62	20	14	36	M9103-0330AK	30265092
3,40	6	62	20	14	36	M9103-0340AK	30265093
3,50	6	62	20	14	36	M9103-0350AK	30265094
3,60	6	62	20	14	36	M9103-0360AK	30265095
3,70	6	62	20	14	36	M9103-0370AK	30265096
3,80	6	66	24	17	36	M9103-0380AK	30265097
3,90	6	66	24	17	36	M9103-0390AK	30265098
4,00	6	66	24	17	36	M9103-0400AK	30265099
4,10	6	66	24	17	36	M9103-0410AK	30265100
4,20	6	66	24	17	36	M9103-0420AK	30265101
4,30	6	66	24	17	36	M9103-0430AK	30265102
4,40	6	66	24	17	36	M9103-0440AK	30265103
4,50	6	66	24	17	36	M9103-0450AK	30265104
4,60	6	66	24	17	36	M9103-0460AK	30265105
4,65	6	66	24	17	36	M9103-0465AK	30265106
4,70	6	66	24	17	36	M9103-0470AK	30265107
4,80	6	66	28	20	36	M9103-0480AK	30265108
4,90	6	66	28	20	36	M9103-0490AK	30265109
5,00	6	66	28	20	36	M9103-0500AK	30265110
5,10	6	66	28	20	36	M9103-0510AK	30265111
5,20	6	66	28	20	36	M9103-0520AK	30265112
5,30	6	66	28	20	36	M9103-0530AK	30265113
5,40	6	66	28	20	36	M9103-0540AK	30265114
5,50	6	66	28	20	36	M9103-0550AK	30265115
5,55	6	66	28	20	36	M9103-0555AK	30265116
5,60	6	66	28	20	36	M9103-0560AK	30265117
5,70	6	66	28	20	36	M9103-0570AK	30265118
5,80	6	66	28	20	36	M9103-0580AK	30265119
5,90	6	66	28	20	36	M9103-0590AK	30265120
6,00	6	66	28	20	36	M9103-0600AK	30265121
6,10	8	79	34	24	36	M9103-0610AK	30265122
6,20	8	79	34	24	36	M9103-0620AK	30265123
6,30	8	79	34	24	36	M9103-0630AK	30265124

MEGA-Speed-Drill-Steel | M9103, 3xD, internal cooling

Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,40	8	79	34	24	36	M9103-0640AK	30265125
6,50	8	79	34	24	36	M9103-0650AK	30265126
6,60	8	79	34	24	36	M9103-0660AK	30265127
6,70	8	79	34	24	36	M9103-0670AK	30265128
6,80	8	79	34	24	36	M9103-0680AK	30265129
6,90	8	79	34	24	36	M9103-0690AK	30265130
7,00	8	79	34	24	36	M9103-0700AK	30265131
7,10	8	79	41	29	36	M9103-0710AK	30265132
7,20	8	79	41	29	36	M9103-0720AK	30265133
7,30	8	79	41	29	36	M9103-0730AK	30265134
7,40	8	79	41	29	36	M9103-0740AK	30265135
7,50	8	79	41	29	36	M9103-0750AK	30265136
7,60	8	79	41	29	36	M9103-0760AK	30265137
7,70	8	79	41	29	36	M9103-0770AK	30265138
7,80	8	79	41	29	36	M9103-0780AK	30265139
7,90	8	79	41	29	36	M9103-0790AK	30265140
8,00	8	79	41	29	36	M9103-0800AK	30265141
8,10	10	89	47	35	40	M9103-0810AK	30265142
8,20	10	89	47	35	40	M9103-0820AK	30265143
8,30	10	89	47	35	40	M9103-0830AK	30265144
8,40	10	89	47	35	40	M9103-0840AK	30261134
8,50	10	89	47	35	40	M9103-0850AK	30265146
8,60	10	89	47	35	40	M9103-0860AK	30265147
8,70	10	89	47	35	40	M9103-0870AK	30265148
8,80	10	89	47	35	40	M9103-0880AK	30265149
8,90	10	89	47	35	40	M9103-0890AK	30265150
9,00	10	89	47	35	40	M9103-0900AK	30265151
9,10	10	89	47	35	40	M9103-0910AK	30265152
9,20	10	89	47	35	40	M9103-0920AK	30265153
9,30	10	89	47	35	40	M9103-0930AK	30265154
9,40	10	89	47	35	40	M9103-0940AK	30265155
9,50	10	89	47	35	40	M9103-0950AK	30265156
9,60	10	89	47	35	40	M9103-0960AK	30265157
9,70	10	89	47	35	40	M9103-0970AK	30265158
9,80	10	89	47	35	40	M9103-0980AK	30265159
9,90	10	89	47	35	40	M9103-0990AK	30265160
10,00	10	89	47	35	40	M9103-1000AK	30265161
10,10	12	102	55	40	45	M9103-1010AK	30265162
10,20	12	102	55	40	45	M9103-1020AK	30265163
10,30	12	102	55	40	45	M9103-1030AK	30265164
10,40	12	102	55	40	45	M9103-1040AK	30265165
10,50	12	102	55	40	45	M9103-1050AK	30265166
10,60	12	102	55	40	45	M9103-1060AK	30265167
10,70	12	102	55	40	45	M9103-1070AK	30265168
10,80	12	102	55	40	45	M9103-1080AK	30265169
10,90	12	102	55	40	45	M9103-1090AK	30265170
11,00	12	102	55	40	45	M9103-1100AK	30265171
11,10	12	102	55	40	45	M9103-1110AK	30265172
11,20	12	102	55	40	45	M9103-1120AK	30265173
11,30	12	102	55	40	45	M9103-1130AK	30265174
11,40	12	102	55	40	45	M9103-1140AK	30265175
11,50	12	102	55	40	45	M9103-1150AK	30265176
11,60	12	102	55	40	45	M9103-1160AK	30265177
11,70	12	102	55	40	45	M9103-1170AK	30265178
11,80	12	102	55	40	45	M9103-1180AK	30265179
11,90	12	102	55	40	45	M9103-1190AK	30265180
12,00	12	102	55	40	45	M9103-1200AK	30265181

Continued on next page.

MEGA-Speed-Drill-Steel | M9103, 3xD, internal cooling

Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
12,50	14	107	60	43	45	M9103-1250AK	30265182
12,80	14	107	60	43	45	M9103-1280AK	30265183
13,00	14	107	60	43	45	M9103-1300AK	30265184
13,50	14	107	60	43	45	M9103-1350AK	30265185
13,80	14	107	60	43	45	M9103-1380AK	30265186
14,00	14	107	60	43	45	M9103-1400AK	30265187
14,50	16	115	65	45	48	M9103-1450AK	30265188
14,80	16	115	65	45	48	M9103-1480AK	30265189
15,00	16	115	65	45	48	M9103-1500AK	30265190
15,50	16	115	65	45	48	M9103-1550AK	30265191
15,80	16	115	65	45	48	M9103-1580AK	30265192
16,00	16	115	65	45	48	M9103-1600AK	30265193
16,50	18	123	73	51	48	M9103-1650AK	30265194
16,80	18	123	73	51	48	M9103-1680AK	30265195
17,00	18	123	73	51	48	M9103-1700AK	30265196
17,50	18	123	73	51	48	M9103-1750AK	30265197
17,80	18	123	73	51	48	M9103-1780AK	30265198
18,00	18	123	73	51	48	M9103-1800AK	30265199
18,50	20	131	79	55	50	M9103-1850AK	30265200
18,80	20	131	79	55	50	M9103-1880AK	30265201
19,00	20	131	79	55	50	M9103-1900AK	30265202
19,50	20	131	79	55	50	M9103-1950AK	30265203
19,80	20	131	79	55	50	M9103-1980AK	30265204
20,00	20	131	79	55	50	M9103-2000AK	30265205

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

MEGA-Speed-Drill-Steel

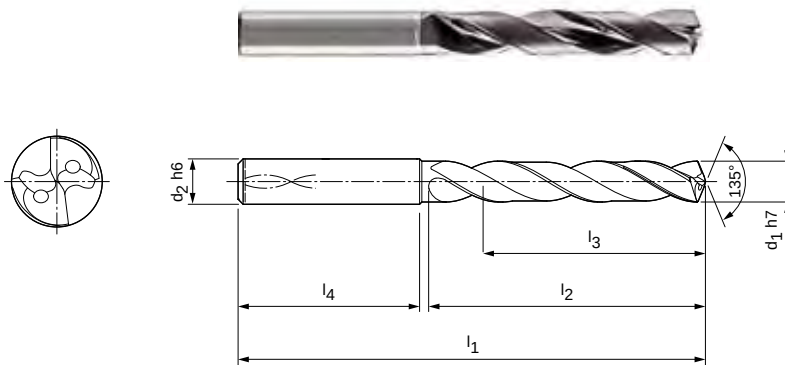
5xD, internal cooling
M9105

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: Mx2
Number of cutting edges: 2
Number of guiding chamfers: 3
Point geometry: Specific geometry
Point angle: 135°
Helix angle: 30°

Application:

For high-speed machining



Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	66	28	23	36	M9105-0300AK	30260858
3,10	6	66	28	23	36	M9105-0310AK	30260859
3,20	6	66	28	23	36	M9105-0320AK	30260860
3,30	6	66	28	23	36	M9105-0330AK	30260861
3,40	6	66	28	23	36	M9105-0340AK	30260862
3,50	6	66	28	23	36	M9105-0350AK	30260863
3,60	6	66	28	23	36	M9105-0360AK	30260864
3,70	6	66	28	23	36	M9105-0370AK	30260865
3,80	6	74	36	29	36	M9105-0380AK	30260866
3,90	6	74	36	29	36	M9105-0390AK	30260867
4,00	6	74	36	29	36	M9105-0400AK	30260868
4,10	6	74	36	29	36	M9105-0410AK	30260869
4,20	6	74	36	29	36	M9105-0420AK	30260870
4,30	6	74	36	29	36	M9105-0430AK	30260871
4,40	6	74	36	29	36	M9105-0440AK	30260872
4,50	6	74	36	29	36	M9105-0450AK	30260873
4,60	6	74	36	29	36	M9105-0460AK	30260874
4,65	6	74	36	29	36	M9105-0465AK	30260875
4,70	6	74	36	29	36	M9105-0470AK	30260876
4,80	6	82	44	35	36	M9105-0480AK	30260877
4,90	6	82	44	35	36	M9105-0490AK	30260878
5,00	6	82	44	35	36	M9105-0500AK	30260879
5,10	6	82	44	35	36	M9105-0510AK	30260880
5,20	6	82	44	35	36	M9105-0520AK	30260881
5,30	6	82	44	35	36	M9105-0530AK	30260882
5,40	6	82	44	35	36	M9105-0540AK	30260883
5,50	6	82	44	35	36	M9105-0550AK	30260884
5,55	6	82	44	35	36	M9105-0555AK	30260885
5,60	6	82	44	35	36	M9105-0560AK	30260886
5,70	6	82	44	35	36	M9105-0570AK	30260887
5,80	6	82	44	35	36	M9105-0580AK	30260888
5,90	6	82	44	35	36	M9105-0590AK	30260889
6,00	6	82	44	35	36	M9105-0600AK	30260890
6,10	8	91	53	43	36	M9105-0610AK	30260891
6,20	8	91	53	43	36	M9105-0620AK	30260892
6,30	8	91	53	43	36	M9105-0630AK	30260893

MEGA-Speed-Drill-Steel | M9105, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,40	8	91	53	43	36	M9105-0640AK	30260894
6,50	8	91	53	43	36	M9105-0650AK	30260895
6,60	8	91	53	43	36	M9105-0660AK	30260896
6,70	8	91	53	43	36	M9105-0670AK	30260897
6,80	8	91	53	43	36	M9105-0680AK	30260898
6,90	8	91	53	43	36	M9105-0690AK	30260899
7,00	8	91	53	43	36	M9105-0700AK	30260900
7,10	8	91	53	43	36	M9105-0710AK	30261186
7,20	8	91	53	43	36	M9105-0720AK	30260901
7,30	8	91	53	43	36	M9105-0730AK	30260902
7,40	8	91	53	43	36	M9105-0740AK	30260903
7,50	8	91	53	43	36	M9105-0750AK	30260904
7,60	8	91	53	43	36	M9105-0760AK	30261187
7,70	8	91	53	43	36	M9105-0770AK	30260905
7,80	8	91	53	43	36	M9105-0780AK	30260906
7,90	8	91	53	43	36	M9105-0790AK	30260907
8,00	8	91	53	43	36	M9105-0800AK	30260908
8,10	10	103	61	49	40	M9105-0810AK	30260909
8,20	10	103	61	49	40	M9105-0820AK	30260910
8,30	10	103	61	49	40	M9105-0830AK	30260911
8,40	10	103	61	49	40	M9105-0840AK	30260912
8,50	10	103	61	49	40	M9105-0850AK	30260913
8,60	10	103	61	49	40	M9105-0860AK	30260914
8,70	10	103	61	49	40	M9105-0870AK	30260915
8,80	10	103	61	49	40	M9105-0880AK	30260916
8,90	10	103	61	49	40	M9105-0890AK	30261188
9,00	10	103	61	49	40	M9105-0900AK	30260917
9,10	10	103	61	49	40	M9105-0910AK	30261190
9,20	10	103	61	49	40	M9105-0920AK	30261191
9,30	10	103	61	49	40	M9105-0930AK	30260918
9,40	10	103	61	49	40	M9105-0940AK	30260919
9,50	10	103	61	49	40	M9105-0950AK	30260920
9,60	10	103	61	49	40	M9105-0960AK	30260921
9,70	10	103	61	49	40	M9105-0970AK	30260922
9,80	10	103	61	49	40	M9105-0980AK	30260923
9,90	10	103	61	49	40	M9105-0990AK	30260924
10,00	10	103	61	49	40	M9105-1000AK	30260925
10,10	12	118	71	56	45	M9105-1010AK	30260926
10,20	12	118	71	56	45	M9105-1020AK	30260927
10,30	12	118	71	56	45	M9105-1030AK	30260928
10,40	12	118	71	56	45	M9105-1040AK	30260929
10,50	12	118	71	56	45	M9105-1050AK	30260930
10,60	12	118	71	56	45	M9105-1060AK	30260931
10,70	12	118	71	56	45	M9105-1070AK	30260968
10,80	12	118	71	56	45	M9105-1080AK	30260933
10,90	12	118	71	56	45	M9105-1090AK	30261192
11,00	12	118	71	56	45	M9105-1100AK	30260934
11,10	12	118	71	56	45	M9105-1110AK	30260969
11,20	12	118	71	56	45	M9105-1120AK	30260936
11,30	12	118	71	56	45	M9105-1130AK	30261193
11,40	12	118	71	56	45	M9105-1140AK	30261194
11,50	12	118	71	56	45	M9105-1150AK	30260937
11,60	12	118	71	56	45	M9105-1160AK	30260938
11,70	12	118	71	56	45	M9105-1170AK	30260939
11,80	12	118	71	56	45	M9105-1180AK	30260940
11,90	12	118	71	56	45	M9105-1190AK	30261195
12,00	12	118	71	56	45	M9105-1200AK	30260941

MEGA-Speed-Drill-Steel | M9105, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
12,50	14	124	77	60	45	M9105-1250AK	30260942
12,80	14	124	77	60	45	M9105-1280AK	30260943
13,00	14	124	77	60	45	M9105-1300AK	30260944
13,50	14	124	77	60	45	M9105-1350AK	30260945
13,80	14	124	77	60	45	M9105-1380AK	30260946
14,00	14	124	77	60	45	M9105-1400AK	30260947
14,50	16	133	83	63	48	M9105-1450AK	30260948
14,80	16	133	83	63	48	M9105-1480AK	30260949
15,00	16	133	83	63	48	M9105-1500AK	30260950
15,50	16	133	83	63	48	M9105-1550AK	30260951
15,80	16	133	83	63	48	M9105-1580AK	30260952
16,00	16	133	83	63	48	M9105-1600AK	30260953
16,50	18	143	93	71	48	M9105-1650AK	30260954
16,80	18	143	93	71	48	M9105-1680AK	30261196
17,00	18	143	93	71	48	M9105-1700AK	30260955
17,50	18	143	93	71	48	M9105-1750AK	30260956
17,80	18	143	93	71	48	M9105-1780AK	30261197
18,00	18	143	93	71	48	M9105-1800AK	30260957
18,50	20	153	101	77	50	M9105-1850AK	30261198
18,80	20	153	101	77	50	M9105-1880AK	30261199
19,00	20	153	101	77	50	M9105-1900AK	30260958
19,50	20	153	101	77	50	M9105-1950AK	30261200
19,80	20	153	101	77	50	M9105-1980AK	30261201
20,00	20	153	101	77	50	M9105-2000AK	30260959

Dimensions in mm.

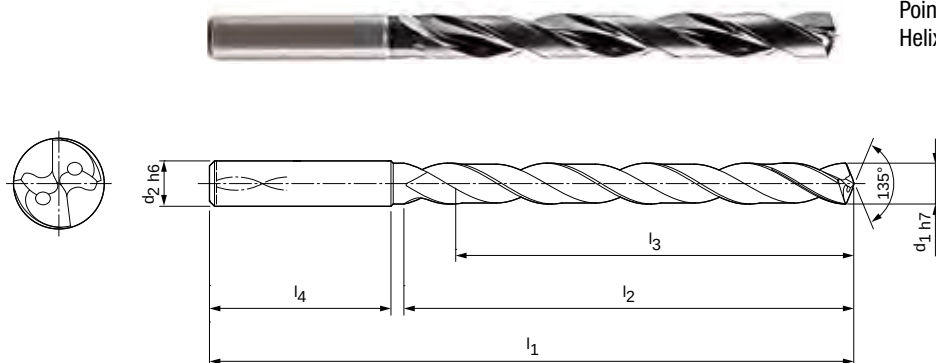
Cutting data recommendations from page 272.

Special designs and other coatings on request.

8xD, internal cooling
M9108

Drill diameter:	3,00 – 20,00 mm
Bore tolerance:	≥ IT 9
Coating:	Mx2
Number of cutting edges:	2
Number of guiding chamfers:	3
Point geometry:	Specific geometry
Point angle:	135°
Helix angle:	30°

Application:
For high-speed machining



Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	72	34	29	36	M9108-0300AK	30265206
3,10	6	72	34	29	36	M9108-0310AK	30265207
3,20	6	72	34	29	36	M9108-0320AK	30265208
3,30	6	72	34	29	36	M9108-0330AK	30265209
3,40	6	72	34	29	36	M9108-0340AK	30265210
3,50	6	72	34	29	36	M9108-0350AK	30265211
3,60	6	72	34	29	36	M9108-0360AK	30265212
3,70	6	72	34	29	36	M9108-0370AK	30265213
3,80	6	81	43	36	36	M9108-0380AK	30265214
3,90	6	81	43	36	36	M9108-0390AK	30265215
4,00	6	81	43	36	36	M9108-0400AK	30265216
4,10	6	81	43	36	36	M9108-0410AK	30265217
4,20	6	81	43	36	36	M9108-0420AK	30265218
4,30	6	81	43	36	36	M9108-0430AK	30265219
4,40	6	81	43	36	36	M9108-0440AK	30265220
4,50	6	81	43	36	36	M9108-0450AK	30265221
4,60	6	81	43	36	36	M9108-0460AK	30265222
4,65	6	81	43	36	36	M9108-0465AK	30265223
4,70	6	81	43	36	36	M9108-0470AK	30265224
4,80	6	95	57	48	36	M9108-0480AK	30265225
4,90	6	95	57	48	36	M9108-0490AK	30265226
5,00	6	95	57	48	36	M9108-0500AK	30265227
5,10	6	95	57	48	36	M9108-0510AK	30265228
5,20	6	95	57	48	36	M9108-0520AK	30265229
5,30	6	95	57	48	36	M9108-0530AK	30265230
5,40	6	95	57	48	36	M9108-0540AK	30265231
5,50	6	95	57	48	36	M9108-0550AK	30265232
5,55	6	95	57	48	36	M9108-0555AK	30265233
5,60	6	95	57	48	36	M9108-0560AK	30265234
5,70	6	95	57	48	36	M9108-0570AK	30265235
5,80	6	95	57	48	36	M9108-0580AK	30265236
5,90	6	95	57	48	36	M9108-0590AK	30265237
6,00	6	95	57	48	36	M9108-0600AK	30265238
6,10	8	114	76	64	36	M9108-0610AK	30265239
6,20	8	114	76	64	36	M9108-0620AK	30265240
6,30	8	114	76	64	36	M9108-0630AK	30265241

MEGA-Speed-Drill-Steel | M9108, 8xD, internal cooling

Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,40	8	114	76	64	36	M9108-0640AK	30265242
6,50	8	114	76	64	36	M9108-0650AK	30265243
6,60	8	114	76	64	36	M9108-0660AK	30265244
6,70	8	114	76	64	36	M9108-0670AK	30265245
6,80	8	114	76	64	36	M9108-0680AK	30265246
6,90	8	114	76	64	36	M9108-0690AK	30265247
7,00	8	114	76	64	36	M9108-0700AK	30265248
7,10	8	114	76	64	36	M9108-0710AK	30265249
7,20	8	114	76	64	36	M9108-0720AK	30265250
7,30	8	114	76	64	36	M9108-0730AK	30265251
7,40	8	114	76	64	36	M9108-0740AK	30265252
7,50	8	114	76	64	36	M9108-0750AK	30265253
7,60	8	114	76	64	36	M9108-0760AK	30265254
7,70	8	114	76	64	36	M9108-0770AK	30265255
7,80	8	114	76	64	36	M9108-0780AK	30265256
7,90	8	114	76	64	36	M9108-0790AK	30265257
8,00	8	114	76	64	36	M9108-0800AK	30265258
8,10	10	142	95	80	40	M9108-0810AK	30265259
8,20	10	142	95	80	40	M9108-0820AK	30265260
8,30	10	142	95	80	40	M9108-0830AK	30265261
8,40	10	142	95	80	40	M9108-0840AK	30265262
8,50	10	142	95	80	40	M9108-0850AK	30265263
8,60	10	142	95	80	40	M9108-0860AK	30265264
8,70	10	142	95	80	40	M9108-0870AK	30265265
8,80	10	142	95	80	40	M9108-0880AK	30265266
8,90	10	142	95	80	40	M9108-0890AK	30265267
9,00	10	142	95	80	40	M9108-0900AK	30265268
9,10	10	142	95	80	40	M9108-0910AK	30265269
9,20	10	142	95	80	40	M9108-0920AK	30265270
9,30	10	142	95	80	40	M9108-0930AK	30265271
9,40	10	142	95	80	40	M9108-0940AK	30265272
9,50	10	142	95	80	40	M9108-0950AK	30265273
9,60	10	142	95	80	40	M9108-0960AK	30265274
9,70	10	142	95	80	40	M9108-0970AK	30265275
9,80	10	142	95	80	40	M9108-0980AK	30265276
9,90	10	142	95	80	40	M9108-0990AK	30265277
10,00	10	142	95	80	40	M9108-1000AK	30265278
10,10	12	162	114	96	45	M9108-1010AK	30265279
10,20	12	162	114	96	45	M9108-1020AK	30265280
10,30	12	162	114	96	45	M9108-1030AK	30265281
10,40	12	162	114	96	45	M9108-1040AK	30265282
10,50	12	162	114	96	45	M9108-1050AK	30265283
10,60	12	162	114	96	45	M9108-1060AK	30265284
10,70	12	162	114	96	45	M9108-1070AK	30265285
10,80	12	162	114	96	45	M9108-1080AK	30265286
10,90	12	162	114	96	45	M9108-1090AK	30265287
11,00	12	162	114	96	45	M9108-1100AK	30265288
11,10	12	162	114	96	45	M9108-1110AK	30265289
11,20	12	162	114	96	45	M9108-1120AK	30265290
11,30	12	162	114	96	45	M9108-1130AK	30265291
11,40	12	162	114	96	45	M9108-1140AK	30265292
11,50	12	162	114	96	45	M9108-1150AK	30265293
11,60	12	162	114	96	45	M9108-1160AK	30265294
11,70	12	162	114	96	45	M9108-1170AK	30265295
11,80	12	162	114	96	45	M9108-1180AK	30265296
11,90	12	162	114	96	45	M9108-1190AK	30265297
12,00	12	162	114	96	45	M9108-1200AK	30265298

Continued on next page.

MEGA-Speed-Drill-Steel | M9108, 8xD, internal cooling

Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
12,50	14	178	133	112	45	M9108-1250AK	30265299
12,80	14	178	133	112	45	M9108-1280AK	30265300
13,00	14	178	133	112	45	M9108-1300AK	30265301
13,50	14	178	133	112	45	M9108-1350AK	30265302
13,80	14	178	133	112	45	M9108-1380AK	30265303
14,00	14	178	133	112	45	M9108-1400AK	30265304
14,50	16	203	152	128	48	M9108-1450AK	30265305
14,80	16	203	152	128	48	M9108-1480AK	30265306
15,00	16	203	152	128	48	M9108-1500AK	30265307
15,50	16	203	152	128	48	M9108-1550AK	30265308
15,80	16	203	152	128	48	M9108-1580AK	30265309
16,00	16	203	152	128	48	M9108-1600AK	30265310
16,50	18	222	171	144	48	M9108-1650AK	30265311
16,80	18	222	171	144	48	M9108-1680AK	30265312
17,00	18	222	171	144	48	M9108-1700AK	30265313
17,50	18	222	171	144	48	M9108-1750AK	30265314
17,80	18	222	171	144	48	M9108-1780AK	30265315
18,00	18	222	171	144	48	M9108-1800AK	30265316
18,50	20	243	190	160	50	M9108-1850AK	30265317
18,80	20	243	190	160	50	M9108-1880AK	30265318
19,00	20	243	190	160	50	M9108-1900AK	30265319
19,50	20	243	190	160	50	M9108-1950AK	30265320
19,80	20	243	190	160	50	M9108-1980AK	30265321
20,00	20	243	190	160	50	M9108-2000AK	30265322

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

MEGA-Speed-Drill-Inox

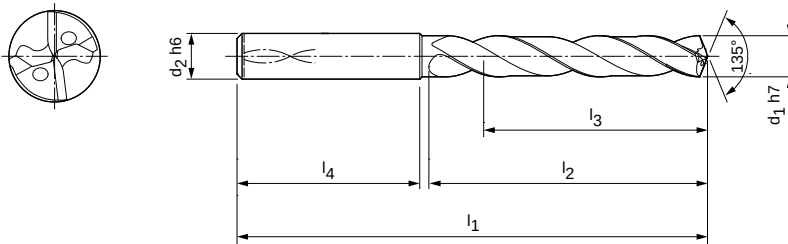
5xD, internal cooling
M9405

Design:

Drill diameter: 3,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: Mx2
Number of cutting edges: 2
Number of guiding chamfers: 3
Point geometry: Specific geometry
Point angle: 135°
Helix angle: 30°

Application:

For high-speed machining



Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	66	28	23	36	M9405-0300AK	30484078
3,10	6	66	28	23	36	M9405-0310AK	30484079
3,20	6	66	28	23	36	M9405-0320AK	30484080
3,30	6	66	28	23	36	M9405-0330AK	30484081
3,40	6	66	28	23	36	M9405-0340AK	30484082
3,50	6	66	28	23	36	M9405-0350AK	30484083
3,60	6	66	28	23	36	M9405-0360AK	30484084
3,70	6	66	28	23	36	M9405-0370AK	30484085
3,80	6	74	36	29	36	M9405-0380AK	30484086
3,90	6	74	36	29	36	M9405-0390AK	30484087
4,00	6	74	36	29	36	M9405-0400AK	30484088
4,10	6	74	36	29	36	M9405-0410AK	30484089
4,20	6	74	36	29	36	M9405-0420AK	30484090
4,30	6	74	36	29	36	M9405-0430AK	30484091
4,40	6	74	36	29	36	M9405-0440AK	30484092
4,50	6	74	36	29	36	M9405-0450AK	30484093
4,60	6	74	36	29	36	M9405-0460AK	30484094
4,65	6	74	36	29	36	M9405-0465AK	30484095
4,70	6	74	36	29	36	M9405-0470AK	30484096
4,80	6	82	44	35	36	M9405-0480AK	30484097
4,90	6	82	44	35	36	M9405-0490AK	30484098
5,00	6	82	44	35	36	M9405-0500AK	30484099
5,10	6	82	44	35	36	M9405-0510AK	30484100
5,20	6	82	44	35	36	M9405-0520AK	30484101
5,30	6	82	44	35	36	M9405-0530AK	30484102
5,40	6	82	44	35	36	M9405-0540AK	30484103
5,50	6	82	44	35	36	M9405-0550AK	30484104
5,55	6	82	44	35	36	M9405-0555AK	30484105
5,60	6	82	44	35	36	M9405-0560AK	30484106
5,70	6	82	44	35	36	M9405-0570AK	30484107
5,80	6	82	44	35	36	M9405-0580AK	30484108
5,90	6	82	44	35	36	M9405-0590AK	30484110
6,00	6	82	44	35	36	M9405-0600AK	30484111
6,10	8	91	53	43	36	M9405-0610AK	30484112
6,20	8	91	53	43	36	M9405-0620AK	30484113
6,30	8	91	53	43	36	M9405-0630AK	30484114

MEGA-Speed-Drill-Inox | M9405, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,40	8	91	53	43	36	M9405-0640AK	30484115
6,50	8	91	53	43	36	M9405-0650AK	30484116
6,60	8	91	53	43	36	M9405-0660AK	30484117
6,70	8	91	53	43	36	M9405-0670AK	30484118
6,80	8	91	53	43	36	M9405-0680AK	30484119
6,90	8	91	53	43	36	M9405-0690AK	30484120
7,00	8	91	53	43	36	M9405-0700AK	30484121
7,10	8	91	53	43	36	M9405-0710AK	30484122
7,20	8	91	53	43	36	M9405-0720AK	30484123
7,30	8	91	53	43	36	M9405-0730AK	30484124
7,40	8	91	53	43	36	M9405-0740AK	30484125
7,50	8	91	53	43	36	M9405-0750AK	30484126
7,60	8	91	53	43	36	M9405-0760AK	30484127
7,70	8	91	53	43	36	M9405-0770AK	30484128
7,80	8	91	53	43	36	M9405-0780AK	30484129
7,90	8	91	53	43	36	M9405-0790AK	30484130
8,00	8	91	53	43	36	M9405-0800AK	30484131
8,10	10	103	61	49	40	M9405-0810AK	30484132
8,20	10	103	61	49	40	M9405-0820AK	30484133
8,30	10	103	61	49	40	M9405-0830AK	30484134
8,40	10	103	61	49	40	M9405-0840AK	30484135
8,50	10	103	61	49	40	M9405-0850AK	30484136
8,60	10	103	61	49	40	M9405-0860AK	30484137
8,70	10	103	61	49	40	M9405-0870AK	30484138
8,80	10	103	61	49	40	M9405-0880AK	30484139
8,90	10	103	61	49	40	M9405-0890AK	30484140
9,00	10	103	61	49	40	M9405-0900AK	30484141
9,10	10	103	61	49	40	M9405-0910AK	30484142
9,20	10	103	61	49	40	M9405-0920AK	30484143
9,30	10	103	61	49	40	M9405-0930AK	30484144
9,40	10	103	61	49	40	M9405-0940AK	30484145
9,50	10	103	61	49	40	M9405-0950AK	30484146
9,60	10	103	61	49	40	M9405-0960AK	30484147
9,70	10	103	61	49	40	M9405-0970AK	30484148
9,80	10	103	61	49	40	M9405-0980AK	30484149
9,90	10	103	61	49	40	M9405-0990AK	30484150
10,00	10	103	61	49	40	M9405-1000AK	30484151
10,10	12	118	71	56	45	M9405-1010AK	30484152
10,20	12	118	71	56	45	M9405-1020AK	30484153
10,30	12	118	71	56	45	M9405-1030AK	30484154
10,40	12	118	71	56	45	M9405-1040AK	30484155
10,50	12	118	71	56	45	M9405-1050AK	30484156
10,60	12	118	71	56	45	M9405-1060AK	30484157
10,70	12	118	71	56	45	M9405-1070AK	30484158
10,80	12	118	71	56	45	M9405-1080AK	30484159
10,90	12	118	71	56	45	M9405-1090AK	30484160
11,00	12	118	71	56	45	M9405-1100AK	30484161
11,10	12	118	71	56	45	M9405-1110AK	30484162
11,20	12	118	71	56	45	M9405-1120AK	30484163
11,30	12	118	71	56	45	M9405-1130AK	30484164
11,40	12	118	71	56	45	M9405-1140AK	30484165
11,50	12	118	71	56	45	M9405-1150AK	30484166
11,60	12	118	71	56	45	M9405-1160AK	30484167
11,70	12	118	71	56	45	M9405-1170AK	30484168
11,80	12	118	71	56	45	M9405-1180AK	30484169
11,90	12	118	71	56	45	M9405-1190AK	30484170
12,00	12	118	71	56	45	M9405-1200AK	30484171

MEGA-Speed-Drill-Inox | M9405, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
12,50	14	124	77	60	45	M9405-1250AK	30484172
12,80	14	124	77	60	45	M9405-1280AK	30484173
13,00	14	124	77	60	45	M9405-1300AK	30484174
13,50	14	124	77	60	45	M9405-1350AK	30484175
13,80	14	124	77	60	45	M9405-1380AK	30484176
14,00	14	124	77	60	45	M9405-1400AK	30484177
14,50	16	133	83	63	48	M9405-1450AK	30484178
14,80	16	133	83	63	48	M9405-1480AK	30484179
15,00	16	133	83	63	48	M9405-1500AK	30484180
15,50	16	133	83	63	48	M9405-1550AK	30484181
15,80	16	133	83	63	48	M9405-1580AK	30484182
16,00	16	133	83	63	48	M9405-1600AK	30484183
16,50	18	143	93	71	48	M9405-1650AK	30484184
16,80	18	143	93	71	48	M9405-1680AK	30484185
17,00	18	143	93	71	48	M9405-1700AK	30484186
17,50	18	143	93	71	48	M9405-1750AK	30484187
17,80	18	143	93	71	48	M9405-1780AK	30484188
18,00	18	143	93	71	48	M9405-1800AK	30484189
18,50	20	153	101	77	50	M9405-1850AK	30484190
18,80	20	153	101	77	50	M9405-1880AK	30484191
19,00	20	153	101	77	50	M9405-1900AK	30484192
19,50	20	153	101	77	50	M9405-1950AK	30484193
19,80	20	153	101	77	50	M9405-1980AK	30484194
20,00	20	153	101	77	50	M9405-2000AK	30484195

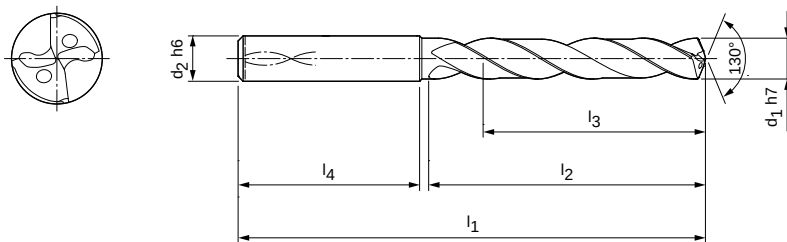
Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

MEGA-Speed-Drill-Iron

5xD, internal cooling
M9505



Design:

Drill diameter:	3,00 – 20,00 mm
Bore tolerance:	≥ IT 9
Coating:	MxM
Number of cutting edges:	2
Number of guiding chamfers:	3
Point geometry:	Specific geometry
Point angle:	130°
Helix angle:	30°

Application:

For high-speed machining

P	1	2	3	4	5	6	M	1	2	3	K	1	2	3	N	1	2	3	4	S	1	2	3	4	5	H	1	2
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Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	66	28	23	36	M9505-0300AP	30484196
3,10	6	66	28	23	36	M9505-0310AP	30484197
3,20	6	66	28	23	36	M9505-0320AP	30484198
3,30	6	66	28	23	36	M9505-0330AP	30484199
3,40	6	66	28	23	36	M9505-0340AP	30484200
3,50	6	66	28	23	36	M9505-0350AP	30484201
3,60	6	66	28	23	36	M9505-0360AP	30484202
3,70	6	66	28	23	36	M9505-0370AP	30484203
3,80	6	74	36	29	36	M9505-0380AP	30484204
3,90	6	74	36	29	36	M9505-0390AP	30484205
4,00	6	74	36	29	36	M9505-0400AP	30484206
4,10	6	74	36	29	36	M9505-0410AP	30484207
4,20	6	74	36	29	36	M9505-0420AP	30484208
4,30	6	74	36	29	36	M9505-0430AP	30484209
4,40	6	74	36	29	36	M9505-0440AP	30484210
4,50	6	74	36	29	36	M9505-0450AP	30484211
4,60	6	74	36	29	36	M9505-0460AP	30484212
4,65	6	74	36	29	36	M9505-0465AP	30484213
4,70	6	74	36	29	36	M9505-0470AP	30484214
4,80	6	82	44	35	36	M9505-0480AP	30484215
4,90	6	82	44	35	36	M9505-0490AP	30484216
5,00	6	82	44	35	36	M9505-0500AP	30484217
5,10	6	82	44	35	36	M9505-0510AP	30484218
5,20	6	82	44	35	36	M9505-0520AP	30484219
5,30	6	82	44	35	36	M9505-0530AP	30484220
5,40	6	82	44	35	36	M9505-0540AP	30484221
5,50	6	82	44	35	36	M9505-0550AP	30484222
5,55	6	82	44	35	36	M9505-0555AP	30484223
5,60	6	82	44	35	36	M9505-0560AP	30484224
5,70	6	82	44	35	36	M9505-0570AP	30484225
5,80	6	82	44	35	36	M9505-0580AP	30484226
5,90	6	82	44	35	36	M9505-0590AP	30484227
6,00	6	82	44	35	36	M9505-0600AP	30484228
6,10	8	91	53	43	36	M9505-0610AP	30484229
6,20	8	91	53	43	36	M9505-0620AP	30484230
6,30	8	91	53	43	36	M9505-0630AP	30484231

MEGA-Speed-Drill-Iron | M9505, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,40	8	91	53	43	36	M9505-0640AP	30484232
6,50	8	91	53	43	36	M9505-0650AP	30484233
6,60	8	91	53	43	36	M9505-0660AP	30484234
6,70	8	91	53	43	36	M9505-0670AP	30484235
6,80	8	91	53	43	36	M9505-0680AP	30484236
6,90	8	91	53	43	36	M9505-0690AP	30484237
7,00	8	91	53	43	36	M9505-0700AP	30484238
7,10	8	91	53	43	36	M9505-0710AP	30484239
7,20	8	91	53	43	36	M9505-0720AP	30484240
7,30	8	91	53	43	36	M9505-0730AP	30484241
7,40	8	91	53	43	36	M9505-0740AP	30484242
7,50	8	91	53	43	36	M9505-0750AP	30484243
7,60	8	91	53	43	36	M9505-0760AP	30484244
7,70	8	91	53	43	36	M9505-0770AP	30484245
7,80	8	91	53	43	36	M9505-0780AP	30484246
7,90	8	91	53	43	36	M9505-0790AP	30484247
8,00	8	91	53	43	36	M9505-0800AP	30484248
8,10	10	103	61	49	40	M9505-0810AP	30484249
8,20	10	103	61	49	40	M9505-0820AP	30484250
8,30	10	103	61	49	40	M9505-0830AP	30484251
8,40	10	103	61	49	40	M9505-0840AP	30484252
8,50	10	103	61	49	40	M9505-0850AP	30484253
8,60	10	103	61	49	40	M9505-0860AP	30484254
8,70	10	103	61	49	40	M9505-0870AP	30484255
8,80	10	103	61	49	40	M9505-0880AP	30484256
8,90	10	103	61	49	40	M9505-0890AP	30484257
9,00	10	103	61	49	40	M9505-0900AP	30484258
9,10	10	103	61	49	40	M9505-0910AP	30484259
9,20	10	103	61	49	40	M9505-0920AP	30484260
9,30	10	103	61	49	40	M9505-0930AP	30484261
9,40	10	103	61	49	40	M9505-0940AP	30484262
9,50	10	103	61	49	40	M9505-0950AP	30484263
9,60	10	103	61	49	40	M9505-0960AP	30484264
9,70	10	103	61	49	40	M9505-0970AP	30484265
9,80	10	103	61	49	40	M9505-0980AP	30484266
9,90	10	103	61	49	40	M9505-0990AP	30484267
10,00	10	103	61	49	40	M9505-1000AP	30484268
10,10	12	118	71	56	45	M9505-1010AP	30484269
10,20	12	118	71	56	45	M9505-1020AP	30484270
10,30	12	118	71	56	45	M9505-1030AP	30484271
10,40	12	118	71	56	45	M9505-1040AP	30484272
10,50	12	118	71	56	45	M9505-1050AP	30484273
10,60	12	118	71	56	45	M9505-1060AP	30484274
10,70	12	118	71	56	45	M9505-1070AP	30484275
10,80	12	118	71	56	45	M9505-1080AP	30484276
10,90	12	118	71	56	45	M9505-1090AP	30484277
11,00	12	118	71	56	45	M9505-1100AP	30484278
11,10	12	118	71	56	45	M9505-1110AP	30484279
11,20	12	118	71	56	45	M9505-1120AP	30484280
11,30	12	118	71	56	45	M9505-1130AP	30484281
11,40	12	118	71	56	45	M9505-1140AP	30484282
11,50	12	118	71	56	45	M9505-1150AP	30484283
11,60	12	118	71	56	45	M9505-1160AP	30484284
11,70	12	118	71	56	45	M9505-1170AP	30484285
11,80	12	118	71	56	45	M9505-1180AP	30484286
11,90	12	118	71	56	45	M9505-1190AP	30484287
12,00	12	118	71	56	45	M9505-1200AP	30484288

Continued on next page.

MEGA-Speed-Drill-Iron | M9505, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
12,50	14	124	77	60	45	M9505-1250AP	30484289
12,80	14	124	77	60	45	M9505-1280AP	30484290
13,00	14	124	77	60	45	M9505-1300AP	30484291
13,50	14	124	77	60	45	M9505-1350AP	30484292
13,80	14	124	77	60	45	M9505-1380AP	30484293
14,00	14	124	77	60	45	M9505-1400AP	30484294
14,50	16	133	83	63	48	M9505-1450AP	30484295
14,80	16	133	83	63	48	M9505-1480AP	30484296
15,00	16	133	83	63	48	M9505-1500AP	30484297
15,50	16	133	83	63	48	M9505-1550AP	30484298
15,80	16	133	83	63	48	M9505-1580AP	30484299
16,00	16	133	83	63	48	M9505-1600AP	30484300
16,50	18	143	93	71	48	M9505-1650AP	30484301
16,80	18	143	93	71	48	M9505-1680AP	30484302
17,00	18	143	93	71	48	M9505-1700AP	30484303
17,50	18	143	93	71	48	M9505-1750AP	30484304
17,80	18	143	93	71	48	M9505-1780AP	30484305
18,00	18	143	93	71	48	M9505-1800AP	30484306
18,50	20	153	101	77	50	M9505-1850AP	30484307
18,80	20	153	101	77	50	M9505-1880AP	30484308
19,00	20	153	101	77	50	M9505-1900AP	30484309
19,50	20	153	101	77	50	M9505-1950AP	30484310
19,80	20	153	101	77	50	M9505-1980AP	30484311
20,00	20	153	101	77	50	M9505-2000AP	30484312

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

MEGA-Speed-Drill-Titan

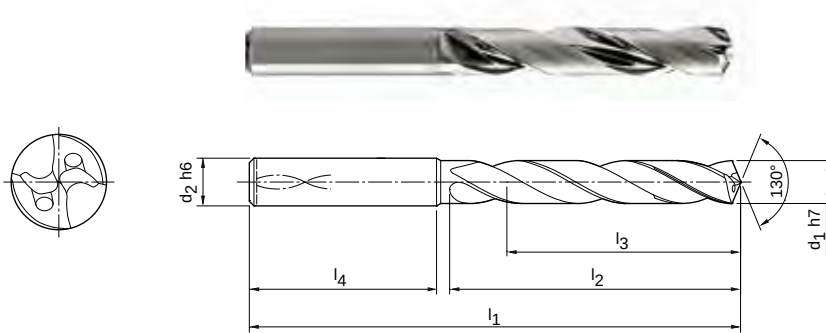
5xD, internal cooling
M9205

Design:

Drill diameter: 3,00 – 12,00 mm
Bore tolerance: $\geq IT 9$
Coating: Uncoated
Number of cutting edges: 2
Number of guiding chamfers: 3
Point angle: 130°
Helix angle: 30°

Application:

For high-speed machining



Dimensions						Specification	Order No.
d ₁ h7	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
3,00	6	66	28	23	36	M9205-0300AU	30388237
4,00	6	74	36	29	36	M9205-0400AU	30388244
5,00	6	82	44	35	36	M9205-0500AU	30388245
6,00	6	82	44	35	36	M9205-0600AU	30388247
7,00	8	91	53	43	36	M9205-0700AU	30388249
8,00	8	91	53	43	40	M9205-0800AU	30388250
9,00	10	103	61	49	40	M9205-0900AU	30388251
10,00	10	103	61	49	40	M9205-1000AU	30388255
11,00	12	118	71	56	45	M9205-1100AU	30388257
12,00	12	118	71	56	45	M9205-1200AU	30388258

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.





GIGA-DRILL

GIGA-Drill

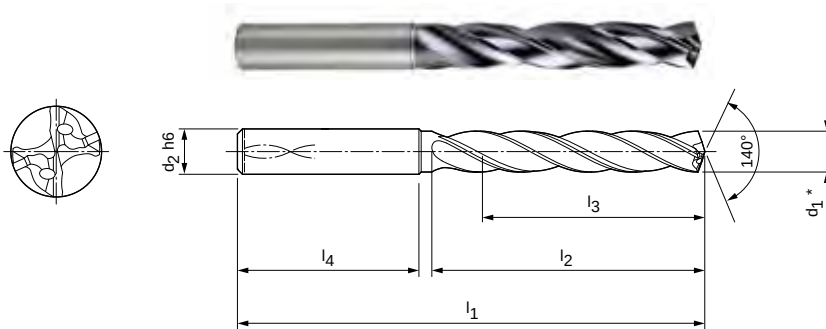
GIGA-Drill, 5xD - internal cooling	230
GIGA-Drill, 8xD - internal cooling	232

GIGA-Drill

5xD, internal cooling
M2195

Design:

Drill diameter: 6,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 4
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d_1^*	d_2 h6	l_1	l_2	l_3	l_4		
6,00	6	82	44	35	36	M2195-0600AE	30054230
6,10	8	91	53	43	36	M2195-0610AE	30054236
6,20	8	91	53	43	36	M2195-0620AE	30054239
6,30	8	91	53	43	36	M2195-0630AE	30054242
6,40	8	91	53	43	36	M2195-0640AE	30054245
6,50	8	91	53	43	36	M2195-0650AE	30054248
6,60	8	91	53	43	36	M2195-0660AE	30054251
6,70	8	91	53	43	36	M2195-0670AE	30054254
6,80	8	91	53	43	36	M2195-0680AE	30054257
6,90	8	91	53	43	36	M2195-0690AE	30054260
7,00	8	91	53	43	36	M2195-0700AE	30054263
7,10	8	91	53	43	36	M2195-0710AE	30054266
7,20	8	91	53	43	36	M2195-0720AE	30054269
7,30	8	91	53	43	36	M2195-0730AE	30054272
7,40	8	91	53	43	36	M2195-0740AE	30054275
7,50	8	91	53	43	36	M2195-0750AE	30054278
7,60	8	91	53	43	36	M2195-0760AE	30054281
7,70	8	91	53	43	36	M2195-0770AE	30054284
7,80	8	91	53	43	36	M2195-0780AE	30054287
7,90	8	91	53	43	36	M2195-0790AE	30054290
8,00	8	91	53	43	36	M2195-0800AE	30054293
8,10	10	103	61	49	40	M2195-0810AE	30054299
8,20	10	103	61	49	40	M2195-0820AE	30054302
8,30	10	103	61	49	40	M2195-0830AE	30054305
8,40	10	103	61	49	40	M2195-0840AE	30054308
8,50	10	103	61	49	40	M2195-0850AE	30054311
8,60	10	103	61	49	40	M2195-0860AE	30054314
8,70	10	103	61	49	40	M2195-0870AE	30054317
8,80	10	103	61	49	40	M2195-0880AE	30054320
8,90	10	103	61	49	40	M2195-0890AE	30054323
9,00	10	103	61	49	40	M2195-0900AE	30054326
9,10	10	103	61	49	40	M2195-0910AE	30054329
9,20	10	103	61	49	40	M2195-0920AE	30054332
9,30	10	103	61	49	40	M2195-0930AE	30054335
9,40	10	103	61	49	40	M2195-0940AE	30054338
9,50	10	103	61	49	40	M2195-0950AE	30054341

GIGA-Drill | M2195, 5xD, internal cooling

Dimensions						Specification	Order No.
d ₁ *	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
9,60	10	103	61	49	40	M2195-0960AE	30054344
9,70	10	103	61	49	40	M2195-0970AE	30054347
9,80	10	103	61	49	40	M2195-0980AE	30054350
9,90	10	103	61	49	40	M2195-0990AE	30054353
10,00	10	103	61	49	40	M2195-1000AE	30054356
10,10	12	118	71	56	45	M2195-1010AE	30054362
10,20	12	118	71	56	45	M2195-1020AE	30054365
10,30	12	118	71	56	45	M2195-1030AE	30054368
10,40	12	118	71	56	45	M2195-1040AE	30054370
10,50	12	118	71	56	45	M2195-1050AE	30054373
10,60	12	118	71	56	45	M2195-1060AE	30054376
10,70	12	118	71	56	45	M2195-1070AE	30054379
10,80	12	118	71	56	45	M2195-1080AE	30054382
10,90	12	118	71	56	45	M2195-1090AE	30054385
11,00	12	118	71	56	45	M2195-1100AE	30054388
11,10	12	118	71	56	45	M2195-1110AE	30054391
11,20	12	118	71	56	45	M2195-1120AE	30054394
11,30	12	118	71	56	45	M2195-1130AE	30054397
11,40	12	118	71	56	45	M2195-1140AE	30054400
11,50	12	118	71	56	45	M2195-1150AE	30054403
11,60	12	118	71	56	45	M2195-1160AE	30054406
11,70	12	118	71	56	45	M2195-1170AE	30054409
11,80	12	118	71	56	45	M2195-1180AE	30054412
11,90	12	118	71	56	45	M2195-1190AE	30054415
12,00	12	118	71	56	45	M2195-1200AE	30054418
12,50	14	124	77	60	45	M2195-1250AE	30054424
13,00	14	124	77	60	45	M2195-1300AE	30054430
13,50	14	124	77	60	45	M2195-1350AE	30054433
13,80	14	124	77	60	45	M2195-1380AE	30054436
14,00	14	124	77	60	45	M2195-1400AE	30054439
14,50	16	133	83	63	48	M2195-1450AE	30054445
15,00	16	133	83	63	48	M2195-1500AE	30054451
15,50	16	133	83	63	48	M2195-1550AE	30054454
15,80	16	133	83	63	48	M2195-1580AE	30054457
16,00	16	133	83	63	48	M2195-1600AE	30054460
16,50	18	143	93	71	48	M2195-1650AE	30054466
17,00	18	143	93	71	48	M2195-1700AE	30054472
18,00	18	143	93	71	48	M2195-1800AE	30054481
18,50	20	153	101	77	50	M2195-1850AE	30054487
18,80	20	153	101	77	50	M2195-1880AE	30054490
19,00	20	153	101	77	50	M2195-1900AE	30054493
19,50	20	153	101	77	50	M2195-1950AE	30054496
20,00	20	153	101	77	50	M2195-2000AE	30054502

* The bore diameter tolerance d1 is within bore tolerance field H7.

Dimensions in mm.

Cutting data recommendations from page 272.

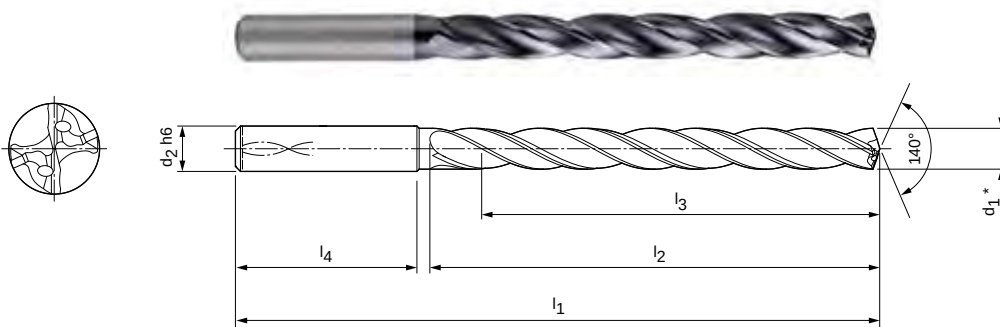
Special designs and other coatings on request.

GIGA-Drill

8xD, internal cooling
M2198

Design:

Drill diameter: 6,00 – 20,00 mm
Bore tolerance: $\geq IT 9$
Coating: MxF
Number of cutting edges: 4
Number of guiding chamfers: 4
Point geometry: Specific geometry
Point angle: 140°
Helix angle: 30°



Dimensions						Specification	Order No.
d ₁ *	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
6,00	6	95	57	48	36	M2198-0600AE	30054508
6,10	8	114	76	64	36	M2198-0610AE	30054514
6,20	8	114	76	64	36	M2198-0620AE	30054517
6,30	8	114	76	64	36	M2198-0630AE	30054520
6,40	8	114	76	64	36	M2198-0640AE	30054523
6,50	8	114	76	64	36	M2198-0650AE	30054526
6,60	8	114	76	64	36	M2198-0660AE	30054529
6,70	8	114	76	64	36	M2198-0670AE	30054532
6,80	8	114	76	64	36	M2198-0680AE	30054535
6,90	8	114	76	64	36	M2198-0690AE	30054538
7,00	8	114	76	64	36	M2198-0700AE	30054540
7,10	8	114	76	64	36	M2198-0710AE	30054543
7,20	8	114	76	64	36	M2198-0720AE	30054546
7,30	8	114	76	64	36	M2198-0730AE	30054549
7,40	8	114	76	64	36	M2198-0740AE	30054552
7,50	8	114	76	64	36	M2198-0750AE	30054555
7,60	8	114	76	64	36	M2198-0760AE	30054558
7,70	8	114	76	64	36	M2198-0770AE	30054561
7,80	8	114	76	64	36	M2198-0780AE	30054564
7,90	8	114	76	64	36	M2198-0790AE	30054567
8,00	8	114	76	64	36	M2198-0800AE	30054570
8,10	10	142	95	80	40	M2198-0810AE	30054576
8,20	10	142	95	80	40	M2198-0820AE	30054579
8,30	10	142	95	80	40	M2198-0830AE	30054582
8,40	10	142	95	80	40	M2198-0840AE	30054585
8,50	10	142	95	80	40	M2198-0850AE	30054588
8,60	10	142	95	80	40	M2198-0860AE	30054591
8,70	10	142	95	80	40	M2198-0870AE	30054594
8,80	10	142	95	80	40	M2198-0880AE	30054597
8,90	10	142	95	80	40	M2198-0890AE	30054600
9,00	10	142	95	80	40	M2198-0900AE	30054603
9,10	10	142	95	80	40	M2198-0910AE	30054606

GIGA-Drill | M2198, 8xD, internal cooling

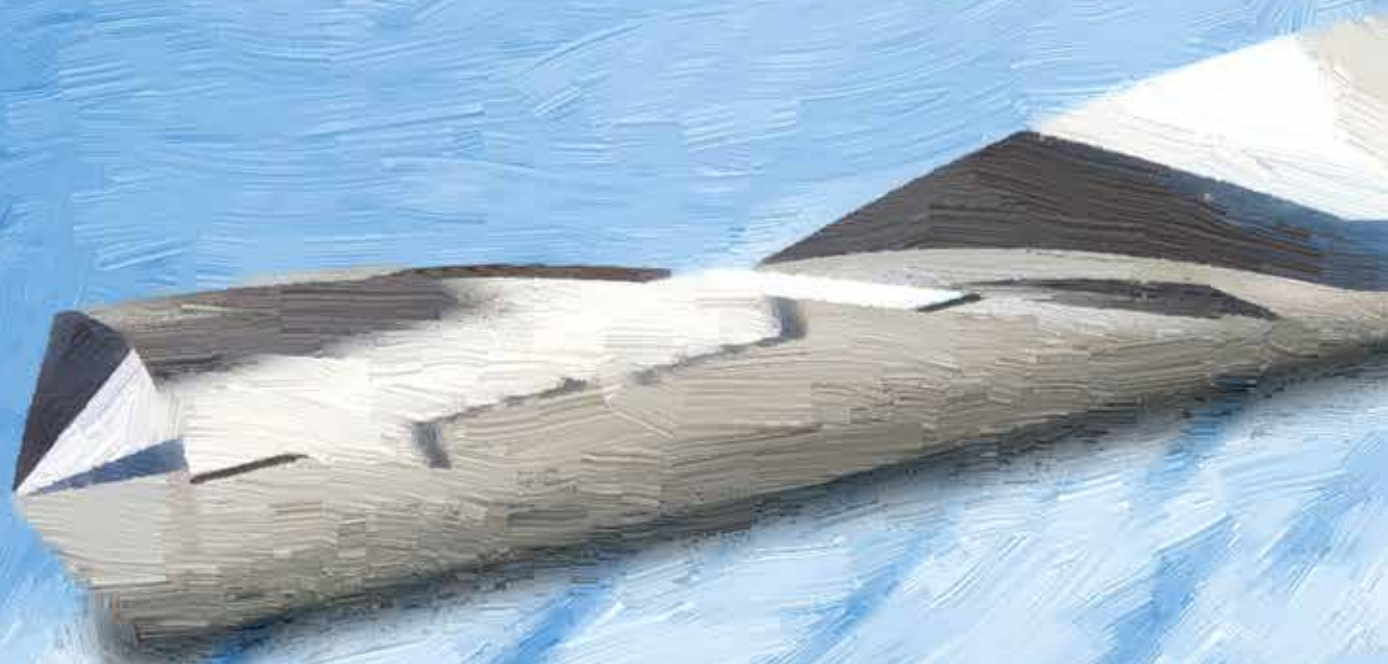
Dimensions						Specification	Order No.
d ₁ *	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
9,20	10	142	95	80	40	M2198-0920AE	30054609
9,30	10	142	95	80	40	M2198-0930AE	30054612
9,40	10	142	95	80	40	M2198-0940AE	30054615
9,50	10	142	95	80	40	M2198-0950AE	30054618
9,60	10	142	95	80	40	M2198-0960AE	30054621
9,70	10	142	95	80	40	M2198-0970AE	30054624
9,80	10	142	95	80	40	M2198-0980AE	30054627
9,90	10	142	95	80	40	M2198-0990AE	30054630
10,00	10	142	95	80	40	M2198-1000AE	30054633
10,10	12	162	114	96	45	M2198-1010AE	30054639
10,20	12	162	114	96	45	M2198-1020AE	30054642
10,30	12	162	114	96	45	M2198-1030AE	30054645
10,40	12	162	114	96	45	M2198-1040AE	30054648
10,50	12	162	114	96	45	M2198-1050AE	30054651
10,60	12	162	114	96	45	M2198-1060AE	30054654
10,70	12	162	114	96	45	M2198-1070AE	30054657
10,80	12	162	114	96	45	M2198-1080AE	30054660
10,90	12	162	114	96	45	M2198-1090AE	30054663
11,00	12	162	114	96	45	M2198-1100AE	30054666
11,10	12	162	114	96	45	M2198-1110AE	30054669
11,20	12	162	114	96	45	M2198-1120AE	30054672
11,30	12	162	114	96	45	M2198-1130AE	30054675
11,40	12	162	114	96	45	M2198-1140AE	30054678
11,50	12	162	114	96	45	M2198-1150AE	30054681
11,60	12	162	114	96	45	M2198-1160AE	30054684
11,70	12	162	114	96	45	M2198-1170AE	30054687
11,80	12	162	114	96	45	M2198-1180AE	30054690
11,90	12	162	114	96	45	M2198-1190AE	30054693
12,00	12	162	114	96	45	M2198-1200AE	30054696
12,50	14	178	133	112	45	M2198-1250AE	30054702
13,00	14	178	133	112	45	M2198-1300AE	30054708
13,50	14	178	133	112	45	M2198-1350AE	30054711
13,80	14	178	133	112	45	M2198-1380AE	30054714
14,00	14	178	133	112	45	M2198-1400AE	30054717
14,50	16	203	152	128	48	M2198-1450AE	30054723
15,00	16	203	152	128	48	M2198-1500AE	30054728
15,50	16	203	152	128	48	M2198-1550AE	30054731
15,80	16	203	152	128	48	M2198-1580AE	30054734
16,00	16	203	152	128	48	M2198-1600AE	30054737
16,50	18	222	171	144	48	M2198-1650AE	30054743
17,00	18	222	171	144	48	M2198-1700AE	30054749
17,50	18	222	171	144	48	M2198-1750AE	30054752
18,00	18	222	171	144	48	M2198-1800AE	30054758
18,50	20	243	190	160	50	M2198-1850AE	30054763
19,50	20	243	190	160	50	M2198-1950AE	30054772
20,00	20	243	190	160	50	M2198-2000AE	30054778

* The bore diameter tolerance d1 is within bore tolerance field H7.

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.





MONO-DRILL-PLASTIC

New level of performance on machining plastic

The Mono-Drill-Plastic was specially developed for machining thermoplastics with poor thermal conductivity and relatively low melting temperatures such as PEEK, POM or PA 6. With the geometry of the so-called single-lip drill, also called the spindle drill, the extremely sharp cutting edge geometry, the special point thinning and the large polished chip flute, a new level of performance for machining modern plastic workpiece materials is achieved. Bore tolerances up to IT7 are realised. Along with the usage for machining plastics, the Mono-Drill-Plastic can also be used for machining aluminium.

Mono-Drill-Plastic

Mono-Drill-Plastic, 5xD

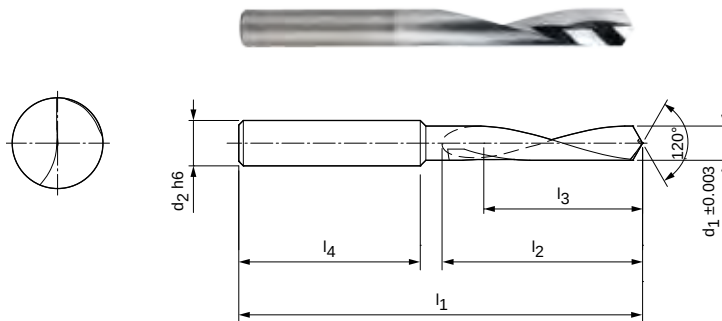
236

Mono-Drill-Plastic

5xD, external cooling
M2955

Design:

Drill diameter: 0,97 – 13,03 mm
Bore tolerance: $\geq IT 7$
Coating: Uncoated
Number of cutting edges: 1
Number of guiding chamfers: 1
Point geometry: Specific geometry
Point angle: 120°



Dimensions						Specification	Order No.
d ₁ (±0,003)	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
0,97	3	45	7	6	31	M2955-0097AU	30658297
0,98	3	45	7	6	31	M2955-0098AU	30658298
0,99	3	45	7	6	31	M2955-0099AU	30658299
1,00	3	45	7	6	31	M2955-0100AU	30658300
1,01	3	45	7	6	31	M2955-0101AU	30658301
1,02	3	45	7	6	31	M2955-0102AU	30658302
1,03	3	45	7	6	31	M2955-0103AU	30658303
1,97	3	50	14	11	31	M2955-0197AU	30658304
1,98	3	50	14	11	31	M2955-0198AU	30658305
1,99	3	50	14	11	31	M2955-0199AU	30658306
2,00	3	50	14	11	31	M2955-0200AU	30658307
2,01	3	50	14	11	31	M2955-0201AU	30658308
2,02	3	50	14	11	31	M2955-0202AU	30658309
2,03	3	50	14	11	31	M2955-0203AU	30658310
2,97	4	66	28	23	36	M2955-0297AU	30658311
2,98	4	66	28	23	36	M2955-0298AU	30658312
2,99	4	66	28	23	36	M2955-0299AU	30658313
3,00	4	66	28	23	36	M2955-0300AU	30658314
3,01	4	66	28	23	36	M2955-0301AU	30658315
3,02	4	66	28	23	36	M2955-0302AU	30658316
3,03	4	66	28	23	36	M2955-0303AU	30658317
3,97	4	74	36	29	36	M2955-0397AU	30658318
3,98	4	74	36	29	36	M2955-0398AU	30658319
3,99	4	74	36	29	36	M2955-0399AU	30658320
4,00	4	74	36	29	36	M2955-0400AU	30658321
4,01	4	74	36	29	36	M2955-0401AU	30658322
4,02	4	74	36	29	36	M2955-0402AU	30658323
4,03	4	74	36	29	36	M2955-0403AU	30658324
4,97	6	82	44	35	36	M2955-0497AU	30658325
4,98	6	82	44	35	36	M2955-0498AU	30658326
4,99	6	82	44	35	36	M2955-0499AU	30658327
5,00	6	82	44	35	36	M2955-0500AU	30658328
5,01	6	82	44	35	36	M2955-0501AU	30658329
5,02	6	82	44	35	36	M2955-0502AU	30658330
5,03	6	82	44	35	36	M2955-0503AU	30658331
5,97	6	82	44	35	36	M2955-0597AU	30658332

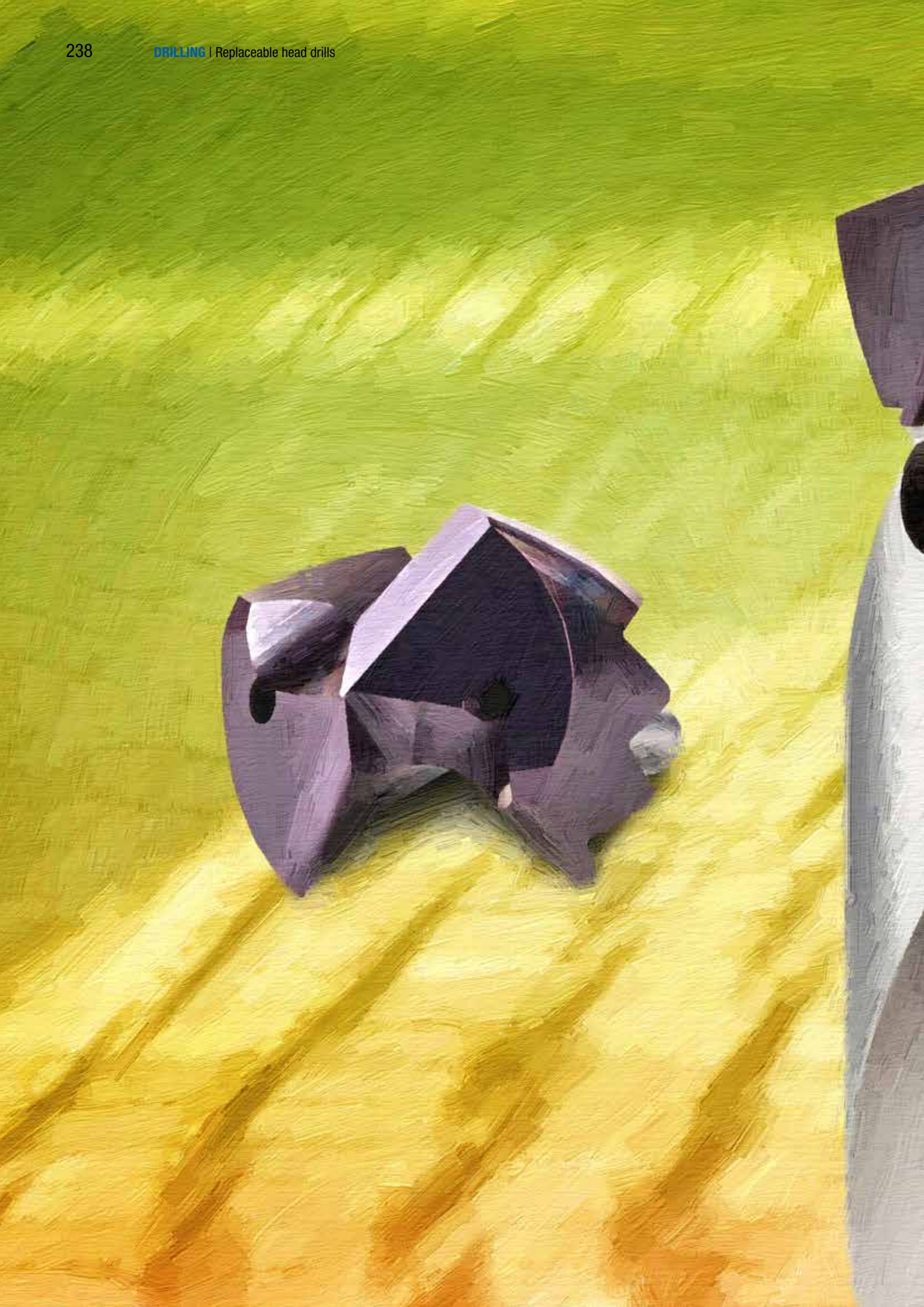
Mono-Drill-Plastic | M2955, 5xD, external cooling

Dimensions						Specification	Order No.
d ₁ (±0,003)	d ₂ h6	l ₁	l ₂	l ₃	l ₄		
5,98	6	82	44	35	36	M2955-0598AU	30658333
5,99	6	82	44	35	36	M2955-0599AU	30658334
6,00	6	82	44	35	36	M2955-0600AU	30658335
6,01	6	82	44	35	36	M2955-0601AU	30658336
6,02	6	82	44	35	36	M2955-0602AU	30658337
6,03	6	82	44	35	36	M2955-0603AU	30658338
6,97	8	91	53	43	36	M2955-0697AU	30658339
6,98	8	91	53	43	36	M2955-0698AU	30658340
6,99	8	91	53	43	36	M2955-0699AU	30658341
7,00	8	91	53	43	36	M2955-0700AU	30658342
7,01	8	91	53	43	36	M2955-0701AU	30658343
7,02	8	91	53	43	36	M2955-0702AU	30658344
7,03	8	91	53	43	36	M2955-0703AU	30658345
7,97	8	91	53	43	36	M2955-0797AU	30658346
7,98	8	91	53	43	36	M2955-0798AU	30658347
7,99	8	91	53	43	36	M2955-0799AU	30658348
8,00	8	91	53	43	36	M2955-0800AU	30658349
8,01	8	91	53	43	36	M2955-0801AU	30658350
8,02	8	91	53	43	36	M2955-0802AU	30658351
8,03	8	91	53	43	36	M2955-0803AU	30658352
8,97	10	103	61	49	40	M2955-0897AU	30658353
8,98	10	103	61	49	40	M2955-0898AU	30658354
8,99	10	103	61	49	40	M2955-0899AU	30658355
9,00	10	103	61	49	40	M2955-0900AU	30658356
9,01	10	103	61	49	40	M2955-0901AU	30658357
9,02	10	103	61	49	40	M2955-0902AU	30658358
9,03	10	103	61	49	40	M2955-0903AU	30658359
9,97	10	103	61	49	40	M2955-0997AU	30658360
9,98	10	103	61	49	40	M2955-0998AU	30658361
9,99	10	103	61	49	40	M2955-0999AU	30658362
10,00	10	103	61	49	40	M2955-1000AU	30658363
10,01	10	103	61	49	40	M2955-1001AU	30658364
10,02	10	103	61	49	40	M2955-1002AU	30658365
10,03	10	103	61	49	40	M2955-1003AU	30658366
10,97	12	118	71	56	45	M2955-1097AU	30658367
10,98	12	118	71	56	45	M2955-1098AU	30658368
10,99	12	118	71	56	45	M2955-1099AU	30658369
11,00	12	118	71	56	45	M2955-1100AU	30658370
11,01	12	118	71	56	45	M2955-1101AU	30658371
11,02	12	118	71	56	45	M2955-1102AU	30658372
11,03	12	118	71	56	45	M2955-1103AU	30658373
11,97	12	118	71	56	45	M2955-1197AU	30658374
11,98	12	118	71	56	45	M2955-1198AU	30658375
11,99	12	118	71	56	45	M2955-1199AU	30658376
12,00	12	118	71	56	45	M2955-1200AU	30658377
12,01	12	118	71	56	45	M2955-1201AU	30658378
12,02	12	118	71	56	45	M2955-1202AU	30658379
12,03	12	118	71	56	45	M2955-1203AU	30658380
12,97	14	124	77	60	45	M2955-1297AU	30658381
12,98	14	124	77	60	45	M2955-1298AU	30658382
12,99	14	124	77	60	45	M2955-1299AU	30658383
13,00	14	124	77	60	45	M2955-1300AU	30658384
13,01	14	124	77	60	45	M2955-1301AU	30658385
13,02	14	124	77	60	45	M2955-1302AU	30658386
13,03	14	124	77	60	45	M2955-1303AU	30658387

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.





REPLACEABLE HEAD DRILLS TTD

Introduction

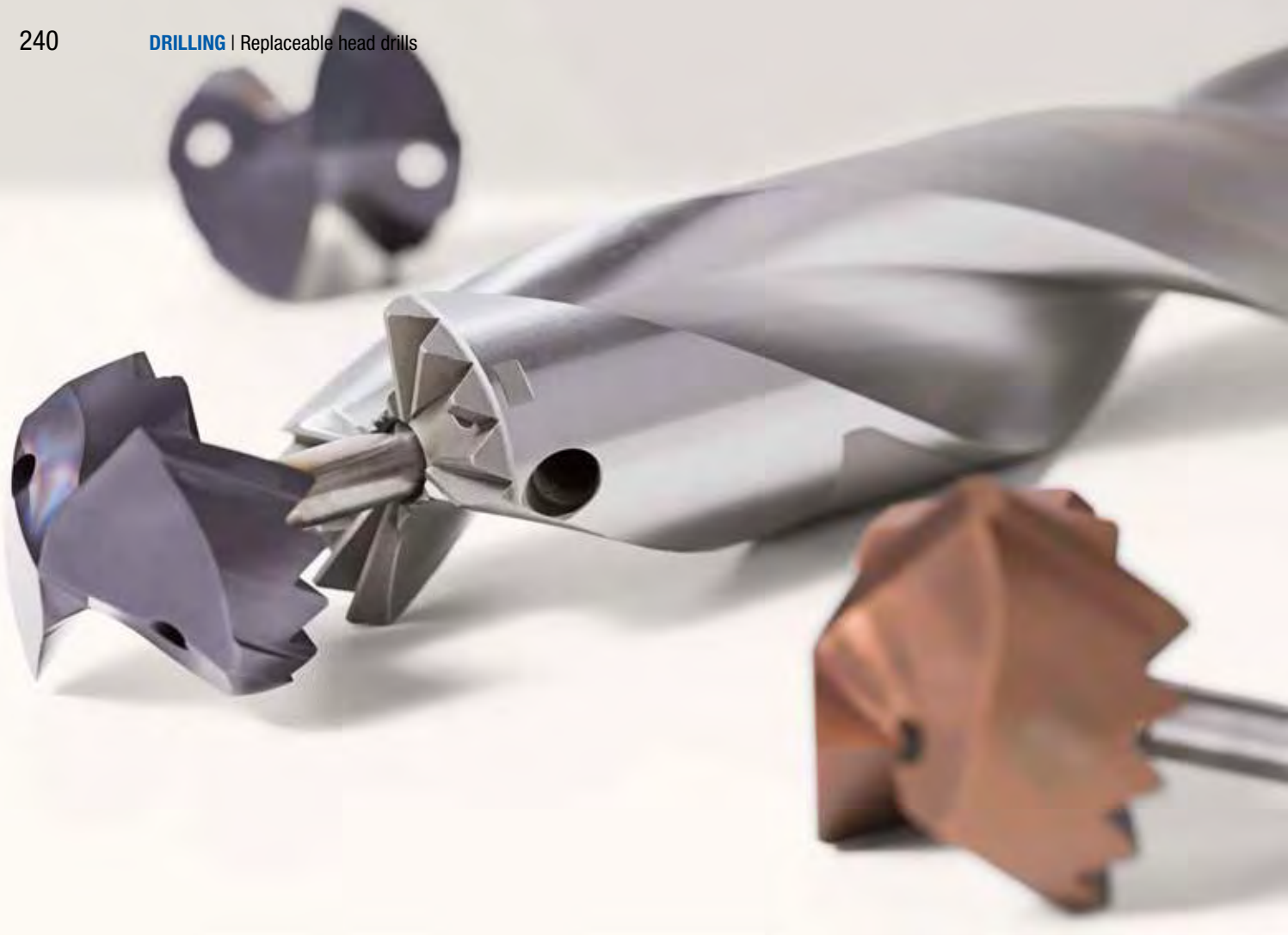
Product overview	240
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Replaceable head drills TTD

Replaceable head drill TTD - Type 01 - Uni	242
Replaceable head drill TTD - Type 02 - Inox	244
Replaceable head drill TTD - Type 03 - Alu	246
Replaceable head drill TTD - Type 04 - Steel	248
Replaceable head drill TTD - Type 05 - Iron	250

Replaceable head holder TTS

Replaceable head holder TTS, 1xD	252
Replaceable head holder TTS, 3xD	253
Replaceable head holder TTS, 5xD	254
Replaceable head holder TTS, 8xD	255
Replaceable head holder TTS, 12xD	256
Accessories and spare parts	257



REPLACEABLE HEAD DRILL TTD

Minimised usage of carbide with highest stability and precision

Thanks to its combination of outstanding characteristics, the replaceable head drill TTD achieves the performance and quality level of solid carbide drills. At the same time, the reduction in the use of carbide for the replaceable drill heads means reduced tool costs.

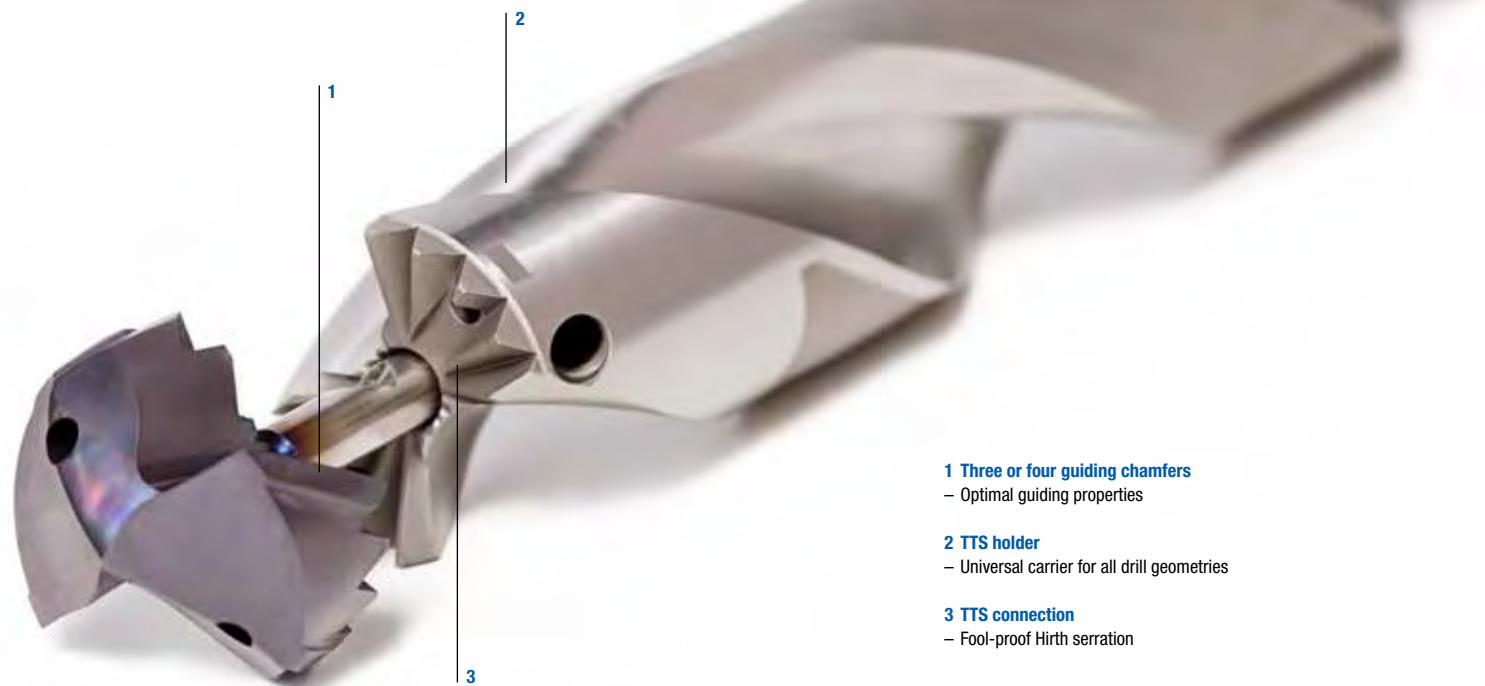
The heart of the replaceable head drill TTD is the connection TTS (Torque Transfer System) that guarantees extremely high stability of the joint.

It is characterised by two elementary features: Optimum torque transmission and high changing and radial run-out accuracies.

The standard range of the replaceable head drills TTD cover the drilling depths 1xD, 3xD, 5xD, 8xD and 12xD. With five different types of replaceable drill head, even problematic machining operations can be carried out in practically all materials in the diameter range from 12 mm to

45 mm. The drill heads exhibit optimum centring properties and the chips are reliably discharged via the chip spaces of the TTS holder thanks to the special facet geometry. In addition, very smooth running is enhanced by the special three or four-chamfer geometry. The combination of these properties enables long tool lives and drilling results to be achieved at the highest level.

Tool features in detail



- 1 Three or four guiding chamfers**
 - Optimal guiding properties
- 2 TTS holder**
 - Universal carrier for all drill geometries
- 3 TTS connection**
 - Fool-proof Hirth serration



AT A GLANCE
- Available ex-stock - $\varnothing$ range 12.00 to 45.00 mm - Drilling depths 1 3 5 8 and 12xD - With internal cooling - Easy handling - Head replacement on the machine possible

FEATURES
- Same performance as solid carbide drill - High radial run-out accuracy - Good positioning accuracy - High torque transmission

ADVANTAGES
- Can be reground if necessary - Error-free head replacement - One replaceable head holder for different drill heads - Almost all bore geometries can be realised

Replaceable head drill TTD

Made of solid carbide, internal cooling

Type 01 - Uni

Design:

Drill diameter:

Bore tolerance:

Coating:

Number of cutting edges:

Number of guiding chamfers:

Point angle:

Type 01

12,00 – 45,00 mm

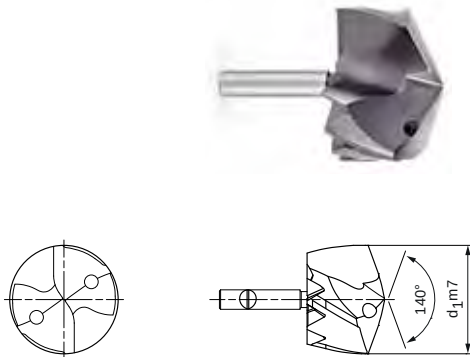
≥ IT 9

MxF

2

4

140°



d ₁ from 12,00 up to 15,40				d ₁ from 15,50 up to 18,90				d ₁ from 19,00 up to 22,40			
d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.
12,00	TTS12-A	TTD-4F01-1200-MxF	30841579	15,50	TTS12-A	TTD-4F01-1550-MxF	30841590	19,00	TTS12-A	TTD-4F01-1900-MxF	30841418
12,10	TTS12-A	TTD-4F01-1210-MxF	30841592	15,60	TTS12-A	TTD-4F01-1560-MxF	30841577	19,10	TTS12-A	TTD-4F01-1910-MxF	30841489
12,20	TTS12-A	TTD-4F01-1220-MxF	30841593	15,70	TTS12-A	TTD-4F01-1570-MxF	30841464	19,20	TTS12-A	TTD-4F01-1920-MxF	30841490
12,30	TTS12-A	TTD-4F01-1230-MxF	30841594	15,80	TTS12-A	TTD-4F01-1580-MxF	30841467	19,30	TTS12-A	TTD-4F01-1930-MxF	30841491
12,40	TTS12-A	TTD-4F01-1240-MxF	30841595	15,90	TTS12-A	TTD-4F01-1590-MxF	30841468	19,40	TTS12-A	TTD-4F01-1940-MxF	30841492
12,50	TTS12-A	TTD-4F01-1250-MxF	30841580	16,00	TTS12-A	TTD-4F01-1600-MxF	30841412	19,50	TTS12-A	TTD-4F01-1950-MxF	30841420
12,60	TTS12-A	TTD-4F01-1260-MxF	30841596	16,10	TTS12-A	TTD-4F01-1610-MxF	30841469	19,60	TTS12-A	TTD-4F01-1960-MxF	30841493
12,70	TTS12-A	TTD-4F01-1270-MxF	30841581	16,20	TTS12-A	TTD-4F01-1620-MxF	30841471	19,70	TTS12-A	TTD-4F01-1970-MxF	30841451
12,80	TTS12-A	TTD-4F01-1280-MxF	30841597	16,30	TTS12-A	TTD-4F01-1630-MxF	30841472	19,80	TTS12-A	TTD-4F01-1980-MxF	30841446
12,90	TTS12-A	TTD-4F01-1290-MxF	30841598	16,40	TTS12-A	TTD-4F01-1640-MxF	30841473	19,90	TTS12-A	TTD-4F01-1990-MxF	30841494
13,00	TTS12-A	TTD-4F01-1300-MxF	30841582	16,50	TTS12-A	TTD-4F01-1650-MxF	30841413	20,00	TTS12-A	TTD-4F01-2000-MxF	30841421
13,10	TTS12-A	TTD-4F01-1310-MxF	30841599	16,60	TTS12-A	TTD-4F01-1660-MxF	30841474	20,10	TTS12-A	TTD-4F01-2010-MxF	30841495
13,20	TTS12-A	TTD-4F01-1320-MxF	30841600	16,70	TTS12-A	TTD-4F01-1670-MxF	30841448	20,20	TTS12-A	TTD-4F01-2020-MxF	30841496
13,30	TTS12-A	TTD-4F01-1330-MxF	30841601	16,80	TTS12-A	TTD-4F01-1680-MxF	30841475	20,30	TTS12-A	TTD-4F01-2030-MxF	30841466
13,40	TTS12-A	TTD-4F01-1340-MxF	30841602	16,90	TTS12-A	TTD-4F01-1690-MxF	30841615	20,40	TTS12-A	TTD-4F01-2040-MxF	30841497
13,50	TTS12-A	TTD-4F01-1350-MxF	30841583	17,00	TTS12-A	TTD-4F01-1700-MxF	30841414	20,50	TTS12-A	TTD-4F01-2050-MxF	30841422
13,60	TTS12-A	TTD-4F01-1360-MxF	30841603	17,10	TTS12-A	TTD-4F01-1710-MxF	30841476	20,60	TTS12-A	TTD-4F01-2060-MxF	30841498
13,70	TTS12-A	TTD-4F01-1370-MxF	30841584	17,20	TTS12-A	TTD-4F01-1720-MxF	30841463	20,70	TTS12-A	TTD-4F01-2070-MxF	30841452
13,80	TTS12-A	TTD-4F01-1380-MxF	30841604	17,30	TTS12-A	TTD-4F01-1730-MxF	30841477	20,80	TTS12-A	TTD-4F01-2080-MxF	30841499
13,90	TTS12-A	TTD-4F01-1390-MxF	30841605	17,40	TTS12-A	TTD-4F01-1740-MxF	30841478	20,90	TTS12-A	TTD-4F01-2090-MxF	30841500
14,00	TTS12-A	TTD-4F01-1400-MxF	30841585	17,50	TTS12-A	TTD-4F01-1750-MxF	30841415	21,00	TTS12-A	TTD-4F01-2100-MxF	30841423
14,10	TTS12-A	TTD-4F01-1410-MxF	30841606	17,60	TTS12-A	TTD-4F01-1760-MxF	30841479	21,10	TTS12-A	TTD-4F01-2110-MxF	30841501
14,20	TTS12-A	TTD-4F01-1420-MxF	30841607	17,70	TTS12-A	TTD-4F01-1770-MxF	30841449	21,20	TTS12-A	TTD-4F01-2120-MxF	30841502
14,30	TTS12-A	TTD-4F01-1430-MxF	30841591	17,80	TTS12-A	TTD-4F01-1780-MxF	30841480	21,30	TTS12-A	TTD-4F01-2130-MxF	30841503
14,40	TTS12-A	TTD-4F01-1440-MxF	30841608	17,90	TTS12-A	TTD-4F01-1790-MxF	30841481	21,40	TTS12-A	TTD-4F01-2140-MxF	30841504
14,50	TTS12-A	TTD-4F01-1450-MxF	30841586	18,00	TTS12-A	TTD-4F01-1800-MxF	30841416	21,50	TTS12-A	TTD-4F01-2150-MxF	30841424
14,60	TTS12-A	TTD-4F01-1460-MxF	30841609	18,10	TTS12-A	TTD-4F01-1810-MxF	30841482	21,60	TTS12-A	TTD-4F01-2160-MxF	30841505
14,70	TTS12-A	TTD-4F01-1470-MxF	30841587	18,20	TTS12-A	TTD-4F01-1820-MxF	30841483	21,70	TTS12-A	TTD-4F01-2170-MxF	30841453
14,80	TTS12-A	TTD-4F01-1480-MxF	30841610	18,30	TTS12-A	TTD-4F01-1830-MxF	30841484	21,80	TTS12-A	TTD-4F01-2180-MxF	30841506
14,90	TTS12-A	TTD-4F01-1490-MxF	30841611	18,40	TTS12-A	TTD-4F01-1840-MxF	30841485	21,90	TTS12-A	TTD-4F01-2190-MxF	30841507
15,00	TTS12-A	TTD-4F01-1500-MxF	30841588	18,50	TTS12-A	TTD-4F01-1850-MxF	30841417	22,00	TTS12-A	TTD-4F01-2200-MxF	30841425
15,10	TTS12-A	TTD-4F01-1510-MxF	30841578	18,60	TTS12-A	TTD-4F01-1860-MxF	30841486	22,10	TTS12-A	TTD-4F01-2210-MxF	30841508
15,20	TTS12-A	TTD-4F01-1520-MxF	30841612	18,70	TTS12-A	TTD-4F01-1870-MxF	30841450	22,20	TTS12-A	TTD-4F01-2220-MxF	30841465
15,30	TTS12-A	TTD-4F01-1530-MxF	30841613	18,80	TTS12-A	TTD-4F01-1880-MxF	30841487	22,30	TTS12-A	TTD-4F01-2230-MxF	30841509
15,40	TTS12-A	TTD-4F01-1540-MxF	30841614	18,90	TTS12-A	TTD-4F01-1890-MxF	30841488	22,40	TTS12-A	TTD-4F01-2240-MxF	30841510

Replaceable head drill TTD made of solid carbide, internal cooling - Type 01

d ₁ from 22,50 up to 26,50				d ₁ from 26,60 up to 30,60				d ₁ from 30,70 up to 45,00			
d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.
22,50	TTS12-A	TTD-4F01-2250-MxF	30841426	26,60	TTS18-A	TTD-4F01-2660-MxF	30841539	30,70	TTS18-A	TTD-4F01-3070-MxF	30841461
22,60	TTS12-A	TTD-4F01-2260-MxF	30841511	26,70	TTS18-A	TTD-4F01-2670-MxF	30841457	30,80	TTS18-A	TTD-4F01-3080-MxF	30841568
22,70	TTS12-A	TTD-4F01-2270-MxF	30841454	26,80	TTS18-A	TTD-4F01-2680-MxF	30841540	30,90	TTS18-A	TTD-4F01-3090-MxF	30841569
22,80	TTS12-A	TTD-4F01-2280-MxF	30841512	26,90	TTS18-A	TTD-4F01-2690-MxF	30841541	31,00	TTS18-A	TTD-4F01-3100-MxF	30841443
22,90	TTS12-A	TTD-4F01-2290-MxF	30841513	27,00	TTS18-A	TTD-4F01-2700-MxF	30841435	31,10	TTS18-A	TTD-4F01-3110-MxF	30841570
23,00	TTS12-A	TTD-4F01-2300-MxF	30841427	27,10	TTS18-A	TTD-4F01-2710-MxF	30841542	31,20	TTS18-A	TTD-4F01-3120-MxF	30841571
23,10	TTS12-A	TTD-4F01-2310-MxF	30841514	27,20	TTS18-A	TTD-4F01-2720-MxF	30841543	31,30	TTS18-A	TTD-4F01-3130-MxF	30841572
23,20	TTS12-A	TTD-4F01-2320-MxF	30841515	27,30	TTS18-A	TTD-4F01-2730-MxF	30841544	31,40	TTS18-A	TTD-4F01-3140-MxF	30841573
23,30	TTS12-A	TTD-4F01-2330-MxF	30841516	27,40	TTS18-A	TTD-4F01-2740-MxF	30841545	31,50	TTS18-A	TTD-4F01-3150-MxF	30841444
23,40	TTS12-A	TTD-4F01-2340-MxF	30841517	27,50	TTS18-A	TTD-4F01-2750-MxF	30841436	31,60	TTS18-A	TTD-4F01-3160-MxF	30841574
23,50	TTS12-A	TTD-4F01-2350-MxF	30841428	27,60	TTS18-A	TTD-4F01-2760-MxF	30841546	31,70	TTS18-A	TTD-4F01-3170-MxF	30841462
23,60	TTS12-A	TTD-4F01-2360-MxF	30841518	27,70	TTS18-A	TTD-4F01-2770-MxF	30841458	31,80	TTS18-A	TTD-4F01-3180-MxF	30841575
23,70	TTS12-A	TTD-4F01-2370-MxF	30841455	27,80	TTS18-A	TTD-4F01-2780-MxF	30841547	31,90	TTS18-A	TTD-4F01-3190-MxF	30841576
23,80	TTS12-A	TTD-4F01-2380-MxF	30841519	27,90	TTS18-A	TTD-4F01-2790-MxF	30841548	32,00	TTS18-A	TTD-4F01-3200-MxF	30841445
23,90	TTS12-A	TTD-4F01-2390-MxF	30841520	28,00	TTS18-A	TTD-4F01-2800-MxF	30841437	32,50	TTS18-A	TTD-4F01-3250-MxF	30841616
24,00	TTS12-A	TTD-4F01-2400-MxF	30841429	28,10	TTS18-A	TTD-4F01-2810-MxF	30841549	33,00	TTS18-A	TTD-4F01-3300-MxF	30841617
24,10	TTS12-A	TTD-4F01-2410-MxF	30841521	28,20	TTS18-A	TTD-4F01-2820-MxF	30841550	33,50	TTS18-A	TTD-4F01-3350-MxF	30841618
24,20	TTS12-A	TTD-4F01-2420-MxF	30841522	28,30	TTS18-A	TTD-4F01-2830-MxF	30841551	34,00	TTS18-A	TTD-4F01-3400-MxF	30841641
24,30	TTS12-A	TTD-4F01-2430-MxF	30841523	28,40	TTS18-A	TTD-4F01-2840-MxF	30841552	34,50	TTS18-A	TTD-4F01-3450-MxF	30841619
24,40	TTS12-A	TTD-4F01-2440-MxF	30841524	28,50	TTS18-A	TTD-4F01-2850-MxF	30841438	35,00	TTS18-A	TTD-4F01-3500-MxF	30841620
24,50	TTS18-A	TTD-4F01-2450-MxF	30841430	28,60	TTS18-A	TTD-4F01-2860-MxF	30841553	35,50	TTS18-A	TTD-4F01-3550-MxF	30841621
24,60	TTS18-A	TTD-4F01-2460-MxF	30841525	28,70	TTS18-A	TTD-4F01-2870-MxF	30841459	36,00	TTS18-A	TTD-4F01-3600-MxF	30841622
24,70	TTS18-A	TTD-4F01-2470-MxF	30841447	28,80	TTS18-A	TTD-4F01-2880-MxF	30841554	36,50	TTS18-A	TTD-4F01-3650-MxF	30841623
24,80	TTS18-A	TTD-4F01-2480-MxF	30841526	28,90	TTS18-A	TTD-4F01-2890-MxF	30841555	37,00	TTS18-A	TTD-4F01-3700-MxF	30841624
24,90	TTS18-A	TTD-4F01-2490-MxF	30841527	29,00	TTS18-A	TTD-4F01-2900-MxF	30841439	37,50	TTS18-A	TTD-4F01-3750-MxF	30841625
25,00	TTS18-A	TTD-4F01-2500-MxF	30841431	29,10	TTS18-A	TTD-4F01-2910-MxF	30841556	38,00	TTS18-A	TTD-4F01-3800-MxF	30841626
25,10	TTS18-A	TTD-4F01-2510-MxF	30841528	29,20	TTS18-A	TTD-4F01-2920-MxF	30841557	38,50	TTS18-A	TTD-4F01-3850-MxF	30841627
25,20	TTS18-A	TTD-4F01-2520-MxF	30841529	29,30	TTS18-A	TTD-4F01-2930-MxF	30841558	39,00	TTS18-A	TTD-4F01-3900-MxF	30841628
25,30	TTS18-A	TTD-4F01-2530-MxF	30841530	29,40	TTS18-A	TTD-4F01-2940-MxF	30841559	39,50	TTS18-A	TTD-4F01-3950-MxF	30841629
25,40	TTS18-A	TTD-4F01-2540-MxF	30841531	29,50	TTS18-A	TTD-4F01-2950-MxF	30841440	40,00	TTS18-A	TTD-4F01-4000-MxF	30841630
25,50	TTS18-A	TTD-4F01-2550-MxF	30841432	29,60	TTS18-A	TTD-4F01-2960-MxF	30841560	40,50	TTS18-A	TTD-4F01-4050-MxF	30841631
25,60	TTS18-A	TTD-4F01-2560-MxF	30841532	29,70	TTS18-A	TTD-4F01-2970-MxF	30841460	41,00	TTS18-A	TTD-4F01-4100-MxF	30841632
25,70	TTS18-A	TTD-4F01-2570-MxF	30841456	29,80	TTS18-A	TTD-4F01-2980-MxF	30841561	41,50	TTS18-A	TTD-4F01-4150-MxF	30841633
25,80	TTS18-A	TTD-4F01-2580-MxF	30841533	29,90	TTS18-A	TTD-4F01-2990-MxF	30841562	42,00	TTS18-A	TTD-4F01-4200-MxF	30841634
25,90	TTS18-A	TTD-4F01-2590-MxF	30841534	30,00	TTS18-A	TTD-4F01-3000-MxF	30841441	42,50	TTS18-A	TTD-4F01-4250-MxF	30841635
26,00	TTS18-A	TTD-4F01-2600-MxF	30841433	30,10	TTS18-A	TTD-4F01-3010-MxF	30841563	43,00	TTS18-A	TTD-4F01-4300-MxF	30841636
26,10	TTS18-A	TTD-4F01-2610-MxF	30841535	30,20	TTS18-A	TTD-4F01-3020-MxF	30841564	43,50	TTS18-A	TTD-4F01-4350-MxF	30841637
26,20	TTS18-A	TTD-4F01-2620-MxF	30841536	30,30	TTS18-A	TTD-4F01-3030-MxF	30841565	44,00	TTS18-A	TTD-4F01-4400-MxF	30841638
26,30	TTS18-A	TTD-4F01-2630-MxF	30841537	30,40	TTS18-A	TTD-4F01-3040-MxF	30841566	44,50	TTS18-A	TTD-4F01-4450-MxF	30841639
26,40	TTS18-A	TTD-4F01-2640-MxF	30841538	30,50	TTS18-A	TTD-4F01-3050-MxF	30841442	45,00	TTS18-A	TTD-4F01-4500-MxF	30841640
26,50	TTS18-A	TTD-4F01-2650-MxF	30841434	30,60	TTS18-A	TTD-4F01-3060-MxF	30841567				

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

Replaceable head drill TTD

Made of solid carbide, internal cooling

Type 02 - Inox

Design:

Drill diameter:

Bore tolerance:

Coating:

Number of cutting edges:

Number of guiding chamfers:

Point angle:

Type 02

12,00 – 45,00 mm

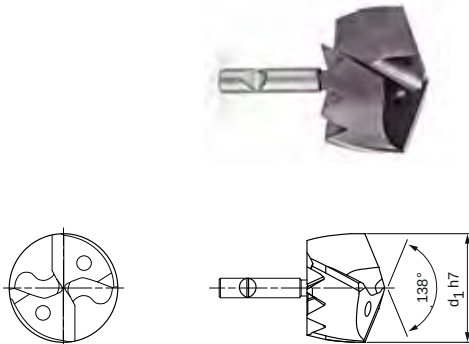
≥ IT 9

MxF

2

3

138°



d ₁ from 12,00 up to 15,40				d ₁ from 15,50 up to 18,90				d ₁ from 19,00 up to 22,40			
d ₁ h7	Conne- ction	Specification	Order No.	d ₁ h7	Conne- ction	Specification	Order No.	d ₁ h7	Conne- ction	Specification	Order No.
12,00	TTS12-A	TTD-3F02-1200-MxF	30841692	15,50	TTS12-A	TTD-3F02-1550-MxF	30841702	19,00	TTS12-A	TTD-3F02-1900-MxF	30841648
12,10	TTS12-A	TTD-3F02-1210-MxF	30842582	15,60	TTS12-A	TTD-3F02-1560-MxF	30842606	19,10	TTS12-A	TTD-3F02-1910-MxF	30842630
12,20	TTS12-A	TTD-3F02-1220-MxF	30842583	15,70	TTS12-A	TTD-3F02-1570-MxF	30841675	19,20	TTS12-A	TTD-3F02-1920-MxF	30842631
12,30	TTS12-A	TTD-3F02-1230-MxF	30842584	15,80	TTS12-A	TTD-3F02-1580-MxF	30842607	19,30	TTS12-A	TTD-3F02-1930-MxF	30842632
12,40	TTS12-A	TTD-3F02-1240-MxF	30842585	15,90	TTS12-A	TTD-3F02-1590-MxF	30842608	19,40	TTS12-A	TTD-3F02-1940-MxF	30842633
12,50	TTS12-A	TTD-3F02-1250-MxF	30841693	16,00	TTS12-A	TTD-3F02-1600-MxF	30841642	19,50	TTS12-A	TTD-3F02-1950-MxF	30841649
12,60	TTS12-A	TTD-3F02-1260-MxF	30842586	16,10	TTS12-A	TTD-3F02-1610-MxF	30842609	19,60	TTS12-A	TTD-3F02-1960-MxF	30842634
12,70	TTS12-A	TTD-3F02-1270-MxF	30841694	16,20	TTS12-A	TTD-3F02-1620-MxF	30842610	19,70	TTS12-A	TTD-3F02-1970-MxF	30841679
12,80	TTS12-A	TTD-3F02-1280-MxF	30842587	16,30	TTS12-A	TTD-3F02-1630-MxF	30842611	19,80	TTS12-A	TTD-3F02-1980-MxF	30842635
12,90	TTS12-A	TTD-3F02-1290-MxF	30842588	16,40	TTS12-A	TTD-3F02-1640-MxF	30842612	19,90	TTS12-A	TTD-3F02-1990-MxF	30842636
13,00	TTS12-A	TTD-3F02-1300-MxF	30841695	16,50	TTS12-A	TTD-3F02-1650-MxF	30841643	20,00	TTS12-A	TTD-3F02-2000-MxF	30841650
13,10	TTS12-A	TTD-3F02-1310-MxF	30842589	16,60	TTS12-A	TTD-3F02-1660-MxF	30842613	20,10	TTS12-A	TTD-3F02-2010-MxF	30842637
13,20	TTS12-A	TTD-3F02-1320-MxF	30842590	16,70	TTS12-A	TTD-3F02-1670-MxF	30841676	20,20	TTS12-A	TTD-3F02-2020-MxF	30842638
13,30	TTS12-A	TTD-3F02-1330-MxF	30842591	16,80	TTS12-A	TTD-3F02-1680-MxF	30842614	20,30	TTS12-A	TTD-3F02-2030-MxF	30842639
13,40	TTS12-A	TTD-3F02-1340-MxF	30842592	16,90	TTS12-A	TTD-3F02-1690-MxF	30842615	20,40	TTS12-A	TTD-3F02-2040-MxF	30842640
13,50	TTS12-A	TTD-3F02-1350-MxF	30841696	17,00	TTS12-A	TTD-3F02-1700-MxF	30841644	20,50	TTS12-A	TTD-3F02-2050-MxF	30841651
13,60	TTS12-A	TTD-3F02-1360-MxF	30842593	17,10	TTS12-A	TTD-3F02-1710-MxF	30842616	20,60	TTS12-A	TTD-3F02-2060-MxF	30842578
13,70	TTS12-A	TTD-3F02-1370-MxF	30841697	17,20	TTS12-A	TTD-3F02-1720-MxF	30842617	20,70	TTS12-A	TTD-3F02-2070-MxF	30841680
13,80	TTS12-A	TTD-3F02-1380-MxF	30842594	17,30	TTS12-A	TTD-3F02-1730-MxF	30842618	20,80	TTS12-A	TTD-3F02-2080-MxF	30842641
13,90	TTS12-A	TTD-3F02-1390-MxF	30842595	17,40	TTS12-A	TTD-3F02-1740-MxF	30842619	20,90	TTS12-A	TTD-3F02-2090-MxF	30842642
14,00	TTS12-A	TTD-3F02-1400-MxF	30841698	17,50	TTS12-A	TTD-3F02-1750-MxF	30841645	21,00	TTS12-A	TTD-3F02-2100-MxF	30841652
14,10	TTS12-A	TTD-3F02-1410-MxF	30842581	17,60	TTS12-A	TTD-3F02-1760-MxF	30842620	21,10	TTS12-A	TTD-3F02-2110-MxF	30842643
14,20	TTS12-A	TTD-3F02-1420-MxF	30842596	17,70	TTS12-A	TTD-3F02-1770-MxF	30841677	21,20	TTS12-A	TTD-3F02-2120-MxF	30842644
14,30	TTS12-A	TTD-3F02-1430-MxF	30842597	17,80	TTS12-A	TTD-3F02-1780-MxF	30842621	21,30	TTS12-A	TTD-3F02-2130-MxF	30842645
14,40	TTS12-A	TTD-3F02-1440-MxF	30842598	17,90	TTS12-A	TTD-3F02-1790-MxF	30842622	21,40	TTS12-A	TTD-3F02-2140-MxF	30842646
14,50	TTS12-A	TTD-3F02-1450-MxF	30841699	18,00	TTS12-A	TTD-3F02-1800-MxF	30841646	21,50	TTS12-A	TTD-3F02-2150-MxF	30841653
14,60	TTS12-A	TTD-3F02-1460-MxF	30842599	18,10	TTS12-A	TTD-3F02-1810-MxF	30842623	21,60	TTS12-A	TTD-3F02-2160-MxF	30842647
14,70	TTS12-A	TTD-3F02-1470-MxF	30841700	18,20	TTS12-A	TTD-3F02-1820-MxF	30842624	21,70	TTS12-A	TTD-3F02-2170-MxF	30841681
14,80	TTS12-A	TTD-3F02-1480-MxF	30842600	18,30	TTS12-A	TTD-3F02-1830-MxF	30842625	21,80	TTS12-A	TTD-3F02-2180-MxF	30842648
14,90	TTS12-A	TTD-3F02-1490-MxF	30842601	18,40	TTS12-A	TTD-3F02-1840-MxF	30842626	21,90	TTS12-A	TTD-3F02-2190-MxF	30842649
15,00	TTS12-A	TTD-3F02-1500-MxF	30841701	18,50	TTS12-A	TTD-3F02-1850-MxF	30841647	22,00	TTS12-A	TTD-3F02-2200-MxF	30841654
15,10	TTS12-A	TTD-3F02-1510-MxF	30842602	18,60	TTS12-A	TTD-3F02-1860-MxF	30842627	22,10	TTS12-A	TTD-3F02-2210-MxF	30842650
15,20	TTS12-A	TTD-3F02-1520-MxF	30842603	18,70	TTS12-A	TTD-3F02-1870-MxF	30841678	22,20	TTS12-A	TTD-3F02-2220-MxF	30842579
15,30	TTS12-A	TTD-3F02-1530-MxF	30842604	18,80	TTS12-A	TTD-3F02-1880-MxF	30842628	22,30	TTS12-A	TTD-3F02-2230-MxF	30842651
15,40	TTS12-A	TTD-3F02-1540-MxF	30842605	18,90	TTS12-A	TTD-3F02-1890-MxF	30842629	22,40	TTS12-A	TTD-3F02-2240-MxF	30842652

Replaceable head drill TTD made of solid carbide, internal cooling - Type 02

d ₁ from 22,50 up to 26,50				d ₁ from 26,60 up to 30,60				d ₁ from 30,70 up to 45,00			
d ₁ h7	Conne- ction	Specification	Order No.	d ₁ h7	Conne- ction	Specification	Order No.	d ₁ h7	Conne- ction	Specification	Order No.
22,50	TTS12-A	TTD-3F02-2250-MxF	30841655	26,60	TTS18-A	TTD-3F02-2660-MxF	30842679	30,70	TTS18-A	TTD-3F02-3070-MxF	30841690
22,60	TTS12-A	TTD-3F02-2260-MxF	30842653	26,70	TTS18-A	TTD-3F02-2670-MxF	30841686	30,80	TTS18-A	TTD-3F02-3080-MxF	30842708
22,70	TTS12-A	TTD-3F02-2270-MxF	30841682	26,80	TTS18-A	TTD-3F02-2680-MxF	30842680	30,90	TTS18-A	TTD-3F02-3090-MxF	30842709
22,80	TTS12-A	TTD-3F02-2280-MxF	30842654	26,90	TTS18-A	TTD-3F02-2690-MxF	30842681	31,00	TTS18-A	TTD-3F02-3100-MxF	30841672
22,90	TTS12-A	TTD-3F02-2290-MxF	30842655	27,00	TTS18-A	TTD-3F02-2700-MxF	30841664	31,10	TTS18-A	TTD-3F02-3110-MxF	30842710
23,00	TTS12-A	TTD-3F02-2300-MxF	30841656	27,10	TTS18-A	TTD-3F02-2710-MxF	30842682	31,20	TTS18-A	TTD-3F02-3120-MxF	30842711
23,10	TTS12-A	TTD-3F02-2310-MxF	30842656	27,20	TTS18-A	TTD-3F02-2720-MxF	30842683	31,30	TTS18-A	TTD-3F02-3130-MxF	30842712
23,20	TTS12-A	TTD-3F02-2320-MxF	30842657	27,30	TTS18-A	TTD-3F02-2730-MxF	30842684	31,40	TTS18-A	TTD-3F02-3140-MxF	30842713
23,30	TTS12-A	TTD-3F02-2330-MxF	30842658	27,40	TTS18-A	TTD-3F02-2740-MxF	30842685	31,50	TTS18-A	TTD-3F02-3150-MxF	30841673
23,40	TTS12-A	TTD-3F02-2340-MxF	30842659	27,50	TTS18-A	TTD-3F02-2750-MxF	30841665	31,60	TTS18-A	TTD-3F02-3160-MxF	30842714
23,50	TTS12-A	TTD-3F02-2350-MxF	30841657	27,60	TTS18-A	TTD-3F02-2760-MxF	30842686	31,70	TTS18-A	TTD-3F02-3170-MxF	30841691
23,60	TTS12-A	TTD-3F02-2360-MxF	30842660	27,70	TTS18-A	TTD-3F02-2770-MxF	30841687	31,80	TTS18-A	TTD-3F02-3180-MxF	30842715
23,70	TTS12-A	TTD-3F02-2370-MxF	30841683	27,80	TTS18-A	TTD-3F02-2780-MxF	30842687	31,90	TTS18-A	TTD-3F02-3190-MxF	30842716
23,80	TTS12-A	TTD-3F02-2380-MxF	30842661	27,90	TTS18-A	TTD-3F02-2790-MxF	30842688	32,00	TTS18-A	TTD-3F02-3200-MxF	30841674
23,90	TTS12-A	TTD-3F02-2390-MxF	30842662	28,00	TTS18-A	TTD-3F02-2800-MxF	30841666	32,50	TTS18-A	TTD-3F02-3250-MxF	30841704
24,00	TTS12-A	TTD-3F02-2400-MxF	30841658	28,10	TTS18-A	TTD-3F02-2810-MxF	30842689	33,00	TTS18-A	TTD-3F02-3300-MxF	30841705
24,10	TTS12-A	TTD-3F02-2410-MxF	30842663	28,20	TTS18-A	TTD-3F02-2820-MxF	30842690	33,50	TTS18-A	TTD-3F02-3350-MxF	30841706
24,20	TTS12-A	TTD-3F02-2420-MxF	30842664	28,30	TTS18-A	TTD-3F02-2830-MxF	30842691	34,00	TTS18-A	TTD-3F02-3400-MxF	30841707
24,30	TTS12-A	TTD-3F02-2430-MxF	30842580	28,40	TTS18-A	TTD-3F02-2840-MxF	30842692	34,50	TTS18-A	TTD-3F02-3450-MxF	30841708
24,40	TTS12-A	TTD-3F02-2440-MxF	30842665	28,50	TTS18-A	TTD-3F02-2850-MxF	30841667	35,00	TTS18-A	TTD-3F02-3500-MxF	30841709
24,50	TTS18-A	TTD-3F02-2450-MxF	30841659	28,60	TTS18-A	TTD-3F02-2860-MxF	30842693	35,50	TTS18-A	TTD-3F02-3550-MxF	30841710
24,60	TTS18-A	TTD-3F02-2460-MxF	30842666	28,70	TTS18-A	TTD-3F02-2870-MxF	30841688	36,00	TTS18-A	TTD-3F02-3600-MxF	30841711
24,70	TTS18-A	TTD-3F02-2470-MxF	30841684	28,80	TTS18-A	TTD-3F02-2880-MxF	30842694	36,50	TTS18-A	TTD-3F02-3650-MxF	30841712
24,80	TTS18-A	TTD-3F02-2480-MxF	30842667	28,90	TTS18-A	TTD-3F02-2890-MxF	30842695	37,00	TTS18-A	TTD-3F02-3700-MxF	30841713
24,90	TTS18-A	TTD-3F02-2490-MxF	30842668	29,00	TTS18-A	TTD-3F02-2900-MxF	30841668	37,50	TTS18-A	TTD-3F02-3750-MxF	30841714
25,00	TTS18-A	TTD-3F02-2500-MxF	30841660	29,10	TTS18-A	TTD-3F02-2910-MxF	30842696	38,00	TTS18-A	TTD-3F02-3800-MxF	30841715
25,10	TTS18-A	TTD-3F02-2510-MxF	30842669	29,20	TTS18-A	TTD-3F02-2920-MxF	30842697	38,50	TTS18-A	TTD-3F02-3850-MxF	30841716
25,20	TTS18-A	TTD-3F02-2520-MxF	30841703	29,30	TTS18-A	TTD-3F02-2930-MxF	30842698	39,00	TTS18-A	TTD-3F02-3900-MxF	30841717
25,30	TTS18-A	TTD-3F02-2530-MxF	30842670	29,40	TTS18-A	TTD-3F02-2940-MxF	30842699	39,50	TTS18-A	TTD-3F02-3950-MxF	30841718
25,40	TTS18-A	TTD-3F02-2540-MxF	30842671	29,50	TTS18-A	TTD-3F02-2950-MxF	30841669	40,00	TTS18-A	TTD-3F02-4000-MxF	30841719
25,50	TTS18-A	TTD-3F02-2550-MxF	30841661	29,60	TTS18-A	TTD-3F02-2960-MxF	30842700	40,50	TTS18-A	TTD-3F02-4050-MxF	30841729
25,60	TTS18-A	TTD-3F02-2560-MxF	30842672	29,70	TTS18-A	TTD-3F02-2970-MxF	30841689	41,00	TTS18-A	TTD-3F02-4100-MxF	30841720
25,70	TTS18-A	TTD-3F02-2570-MxF	30841685	29,80	TTS18-A	TTD-3F02-2980-MxF	30842701	41,50	TTS18-A	TTD-3F02-4150-MxF	30841721
25,80	TTS18-A	TTD-3F02-2580-MxF	30842673	29,90	TTS18-A	TTD-3F02-2990-MxF	30842702	42,00	TTS18-A	TTD-3F02-4200-MxF	30841722
25,90	TTS18-A	TTD-3F02-2590-MxF	30842674	30,00	TTS18-A	TTD-3F02-3000-MxF	30841670	42,50	TTS18-A	TTD-3F02-4250-MxF	30841723
26,00	TTS18-A	TTD-3F02-2600-MxF	30841662	30,10	TTS18-A	TTD-3F02-3010-MxF	30842703	43,00	TTS18-A	TTD-3F02-4300-MxF	30841724
26,10	TTS18-A	TTD-3F02-2610-MxF	30842675	30,20	TTS18-A	TTD-3F02-3020-MxF	30842704	43,50	TTS18-A	TTD-3F02-4350-MxF	30841725
26,20	TTS18-A	TTD-3F02-2620-MxF	30842676	30,30	TTS18-A	TTD-3F02-3030-MxF	30842705	44,00	TTS18-A	TTD-3F02-4400-MxF	30841726
26,30	TTS18-A	TTD-3F02-2630-MxF	30842677	30,40	TTS18-A	TTD-3F02-3040-MxF	30842706	44,50	TTS18-A	TTD-3F02-4450-MxF	30841727
26,40	TTS18-A	TTD-3F02-2640-MxF	30842678	30,50	TTS18-A	TTD-3F02-3050-MxF	30841671	45,00	TTS18-A	TTD-3F02-4500-MxF	30841728
26,50	TTS18-A	TTD-3F02-2650-MxF	30841663	30,60	TTS18-A	TTD-3F02-3060-MxF	30842707				

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

Replaceable head drill TTD

Made of solid carbide, internal cooling

Type 03 - Alu

Design:

Drill diameter:

Bore tolerance:

Coating:

Number of cutting edges:

Number of guiding chamfers:

Point angle:

Type 03

12,00 – 45,00 mm

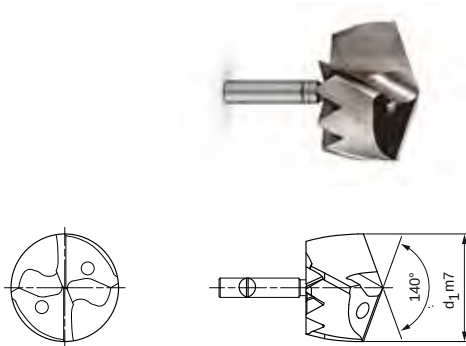
≥ IT 9

MxA

2

4

140°



P	1	2	3	4	5	6	M	1	2	3	K	1	2	3	N	1	2	3	4	S	1	2	3	4	5	H	1	2



d ₁ from 12,00 up to 15,40				d ₁ from 15,50 up to 18,90				d ₁ from 19,00 up to 22,40			
d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.
12,00	TTS12-A	TTD-4F03-1200-MxA	30841780	15,50	TTS12-A	TTD-4F03-1550-MxA	30841790	19,00	TTS12-A	TTD-4F03-1900-MxA	30841736
12,10	TTS12-A	TTD-4F03-1210-MxA	30842719	15,60	TTS12-A	TTD-4F03-1560-MxA	30842745	19,10	TTS12-A	TTD-4F03-1910-MxA	30842768
12,20	TTS12-A	TTD-4F03-1220-MxA	30842720	15,70	TTS12-A	TTD-4F03-1570-MxA	30841763	19,20	TTS12-A	TTD-4F03-1920-MxA	30842769
12,30	TTS12-A	TTD-4F03-1230-MxA	30842721	15,80	TTS12-A	TTD-4F03-1580-MxA	30842746	19,30	TTS12-A	TTD-4F03-1930-MxA	30842770
12,40	TTS12-A	TTD-4F03-1240-MxA	30842722	15,90	TTS12-A	TTD-4F03-1590-MxA	30842747	19,40	TTS12-A	TTD-4F03-1940-MxA	30842771
12,50	TTS12-A	TTD-4F03-1250-MxA	30841781	16,00	TTS12-A	TTD-4F03-1600-MxA	30841730	19,50	TTS12-A	TTD-4F03-1950-MxA	30841737
12,60	TTS12-A	TTD-4F03-1260-MxA	30842723	16,10	TTS12-A	TTD-4F03-1610-MxA	30842748	19,60	TTS12-A	TTD-4F03-1960-MxA	30842772
12,70	TTS12-A	TTD-4F03-1270-MxA	30841782	16,20	TTS12-A	TTD-4F03-1620-MxA	30842749	19,70	TTS12-A	TTD-4F03-1970-MxA	30841767
12,80	TTS12-A	TTD-4F03-1280-MxA	30842724	16,30	TTS12-A	TTD-4F03-1630-MxA	30842750	19,80	TTS12-A	TTD-4F03-1980-MxA	30842773
12,90	TTS12-A	TTD-4F03-1290-MxA	30842725	16,40	TTS12-A	TTD-4F03-1640-MxA	30842751	19,90	TTS12-A	TTD-4F03-1990-MxA	30842774
13,00	TTS12-A	TTD-4F03-1300-MxA	30841783	16,50	TTS12-A	TTD-4F03-1650-MxA	30841731	20,00	TTS12-A	TTD-4F03-2000-MxA	30841738
13,10	TTS12-A	TTD-4F03-1310-MxA	30842726	16,60	TTS12-A	TTD-4F03-1660-MxA	30842752	20,10	TTS12-A	TTD-4F03-2010-MxA	30842775
13,20	TTS12-A	TTD-4F03-1320-MxA	30842727	16,70	TTS12-A	TTD-4F03-1670-MxA	30841764	20,20	TTS12-A	TTD-4F03-2020-MxA	30842776
13,30	TTS12-A	TTD-4F03-1330-MxA	30842728	16,80	TTS12-A	TTD-4F03-1680-MxA	30842753	20,30	TTS12-A	TTD-4F03-2030-MxA	30842717
13,40	TTS12-A	TTD-4F03-1340-MxA	30842729	16,90	TTS12-A	TTD-4F03-1690-MxA	30842754	20,40	TTS12-A	TTD-4F03-2040-MxA	30842777
13,50	TTS12-A	TTD-4F03-1350-MxA	30841784	17,00	TTS12-A	TTD-4F03-1700-MxA	30841732	20,50	TTS12-A	TTD-4F03-2050-MxA	30841739
13,60	TTS12-A	TTD-4F03-1360-MxA	30842730	17,10	TTS12-A	TTD-4F03-1710-MxA	30842755	20,60	TTS12-A	TTD-4F03-2060-MxA	30842778
13,70	TTS12-A	TTD-4F03-1370-MxA	30841785	17,20	TTS12-A	TTD-4F03-1720-MxA	30842756	20,70	TTS12-A	TTD-4F03-2070-MxA	30841768
13,80	TTS12-A	TTD-4F03-1380-MxA	30842731	17,30	TTS12-A	TTD-4F03-1730-MxA	30842757	20,80	TTS12-A	TTD-4F03-2080-MxA	30842779
13,90	TTS12-A	TTD-4F03-1390-MxA	30842732	17,40	TTS12-A	TTD-4F03-1740-MxA	30842758	20,90	TTS12-A	TTD-4F03-2090-MxA	30842780
14,00	TTS12-A	TTD-4F03-1400-MxA	30841786	17,50	TTS12-A	TTD-4F03-1750-MxA	30841733	21,00	TTS12-A	TTD-4F03-2100-MxA	30841740
14,10	TTS12-A	TTD-4F03-1410-MxA	30842733	17,60	TTS12-A	TTD-4F03-1760-MxA	30842759	21,10	TTS12-A	TTD-4F03-2110-MxA	30842781
14,20	TTS12-A	TTD-4F03-1420-MxA	30842734	17,70	TTS12-A	TTD-4F03-1770-MxA	30841765	21,20	TTS12-A	TTD-4F03-2120-MxA	30842782
14,30	TTS12-A	TTD-4F03-1430-MxA	30842735	17,80	TTS12-A	TTD-4F03-1780-MxA	30842760	21,30	TTS12-A	TTD-4F03-2130-MxA	30842783
14,40	TTS12-A	TTD-4F03-1440-MxA	30842736	17,90	TTS12-A	TTD-4F03-1790-MxA	30842761	21,40	TTS12-A	TTD-4F03-2140-MxA	30842784
14,50	TTS12-A	TTD-4F03-1450-MxA	30841787	18,00	TTS12-A	TTD-4F03-1800-MxA	30841734	21,50	TTS12-A	TTD-4F03-2150-MxA	30841741
14,60	TTS12-A	TTD-4F03-1460-MxA	30842737	18,10	TTS12-A	TTD-4F03-1810-MxA	30842718	21,60	TTS12-A	TTD-4F03-2160-MxA	30842785
14,70	TTS12-A	TTD-4F03-1470-MxA	30841788	18,20	TTS12-A	TTD-4F03-1820-MxA	30842762	21,70	TTS12-A	TTD-4F03-2170-MxA	30841769
14,80	TTS12-A	TTD-4F03-1480-MxA	30842739	18,30	TTS12-A	TTD-4F03-1830-MxA	30842763	21,80	TTS12-A	TTD-4F03-2180-MxA	30842786
14,90	TTS12-A	TTD-4F03-1490-MxA	30842740	18,40	TTS12-A	TTD-4F03-1840-MxA	30842764	21,90	TTS12-A	TTD-4F03-2190-MxA	30842787
15,00	TTS12-A	TTD-4F03-1500-MxA	30841789	18,50	TTS12-A	TTD-4F03-1850-MxA	30841735	22,00	TTS12-A	TTD-4F03-2200-MxA	30841742
15,10	TTS12-A	TTD-4F03-1510-MxA	30842741	18,60	TTS12-A	TTD-4F03-1860-MxA	30842765	22,10	TTS12-A	TTD-4F03-2210-MxA	30842788
15,20	TTS12-A	TTD-4F03-1520-MxA	30842742	18,70	TTS12-A	TTD-4F03-1870-MxA	30841766	22,20	TTS12-A	TTD-4F03-2220-MxA	30842789
15,30	TTS12-A	TTD-4F03-1530-MxA	30842743	18,80	TTS12-A	TTD-4F03-1880-MxA	30842766	22,30	TTS12-A	TTD-4F03-2230-MxA	30842790
15,40	TTS12-A	TTD-4F03-1540-MxA	30842744	18,90	TTS12-A	TTD-4F03-1890-MxA	30842767	22,40	TTS12-A	TTD-4F03-2240-MxA	30842791

Replaceable head drill TTD made of solid carbide, internal cooling - Type 03

d ₁ from 22,50 up to 26,50				d ₁ from 26,60 up to 30,60				d ₁ from 30,70 up to 45,00			
d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.
22,50	TTS12-A	TTD-4F03-2250-MxA	30841743	26,60	TTS18-A	TTD-4F03-2660-MxA	30842820	30,70	TTS18-A	TTD-4F03-3070-MxA	30841778
22,60	TTS12-A	TTD-4F03-2260-MxA	30842792	26,70	TTS18-A	TTD-4F03-2670-MxA	30841774	30,80	TTS18-A	TTD-4F03-3080-MxA	30842850
22,70	TTS12-A	TTD-4F03-2270-MxA	30841770	26,80	TTS18-A	TTD-4F03-2680-MxA	30842821	30,90	TTS18-A	TTD-4F03-3090-MxA	30842851
22,80	TTS12-A	TTD-4F03-2280-MxA	30842793	26,90	TTS18-A	TTD-4F03-2690-MxA	30842822	31,00	TTS18-A	TTD-4F03-3100-MxA	30841760
22,90	TTS12-A	TTD-4F03-2290-MxA	30842794	27,00	TTS18-A	TTD-4F03-2700-MxA	30841752	31,10	TTS18-A	TTD-4F03-3110-MxA	30842852
23,00	TTS12-A	TTD-4F03-2300-MxA	30841744	27,10	TTS18-A	TTD-4F03-2710-MxA	30842823	31,20	TTS18-A	TTD-4F03-3120-MxA	30842853
23,10	TTS12-A	TTD-4F03-2310-MxA	30842795	27,20	TTS18-A	TTD-4F03-2720-MxA	30842824	31,30	TTS18-A	TTD-4F03-3130-MxA	30842854
23,20	TTS12-A	TTD-4F03-2320-MxA	30842796	27,30	TTS18-A	TTD-4F03-2730-MxA	30842825	31,40	TTS18-A	TTD-4F03-3140-MxA	30842855
23,30	TTS12-A	TTD-4F03-2330-MxA	30842797	27,40	TTS18-A	TTD-4F03-2740-MxA	30842826	31,50	TTS18-A	TTD-4F03-3150-MxA	30841761
23,40	TTS12-A	TTD-4F03-2340-MxA	30842798	27,50	TTS18-A	TTD-4F03-2750-MxA	30841753	31,60	TTS18-A	TTD-4F03-3160-MxA	30842856
23,50	TTS12-A	TTD-4F03-2350-MxA	30841745	27,60	TTS18-A	TTD-4F03-2760-MxA	30842827	31,70	TTS18-A	TTD-4F03-3170-MxA	30841779
23,60	TTS12-A	TTD-4F03-2360-MxA	30842799	27,70	TTS18-A	TTD-4F03-2770-MxA	30841775	31,80	TTS18-A	TTD-4F03-3180-MxA	30842857
23,70	TTS12-A	TTD-4F03-2370-MxA	30841771	27,80	TTS18-A	TTD-4F03-2780-MxA	30842828	31,90	TTS18-A	TTD-4F03-3190-MxA	30842858
23,80	TTS12-A	TTD-4F03-2380-MxA	30842800	27,90	TTS18-A	TTD-4F03-2790-MxA	30842829	32,00	TTS18-A	TTD-4F03-3200-MxA	30841762
23,90	TTS12-A	TTD-4F03-2390-MxA	30842801	28,00	TTS18-A	TTD-4F03-2800-MxA	30841754	32,50	TTS18-A	TTD-4F03-3250-MxA	30841791
24,00	TTS12-A	TTD-4F03-2400-MxA	30841746	28,10	TTS18-A	TTD-4F03-2810-MxA	30842830	33,00	TTS18-A	TTD-4F03-3300-MxA	30841792
24,10	TTS12-A	TTD-4F03-2410-MxA	30842802	28,20	TTS18-A	TTD-4F03-2820-MxA	30842831	33,50	TTS18-A	TTD-4F03-3350-MxA	30841793
24,20	TTS12-A	TTD-4F03-2420-MxA	30842803	28,30	TTS18-A	TTD-4F03-2830-MxA	30842832	34,00	TTS18-A	TTD-4F03-3400-MxA	30841794
24,30	TTS12-A	TTD-4F03-2430-MxA	30842804	28,40	TTS18-A	TTD-4F03-2840-MxA	30842833	34,50	TTS18-A	TTD-4F03-3450-MxA	30841795
24,40	TTS12-A	TTD-4F03-2440-MxA	30842805	28,50	TTS18-A	TTD-4F03-2850-MxA	30841755	35,00	TTS18-A	TTD-4F03-3500-MxA	30841796
24,50	TTS18-A	TTD-4F03-2450-MxA	30841747	28,60	TTS18-A	TTD-4F03-2860-MxA	30842834	35,50	TTS18-A	TTD-4F03-3550-MxA	30841798
24,60	TTS18-A	TTD-4F03-2460-MxA	30842806	28,70	TTS18-A	TTD-4F03-2870-MxA	30841776	36,00	TTS18-A	TTD-4F03-3600-MxA	30841799
24,70	TTS18-A	TTD-4F03-2470-MxA	30841772	28,80	TTS18-A	TTD-4F03-2880-MxA	30842835	36,50	TTS18-A	TTD-4F03-3650-MxA	30841800
24,80	TTS18-A	TTD-4F03-2480-MxA	30842807	28,90	TTS18-A	TTD-4F03-2890-MxA	30842836	37,00	TTS18-A	TTD-4F03-3700-MxA	30841801
24,90	TTS18-A	TTD-4F03-2490-MxA	30842808	29,00	TTS18-A	TTD-4F03-2900-MxA	30841756	37,50	TTS18-A	TTD-4F03-3750-MxA	30841802
25,00	TTS18-A	TTD-4F03-2500-MxA	30841748	29,10	TTS18-A	TTD-4F03-2910-MxA	30842837	38,00	TTS18-A	TTD-4F03-3800-MxA	30841803
25,10	TTS18-A	TTD-4F03-2510-MxA	30842809	29,20	TTS18-A	TTD-4F03-2920-MxA	30842839	38,50	TTS18-A	TTD-4F03-3850-MxA	30841804
25,20	TTS18-A	TTD-4F03-2520-MxA	30842810	29,30	TTS18-A	TTD-4F03-2930-MxA	30842840	39,00	TTS18-A	TTD-4F03-3900-MxA	30841817
25,30	TTS18-A	TTD-4F03-2530-MxA	30842811	29,40	TTS18-A	TTD-4F03-2940-MxA	30842841	39,50	TTS18-A	TTD-4F03-3950-MxA	30841805
25,40	TTS18-A	TTD-4F03-2540-MxA	30842812	29,50	TTS18-A	TTD-4F03-2950-MxA	30841757	40,00	TTS18-A	TTD-4F03-4000-MxA	30841806
25,50	TTS18-A	TTD-4F03-2550-MxA	30841749	29,60	TTS18-A	TTD-4F03-2960-MxA	30842842	40,50	TTS18-A	TTD-4F03-4050-MxA	30841807
25,60	TTS18-A	TTD-4F03-2560-MxA	30842813	29,70	TTS18-A	TTD-4F03-2970-MxA	30841777	41,00	TTS18-A	TTD-4F03-4100-MxA	30841808
25,70	TTS18-A	TTD-4F03-2570-MxA	30841773	29,80	TTS18-A	TTD-4F03-2980-MxA	30842843	41,50	TTS18-A	TTD-4F03-4150-MxA	30841809
25,80	TTS18-A	TTD-4F03-2580-MxA	30842814	29,90	TTS18-A	TTD-4F03-2990-MxA	30842844	42,00	TTS18-A	TTD-4F03-4200-MxA	30841810
25,90	TTS18-A	TTD-4F03-2590-MxA	30842815	30,00	TTS18-A	TTD-4F03-3000-MxA	30841758	42,50	TTS18-A	TTD-4F03-4250-MxA	30841811
26,00	TTS18-A	TTD-4F03-2600-MxA	30841750	30,10	TTS18-A	TTD-4F03-3010-MxA	30842845	43,00	TTS18-A	TTD-4F03-4300-MxA	30841812
26,10	TTS18-A	TTD-4F03-2610-MxA	30842816	30,20	TTS18-A	TTD-4F03-3020-MxA	30842846	43,50	TTS18-A	TTD-4F03-4350-MxA	30841813
26,20	TTS18-A	TTD-4F03-2620-MxA	30842817	30,30	TTS18-A	TTD-4F03-3030-MxA	30842847	44,00	TTS18-A	TTD-4F03-4400-MxA	30841814
26,30	TTS18-A	TTD-4F03-2630-MxA	30842818	30,40	TTS18-A	TTD-4F03-3040-MxA	30842848	44,50	TTS18-A	TTD-4F03-4450-MxA	30841815
26,40	TTS18-A	TTD-4F03-2640-MxA	30842819	30,50	TTS18-A	TTD-4F03-3050-MxA	30841759	45,00	TTS18-A	TTD-4F03-4500-MxA	30841816
26,50	TTS18-A	TTD-4F03-2650-MxA	30841751	30,60	TTS18-A	TTD-4F03-3060-MxA	30842849				

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

Replaceable head drill TTD

Made of solid carbide, internal cooling

Type 04 - Steel

Design:

Drill diameter:

Bore tolerance:

Coating:

Number of cutting edges:

Number of guiding chamfers:

Point angle:

Type 04

12,00 – 45,00 mm

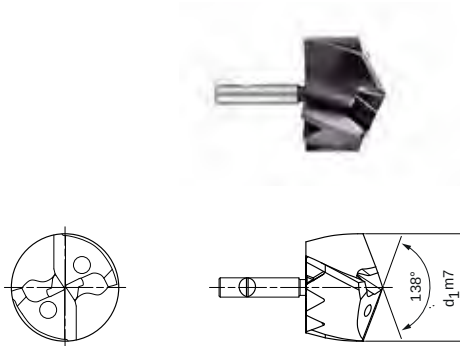
≥ IT 9

MxP

2

3

138°



d ₁ from 12,00 up to 15,40				d ₁ from 15,50 up to 18,90				d ₁ from 19,00 up to 22,40			
d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.
12,00	TTS12-A	TTD-3F04-1200-MxP	30841818	15,50	TTS12-A	TTD-3F04-1550-MxP	30841828	19,00	TTS12-A	TTD-3F04-1900-MxP	30841839
12,10	TTS12-A	TTD-3F04-1210-MxP	30841905	15,60	TTS12-A	TTD-3F04-1560-MxP	30841930	19,10	TTS12-A	TTD-3F04-1910-MxP	30841954
12,20	TTS12-A	TTD-3F04-1220-MxP	30841906	15,70	TTS12-A	TTD-3F04-1570-MxP	30841829	19,20	TTS12-A	TTD-3F04-1920-MxP	30841955
12,30	TTS12-A	TTD-3F04-1230-MxP	30841907	15,80	TTS12-A	TTD-3F04-1580-MxP	30841931	19,30	TTS12-A	TTD-3F04-1930-MxP	30841956
12,40	TTS12-A	TTD-3F04-1240-MxP	30841908	15,90	TTS12-A	TTD-3F04-1590-MxP	30841932	19,40	TTS12-A	TTD-3F04-1940-MxP	30841957
12,50	TTS12-A	TTD-3F04-1250-MxP	30841819	16,00	TTS12-A	TTD-3F04-1600-MxP	30841830	19,50	TTS12-A	TTD-3F04-1950-MxP	30841840
12,60	TTS12-A	TTD-3F04-1260-MxP	30841909	16,10	TTS12-A	TTD-3F04-1610-MxP	30841933	19,60	TTS12-A	TTD-3F04-1960-MxP	30841958
12,70	TTS12-A	TTD-3F04-1270-MxP	30841820	16,20	TTS12-A	TTD-3F04-1620-MxP	30841934	19,70	TTS12-A	TTD-3F04-1970-MxP	30841841
12,80	TTS12-A	TTD-3F04-1280-MxP	30841910	16,30	TTS12-A	TTD-3F04-1630-MxP	30841935	19,80	TTS12-A	TTD-3F04-1980-MxP	30841959
12,90	TTS12-A	TTD-3F04-1290-MxP	30841911	16,40	TTS12-A	TTD-3F04-1640-MxP	30841936	19,90	TTS12-A	TTD-3F04-1990-MxP	30841960
13,00	TTS12-A	TTD-3F04-1300-MxP	30841821	16,50	TTS12-A	TTD-3F04-1650-MxP	30841831	20,00	TTS12-A	TTD-3F04-2000-MxP	30841842
13,10	TTS12-A	TTD-3F04-1310-MxP	30841912	16,60	TTS12-A	TTD-3F04-1660-MxP	30841937	20,10	TTS12-A	TTD-3F04-2010-MxP	30841961
13,20	TTS12-A	TTD-3F04-1320-MxP	30841913	16,70	TTS12-A	TTD-3F04-1670-MxP	30841832	20,20	TTS12-A	TTD-3F04-2020-MxP	30841962
13,30	TTS12-A	TTD-3F04-1330-MxP	30841914	16,80	TTS12-A	TTD-3F04-1680-MxP	30841938	20,30	TTS12-A	TTD-3F04-2030-MxP	30841963
13,40	TTS12-A	TTD-3F04-1340-MxP	30841915	16,90	TTS12-A	TTD-3F04-1690-MxP	30841939	20,40	TTS12-A	TTD-3F04-2040-MxP	30841964
13,50	TTS12-A	TTD-3F04-1350-MxP	30841822	17,00	TTS12-A	TTD-3F04-1700-MxP	30841833	20,50	TTS12-A	TTD-3F04-2050-MxP	30841843
13,60	TTS12-A	TTD-3F04-1360-MxP	30841916	17,10	TTS12-A	TTD-3F04-1710-MxP	30841940	20,60	TTS12-A	TTD-3F04-2060-MxP	30841965
13,70	TTS12-A	TTD-3F04-1370-MxP	30841823	17,20	TTS12-A	TTD-3F04-1720-MxP	30841941	20,70	TTS12-A	TTD-3F04-2070-MxP	30841844
13,80	TTS12-A	TTD-3F04-1380-MxP	30841917	17,30	TTS12-A	TTD-3F04-1730-MxP	30841942	20,80	TTS12-A	TTD-3F04-2080-MxP	30841966
13,90	TTS12-A	TTD-3F04-1390-MxP	30841918	17,40	TTS12-A	TTD-3F04-1740-MxP	30841943	20,90	TTS12-A	TTD-3F04-2090-MxP	30841967
14,00	TTS12-A	TTD-3F04-1400-MxP	30841824	17,50	TTS12-A	TTD-3F04-1750-MxP	30841834	21,00	TTS12-A	TTD-3F04-2100-MxP	30841845
14,10	TTS12-A	TTD-3F04-1410-MxP	30841919	17,60	TTS12-A	TTD-3F04-1760-MxP	30841944	21,10	TTS12-A	TTD-3F04-2110-MxP	30841968
14,20	TTS12-A	TTD-3F04-1420-MxP	30841920	17,70	TTS12-A	TTD-3F04-1770-MxP	30841835	21,20	TTS12-A	TTD-3F04-2120-MxP	30841969
14,30	TTS12-A	TTD-3F04-1430-MxP	30841921	17,80	TTS12-A	TTD-3F04-1780-MxP	30841945	21,30	TTS12-A	TTD-3F04-2130-MxP	30841970
14,40	TTS12-A	TTD-3F04-1440-MxP	30841922	17,90	TTS12-A	TTD-3F04-1790-MxP	30841946	21,40	TTS12-A	TTD-3F04-2140-MxP	30841971
14,50	TTS12-A	TTD-3F04-1450-MxP	30841825	18,00	TTS12-A	TTD-3F04-1800-MxP	30841836	21,50	TTS12-A	TTD-3F04-2150-MxP	30841846
14,60	TTS12-A	TTD-3F04-1460-MxP	30841923	18,10	TTS12-A	TTD-3F04-1810-MxP	30841947	21,60	TTS12-A	TTD-3F04-2160-MxP	30841972
14,70	TTS12-A	TTD-3F04-1470-MxP	30841826	18,20	TTS12-A	TTD-3F04-1820-MxP	30841948	21,70	TTS12-A	TTD-3F04-2170-MxP	30841847
14,80	TTS12-A	TTD-3F04-1480-MxP	30841924	18,30	TTS12-A	TTD-3F04-1830-MxP	30841949	21,80	TTS12-A	TTD-3F04-2180-MxP	30841973
14,90	TTS12-A	TTD-3F04-1490-MxP	30841925	18,40	TTS12-A	TTD-3F04-1840-MxP	30841950	21,90	TTS12-A	TTD-3F04-2190-MxP	30841974
15,00	TTS12-A	TTD-3F04-1500-MxP	30841827	18,50	TTS12-A	TTD-3F04-1850-MxP	30841837	22,00	TTS12-A	TTD-3F04-2200-MxP	30841848
15,10	TTS12-A	TTD-3F04-1510-MxP	30841926	18,60	TTS12-A	TTD-3F04-1860-MxP	30841951	22,10	TTS12-A	TTD-3F04-2210-MxP	30841975
15,20	TTS12-A	TTD-3F04-1520-MxP	30841927	18,70	TTS12-A	TTD-3F04-1870-MxP	30841838	22,20	TTS12-A	TTD-3F04-2220-MxP	30841976
15,30	TTS12-A	TTD-3F04-1530-MxP	30841928	18,80	TTS12-A	TTD-3F04-1880-MxP	30841952	22,30	TTS12-A	TTD-3F04-2230-MxP	30841977
15,40	TTS12-A	TTD-3F04-1540-MxP	30841929	18,90	TTS12-A	TTD-3F04-1890-MxP	30841953	22,40	TTS12-A	TTD-3F04-2240-MxP	30841978

Replaceable head drill TTD made of solid carbide, internal cooling - Type 04

d ₁ from 22,50 up to 26,50				d ₁ from 26,60 up to 30,60				d ₁ from 30,70 up to 45,00			
d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.
22,50	TTS12-A	TTD-3F04-2250-MxP	30841849	26,60	TTS18-A	TTD-3F04-2660-MxP	30842007	30,70	TTS18-A	TTD-3F04-3070-MxP	30841874
22,60	TTS12-A	TTD-3F04-2260-MxP	30841979	26,70	TTS18-A	TTD-3F04-2670-MxP	30841862	30,80	TTS18-A	TTD-3F04-3080-MxP	30842036
22,70	TTS12-A	TTD-3F04-2270-MxP	30841850	26,80	TTS18-A	TTD-3F04-2680-MxP	30842008	30,90	TTS18-A	TTD-3F04-3090-MxP	30842037
22,80	TTS12-A	TTD-3F04-2280-MxP	30841980	26,90	TTS18-A	TTD-3F04-2690-MxP	30842009	31,00	TTS18-A	TTD-3F04-3100-MxP	30841875
22,90	TTS12-A	TTD-3F04-2290-MxP	30841981	27,00	TTS18-A	TTD-3F04-2700-MxP	30841863	31,10	TTS18-A	TTD-3F04-3110-MxP	30842038
23,00	TTS12-A	TTD-3F04-2300-MxP	30841851	27,10	TTS18-A	TTD-3F04-2710-MxP	30842010	31,20	TTS18-A	TTD-3F04-3120-MxP	30842039
23,10	TTS12-A	TTD-3F04-2310-MxP	30841982	27,20	TTS18-A	TTD-3F04-2720-MxP	30842011	31,30	TTS18-A	TTD-3F04-3130-MxP	30842040
23,20	TTS12-A	TTD-3F04-2320-MxP	30841983	27,30	TTS18-A	TTD-3F04-2730-MxP	30842012	31,40	TTS18-A	TTD-3F04-3140-MxP	30842041
23,30	TTS12-A	TTD-3F04-2330-MxP	30841984	27,40	TTS18-A	TTD-3F04-2740-MxP	30842013	31,50	TTS18-A	TTD-3F04-3150-MxP	30841876
23,40	TTS12-A	TTD-3F04-2340-MxP	30841985	27,50	TTS18-A	TTD-3F04-2750-MxP	30841864	31,60	TTS18-A	TTD-3F04-3160-MxP	30842042
23,50	TTS12-A	TTD-3F04-2350-MxP	30841852	27,60	TTS18-A	TTD-3F04-2760-MxP	30842014	31,70	TTS18-A	TTD-3F04-3170-MxP	30841877
23,60	TTS12-A	TTD-3F04-2360-MxP	30841986	27,70	TTS18-A	TTD-3F04-2770-MxP	30841865	31,80	TTS18-A	TTD-3F04-3180-MxP	30842043
23,70	TTS12-A	TTD-3F04-2370-MxP	30841853	27,80	TTS18-A	TTD-3F04-2780-MxP	30842015	31,90	TTS18-A	TTD-3F04-3190-MxP	30842044
23,80	TTS12-A	TTD-3F04-2380-MxP	30841987	27,90	TTS18-A	TTD-3F04-2790-MxP	30842016	32,00	TTS18-A	TTD-3F04-3200-MxP	30841878
23,90	TTS12-A	TTD-3F04-2390-MxP	30841988	28,00	TTS18-A	TTD-3F04-2800-MxP	30841866	32,50	TTS18-A	TTD-3F04-3250-MxP	30841879
24,00	TTS12-A	TTD-3F04-2400-MxP	30841854	28,10	TTS18-A	TTD-3F04-2810-MxP	30842017	33,00	TTS18-A	TTD-3F04-3300-MxP	30841880
24,10	TTS12-A	TTD-3F04-2410-MxP	30841989	28,20	TTS18-A	TTD-3F04-2820-MxP	30842018	33,50	TTS18-A	TTD-3F04-3350-MxP	30841881
24,20	TTS12-A	TTD-3F04-2420-MxP	30841990	28,30	TTS18-A	TTD-3F04-2830-MxP	30842019	34,00	TTS18-A	TTD-3F04-3400-MxP	30841882
24,30	TTS12-A	TTD-3F04-2430-MxP	30841991	28,40	TTS18-A	TTD-3F04-2840-MxP	30842020	34,50	TTS18-A	TTD-3F04-3450-MxP	30841883
24,40	TTS12-A	TTD-3F04-2440-MxP	30841992	28,50	TTS18-A	TTD-3F04-2850-MxP	30841867	35,00	TTS18-A	TTD-3F04-3500-MxP	30841884
24,50	TTS18-A	TTD-3F04-2450-MxP	30841855	28,60	TTS18-A	TTD-3F04-2860-MxP	30842021	35,50	TTS18-A	TTD-3F04-3550-MxP	30841885
24,60	TTS18-A	TTD-3F04-2460-MxP	30841993	28,70	TTS18-A	TTD-3F04-2870-MxP	30841868	36,00	TTS18-A	TTD-3F04-3600-MxP	30841886
24,70	TTS18-A	TTD-3F04-2470-MxP	30841856	28,80	TTS18-A	TTD-3F04-2880-MxP	30842022	36,50	TTS18-A	TTD-3F04-3650-MxP	30841887
24,80	TTS18-A	TTD-3F04-2480-MxP	30841994	28,90	TTS18-A	TTD-3F04-2890-MxP	30842023	37,00	TTS18-A	TTD-3F04-3700-MxP	30841888
24,90	TTS18-A	TTD-3F04-2490-MxP	30841995	29,00	TTS18-A	TTD-3F04-2900-MxP	30841869	37,50	TTS18-A	TTD-3F04-3750-MxP	30841889
25,00	TTS18-A	TTD-3F04-2500-MxP	30841857	29,10	TTS18-A	TTD-3F04-2910-MxP	30842024	38,00	TTS18-A	TTD-3F04-3800-MxP	30841890
25,10	TTS18-A	TTD-3F04-2510-MxP	30841996	29,20	TTS18-A	TTD-3F04-2920-MxP	30842025	38,50	TTS18-A	TTD-3F04-3850-MxP	30841891
25,20	TTS18-A	TTD-3F04-2520-MxP	30841997	29,30	TTS18-A	TTD-3F04-2930-MxP	30842026	39,00	TTS18-A	TTD-3F04-3900-MxP	30841892
25,30	TTS18-A	TTD-3F04-2530-MxP	30841998	29,40	TTS18-A	TTD-3F04-2940-MxP	30842027	39,50	TTS18-A	TTD-3F04-3950-MxP	30841893
25,40	TTS18-A	TTD-3F04-2540-MxP	30841999	29,50	TTS18-A	TTD-3F04-2950-MxP	30841870	40,00	TTS18-A	TTD-3F04-4000-MxP	30841894
25,50	TTS18-A	TTD-3F04-2550-MxP	30841858	29,60	TTS18-A	TTD-3F04-2960-MxP	30842028	40,50	TTS18-A	TTD-3F04-4050-MxP	30841895
25,60	TTS18-A	TTD-3F04-2560-MxP	30842000	29,70	TTS18-A	TTD-3F04-2970-MxP	30841871	41,00	TTS18-A	TTD-3F04-4100-MxP	30841896
25,70	TTS18-A	TTD-3F04-2570-MxP	30841859	29,80	TTS18-A	TTD-3F04-2980-MxP	30842029	41,50	TTS18-A	TTD-3F04-4150-MxP	30841897
25,80	TTS18-A	TTD-3F04-2580-MxP	30842001	29,90	TTS18-A	TTD-3F04-2990-MxP	30842030	42,00	TTS18-A	TTD-3F04-4200-MxP	30841898
25,90	TTS18-A	TTD-3F04-2590-MxP	30842002	30,00	TTS18-A	TTD-3F04-3000-MxP	30841872	42,50	TTS18-A	TTD-3F04-4250-MxP	30841899
26,00	TTS18-A	TTD-3F04-2600-MxP	30841860	30,10	TTS18-A	TTD-3F04-3010-MxP	30842031	43,00	TTS18-A	TTD-3F04-4300-MxP	30841900
26,10	TTS18-A	TTD-3F04-2610-MxP	30842003	30,20	TTS18-A	TTD-3F04-3020-MxP	30842032	43,50	TTS18-A	TTD-3F04-4350-MxP	30841901
26,20	TTS18-A	TTD-3F04-2620-MxP	30842004	30,30	TTS18-A	TTD-3F04-3030-MxP	30842033	44,00	TTS18-A	TTD-3F04-4400-MxP	30841902
26,30	TTS18-A	TTD-3F04-2630-MxP	30842005	30,40	TTS18-A	TTD-3F04-3040-MxP	30842034	44,50	TTS18-A	TTD-3F04-4450-MxP	30841903
26,40	TTS18-A	TTD-3F04-2640-MxP	30842006	30,50	TTS18-A	TTD-3F04-3050-MxP	30841873	45,00	TTS18-A	TTD-3F04-4500-MxP	30841904
26,50	TTS18-A	TTD-3F04-2650-MxP	30841861	30,60	TTS18-A	TTD-3F04-3060-MxP	30842035				

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

Replaceable head drill TTD

Made of solid carbide, internal cooling

Type 05 - Iron

Design:

Drill diameter:

Bore tolerance:

Coating:

Number of cutting edges:

Number of guiding chamfers:

Point angle:

Type 05

12,00 – 45,00 mm

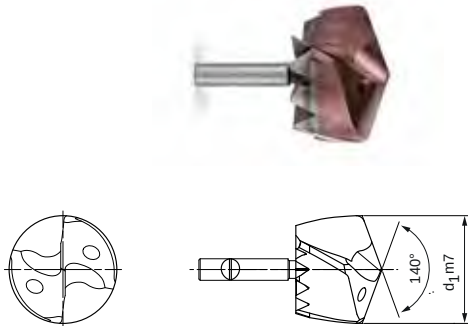
≥ IT 9

MxM

2

4

140°



P	1	2	3	4	5	6	M	1	2	3	K	1	2	3	N	1	2	3	4	S	1	2	3	4	5	H	1	2
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d ₁ from 12,00 up to 15,40				d ₁ from 15,50 up to 18,90				d ₁ from 19,00 up to 22,40			
d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.
12,00	TTS12-A	TTD-4F05-1200-MxM	30842045	15,50	TTS12-A	TTD-4F05-1550-MxM	30842080	19,00	TTS12-A	TTD-4F05-1900-MxM	30842115
12,10	TTS12-A	TTD-4F05-1210-MxM	30842046	15,60	TTS12-A	TTD-4F05-1560-MxM	30842081	19,10	TTS12-A	TTD-4F05-1910-MxM	30842116
12,20	TTS12-A	TTD-4F05-1220-MxM	30842047	15,70	TTS12-A	TTD-4F05-1570-MxM	30842082	19,20	TTS12-A	TTD-4F05-1920-MxM	30842117
12,30	TTS12-A	TTD-4F05-1230-MxM	30842048	15,80	TTS12-A	TTD-4F05-1580-MxM	30842083	19,30	TTS12-A	TTD-4F05-1930-MxM	30842118
12,40	TTS12-A	TTD-4F05-1240-MxM	30842049	15,90	TTS12-A	TTD-4F05-1590-MxM	30842084	19,40	TTS12-A	TTD-4F05-1940-MxM	30842119
12,50	TTS12-A	TTD-4F05-1250-MxM	30842050	16,00	TTS12-A	TTD-4F05-1600-MxM	30842085	19,50	TTS12-A	TTD-4F05-1950-MxM	30842120
12,60	TTS12-A	TTD-4F05-1260-MxM	30842051	16,10	TTS12-A	TTD-4F05-1610-MxM	30842086	19,60	TTS12-A	TTD-4F05-1960-MxM	30842121
12,70	TTS12-A	TTD-4F05-1270-MxM	30842052	16,20	TTS12-A	TTD-4F05-1620-MxM	30842087	19,70	TTS12-A	TTD-4F05-1970-MxM	30842122
12,80	TTS12-A	TTD-4F05-1280-MxM	30842053	16,30	TTS12-A	TTD-4F05-1630-MxM	30842088	19,80	TTS12-A	TTD-4F05-1980-MxM	30842123
12,90	TTS12-A	TTD-4F05-1290-MxM	30842054	16,40	TTS12-A	TTD-4F05-1640-MxM	30842089	19,90	TTS12-A	TTD-4F05-1990-MxM	30842124
13,00	TTS12-A	TTD-4F05-1300-MxM	30842055	16,50	TTS12-A	TTD-4F05-1650-MxM	30842090	20,00	TTS12-A	TTD-4F05-2000-MxM	30842125
13,10	TTS12-A	TTD-4F05-1310-MxM	30842056	16,60	TTS12-A	TTD-4F05-1660-MxM	30842091	20,10	TTS12-A	TTD-4F05-2010-MxM	30842126
13,20	TTS12-A	TTD-4F05-1320-MxM	30842057	16,70	TTS12-A	TTD-4F05-1670-MxM	30842092	20,20	TTS12-A	TTD-4F05-2020-MxM	30842127
13,30	TTS12-A	TTD-4F05-1330-MxM	30842058	16,80	TTS12-A	TTD-4F05-1680-MxM	30842093	20,30	TTS12-A	TTD-4F05-2030-MxM	30842128
13,40	TTS12-A	TTD-4F05-1340-MxM	30842059	16,90	TTS12-A	TTD-4F05-1690-MxM	30842094	20,40	TTS12-A	TTD-4F05-2040-MxM	30842129
13,50	TTS12-A	TTD-4F05-1350-MxM	30842060	17,00	TTS12-A	TTD-4F05-1700-MxM	30842095	20,50	TTS12-A	TTD-4F05-2050-MxM	30842130
13,60	TTS12-A	TTD-4F05-1360-MxM	30842061	17,10	TTS12-A	TTD-4F05-1710-MxM	30842096	20,60	TTS12-A	TTD-4F05-2060-MxM	30842131
13,70	TTS12-A	TTD-4F05-1370-MxM	30842062	17,20	TTS12-A	TTD-4F05-1720-MxM	30842097	20,70	TTS12-A	TTD-4F05-2070-MxM	30842132
13,80	TTS12-A	TTD-4F05-1380-MxM	30842063	17,30	TTS12-A	TTD-4F05-1730-MxM	30842098	20,80	TTS12-A	TTD-4F05-2080-MxM	30842133
13,90	TTS12-A	TTD-4F05-1390-MxM	30842064	17,40	TTS12-A	TTD-4F05-1740-MxM	30842099	20,90	TTS12-A	TTD-4F05-2090-MxM	30842134
14,00	TTS12-A	TTD-4F05-1400-MxM	30842065	17,50	TTS12-A	TTD-4F05-1750-MxM	30842100	21,00	TTS12-A	TTD-4F05-2100-MxM	30842135
14,10	TTS12-A	TTD-4F05-1410-MxM	30842066	17,60	TTS12-A	TTD-4F05-1760-MxM	30842101	21,10	TTS12-A	TTD-4F05-2110-MxM	30842136
14,20	TTS12-A	TTD-4F05-1420-MxM	30842067	17,70	TTS12-A	TTD-4F05-1770-MxM	30842102	21,20	TTS12-A	TTD-4F05-2120-MxM	30842137
14,30	TTS12-A	TTD-4F05-1430-MxM	30842068	17,80	TTS12-A	TTD-4F05-1780-MxM	30842103	21,30	TTS12-A	TTD-4F05-2130-MxM	30842138
14,40	TTS12-A	TTD-4F05-1440-MxM	30842069	17,90	TTS12-A	TTD-4F05-1790-MxM	30842104	21,40	TTS12-A	TTD-4F05-2140-MxM	30842139
14,50	TTS12-A	TTD-4F05-1450-MxM	30842070	18,00	TTS12-A	TTD-4F05-1800-MxM	30842105	21,50	TTS12-A	TTD-4F05-2150-MxM	30842140
14,60	TTS12-A	TTD-4F05-1460-MxM	30842071	18,10	TTS12-A	TTD-4F05-1810-MxM	30842106	21,60	TTS12-A	TTD-4F05-2160-MxM	30842141
14,70	TTS12-A	TTD-4F05-1470-MxM	30842072	18,20	TTS12-A	TTD-4F05-1820-MxM	30842107	21,70	TTS12-A	TTD-4F05-2170-MxM	30842142
14,80	TTS12-A	TTD-4F05-1480-MxM	30842073	18,30	TTS12-A	TTD-4F05-1830-MxM	30842108	21,80	TTS12-A	TTD-4F05-2180-MxM	30842143
14,90	TTS12-A	TTD-4F05-1490-MxM	30842074	18,40	TTS12-A	TTD-4F05-1840-MxM	30842109	21,90	TTS12-A	TTD-4F05-2190-MxM	30842144
15,00	TTS12-A	TTD-4F05-1500-MxM	30842075	18,50	TTS12-A	TTD-4F05-1850-MxM	30842110	22,00	TTS12-A	TTD-4F05-2200-MxM	30842145
15,10	TTS12-A	TTD-4F05-1510-MxM	30842076	18,60	TTS12-A	TTD-4F05-1860-MxM	30842111	22,10	TTS12-A	TTD-4F05-2210-MxM	30842146
15,20	TTS12-A	TTD-4F05-1520-MxM	30842077	18,70	TTS12-A	TTD-4F05-1870-MxM	30842112	22,20	TTS12-A	TTD-4F05-2220-MxM	30842147
15,30	TTS12-A	TTD-4F05-1530-MxM	30842078	18,80	TTS12-A	TTD-4F05-1880-MxM	30842113	22,30	TTS12-A	TTD-4F05-2230-MxM	30842148
15,40	TTS12-A	TTD-4F05-1540-MxM	30842079	18,90	TTS12-A	TTD-4F05-1890-MxM	30842114	22,40	TTS12-A	TTD-4F05-2240-MxM	30842149

Replaceable head drill TTD made of solid carbide, internal cooling - Type 05

d ₁ from 22,50 up to 26,50				d ₁ from 26,60 up to 30,60				d ₁ from 30,70 up to 45,00			
d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.	d ₁ m7	Conne- ction	Specification	Order No.
22,50	TTS12-A	TTD-4F05-2250-MxM	30842150	26,60	TTS18-A	TTD-4F05-2660-MxM	30842191	30,70	TTS18-A	TTD-4F05-3070-MxM	30842232
22,60	TTS12-A	TTD-4F05-2260-MxM	30842151	26,70	TTS18-A	TTD-4F05-2670-MxM	30842192	30,80	TTS18-A	TTD-4F05-3080-MxM	30842233
22,70	TTS12-A	TTD-4F05-2270-MxM	30842152	26,80	TTS18-A	TTD-4F05-2680-MxM	30842193	30,90	TTS18-A	TTD-4F05-3090-MxM	30842234
22,80	TTS12-A	TTD-4F05-2280-MxM	30842153	26,90	TTS18-A	TTD-4F05-2690-MxM	30842194	31,00	TTS18-A	TTD-4F05-3100-MxM	30842235
22,90	TTS12-A	TTD-4F05-2290-MxM	30842154	27,00	TTS18-A	TTD-4F05-2700-MxM	30842195	31,10	TTS18-A	TTD-4F05-3110-MxM	30842236
23,00	TTS12-A	TTD-4F05-2300-MxM	30842155	27,10	TTS18-A	TTD-4F05-2710-MxM	30842196	31,20	TTS18-A	TTD-4F05-3120-MxM	30842237
23,10	TTS12-A	TTD-4F05-2310-MxM	30842156	27,20	TTS18-A	TTD-4F05-2720-MxM	30842197	31,30	TTS18-A	TTD-4F05-3130-MxM	30842238
23,20	TTS12-A	TTD-4F05-2320-MxM	30842157	27,30	TTS18-A	TTD-4F05-2730-MxM	30842198	31,40	TTS18-A	TTD-4F05-3140-MxM	30842239
23,30	TTS12-A	TTD-4F05-2330-MxM	30842158	27,40	TTS18-A	TTD-4F05-2740-MxM	30842199	31,50	TTS18-A	TTD-4F05-3150-MxM	30842240
23,40	TTS12-A	TTD-4F05-2340-MxM	30842159	27,50	TTS18-A	TTD-4F05-2750-MxM	30842200	31,60	TTS18-A	TTD-4F05-3160-MxM	30842241
23,50	TTS12-A	TTD-4F05-2350-MxM	30842160	27,60	TTS18-A	TTD-4F05-2760-MxM	30842201	31,70	TTS18-A	TTD-4F05-3170-MxM	30842242
23,60	TTS12-A	TTD-4F05-2360-MxM	30842161	27,70	TTS18-A	TTD-4F05-2770-MxM	30842202	31,80	TTS18-A	TTD-4F05-3180-MxM	30842243
23,70	TTS12-A	TTD-4F05-2370-MxM	30842162	27,80	TTS18-A	TTD-4F05-2780-MxM	30842203	31,90	TTS18-A	TTD-4F05-3190-MxM	30842244
23,80	TTS12-A	TTD-4F05-2380-MxM	30842163	27,90	TTS18-A	TTD-4F05-2790-MxM	30842204	32,00	TTS18-A	TTD-4F05-3200-MxM	30842245
23,90	TTS12-A	TTD-4F05-2390-MxM	30842164	28,00	TTS18-A	TTD-4F05-2800-MxM	30842205	32,50	TTS18-A	TTD-4F05-3250-MxM	30842246
24,00	TTS12-A	TTD-4F05-2400-MxM	30842165	28,10	TTS18-A	TTD-4F05-2810-MxM	30842206	33,00	TTS18-A	TTD-4F05-3300-MxM	30842247
24,10	TTS12-A	TTD-4F05-2410-MxM	30842166	28,20	TTS18-A	TTD-4F05-2820-MxM	30842207	33,50	TTS18-A	TTD-4F05-3350-MxM	30842248
24,20	TTS12-A	TTD-4F05-2420-MxM	30842167	28,30	TTS18-A	TTD-4F05-2830-MxM	30842208	34,00	TTS18-A	TTD-4F05-3400-MxM	30842249
24,30	TTS12-A	TTD-4F05-2430-MxM	30842168	28,40	TTS18-A	TTD-4F05-2840-MxM	30842209	34,50	TTS18-A	TTD-4F05-3450-MxM	30842250
24,40	TTS12-A	TTD-4F05-2440-MxM	30842169	28,50	TTS18-A	TTD-4F05-2850-MxM	30842210	35,00	TTS18-A	TTD-4F05-3500-MxM	30842251
24,50	TTS18-A	TTD-4F05-2450-MxM	30842170	28,60	TTS18-A	TTD-4F05-2860-MxM	30842211	35,50	TTS18-A	TTD-4F05-3550-MxM	30842252
24,60	TTS18-A	TTD-4F05-2460-MxM	30842171	28,70	TTS18-A	TTD-4F05-2870-MxM	30842212	36,00	TTS18-A	TTD-4F05-3600-MxM	30842253
24,70	TTS18-A	TTD-4F05-2470-MxM	30842172	28,80	TTS18-A	TTD-4F05-2880-MxM	30842213	36,50	TTS18-A	TTD-4F05-3650-MxM	30842254
24,80	TTS18-A	TTD-4F05-2480-MxM	30842173	28,90	TTS18-A	TTD-4F05-2890-MxM	30842214	37,00	TTS18-A	TTD-4F05-3700-MxM	30842255
24,90	TTS18-A	TTD-4F05-2490-MxM	30842174	29,00	TTS18-A	TTD-4F05-2900-MxM	30842215	37,50	TTS18-A	TTD-4F05-3750-MxM	30842256
25,00	TTS18-A	TTD-4F05-2500-MxM	30842175	29,10	TTS18-A	TTD-4F05-2910-MxM	30842216	38,00	TTS18-A	TTD-4F05-3800-MxM	30842257
25,10	TTS18-A	TTD-4F05-2510-MxM	30842176	29,20	TTS18-A	TTD-4F05-2920-MxM	30842217	38,50	TTS18-A	TTD-4F05-3850-MxM	30842258
25,20	TTS18-A	TTD-4F05-2520-MxM	30842177	29,30	TTS18-A	TTD-4F05-2930-MxM	30842218	39,00	TTS18-A	TTD-4F05-3900-MxM	30842259
25,30	TTS18-A	TTD-4F05-2530-MxM	30842178	29,40	TTS18-A	TTD-4F05-2940-MxM	30842219	39,50	TTS18-A	TTD-4F05-3950-MxM	30842260
25,40	TTS18-A	TTD-4F05-2540-MxM	30842179	29,50	TTS18-A	TTD-4F05-2950-MxM	30842220	40,00	TTS18-A	TTD-4F05-4000-MxM	30842261
25,50	TTS18-A	TTD-4F05-2550-MxM	30842180	29,60	TTS18-A	TTD-4F05-2960-MxM	30842221	40,50	TTS18-A	TTD-4F05-4050-MxM	30842262
25,60	TTS18-A	TTD-4F05-2560-MxM	30842181	29,70	TTS18-A	TTD-4F05-2970-MxM	30842222	41,00	TTS18-A	TTD-4F05-4100-MxM	30842263
25,70	TTS18-A	TTD-4F05-2570-MxM	30842182	29,80	TTS18-A	TTD-4F05-2980-MxM	30842223	41,50	TTS18-A	TTD-4F05-4150-MxM	30842264
25,80	TTS18-A	TTD-4F05-2580-MxM	30842183	29,90	TTS18-A	TTD-4F05-2990-MxM	30842224	42,00	TTS18-A	TTD-4F05-4200-MxM	30842265
25,90	TTS18-A	TTD-4F05-2590-MxM	30842184	30,00	TTS18-A	TTD-4F05-3000-MxM	30842225	42,50	TTS18-A	TTD-4F05-4250-MxM	30842266
26,00	TTS18-A	TTD-4F05-2600-MxM	30842185	30,10	TTS18-A	TTD-4F05-3010-MxM	30842226	43,00	TTS18-A	TTD-4F05-4300-MxM	30842267
26,10	TTS18-A	TTD-4F05-2610-MxM	30842186	30,20	TTS18-A	TTD-4F05-3020-MxM	30842227	43,50	TTS18-A	TTD-4F05-4350-MxM	30842268
26,20	TTS18-A	TTD-4F05-2620-MxM	30842187	30,30	TTS18-A	TTD-4F05-3030-MxM	30842228	44,00	TTS18-A	TTD-4F05-4400-MxM	30842269
26,30	TTS18-A	TTD-4F05-2630-MxM	30842188	30,40	TTS18-A	TTD-4F05-3040-MxM	30842229	44,50	TTS18-A	TTD-4F05-4450-MxM	30842270
26,40	TTS18-A	TTD-4F05-2640-MxM	30842189	30,50	TTS18-A	TTD-4F05-3050-MxM	30842230	45,00	TTS18-A	TTD-4F05-4500-MxM	30842886
26,50	TTS18-A	TTD-4F05-2650-MxM	30842190	30,60	TTS18-A	TTD-4F05-3060-MxM	30842231				

Dimensions in mm.

Cutting data recommendations from page 272.

Special designs and other coatings on request.

Replaceable head holder TTS

TTS100 with front clamping system for replaceable head drill TTD (1xD), internal cooling

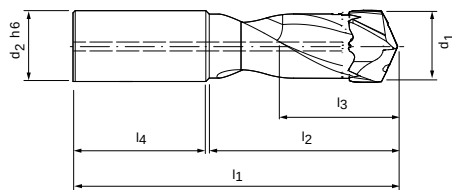
Design:

For diameter:

12,00 - 45,49 mm

Changing system:

Front clamping system
head can be exchanged
on the machine



Dimensions							Specification	Shank form HA	Shank form HB	Shank form HE
d ₁	Connection	d ₂ h6	l ₁	l ₂	l ₃	l ₄		Order No.	Order No.	Order No.
12,00-12,49	TTS12-S	14	81	29	13	45	TTS100-12-DR1-1200-14	30324271	30324304	30324332
12,50-12,99	TTS12-S	14	81	29	13	45	TTS100-12-DR1-1250-14	30324272	30324305	30324333
13,00-13,49	TTS12-S	14	81	31	14	45	TTS100-12-DR1-1300-14	30324273	30324306	30324334
13,50-13,99	TTS12-S	16	86	32	14	48	TTS100-12-DR1-1350-16	30324274	30324307	30324335
14,00-14,49	TTS12-S	16	86	33	15	48	TTS100-12-DR1-1400-16	30324275	30324308	30324336
14,50-14,99	TTS12-S	16	91	34	15	48	TTS100-12-DR1-1450-16	30324276	30324309	30324337
15,00-15,49	TTS12-S	16	91	36	16	48	TTS100-12-DR1-1500-16	30324277	30324310	30324338
15,50-16,49	TTS12-S	18	92	38	17	48	TTS100-12-DR1-1550-18	30324278	30324311	30324339
16,50-17,49	TTS12-S	18	94	40	18	48	TTS100-12-DR1-1650-18	30324280	30324312	30324340
17,50-18,49	TTS12-S	18	99	43	19	48	TTS100-12-DR1-1750-18	30324282	30324313	30324341
18,50-19,49	TTS12-S	20	99	45	20	50	TTS100-12-DR1-1850-20	30324283	30324314	30324342
19,50-20,49	TTS12-S	20	104	47	21	50	TTS100-12-DR1-1950-20	30324284	30324316	30324343
20,50-21,49	TTS12-S	25	111	49	22	56	TTS100-12-DR1-2050-25	30324285	30324317	30324344
21,50-22,49	TTS12-S	25	116	52	23	56	TTS100-12-DR1-2150-25	30324286	30324318	30324345
22,50-23,49	TTS12-S	25	116	54	24	56	TTS100-12-DR1-2250-25	30324287	30324319	30324346
23,50-24,49	TTS12-S	25	121	56	25	56	TTS100-12-DR1-2350-25	30324288	30324320	30324347
24,50-25,49	TTS18-S	25	123	59	26	56	TTS100-18-DR1-2450-25	30324289	30324321	30324348
25,50-26,49	TTS18-S	25	123	61	27	56	TTS100-18-DR1-2550-25	30324290	30324322	30324349
26,50-27,49	TTS18-S	25	128	63	28	56	TTS100-18-DR1-2650-25	30324291	30324323	30324350
27,50-28,49	TTS18-S	25	128	66	29	56	TTS100-18-DR1-2750-25	30324292	30324325	30324352
28,50-29,49	TTS18-S	32	134	68	30	60	TTS100-18-DR1-2850-32	30324293	30324327	30324353
29,50-30,49	TTS18-S	32	139	70	31	60	TTS100-18-DR1-2950-32	30324294	30324328	30324354
30,50-31,49	TTS18-S	32	139	75	32	60	TTS100-18-DR1-3050-32	30324295	30324329	30324355
31,50-32,49	TTS18-S	32	139	75	33	60	TTS100-18-DR1-3150-32	30324296	30324330	30324357
32,50-33,49	TTS18-S	32	150	78	34	60	TTS100-18-DR1-3250-32	30374584	30374587	30374588
33,50-34,49	TTS18-S	32	150	79	35	60	TTS100-18-DR1-3350-32	30374589	30374590	30374591
34,50-35,49	TTS18-S	32	150	82	36	60	TTS100-18-DR1-3450-32	30374592	30374593	30374594
35,50-37,49	TTS18-S	40	162	86	38	70	TTS100-18-DR1-3550-40	—	30535302	30374595
37,50-39,49	TTS18-S	40	167	71	40	70	TTS100-18-DR1-3750-40	—	30535303	30374596
39,50-41,49	TTS18-S	40	177	95	42	70	TTS100-18-DR1-3950-40	—	30535305	30374597
41,50-43,49	TTS18-S	40	180	100	44	70	TTS100-18-DR1-4150-40	—	30535307	30374598
43,50-45,49	TTS18-S	40	185	105	46	70	TTS100-18-DR1-4350-40	—	30535312	30374599

Dimensions in mm.

* similar to HE (DIN 6535)

Special designs on request.

Replaceable head holder TTS

TTS100 with front clamping system for replaceable head drill TTD (3xD), internal cooling

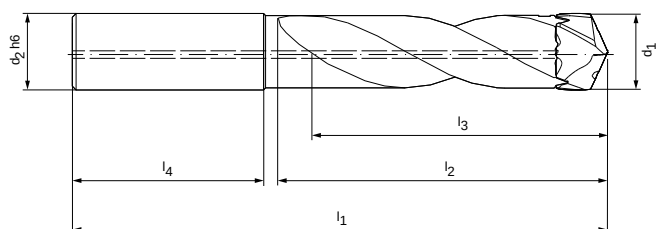
Design:

For diameter:

12,00 - 45,49 mm

Changing system:

Front clamping system
head can be exchanged
on the machine



Dimensions							Specification	Shank form HA	Shank form HB	Shank form HE
d ₁	Connection	d ₂ h6	l ₁	l ₂	l ₃	l ₄		Order No.	Order No.	Order No.
12,00-12,49	TTS12-S	14	100	53	38	45	TTS100-12-DR3-1200-14	30231822	30232785	30232818
12,50-12,99	TTS12-S	14	105	55	39	45	TTS100-12-DR3-1250-14	30231823	30232787	30232820
13,00-13,49	TTS12-S	14	105	57	41	45	TTS100-12-DR3-1300-14	30231824	30232789	30232821
13,50-13,99	TTS12-S	16	110	59	42	48	TTS100-12-DR3-1350-16	30231825	30232790	30232827
14,00-14,49	TTS12-S	16	115	61	44	48	TTS100-12-DR3-1400-16	30231831	30232792	30232828
14,50-14,99	TTS12-S	16	115	63	45	48	TTS100-12-DR3-1450-16	30231832	30232793	30232829
15,00-15,49	TTS12-S	16	115	65	47	48	TTS100-12-DR3-1500-16	30231833	30232794	30232830
15,50-16,49	TTS12-S	18	120	70	50	48	TTS100-12-DR3-1550-18	30191550	30191496	30198891
16,50-17,49	TTS12-S	18	125	74	53	48	TTS100-12-DR3-1650-18	30191551	30191497	30198895
17,50-18,49	TTS12-S	18	130	78	56	48	TTS100-12-DR3-1750-18	30191552	30191498	30198932
18,50-19,49	TTS12-S	20	135	82	59	50	TTS100-12-DR3-1850-20	30191553	30191499	30198933
19,50-20,49	TTS12-S	20	140	87	62	50	TTS100-12-DR3-1950-20	30191554	30191500	30198934
20,50-21,49	TTS12-S	25	150	91	65	56	TTS100-12-DR3-2050-25	30191555	30191501	30198935
21,50-22,49	TTS12-S	25	155	95	68	56	TTS100-12-DR3-2150-25	30191556	30191502	30198936
22,50-23,49	TTS12-S	25	160	99	71	56	TTS100-12-DR3-2250-25	30191557	30191503	30198937
23,50-24,49	TTS12-S	25	165	103	74	56	TTS100-12-DR3-2350-25	30191558	30191504	30198938
24,50-25,49	TTS18-S	25	165	108	77	56	TTS100-18-DR3-2450-25	30191559	30191505	30198939
25,50-26,49	TTS18-S	25	175	112	80	56	TTS100-18-DR3-2550-25	30191561	30191507	30198940
26,50-27,49	TTS18-S	25	175	116	83	56	TTS100-18-DR3-2650-25	30191562	30191508	30198941
27,50-28,49	TTS18-S	25	180	120	86	56	TTS100-18-DR3-2750-25	30191563	30191509	30198942
28,50-29,49	TTS18-S	32	190	124	89	60	TTS100-18-DR3-2850-32	30191564	30191510	30198943
29,50-30,49	TTS18-S	32	195	129	92	60	TTS100-18-DR3-2950-32	30191565	30191511	30198945
30,50-31,49	TTS18-S	32	195	133	95	60	TTS100-18-DR3-3050-32	30191566	30191512	30198946
31,50-32,49	TTS18-S	32	200	137	98	60	TTS100-18-DR3-3150-32	30191567	30191513	30198948
32,50-33,49	TTS18-S	32	210	144	101	60	TTS100-18-DR3-3250-32	30322281	30322289	30322297
33,50-34,49	TTS18-S	32	215	148	104	60	TTS100-18-DR3-3350-32	30322282	30322290	30322298
34,50-35,49	TTS18-S	32	220	153	107	60	TTS100-18-DR3-3450-32	30322283	30322291	30322299
35,50-37,49	TTS18-S	40	237	161	113	70	TTS100-18-DR3-3550-40	—	30535313	30322300
37,50-39,49	TTS18-S	40	247	170	119	70	TTS100-18-DR3-3750-40	—	30535316	30322301
39,50-41,49	TTS18-S	40	257	178	125	70	TTS100-18-DR3-3950-40	—	30535318	30322302
41,50-43,49	TTS18-S	40	265	187	131	70	TTS100-18-DR3-4150-40	—	30535320	30322303
43,50-45,49	TTS18-S	40	275	196	137	70	TTS100-18-DR3-4350-40	—	30535321	30322304

Dimensions in mm.

* similar to HE (DIN 6535)

Special designs on request.

Replaceable head holder TTS

TTS100 with front clamping system for replaceable head drill TTD (5xD), internal cooling

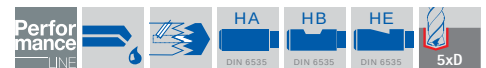
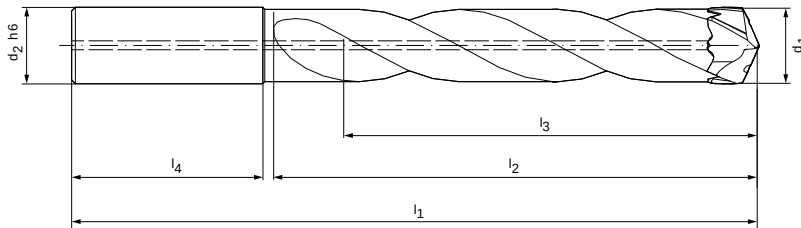
Design:

For diameter:

12,00 - 45,49 mm

Changing system:

Front clamping system head can be exchanged on the machine



Dimensions							Specification	Shank form HA	Shank form HB	Shank form HE
d ₁	Connection	d ₂ h6	l ₁	l ₂	l ₃	l ₄		Order No.	Order No.	Order No.
12,00-12,49	TTS12-S	14	125	78	63	45	TTS100-12-DR5-1200-14	30231835	30232796	30232832
12,50-12,99	TTS12-S	14	130	81	65	45	TTS100-12-DR5-1250-14	30231836	30232798	30232833
13,00-13,49	TTS12-S	14	130	84	68	45	TTS100-12-DR5-1300-14	30231837	30232799	30232834
13,50-13,99	TTS12-S	16	140	88	70	48	TTS100-12-DR5-1350-16	30231838	30232800	30232835
14,00-14,49	TTS12-S	16	140	90	73	48	TTS100-12-DR5-1400-16	30231839	30232801	30232836
14,50-14,99	TTS12-S	16	145	94	75	48	TTS100-12-DR5-1450-16	30231840	30232802	30232837
15,00-15,49	TTS12-S	16	145	96	78	48	TTS100-12-DR5-1500-16	30231841	30232803	30232838
15,50-16,49	TTS12-S	18	155	103	83	48	TTS100-12-DR5-1550-18	30191568	30191514	30198949
16,50-17,49	TTS12-S	18	160	109	88	48	TTS100-12-DR5-1650-18	30191569	30191515	30198950
17,50-18,49	TTS12-S	18	165	115	93	48	TTS100-12-DR5-1750-18	30191570	30191516	30198951
18,50-19,49	TTS12-S	20	175	121	98	50	TTS100-12-DR5-1850-20	30191571	30191517	30198952
19,50-20,49	TTS12-S	20	180	128	103	50	TTS100-12-DR5-1950-20	30191572	30191518	30198953
20,50-21,49	TTS12-S	25	195	134	108	56	TTS100-12-DR5-2050-25	30191573	30191519	30198954
21,50-22,49	TTS12-S	25	200	140	113	56	TTS100-12-DR5-2150-25	30191574	30191520	30198955
22,50-23,49	TTS12-S	25	205	146	118	56	TTS100-12-DR5-2250-25	30191575	30191521	30198956
23,50-24,49	TTS12-S	25	210	152	123	56	TTS100-12-DR5-2350-25	30191576	30191522	30198957
24,50-25,49	TTS18-S	25	220	159	128	56	TTS100-18-DR5-2450-25	30191577	30191523	30198958
25,50-26,49	TTS18-S	25	225	165	133	56	TTS100-18-DR5-2550-25	30191579	30191525	30198959
26,50-27,49	TTS18-S	25	230	171	138	56	TTS100-18-DR5-2650-25	30191580	30191526	30198960
27,50-28,49	TTS18-S	25	240	177	143	56	TTS100-18-DR5-2750-25	30191581	30191527	30198961
28,50-29,49	TTS18-S	32	250	183	148	60	TTS100-18-DR5-2850-32	30191582	30191528	30198962
29,50-30,49	TTS18-S	32	255	190	153	60	TTS100-18-DR5-2950-32	30191583	30191529	30198963
30,50-31,49	TTS18-S	32	260	196	158	60	TTS100-18-DR5-3050-32	30191584	30191530	30198964
31,50-32,49	TTS18-S	32	265	202	163	60	TTS100-18-DR5-3150-32	30191585	30191531	30198965
32,50-33,49	TTS18-S	32	275	210	168	60	TTS100-18-DR5-3250-32	30322305	30322313	30322322
33,50-34,49	TTS18-S	32	285	217	173	60	TTS100-18-DR5-3350-32	30322306	30322314	30322323
34,50-35,49	TTS18-S	32	290	224	178	60	TTS100-18-DR5-3450-32	30322307	30322315	30322324
*35,50-37,49	TTS18-S	40	312	236	188	70	TTS100-18-DR5-3550-40	—	30535324	30322326
*37,50-39,49	TTS18-S	40	327	249	198	70	TTS100-18-DR5-3750-40	—	30534860	30322327
*39,50-41,49	TTS18-S	40	337	261	208	70	TTS100-18-DR5-3950-40	—	30535326	30322328
*41,50-43,49	TTS18-S	40	350	274	218	70	TTS100-18-DR5-4150-40	—	30535327	30322329
*43,50-45,49	TTS18-S	40	365	287	228	70	TTS100-18-DR5-4350-40	—	30535328	30322331

Dimensions in mm.

* similar to HE (DIN 6535)

Special designs on request.

Replaceable head holder TTS

TTS100 with front clamping system for replaceable head drill TTD (8xD),
internal cooling

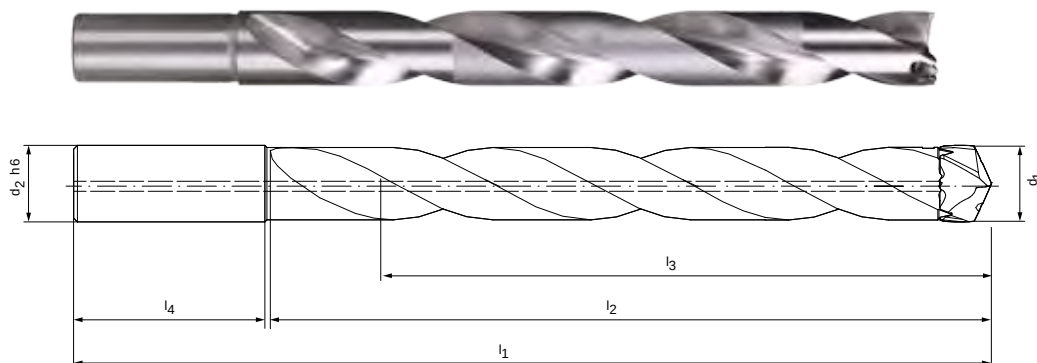
Design:

For diameter:

12,00 - 32,49 mm

Changing system:

Front clamping system
head can be exchanged
on the machine



Dimensions							Specification	Shank form HA	Shank form HB	Shank form HE
d ₁	Connection	d ₂ h6	l ₁	l ₂	l ₃	l ₄		Order No.	Order No.	Order No.
12,00-12,49	TTS12-S	14	165	116	100	45	TTS100-12-DR8-1200-14	30231843	30232805	30232840
12,50-12,99	TTS12-S	14	170	121	104	45	TTS100-12-DR8-1250-14	30231844	30232806	30232841
13,00-13,49	TTS12-S	14	175	126	108	45	TTS100-12-DR8-1300-14	30231845	30232807	30232842
13,50-13,99	TTS12-S	16	180	129	112	48	TTS100-12-DR8-1350-16	30231846	30232808	30232843
14,00-14,49	TTS12-S	16	185	134	116	48	TTS100-12-DR8-1400-16	30231847	30232809	30232845
14,50-14,99	TTS12-S	16	190	139	120	48	TTS100-12-DR8-1450-16	30231848	30232810	30232846
15,00-15,49	TTS12-S	16	195	144	124	48	TTS100-12-DR8-1500-16	30231849	30232811	30232847
15,50-16,49	TTS12-S	18	205	152	132	48	TTS100-12-DR8-1550-18	30191586	30191532	30198966
16,50-17,49	TTS12-S	18	215	161	140	48	TTS100-12-DR8-1650-18	30191587	30191533	30198967
17,50-18,49	TTS12-S	18	220	171	148	48	TTS100-12-DR8-1750-18	30191588	30191534	30198968
18,50-19,49	TTS12-S	20	235	180	156	50	TTS100-12-DR8-1850-20	30191589	30191535	30198969
19,50-20,49	TTS12-S	20	240	189	164	50	TTS100-12-DR8-1950-20	30191590	30191536	30198971
20,50-21,49	TTS12-S	25	260	198	172	56	TTS100-12-DR8-2050-25	30191591	30191537	30198972
21,50-22,49	TTS12-S	25	270	207	180	56	TTS100-12-DR8-2150-25	30191592	30191538	30198973
22,50-23,49	TTS12-S	25	275	217	188	56	TTS100-12-DR8-2250-25	30191593	30191539	30198974
23,50-24,49	TTS12-S	25	285	226	196	56	TTS100-12-DR8-2350-25	30191594	30191540	30198975
24,50-25,49	TTS18-S	25	295	235	204	56	TTS100-18-DR8-2450-25	30191595	30191541	30198976
25,50-26,49	TTS18-S	25	305	244	212	56	TTS100-18-DR8-2550-25	30191597	30191543	30198977
26,50-27,49	TTS18-S	25	315	253	220	56	TTS100-18-DR8-2650-25	30191598	30191544	30198978
27,50-28,49	TTS18-S	25	325	263	228	56	TTS100-18-DR8-2750-25	30191599	30191545	30198979
28,50-29,49	TTS18-S	32	340	272	236	60	TTS100-18-DR8-2850-32	30191600	30191546	30198980
29,50-30,49	TTS18-S	32	345	281	244	60	TTS100-18-DR8-2950-32	30191601	30191547	30198981
30,50-31,49	TTS18-S	32	355	290	252	60	TTS100-18-DR8-3050-32	30191602	30191548	30198982
31,50-32,49	TTS18-S	32	360	299	260	60	TTS100-18-DR8-3150-32	30191603	30191549	30198983

Dimensions in mm.

Special designs on request.

Replaceable head holder TTS

TTS100 with front clamping system for replaceable head drill TTD (12xD), internal cooling

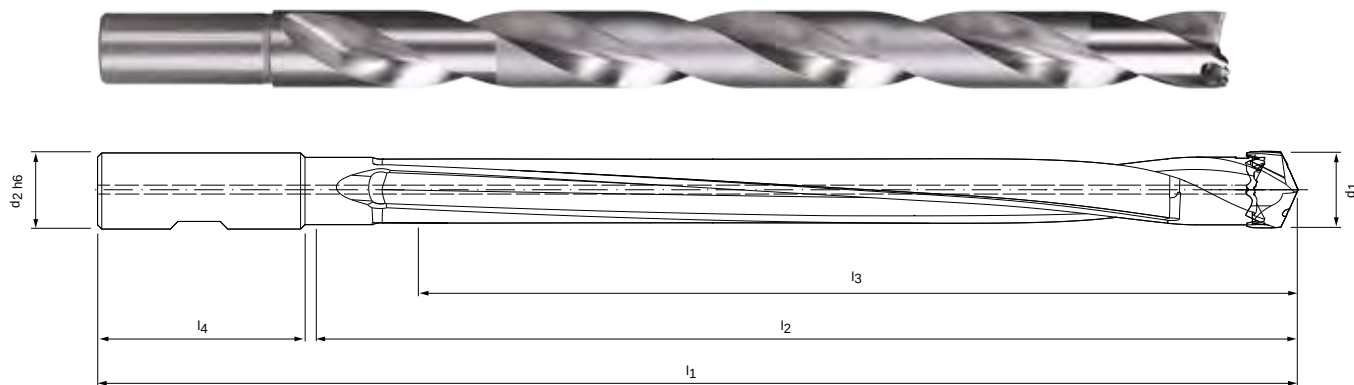
Design:

For diameter:

12,00 - 32,49 mm

Changing system:

Front clamping system head can be exchanged on the machine



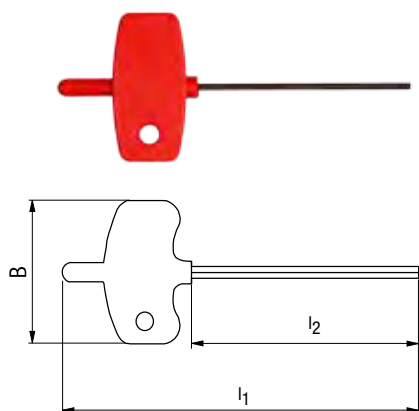
Dimensions							Specification	Shank form HA	Shank form HB	Shank form HE
d ₁	Connection	d ₂ h6	l ₁	l ₂	l ₃	l ₄		Order No.	Order No.	Order No.
12,00-12,49	TTS12-S	14	210	162	150	45	TTS100-12-DR12-1200-14	30327797	30327798	30327800
12,50-12,99	TTS12-S	14	216	168	156	45	TTS100-12-DR12-1250-14	30327801	30327802	30327803
13,00-13,49	TTS12-S	14	223	175	162	45	TTS100-12-DR12-1300-14	30327804	30327805	30327806
13,50-13,99	TTS12-S	16	235	182	168	48	TTS100-12-DR12-1350-16	30327807	30327808	30327809
14,00-14,49	TTS12-S	16	242	189	174	48	TTS100-12-DR12-1400-16	30327810	30327811	30327812
14,50-14,99	TTS12-S	16	248	195	180	48	TTS100-12-DR12-1450-16	30327813	30327814	30327815
15,00-15,49	TTS12-S	16	255	202	186	48	TTS100-12-DR12-1500-16	30327816	30327817	30327818
15,50-16,49	TTS12-S	18	262	209	198	48	TTS100-12-DR12-1550-18	30327819	30327820	30327822
16,50-17,49	TTS12-S	18	275	222	210	48	TTS100-12-DR12-1650-18	30327823	30327824	30327826
17,50-18,49	TTS12-S	18	289	236	222	48	TTS100-12-DR12-1750-18	30327827	30327828	30327830
18,50-19,49	TTS12-S	20	304	249	234	50	TTS100-12-DR12-1850-20	30327832	30327833	30327834
19,50-20,49	TTS12-S	20	318	263	246	50	TTS100-12-DR12-1950-20	30327835	30255588	30327842
20,50-21,49	TTS12-S	25	337	276	258	56	TTS100-12-DR12-2050-25	30327843	30327844	30327845
21,50-22,49	TTS12-S	25	351	290	270	56	TTS100-12-DR12-2150-25	30327846	30327847	30327849
22,50-23,49	TTS12-S	25	364	303	282	56	TTS100-12-DR12-2250-25	30327850	30327851	30327852
23,50-24,49	TTS12-S	25	378	317	294	56	TTS100-12-DR12-2350-25	30327853	30327854	30327855
24,50-25,49	TTS18-S	25	391	330	306	56	TTS100-18-DR12-2450-25	30327858	30327859	30327860
25,50-26,49	TTS18-S	25	405	344	318	56	TTS100-18-DR12-2550-25	30327861	30327863	30327864
26,50-27,49	TTS18-S	25	418	357	330	56	TTS100-18-DR12-2650-25	30327865	30327866	30327867
27,50-28,49	TTS18-S	25	432	371	342	56	TTS100-18-DR12-2750-25	30327869	30327870	30327871
28,50-29,49	TTS18-S	32	449	384	354	60	TTS100-18-DR12-2850-32	30327872	30327873	30327874
29,50-30,49	TTS18-S	32	463	398	366	60	TTS100-18-DR12-2950-32	30327875	30327876	30327877
30,50-31,49	TTS18-S	32	476	411	378	60	TTS100-18-DR12-3050-32	30327878	30327879	30327880
31,50-32,49	TTS18-S	32	490	425	390	60	TTS100-18-DR12-3150-32	30327881	30327883	30327885

Dimensions in mm.

Please note the handling informations for replaceable head drills TTD (12xD) on page 270.

Special designs on request.

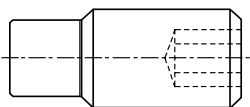
Spare parts



Hexagonal T-Key

Holder	SW	l_1	l_2	B	Order No.
TS100-12-DRx-1200-14-HA	1,3	95	60	38	10004355
TS100-12-DRx-1250-14-HA	1,3	95	60	38	10004355
TS100-12-DRx-1300-14-HA	1,3	95	60	38	10004355
TS100-12-DRx-1350-16-HA	1,5	95	60	38	10098108
TS100-12-DRx-1400-16-HA	1,5	95	60	38	10098108
TS100-12-DRx-1450-16-HA	1,5	95	60	38	10098108
TS100-12-DRx-1500-16-HA	1,5	95	60	38	10098108
TS100-12-DRx-1550-18-HA	1,5	95	60	38	10098108
TS100-12-DRx-1650-18-HA	2	95	60	38	10098109
TS100-12-DRx-1750-18-HA	2	95	60	38	10098109
TS100-12-DRx-1850-20-HA	2	95	60	38	10098109
TS100-12-DRx-1950-20-HA	2	95	60	38	10098109
TS100-12-DRx-2050-25-HA	2	95	60	38	10098109
TS100-12-DRx-2150-25-HA	2	95	60	38	10098109
TS100-12-DRx-2250-25-HA	2	95	60	38	10098109
TS100-12-DRx-2350-25-HA	2	95	60	38	10098109
TS100-18-DRx-2450-25-HA	2,5	95	60	38	10098110
TS100-18-DRx-2550-25-HA	2,5	95	60	38	10098110
TS100-18-DRx-2650-25-HA	2,5	95	60	38	10098110
TS100-18-DRx-2750-25-HA	2,5	95	60	38	10098110
TS100-18-DRx-2850-32-HA	2,5	95	60	38	10098110
TS100-18-DRx-2950-32-HA	2,5	95	60	38	10098110
TS100-18-DRx-3050-32-HA	2,5	95	60	38	10098110
TS100-18-DRx-3150-32-HA	2,5	95	60	38	10098110
TS100-18-DRx-3250-32-HA	3	100	60	38	10006234
TS100-18-DRx-3350-32-HA	3	100	60	38	10006234
TS100-18-DRx-3450-32-HA	3	100	60	38	10006234
TS100-18-DRx-3550-40-HA	3	100	60	38	10006234
TS100-18-DRx-3750-40-HA	3	100	60	38	10006234
TS100-18-DRx-3950-40-HA	3	100	60	38	10006234
TS100-18-DRx-4150-40-HA	4	100	60	38	10006235
TS100-18-DRx-4350-40-HA	4	100	60	38	10006235

Spare parts



Threaded pin

Holder	Threaded pin	Order No.
TS100-12-DRx-1200-14-HA	M2,5x5	30259117
TS100-12-DRx-1250-14-HA	M2,5x6	30259118
TS100-12-DRx-1300-14-HA	M2,5x6	30259118
TS100-12-DRx-1350-16-HA	M3x6	30259119
TS100-12-DRx-1400-16-HA	M3x6	30259119
TS100-12-DRx-1450-16-HA	M3x7	30193231
TS100-12-DRx-1500-16-HA	M3x7	30193231
TS100-12-DRx-1550-18-HA	M3x0,5x7	30193231
TS100-12-DRx-1650-18-HA	M4x0,5x7,5	30193232
TS100-12-DRx-1750-18-HA	M4x0,5x7,5	30193232
TS100-12-DRx-1850-20-HA	M4x0,5x7,5	30193232
TS100-12-DRx-1950-20-HA	M4x0,5x7,5	30193232
TS100-12-DRx-2050-25-HA	M4x0,5x10	30193233
TS100-12-DRx-2150-25-HA	M4x0,5x10	30193233
TS100-12-DRx-2250-25-HA	M4x0,5x10	30193233
TS100-12-DRx-2350-25-HA	M4x0,5x10	30193233
TS100-18-DRx-2450-25-HA	M5x0,5x11	30193234
TS100-18-DRx-2550-25-HA	M5x0,5x11	30193234
TS100-18-DRx-2650-25-HA	M5x0,5x11	30193234
TS100-18-DRx-2750-25-HA	M5x0,5x11	30193234
TS100-18-DRx-2850-32-HA	M5x0,5x14	30193235
TS100-18-DRx-2950-32-HA	M5x0,5x14	30193235
TS100-18-DRx-3050-32-HA	M5x0,5x14	30193235
TS100-18-DRx-3150-32-HA	M5x0,5x14	30193235
TS100-18-DRx-3250-32-HA	M6x0,5x16	30320812
TS100-18-DRx-3350-32-HA	M6x0,5x16	30320812
TS100-18-DRx-3450-32-HA	M6x0,5x16	30320812
TS100-18-DRx-3550-40-HA	M6x0,5x18	30320811
TS100-18-DRx-3750-40-HA	M6x0,5x18	30320811
TS100-18-DRx-3950-40-HA	M6x0,5x20	30320810
TS100-18-DRx-4150-40-HA	M8x1x20	30320806
TS100-18-DRx-4350-40-HA	M8x1x20	30320806





DRILLING FROM SOLID WITH PCD

Optimally matched to the process

During the machining of parts made of aluminium and other non-ferrous metals, mostly straight-fluted PCD drilling tools are used for drilling. The tool features are optimally matched for the high effectiveness of the PCD drills. The chip flutes are polished along the entire length of the drill to keep the chip friction as low as possible. The optimally embedded PCD cutting edges result in good cutting behaviour of the drill. In this way the heat introduction to the part is reduced. For processes with minimum quantity lubrication (MQL) the coolant outlets are positioned such that the aerosol arrives exactly where it is required for

lubrication. In this way the risk of built-up edges is reduced and the tool life of the drill increased.

However, modern machining processes increasingly require PCD-tipped drilling tools with a large helix angle.

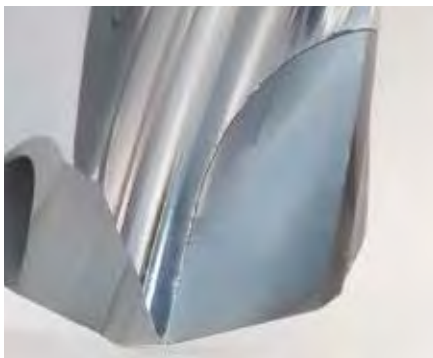
The twisted PCD tools make possible reliable, productive bore machining. Chip congestion or tool fracture is prevented by "mechanical assisted" removal of the chips. Highly positive rake angles reduce the cutting forces required. Several machining steps such as drilling from solid

or boring processes can be undertaken in one machining step. The reduction of the machining time increases productivity, with high process reliability and bore quality.

Tool features in detail



Optimally embedded PCD cutting edges



The embedding of PCD segments in a twisted groove rounded on all sides places high demands on the production technology. The latest production equipment ensures that twisted PCD drilling tools can be designed and manufactured reliably and reproducibly. To ensure the correct performance of the tools, comprehensive application details flow via the technical consultants and production specialists at MILLER into the design and the construction.

Highly polished chip flute



The chip flutes are highly polished, such that the friction produced by the chips is reduced and as a consequence the heat introduction to the part is also reduced. The twisted design of the chip flutes makes possible the "mechanically assisted" removal of the chips. Highly positive rake angles reduce the cutting forces required.

Ideal for MQL processes



The correct positioning of the coolant outlets is crucial for the performance of the drill during MQL machining. The aerosol must arrive exactly where it is required for lubrication. This reduces the risk, for example, of built-up edges and of course also helps to increase the tool life of the drill.

CUSTOM TOOLS FOR DRILLING

Along with a comprehensive standard programme of drilling tools, MILLER also offers custom tools.

Individual customer requirements demand custom solutions that are specifically tailored to the machining tasks. With its vast know-how in metal machining and many years of experience, MILLER is your competent partner worldwide when it comes to the design and manufacture of custom tools, as well as the design of complete machining processes for drilling. The programme includes twisted and straight-fluted drills as well as step drills made of solid carbide or PCD-tipped drills.

MILLER – your partner for application-specific custom solutions.





Custom tools for drilling from MILLER

- 1 Custom solid carbide step drill with three cutting edges, self-centring chisel edge, for connecting rod machining in a 1-shot process
- 2 Solid carbide step drill with three guiding chamfers and special coating for high-speed machining
- 3 Solid carbide core hole drill for connecting rod machining in a 2-shot process
- 4 Solid carbide step drill with three guiding chamfers and special coating for the high-speed machining of automotive constant-velocity joints made of ADI 900
- 5 Custom solid carbide drill with MEGA-Spike-Drill geometry and special coating for turbocharger machining
- 6 Drill reamer with three cutting edges and additional reaming cutting edge on the periphery with special coating for machining axles made of EN-GJS-500-7
- 7 Solid carbide pilot drill for connecting rod machining in a 2-shot process
- 8 Solid carbide deep hole drill with custom coating for machining cylinder blocks made of GJV
- 9 Solid carbide aluminium drill with three cutting edges, self-centring chisel edge and highly polished chip flutes for machining AISi1
- 10 Solid carbide step drill with 180° face geometry for valve machining

TECHNICAL APPENDIX

Notes on usage, handling as well as cutting data









TECHNICAL APPENDIX

General technical information

Application notes	_____	
Deep hole drilling	_____	268
Handling notes	_____	
Replaceable head drills TTD	_____	270

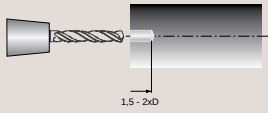
Cutting data recommendation

Overview Drilling	_____	272
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Deep hole drilling

For MEGA-Deep-Drill | MEGA-Deep-Drill-Alu

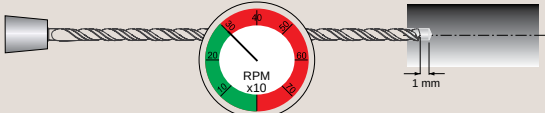
1



Make pilot bore

- Pilot drill point angle 140° / tolerance m7 (or $0.01 - 0.02 > \varnothing$ deep hole drill)
- Pilot bore depth between 1.5 and $2xD$

2



MEGA-Deep-Drill - enter the pilot bore

- Enter at max. 300 min^{-1} and $v_f = 1000 \text{ mm/min}$
- Without coolant – up to 1 mm before the bottom of the pilot bore
- Turn on coolant

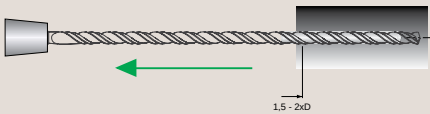
3



Drill using MEGA-Deep-Drill

- Cutting speed (v_c) and feeds (f) as per table (see page 290). Drill without relief cycles

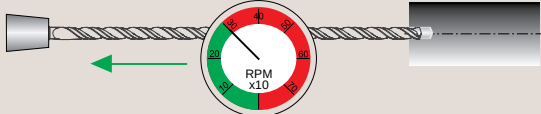
4



MEGA-Deep-Drill – move back

- Move back at current spindle speed ($= v_c$) and double feed ($= 2 \times v_f$) – to $1.5 - 2xD$ to the end of the bore

5

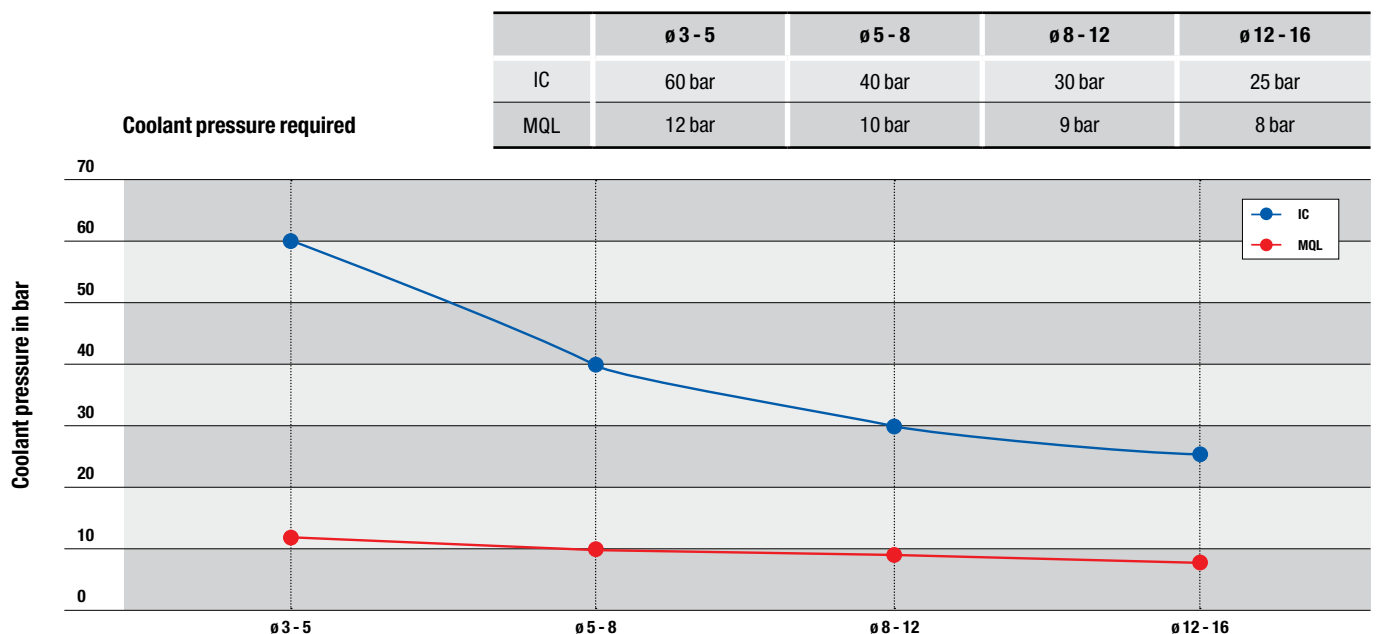


MEGA-Deep-Drill – run out of the bore

- Switch off coolant
- Run out at max. 300 min^{-1} and $v_f = 1000 \text{ mm/min}$

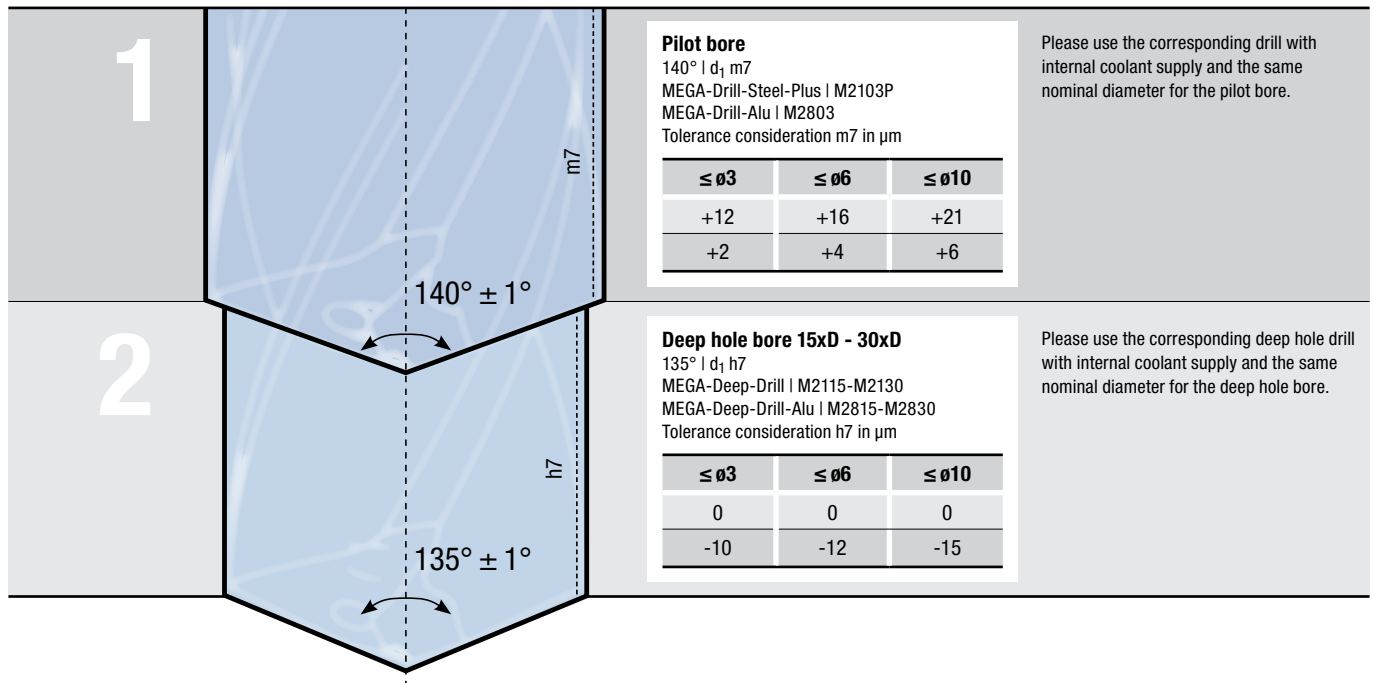
Coolant pressure required

For MEGA-Deep-Drill | MEGA-Deep-Drill-Alu



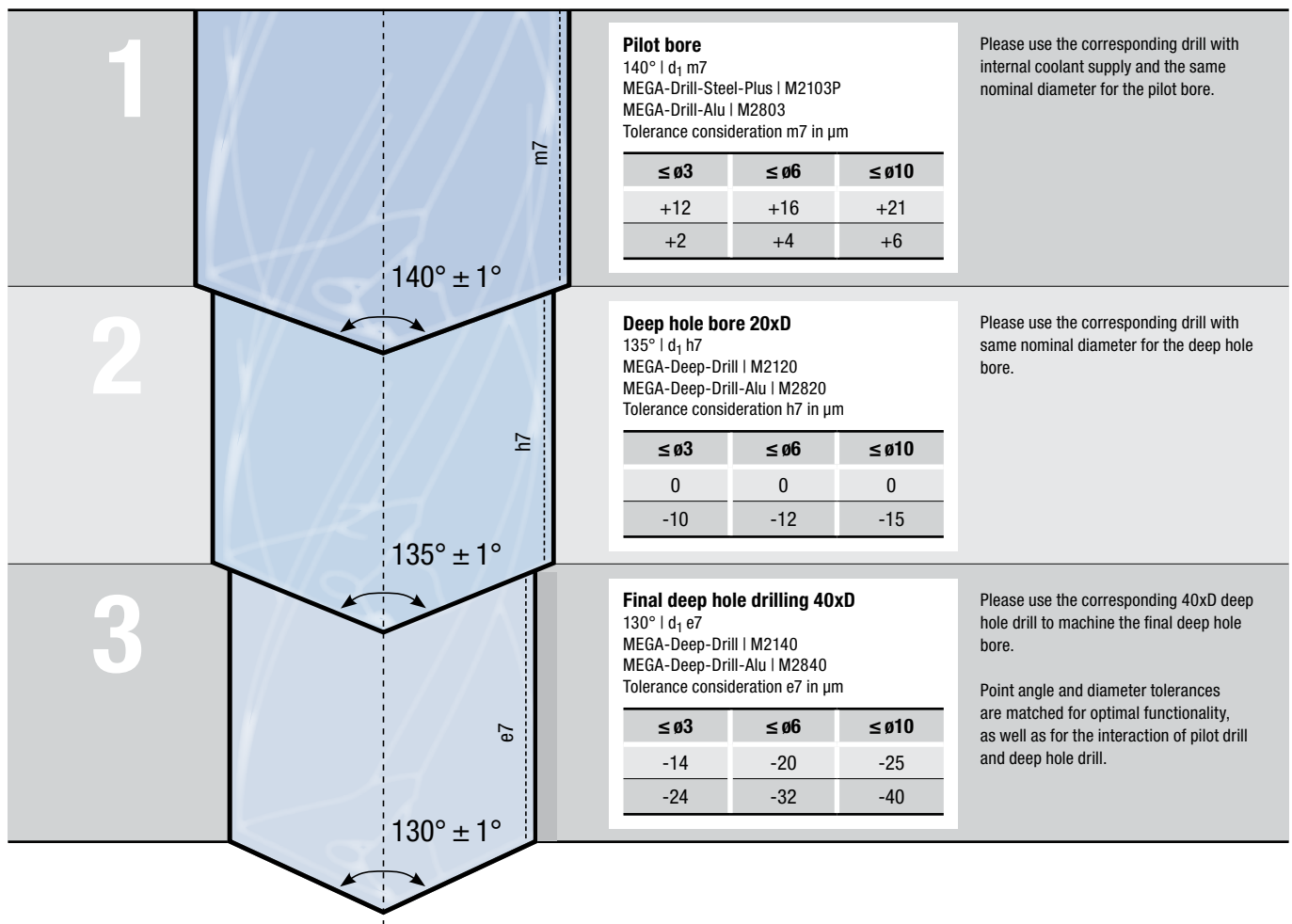
Deep hole drilling 15xD – 30xD in two steps:

Deep hole drilling 15xD - 30xD with MEGA-Deep-Drill | M2115-M2130) and MEGA-Deep-Drill-Alu | M2815-M2830)



Deep hole drilling 40xD in three steps:

Deep hole drilling 40xD with MEGA-Deep-Drill | M2140 and MEGA-Deep-Drill-Alu | M2840
 Optimally designed for reliable machining.



Handling notes replaceable head drills TTD

Practical notes

PILOTING

- From drilling depths of 8xD a pilot bore is to be recommended
- With the replaceable drill head type 02, a pilot bore is to be recommended from a drilling depth of 5xD
- For a pilot bore with the replaceable drill head type 02 a reduction of the feed stated by 50 % is to be recommended
- For a pilot bore with the replaceable drill heads type 01 and type 03, the recommended machining values can be used
- The movement into the pilot bore is with the same drill head geometry and reduced machining values (recommendation: $v_c = 50 \%$ and approx. $f = 50 \%$) up to 1 mm before the bottom of the bore
- Drilling after piloting is then undertaken using the recommended machining values (see section technical appendix in the sub-section cutting data recommendation for replaceable head drills TTD)

NOTES ON DRILLING USING 12xD HOLDERS

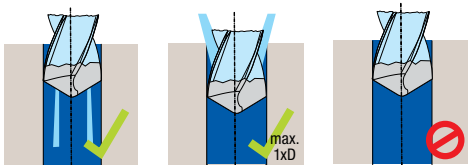
- At a drilling depth of 12xD a pilot bore is necessary
- Coolant pressure must be at least 40 bar
- During the machining of steel materials, chip removal may be necessary
- Usage on a lathe is possible with a powered tool
- Increasing the cutting speed by 30 % over the standard value is to be recommended

Stationary tool

If the tool is stationary, position chip flute runout horizontal so that chip congestion does not occur.

Coolant situation

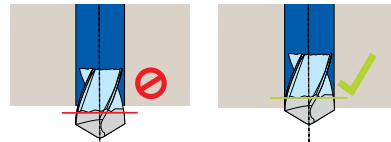
Coolant pressure as a function of the drilling depth:



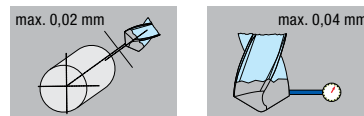
1xD: 8 bar | 3xD: 8 bar | 5xD: 12 bar | 8xD: 25 bar | 12xD: 40 bar

Through bore

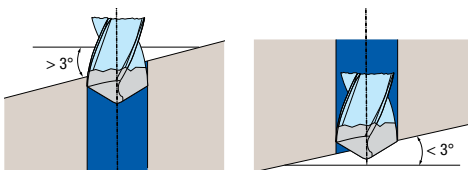
It is recommended not to reduce the cutting values at the bore outlet.



Radial run-out accuracy

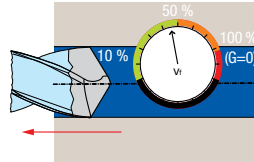


Max. entry and exit angle

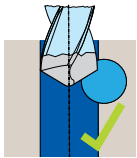


No rapid traverse on withdrawal

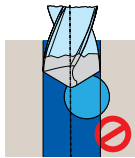
Five times the feed speed is recommended for the withdrawal speed.



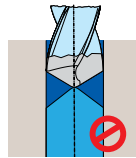
Machining situations



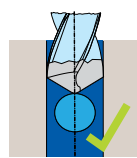
Bore off-centre
chisel edge in contact



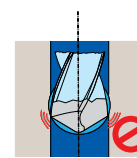
Bore off-centre
chisel edge not in contact



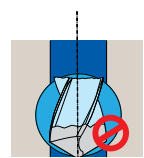
Breakthrough to bore
in opposite direction



Bore centred
and $\leq D$



Bore centred
and $\cong D$



Bore centred
and $>> D$

Assembly

Releasing drill head

1. On each drill head change, check the clamping screw for stiffness. If the clamping screw can be undone easily, the clamping screw must be replaced. Only use the original clamping screws!



2. Undo the clamping screw with the aid of the hex wrench supplied.



3. Pull the drill head out of the serration.

Note:

At the latest on the 8th drill head change the clamping screw must be replaced.

Clamping drill head



1. Clean the TTS connection on the tool holder with a brush.

2. Fit the new drill head to the tool holder.

3. Tighten hand-tight the clamping screw by turning clockwise.

Note:

Ensure the positioning aid on the drill head is engaged in the positioning aid on the tool holder and that the chip flute and serration on the drill head and tool holder are aligned.

Cutting data recommendation

Drilling

Solid carbide drills

Product name	Specification	Page
ECU-Drill-Uni	M6704, M6804, M6806	274
ECU-Drill-Steel	M6003, M6005, M6103, M6105, M6108, M6112	276
ECU-G-Drill	M2605, M2608, M2612	276
ECU-Centre-Drill	M1200	278
MEGA-Drill-Steel	M2003, M2005, M2103, M2105, M2108, M2112	280
MEGA-Drill-Steel-Plus	M2003P, M2005P, M2103P, M2105P, M2108P	282
MEGA-Drill-Steel-Step-Drill	M2303, M2403	282
MEGA-Drill-Inox	M1703, M1705, M1803, M1805, M1808	284
MEGA-Drill-Alu	M2705, M2803, M2805, M2808, M2812	286
MEGA-Drill-Inco	M9305	286
MEGA-Drill-Hardened	M1600	286
MEGA-SMART-Drill	M1905, M1908, M1912	288
MEGA-Deep-Drill	M2115, M2120, M2125, M2130, M2140	290

Product name	Specification	Page
MEGA-Deep-Drill-Alu	M2815, M2820, M2825, M2830, M2840	290
MEGA-Drill-Composite-MD	M2925	292
MEGA-Drill-Composite-UDX	M2915, M2935	292
MEGA-Drill-Composite-MD-Micro	M1985	294
MEGA-Spike-Drill-Uni	M9535, M9538	296
MEGA-180°-Drill	M9183, M9185	298
MEGA-180°-Drill-Alu	M9883, M9885	298
GIGA-Drill	M2195, M2198	300
MEGA-Drill-Reamer	M2253, M2263, M2265	300
MEGA-Quadro-Drill	M2075, M2175, M2178, M2182	302
MEGA-Speed-Drill-Steel	M9103, M9105, M9108	304
MEGA-Speed-Drill-Iron	M9505	304
MEGA-Speed-Drill-Titan	M9205	304
MEGA-Speed-Drill-Inox	M9405	306
Mono-Drill-Plastic	M2955	308



Replaceable head drills

Product name	Specification	Page
Replaceable head drill TTD	Type 01 - Uni	310
Replaceable head drill TTD	Type 02 - Inox	310
Replaceable head drill TTD	Type 03 - Alu	312
Replaceable head drill TTD	Type 04 - Steel	312
Replaceable head drill TTD	Type 05 - Iron	312

The cutting data recommendations shown, are guidelines.
The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

ECU-Drill-Uni | M6704-M6806

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
M	M1	M1.1 Stainless steel, austenitic	< 700 N/mm ²	
		M1.2 Stainless steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
	M2	M2.1 Stainless cast steel, austenitic	< 700 N/mm ²	
	M3	M3.1 Stainless cast steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
	N4	N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
		N4.3 Plastic, foam		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3,0	4,5	6,5	9,5	14,0	20,0
	75	70	70		0,04	0,05	0,07	0,11	0,16	0,22
	70	55	55		0,05	0,06	0,09	0,13	0,20	0,27
	75	65	65		0,05	0,06	0,08	0,13	0,19	0,26
	55	45	45		0,04	0,05	0,07	0,10	0,15	0,20
	55	50	50		0,04	0,05	0,08	0,11	0,17	0,23
	45	40	40		0,04	0,05	0,06	0,10	0,14	0,19
	45	35	40		0,03	0,04	0,05	0,08	0,11	0,15
	75	65	65		0,05	0,06	0,08	0,13	0,19	0,26
	45	35	40		0,03	0,04	0,05	0,08	0,11	0,15
	45	30	30		0,03	0,04	0,06	0,09	0,14	0,19
	45	25	25		0,03	0,04	0,05	0,08	0,12	0,16
	45	30	30		0,03	0,04	0,06	0,09	0,14	0,19
	45	25	25		0,03	0,04	0,05	0,08	0,12	0,16
	90	65	65	65	0,05	0,08	0,13	0,21	0,33	0,45
	120	75	90	90	0,06	0,08	0,13	0,20	0,31	0,41
	75	55	55		0,06	0,08	0,11	0,17	0,26	0,36
	70	60	60		0,06	0,08	0,12	0,19	0,28	0,38
	60	55	55		0,06	0,07	0,10	0,15	0,23	0,30
	255	170	215		0,05	0,06	0,09	0,13	0,20	0,27
	215	155	170		0,06	0,08	0,11	0,17	0,26	0,36
	185	130	155		0,06	0,08	0,11	0,17	0,26	0,36
	155	100	130		0,06	0,08	0,11	0,17	0,26	0,36
	120	85			0,05	0,06	0,09	0,13	0,20	0,27
	100	75			0,06	0,08	0,11	0,17	0,26	0,36
	170	135	135	100	0,05	0,08	0,13	0,21	0,33	0,45

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

ECU-Drill-Steel | M6003-M6112

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	

ECU-G-Drill | M2605-M2612

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
	N4	N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
		N4.3 Plastic, foam		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3,0	4,5	6,5	9,5	14,0	20,0
	75	70	70		0,08	0,11	0,13	0,17	0,22	0,27
	70	55	55		0,10	0,13	0,17	0,22	0,28	0,34
	75	65	65		0,10	0,12	0,16	0,21	0,26	0,32
	55	45	45		0,08	0,10	0,13	0,17	0,21	0,25
	55	50	50		0,09	0,11	0,14	0,18	0,24	0,29
	45	40	40		0,07	0,09	0,12	0,15	0,19	0,23
	45	35	40		0,06	0,07	0,09	0,12	0,16	0,19
	75	65	65		0,10	0,12	0,16	0,21	0,26	0,32
	45	35	40		0,06	0,07	0,09	0,12	0,16	0,19
	80	55	55	55	0,11	0,15	0,21	0,28	0,37	0,45
	110	70	80	80	0,11	0,15	0,20	0,26	0,34	0,41
	70	50	50		0,10	0,13	0,17	0,23	0,29	0,36
	60	55	55		0,11	0,14	0,19	0,24	0,31	0,38
	55	45	45		0,09	0,12	0,15	0,20	0,25	0,30

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3,0	4,5	6,5	9,5	14,0	20,0
	145	100	100	100	0,10	0,14	0,18	0,25	0,32	0,40
	190	120	145	145	0,10	0,13	0,18	0,23	0,30	0,37
	300	215	240		0,09	0,12	0,15	0,20	0,26	0,32
	265	180	215		0,09	0,12	0,15	0,20	0,26	0,32
	215	145	180		0,09	0,12	0,15	0,20	0,26	0,32
	240	190		145	0,10	0,14	0,18	0,25	0,32	0,40

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

ECU-Centre-Drill | M1200

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
M	M1	M1.1 Stainless steel, austenitic	< 700 N/mm ²	
		M1.2 Stainless steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
	M2	M2.1 Stainless cast steel, austenitic	< 700 N/mm ²	
	M3	M3.1 Stainless cast steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
	N4	N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
		N4.3 Plastic, foam		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3,0	4,5	6,5	9,5	14,0	20,0
		70	70		0,02	0,03	0,03	0,04	0,05	0,07
		55	55		0,03	0,03	0,04	0,05	0,07	0,09
		65	65		0,03	0,03	0,04	0,05	0,06	0,09
		45	45		0,03	0,03	0,03	0,04	0,05	0,07
		50	50		0,02	0,03	0,03	0,04	0,06	0,08
		40	40		0,02	0,02	0,03	0,04	0,05	0,06
		35	40		0,02	0,02	0,02	0,03	0,04	0,05
		65	65		0,03	0,03	0,04	0,05	0,06	0,09
		35	40		0,02	0,02	0,02	0,03	0,04	0,05
		30	30		0,02	0,02	0,02	0,03	0,04	0,05
		25	25		0,01	0,02	0,02	0,02	0,03	0,04
		30	30		0,02	0,02	0,02	0,03	0,04	0,05
		25	25		0,01	0,02	0,02	0,02	0,03	0,04
		65	65		0,03	0,03	0,05	0,07	0,10	0,15
		75	90		0,03	0,04	0,05	0,07	0,10	0,14
		55	55		0,03	0,04	0,05	0,06	0,09	0,12
		60	60		0,04	0,04	0,05	0,07	0,10	0,13
		55	55		0,04	0,04	0,05	0,06	0,08	0,11
		170	215		0,03	0,03	0,04	0,05	0,07	0,10
		155	170		0,03	0,04	0,05	0,06	0,09	0,12
		130	155		0,03	0,04	0,05	0,06	0,09	0,12
		100	130		0,03	0,04	0,05	0,06	0,09	0,12
		85			0,03	0,03	0,04	0,05	0,07	0,10
		75			0,03	0,04	0,05	0,06	0,09	0,12
		135	135		0,03	0,03	0,05	0,07	0,10	0,15

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

MEGA-Drill-Steel | M2003, M2005, M2103, M2105, M2108, M2112

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
H	H1	H1.1 Hardened steel/cast steel	45-55 HRC	
		H1.2 Hardened steel/cast steel	55-64 HRC	
		H1.3 Hardened steel/cast steel	64-70 HRC	
	H2	N2.3 Wear resistant castings/chilled cast iron, GJN		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3,0	4,5	6,5	9,5	14,0	20,0
	100	90	90		0,09	0,12	0,15	0,19	0,25	0,30
	90	75	75		0,11	0,15	0,19	0,24	0,31	0,38
	100	85	85		0,11	0,14	0,18	0,23	0,29	0,36
	70	60	60		0,09	0,12	0,14	0,18	0,23	0,28
	75	65	65		0,10	0,12	0,16	0,20	0,26	0,32
	60	55	55		0,08	0,10	0,13	0,17	0,22	0,26
	60	45	50		0,06	0,08	0,10	0,14	0,17	0,21
	100	85	85		0,11	0,14	0,18	0,23	0,29	0,36
	60	45	50		0,06	0,08	0,10	0,14	0,17	0,21
	110	75	75	75	0,12	0,17	0,23	0,31	0,41	0,50
	145	90	110	110	0,13	0,17	0,22	0,29	0,38	0,46
	90	70	70		0,11	0,15	0,19	0,25	0,32	0,40
	80	70	70		0,12	0,16	0,21	0,27	0,35	0,43
	70	65	65		0,11	0,13	0,17	0,22	0,28	0,34
	25	25	25		0,04	0,06	0,07	0,09	0,12	0,14

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

MEGA-Drill-Steel-Plus | M2003P-M2108P

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite , EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite , EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
H	H1	H1.1 Hardened steel/cast steel	45-55 HRC	
		H1.2 Hardened steel/cast steel	55-64 HRC	
		H1.3 Hardened steel/cast steel	64-70 HRC	
	H2	N2.3 Wear resistant castings/chilled cast iron, GJN		

MEGA-Drill-Steel-Step-Drill | M2303, M2403

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite , EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite , EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
H	H1	H1.1 Hardened steel/cast steel	45-55 HRC	
		H1.2 Hardened steel/cast steel	55-64 HRC	
		H1.3 Hardened steel/cast steel	64-70 HRC	
	H2	N2.3 Wear resistant castings/chilled cast iron, GJN		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3,0	4,5	6,5	9,5	14,0	20,0
	110	100	100		0,10	0,13	0,16	0,21	0,27	0,33
	100	85	85		0,13	0,16	0,21	0,27	0,34	0,41
	110	95	95		0,12	0,15	0,19	0,25	0,32	0,39
	75	65	65		0,10	0,13	0,16	0,20	0,26	0,31
	85	70	70		0,11	0,14	0,17	0,23	0,29	0,35
	65	60	60		0,09	0,12	0,15	0,19	0,24	0,29
	65	50	55		0,07	0,09	0,12	0,15	0,19	0,23
	110	95	95		0,12	0,15	0,19	0,25	0,32	0,39
	65	50	55		0,07	0,09	0,12	0,15	0,19	0,23
	120	85	85	85	0,14	0,19	0,25	0,34	0,45	0,55
	160	100	120	120	0,14	0,18	0,24	0,32	0,41	0,51
	100	75	75		0,12	0,16	0,21	0,28	0,36	0,43
	90	80	80		0,13	0,18	0,23	0,30	0,38	0,47
	80	70	70		0,12	0,15	0,19	0,24	0,31	0,37
	25	25	25		0,05	0,06	0,08	0,10	0,13	0,16

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3,0	4,5	6,5	9,5	14,0	20,0
	100	90	90		0,09	0,12	0,15	0,19	0,25	0,30
	90	75	75		0,11	0,15	0,19	0,24	0,31	0,38
	100	85	85		0,11	0,14	0,18	0,23	0,29	0,36
	70	60	60		0,09	0,12	0,14	0,18	0,23	0,28
	75	65	65		0,10	0,12	0,16	0,20	0,26	0,32
	60	55	55		0,08	0,10	0,13	0,17	0,22	0,26
	60	45	50		0,06	0,08	0,10	0,14	0,17	0,21
	100	85	85		0,11	0,14	0,18	0,23	0,29	0,36
	60	45	50		0,06	0,08	0,10	0,14	0,17	0,21
	110	75	75	75	0,12	0,17	0,23	0,31	0,41	0,50
	145	90	110	110	0,13	0,17	0,22	0,29	0,38	0,46
	90	70	70		0,11	0,15	0,19	0,25	0,32	0,40
	80	70	70		0,12	0,16	0,21	0,27	0,35	0,43
	70	65	65		0,11	0,13	0,17	0,22	0,28	0,34
	25	25	25		0,04	0,06	0,07	0,09	0,12	0,14

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

MEGA-Drill-Inox | M1703-M1808

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
M	M1	M1.1 Stainless steel, austenitic	< 700 N/mm ²	
		M1.2 Stainless steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
	M2	M2.1 Stainless cast steel, austenitic	< 700 N/mm ²	
	M3	M3.1 Stainless cast steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
	N4	N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
		N4.3 Plastic, foam		
S	S1	S1.1 Titanium, titanium alloy	< 400 N/mm ²	
		S2.1 Titanium, titanium alloy	< 1200 N/mm ²	
	S2	S2.2 Titanium, titanium alloy	> 1200 N/mm ²	
		S3.1 Nickel, non-alloyed and alloyed	< 900 N/mm ²	
	S3	S3.2 Nickel, non-alloyed and alloyed	> 900 N/mm ²	
		S4.1 Heat resistant super alloys, Ni, Co, and Fe based		
	S5	S5.1 Tungsten and molybdenum alloys		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3,0	4,5	6,5	9,5	14,0	20,0
	100	90	90		0,07	0,09	0,12	0,15	0,20	0,24
	90	75	75		0,09	0,12	0,15	0,19	0,25	0,30
	100	85	85		0,09	0,11	0,14	0,18	0,23	0,28
	70	60	60		0,07	0,09	0,12	0,15	0,19	0,22
	75	65	65		0,08	0,10	0,13	0,16	0,21	0,26
	60	55	55		0,07	0,08	0,11	0,14	0,17	0,21
	60	45	50		0,05	0,07	0,08	0,11	0,14	0,17
	100	85	85		0,09	0,11	0,14	0,18	0,23	0,28
	60	45	50		0,05	0,07	0,08	0,11	0,14	0,17
		35	35		0,06	0,08	0,10	0,14	0,17	0,21
	50	30	30		0,05	0,07	0,09	0,12	0,15	0,18
	55	35	35		0,06	0,08	0,10	0,14	0,17	0,21
	50	30	30		0,05	0,07	0,09	0,12	0,15	0,18
	120	85	85	85	0,12	0,17	0,23	0,31	0,41	0,50
	160	100	120	120	0,13	0,17	0,22	0,29	0,38	0,46
	100	75	75		0,11	0,15	0,19	0,25	0,32	0,40
	90	80	80		0,12	0,16	0,21	0,27	0,35	0,43
	80	70	70		0,11	0,13	0,17	0,22	0,28	0,34
	120	90			0,11	0,15	0,19	0,25	0,32	0,40
	200	160		120	0,12	0,17	0,23	0,31	0,41	0,50
	40	25			0,06	0,08	0,10	0,14	0,17	0,21
	30	20			0,05	0,07	0,09	0,12	0,15	0,18
	25	15			0,05	0,06	0,07	0,10	0,12	0,15
	20	15			0,04	0,05	0,06	0,08	0,10	0,12
	15	10			0,05	0,06	0,07	0,10	0,12	0,15
	15	10			0,04	0,05	0,06	0,08	0,10	0,12
	15	10			0,04	0,05	0,06	0,08	0,10	0,12

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

MEGA-Drill-Alu | M2705-M2812

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
	N4	N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
		N4.3 Plastic, foam		

MEGA-Drill-Inco | M9305

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
S	S1	S1.1 Titanium, titanium alloy	< 400 N/mm ²	
	S2	S2.1 Titanium, titanium alloy	< 1200 N/mm ²	
		S2.2 Titanium, titanium alloy	> 1200 N/mm ²	
	S3	S3.1 Nickel, non-alloyed and alloyed	< 900 N/mm ²	
		S3.2 Nickel, non-alloyed and alloyed	> 900 N/mm ²	
	S4	S4.1 Heat resistant super alloys, Ni, Co, and Fe based		
	S5	S5.1 Tungsten and molybdenum alloys		

MEGA-Drill-Hardened | M1600

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
H	H1	H1.1 Hardened steel/cast steel	45-55 HRC	
		H1.2 Hardened steel/cast steel	55-64 HRC	
		H1.3 Hardened steel/cast steel	64-70 HRC	
	H2	N2.3 Wear resistant castings/chilled cast iron, GJN		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3,0	4,5	6,5	9,5	14,0	20,0
	300	200	250		0,09	0,12	0,15	0,19	0,25	0,30
	250	180	200		0,11	0,15	0,19	0,25	0,32	0,40
	220	150	180		0,11	0,15	0,19	0,25	0,32	0,40
	180	120	150		0,11	0,15	0,19	0,25	0,32	0,40
	140	100			0,09	0,12	0,15	0,19	0,25	0,30
	200	160		120	0,10	0,14	0,18	0,25	0,32	0,40

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3	4,5	6,5	9,5	14,0	20
	40	25			0,06	0,08	0,10	0,14	0,17	0,21
	30	20			0,05	0,07	0,09	0,12	0,15	0,18
	25	15			0,05	0,06	0,07	0,10	0,12	0,15
	20	15			0,04	0,05	0,06	0,08	0,10	0,12
	15	10			0,05	0,06	0,07	0,10	0,12	0,15
	15	10			0,04	0,05	0,06	0,08	0,10	0,12
	15	10			0,04	0,05	0,06	0,08	0,10	0,12

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	2,6	3,7	5,3	7,7	11,1	16,0
	30	30	30		0,05	0,06	0,08	0,10	0,13	0,16
		20	20		0,03	0,04	0,05	0,06	0,07	0,09
		30	30		0,03	0,04	0,05	0,07	0,09	0,11

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

MEGA-SMART-Drill | M1905-M1912

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
M	M1	M1.1 Stainless steel, austenitic	< 700 N/mm ²	
		M1.2 Stainless steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
	M2	M2.1 Stainless cast steel, austenitic	< 700 N/mm ²	
	M3	M3.1 Stainless cast steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
	N4	N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
		N4.3 Plastic, foam		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	1,0	1,2	1,6	1,9	2,4	3,0
	80	70	70		0,05	0,06	0,06	0,07	0,08	0,09
	70	60	60		0,07	0,07	0,08	0,09	0,10	0,11
	80	70	70		0,06	0,07	0,08	0,08	0,10	0,11
	55	50	50		0,06	0,06	0,07	0,07	0,08	0,09
	60	50	50		0,06	0,06	0,07	0,07	0,08	0,10
	50	45	45		0,05	0,06	0,06	0,07	0,07	0,08
	50	35	40		0,04	0,04	0,05	0,05	0,06	0,06
	80	70	70		0,06	0,07	0,08	0,08	0,10	0,11
	50	35	40		0,04	0,04	0,05	0,05	0,06	0,06
		30	30		0,04	0,04	0,05	0,05	0,06	0,06
	40	25	25		0,03	0,04	0,04	0,04	0,05	0,05
	45	30	30		0,04	0,04	0,05	0,05	0,06	0,06
	40	25	25		0,03	0,04	0,04	0,04	0,05	0,05
	95	70	70	70	0,06	0,07	0,08	0,09	0,10	0,12
	130	80	95	95	0,07	0,07	0,08	0,09	0,11	0,13
	80	60	60		0,06	0,07	0,08	0,09	0,10	0,11
	70	65	65		0,07	0,08	0,08	0,09	0,11	0,12
	65	55	55		0,06	0,07	0,08	0,08	0,09	0,11
	240	160	200		0,05	0,06	0,06	0,07	0,08	0,09
	200	145	160		0,06	0,07	0,08	0,09	0,10	0,11
	175	120	145		0,06	0,07	0,08	0,09	0,10	0,11
	145	95	120		0,06	0,07	0,08	0,09	0,10	0,11
	110	80			0,05	0,06	0,06	0,07	0,08	0,09
	95	70			0,06	0,07	0,08	0,09	0,10	0,11
	160	130		95	0,06	0,07	0,08	0,09	0,10	0,12

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

MEGA-Deep-Drill I M2115-M2140

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	

MEGA-Deep-Drill-Alu I M2815-M2840

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
	N4	N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
		N4.3 Plastic, foam		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3,0	4,0	5,5	7,5	10,5	16,0
	90	80	80		0,09	0,11	0,13	0,16	0,21	0,27
	80	70	70		0,11	0,14	0,17	0,21	0,26	0,33
	90	75	75		0,11	0,13	0,16	0,19	0,24	0,32
	65	55	55		0,09	0,11	0,13	0,16	0,20	0,25
	70	60	60		0,10	0,11	0,14	0,17	0,22	0,29
	55	50	50		0,08	0,10	0,12	0,15	0,18	0,23
	55	40	45		0,06	0,08	0,09	0,12	0,14	0,19
	90	75	75		0,11	0,13	0,16	0,19	0,24	0,32
	55	40	45		0,06	0,08	0,09	0,12	0,14	0,19
	110	75	75	75	0,15	0,19	0,24	0,31	0,40	0,53
	145	90	110	110	0,15	0,18	0,23	0,29	0,37	0,49
	90	70	70		0,14	0,16	0,20	0,25	0,32	0,42
	80	70	70		0,15	0,18	0,22	0,27	0,35	0,45
	70	65	65		0,13	0,15	0,18	0,22	0,28	0,36

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3,0	4,0	5,5	7,5	10,5	16,0
	300	200	250		0,11	0,13	0,16	0,20	0,25	0,32
	250	180	200		0,14	0,16	0,20	0,25	0,32	0,42
	220	150	180		0,14	0,16	0,20	0,25	0,32	0,42
	180	120	150		0,14	0,16	0,20	0,25	0,32	0,42
	140	100			0,09	0,11	0,13	0,16	0,21	0,27
	120	90			0,11	0,14	0,17	0,21	0,27	0,35
	200	160		120	0,15	0,19	0,24	0,31	0,40	0,53

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

MEGA-Drill-Composite-MD I M2925

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
	N4	N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
		N4.3 Plastic, foam		
C	C1	C1.1 Plastic matrix, aramid fibre reinforced plastic (AFK)		
		C1.2 Plastic matrix (thermosetting), CFRP/GFRP		
		C1.3 Plastic matrix (thermoplastic), CFRP/GFRP		
	C2	C2.1 Carbon matrix, carbon fibre reinforced (CFC)		
	C3	C3.1 Metal matrix (MMC)		
	C4	C4.1 Sandwich construction, honeycomb core of paper		
		C4.2 Sandwich construction, honeycomb core of aluminium		
		C4.3 Sandwich construction, honeycomb core of plastic and fibre composite materials		
		C4.4 Sandwich construction, core of rigid foam		
	C5	C5.1 Stack (hybrid structure) CFRP-aluminium		
		C5.2 Stack (hybrid structure) CFRP-titanium/stainless steel		

MEGA-Drill-Composite-UDX I M2915, M2935

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
C	C1	C1.1 Plastic matrix, aramid fibre reinforced plastic (AFK)		
		C1.2 Plastic matrix (thermosetting), CFRP/GFRP		
		C1.3 Plastic matrix (thermoplastic), CFRP/GFRP		
	C2	C2.1 Carbon matrix, carbon fibre reinforced (CFC)		
	C3	C3.1 Metal matrix (MMC)		
	C4	C4.1 Sandwich construction, honeycomb core of paper		
		C4.2 Sandwich construction, honeycomb core of aluminium		
		C4.3 Sandwich construction, honeycomb core of plastic and fibre composite materials		
		C4.4 Sandwich construction, core of rigid foam		
	C5	C5.1 Stack (hybrid structure) CFRP-aluminium		
		C5.2 Stack (hybrid structure) CFRP-titanium/stainless steel		

Cutting data recommendation for solid carbide drills

Feed and cutting speed

MEGA-Drill-Composite-MD-Micro I M1985

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
	N4	N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
		N4.3 Plastic, foam		
C	C1	C1.1 Plastic matrix, aramid fibre reinforced plastic (AFK)		
		C1.2 Plastic matrix (thermosetting), CFRP/GFRP		
		C1.3 Plastic matrix (thermoplastic), CFRP/GFRP		
	C2	C2.1 Carbon matrix, carbon fibre reinforced (CFC)		
	C3	C3.1 Metal matrix (MMC)		
	C4	C4.1 Sandwich construction, honeycomb core of paper		
		C4.2 Sandwich construction, honeycomb core of aluminium		
		C4.3 Sandwich construction, honeycomb core of plastic and fibre composite materials		
		C4.4 Sandwich construction, core of rigid foam		
	C5	C5.1 Stack (hybrid structure) CFRP-aluminium		
		C5.2 Stack (hybrid structure) CFRP-titanium/stainless steel		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	0,5 - 2,9	–	–	–	–	–
				75 - 150	0,05 - 0,1					
				75 - 150	0,05 - 0,2					
				75 - 150	0,05 - 0,1					
				75 - 200	0,05 - 0,4					
				75 - 150	0,05 - 0,1					
				75 - 150	0,05 - 0,1					
				75 - 150	0,05 - 0,1					
				75 - 150	0,05 - 0,1					
				75 - 150	0,05 - 0,1					
				75 - 150	0,05 - 0,1					
				75 - 150	0,05 - 0,1					

The cutting data recommendations shown, are guidelines.
The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

MEGA-Spike-Drill-Uni | M9535, M9538

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
M	M1	M1.1 Stainless steel, austenitic	< 700 N/mm ²	
		M1.2 Stainless steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
	M2	M2.1 Stainless cast steel, austenitic	< 700 N/mm ²	
	M3	M3.1 Stainless cast steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤ 7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
	N4	N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
		N4.3 Plastic, foam		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3,0	4,5	6,5	9,5	14,0	20,0
	100	90	90		0,25	0,30	0,36	0,43	0,51	0,60
	90	75	75		0,31	0,37	0,45	0,53	0,63	0,75
	100	85	85		0,30	0,35	0,42	0,50	0,60	0,71
	70	60	60		0,25	0,29	0,34	0,40	0,48	0,56
	75	65	65		0,26	0,32	0,38	0,45	0,54	0,64
	60	55	55		0,22	0,26	0,31	0,37	0,44	0,52
	60	45	50		0,18	0,21	0,25	0,30	0,35	0,42
	100	85	85		0,30	0,35	0,42	0,50	0,60	0,71
	60	45	50		0,18	0,21	0,25	0,30	0,35	0,42
		35	35		0,13	0,16	0,19	0,22	0,27	0,32
	50	30	30		0,11	0,13	0,16	0,19	0,23	0,27
	55	35	35		0,13	0,16	0,19	0,22	0,27	0,32
	50	30	30		0,11	0,13	0,16	0,19	0,23	0,27
	120	85	85	85	0,37	0,46	0,57	0,69	0,83	1,00
	160	100	120	120	0,36	0,44	0,53	0,64	0,77	0,92
	100	75	75		0,32	0,38	0,46	0,55	0,66	0,79
	60	40	50		0,17	0,20	0,24	0,28	0,33	0,39
	90	80	80		0,34	0,41	0,50	0,60	0,71	0,85
	80	70	70		0,29	0,34	0,40	0,48	0,57	0,67
	300	200	250		0,25	0,30	0,36	0,43	0,51	0,60
	250	180	200		0,32	0,38	0,46	0,55	0,66	0,79
	220	150	180		0,32	0,38	0,46	0,55	0,66	0,79
	180	120	150		0,32	0,38	0,46	0,55	0,66	0,79
	120	90			0,24	0,29	0,35	0,42	0,50	0,59
	200	160		120	0,37	0,46	0,57	0,69	0,83	1,00

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

MEGA-180°-Drill | M9183, M9185

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
M	M1	M1.1 Stainless steel, austenitic	< 700 N/mm ²	
		M1.2 Stainless steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
	M2	M2.1 Stainless cast steel, austenitic	< 700 N/mm ²	
	M3	M3.1 Stainless cast steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	

MEGA-180°-Drill-Alu | M9883, M9885

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤ 7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
	N4	N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
		N4.3 Plastic, foam		

Correction factors Kv for f [mm/rev] for spot drilling

Inclination workpiece surface	Kv	Kv
	3xD	5xD
15°	0,5	0,25
30°	0,4	not recommended
45°	0,25	not recommended

Application notes

- For spot drilling multiply feed f [mm/rev] with correction factor Kv
- Spot drilling with reduced feed until the tool is cutting at 0,25xD in the entire ø
- For inclined spot drilling: moving back with double feed f [mm/rev]
- After spot drilling with reduced feed (correction factor) drilling continues with feed f [mm/rev] based on the cutting data recommendation without any correction factor.
- For spot drilling on plane surfaces (inclination 0°) with M9185 / M9885, we recommend to use a pilot drill (M2103 / M2803)

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	ML	Air	3	4,5	6,5	9,5	14,0	20
	80	70	70		0,07	0,09	0,12	0,15	0,20	0,24
	70	60	60		0,09	0,12	0,15	0,19	0,25	0,30
	80	70	70		0,09	0,11	0,14	0,18	0,23	0,28
	55	50	50		0,07	0,09	0,12	0,15	0,19	0,22
	60	50	50		0,08	0,10	0,13	0,16	0,21	0,26
	50	45	45		0,07	0,08	0,11	0,14	0,17	0,21
	50	35	40		0,05	0,07	0,08	0,11	0,14	0,17
	80	70	70		0,09	0,11	0,14	0,18	0,23	0,28
	50	35	40		0,05	0,07	0,08	0,11	0,14	0,17
		30	30		0,05	0,07	0,08	0,11	0,14	0,17
	40	25	25		0,04	0,06	0,07	0,09	0,12	0,14
	45	30	30		0,05	0,07	0,08	0,11	0,14	0,17
	40	25	25		0,04	0,06	0,07	0,09	0,12	0,14
	95	70	70	70	0,10	0,14	0,18	0,25	0,32	0,40
	130	80	95	95	0,10	0,13	0,18	0,23	0,30	0,37
	80	60	60		0,09	0,12	0,15	0,20	0,26	0,32
	70	65	65		0,10	0,13	0,17	0,22	0,28	0,34
	65	55	55		0,08	0,11	0,14	0,17	0,22	0,27

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	ML	Air	3	4,5	6,5	9,5	14,0	20
	240	160	200		0,07	0,09	0,12	0,15	0,20	0,24
	200	145	160		0,09	0,12	0,15	0,20	0,26	0,32
	175	120	145		0,09	0,12	0,15	0,20	0,26	0,32
	145	95	120		0,09	0,12	0,15	0,20	0,26	0,32
	110	80			0,07	0,09	0,12	0,15	0,20	0,24
	95	70			0,09	0,12	0,15	0,20	0,26	0,32
	160	130		95	0,10	0,14	0,18	0,25	0,32	0,40

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

MEGA-Drill-Reamer | M2253-M2265

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
		N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
	N4	N4.3 Plastic, foam		

GIGA-Drill | M2195, M2198

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3	4,5	6,5	9,5	14,0	20
	80	70	70		0,11	0,13	0,14	0,15	0,17	0,19
	70	60	60		0,14	0,16	0,17	0,19	0,21	0,23
	80	70	70		0,13	0,15	0,16	0,18	0,20	0,22
	55	50	50		0,11	0,12	0,13	0,15	0,16	0,18
	60	50	50		0,12	0,13	0,15	0,16	0,18	0,20
	50	45	45		0,10	0,11	0,12	0,14	0,15	0,16
	50	35	40		0,08	0,09	0,10	0,11	0,12	0,13
	80	70	70		0,13	0,15	0,16	0,18	0,20	0,22
	50	35	40		0,08	0,09	0,10	0,11	0,12	0,13
	95	70	70	70	0,17	0,19	0,22	0,25	0,27	0,30
	130	80	95	95	0,16	0,19	0,20	0,23	0,26	0,28
	80	60	60		0,14	0,16	0,18	0,20	0,22	0,24
	70	65	65		0,16	0,17	0,19	0,22	0,24	0,26
	65	55	55		0,13	0,14	0,16	0,17	0,19	0,21
	240	160	200		0,11	0,13	0,14	0,15	0,17	0,19
	200	145	160		0,14	0,16	0,18	0,20	0,22	0,24
	175	120	145		0,14	0,16	0,18	0,20	0,22	0,24
	145	95	120		0,14	0,16	0,18	0,20	0,22	0,24
	160	130		95	0,17	0,19	0,22	0,25	0,27	0,30

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3	4,5	6,5	9,5	14,0	20
	110	75	75	75	0,34	0,41	0,49	0,58	0,69	0,80
	145	90	110	110	0,33	0,39	0,46	0,54	0,64	0,74
	225	160	180		0,29	0,34	0,40	0,47	0,55	0,63
	200	135	160		0,29	0,34	0,40	0,47	0,55	0,63
	160	110	135		0,29	0,34	0,40	0,47	0,55	0,63
	200	160		120	0,34	0,41	0,49	0,58	0,69	0,80

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

MEGA-Quadro-Drill | M2075-M2182

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
H	H1	H1.1 Hardened steel/cast steel	45-55 HRC	
		H1.2 Hardened steel/cast steel	55-64 HRC	
		H1.3 Hardened steel/cast steel	64-70 HRC	
	H2	N2.3 Wear resistant castings/chilled cast iron, GJN		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3	4,5	6,5	9,5	14,0	20
	100	90	90		0,09	0,12	0,15	0,19	0,25	0,30
	90	75	75		0,11	0,15	0,19	0,24	0,31	0,38
	100	85	85		0,11	0,14	0,18	0,23	0,29	0,36
	70	60	60		0,09	0,12	0,14	0,18	0,23	0,28
	75	65	65		0,10	0,12	0,16	0,20	0,26	0,32
	60	55	55		0,08	0,10	0,13	0,17	0,22	0,26
	60	45	50		0,06	0,08	0,10	0,14	0,17	0,21
	100	85	85		0,11	0,14	0,18	0,23	0,29	0,36
	60	45	50		0,06	0,08	0,10	0,14	0,17	0,21
	120	85	85	85	0,12	0,17	0,23	0,31	0,41	0,50
	160	100	120	120	0,13	0,17	0,22	0,29	0,38	0,46
	100	75	75		0,11	0,15	0,19	0,25	0,32	0,40
	90	80	80		0,12	0,16	0,21	0,27	0,35	0,43
	80	70	70		0,11	0,13	0,17	0,22	0,28	0,34
	25	25	25		0,04	0,06	0,07	0,09	0,12	0,14

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

MEGA-Speed-Drill-Steel | M9103-M9108

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
H	H1	H1.1 Hardened steel/cast steel	45-55 HRC	
		H1.2 Hardened steel/cast steel	55-64 HRC	
		H1.3 Hardened steel/cast steel	64-70 HRC	
	H2	N2.3 Wear resistant castings/chilled cast iron, GJN		

MEGA-Speed-Drill-Iron | M9505

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	

MEGA-Speed-Drill-Titan | M9205

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
S	S1	S1.1 Titanium, titanium alloy	< 400 N/mm ²	
		S2.1 Titanium, titanium alloy	< 1200 N/mm ²	
	S2	S2.2 Titanium, titanium alloy	> 1200 N/mm ²	
		S3.1 Nickel, non-alloyed and alloyed	< 900 N/mm ²	
	S3	S3.2 Nickel, non-alloyed and alloyed	> 900 N/mm ²	
		S4.1 Heat resistant super alloys, Ni, Co, and Fe based		
	S5	S5.1 Tungsten and molybdenum alloys		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3	4,5	6,5	9,5	14,0	20
	170	155	155		0,11	0,14	0,18	0,23	0,30	0,36
	155	130	130		0,14	0,18	0,22	0,29	0,37	0,45
	170	145	145		0,13	0,17	0,21	0,27	0,35	0,43
	120	100	100		0,11	0,14	0,17	0,22	0,28	0,34
	130	110	110		0,11	0,15	0,19	0,25	0,32	0,38
	100	95	95		0,10	0,13	0,16	0,20	0,26	0,31
	100	75	85		0,08	0,10	0,13	0,16	0,21	0,25
	170	145	145		0,13	0,17	0,21	0,27	0,35	0,43
	100	75	85		0,08	0,10	0,13	0,16	0,21	0,25
	150	105	105	105	0,14	0,19	0,25	0,34	0,45	0,55
	200	125	150	150	0,14	0,18	0,24	0,32	0,41	0,51
	125	95	95		0,12	0,16	0,21	0,28	0,36	0,43
	115	100	100		0,13	0,18	0,23	0,30	0,38	0,47
	100	90	90		0,12	0,15	0,19	0,24	0,31	0,37
	35	35	35		0,04	0,06	0,07	0,09	0,12	0,14

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3	4,5	6,5	9,5	14,0	20
	170	120	120	120	0,16	0,21	0,29	0,38	0,51	0,63
	225	140	170	170	0,16	0,21	0,27	0,36	0,47	0,58
	140	105	105		0,14	0,19	0,24	0,31	0,41	0,49
	85	55	70		0,10	0,13	0,17	0,21	0,27	0,33
	125	110	110		0,15	0,20	0,26	0,34	0,44	0,53
	110	100	100		0,13	0,17	0,21	0,27	0,35	0,42

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air						
	50	30			0,06	0,07	0,09	0,12	0,16	0,19
	40	25			0,05	0,06	0,08	0,10	0,13	0,16
	30	20			0,04	0,05	0,07	0,09	0,11	0,14
	20	15			0,03	0,04	0,05	0,07	0,09	0,11
	15	10			0,04	0,05	0,07	0,09	0,11	0,14
	15	10			0,03	0,04	0,05	0,07	0,09	0,11
	15	10			0,03	0,04	0,05	0,07	0,09	0,11

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

MEGA-Speed-Drill-Inox | M9405

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
M	M1	M1.1 Stainless steel, austenitic	< 700 N/mm ²	
		M1.2 Stainless steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
	M2	M2.1 Stainless cast steel, austenitic	< 700 N/mm ²	
	M3	M3.1 Stainless cast steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
	N4	N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
		N4.3 Plastic, foam		
S	S1	S1.1 Titanium, titanium alloy	< 400 N/mm ²	
		S2.1 Titanium, titanium alloy	< 1200 N/mm ²	
	S2	S2.2 Titanium, titanium alloy	> 1200 N/mm ²	
	S3	S3.1 Nickel, non-alloyed and alloyed	< 900 N/mm ²	
		S3.2 Nickel, non-alloyed and alloyed	> 900 N/mm ²	
	S4	S4.1 Heat resistant super alloys, Ni, Co, and Fe based		
	S5	S5.1 Tungsten and molybdenum alloys		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	3	4,5	6,5	9,5	14,0	20
	150	135	135		0,09	0,12	0,15	0,19	0,25	0,30
	135	115	115		0,11	0,15	0,19	0,24	0,31	0,38
	150	130	130		0,11	0,14	0,18	0,23	0,29	0,36
	105	90	90		0,09	0,12	0,14	0,18	0,23	0,28
	115	100	100		0,10	0,12	0,16	0,20	0,26	0,32
	90	85	85		0,08	0,10	0,13	0,17	0,22	0,26
	70	55	60		0,06	0,08	0,10	0,14	0,17	0,21
	150	130	130		0,11	0,14	0,18	0,23	0,29	0,36
	70	55	60		0,06	0,08	0,10	0,14	0,17	0,21
		50	50		0,08	0,10	0,13	0,17	0,22	0,26
	75	45	45		0,07	0,09	0,11	0,14	0,19	0,23
	80	50	50		0,08	0,10	0,13	0,17	0,22	0,26
	75	45	45		0,07	0,09	0,11	0,14	0,19	0,23
	150	105	105	105	0,12	0,17	0,23	0,31	0,41	0,50
	200	125	150	150	0,13	0,17	0,22	0,29	0,38	0,46
	125	95	95		0,11	0,15	0,19	0,25	0,32	0,40
	115	100	100		0,12	0,16	0,21	0,27	0,35	0,43
	100	90	90		0,11	0,13	0,17	0,22	0,28	0,34
	145	110			0,11	0,15	0,19	0,25	0,32	0,40
	50	30			0,08	0,10	0,13	0,16	0,21	0,25
	35	25			0,07	0,08	0,11	0,14	0,18	0,22
	30	20			0,05	0,07	0,09	0,12	0,15	0,18
	25	20			0,04	0,06	0,07	0,09	0,12	0,14
	20	10			0,05	0,07	0,09	0,12	0,15	0,18
	20	10			0,04	0,06	0,07	0,09	0,12	0,14
	20	10			0,04	0,06	0,07	0,09	0,12	0,14

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for solid carbide drills

Feed and cutting speed

Mono-Drill-Plastic | M2955

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
	N4	N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
		N4.3 Plastic, foam		
C	C1	C1.1 Plastic matrix, aramid fibre reinforced plastic (AFK)		
		C1.2 Plastic matrix (thermosetting), CFRP/GFRP		
		C1.3 Plastic matrix (thermoplastic), CFRP/GFRP		
	C2	C2.1 Carbon matrix, carbon fibre reinforced (CFC)		
	C3	C3.1 Metal matrix (MMC)		
	C4	C4.1 Sandwich construction, honeycomb core of paper		
		C4.2 Sandwich construction, honeycomb core of aluminium		
		C4.3 Sandwich construction, honeycomb core of plastic and fibre composite materials		
		C4.4 Sandwich construction, core of rigid foam		
	C5	C5.1 Stack (hybrid structure) CFRP-aluminium		
		C5.2 Stack (hybrid structure) CFRP-titanium/stainless steel		

Cutting data recommendation for replaceable head drills

Feed and cutting speed

TTD - Type 01 - Uni

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	

TTD - Type 02 - Inox

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
P	P1	P1.1 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm ²	
		P1.2 Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm ²	
	P2	P2.1 Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm ²	
		P2.2 Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm ²	
	P3	P3.1 Tool, roller bearing, spring and high speed steel	< 900 N/mm ²	
		P3.2 Tool, roller bearing, spring and high speed steel	< 1500 N/mm ²	
	P4	P4.1 Stainless steel, ferritic and martensitic		
	P5	P5.1 Cast steel		
	P6	P6.1 Stainless cast steel, ferritic and martensitic		
M	M1	M1.1 Stainless steel, austenitic	< 700 N/mm ²	
		M1.2 Stainless steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
	M2	M2.1 Stainless cast steel, austenitic	< 700 N/mm ²	
	M3	M3.1 Stainless cast steel, ferritic/austenitic (Duplex)	< 1000 N/mm ²	
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	
S	S1	S1.1 Titanium, titanium alloy	< 400 N/mm ²	
		S2.1 Titanium, titanium alloy	< 1200 N/mm ²	
	S2	S2.2 Titanium, titanium alloy	> 1200 N/mm ²	
	S3	S3.1 Nickel, non-alloyed and alloyed	< 900 N/mm ²	
		S3.2 Nickel, non-alloyed and alloyed	> 900 N/mm ²	
	S4	S4.1 Heat resistant super alloys, Ni, Co, and Fe based		
	S5	S5.1 Tungsten and molybdenum alloys		

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	12,0	15,5	19,5	25,0	32,0	40,0
	100	90	90		0,23	0,26	0,30	0,33	0,33	0,30
	90	75	75		0,28	0,33	0,37	0,41	0,42	0,38
	100	85	85		0,27	0,31	0,35	0,39	0,40	0,37
	70	60	60		0,21	0,25	0,28	0,30	0,31	0,28
	75	65	65		0,24	0,28	0,32	0,35	0,36	0,33
	60	55	55		0,20	0,23	0,26	0,28	0,29	0,26
	60	45	50		0,16	0,18	0,21	0,23	0,23	0,21
	100	85	85		0,27	0,31	0,35	0,39	0,40	0,37
	60	45	50		0,16	0,18	0,21	0,23	0,23	0,21
	95	70	70	70	0,33	0,39	0,44	0,49	0,50	0,46
	130	80	95	95	0,31	0,36	0,41	0,45	0,46	0,42
	80	60	60		0,26	0,31	0,35	0,39	0,40	0,36

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	MQL	Air	12,0	15,5	19,5	25,0	32,0	40,0
	100	90	90		0,20	0,24	0,27	0,29	0,30	0,27
	90	75	75		0,25	0,30	0,33	0,37	0,38	0,34
	100	85	85		0,24	0,28	0,32	0,35	0,36	0,33
	70	60	60		0,19	0,22	0,25	0,27	0,28	0,26
	75	65	65		0,22	0,25	0,28	0,31	0,32	0,30
	60	55	55		0,18	0,21	0,23	0,25	0,26	0,24
	60	45	50		0,14	0,17	0,19	0,21	0,21	0,19
	100	85	85		0,24	0,28	0,32	0,35	0,36	0,33
	60	45	50		0,14	0,17	0,19	0,21	0,21	0,19
	55	35	35		0,18	0,21	0,24	0,26	0,27	0,24
	50	30	30		0,16	0,18	0,20	0,22	0,23	0,21
	55	35	35		0,18	0,21	0,24	0,26	0,27	0,24
	50	30	30		0,16	0,18	0,20	0,22	0,23	0,21
	95	70	70	70	0,33	0,39	0,44	0,49	0,50	0,46
	130	80	95	95	0,31	0,36	0,41	0,45	0,46	0,42
	80	60	60		0,26	0,31	0,35	0,39	0,40	0,36
	50	30	40		0,18	0,21	0,23	0,25	0,26	0,24
	70	65	65		0,28	0,33	0,38	0,42	0,43	0,39
	65	55	55		0,23	0,27	0,30	0,33	0,34	0,31
	40	25			0,16	0,18	0,21	0,23	0,23	0,21
	30	20			0,14	0,16	0,18	0,20	0,20	0,18
	25	15			0,11	0,13	0,15	0,16	0,17	0,15
	20	15			0,09	0,11	0,12	0,13	0,13	0,12
	15	10			0,11	0,13	0,15	0,16	0,17	0,15
	15	10			0,09	0,11	0,12	0,13	0,13	0,12
	15	10			0,09	0,11	0,12	0,13	0,13	0,12

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

Cutting data recommendation for replaceable head drills

Feed and cutting speed

TTD - Type 03 - Alu

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
N	N1	N1.1 Aluminium, non-alloyed and alloyed <3% Si		
		N1.2 Aluminium, alloyed ≤7% Si		
		N1.3 Aluminium, alloyed > 7-12% Si		
		N1.4 Aluminium, alloyed > 12% Si		
	N2	N2.1 Copper, non-alloyed and low alloyed	< 300 N/mm ²	
		N2.2 Copper, alloyed	> 300 N/mm ²	
		N2.3 Brass, bronze, gun metal	< 1200 N/mm ²	
	N3	N3.1 Graphite		
	N4	N4.1 Plastic, thermoplastic		
		N4.2 Plastic, thermosetting plastic (duroplast)		
		N4.3 Plastic, foam		

TTD - Type 04 - Steel

MMG*			Material	Tensile strength/Hardness [N/mm²] [HRC]	
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm²	
		P1.2	Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm²	
	P2	P2.1	Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm²	
		P2.2	Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm²	
	P3	P3.1	Tool, roller bearing, spring and high speed steel	< 900 N/mm²	
		P3.2	Tool, roller bearing, spring and high speed steel	< 1500 N/mm²	
	P4	P4.1	Stainless steel, ferritic and martensitic		
	P5	P5.1	Cast steel		
	P6	P6.1	Stainless cast steel, ferritic and martensitic		
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm²	
		K2.1	Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm²	
	K2	K2.2	Cast iron with spheroidal graphite , EN-GJS	500-800 N/mm²	
		K2.3	Cast iron with spheroidal graphite , EN-GJS	> 800 N/mm²	
	K3	K3.1	Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm²	
		K3.2	Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm²	

TTD - Type 05 - Iron

MMG*		Material	Tensile strength/Hardness [N/mm ²] [HRC]	
K	K1	K1.1 Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm ²	
		K2.1 Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm ²	
	K2	K2.2 Cast iron with spheroidal graphite, EN-GJS	500-800 N/mm ²	
		K2.3 Cast iron with spheroidal graphite, EN-GJS	> 800 N/mm ²	
	K3	K3.1 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm ²	
		K3.2 Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm ²	

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	ML	Air	12,0	15,5	19,5	25,0	32,0	40,0
	300	200	250		0,23	0,26	0,30	0,33	0,33	0,30
	250	180	200		0,29	0,35	0,39	0,43	0,44	0,40
	220	150	180		0,29	0,35	0,39	0,43	0,44	0,40
	180	120	150		0,29	0,35	0,39	0,43	0,44	0,40
	140	100			0,23	0,26	0,30	0,33	0,33	0,30
	120	90			0,29	0,35	0,39	0,43	0,44	0,40
	200	160	160	120	0,37	0,43	0,49	0,55	0,56	0,51

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	ML	Air	12,0	15,5	19,5	25,0	32,0	40,0
	110	100	100		0,26	0,30	0,34	0,37	0,38	0,35
	100	85	85		0,32	0,38	0,43	0,47	0,48	0,44
	110	95	95		0,31	0,36	0,40	0,44	0,46	0,42
	75	65	65		0,24	0,28	0,32	0,35	0,36	0,33
	85	70	70		0,27	0,32	0,36	0,40	0,41	0,38
	65	60	60		0,23	0,26	0,30	0,32	0,33	0,30
	65	50	55		0,18	0,21	0,24	0,26	0,27	0,24
	110	95	95		0,31	0,36	0,40	0,44	0,46	0,42
	65	50	55		0,18	0,21	0,24	0,26	0,27	0,24
	110	75	75	75	0,37	0,43	0,49	0,55	0,56	0,51
	145	90	110	110	0,34	0,40	0,45	0,50	0,51	0,47
	90	70	70		0,29	0,35	0,39	0,43	0,44	0,40
	55	35	45		0,20	0,23	0,26	0,28	0,29	0,26
	80	70	70		0,32	0,37	0,42	0,46	0,47	0,43
	70	65	65		0,25	0,29	0,33	0,37	0,38	0,35

	Cutting speed v_c [m/min]				Feed f [mm] with drill diameter					
	Internal cooling	External cooling	ML	Air	12,0	15,5	19,5	25,0	32,0	40,0
	120	85	85	85	0,35	0,44	0,53	0,62	0,67	0,61
	160	100	120	120	0,33	0,41	0,49	0,57	0,62	0,56
	100	75	75		0,29	0,35	0,42	0,49	0,53	0,48
	60	40	50		0,20	0,24	0,28	0,32	0,35	0,32
	90	80	80		0,31	0,38	0,45	0,53	0,57	0,52
	80	70	70		0,25	0,30	0,36	0,42	0,45	0,42

The cutting data recommendations shown, are guidelines.

The best data for the machining task in question should be calculated during trials or during the machining operation.

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Pictograms

1

Design

>

 Monolithic

 Modular TTS

2

Product class

>

 **Basic Line:**
Universal tools, broad application area,
low procurement costs

 **Expert Line:**
Specialist tools for selected applications,
maximum precision and productivity

 **Performance Line:**
High-performance tools, broad application area,
high productivity in series production manufacturing

3

Material suitability

>

 Highly suitable

 Suitable in some situations

Example standard material suitability table

P	1	2	3	4	5	6	M	1	2	3	K	1	2	3	N	1	2	3	4	S	1	2	3	4	5	H	1	2

Example material suitability table for non-ferrous metals and lightweight materials

N	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	4.1	4.2	4.3	C	1.1	1.2	1.3	2.1	3.1	4.1	4.2	4.3	4.4	5.1	5.2

4

Characteristics

>

 Maximum drilling depth

 Drilling into the solid

 Interrupted cut

 Inclined bore entrances

 Inclined bore outlets

 Flat 180° bottom of the bore

 Achievable bore tolerance

 Cylindrical shank in accordance with DIN 6535

 Cylindrical shank in accordance with DIN 6535

 Cylindrical shank in accordance with DIN 6535

 Internal cooling

 External cooling

Note:
On request we would be pleased to provide you with information on prices and availability for the products in this catalogue.

MILLER machining groups

The MILLER machining groups make it possible to provide precise information on the suitability of a tool for certain workpiece materials. Crucial for the categorisation of the groups is the machinability in relation to the cutting data (cutting speed and feed) for a material. It is necessary to sub-divide certain workpiece material groups based on the strength/hardness of the related workpiece material.

Machining group			Material	Strength - Hardness [N/mm² - HRC]	Frequently machined workpiece materials
P	P1	P1.1	Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 700 N/mm²	1.0122 (S235/St 37), 1.0401 (C15), 1.0503 (C45), 1.0570 (S355/St 52), 1.1213 (C153)
		P1.2	Structural, free-cutting, case hardened and heat-treated steel, non-alloyed	< 1200 N/mm²	1.1249 (C70)
	P2	P2.1	Nitrated, case hardened and heat-treated steel, alloyed	< 900 N/mm²	1.7131 (16MnCr5)
		P2.2	Nitrated, case hardened and heat-treated steel, alloyed	< 1400 N/mm²	1.7227 (42CrMoS4)
	P3	P3.1	Tool, roller bearing, spring and high speed steel	< 900 N/mm²	1.2343 (X38CrMoV5-1)
		P3.2	Tool, roller bearing, spring and high speed steel	< 1500 N/mm²	1.3505 (100Cr6)
	P4	P4.1	Stainless steel, ferritic and martensitic		1.4510 (X3CrTi17), 1.4589 (X5CrNiMoTi15-2)
	P5	P5.1	Cast steel		1.7231 (G42CrMo4)
M	M1	M1.1	Stainless steel, austenitic	< 700 N/mm²	1.4301 (V2A), 1.4571 (V4A)
		M1.2	Stainless steel, ferritic/austenitic (Duplex)	< 1000 N/mm²	1.4362 (Alloy 2304), 1.4501, 1.4662 (LDX 2404)
	M2	M2.1	Stainless cast steel, austenitic	< 700 N/mm²	
	M3	M3.1	Stainless cast steel, ferritic/austenitic (Duplex)	< 1000 N/mm²	
K	K1	K1.1	Cast iron with lamellar graphite (grey cast iron), EN-GJL	< 300 N/mm²	GJL-250 (GG-25), GJL-260 (GG-26 Cr)
		K2.1	Cast iron with spheroidal graphite, EN-GJS	< 500 N/mm²	GJS-400 (GGG-40), GJS-450 (GGG-45)
	K2	K2.2	Cast iron with spheroidal graphite , EN-GJS	500-800 N/mm²	GJS-600 (GGG-60), GJS-800-2 (GGG-80), GJS-800-8 (ADI 800)
		K2.3	Cast iron with spheroidal graphite , EN-GJS	> 800 N/mm²	GJS-900-2 (GGG-90), GJS-1000-5 (ADI 1000), GJS-1200-2 (ADI 1200), GJS-1400-1 (ADI 1400)
	K3	K3.1	Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	< 500 N/mm²	GJV-300, GJV-400, GJMW-400-5 (GTW-40)
		K3.2	Cast iron with vermicular graphite, EN-GJV; Malleable cast iron, GJM	> 500 N/mm²	GJV-500, GJV-700
N	N1	N1.1	Aluminium, non-alloyed and alloyed <3% Si		Alloy 2024, Alloy 7075, A199
		N1.2	Aluminium, alloyed ≤ 7% Si		AlSi7
		N1.3	Aluminium, alloyed > 7-12% Si		AlSi9, AlSi9Cu
		N1.4	Aluminium, alloyed > 12% Si		AlSi12, AlSi17
	N2	N2.1	Copper, non-alloyed and low alloyed	< 300 N/mm²	SE-Cu
		N2.2	Copper, alloyed	> 300 N/mm²	CuSn6
		N2.3	Brass, bronze, gun metal	< 1200 N/mm²	CuZn33, CuAl9Mn3
	N3	N3.1	Graphite		
	N4	N4.1	Plastic, thermoplastic		PA, PE, PC, PS, PVC, PP, PTFE, POM, PMMA
		N4.2	Plastic, thermosetting plastic (duroplast)		PU, PF, EP, UP, VE, CR
		N4.3	Plastic, foam		EPS, PUR, PVC-E, PS-E, PP-E
C	C1	C1.1	Plastic matrix, aramid fibre reinforced plastic		Nomex, Kevlar, Twaron, KOREX
		C1.2	Plastic matrix (thermosetting), CFRP/GFRP		IMS, HTA
		C1.3	Plastic matrix (thermoplastic), CFRP/GFRP		GMT-PP, PEEK
	C2	C2.1	Carbon matrix, carbon fibre reinforced (CFC)		CF222, CF225, CF226, CF227, CF260
	C3	C3.1	Metal matrix (MMC)		CeramTec AO-403 (AlSi9MgMn-Al2O3), Al/Cu/Mg-SiO2/Al2O3/AlN/TiC/SiC/BN/TiB2
	C4	C4.1	Sandwich construction, honeycomb core of paper		
		C4.2	Sandwich construction, honeycomb core of aluminium		PLASCORE PAMG-XR1 5052, PCGA-XR1 3003, PAMG-XR1 5056, Micro-Cell (core = alloy 5052/5056)
		C4.3	Sandwich construction, honeycomb core of plastic and fibre composite materials		CORMASTER, TUBUS, KOREX, HFT-G, TPU, HFT, HRH (HRH-10, HRH-310, HRH-78, HRH-49, HRH-327), HDC-F
		C4.4	Sandwich construction, core of rigid foam		AIREX R63, AIREX C70, ROHACELL IG-F
	C5	C5.1	Stack (hybrid structure) CFRP-aluminium		IMS/HTA + Alloy 2024/6061/7075
		C5.2	Stack (hybrid structure) CFRP-titanium/stainless steel		IMS/HTA + TiAl6V4/AMS4905
S	S1	S1.1	Titanium, titanium alloy	< 400 N/mm²	
		S2.1	Titanium, titanium alloy	< 1200 N/mm²	TiAl6V4
	S2	S2.2	Titanium, titanium alloy	> 1200 N/mm²	
		S3.1	Nickel, non-alloyed and alloyed	< 900 N/mm²	1.3912 (Invar, Ni36)
	S3	S3.2	Nickel, non-alloyed and alloyed	> 900 N/mm²	
		S4.1	Heat resistant super alloys, Ni, Co, and Fe based		Hardox, Hastelloy, Incoloy, Inconel, NIMONIC, Stellite, Waspaloy
	S5	S5.1	Tungsten and molybdenum alloys		
H	H1	H1.1	Hardened steel/cast steel	45-55 HRC	
		H1.2	Hardened steel/cast steel	55-64 HRC	
		H1.3	Hardened steel/cast steel	64-70 HRC	
	H2	H2.1	Wear resistant castings/chilled cast iron, GJN		