

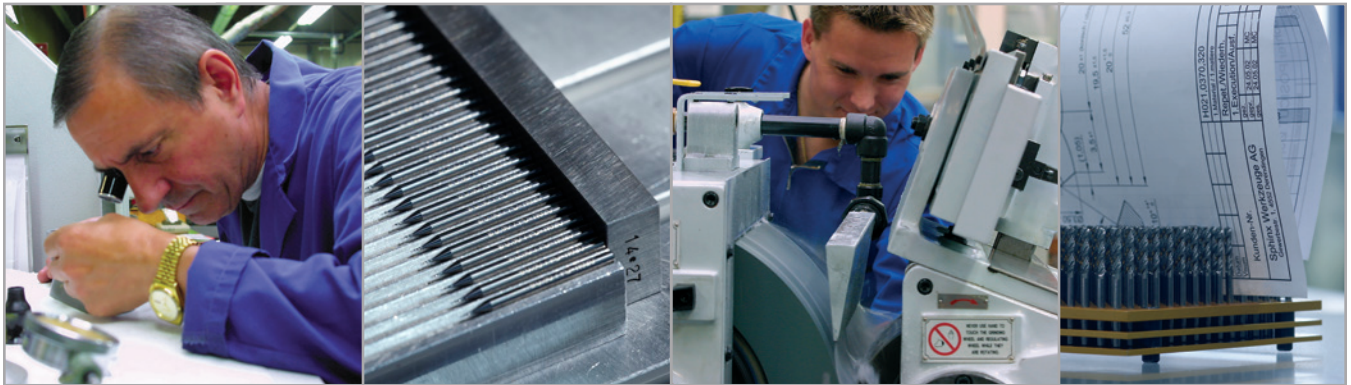


SPHINX HIGH PRECISION CUTTING TOOLS
VOL. 2

SPHINX+TOOLS

WHERE PRECISION SETS STANDARDS

Sphinx Tools Ltd. is a leading company for the production and sale of precision machining tools. Its strong international position today is a result of continuous growth, consistent reinvestment in the production plants and the personal dedication of the employees. Customer needs are viewed as the motivation of all innovations. That is why renowned industrial and medical companies rely on the quality and experience from Sphinx. Closeness to customers and solid knowledge allows Sphinx to solve complex tasks and offer what are often unique solutions. In doing so, Sphinx contributes substantially to the market success of well-known companies. The market is becoming ever more demanding, and meeting those demands is the daily challenge today and in the future.



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Micro Drills ($\phi \leq 3\text{mm}$)

Designed for maximum tool life, accuracy and process reliability in the smallest diameters. A wide variety of unique drill point geometries, flute lengths, and shank diameters are offered for use in most common and exotic workpiece materials including steel, stainless steel, titanium and aluminum. Sphinx micro drills are available in both fine-grained, high strength carbide and 8% cobalt high speed steel.

Features

- 15+ different standard article numbers
- 1,700 different standard micro drills included in this catalog
- Minimum diameter $\phi.03\text{mm}$, $\phi.01\text{mm}$ increments between sizes
- Standard diametrical tolerances as low as $0/-0.004\text{mm}$
- Utilization of modern coatings designed specifically for micro tools
- Ultra-fine flute surface finish
- 80xd maximum usable length **(50780)**
- Internal coolant for all Phoenix TC2 diameters **(52903-52916)**
- Standard products with $\phi 3\text{mm}$ reinforced shank for all sizes **(56033, 55652, 51200, 51201, 50621, 50622, 52903-52916)**
- Appropriate pilot or spotting tool for all micro drilling applications **(16004, 56005, 56030, 56033, 56036)**



Micro Tricut Drill Reamer (Art. 55652)

- Ideal tool for drill reaming steels, short chipping stainless steels, titanium and cast iron
- $\phi 3\text{mm}$ reinforced shank for all diameters
- Three flute geometry allows high feed rates
- Excellent self-centering capabilities for accurate hole location
- Fine flute surface finish for optimal chip flow
- Three distinct lands maximize guidance and produce hole tolerances ranging from H7-H9



Deep Hole Drill (Art. 50720, 50740, 50760, 50780)

- 20xd, 40xd, 60xd & 80xd for $\phi.20/.40-1.50\text{mm}$
- Solid carbide
- $\phi 3\text{mm}$ shank for all diameters
- External coolant
- Innovative AlCrN based coating intended specifically for micro tools







High Performance Drills

Reduce cost per hole with a reliable solution developed to optimize performance and efficiency in most common and exotic materials. Advanced drill geometries featuring innovative coatings and internal coolant are capable of reducing cycle time while increasing tool life in many applications. Maximize rigidity using one of seven different standard flute lengths, with specials available upon request.

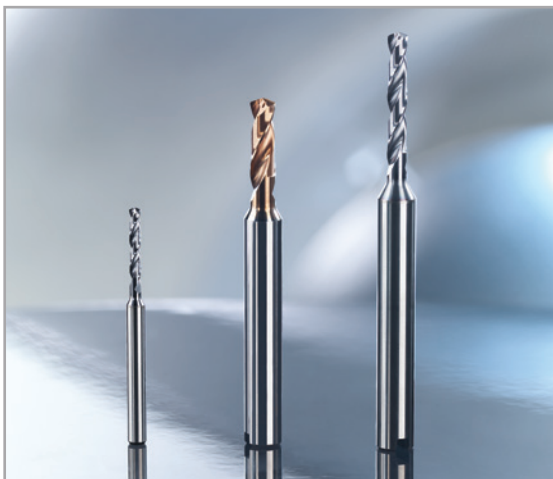
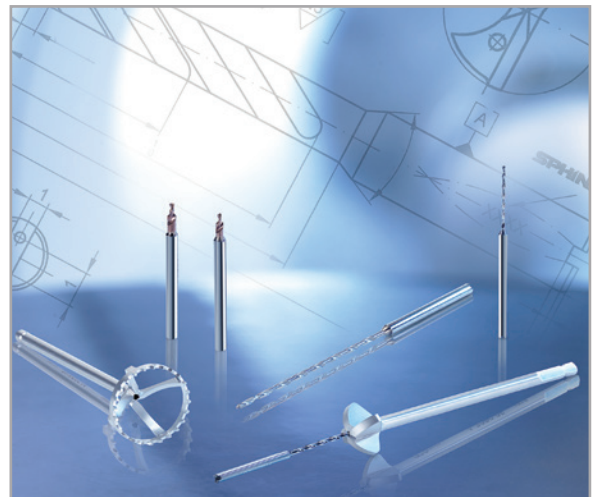
Features

- Developed for maximum performance in most common and exotic materials
- \varnothing 1.00-20.00mm
- Lengths 3-30xd
- Utilization of modern coatings suitable for most common and exotic materials
- Internal coolant for most sizes
- Most geometries can be reground & recoated to decrease cost per hole



Phoenix TC2 (Art. 52903, 52906, 52909, 52912, 52916, 52920, 52930)

- 3xd, 6xd, 9xd, 12xd, 16xd, 20xd & 30xd standard flute lengths
- Two margin modified Phoenix point geometry for optimal chip formation
- Polished flutes and brushed cutting edges
- Internal coolant for all sizes and lengths
- AlCrTiN coated for ultimate wear resistance
- 3xd, 6xd, 9xd, 12xd & 16xd for \varnothing 1.00-10.00mm
- 20xd & 30xd for \varnothing 3.00-10.00mm
- Pilot hole recommended for flute lengths >12xd
(Fastcut Art. 50950, Pilot/Step Art. 56036)



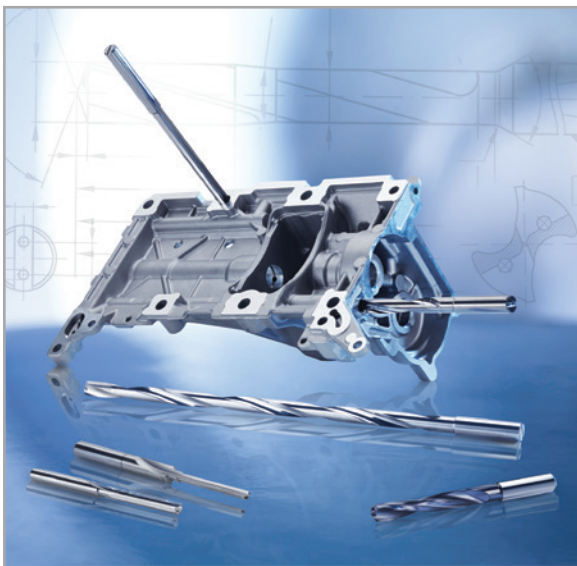
Phoenix (Art. 50938, 50940, 50941, 50942)

- Standard \varnothing .50-12.70mm based on article number
- 3xd, 6xd & 12xd standard flute lengths
- AlCrN and TiAlN coatings for increased wear resistance and tool life
- Internal coolant for most sizes
- Universal performance and high return on investment in most materials
- Unique split-point, four facet point geometry
- Strong cutting edge, low cutting forces
- Self-centering



Quadro Plus (Art. 52100, 52200)

- $\varnothing 3.00-20.00\text{mm}$
- 6xd & 12xd standard flute lengths
- Internal coolant for all sizes and lengths
- 0° helix angle
- Four facet, split-point geometry
- Self-centering
- Two cutting edges, four guiding edges
- Highest performing drill in short chipping aluminum and cast iron
- Straight flute design permits highest speeds and feeds by improving chip evacuation
- Best achievable size control of H7-H9



Quadro 15 Plus (Art. 52150)

- $\varnothing 4.00-20.00\text{mm}$
- 6xd standard flute length
- Internal coolant for all sizes
- Modified Quadro Plus geometry
- 15° helix angle
- TiAlN coating
- High performance in alloyed steels, steel castings, cast iron & non-ferrous metals
- Best achievable size control of H7-H9
- Extremely high tool life



Twist Drills

A high quality, low cost solution to applications in most common and exotic materials. Sphinx solid carbide twist drills separate themselves from the competition by incorporating a high level of process accuracy and repeatability into a basic drill geometry.

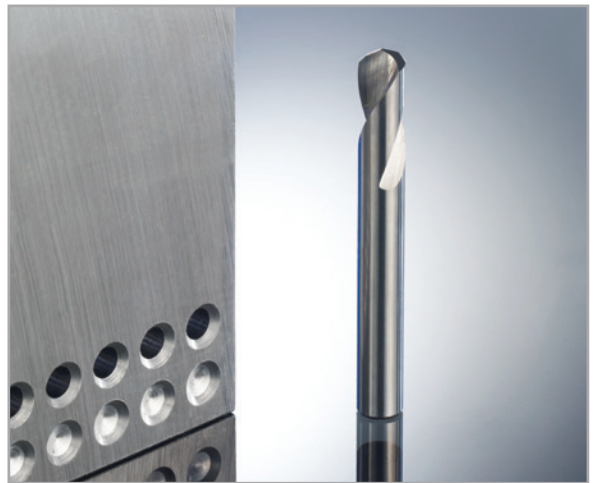
Features

- \varnothing .30-20.00mm
- 3-10xd standard flute lengths
- Four different spot drill geometries
- External coolant for all geometries and sizes



Spotting/Chamfering 142°/90° (Art. 50818)

- \varnothing 1.60-12.00mm
- Suitable for most common and exotic materials
- Self-centering, four facet point grind
- Capable of spotting at 142° and chamfering at 90° in one operation
- Optimize hole location and accuracy
- Improve tool life of succeeding drill



Fastcut (Art. 50950)

- DIN 6537
- \varnothing 3.00-20.00
- 3xd standard flute length
- TiAlN coating suitable for most materials, including hardened steel
- External coolant
- Positive m7 diametrical tolerance
- Suggested pilot drill for high performance drills $>\varnothing$ 3.00mm



Drill Reamers

Suggested cutting tool in situations where surface finish and hole tolerance are of the utmost importance. Sphinx drill reamers separate themselves from the competition using geometries with three distinct margins. Additional contact points optimize surface finish and allow achievable hole tolerances ranging from H7 to H9.

Features

- \varnothing .20-14.00mm
- 5-10xd standard flute lengths
- Three margins
- H7-H9 achievable hole tolerance
- Coated tools available upon request



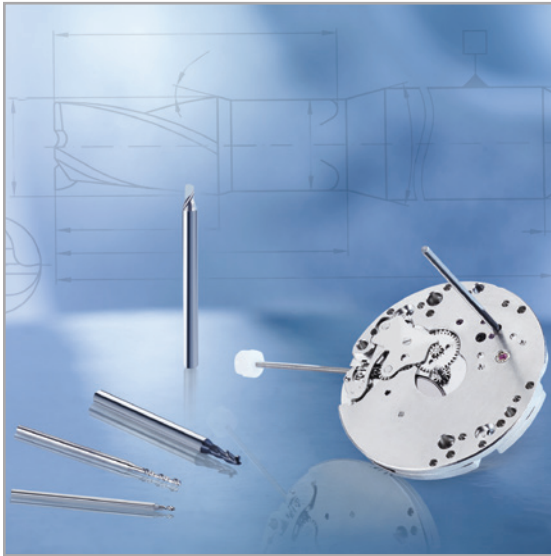
Asycut (Art. 50840)

- \varnothing 2.00-14.00mm
- DIN6539
- 3-5xd flute length
- Asymmetrical flute design
- Three margins



Tricut (Art. 55652, 55654, 55338)

- \varnothing .20-14.00mm
- Steel, titanium, short-chipping stainless steels, cast iron & sintered metals
- DIN 6539 & DIN 338
- 5-10xd flute length
- Three flutes
- Fine flute surface finish optimizing chip flow and feed rate
- Self-centering three margin geometry
- H7-H9 achievable hole tolerance
- Excellent hole surface finish
- Inch sizes available



Micro End Mills

Accurate cutting tools capable of increasing productivity and consistently exceeding application requirements. All micro cutting tools are made of solid carbide with a $\varnothing 3\text{mm}$ reinforced shank for added stability. The high quality edge preparation used on even the smallest diameters is necessary to create fine workpiece features.

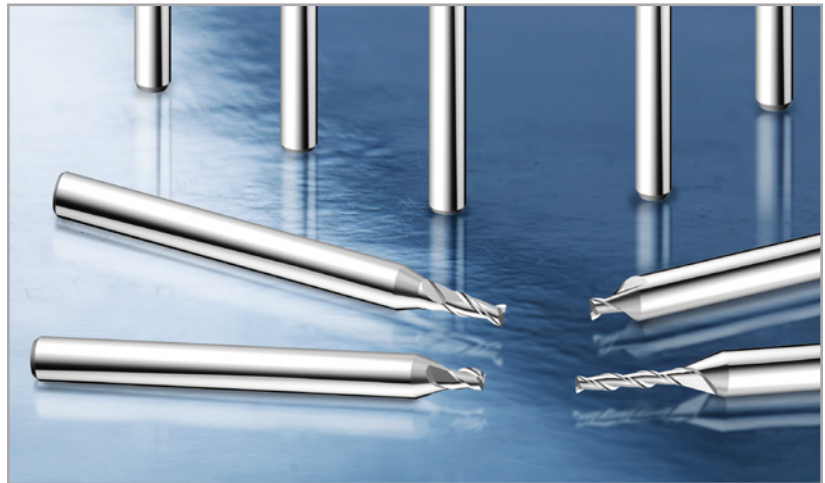
Features

- $\varnothing.02\text{-}3.00\text{mm}$
- $\varnothing 3\text{mm}$ shank for all sizes
- Useful in most common and exotic materials
- Standard coated tools available upon request



End Mill $\varnothing 3\text{mm}$ Shank 3xd (Art. 42000)

- $\varnothing.10\text{-}3.00\text{mm}$
- 3xd cutting length
- $\varnothing 3\text{mm}$ shank for all sizes
- Two flutes
- 30° helix



Engraving Mill – Flat/Radius Tip (Art. 70030-70090, 70130-70190)

- $\varnothing.02\text{-}.15\text{mm}$
- Flat and radius tip
- $30^\circ, 40^\circ, 50^\circ, 60^\circ$ & 90° standard point angles
- $\varnothing 3\text{mm}$ shank for all sizes
- Single flute design
- 0° helix



	Article	Description	Dia. Range (mm)	Dia. Inc. (mm)	Dia. Tol. (mm)	Cutting Length	Point Angle	Through Coolant	
Micro Drills (ø≤3mm)									
	16004	Pilot/Spotting 130°, HSS	.10-1.50	.05	+.005/0	2-4xd	130°	—	
	56005	Pilot/Spotting 130°, HSS	.10-1.50	.05	+.005/0	2-4xd	130°	—	
	56030	Spirec Pilot 2xd	.10-1.00	.01	+.005/0	2xd	130°	—	
	56033	Pilot ø3mm Shank 2xd	.03-2.99	.01	+.005/0	2xd	130°	—	
	55652	Tricut 5xd	.20-2.99	.01	0/- .006	≈5xd	140°	—	
	50941	High Performance Phoenix 6xd	.50-2.40	.10	0/- .006	6xd	140°	—	
	12604	Spirec 6xd, HSS	.05-3.175	.01	0/- .004	5-8xd	118°	—	
	50695	Spirec Pilot 6xd	.20-1.50	.01	+.004/0	6-8xd	118°	—	
	50699	Spirec 6xd	.05-2.00	.01	0/- .004	6-8xd	118°	—	
	51200	ø3mm Shank 6xd	.03-3.00	.01	0/- .004	≈6xd	130°	—	
	51201	ø3mm Shank 6xd	.20-3.00	.01	0/- .004	≈6xd	130°	—	
	50621	ø3mm Shank 12xd	.15-3.00	.01	0/- .006	12xd	130°	—	
	50622	ø3mm Shank 12xd	.20-3.00	.01	0/- .006	12xd	130°	—	
	50720	Deep Hole 20xd	.20-1.50	.05	+.009/+ .005	20xd	129°	—	
	50740	Deep Hole 40xd	.40-1.50	.05	+.004/0	40xd	126°	—	
	50760	Deep Hole 60xd	.40-1.50	.05	0/- .004	60xd	126°	—	
	50780	Deep Hole 80xd	.40-1.50	.05	0/- .004	80xd	126°	—	

	Article	Description	Dia. Range (mm)	Dia. Inc. (mm)	Dia. Tol. (mm)	Cutting Length	Point Angle	Through Coolant	
High Performance Drills									
	56036	Pilot/Step 140°/90°	.30-6.00	.05	+.008/+ .002	2xd	140°/90°	—	
	50938	Phoenix 3xd	1.00-12.70	.10	h6	3xd	140°	>ø2.5mm	
	50940	Phoenix 6xd	1.00-12.70	.05	h6	6xd	140°	Standard	
	50942	Phoenix 12xd	1.00-12.70	.10	h6	12xd	140°	>ø2.5mm	
	52903	Phoenix TC2 3xd	1.00-10.00	.05	h6	3xd	140°	Standard	
	52906	Phoenix TC2 6xd	1.00-10.00	.05	h6	6xd	140°	Standard	
	52909	Phoenix TC2 9xd	1.00-10.00	.10	h6	9xd	140°	Standard	
	52912	Phoenix TC2 12xd	1.00-10.00	.10	h6	12xd	137°	Standard	
	52916	Phoenix TC2 16xd	1.00-10.00	.10	h6	16xd	137°	Standard	
	52920	Phoenix TC2 20xd	3.00-10.00	1.00	h6	20xd	137°	Standard	
	52930	Phoenix TC2 30xd	3.00-10.00	1.00	h6	30xd	137°	Standard	
	52150	Quadro 15 Plus 6xd	4.00-20.00	.50	h6	6xd	140°	Standard	
	52100	Quadro Plus 6xd	3.00-20.00	.50	h6	6xd	140°	Standard	
	52200	Quadro Plus 12xd	3.00-20.00	.50	h6	12xd	140°	Standard	

	Article	Description	Dia. Range (mm)	Dia. Inc. (mm)	Dia. Tol. (mm)	Cutting Length	Point Angle	Through Coolant	
Twist Drills									
	50810	Spotting 90°	2.00-20.00	1.00	h6	—	90°	—	
	50812	Spotting 123°	2.00-20.00	1.00	h6	—	123°	—	
	50814	Spotting 142°	2.00-20.00	1.00	h6	—	142°	—	
	50818	Spotting/Chamfering 142°/90°	1.60-12.00	—	—	—	142°/90°	—	
	50950	Fastcut Pilot 3xd	3.00-20.00	.10	m7	3xd	140°	—	
	50830	Posicut 5xd	.30-20.00	.10	h6	≈5xd	118°	—	
	50838	Spirec 10xd	.30-6.00	.05	h6	≈10xd	118°	—	
	50820	Spicut 10xd	.70-14.00	.10	h6	≈10xd	130°	—	

	Article	Description	Dia. Range (mm)	Dia. Inc. (mm)	Dia. Tol. (mm)	Cutting Length	Point Angle	Through Coolant	
Drill Reamers									
	50840	Asycut 5xd	2.00-14.00	.10	h6	≈5xd	118°	—	
	55654	Tricut 5xd	1.00-14.00	.10	h6	≈5xd	140°	—	
	55338	Tricut 10xd	1.00-14.00	.10	h6	≈10xd	140°	—	

	Article	Description	Dia. Range (mm)	Dia. Inc. (mm)	Dia. Tol. (mm)	Cutting Length	Point Angle	Through Coolant	
Micro End Mills									
	42000	End Mill ø3mm Shank 3xd	.10-3.00	.10	0/- .03	3xd	—	—	
	73000	Chamfering Mill 90°	.50-8.00	.50	—	—	90°	—	
	70030	Engraving Mill 30°, Flat Tip	.02-.15	.01	—	—	30°	—	
	70040	Engraving Mill 40°, Flat Tip	.02-.15	.01	—	—	40°	—	
	70050	Engraving Mill 50°, Flat Tip	.02-.15	.01	—	—	50°	—	
	70060	Engraving Mill 60°, Flat Tip	.02-.15	.01	—	—	60°	—	
	70090	Engraving Mill 90°, Flat Tip	.02-.15	.01	—	—	90°	—	
	70130	Engraving Mill 30°, Radius Tip	.04-.10	.01	—	—	30°	—	
	70140	Engraving Mill 40°, Radius Tip	.04-.10	.01	—	—	40°	—	
	70150	Engraving Mill 50°, Radius Tip	.04-.10	.01	—	—	50°	—	
	70160	Engraving Mill 60°, Radius Tip	.04-.10	.01	—	—	60°	—	
	70190	Engraving Mill 90°, Radius Tip	.04-.10	.01	—	—	90°	—	

• All diameters manufactured in metric (mm) increments



Carbide



High Speed Steel (HSS)

DRILL SELECTION CHART

Coating	Workpiece Material							Page
	Steel	Stainless Steel	Cast Iron	Nonferrous Metals	Ti/Nickel Alloys	Hardened Steel	Plastic	
—	✓	•	✓	•				16-17
—	✓	•	✓	✓	✓		✓	18-19
—	✓	✓	✓	✓	✓		✓	20-23
—	✓	•	✓	✓	•		•	24-27
TiAlN	✓	✓	✓	✓	✓	•		28
—	✓	•	✓	•				30-31
—	✓	•	✓	✓				32-33
—	✓	•	✓	✓				34-36
—	✓	✓	✓	✓	✓		•	38-45
TiAlN	✓	✓	✓	✓	✓	•	•	46-53
—	✓	•	✓	✓				54
TiAlN	✓	•	✓	✓		•		56
AlCrN	✓	✓	✓	✓	•	•	•	57
AlCrN	✓	✓	✓	✓	•	•	•	
AlCrN	✓	✓	✓	✓	•	•	•	
AlCrN	✓	✓	✓	✓	•	•	•	
AlCrN	✓	✓	✓	✓	✓	•		74-75
AlCrN	✓	✓	✓	✓	•	•		76-79
TiAlN	✓	✓	✓	✓	•	•		80-82
AlCrN	✓	•	✓	•	•	•		76-79
AlTiCrN+S	✓	✓	✓	✓	✓	•	•	84-87
AlTiCrN+S	✓	✓	✓	✓	✓	•	•	
AlTiCrN+S	✓	✓	✓	✓	✓	•	•	
AlCrTiN	✓	✓	✓	✓	✓	•	•	88-90
AlCrTiN	✓	✓	✓	✓	✓	•	•	
AlCrTiN	✓	✓	•	✓	✓	•	•	92
AlCrTiN	✓	✓	•	✓	✓	•	•	
TiAlN	✓		✓	•		•		93
—			✓	✓			•	94-95
—			✓	✓			•	
—	✓	✓	✓	✓	•		✓	108
—	✓	✓	✓	✓	•		✓	
—	✓	✓	✓	✓	•		✓	109
—	✓	✓	✓	✓	•	•	✓	110-111
TiAlN	✓	•	✓	•	✓		✓	112-113
—	✓	✓	•	✓	✓		✓	114-115
—	✓	✓	✓	✓	•		✓	116-117
—	•	•	•	✓				126-127
—	✓	•	✓	•	•			128-130
—	✓	•	✓	•	•			
—	✓	•	✓	✓	•		•	136
—	✓	•	✓	✓	•		•	137
—	✓	✓	✓	✓	✓		✓	138-139
—	✓	✓	✓	✓	✓		✓	
—	✓	✓	✓	✓	✓		✓	
—	✓	✓	✓	✓	✓		✓	
—	✓	✓	✓	✓	✓		✓	
—	✓	✓	✓	✓	✓		✓	140-141
—	✓	✓	✓	✓	✓		✓	
—	✓	✓	✓	✓	✓		✓	

Excellent
 Suitable
 Not Recommended





Pilot/Spotting 130°, HSS & Carbide

Art. 16004 & 56005 Pg. 16-17



Spirec Pilot 2xd

Art. 56030 Pg. 18-19



Pilot ø3mm Shank 2xd

Art. 56033 Pg. 20-23



Tricut 5xd

Art. 55652 Pg. 24-27



High Performance Phoenix 6xd

Art. 50941 Pg. 28



Spirec 6xd, HSS

Art. 12604 Pg. 30-31



Spirec Pilot 6xd

Art. 50695 Pg. 32-33



Spirec 6xd

Art. 50699 Pg. 34-36



ø3mm Shank 6xd

Art. 51200 & 51201 Pg. 38-45



ø3mm Shank 12xd

Art. 50621 & 50622 Pg. 46-53



Deep Hole 20xd

Art. 50720 Pg. 54



Deep Hole 40xd

Art. 50740 Pg. 56



Deep Hole 60xd & 80xd

Art. 50760 & 50780 Pg. 57

Cutting Data

Art. 16004 Pg. 58	Art. 51200 Pg. 65
Art. 56005 Pg. 59	Art. 51201 Pg. 66
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Art. 55652 Pg. 61	Art. 50622 Pg. 68
Art. 50941 Pg. 62	Art. 50720 Pg. 69
Art. 12604 Pg. 63	Art. 50740, 50760 & 50780 Pg. 70
Art. 50695 & 50699 Pg. 64	

MICRO DRILLS

PILOT/SPOTTING 130° — ART. 16004 & 56005

Art. 16004

HSS
 $+0.005$
 $d_1 \ 0$
Z
2
130°
20°

Blind Hole
Through Hole
Countersink 130°

ST
SST
C.I.
Al
Brass

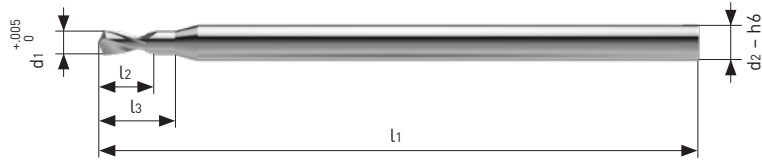
Art. 56005

Carbide
 $+0.005$
 $d_1 \ 0$
Z
2
130°
20°

Blind Hole
Through Hole
Countersink 130°

ST
SST
C.I.
Al
Mg
Ti

Plastic



※ All dimensions are millimeters unless otherwise noted

d ₁	d ₁ (in.)	l ₂	l ₃	l ₁	d ₂	Art. 16004	Art. 56005
						Catalog Number	Catalog Number
.10	.0039	.40	.60	25	1.50	40.16004.0010	40.56005.0010
.15	.0059	.40	.60	25	1.50	40.16004.0015	40.56005.0015
.20	.0079	.60	.90	25	1.50	40.16004.0020	40.56005.0020
.25	.0098	.60	.90	25	1.50	40.16004.0025	40.56005.0025
.30	.0118	.90	1.20	25	1.50	40.16004.0030	40.56005.0030
.35	.0138	.90	1.20	25	1.50	40.16004.0035	40.56005.0035
.40	.0157	.90	1.60	25	1.50	40.16004.0040	40.56005.0040
.45	.0177	.90	1.60	25	1.50	40.16004.0045	40.56005.0045
.50	.0197	1.00	1.80	25	1.50	40.16004.0050	40.56005.0050
.55	.0217	1.00	1.80	25	1.50	40.16004.0055	40.56005.0055
.60	.0236	1.20	2.00	25	1.50	40.16004.0060	40.56005.0060
.65	.0256	1.20	2.00	25	1.50	40.16004.0065	40.56005.0065
.70	.0276	1.50	2.50	25	1.50	40.16004.0070	40.56005.0070
.75	.0295	1.50	2.50	25	1.50	40.16004.0075	40.56005.0075
.80	.0315	1.50	2.50	25	1.50	40.16004.0080	40.56005.0080
.85	.0335	1.50	2.50	25	1.50	40.16004.0085	40.56005.0085
.90	.0354	1.60	2.60	25	1.50	40.16004.0090	40.56005.0090
.95	.0374	1.60	2.60	25	1.50	40.16004.0095	40.56005.0095
1.00	.0394	2.00	3.20	25	1.50	40.16004.0100	40.56005.0100
1.05	.0413	2.00	3.20	25	1.50	40.16004.0105	40.56005.0105
1.10	.0433	2.30	3.50	25	1.50	40.16004.0110	40.56005.0110
1.15	.0453	2.30	3.50	25	1.50	40.16004.0115	40.56005.0115
1.20	.0472	2.30	3.50	25	1.50	40.16004.0120	40.56005.0120
1.25	.0492	2.30	3.50	25	1.50	40.16004.0125	40.56005.0125

• Packaged in quantities of 10 pieces

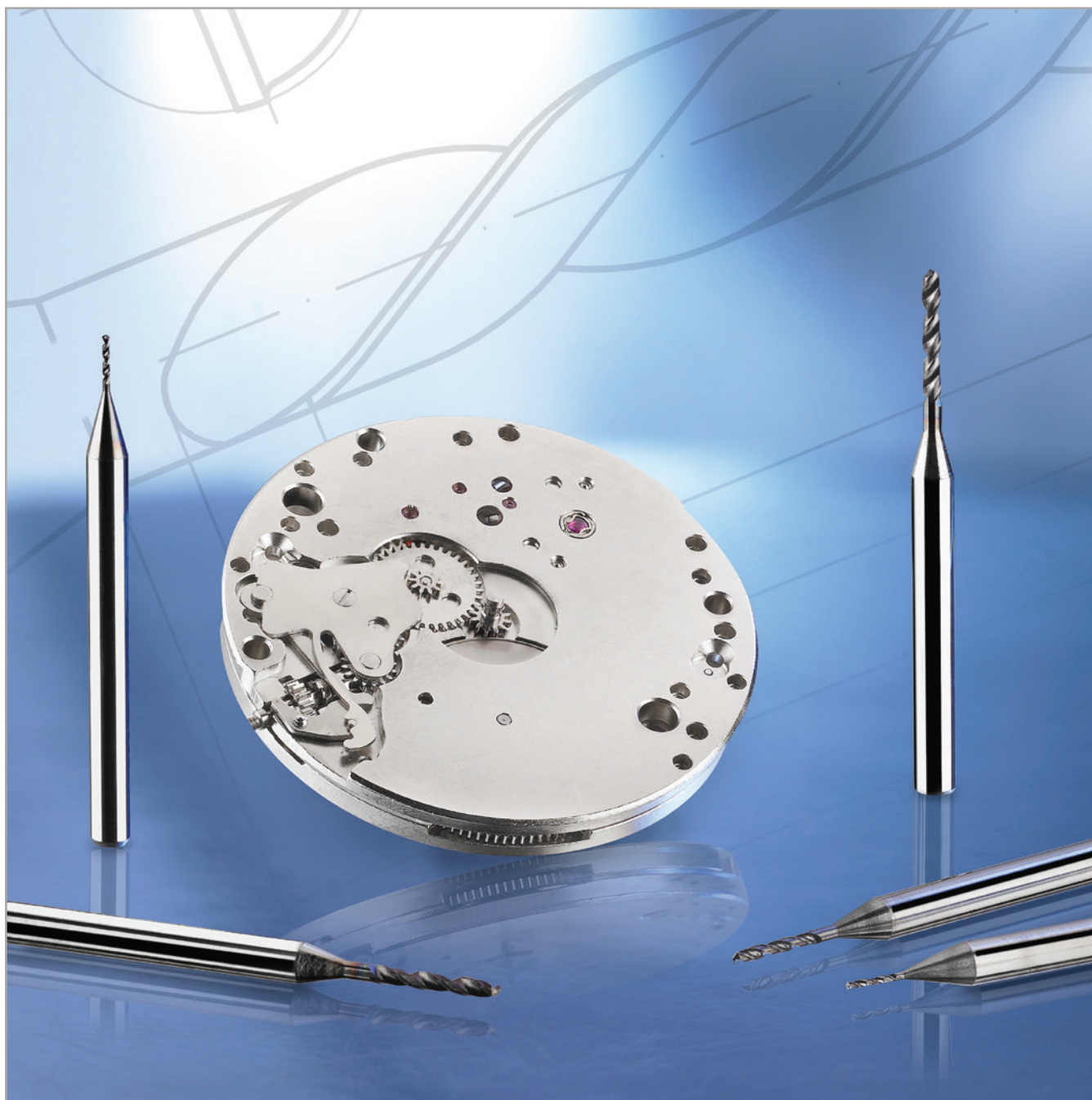
MICRO DRILLS

PILOT/SPOTTING 130° — ART. 16004 & 56005

※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Art. 16004	Art. 56005
						Catalog Number	Catalog Number
1.30	.0512	2.70	4.20	25	1.50	40.16004.0130	40.56005.0130
1.35	.0531	2.70	4.20	25	1.50	40.16004.0135	40.56005.0135
1.40	.0551	2.70	4.20	25	1.50	40.16004.0140	40.56005.0140
1.45	.0571	2.70	4.20	25	1.50	40.16004.0145	40.56005.0145
1.50	.0591	3.00	4.20	25	1.50	40.16004.0150	40.56005.0150

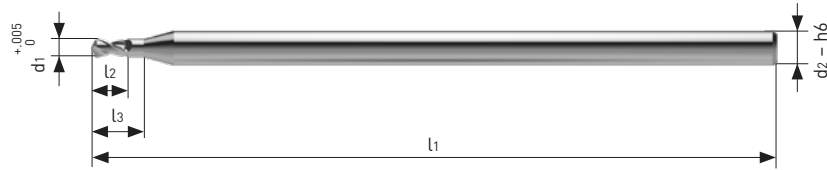
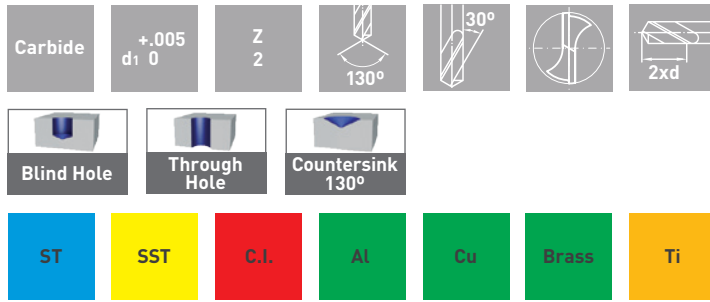
• Packaged in quantities of 10 pieces



MICRO DRILLS

SPIREC PILOT 2XD — ART. 56030

Art. 56030



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.10	.0039	.35	.55	30	1.50	40.56030.0010
.11	.0043	.35	.55	30	1.50	40.56030.0011
.12	.0047	.35	.55	30	1.50	40.56030.0012
.13	.0051	.40	.60	30	1.50	40.56030.0013
.14	.0055	.40	.60	30	1.50	40.56030.0014
.15	.0059	.40	.60	30	1.50	40.56030.0015
.16	.0063	.40	.60	30	1.50	40.56030.0016
.17	.0067	.50	.70	30	1.50	40.56030.0017
.18	.0071	.50	.70	30	1.50	40.56030.0018
.19	.0075	.50	.70	30	1.50	40.56030.0019
.20	.0079	.55	.75	30	1.50	40.56030.0020
.21	.0083	.55	.75	30	1.50	40.56030.0021
.22	.0087	.60	.80	30	1.50	40.56030.0022
.23	.0091	.60	.80	30	1.50	40.56030.0023
.24	.0094	.60	.80	30	1.50	40.56030.0024
.25	.0098	.70	.90	30	1.50	40.56030.0025
.26	.0102	.70	.90	30	1.50	40.56030.0026
.27	.0106	.70	.90	30	1.50	40.56030.0027
.28	.0110	.80	1.00	30	1.50	40.56030.0028
.29	.0114	.80	1.00	30	1.50	40.56030.0029
.30	.0118	.90	1.20	30	1.50	40.56030.0030
.31	.0122	.90	1.20	30	1.50	40.56030.0031
.32	.0126	.90	1.20	30	1.50	40.56030.0032
.33	.0130	.90	1.20	30	1.50	40.56030.0033
.34	.0134	.90	1.35	30	1.50	40.56030.0034
.35	.0138	.90	1.35	30	1.50	40.56030.0035
.36	.0142	.95	1.35	30	1.50	40.56030.0036
.37	.0146	.95	1.35	30	1.50	40.56030.0037
.38	.0150	.95	1.50	30	1.50	40.56030.0038
.39	.0154	.95	1.50	30	1.50	40.56030.0039

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.40	.0157	.80	1.60	30	1.50	40.56030.0040
.41	.0161	.82	1.60	30	1.50	40.56030.0041
.42	.0165	.84	1.60	30	1.50	40.56030.0042
.43	.0169	.86	1.60	30	1.50	40.56030.0043
.44	.0173	.88	1.60	30	1.50	40.56030.0044
.45	.0177	.90	1.60	30	1.50	40.56030.0045
.46	.0181	.92	1.70	30	1.50	40.56030.0046
.47	.0185	.94	1.70	30	1.50	40.56030.0047
.48	.0189	.96	1.70	30	1.50	40.56030.0048
.49	.0193	.98	1.70	30	1.50	40.56030.0049
.50	.0197	1.00	1.70	30	1.50	40.56030.0050
.51	.0201	1.02	1.80	30	1.50	40.56030.0051
.52	.0205	1.04	1.80	30	1.50	40.56030.0052
.53	.0209	1.06	1.80	30	1.50	40.56030.0053
.54	.0213	1.08	1.80	30	1.50	40.56030.0054
.55	.0217	1.10	1.80	30	1.50	40.56030.0055
.56	.0220	1.12	1.90	30	1.50	40.56030.0056
.57	.0224	1.14	1.90	30	1.50	40.56030.0057
.58	.0228	1.16	1.90	30	1.50	40.56030.0058
.59	.0232	1.18	1.90	30	1.50	40.56030.0059
.60	.0236	1.20	1.90	30	1.50	40.56030.0060
.61	.0240	1.22	2.00	30	1.50	40.56030.0061
.62	.0244	1.24	2.00	30	1.50	40.56030.0062
.63	.0248	1.26	2.00	30	1.50	40.56030.0063
.64	.0252	1.28	2.00	30	1.50	40.56030.0064
.65	.0256	1.30	2.00	30	1.50	40.56030.0065
.66	.0260	1.32	2.10	30	1.50	40.56030.0066
.67	.0264	1.34	2.10	30	1.50	40.56030.0067
.68	.0268	1.36	2.10	30	1.50	40.56030.0068
.69	.0272	1.38	2.10	30	1.50	40.56030.0069

• Packaged in quantities of 10 pieces

MICRO DRILLS

SPIREC PILOT 2XD — ART. 56030

※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.70	.0276	1.40	2.10	30	1.50	40.56030.0070
.71	.0280	1.42	2.20	30	1.50	40.56030.0071
.72	.0283	1.44	2.20	30	1.50	40.56030.0072
.73	.0287	1.46	2.20	30	1.50	40.56030.0073
.74	.0291	1.48	2.20	30	1.50	40.56030.0074
.75	.0295	1.50	2.20	30	1.50	40.56030.0075
.76	.0299	1.52	2.30	30	1.50	40.56030.0076
.77	.0303	1.54	2.30	30	1.50	40.56030.0077
.78	.0307	1.56	2.30	30	1.50	40.56030.0078
.79	.0311	1.58	2.30	30	1.50	40.56030.0079
.80	.0315	1.60	2.30	30	1.50	40.56030.0080
.81	.0319	1.62	2.40	30	1.50	40.56030.0081
.82	.0323	1.64	2.40	30	1.50	40.56030.0082
.83	.0327	1.66	2.40	30	1.50	40.56030.0083
.84	.0331	1.68	2.40	30	1.50	40.56030.0084
.85	.0335	1.70	2.40	30	1.50	40.56030.0085

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.86	.0339	1.72	2.50	30	1.50	40.56030.0086
.87	.0343	1.74	2.50	30	1.50	40.56030.0087
.88	.0346	1.76	2.50	30	1.50	40.56030.0088
.89	.0350	1.78	2.50	30	1.50	40.56030.0089
.90	.0354	1.80	2.50	30	1.50	40.56030.0090
.91	.0358	1.82	2.60	30	1.50	40.56030.0091
.92	.0362	1.84	2.60	30	1.50	40.56030.0092
.93	.0366	1.86	2.60	30	1.50	40.56030.0093
.94	.0370	1.88	2.60	30	1.50	40.56030.0094
.95	.0374	1.90	2.60	30	1.50	40.56030.0095
.96	.0378	1.92	2.70	30	1.50	40.56030.0096
.97	.0382	1.94	2.70	30	1.50	40.56030.0097
.98	.0386	1.96	2.70	30	1.50	40.56030.0098
.99	.0390	1.98	2.70	30	1.50	40.56030.0099
1.00	.0394	2.00	2.70	30	1.50	40.56030.0100

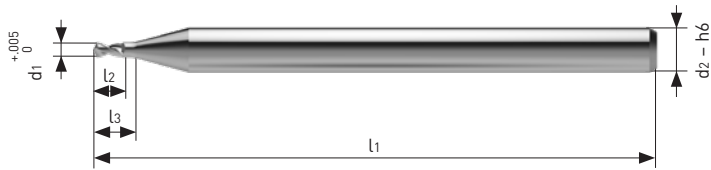
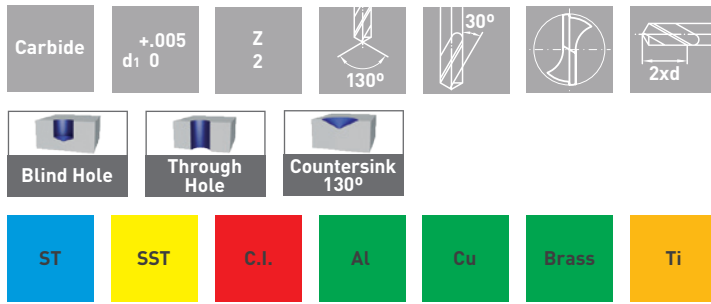
• Packaged in quantities of 10 pieces



MICRO DRILLS

PILOT Ø3MM SHANK 2XD — ART. 56033

Art. 56033



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.03	.0012	.15	.30	38	3.00	40.56033.0003
.04	.0016	.15	.30	38	3.00	40.56033.0004
.05	.0020	.20	.40	38	3.00	40.56033.0005
.06	.0024	.20	.40	38	3.00	40.56033.0006
.07	.0028	.25	.45	38	3.00	40.56033.0007
.08	.0031	.25	.45	38	3.00	40.56033.0008
.09	.0035	.30	.50	38	3.00	40.56033.0009
.10	.0039	.35	.55	38	3.00	40.56033.0010
.11	.0043	.35	.55	38	3.00	40.56033.0011
.12	.0047	.35	.55	38	3.00	40.56033.0012
.13	.0051	.40	.60	38	3.00	40.56033.0013
.14	.0055	.40	.60	38	3.00	40.56033.0014
.15	.0059	.40	.60	38	3.00	40.56033.0015
.16	.0063	.40	.60	38	3.00	40.56033.0016
.17	.0067	.50	.70	38	3.00	40.56033.0017
.18	.0071	.50	.70	38	3.00	40.56033.0018
.19	.0075	.50	.70	38	3.00	40.56033.0019
.20	.0079	.55	.75	38	3.00	40.56033.0020
.21	.0083	.55	.75	38	3.00	40.56033.0021
.22	.0087	.60	.80	38	3.00	40.56033.0022
.23	.0091	.60	.80	38	3.00	40.56033.0023
.24	.0094	.60	.80	38	3.00	40.56033.0024
.25	.0098	.70	.90	38	3.00	40.56033.0025
.26	.0102	.70	.90	38	3.00	40.56033.0026
.27	.0106	.70	.90	38	3.00	40.56033.0027
.28	.0110	.80	1.00	38	3.00	40.56033.0028
.29	.0114	.80	1.00	38	3.00	40.56033.0029
.30	.0118	.90	1.20	38	3.00	40.56033.0030
.31	.0122	.90	1.20	38	3.00	40.56033.0031
.32	.0126	.90	1.20	38	3.00	40.56033.0032

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.33	.0130	.90	1.20	38	3.00	40.56033.0033
.34	.0134	.90	1.35	38	3.00	40.56033.0034
.35	.0138	.90	1.35	38	3.00	40.56033.0035
.36	.0142	.95	1.35	38	3.00	40.56033.0036
.37	.0146	.95	1.35	38	3.00	40.56033.0037
.38	.0150	.95	1.50	38	3.00	40.56033.0038
.39	.0154	.95	1.50	38	3.00	40.56033.0039
.40	.0157	.80	1.60	38	3.00	40.56033.0040
.41	.0161	.82	1.60	38	3.00	40.56033.0041
.42	.0165	.84	1.60	38	3.00	40.56033.0042
.43	.0169	.86	1.60	38	3.00	40.56033.0043
.44	.0173	.88	1.60	38	3.00	40.56033.0044
.45	.0177	.90	1.60	38	3.00	40.56033.0045
.46	.0181	.92	1.70	38	3.00	40.56033.0046
.47	.0185	.94	1.70	38	3.00	40.56033.0047
.48	.0189	.96	1.70	38	3.00	40.56033.0048
.49	.0193	.98	1.70	38	3.00	40.56033.0049
.50	.0197	1.00	1.70	38	3.00	40.56033.0050
.51	.0201	1.02	1.80	38	3.00	40.56033.0051
.52	.0205	1.04	1.80	38	3.00	40.56033.0052
.53	.0209	1.06	1.80	38	3.00	40.56033.0053
.54	.0213	1.08	1.80	38	3.00	40.56033.0054
.55	.0217	1.10	1.80	38	3.00	40.56033.0055
.56	.0220	1.12	1.90	38	3.00	40.56033.0056
.57	.0224	1.14	1.90	38	3.00	40.56033.0057
.58	.0228	1.16	1.90	38	3.00	40.56033.0058
.59	.0232	1.18	1.90	38	3.00	40.56033.0059
.60	.0236	1.20	1.90	38	3.00	40.56033.0060
.61	.0240	1.22	2.00	38	3.00	40.56033.0061
.62	.0244	1.24	2.00	38	3.00	40.56033.0062

MICRO DRILLS

PILOT Ø3MM SHANK 2XD — ART. 56033

※ All dimensions are millimeters unless otherwise noted

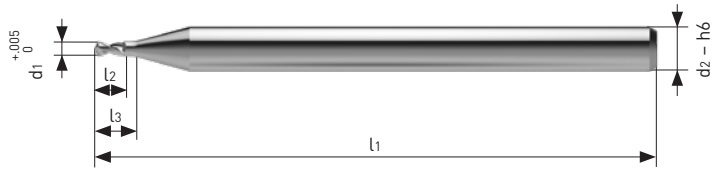
d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.63	.0248	1.26	2.00	38	3.00	40.56033.0063
.64	.0252	1.28	2.00	38	3.00	40.56033.0064
.65	.0256	1.30	2.00	38	3.00	40.56033.0065
.66	.0260	1.32	2.10	38	3.00	40.56033.0066
.67	.0264	1.34	2.10	38	3.00	40.56033.0067
.68	.0268	1.36	2.10	38	3.00	40.56033.0068
.69	.0272	1.38	2.10	38	3.00	40.56033.0069
.70	.0276	1.40	2.10	38	3.00	40.56033.0070
.71	.0280	1.42	2.20	38	3.00	40.56033.0071
.72	.0283	1.44	2.20	38	3.00	40.56033.0072
.73	.0287	1.46	2.20	38	3.00	40.56033.0073
.74	.0291	1.48	2.20	38	3.00	40.56033.0074
.75	.0295	1.50	2.20	38	3.00	40.56033.0075
.76	.0299	1.52	2.30	38	3.00	40.56033.0076
.77	.0303	1.54	2.30	38	3.00	40.56033.0077
.78	.0307	1.56	2.30	38	3.00	40.56033.0078
.79	.0311	1.58	2.30	38	3.00	40.56033.0079
.80	.0315	1.60	2.30	38	3.00	40.56033.0080
.81	.0319	1.62	2.40	38	3.00	40.56033.0081
.82	.0323	1.64	2.40	38	3.00	40.56033.0082
.83	.0327	1.66	2.40	38	3.00	40.56033.0083
.84	.0331	1.68	2.40	38	3.00	40.56033.0084
.85	.0335	1.70	2.40	38	3.00	40.56033.0085
.86	.0339	1.72	2.50	38	3.00	40.56033.0086
.87	.0343	1.74	2.50	38	3.00	40.56033.0087
.88	.0346	1.76	2.50	38	3.00	40.56033.0088
.89	.0350	1.78	2.50	38	3.00	40.56033.0089
.90	.0354	1.80	2.50	38	3.00	40.56033.0090
.91	.0358	1.82	2.60	38	3.00	40.56033.0091
.92	.0362	1.84	2.60	38	3.00	40.56033.0092
.93	.0366	1.86	2.60	38	3.00	40.56033.0093
.94	.0370	1.88	2.60	38	3.00	40.56033.0094
.95	.0374	1.90	2.60	38	3.00	40.56033.0095
.96	.0378	1.92	2.70	38	3.00	40.56033.0096
.97	.0382	1.94	2.70	38	3.00	40.56033.0097
.98	.0386	1.96	2.70	38	3.00	40.56033.0098
.99	.0390	1.98	2.70	38	3.00	40.56033.0099
1.00	.0394	2.00	2.70	38	3.00	40.56033.0100
1.01	.0398	2.02	3.50	38	3.00	40.56033.0101
1.02	.0402	2.04	3.50	38	3.00	40.56033.0102
1.03	.0406	2.06	3.50	38	3.00	40.56033.0103
1.04	.0409	2.08	3.50	38	3.00	40.56033.0104
1.05	.0413	2.10	3.50	38	3.00	40.56033.0105
1.06	.0417	2.12	3.60	38	3.00	40.56033.0106
1.07	.0421	2.14	3.60	38	3.00	40.56033.0107

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
1.08	.0425	2.16	3.60	38	3.00	40.56033.0108
1.09	.0429	2.18	3.60	38	3.00	40.56033.0109
1.10	.0433	2.20	3.60	38	3.00	40.56033.0110
1.11	.0437	2.22	3.70	38	3.00	40.56033.0111
1.12	.0441	2.24	3.70	38	3.00	40.56033.0112
1.13	.0445	2.26	3.70	38	3.00	40.56033.0113
1.14	.0449	2.28	3.70	38	3.00	40.56033.0114
1.15	.0453	2.30	3.70	38	3.00	40.56033.0115
1.16	.0457	2.32	3.80	38	3.00	40.56033.0116
1.17	.0461	2.34	3.80	38	3.00	40.56033.0117
1.18	.0465	2.36	3.80	38	3.00	40.56033.0118
1.19	.0469	2.38	3.80	38	3.00	40.56033.0119
1.20	.0472	2.40	3.80	38	3.00	40.56033.0120
1.21	.0476	2.42	4.20	38	3.00	40.56033.0121
1.22	.0480	2.44	4.20	38	3.00	40.56033.0122
1.23	.0484	2.46	4.20	38	3.00	40.56033.0123
1.24	.0488	2.48	4.20	38	3.00	40.56033.0124
1.25	.0492	2.50	4.20	38	3.00	40.56033.0125
1.26	.0496	2.52	4.30	38	3.00	40.56033.0126
1.27	.0500	2.54	4.30	38	3.00	40.56033.0127
1.28	.0504	2.56	4.30	38	3.00	40.56033.0128
1.29	.0508	2.58	4.30	38	3.00	40.56033.0129
1.30	.0512	2.60	4.30	38	3.00	40.56033.0130
1.31	.0516	2.62	4.40	38	3.00	40.56033.0131
1.32	.0520	2.64	4.40	38	3.00	40.56033.0132
1.33	.0524	2.66	4.40	38	3.00	40.56033.0133
1.34	.0528	2.68	4.40	38	3.00	40.56033.0134
1.35	.0531	2.70	4.40	38	3.00	40.56033.0135
1.36	.0535	2.72	4.50	38	3.00	40.56033.0136
1.37	.0539	2.74	4.50	38	3.00	40.56033.0137
1.38	.0543	2.76	4.50	38	3.00	40.56033.0138
1.39	.0547	2.78	4.50	38	3.00	40.56033.0139
1.40	.0551	2.80	4.50	38	3.00	40.56033.0140
1.41	.0555	2.82	4.60	38	3.00	40.56033.0141
1.42	.0559	2.84	4.60	38	3.00	40.56033.0142
1.43	.0563	2.86	4.60	38	3.00	40.56033.0143
1.44	.0567	2.88	4.60	38	3.00	40.56033.0144
1.45	.0571	2.90	4.60	38	3.00	40.56033.0145
1.46	.0575	2.92	4.70	38	3.00	40.56033.0146
1.47	.0579	2.94	4.70	38	3.00	40.56033.0147
1.48	.0583	2.96	4.70	38	3.00	40.56033.0148
1.49	.0587	2.98	4.70	38	3.00	40.56033.0149
1.50	.0591	3.00	4.70	38	3.00	40.56033.0150
1.51	.0594	3.02	5.10	38	3.00	40.56033.0151
1.52	.0598	3.04	5.10	38	3.00	40.56033.0152

MICRO DRILLS

PILOT Ø3MM SHANK 2XD — ART. 56033

Art. 56033 Cont.



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
1.53	.0602	3.06	5.10	38	3.00	40.56033.0153
1.54	.0606	3.08	5.10	38	3.00	40.56033.0154
1.55	.0610	3.10	5.10	38	3.00	40.56033.0155
1.56	.0614	3.12	5.20	38	3.00	40.56033.0156
1.57	.0618	3.14	5.20	38	3.00	40.56033.0157
1.58	.0622	3.16	5.20	38	3.00	40.56033.0158
1.59	.0626	3.18	5.20	38	3.00	40.56033.0159
1.60	.0630	3.20	5.20	38	3.00	40.56033.0160
1.61	.0634	3.22	5.30	38	3.00	40.56033.0161
1.62	.0638	3.24	5.30	38	3.00	40.56033.0162
1.63	.0642	3.26	5.30	38	3.00	40.56033.0163
1.64	.0646	3.28	5.30	38	3.00	40.56033.0164
1.65	.0650	3.30	5.30	38	3.00	40.56033.0165
1.66	.0654	3.32	5.40	38	3.00	40.56033.0166
1.67	.0657	3.34	5.40	38	3.00	40.56033.0167
1.68	.0661	3.36	5.40	38	3.00	40.56033.0168
1.69	.0665	3.38	5.40	38	3.00	40.56033.0169
1.70	.0669	3.40	5.40	38	3.00	40.56033.0170
1.71	.0673	3.42	5.50	38	3.00	40.56033.0171
1.72	.0677	3.44	5.50	38	3.00	40.56033.0172
1.73	.0681	3.46	5.50	38	3.00	40.56033.0173
1.74	.0685	3.48	5.50	38	3.00	40.56033.0174
1.75	.0689	3.50	5.50	38	3.00	40.56033.0175
1.76	.0693	3.52	5.60	38	3.00	40.56033.0176
1.77	.0697	3.54	5.60	38	3.00	40.56033.0177
1.78	.0701	3.56	5.60	38	3.00	40.56033.0178
1.79	.0705	3.58	5.60	38	3.00	40.56033.0179
1.80	.0709	3.60	5.60	38	3.00	40.56033.0180
1.81	.0713	3.62	5.70	38	3.00	40.56033.0181
1.82	.0717	3.64	5.70	38	3.00	40.56033.0182
1.83	.0720	3.66	5.70	38	3.00	40.56033.0183
1.84	.0724	3.68	5.70	38	3.00	40.56033.0184
1.85	.0728	3.70	5.70	38	3.00	40.56033.0185
1.86	.0732	3.72	5.80	38	3.00	40.56033.0186
1.87	.0736	3.74	5.80	38	3.00	40.56033.0187
1.88	.0740	3.76	5.80	38	3.00	40.56033.0188
1.89	.0744	3.78	5.80	38	3.00	40.56033.0189
1.90	.0748	3.80	5.80	38	3.00	40.56033.0190
1.91	.0752	3.82	5.90	38	3.00	40.56033.0191
1.92	.0756	3.84	5.90	38	3.00	40.56033.0192

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
1.93	.0760	3.86	5.90	38	3.00	40.56033.0193
1.94	.0764	3.88	5.90	38	3.00	40.56033.0194
1.95	.0768	3.90	5.90	38	3.00	40.56033.0195
1.96	.0772	3.92	6.00	38	3.00	40.56033.0196
1.97	.0776	3.94	6.00	38	3.00	40.56033.0197
1.98	.0780	3.96	6.00	38	3.00	40.56033.0198
1.99	.0783	3.98	6.00	38	3.00	40.56033.0199
2.00	.0787	4.00	6.00	38	3.00	40.56033.0200
2.01	.0791	4.02	6.10	38	3.00	40.56033.0201
2.02	.0795	4.04	6.10	38	3.00	40.56033.0202
2.03	.0799	4.06	6.10	38	3.00	40.56033.0203
2.04	.0803	4.08	6.10	38	3.00	40.56033.0204
2.05	.0807	4.10	6.10	38	3.00	40.56033.0205
2.06	.0811	4.12	6.20	38	3.00	40.56033.0206
2.07	.0815	4.14	6.20	38	3.00	40.56033.0207
2.08	.0819	4.16	6.20	38	3.00	40.56033.0208
2.09	.0823	4.18	6.20	38	3.00	40.56033.0209
2.10	.0827	4.20	6.20	38	3.00	40.56033.0210
2.11	.0831	4.22	6.30	38	3.00	40.56033.0211
2.12	.0835	4.24	6.30	38	3.00	40.56033.0212
2.13	.0839	4.26	6.30	38	3.00	40.56033.0213
2.14	.0843	4.28	6.30	38	3.00	40.56033.0214
2.15	.0846	4.30	6.30	38	3.00	40.56033.0215
2.16	.0850	4.32	6.40	38	3.00	40.56033.0216
2.17	.0854	4.34	6.40	38	3.00	40.56033.0217
2.18	.0858	4.36	6.40	38	3.00	40.56033.0218
2.19	.0862	4.38	6.40	38	3.00	40.56033.0219
2.20	.0866	4.40	6.40	38	3.00	40.56033.0220
2.21	.0870	4.42	6.50	38	3.00	40.56033.0221
2.22	.0874	4.44	6.50	38	3.00	40.56033.0222
2.23	.0878	4.46	6.50	38	3.00	40.56033.0223
2.24	.0882	4.48	6.50	38	3.00	40.56033.0224
2.25	.0886	4.50	6.50	38	3.00	40.56033.0225
2.26	.0890	4.52	6.60	38	3.00	40.56033.0226
2.27	.0894	4.54	6.60	38	3.00	40.56033.0227
2.28	.0898	4.56	6.60	38	3.00	40.56033.0228
2.29	.0902	4.58	6.60	38	3.00	40.56033.0229
2.30	.0906	4.60	6.60	38	3.00	40.56033.0230
2.31	.0909	4.62	6.70	38	3.00	40.56033.0231
2.32	.0913	4.64	6.70	38	3.00	40.56033.0232

MICRO DRILLS

PILOT Ø3MM SHANK 2XD — ART. 56033

※ All dimensions are millimeters unless otherwise noted

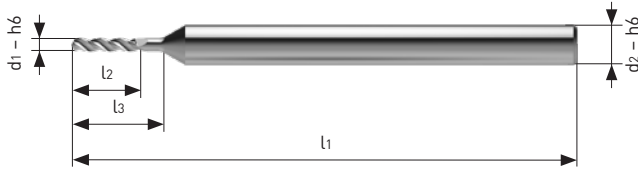
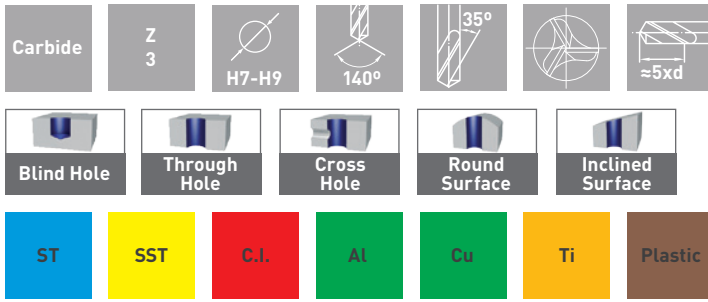
d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
2.33	.0917	4.66	6.70	38	3.00	40.56033.0233
2.34	.0921	4.68	6.70	38	3.00	40.56033.0234
2.35	.0925	4.70	6.70	38	3.00	40.56033.0235
2.36	.0929	4.72	6.80	38	3.00	40.56033.0236
2.37	.0933	4.74	6.80	38	3.00	40.56033.0237
2.38	.0937	4.76	6.80	38	3.00	40.56033.0238
2.39	.0941	4.78	6.80	38	3.00	40.56033.0239
2.40	.0945	4.80	6.80	38	3.00	40.56033.0240
2.41	.0949	4.82	6.90	38	3.00	40.56033.0241
2.42	.0953	4.84	6.90	38	3.00	40.56033.0242
2.43	.0957	4.86	6.90	38	3.00	40.56033.0243
2.44	.0961	4.88	6.90	38	3.00	40.56033.0244
2.45	.0965	4.90	6.90	38	3.00	40.56033.0245
2.46	.0969	4.92	7.00	38	3.00	40.56033.0246
2.47	.0972	4.94	7.00	38	3.00	40.56033.0247
2.48	.0976	4.96	7.00	38	3.00	40.56033.0248
2.49	.0980	4.98	7.00	38	3.00	40.56033.0249
2.50	.0984	5.00	7.00	38	3.00	40.56033.0250
2.51	.0988	5.02	7.10	38	3.00	40.56033.0251
2.52	.0992	5.04	7.10	38	3.00	40.56033.0252
2.53	.0996	5.06	7.10	38	3.00	40.56033.0253
2.54	.1000	5.08	7.10	38	3.00	40.56033.0254
2.55	.1004	5.10	7.10	38	3.00	40.56033.0255
2.56	.1008	5.12	7.20	38	3.00	40.56033.0256
2.57	.1012	5.14	7.20	38	3.00	40.56033.0257
2.58	.1016	5.16	7.20	38	3.00	40.56033.0258
2.59	.1020	5.18	7.20	38	3.00	40.56033.0259
2.60	.1024	5.20	7.20	38	3.00	40.56033.0260
2.61	.1028	5.22	7.30	38	3.00	40.56033.0261
2.62	.1031	5.24	7.30	38	3.00	40.56033.0262
2.63	.1035	5.26	7.30	38	3.00	40.56033.0263
2.64	.1039	5.28	7.30	38	3.00	40.56033.0264
2.65	.1043	5.30	7.30	38	3.00	40.56033.0265
2.66	.1047	5.32	7.40	38	3.00	40.56033.0266

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
2.67	.1051	5.34	7.40	38	3.00	40.56033.0267
2.68	.1055	5.36	7.40	38	3.00	40.56033.0268
2.69	.1059	5.38	7.40	38	3.00	40.56033.0269
2.70	.1063	5.40	7.40	38	3.00	40.56033.0270
2.71	.1067	5.42	7.50	38	3.00	40.56033.0271
2.72	.1071	5.44	7.50	38	3.00	40.56033.0272
2.73	.1075	5.46	7.50	38	3.00	40.56033.0273
2.74	.1079	5.48	7.50	38	3.00	40.56033.0274
2.75	.1083	5.50	7.50	38	3.00	40.56033.0275
2.76	.1087	5.52	7.60	38	3.00	40.56033.0276
2.77	.1091	5.54	7.60	38	3.00	40.56033.0277
2.78	.1094	5.56	7.60	38	3.00	40.56033.0278
2.79	.1098	5.58	7.60	38	3.00	40.56033.0279
2.80	.1102	5.60	7.60	38	3.00	40.56033.0280
2.81	.1106	5.62	7.70	38	3.00	40.56033.0281
2.82	.1110	5.64	7.70	38	3.00	40.56033.0282
2.83	.1114	5.66	7.70	38	3.00	40.56033.0283
2.84	.1118	5.68	7.70	38	3.00	40.56033.0284
2.85	.1122	5.70	7.70	38	3.00	40.56033.0285
2.86	.1126	5.72	7.80	38	3.00	40.56033.0286
2.87	.1130	5.74	7.80	38	3.00	40.56033.0287
2.88	.1134	5.76	7.80	38	3.00	40.56033.0288
2.89	.1138	5.78	7.80	38	3.00	40.56033.0289
2.90	.1142	5.80	7.80	38	3.00	40.56033.0290
2.91	.1146	5.82	7.90	38	3.00	40.56033.0291
2.92	.1150	5.84	7.90	38	3.00	40.56033.0292
2.93	.1154	5.86	7.90	38	3.00	40.56033.0293
2.94	.1157	5.88	7.90	38	3.00	40.56033.0294
2.95	.1161	5.90	7.90	38	3.00	40.56033.0295
2.96	.1165	5.92	8.00	38	3.00	40.56033.0296
2.97	.1169	5.94	8.00	38	3.00	40.56033.0297
2.98	.1173	5.96	8.00	38	3.00	40.56033.0298
2.99	.1177	5.98	8.00	38	3.00	40.56033.0299

MICRO DRILLS

TRICUT 5XD — ART. 55652

Art. 55652



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.20	.0079	1.00	1.50	38	3.00	40.55652.0020
.21	.0083	1.05	1.50	38	3.00	40.55652.0021
.22	.0087	1.10	1.60	38	3.00	40.55652.0022
.23	.0091	1.15	1.60	38	3.00	40.55652.0023
.24	.0094	1.20	1.70	38	3.00	40.55652.0024
.25	.0098	1.25	1.70	38	3.00	40.55652.0025
.26	.0102	1.30	1.80	38	3.00	40.55652.0026
.27	.0106	1.35	1.80	38	3.00	40.55652.0027
.28	.0110	1.40	1.90	38	3.00	40.55652.0028
.29	.0114	1.45	1.90	38	3.00	40.55652.0029
.30	.0118	1.50	2.00	38	3.00	40.55652.0030
.31	.0122	1.55	2.00	38	3.00	40.55652.0031
.32	.0126	1.60	2.10	38	3.00	40.55652.0032
.33	.0130	1.65	2.10	38	3.00	40.55652.0033
.34	.0134	1.70	2.20	38	3.00	40.55652.0034
.35	.0138	1.75	2.20	38	3.00	40.55652.0035
.36	.0142	1.80	2.30	38	3.00	40.55652.0036
.37	.0146	1.85	2.30	38	3.00	40.55652.0037
.38	.0150	1.90	2.40	38	3.00	40.55652.0038
.39	.0154	1.95	2.40	38	3.00	40.55652.0039
.40	.0157	2.00	2.50	38	3.00	40.55652.0040
.41	.0161	2.05	2.50	38	3.00	40.55652.0041
.42	.0165	2.10	2.60	38	3.00	40.55652.0042
.43	.0169	2.15	2.60	38	3.00	40.55652.0043
.44	.0173	2.20	2.70	38	3.00	40.55652.0044
.45	.0177	2.25	2.70	38	3.00	40.55652.0045
.46	.0181	2.30	2.80	38	3.00	40.55652.0046
.47	.0185	2.35	2.80	38	3.00	40.55652.0047
.48	.0189	2.40	2.90	38	3.00	40.55652.0048

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.49	.0193	2.45	2.90	38	3.00	40.55652.0049
.50	.0197	2.50	3.00	38	3.00	40.55652.0050
.51	.0201	2.55	3.00	38	3.00	40.55652.0051
.52	.0205	2.60	3.10	38	3.00	40.55652.0052
.53	.0209	2.65	3.10	38	3.00	40.55652.0053
.54	.0213	2.70	3.20	38	3.00	40.55652.0054
.55	.0217	2.75	3.20	38	3.00	40.55652.0055
.56	.0220	2.80	3.30	38	3.00	40.55652.0056
.57	.0224	2.85	3.30	38	3.00	40.55652.0057
.58	.0228	2.90	3.40	38	3.00	40.55652.0058
.59	.0232	2.95	3.40	38	3.00	40.55652.0059
.60	.0236	3.00	3.50	38	3.00	40.55652.0060
.61	.0240	3.05	3.50	38	3.00	40.55652.0061
.62	.0244	3.10	3.60	38	3.00	40.55652.0062
.63	.0248	3.15	3.60	38	3.00	40.55652.0063
.64	.0252	3.20	3.70	38	3.00	40.55652.0064
.65	.0256	3.25	3.70	38	3.00	40.55652.0065
.66	.0260	3.30	3.80	38	3.00	40.55652.0066
.67	.0264	3.35	3.80	38	3.00	40.55652.0067
.68	.0268	3.40	3.90	38	3.00	40.55652.0068
.69	.0272	3.45	3.90	38	3.00	40.55652.0069
.70	.0276	3.50	4.00	38	3.00	40.55652.0070
.71	.0280	3.55	4.00	38	3.00	40.55652.0071
.72	.0283	3.60	4.10	38	3.00	40.55652.0072
.73	.0287	3.65	4.10	38	3.00	40.55652.0073
.74	.0291	3.70	4.20	38	3.00	40.55652.0074
.75	.0295	3.75	4.20	38	3.00	40.55652.0075
.76	.0299	3.80	4.30	38	3.00	40.55652.0076
.77	.0303	3.85	4.30	38	3.00	40.55652.0077

MICRO DRILLS

TRICUT 5XD — ART. 55652

※ All dimensions are millimeters unless otherwise noted

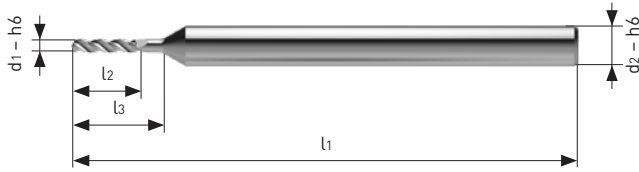
d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.78	.0307	3.90	4.40	38	3.00	40.55652.0078
.79	.0311	3.95	4.40	38	3.00	40.55652.0079
.80	.0315	4.00	4.50	38	3.00	40.55652.0080
.81	.0319	4.05	4.50	38	3.00	40.55652.0081
.82	.0323	4.10	4.60	38	3.00	40.55652.0082
.83	.0327	4.15	4.60	38	3.00	40.55652.0083
.84	.0331	4.20	4.70	38	3.00	40.55652.0084
.85	.0335	4.25	4.70	38	3.00	40.55652.0085
.86	.0339	4.30	4.80	38	3.00	40.55652.0086
.87	.0343	4.35	4.80	38	3.00	40.55652.0087
.88	.0346	4.40	4.90	38	3.00	40.55652.0088
.89	.0350	4.45	4.90	38	3.00	40.55652.0089
.90	.0354	4.50	5.00	38	3.00	40.55652.0090
.91	.0358	4.55	5.00	38	3.00	40.55652.0091
.92	.0362	4.60	5.10	38	3.00	40.55652.0092
.93	.0366	4.65	5.10	38	3.00	40.55652.0093
.94	.0370	4.70	5.20	38	3.00	40.55652.0094
.95	.0374	4.75	5.20	38	3.00	40.55652.0095
.96	.0378	4.80	5.30	38	3.00	40.55652.0096
.97	.0382	4.85	5.30	38	3.00	40.55652.0097
.98	.0386	4.90	5.40	38	3.00	40.55652.0098
.99	.0390	4.95	5.40	38	3.00	40.55652.0099
1.00	.0394	5.00	6.50	38	3.00	40.55652.0100
1.01	.0398	5.05	6.50	38	3.00	40.55652.0101
1.02	.0402	5.10	6.50	38	3.00	40.55652.0102
1.03	.0406	5.15	6.50	38	3.00	40.55652.0103
1.04	.0409	5.20	6.50	38	3.00	40.55652.0104
1.05	.0413	5.25	6.50	38	3.00	40.55652.0105
1.06	.0417	5.30	6.50	38	3.00	40.55652.0106
1.07	.0421	5.35	7.50	38	3.00	40.55652.0107
1.08	.0425	5.40	7.50	38	3.00	40.55652.0108
1.09	.0429	5.45	7.50	38	3.00	40.55652.0109
1.10	.0433	5.50	7.50	38	3.00	40.55652.0110
1.11	.0437	5.55	7.50	38	3.00	40.55652.0111
1.12	.0441	5.60	7.50	38	3.00	40.55652.0112
1.13	.0445	5.65	7.50	38	3.00	40.55652.0113
1.14	.0449	5.70	7.50	38	3.00	40.55652.0114
1.15	.0453	5.75	7.50	38	3.00	40.55652.0115
1.16	.0457	5.80	7.50	38	3.00	40.55652.0116
1.17	.0461	5.85	7.50	38	3.00	40.55652.0117
1.18	.0465	5.90	8.50	38	3.00	40.55652.0118
1.19	.0469	5.95	8.50	38	3.00	40.55652.0119
1.20	.0472	6.00	8.50	38	3.00	40.55652.0120
1.21	.0476	6.05	8.50	38	3.00	40.55652.0121
1.22	.0480	6.10	8.50	38	3.00	40.55652.0122

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
1.23	.0484	6.15	8.50	38	3.00	40.55652.0123
1.24	.0488	6.20	8.50	38	3.00	40.55652.0124
1.25	.0492	6.25	8.50	38	3.00	40.55652.0125
1.26	.0496	6.30	8.50	38	3.00	40.55652.0126
1.27	.0500	6.35	8.50	38	3.00	40.55652.0127
1.28	.0504	6.40	8.50	38	3.00	40.55652.0128
1.29	.0508	6.45	8.50	38	3.00	40.55652.0129
1.30	.0512	6.50	8.50	38	3.00	40.55652.0130
1.31	.0516	6.55	8.50	38	3.00	40.55652.0131
1.32	.0520	6.60	8.50	38	3.00	40.55652.0132
1.33	.0524	6.65	9.50	38	3.00	40.55652.0133
1.34	.0528	6.70	9.50	38	3.00	40.55652.0134
1.35	.0531	6.75	9.50	38	3.00	40.55652.0135
1.36	.0535	6.80	9.50	38	3.00	40.55652.0136
1.37	.0539	6.85	9.50	38	3.00	40.55652.0137
1.38	.0543	6.90	9.50	38	3.00	40.55652.0138
1.39	.0547	6.95	9.50	38	3.00	40.55652.0139
1.40	.0551	7.00	9.50	38	3.00	40.55652.0140
1.41	.0555	7.05	9.50	38	3.00	40.55652.0141
1.42	.0559	7.10	9.50	38	3.00	40.55652.0142
1.43	.0563	7.15	9.50	38	3.00	40.55652.0143
1.44	.0567	7.20	9.50	38	3.00	40.55652.0144
1.45	.0571	7.25	9.50	38	3.00	40.55652.0145
1.46	.0575	7.30	9.50	38	3.00	40.55652.0146
1.47	.0579	7.35	9.50	38	3.00	40.55652.0147
1.48	.0583	7.40	9.50	38	3.00	40.55652.0148
1.49	.0587	7.45	9.50	38	3.00	40.55652.0149
1.50	.0591	7.50	9.50	38	3.00	40.55652.0150
1.51	.0594	7.55	10.50	38	3.00	40.55652.0151
1.52	.0598	7.60	10.50	38	3.00	40.55652.0152
1.53	.0602	7.65	10.50	38	3.00	40.55652.0153
1.54	.0606	7.70	10.50	38	3.00	40.55652.0154
1.55	.0610	7.75	10.50	38	3.00	40.55652.0155
1.56	.0614	7.80	10.50	38	3.00	40.55652.0156
1.57	.0618	7.85	10.50	38	3.00	40.55652.0157
1.58	.0622	7.90	10.50	38	3.00	40.55652.0158
1.59	.0626	7.95	10.50	38	3.00	40.55652.0159
1.60	.0630	8.00	10.50	38	3.00	40.55652.0160
1.61	.0634	8.05	10.50	38	3.00	40.55652.0161
1.62	.0638	8.10	10.50	38	3.00	40.55652.0162
1.63	.0642	8.15	10.50	38	3.00	40.55652.0163
1.64	.0646	8.20	10.50	38	3.00	40.55652.0164
1.65	.0650	8.25	10.50	38	3.00	40.55652.0165
1.66	.0654	8.30	10.50	38	3.00	40.55652.0166
1.67	.0657	8.35	10.50	38	3.00	40.55652.0167

MICRO DRILLS

TRICUT 5XD — ART. 55652

Art. 55652 Cont.



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
1.68	.0661	8.40	10.50	38	3.00	40.55652.0168
1.69	.0665	8.45	10.50	38	3.00	40.55652.0169
1.70	.0669	8.50	10.50	38	3.00	40.55652.0170
1.71	.0673	8.55	11.50	38	3.00	40.55652.0171
1.72	.0677	8.60	11.50	38	3.00	40.55652.0172
1.73	.0681	8.65	11.50	38	3.00	40.55652.0173
1.74	.0685	8.70	11.50	38	3.00	40.55652.0174
1.75	.0689	8.75	11.50	38	3.00	40.55652.0175
1.76	.0693	8.80	11.50	38	3.00	40.55652.0176
1.77	.0697	8.85	11.50	38	3.00	40.55652.0177
1.78	.0701	8.90	11.50	38	3.00	40.55652.0178
1.79	.0705	8.95	11.50	38	3.00	40.55652.0179
1.80	.0709	9.00	11.50	38	3.00	40.55652.0180
1.81	.0713	9.05	11.50	38	3.00	40.55652.0181
1.82	.0717	9.10	11.50	38	3.00	40.55652.0182
1.83	.0720	9.15	11.50	38	3.00	40.55652.0183
1.84	.0724	9.20	11.50	38	3.00	40.55652.0184
1.85	.0728	9.25	11.50	38	3.00	40.55652.0185
1.86	.0732	9.30	11.50	38	3.00	40.55652.0186
1.87	.0736	9.35	11.50	38	3.00	40.55652.0187
1.88	.0740	9.40	11.50	38	3.00	40.55652.0188
1.89	.0744	9.45	11.50	38	3.00	40.55652.0189
1.90	.0748	9.50	11.50	38	3.00	40.55652.0190
1.91	.0752	9.55	12.50	38	3.00	40.55652.0191
1.92	.0756	9.60	12.50	38	3.00	40.55652.0192
1.93	.0760	9.65	12.50	38	3.00	40.55652.0193
1.94	.0764	9.70	12.50	38	3.00	40.55652.0194
1.95	.0768	9.75	12.50	38	3.00	40.55652.0195
1.96	.0772	9.80	12.50	38	3.00	40.55652.0196
1.97	.0776	9.85	12.50	38	3.00	40.55652.0197
1.98	.0780	9.90	12.50	38	3.00	40.55652.0198
1.99	.0783	9.95	12.50	38	3.00	40.55652.0199
2.00	.0787	10.00	12.50	38	3.00	40.55652.0200
2.01	.0791	10.05	12.50	38	3.00	40.55652.0201
2.02	.0795	10.10	12.50	38	3.00	40.55652.0202
2.03	.0799	10.15	12.50	38	3.00	40.55652.0203
2.04	.0803	10.20	12.50	38	3.00	40.55652.0204
2.05	.0807	10.25	12.50	38	3.00	40.55652.0205
2.06	.0811	10.30	12.50	38	3.00	40.55652.0206

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
2.07	.0815	10.35	12.50	38	3.00	40.55652.0207
2.08	.0819	10.40	12.50	38	3.00	40.55652.0208
2.09	.0823	10.45	12.50	38	3.00	40.55652.0209
2.10	.0827	10.50	12.50	38	3.00	40.55652.0210
2.11	.0831	10.55	12.50	38	3.00	40.55652.0211
2.12	.0835	10.60	12.50	38	3.00	40.55652.0212
2.13	.0839	10.65	13.50	38	3.00	40.55652.0213
2.14	.0843	10.70	13.50	38	3.00	40.55652.0214
2.15	.0846	10.75	13.50	38	3.00	40.55652.0215
2.16	.0850	10.80	13.50	38	3.00	40.55652.0216
2.17	.0854	10.85	13.50	38	3.00	40.55652.0217
2.18	.0858	10.90	13.50	38	3.00	40.55652.0218
2.19	.0862	10.95	13.50	38	3.00	40.55652.0219
2.20	.0866	11.00	13.50	38	3.00	40.55652.0220
2.21	.0870	11.05	13.50	38	3.00	40.55652.0221
2.22	.0874	11.10	13.50	38	3.00	40.55652.0222
2.23	.0878	11.15	13.50	38	3.00	40.55652.0223
2.24	.0882	11.20	13.50	38	3.00	40.55652.0224
2.25	.0886	11.25	13.50	38	3.00	40.55652.0225
2.26	.0890	11.30	13.50	38	3.00	40.55652.0226
2.27	.0894	11.35	13.50	38	3.00	40.55652.0227
2.28	.0898	11.40	13.50	38	3.00	40.55652.0228
2.29	.0902	11.45	13.50	38	3.00	40.55652.0229
2.30	.0906	11.50	13.50	38	3.00	40.55652.0230
2.31	.0909	11.55	13.50	38	3.00	40.55652.0231
2.32	.0913	11.60	13.50	38	3.00	40.55652.0232
2.33	.0917	11.65	13.50	38	3.00	40.55652.0233
2.34	.0921	11.70	13.50	38	3.00	40.55652.0234
2.35	.0925	11.75	13.50	38	3.00	40.55652.0235
2.36	.0929	11.80	13.50	38	3.00	40.55652.0236
2.37	.0933	11.85	14.50	38	3.00	40.55652.0237
2.38	.0937	11.90	14.50	38	3.00	40.55652.0238
2.39	.0941	11.95	14.50	38	3.00	40.55652.0239
2.40	.0945	12.00	14.50	38	3.00	40.55652.0240
2.41	.0949	12.05	14.50	38	3.00	40.55652.0241
2.42	.0953	12.10	14.50	38	3.00	40.55652.0242
2.43	.0957	12.15	14.50	38	3.00	40.55652.0243
2.44	.0961	12.20	14.50	38	3.00	40.55652.0244
2.45	.0965	12.25	14.50	38	3.00	40.55652.0245

MICRO DRILLS

TRICUT 5XD — ART. 55652

※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
2.46	.0969	12.30	14.50	38	3.00	40.55652.0246
2.47	.0972	12.35	14.50	38	3.00	40.55652.0247
2.48	.0976	12.40	14.50	38	3.00	40.55652.0248
2.49	.0980	12.45	14.50	38	3.00	40.55652.0249
2.50	.0984	12.50	14.50	38	3.00	40.55652.0250
2.51	.0988	12.55	14.50	38	3.00	40.55652.0251
2.52	.0992	12.60	14.50	38	3.00	40.55652.0252
2.53	.0996	12.65	14.50	38	3.00	40.55652.0253
2.54	.1000	12.70	14.50	38	3.00	40.55652.0254
2.55	.1004	12.75	14.50	38	3.00	40.55652.0255
2.56	.1008	12.80	14.50	38	3.00	40.55652.0256
2.57	.1012	12.85	14.50	38	3.00	40.55652.0257
2.58	.1016	12.90	14.50	38	3.00	40.55652.0258
2.59	.1020	12.95	14.50	38	3.00	40.55652.0259
2.60	.1024	13.00	14.50	38	3.00	40.55652.0260
2.61	.1028	13.05	14.50	38	3.00	40.55652.0261
2.62	.1031	13.10	14.50	38	3.00	40.55652.0262
2.63	.1035	13.15	14.50	38	3.00	40.55652.0263
2.64	.1039	13.20	14.50	38	3.00	40.55652.0264
2.65	.1043	13.25	14.50	38	3.00	40.55652.0265
2.66	.1047	13.30	16.50	38	3.00	40.55652.0266
2.67	.1051	13.35	16.50	38	3.00	40.55652.0267
2.68	.1055	13.40	16.50	38	3.00	40.55652.0268
2.69	.1059	13.45	16.50	38	3.00	40.55652.0269
2.70	.1063	13.50	16.50	38	3.00	40.55652.0270
2.71	.1067	13.55	16.50	38	3.00	40.55652.0271
2.72	.1071	13.60	16.50	38	3.00	40.55652.0272

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
2.73	.1075	13.65	16.50	38	3.00	40.55652.0273
2.74	.1079	13.70	16.50	38	3.00	40.55652.0274
2.75	.1083	13.75	16.50	38	3.00	40.55652.0275
2.76	.1087	13.80	16.50	38	3.00	40.55652.0276
2.77	.1091	13.85	16.50	38	3.00	40.55652.0277
2.78	.1094	13.90	16.50	38	3.00	40.55652.0278
2.79	.1098	13.95	16.50	38	3.00	40.55652.0279
2.80	.1102	14.00	16.50	38	3.00	40.55652.0280
2.81	.1106	14.05	16.50	38	3.00	40.55652.0281
2.82	.1110	14.10	16.50	38	3.00	40.55652.0282
2.83	.1114	14.15	16.50	38	3.00	40.55652.0283
2.84	.1118	14.20	16.50	38	3.00	40.55652.0284
2.85	.1122	14.25	16.50	38	3.00	40.55652.0285
2.86	.1126	14.30	16.50	38	3.00	40.55652.0286
2.87	.1130	14.35	16.50	38	3.00	40.55652.0287
2.88	.1134	14.40	16.50	38	3.00	40.55652.0288
2.89	.1138	14.45	16.50	38	3.00	40.55652.0289
2.90	.1142	14.50	16.50	38	3.00	40.55652.0290
2.91	.1146	14.55	16.50	38	3.00	40.55652.0291
2.92	.1150	14.60	16.50	38	3.00	40.55652.0292
2.93	.1154	14.65	16.50	38	3.00	40.55652.0293
2.94	.1157	14.70	16.50	38	3.00	40.55652.0294
2.95	.1161	14.75	16.50	38	3.00	40.55652.0295
2.96	.1165	14.80	16.50	38	3.00	40.55652.0296
2.97	.1169	14.85	16.50	38	3.00	40.55652.0297
2.98	.1173	14.90	16.50	38	3.00	40.55652.0298
2.99	.1177	14.95	16.50	38	3.00	40.55652.0299



MICRO DRILLS

HIGH PERFORMANCE PHOENIX 6XD — ART. 50941

Art. 50941

Carbide

Z
2

140°

30°

6xd

TiAlN

Blind Hole

Through Hole

Multi-Composite

ST

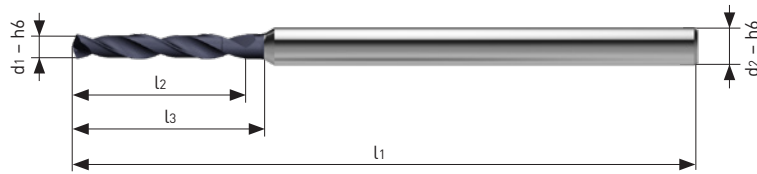
SST

C.I.

Al

Ti

HST



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.50	.0197	3.00	4.80	38	3.00	40.50941.0050
.60	.0236	3.60	5.40	38	3.00	40.50941.0060
.70	.0276	4.20	6.00	38	3.00	40.50941.0070
.80	.0315	4.80	6.70	38	3.00	40.50941.0080
.90	.0354	5.40	7.80	38	3.00	40.50941.0090
1.00	.0394	6.00	8.00	38	3.00	40.50941.0100
1.10	.0433	6.60	8.60	38	3.00	40.50941.0110
1.20	.0472	7.20	9.20	38	3.00	40.50941.0120
1.30	.0512	7.80	9.80	38	3.00	40.50941.0130
1.40	.0551	8.40	10.40	38	3.00	40.50941.0140

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
1.50	.0591	9.00	11.00	38	3.00	40.50941.0150
1.60	.0630	9.60	12.60	38	3.00	40.50941.0160
1.70	.0669	10.20	13.20	38	3.00	40.50941.0170
1.80	.0709	10.80	13.80	38	3.00	40.50941.0180
1.90	.0748	11.40	14.40	38	3.00	40.50941.0190
2.00	.0787	12.00	15.00	50	3.00	40.50941.0200
2.10	.0827	12.60	15.60	50	3.00	40.50941.0210
2.20	.0866	13.20	16.20	50	3.00	40.50941.0220
2.30	.0906	13.80	16.80	50	3.00	40.50941.0230
2.40	.0945	14.40	17.40	50	3.00	40.50941.0240

MICRO DRILLS

HIGH PERFORMANCE NIROX 9XD — ART. 51609

Art. 51609

Carbide

Z
2

140°

30°

9xd

TiAlSiN

Blind Hole

Through Hole

Multi-Composite

Cross Hole

ST

SST

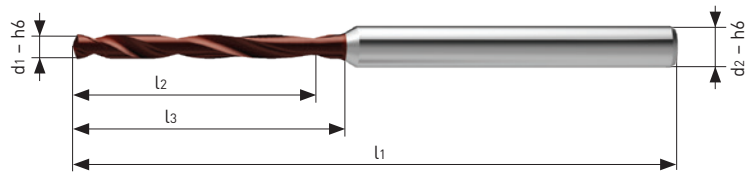
C.I.

Al

Ti

HST

Plastic



※ All dimensions are millimeters unless otherwise noted

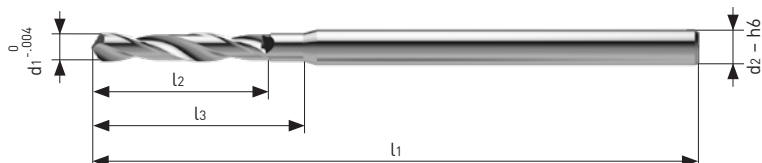
d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.30	.0118	2.70	3.30	38	3.00	40.51609.0030
.35	.0138	3.20	3.90	38	3.00	40.51609.0035
.40	.0157	3.60	4.40	38	3.00	40.51609.0040
.45	.0177	4.10	5.00	38	3.00	40.51609.0045
.50	.0197	4.50	5.50	38	3.00	40.51609.0050
.55	.0217	5.00	6.10	38	3.00	40.51609.0055
.60	.0236	5.40	6.60	38	3.00	40.51609.0060
.65	.0256	5.90	7.20	38	3.00	40.51609.0065
.70	.0276	6.30	7.70	38	3.00	40.51609.0070
.75	.0295	6.80	8.30	38	3.00	40.51609.0075
.80	.0315	7.20	8.80	38	3.00	40.51609.0080
.85	.0335	7.70	9.40	38	3.00	40.51609.0085
.90	.0354	8.10	9.90	38	3.00	40.51609.0090
.95	.0374	8.60	10.50	38	3.00	40.51609.0095
1.00	.0394	9.00	11.00	38	3.00	40.51609.0100
1.05	.0413	9.50	11.60	38	3.00	40.51609.0105
1.10	.0433	9.90	12.10	38	3.00	40.51609.0110
1.15	.0453	10.40	12.70	38	3.00	40.51609.0115
1.20	.0472	10.80	13.20	38	3.00	40.51609.0120
1.25	.0492	11.30	13.80	38	3.00	40.51609.0125
1.30	.0512	11.70	14.30	38	3.00	40.51609.0130
1.35	.0531	12.20	14.90	38	3.00	40.51609.0135
1.40	.0551	12.60	15.40	38	3.00	40.51609.0140
1.45	.0571	13.10	16.00	38	3.00	40.51609.0145
1.50	.0591	13.50	16.50	38	3.00	40.51609.0150
1.55	.0610	14.00	17.10	50	3.00	40.51609.0155
1.60	.0630	14.40	17.60	50	3.00	40.51609.0160
1.65	.0650	14.90	18.20	50	3.00	40.51609.0165

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
1.70	.0669	15.30	18.70	50	3.00	40.51609.0170
1.75	.0689	15.80	19.30	50	3.00	40.51609.0175
1.80	.0709	16.20	19.80	50	3.00	40.51609.0180
1.85	.0728	16.70	20.40	50	3.00	40.51609.0185
1.90	.0748	17.10	20.90	50	3.00	40.51609.0190
1.95	.0768	17.60	21.50	50	3.00	40.51609.0195
2.00	.0787	18.00	22.00	50	3.00	40.51609.0200
2.05	.0807	18.50	22.60	50	3.00	40.51609.0205
2.10	.0827	18.90	23.10	50	3.00	40.51609.0210
2.15	.0846	19.40	23.70	50	3.00	40.51609.0215
2.20	.0866	19.80	24.20	50	3.00	40.51609.0220
2.25	.0886	20.30	24.80	50	3.00	40.51609.0225
2.30	.0906	20.70	25.30	50	3.00	40.51609.0230
2.35	.0925	21.20	25.90	50	3.00	40.51609.0235
2.40	.0945	21.60	26.40	50	3.00	40.51609.0240
2.45	.0965	22.10	27.00	50	3.00	40.51609.0245
2.50	.0984	22.50	27.50	50	3.00	40.51609.0250
2.55	.1004	23.00	28.10	50	3.00	40.51609.0255
2.60	.1024	23.40	28.60	50	3.00	40.51609.0260
2.65	.1043	23.90	29.20	50	3.00	40.51609.0265
2.70	.1063	24.30	29.70	50	3.00	40.51609.0270
2.75	.1083	24.80	30.30	50	3.00	40.51609.0275
2.80	.1102	25.20	30.80	50	3.00	40.51609.0280
2.85	.1122	25.70	31.40	50	3.00	40.51609.0285
2.90	.1142	26.10	31.90	50	3.00	40.51609.0290
2.95	.1161	26.60	32.50	50	3.00	40.51609.0295
3.00	.1181	27.00	33.00	50	3.00	40.51609.0300

MICRO DRILLS

SPIREC 6XD, HSS — ART. 12604

Art. 12604



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.05	.0020	.40	.60	25	1.00	40.12604.0005
.06	.0024	.40	.60	25	1.00	40.12604.0006
.07	.0028	.50	.70	25	1.00	40.12604.0007
.08	.0031	.50	.70	25	1.00	40.12604.0008
.09	.0035	.50	.70	25	1.00	40.12604.0009
.10	.0039	.50	.70	25	1.00	40.12604.0010
.11	.0043	.50	.70	25	1.00	40.12604.0011
.12	.0047	.50	.70	25	1.00	40.12604.0012
.13	.0051	.80	1.00	25	1.00	40.12604.0013
.14	.0055	.80	1.00	25	1.00	40.12604.0014
.15	.0059	.80	1.00	25	1.00	40.12604.0015
.16	.0063	1.10	1.40	25	1.00	40.12604.0016
.17	.0067	1.10	1.40	25	1.00	40.12604.0017
.18	.0071	1.10	1.40	25	1.00	40.12604.0018
.19	.0075	1.10	1.40	25	1.00	40.12604.0019
.20	.0079	1.50	1.80	25	1.00	40.12604.0020
.21	.0083	1.50	1.80	25	1.00	40.12604.0021
.22	.0087	1.50	1.80	25	1.00	40.12604.0022
.23	.0091	1.50	1.80	25	1.00	40.12604.0023
.24	.0094	1.50	1.80	25	1.00	40.12604.0024
.25	.0098	1.90	2.20	25	1.00	40.12604.0025
.26	.0102	1.90	2.20	25	1.00	40.12604.0026
.27	.0106	1.90	2.20	25	1.00	40.12604.0027
.28	.0110	1.90	2.20	25	1.00	40.12604.0028
.29	.0114	1.90	2.20	25	1.00	40.12604.0029
.30	.0118	1.90	2.20	25	1.00	40.12604.0030
.31	.0122	2.40	2.80	25	1.00	40.12604.0031
.32	.0126	2.40	2.80	25	1.00	40.12604.0032
.33	.0130	2.40	2.80	25	1.00	40.12604.0033
.34	.0134	2.40	2.80	25	1.00	40.12604.0034

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.35	.0138	2.40	2.80	25	1.00	40.12604.0035
.36	.0142	2.40	2.80	25	1.00	40.12604.0036
.37	.0146	2.40	2.80	25	1.00	40.12604.0037
.38	.0150	2.40	2.80	25	1.00	40.12604.0038
.39	.0154	2.70	3.60	25	1.00	40.12604.0039
.40	.0157	2.70	3.60	25	1.00	40.12604.0040
.41	.0161	2.70	3.60	25	1.00	40.12604.0041
.42	.0165	2.70	3.60	25	1.00	40.12604.0042
.43	.0169	2.70	3.60	25	1.00	40.12604.0043
.44	.0173	2.70	3.60	25	1.00	40.12604.0044
.45	.0177	2.70	3.60	25	1.00	40.12604.0045
.46	.0181	2.70	3.60	25	1.00	40.12604.0046
.47	.0185	2.70	3.60	25	1.00	40.12604.0047
.48	.0189	2.70	3.60	25	1.00	40.12604.0048
.49	.0193	3.20	4.00	25	1.00	40.12604.0049
.50	.0197	3.20	4.00	25	1.00	40.12604.0050
.51	.0201	3.20	4.00	25	1.00	40.12604.0051
.52	.0205	3.20	4.00	25	1.00	40.12604.0052
.53	.0209	3.20	4.00	25	1.00	40.12604.0053
.54	.0213	3.60	4.50	25	1.00	40.12604.0054
.55	.0217	3.60	4.50	25	1.00	40.12604.0055
.56	.0220	3.60	4.50	25	1.00	40.12604.0056
.57	.0224	3.60	4.50	25	1.00	40.12604.0057
.58	.0228	3.60	4.50	25	1.00	40.12604.0058
.59	.0232	3.60	4.50	25	1.00	40.12604.0059
.60	.0236	3.60	4.50	25	1.00	40.12604.0060
.61	.0240	3.90	5.00	25	1.00	40.12604.0061
.62	.0244	3.90	5.00	25	1.00	40.12604.0062
.63	.0248	3.90	5.00	25	1.00	40.12604.0063
.64	.0252	3.90	5.00	25	1.00	40.12604.0064

• Packaged in quantities of 10 pieces

MICRO DRILLS

SPIREC 6XD, HSS — ART. 12604

※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.65	.0256	3.90	5.00	25	1.00	40.12604.0065
.66	.0260	3.90	5.00	25	1.00	40.12604.0066
.67	.0264	3.90	5.00	25	1.00	40.12604.0067
.68	.0268	4.50	5.60	25	1.00	40.12604.0068
.69	.0272	4.50	5.60	25	1.00	40.12604.0069
.70	.0276	4.50	5.60	25	1.00	40.12604.0070
.71	.0280	4.50	5.60	25	1.00	40.12604.0071
.72	.0283	4.50	5.60	25	1.00	40.12604.0072
.73	.0287	4.50	5.60	25	1.00	40.12604.0073
.74	.0291	4.50	5.60	25	1.00	40.12604.0074
.75	.0295	4.50	5.60	25	1.00	40.12604.0075
.76	.0299	5.00	6.30	25	1.00	40.12604.0076
.77	.0303	5.00	6.30	25	1.00	40.12604.0077
.78	.0307	5.00	6.30	25	1.00	40.12604.0078
.79	.0311	5.00	6.30	25	1.00	40.12604.0079
.80	.0315	5.00	6.30	25	1.50	40.12604.0080
.81	.0319	5.00	6.30	25	1.50	40.12604.0081
.82	.0323	5.00	6.30	25	1.50	40.12604.0082
.83	.0327	5.00	6.30	25	1.50	40.12604.0083
.84	.0331	5.00	6.30	25	1.50	40.12604.0084
.85	.0335	5.00	6.30	25	1.50	40.12604.0085
.86	.0339	5.70	7.10	25	1.50	40.12604.0086
.87	.0343	5.70	7.10	25	1.50	40.12604.0087
.88	.0346	5.70	7.10	25	1.50	40.12604.0088
.89	.0350	5.70	7.10	25	1.50	40.12604.0089
.90	.0354	5.70	7.10	25	1.50	40.12604.0090
.91	.0358	5.70	7.10	25	1.50	40.12604.0091
.92	.0362	5.70	7.10	25	1.50	40.12604.0092
.93	.0366	5.70	7.10	25	1.50	40.12604.0093
.94	.0370	5.70	7.10	25	1.50	40.12604.0094
.95	.0374	5.70	7.10	25	1.50	40.12604.0095
.96	.0378	6.50	8.00	25	1.50	40.12604.0096
.97	.0382	6.50	8.00	25	1.50	40.12604.0097
.98	.0386	6.50	8.00	25	1.50	40.12604.0098
.99	.0390	6.50	8.00	25	1.50	40.12604.0099
1.00	.0394	6.50	8.00	25	1.50	40.12604.0100
1.05	.0413	6.50	8.00	25	1.50	40.12604.0105
1.10	.0433	7.30	9.00	25	1.50	40.12604.0110
1.15	.0453	7.30	9.00	25	1.50	40.12604.0115
1.20	.0472	8.20	10.00	25	1.50	40.12604.0120
1.25	.0492	8.20	10.00	25	1.50	40.12604.0125

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
1.30	.0512	8.20	10.00	25	1.50	40.12604.0130
1.35	.0531	9.20	11.20	25	1.50	40.12604.0135
1.40	.0551	9.20	11.20	25	1.50	40.12604.0140
1.45	.0571	9.20	11.20	25	1.50	40.12604.0145
1.50	.0591	10.90	12.90	38	2.00	40.12604.0150
1.55	.0610	11.20	13.40	38	2.00	40.12604.0155
1.587	.0625 (1/16)	11.20	13.40	38	2.00	40.12604.0158
1.60	.0630	11.20	13.40	38	2.00	40.12604.0160
1.65	.0650	11.20	13.40	38	2.00	40.12604.0165
1.70	.0669	11.20	13.40	38	2.00	40.12604.0170
1.75	.0689	11.20	13.40	38	2.00	40.12604.0175
1.80	.0709	11.20	13.40	38	2.00	40.12604.0180
1.85	.0728	11.20	13.40	38	2.00	40.12604.0185
1.90	.0748	11.70	14.00	38	2.00	40.12604.0190
1.95	.0768	11.70	14.00	38	2.00	40.12604.0195
1.984	.0781 (5/64)	11.70	14.00	38	2.00	40.12604.0198
2.00	.0787	12.70	15.00	43	2.50	40.12604.0200
2.05	.0807	12.70	15.00	43	2.50	40.12604.0205
2.10	.0827	12.70	15.00	43	2.50	40.12604.0210
2.15	.0846	12.70	15.00	43	2.50	40.12604.0215
2.20	.0866	13.70	17.00	43	2.50	40.12604.0220
2.25	.0886	13.70	17.00	43	2.50	40.12604.0225
2.30	.0906	13.70	17.00	43	2.50	40.12604.0230
2.35	.0925	13.70	17.00	43	2.50	40.12604.0235
2.381	.0938 (3/32)	13.70	17.00	43	2.50	40.12604.0238
2.40	.0945	14.70	18.00	43	2.50	40.12604.0240
2.45	.0965	14.70	18.00	43	2.50	40.12604.0245
2.50	.0984	14.70	18.00	46	3.00	40.12604.0250
2.55	.1004	15.70	19.00	46	3.00	40.12604.0255
2.60	.1024	15.70	19.00	46	3.00	40.12604.0260
2.65	.1043	16.70	20.00	46	3.00	40.12604.0265
2.70	.1063	16.70	20.00	46	3.00	40.12604.0270
2.75	.1083	17.70	21.00	46	3.00	40.12604.0275
2.778	.1094 (7/64)	17.70	21.00	46	3.00	40.12604.0278
2.80	.1102	17.70	21.00	46	3.00	40.12604.0280
2.85	.1122	18.70	22.00	46	3.00	40.12604.0285
2.90	.1142	18.70	22.00	46	3.00	40.12604.0290
2.95	.1161	19.70	23.00	46	3.00	40.12604.0295
3.00	.1181	19.70	—	46	3.00	40.12604.0300
3.175	.1250 (1/8)	19.70	—	46	3.175	40.12604.0318

• Packaged in quantities of 10 pieces

MICRO DRILLS

SPIREC PILOT 6XD — ART. 50695

Art. 50695

Carbide

+.004
d1 0

Z
2

118°

30°

6-8xd

Blind Hole

Through Hole

ST

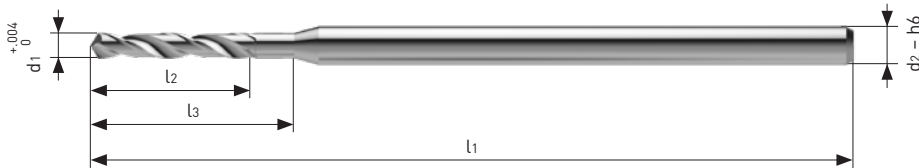
SST

C.I.

Al

Brass

Mg



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.20	.0079	1.50	1.80	30	1.00	40.50695.0020
.21	.0083	1.50	1.80	30	1.00	40.50695.0021
.22	.0087	1.50	1.80	30	1.00	40.50695.0022
.23	.0091	1.50	1.80	30	1.00	40.50695.0023
.24	.0094	1.50	1.80	30	1.00	40.50695.0024
.25	.0098	1.90	2.20	30	1.00	40.50695.0025
.26	.0102	1.90	2.20	30	1.00	40.50695.0026
.27	.0106	1.90	2.20	30	1.00	40.50695.0027
.28	.0110	1.90	2.20	30	1.00	40.50695.0028
.29	.0114	1.90	2.20	30	1.00	40.50695.0029
.30	.0118	1.90	2.20	30	1.00	40.50695.0030
.31	.0122	2.40	2.80	30	1.00	40.50695.0031
.32	.0126	2.40	2.80	30	1.00	40.50695.0032
.33	.0130	2.40	2.80	30	1.00	40.50695.0033
.34	.0134	2.40	2.80	30	1.00	40.50695.0034
.35	.0138	2.40	2.80	30	1.00	40.50695.0035
.36	.0142	2.40	2.80	30	1.00	40.50695.0036
.37	.0146	2.40	2.80	30	1.00	40.50695.0037
.38	.0150	2.40	2.80	30	1.00	40.50695.0038
.39	.0154	2.70	3.60	30	1.00	40.50695.0039
.40	.0157	2.70	3.60	30	1.00	40.50695.0040
.41	.0161	2.70	3.60	30	1.00	40.50695.0041
.42	.0165	2.70	3.60	30	1.00	40.50695.0042
.43	.0169	2.70	3.60	30	1.00	40.50695.0043
.44	.0173	2.70	3.60	30	1.00	40.50695.0044
.45	.0177	2.70	3.60	30	1.00	40.50695.0045
.46	.0181	2.70	3.60	30	1.00	40.50695.0046
.47	.0185	2.70	3.60	30	1.00	40.50695.0047
.48	.0189	2.70	3.60	30	1.00	40.50695.0048

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.49	.0193	3.20	4.00	30	1.00	40.50695.0049
.50	.0197	3.20	4.00	30	1.00	40.50695.0050
.51	.0201	3.20	4.00	30	1.00	40.50695.0051
.52	.0205	3.20	4.00	30	1.00	40.50695.0052
.53	.0209	3.20	4.00	30	1.00	40.50695.0053
.54	.0213	3.60	4.50	30	1.00	40.50695.0054
.55	.0217	3.60	4.50	30	1.00	40.50695.0055
.56	.0220	3.60	4.50	30	1.00	40.50695.0056
.57	.0224	3.60	4.50	30	1.00	40.50695.0057
.58	.0228	3.60	4.50	30	1.00	40.50695.0058
.59	.0232	3.60	4.50	30	1.00	40.50695.0059
.60	.0236	3.60	4.50	30	1.00	40.50695.0060
.61	.0240	3.90	5.00	30	1.00	40.50695.0061
.62	.0244	3.90	5.00	30	1.00	40.50695.0062
.63	.0248	3.90	5.00	30	1.00	40.50695.0063
.64	.0252	3.90	5.00	30	1.00	40.50695.0064
.65	.0256	3.90	5.00	30	1.00	40.50695.0065
.66	.0260	3.90	5.00	30	1.00	40.50695.0066
.67	.0264	3.90	5.00	30	1.00	40.50695.0067
.68	.0268	4.50	5.60	30	1.00	40.50695.0068
.69	.0272	4.50	5.60	30	1.00	40.50695.0069
.70	.0276	4.50	5.60	30	1.00	40.50695.0070
.71	.0280	4.50	5.60	30	1.00	40.50695.0071
.72	.0283	4.50	5.60	30	1.00	40.50695.0072
.73	.0287	4.50	5.60	30	1.00	40.50695.0073
.74	.0291	4.50	5.60	30	1.00	40.50695.0074
.75	.0295	4.50	5.60	30	1.00	40.50695.0075
.76	.0299	5.00	6.30	30	1.00	40.50695.0076
.77	.0303	5.00	6.30	30	1.00	40.50695.0077

• Packaged in quantities of 10 pieces

MICRO DRILLS

SPIREC PILOT 6XD — ART. 50695

※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.78	.0307	5.00	6.30	30	1.00	40.50695.0078
.79	.0311	5.00	6.30	30	1.00	40.50695.0079
.80	.0315	5.00	6.30	30	1.50	40.50695.0080
.81	.0319	5.00	6.30	30	1.50	40.50695.0081
.82	.0323	5.00	6.30	30	1.50	40.50695.0082
.83	.0327	5.00	6.30	30	1.50	40.50695.0083
.84	.0331	5.00	6.30	30	1.50	40.50695.0084
.85	.0335	5.00	6.30	30	1.50	40.50695.0085
.86	.0339	5.70	7.10	30	1.50	40.50695.0086
.87	.0343	5.70	7.10	30	1.50	40.50695.0087
.88	.0346	5.70	7.10	30	1.50	40.50695.0088
.89	.0350	5.70	7.10	30	1.50	40.50695.0089
.90	.0354	5.70	7.10	30	1.50	40.50695.0090
.91	.0358	5.70	7.10	30	1.50	40.50695.0091
.92	.0362	5.70	7.10	30	1.50	40.50695.0092
.93	.0366	5.70	7.10	30	1.50	40.50695.0093
.94	.0370	5.70	7.10	30	1.50	40.50695.0094
.95	.0374	5.70	7.10	30	1.50	40.50695.0095
.96	.0378	6.50	8.00	30	1.50	40.50695.0096
.97	.0382	6.50	8.00	30	1.50	40.50695.0097
.98	.0386	6.50	8.00	30	1.50	40.50695.0098
.99	.0390	6.50	8.00	30	1.50	40.50695.0099
1.00	.0394	6.50	8.00	30	1.50	40.50695.0100
1.01	.0398	6.50	8.00	30	1.50	40.50695.0101
1.02	.0402	6.50	8.00	30	1.50	40.50695.0102
1.03	.0406	6.50	8.00	30	1.50	40.50695.0103
1.04	.0409	6.50	8.00	30	1.50	40.50695.0104
1.05	.0413	6.50	8.00	30	1.50	40.50695.0105
1.06	.0417	7.30	9.00	30	1.50	40.50695.0106
1.07	.0421	7.30	9.00	30	1.50	40.50695.0107
1.08	.0425	7.30	9.00	30	1.50	40.50695.0108
1.09	.0429	7.30	9.00	30	1.50	40.50695.0109
1.10	.0433	7.30	9.00	30	1.50	40.50695.0110
1.11	.0437	7.30	9.00	30	1.50	40.50695.0111
1.12	.0441	7.30	9.00	30	1.50	40.50695.0112
1.13	.0445	7.30	9.00	30	1.50	40.50695.0113
1.14	.0449	7.30	9.00	30	1.50	40.50695.0114

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
1.15	.0453	7.30	9.00	30	1.50	40.50695.0115
1.16	.0457	8.20	10.00	30	1.50	40.50695.0116
1.17	.0461	8.20	10.00	30	1.50	40.50695.0117
1.18	.0465	8.20	10.00	30	1.50	40.50695.0118
1.19	.0469	8.20	10.00	30	1.50	40.50695.0119
1.20	.0472	8.20	10.00	30	1.50	40.50695.0120
1.21	.0476	8.20	10.00	30	1.50	40.50695.0121
1.22	.0480	8.20	10.00	30	1.50	40.50695.0122
1.23	.0484	8.20	10.00	30	1.50	40.50695.0123
1.24	.0488	8.20	10.00	30	1.50	40.50695.0124
1.25	.0492	8.20	10.00	30	1.50	40.50695.0125
1.26	.0496	8.20	10.00	30	1.50	40.50695.0126
1.27	.0500	8.20	10.00	30	1.50	40.50695.0127
1.28	.0504	8.20	10.00	30	1.50	40.50695.0128
1.29	.0508	8.20	10.00	30	1.50	40.50695.0129
1.30	.0512	8.20	10.00	30	1.50	40.50695.0130
1.31	.0516	9.20	11.20	30	1.50	40.50695.0131
1.32	.0520	9.20	11.20	30	1.50	40.50695.0132
1.33	.0524	9.20	11.20	30	1.50	40.50695.0133
1.34	.0528	9.20	11.20	30	1.50	40.50695.0134
1.35	.0531	9.20	11.20	30	1.50	40.50695.0135
1.36	.0535	9.20	11.20	30	1.50	40.50695.0136
1.37	.0539	9.20	11.20	30	1.50	40.50695.0137
1.38	.0543	9.20	11.20	30	1.50	40.50695.0138
1.39	.0547	9.20	11.20	30	1.50	40.50695.0139
1.40	.0551	9.20	11.20	30	1.50	40.50695.0140
1.41	.0555	9.20	11.20	30	1.50	40.50695.0141
1.42	.0559	9.20	11.20	30	1.50	40.50695.0142
1.43	.0563	9.20	11.20	30	1.50	40.50695.0143
1.44	.0567	9.20	11.20	30	1.50	40.50695.0144
1.45	.0571	9.20	11.20	30	1.50	40.50695.0145
1.46	.0575	9.20	11.20	30	1.50	40.50695.0146
1.47	.0579	9.20	11.20	30	1.50	40.50695.0147
1.48	.0583	9.20	11.20	30	1.50	40.50695.0148
1.49	.0587	9.20	11.20	30	1.50	40.50695.0149
1.50	.0591	9.20	—	30	1.50	40.50695.0150

• Packaged in quantities of 10 pieces

MICRO DRILLS

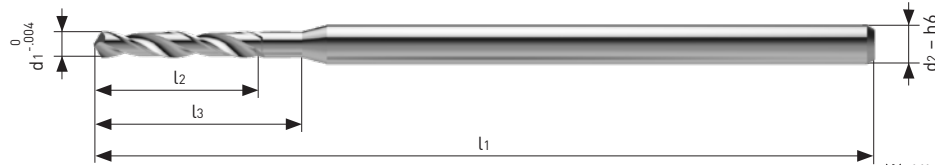
SPIREC 6XD — ART. 50699

Art. 50699

Carbide $d_1 \text{ } ^0_{-0.004}$ DIN 1899-A Z 2 118° 30° 6-8xd

Blind Hole Through Hole

ST SST C.I. Al Brass Mg



※ All dimensions are millimeters unless otherwise noted

d_1	d_1 (in.)	l_2	l_3	l_1	d_2	Catalog Number
.05	.0020	.40	.60	25	1.00	40.50699.0005
.06	.0024	.40	.60	25	1.00	40.50699.0006
.07	.0028	.50	.70	25	1.00	40.50699.0007
.08	.0031	.50	.70	25	1.00	40.50699.0008
.09	.0035	.50	.70	25	1.00	40.50699.0009
.10	.0039	.50	.70	25	1.00	40.50699.0010
.11	.0043	.50	.70	25	1.00	40.50699.0011
.12	.0047	.50	.70	25	1.00	40.50699.0012
.13	.0051	.80	1.00	25	1.00	40.50699.0013
.14	.0055	.80	1.00	25	1.00	40.50699.0014
.15	.0059	.80	1.00	25	1.00	40.50699.0015
.16	.0063	1.10	1.40	25	1.00	40.50699.0016
.17	.0067	1.10	1.40	25	1.00	40.50699.0017
.18	.0071	1.10	1.40	25	1.00	40.50699.0018
.19	.0075	1.10	1.40	25	1.00	40.50699.0019
.20	.0079	1.50	1.80	25	1.00	40.50699.0020
.21	.0083	1.50	1.80	25	1.00	40.50699.0021
.22	.0087	1.50	1.80	25	1.00	40.50699.0022
.23	.0091	1.50	1.80	25	1.00	40.50699.0023
.24	.0094	1.50	1.80	25	1.00	40.50699.0024
.25	.0098	1.90	2.20	25	1.00	40.50699.0025
.26	.0102	1.90	2.20	25	1.00	40.50699.0026
.27	.0106	1.90	2.20	25	1.00	40.50699.0027
.28	.0110	1.90	2.20	25	1.00	40.50699.0028
.29	.0114	1.90	2.20	25	1.00	40.50699.0029
.30	.0118	1.90	2.20	25	1.00	40.50699.0030
.31	.0122	2.40	2.80	25	1.00	40.50699.0031
.32	.0126	2.40	2.80	25	1.00	40.50699.0032
.33	.0130	2.40	2.80	25	1.00	40.50699.0033
.34	.0134	2.40	2.80	25	1.00	40.50699.0034

d_1	d_1 (in.)	l_2	l_3	l_1	d_2	Catalog Number
.35	.0138	2.40	2.80	25	1.00	40.50699.0035
.36	.0142	2.40	2.80	25	1.00	40.50699.0036
.37	.0146	2.40	2.80	25	1.00	40.50699.0037
.38	.0150	2.40	2.80	25	1.00	40.50699.0038
.39	.0154	2.70	3.60	25	1.00	40.50699.0039
.40	.0157	2.70	3.60	25	1.00	40.50699.0040
.41	.0161	2.70	3.60	25	1.00	40.50699.0041
.42	.0165	2.70	3.60	25	1.00	40.50699.0042
.43	.0169	2.70	3.60	25	1.00	40.50699.0043
.44	.0173	2.70	3.60	25	1.00	40.50699.0044
.45	.0177	2.70	3.60	25	1.00	40.50699.0045
.46	.0181	2.70	3.60	25	1.00	40.50699.0046
.47	.0185	2.70	3.60	25	1.00	40.50699.0047
.48	.0189	2.70	3.60	25	1.00	40.50699.0048
.49	.0193	3.20	4.00	25	1.00	40.50699.0049
.50	.0197	3.20	4.00	25	1.00	40.50699.0050
.51	.0201	3.20	4.00	25	1.00	40.50699.0051
.52	.0205	3.20	4.00	25	1.00	40.50699.0052
.53	.0209	3.20	4.00	25	1.00	40.50699.0053
.54	.0213	3.60	4.50	25	1.00	40.50699.0054
.55	.0217	3.60	4.50	25	1.00	40.50699.0055
.56	.0220	3.60	4.50	25	1.00	40.50699.0056
.57	.0224	3.60	4.50	25	1.00	40.50699.0057
.58	.0228	3.60	4.50	25	1.00	40.50699.0058
.59	.0232	3.60	4.50	25	1.00	40.50699.0059
.60	.0236	3.60	4.50	25	1.00	40.50699.0060
.61	.0240	3.90	5.00	25	1.00	40.50699.0061
.62	.0244	3.90	5.00	25	1.00	40.50699.0062
.63	.0248	3.90	5.00	25	1.00	40.50699.0063
.64	.0252	3.90	5.00	25	1.00	40.50699.0064

• Packaged in quantities of 10 pieces

MICRO DRILLS

SPIREC 6XD — ART. 50699

※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
.65	.0256	3.90	5.00	25	1.00	40.50699.0065
.66	.0260	3.90	5.00	25	1.00	40.50699.0066
.67	.0264	3.90	5.00	25	1.00	40.50699.0067
.68	.0268	4.50	5.60	25	1.00	40.50699.0068
.69	.0272	4.50	5.60	25	1.00	40.50699.0069
.70	.0276	4.50	5.60	25	1.00	40.50699.0070
.71	.0280	4.50	5.60	25	1.00	40.50699.0071
.72	.0283	4.50	5.60	25	1.00	40.50699.0072
.73	.0287	4.50	5.60	25	1.00	40.50699.0073
.74	.0291	4.50	5.60	25	1.00	40.50699.0074
.75	.0295	4.50	5.60	25	1.00	40.50699.0075
.76	.0299	5.00	6.30	25	1.00	40.50699.0076
.77	.0303	5.00	6.30	25	1.00	40.50699.0077
.78	.0307	5.00	6.30	25	1.00	40.50699.0078
.79	.0311	5.00	6.30	25	1.00	40.50699.0079
.80	.0315	5.00	6.30	25	1.50	40.50699.0080
.81	.0319	5.00	6.30	25	1.50	40.50699.0081
.82	.0323	5.00	6.30	25	1.50	40.50699.0082
.83	.0327	5.00	6.30	25	1.50	40.50699.0083
.84	.0331	5.00	6.30	25	1.50	40.50699.0084
.85	.0335	5.00	6.30	25	1.50	40.50699.0085
.86	.0339	5.70	7.10	25	1.50	40.50699.0086
.87	.0343	5.70	7.10	25	1.50	40.50699.0087
.88	.0346	5.70	7.10	25	1.50	40.50699.0088
.89	.0350	5.70	7.10	25	1.50	40.50699.0089
.90	.0354	5.70	7.10	25	1.50	40.50699.0090
.91	.0358	5.70	7.10	25	1.50	40.50699.0091
.92	.0362	5.70	7.10	25	1.50	40.50699.0092
.93	.0366	5.70	7.10	25	1.50	40.50699.0093
.94	.0370	5.70	7.10	25	1.50	40.50699.0094
.95	.0374	5.70	7.10	25	1.50	40.50699.0095
.96	.0378	6.50	8.00	25	1.50	40.50699.0096
.97	.0382	6.50	8.00	25	1.50	40.50699.0097
.98	.0386	6.50	8.00	25	1.50	40.50699.0098
.99	.0390	6.50	8.00	25	1.50	40.50699.0099
1.00	.0394	6.50	8.00	25	1.50	40.50699.0100
1.01	.0398	6.50	8.00	25	1.50	40.50699.0101
1.02	.0402	6.50	8.00	25	1.50	40.50699.0102
1.03	.0406	6.50	8.00	25	1.50	40.50699.0103
1.04	.0409	6.50	8.00	25	1.50	40.50699.0104
1.05	.0413	6.50	8.00	25	1.50	40.50699.0105
1.06	.0417	7.30	9.00	25	1.50	40.50699.0106
1.07	.0421	7.30	9.00	25	1.50	40.50699.0107
1.08	.0425	7.30	9.00	25	1.50	40.50699.0108
1.09	.0429	7.30	9.00	25	1.50	40.50699.0109

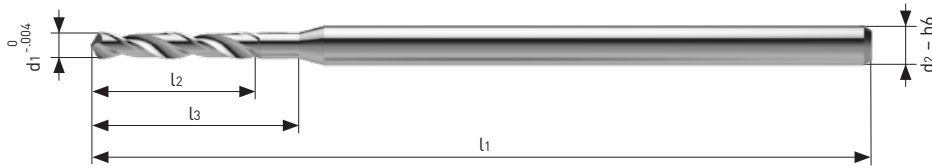
d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
1.10	.0433	7.30	9.00	25	1.50	40.50699.0110
1.11	.0437	7.30	9.00	25	1.50	40.50699.0111
1.12	.0441	7.30	9.00	25	1.50	40.50699.0112
1.13	.0445	7.30	9.00	25	1.50	40.50699.0113
1.14	.0449	7.30	9.00	25	1.50	40.50699.0114
1.15	.0453	7.30	9.00	25	1.50	40.50699.0115
1.16	.0457	8.20	10.00	25	1.50	40.50699.0116
1.17	.0461	8.20	10.00	25	1.50	40.50699.0117
1.18	.0465	8.20	10.00	25	1.50	40.50699.0118
1.19	.0469	8.20	10.00	25	1.50	40.50699.0119
1.20	.0472	8.20	10.00	25	1.50	40.50699.0120
1.21	.0476	8.20	10.00	25	1.50	40.50699.0121
1.22	.0480	8.20	10.00	25	1.50	40.50699.0122
1.23	.0484	8.20	10.00	25	1.50	40.50699.0123
1.24	.0488	8.20	10.00	25	1.50	40.50699.0124
1.25	.0492	8.20	10.00	25	1.50	40.50699.0125
1.26	.0496	8.20	10.00	25	1.50	40.50699.0126
1.27	.0500	8.20	10.00	25	1.50	40.50699.0127
1.28	.0504	8.20	10.00	25	1.50	40.50699.0128
1.29	.0508	8.20	10.00	25	1.50	40.50699.0129
1.30	.0512	8.20	10.00	25	1.50	40.50699.0130
1.31	.0516	9.20	11.20	25	1.50	40.50699.0131
1.32	.0520	9.20	11.20	25	1.50	40.50699.0132
1.33	.0524	9.20	11.20	25	1.50	40.50699.0133
1.34	.0528	9.20	11.20	25	1.50	40.50699.0134
1.35	.0531	9.20	11.20	25	1.50	40.50699.0135
1.36	.0535	9.20	11.20	25	1.50	40.50699.0136
1.37	.0539	9.20	11.20	25	1.50	40.50699.0137
1.38	.0543	9.20	11.20	25	1.50	40.50699.0138
1.39	.0547	9.20	11.20	25	1.50	40.50699.0139
1.40	.0551	9.20	11.20	25	1.50	40.50699.0140
1.41	.0555	9.20	11.20	25	1.50	40.50699.0141
1.42	.0559	9.20	11.20	25	1.50	40.50699.0142
1.43	.0563	9.20	11.20	25	1.50	40.50699.0143
1.44	.0567	9.20	11.20	25	1.50	40.50699.0144
1.45	.0571	9.20	11.20	25	1.50	40.50699.0145
1.46	.0575	9.20	11.20	25	1.50	40.50699.0146
1.47	.0579	9.20	11.20	25	1.50	40.50699.0147
1.48	.0583	9.20	11.20	25	1.50	40.50699.0148
1.49	.0587	9.20	11.20	25	1.50	40.50699.0149
1.50	.0591	9.20	—	25	1.50	40.50699.0150
1.51	.0594	11.20	13.40	38	2.00	40.50699.0151
1.52	.0598	11.20	13.40	38	2.00	40.50699.0152
1.53	.0602	11.20	13.40	38	2.00	40.50699.0153
1.54	.0606	11.20	13.40	38	2.00	40.50699.0154

• Packaged in quantities of 10 pieces

MICRO DRILLS

SPIREC 6XD — ART. 50699

Art. 50699 Cont.

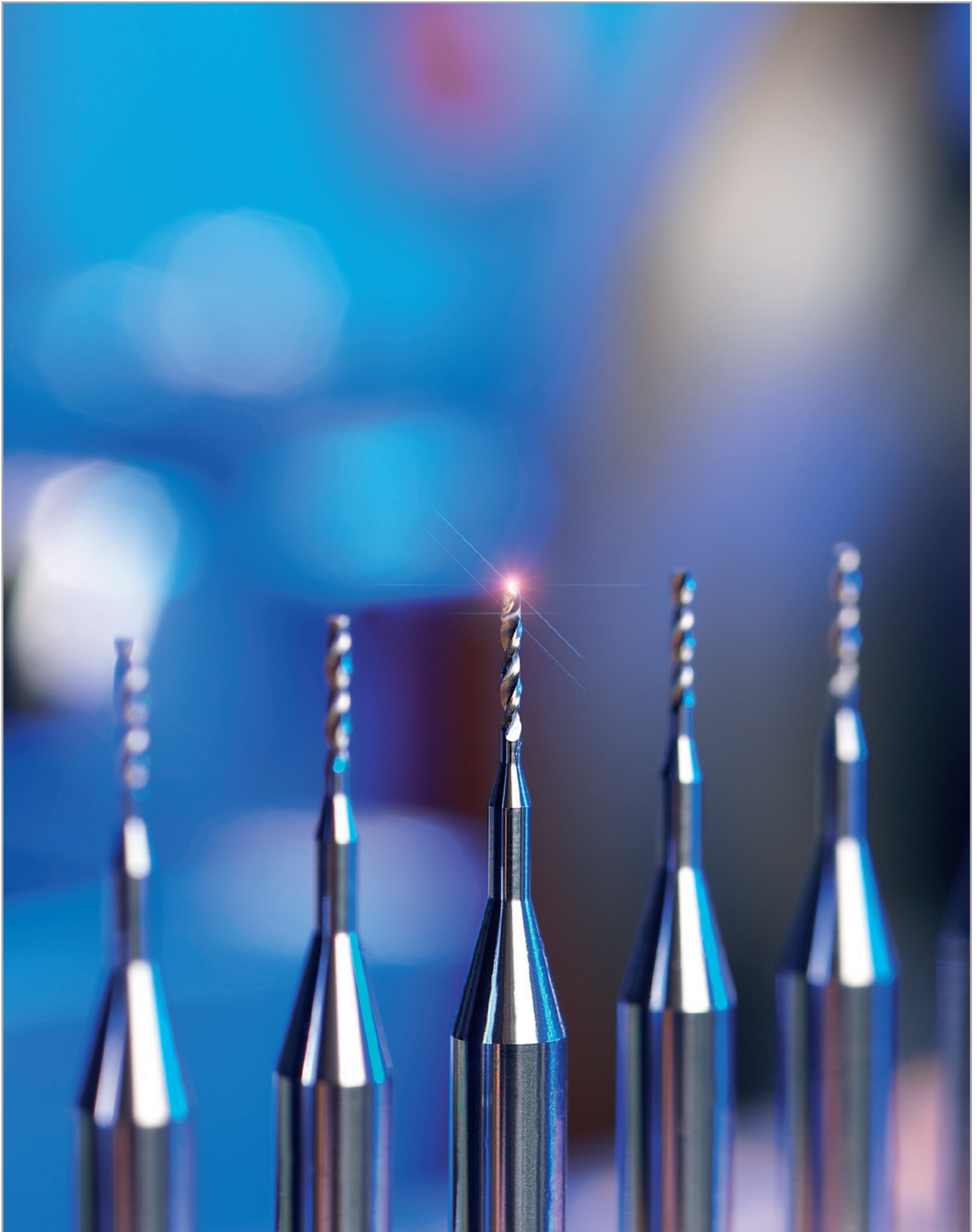


※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
1.55	.0610	11.20	13.40	38	2.00	40.50699.0155
1.56	.0614	11.20	13.40	38	2.00	40.50699.0156
1.57	.0618	11.20	13.40	38	2.00	40.50699.0157
1.58	.0622	11.20	13.40	38	2.00	40.50699.0158
1.59	.0626	11.20	13.40	38	2.00	40.50699.0159
1.60	.0630	11.20	13.40	38	2.00	40.50699.0160
1.61	.0634	11.20	13.40	38	2.00	40.50699.0161
1.62	.0638	11.20	13.40	38	2.00	40.50699.0162
1.63	.0642	11.20	13.40	38	2.00	40.50699.0163
1.64	.0646	11.20	13.40	38	2.00	40.50699.0164
1.65	.0650	11.20	13.40	38	2.00	40.50699.0165
1.66	.0654	11.20	13.40	38	2.00	40.50699.0166
1.67	.0657	11.20	13.40	38	2.00	40.50699.0167
1.68	.0661	11.20	13.40	38	2.00	40.50699.0168
1.69	.0665	11.20	13.40	38	2.00	40.50699.0169
1.70	.0669	11.20	13.40	38	2.00	40.50699.0170
1.71	.0673	11.20	13.40	38	2.00	40.50699.0171
1.72	.0677	11.20	13.40	38	2.00	40.50699.0172
1.73	.0681	11.20	13.40	38	2.00	40.50699.0173
1.74	.0685	11.20	13.40	38	2.00	40.50699.0174
1.75	.0689	11.20	13.40	38	2.00	40.50699.0175
1.76	.0693	11.20	13.40	38	2.00	40.50699.0176
1.77	.0697	11.20	13.40	38	2.00	40.50699.0177

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
1.78	.0701	11.20	13.40	38	2.00	40.50699.0178
1.79	.0705	11.20	13.40	38	2.00	40.50699.0179
1.80	.0709	11.20	13.40	38	2.00	40.50699.0180
1.81	.0713	11.20	13.40	38	2.00	40.50699.0181
1.82	.0717	11.20	13.40	38	2.00	40.50699.0182
1.83	.0720	11.20	13.40	38	2.00	40.50699.0183
1.84	.0724	11.20	13.40	38	2.00	40.50699.0184
1.85	.0728	11.20	13.40	38	2.00	40.50699.0185
1.86	.0732	11.20	13.40	38	2.00	40.50699.0186
1.87	.0736	11.20	13.40	38	2.00	40.50699.0187
1.88	.0740	11.20	13.40	38	2.00	40.50699.0188
1.89	.0744	11.20	13.40	38	2.00	40.50699.0189
1.90	.0748	11.20	13.40	38	2.00	40.50699.0190
1.91	.0752	11.20	13.40	38	2.00	40.50699.0191
1.92	.0756	11.20	13.40	38	2.00	40.50699.0192
1.93	.0760	11.20	13.40	38	2.00	40.50699.0193
1.94	.0764	11.20	13.40	38	2.00	40.50699.0194
1.95	.0768	11.20	13.40	38	2.00	40.50699.0195
1.96	.0772	11.20	13.40	38	2.00	40.50699.0196
1.97	.0776	11.20	13.40	38	2.00	40.50699.0197
1.98	.0780	11.20	13.40	38	2.00	40.50699.0198
1.99	.0783	11.20	13.40	38	2.00	40.50699.0199
2.00	.0787	11.20	—	38	2.00	40.50699.0200

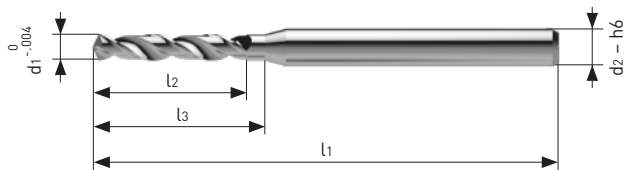
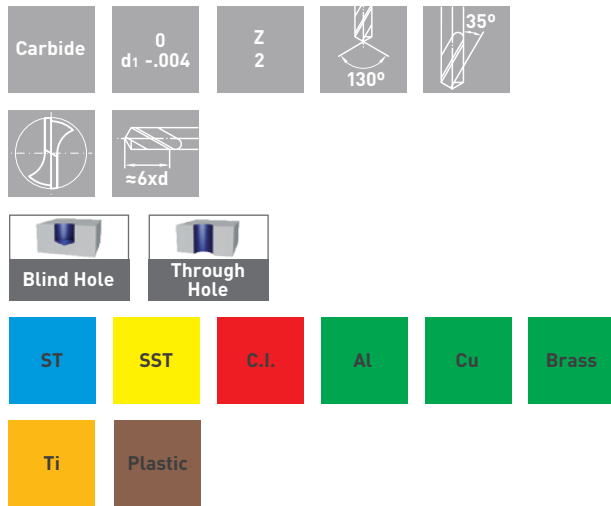
• Packaged in quantities of 10 pieces



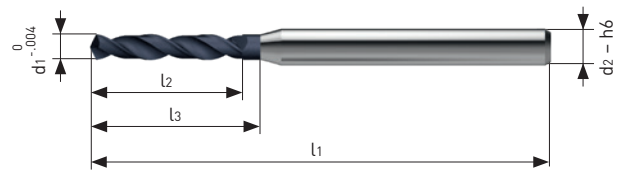
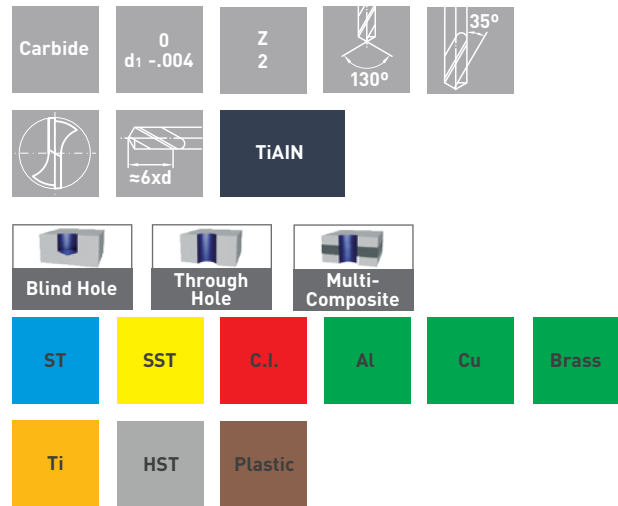
MICRO DRILLS

Ø3MM SHANK 6XD — ART. 51200 & 51201

Art. 51200



Art. 51201



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Art. 51200	Art. 51201
						Catalog Number	Catalog Number
.03	.0012	.25	.35	38	3.00	40.51200.0003	—
.04	.0016	.30	.40	38	3.00	40.51200.0004	—
.05	.0020	.35	.45	38	3.00	40.51200.0005	—
.06	.0024	.40	.50	38	3.00	40.51200.0006	—
.07	.0028	.45	.60	38	3.00	40.51200.0007	—
.08	.0031	.50	.70	38	3.00	40.51200.0008	—
.09	.0035	.50	.70	38	3.00	40.51200.0009	—
.10	.0039	.50	.70	38	3.00	40.51200.0010	—
.11	.0043	.50	.70	38	3.00	40.51200.0011	—
.12	.0047	.50	.70	38	3.00	40.51200.0012	—
.13	.0051	.80	1.00	38	3.00	40.51200.0013	—
.14	.0055	.80	1.00	38	3.00	40.51200.0014	—
.15	.0059	.80	1.00	38	3.00	40.51200.0015	—
.16	.0063	1.10	1.40	38	3.00	40.51200.0016	—
.17	.0067	1.10	1.40	38	3.00	40.51200.0017	—
.18	.0071	1.10	1.40	38	3.00	40.51200.0018	—
.19	.0075	1.10	1.40	38	3.00	40.51200.0019	—
.20	.0079	1.50	1.80	38	3.00	40.51200.0020	40.51201.0020
.21	.0083	1.50	1.80	38	3.00	40.51200.0021	40.51201.0021
.22	.0087	1.50	1.80	38	3.00	40.51200.0022	40.51201.0022
.23	.0091	1.50	1.80	38	3.00	40.51200.0023	40.51201.0023
.24	.0094	1.50	1.80	38	3.00	40.51200.0024	40.51201.0024
.25	.0098	1.90	2.20	38	3.00	40.51200.0025	40.51201.0025
.26	.0102	1.90	2.20	38	3.00	40.51200.0026	40.51201.0026

MICRO DRILLS

Ø3MM SHANK 6XD — ART. 51200 & 51201

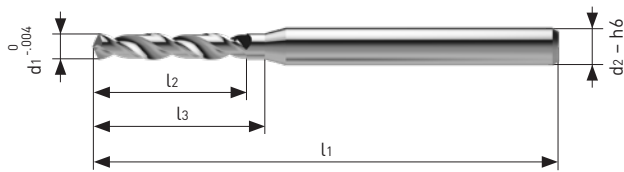
※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Art. 51200	Art. 51201
						Catalog Number	Catalog Number
.27	.0106	1.90	2.20	38	3.00	40.51200.0027	40.51201.0027
.28	.0110	1.90	2.20	38	3.00	40.51200.0028	40.51201.0028
.29	.0114	1.90	2.20	38	3.00	40.51200.0029	40.51201.0029
.30	.0118	1.80	2.40	38	3.00	40.51200.0030	40.51201.0030
.31	.0122	1.80	2.40	38	3.00	40.51200.0031	40.51201.0031
.32	.0126	1.80	2.40	38	3.00	40.51200.0032	40.51201.0032
.33	.0130	1.80	2.40	38	3.00	40.51200.0033	40.51201.0033
.34	.0134	1.80	2.40	38	3.00	40.51200.0034	40.51201.0034
.35	.0138	2.20	2.80	38	3.00	40.51200.0035	40.51201.0035
.36	.0142	2.20	2.80	38	3.00	40.51200.0036	40.51201.0036
.37	.0146	2.20	2.80	38	3.00	40.51200.0037	40.51201.0037
.38	.0150	2.20	2.80	38	3.00	40.51200.0038	40.51201.0038
.39	.0154	2.70	3.60	38	3.00	40.51200.0039	40.51201.0039
.40	.0157	2.70	3.60	38	3.00	40.51200.0040	40.51201.0040
.41	.0161	2.70	3.60	38	3.00	40.51200.0041	40.51201.0041
.42	.0165	2.70	3.60	38	3.00	40.51200.0042	40.51201.0042
.43	.0169	2.70	3.60	38	3.00	40.51200.0043	40.51201.0043
.44	.0173	2.70	3.60	38	3.00	40.51200.0044	40.51201.0044
.45	.0177	2.70	3.60	38	3.00	40.51200.0045	40.51201.0045
.46	.0181	2.70	3.60	38	3.00	40.51200.0046	40.51201.0046
.47	.0185	2.70	3.60	38	3.00	40.51200.0047	40.51201.0047
.48	.0189	2.70	3.60	38	3.00	40.51200.0048	40.51201.0048
.49	.0193	3.20	4.00	38	3.00	40.51200.0049	40.51201.0049
.50	.0197	3.20	4.00	38	3.00	40.51200.0050	40.51201.0050
.51	.0201	3.20	4.00	38	3.00	40.51200.0051	40.51201.0051
.52	.0205	3.20	4.00	38	3.00	40.51200.0052	40.51201.0052
.53	.0209	3.20	4.00	38	3.00	40.51200.0053	40.51201.0053
.54	.0213	3.60	4.50	38	3.00	40.51200.0054	40.51201.0054
.55	.0217	3.60	4.50	38	3.00	40.51200.0055	40.51201.0055
.56	.0220	3.60	4.50	38	3.00	40.51200.0056	40.51201.0056
.57	.0224	3.60	4.50	38	3.00	40.51200.0057	40.51201.0057
.58	.0228	3.60	4.50	38	3.00	40.51200.0058	40.51201.0058
.59	.0232	3.60	4.50	38	3.00	40.51200.0059	40.51201.0059
.60	.0236	3.60	4.50	38	3.00	40.51200.0060	40.51201.0060
.61	.0240	3.90	5.00	38	3.00	40.51200.0061	40.51201.0061
.62	.0244	3.90	5.00	38	3.00	40.51200.0062	40.51201.0062
.63	.0248	3.90	5.00	38	3.00	40.51200.0063	40.51201.0063
.64	.0252	3.90	5.00	38	3.00	40.51200.0064	40.51201.0064
.65	.0256	3.90	5.00	38	3.00	40.51200.0065	40.51201.0065
.66	.0260	3.90	5.00	38	3.00	40.51200.0066	40.51201.0066
.67	.0264	3.90	5.00	38	3.00	40.51200.0067	40.51201.0067
.68	.0268	4.50	5.60	38	3.00	40.51200.0068	40.51201.0068
.69	.0272	4.50	5.60	38	3.00	40.51200.0069	40.51201.0069
.70	.0276	4.50	5.60	38	3.00	40.51200.0070	40.51201.0070
.71	.0280	4.50	5.60	38	3.00	40.51200.0071	40.51201.0071
.72	.0283	4.50	5.60	38	3.00	40.51200.0072	40.51201.0072

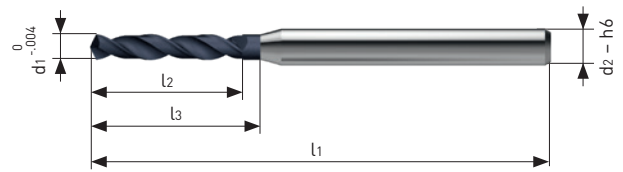
MICRO DRILLS

Ø3MM SHANK 6XD — ART. 51200 & 51201

Art. 51200 Cont.



Art. 51201 Cont.



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Art. 51200	Art. 51201
						Catalog Number	Catalog Number
.73	.0287	4.50	5.60	38	3.00	40.51200.0073	40.51201.0073
.74	.0291	4.50	5.60	38	3.00	40.51200.0074	40.51201.0074
.75	.0295	4.50	5.60	38	3.00	40.51200.0075	40.51201.0075
.76	.0299	5.00	6.30	38	3.00	40.51200.0076	40.51201.0076
.77	.0303	5.00	6.30	38	3.00	40.51200.0077	40.51201.0077
.78	.0307	5.00	6.30	38	3.00	40.51200.0078	40.51201.0078
.79	.0311	5.00	6.30	38	3.00	40.51200.0079	40.51201.0079
.80	.0315	5.00	6.30	38	3.00	40.51200.0080	40.51201.0080
.81	.0319	5.00	6.30	38	3.00	40.51200.0081	40.51201.0081
.82	.0323	5.00	6.30	38	3.00	40.51200.0082	40.51201.0082
.83	.0327	5.00	6.30	38	3.00	40.51200.0083	40.51201.0083
.84	.0331	5.00	6.30	38	3.00	40.51200.0084	40.51201.0084
.85	.0335	5.00	6.30	38	3.00	40.51200.0085	40.51201.0085
.86	.0339	5.70	7.10	38	3.00	40.51200.0086	40.51201.0086
.87	.0343	5.70	7.10	38	3.00	40.51200.0087	40.51201.0087
.88	.0346	5.70	7.10	38	3.00	40.51200.0088	40.51201.0088
.89	.0350	5.70	7.10	38	3.00	40.51200.0089	40.51201.0089
.90	.0354	5.70	7.10	38	3.00	40.51200.0090	40.51201.0090
.91	.0358	5.70	7.10	38	3.00	40.51200.0091	40.51201.0091
.92	.0362	5.70	7.10	38	3.00	40.51200.0092	40.51201.0092
.93	.0366	5.70	7.10	38	3.00	40.51200.0093	40.51201.0093
.94	.0370	5.70	7.10	38	3.00	40.51200.0094	40.51201.0094
.95	.0374	5.70	7.10	38	3.00	40.51200.0095	40.51201.0095
.96	.0378	6.50	8.00	38	3.00	40.51200.0096	40.51201.0096
.97	.0382	6.50	8.00	38	3.00	40.51200.0097	40.51201.0097
.98	.0386	6.50	8.00	38	3.00	40.51200.0098	40.51201.0098
.99	.0390	6.50	8.00	38	3.00	40.51200.0099	40.51201.0099
1.00	.0394	6.50	8.00	38	3.00	40.51200.0100	40.51201.0100
1.01	.0398	6.50	8.00	38	3.00	40.51200.0101	40.51201.0101
1.02	.0402	6.50	8.00	38	3.00	40.51200.0102	40.51201.0102
1.03	.0406	6.50	8.00	38	3.00	40.51200.0103	40.51201.0103
1.04	.0409	6.50	8.00	38	3.00	40.51200.0104	40.51201.0104
1.05	.0413	6.50	8.00	38	3.00	40.51200.0105	40.51201.0105
1.06	.0417	7.30	9.00	38	3.00	40.51200.0106	40.51201.0106
1.07	.0421	7.30	9.00	38	3.00	40.51200.0107	40.51201.0107
1.08	.0425	7.30	9.00	38	3.00	40.51200.0108	40.51201.0108
1.09	.0429	7.30	9.00	38	3.00	40.51200.0109	40.51201.0109
1.10	.0433	7.30	9.00	38	3.00	40.51200.0110	40.51201.0110
1.11	.0437	7.30	9.00	38	3.00	40.51200.0111	40.51201.0111
1.12	.0441	7.30	9.00	38	3.00	40.51200.0112	40.51201.0112

MICRO DRILLS

Ø3MM SHANK 6XD — ART. 51200 & 51201

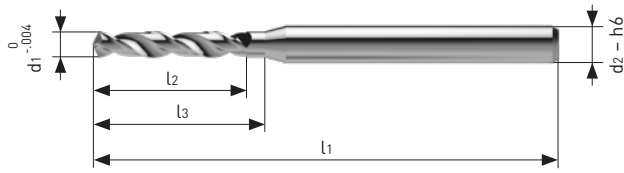
※ All dimensions are millimeters unless otherwise noted

d1	d1 [in.]	l2	l3	l1	d2	Art. 51200	Art. 51201
						Catalog Number	Catalog Number
1.13	.0445	7.30	9.00	38	3.00	40.51200.0113	40.51201.0113
1.14	.0449	7.30	9.00	38	3.00	40.51200.0114	40.51201.0114
1.15	.0453	7.30	9.00	38	3.00	40.51200.0115	40.51201.0115
1.16	.0457	8.20	10.00	38	3.00	40.51200.0116	40.51201.0116
1.17	.0461	8.20	10.00	38	3.00	40.51200.0117	40.51201.0117
1.18	.0465	8.20	10.00	38	3.00	40.51200.0118	40.51201.0118
1.19	.0469	8.20	10.00	38	3.00	40.51200.0119	40.51201.0119
1.20	.0472	8.20	10.00	38	3.00	40.51200.0120	40.51201.0120
1.21	.0476	8.20	10.00	38	3.00	40.51200.0121	40.51201.0121
1.22	.0480	8.20	10.00	38	3.00	40.51200.0122	40.51201.0122
1.23	.0484	8.20	10.00	38	3.00	40.51200.0123	40.51201.0123
1.24	.0488	8.20	10.00	38	3.00	40.51200.0124	40.51201.0124
1.25	.0492	8.20	10.00	38	3.00	40.51200.0125	40.51201.0125
1.26	.0496	8.20	10.00	38	3.00	40.51200.0126	40.51201.0126
1.27	.0500	8.20	10.00	38	3.00	40.51200.0127	40.51201.0127
1.28	.0504	8.20	10.00	38	3.00	40.51200.0128	40.51201.0128
1.29	.0508	8.20	10.00	38	3.00	40.51200.0129	40.51201.0129
1.30	.0512	8.20	10.00	38	3.00	40.51200.0130	40.51201.0130
1.31	.0516	9.20	11.20	38	3.00	40.51200.0131	40.51201.0131
1.32	.0520	9.20	11.20	38	3.00	40.51200.0132	40.51201.0132
1.33	.0524	9.20	11.20	38	3.00	40.51200.0133	40.51201.0133
1.34	.0528	9.20	11.20	38	3.00	40.51200.0134	40.51201.0134
1.35	.0531	9.20	11.20	38	3.00	40.51200.0135	40.51201.0135
1.36	.0535	9.20	11.20	38	3.00	40.51200.0136	40.51201.0136
1.37	.0539	9.20	11.20	38	3.00	40.51200.0137	40.51201.0137
1.38	.0543	9.20	11.20	38	3.00	40.51200.0138	40.51201.0138
1.39	.0547	9.20	11.20	38	3.00	40.51200.0139	40.51201.0139
1.40	.0551	9.20	11.20	38	3.00	40.51200.0140	40.51201.0140
1.41	.0555	9.20	11.20	38	3.00	40.51200.0141	40.51201.0141
1.42	.0559	9.20	11.20	38	3.00	40.51200.0142	40.51201.0142
1.43	.0563	9.20	11.20	38	3.00	40.51200.0143	40.51201.0143
1.44	.0567	9.20	11.20	38	3.00	40.51200.0144	40.51201.0144
1.45	.0571	9.20	11.20	38	3.00	40.51200.0145	40.51201.0145
1.46	.0575	9.20	11.20	38	3.00	40.51200.0146	40.51201.0146
1.47	.0579	9.20	11.20	38	3.00	40.51200.0147	40.51201.0147
1.48	.0583	9.20	11.20	38	3.00	40.51200.0148	40.51201.0148
1.49	.0587	9.20	11.20	38	3.00	40.51200.0149	40.51201.0149
1.50	.0591	9.20	11.20	38	3.00	40.51200.0150	40.51201.0150
1.51	.0594	11.20	13.40	38	3.00	40.51200.0151	40.51201.0151
1.52	.0598	11.20	13.40	38	3.00	40.51200.0152	40.51201.0152
1.53	.0602	11.20	13.40	38	3.00	40.51200.0153	40.51201.0153
1.54	.0606	11.20	13.40	38	3.00	40.51200.0154	40.51201.0154
1.55	.0610	11.20	13.40	38	3.00	40.51200.0155	40.51201.0155
1.56	.0614	11.20	13.40	38	3.00	40.51200.0156	40.51201.0156
1.57	.0618	11.20	13.40	38	3.00	40.51200.0157	40.51201.0157
1.58	.0622	11.20	13.40	38	3.00	40.51200.0158	40.51201.0158

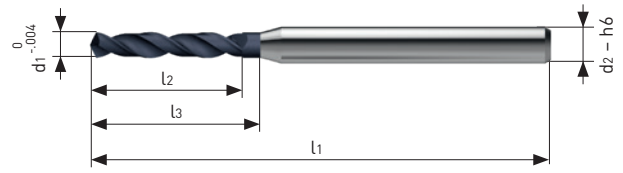
MICRO DRILLS

Ø3MM SHANK 6XD — ART. 51200 & 51201

Art. 51200 Cont.



Art. 51201 Cont.



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Art. 51200	Art. 51201
						Catalog Number	Catalog Number
1.59	.0626	11.20	13.40	38	3.00	40.51200.0159	40.51201.0159
1.60	.0630	11.20	13.40	38	3.00	40.51200.0160	40.51201.0160
1.61	.0634	11.20	13.40	38	3.00	40.51200.0161	40.51201.0161
1.62	.0638	11.20	13.40	38	3.00	40.51200.0162	40.51201.0162
1.63	.0642	11.20	13.40	38	3.00	40.51200.0163	40.51201.0163
1.64	.0646	11.20	13.40	38	3.00	40.51200.0164	40.51201.0164
1.65	.0650	11.20	13.40	38	3.00	40.51200.0165	40.51201.0165
1.66	.0654	11.20	13.40	38	3.00	40.51200.0166	40.51201.0166
1.67	.0657	11.20	13.40	38	3.00	40.51200.0167	40.51201.0167
1.68	.0661	11.20	13.40	38	3.00	40.51200.0168	40.51201.0168
1.69	.0665	11.20	13.40	38	3.00	40.51200.0169	40.51201.0169
1.70	.0669	11.20	13.40	38	3.00	40.51200.0170	40.51201.0170
1.71	.0673	11.20	13.40	38	3.00	40.51200.0171	40.51201.0171
1.72	.0677	11.20	13.40	38	3.00	40.51200.0172	40.51201.0172
1.73	.0681	11.20	13.40	38	3.00	40.51200.0173	40.51201.0173
1.74	.0685	11.20	13.40	38	3.00	40.51200.0174	40.51201.0174
1.75	.0689	11.20	13.40	38	3.00	40.51200.0175	40.51201.0175
1.76	.0693	11.20	13.40	38	3.00	40.51200.0176	40.51201.0176
1.77	.0697	11.20	13.40	38	3.00	40.51200.0177	40.51201.0177
1.78	.0701	11.20	13.40	38	3.00	40.51200.0178	40.51201.0178
1.79	.0705	11.20	13.40	38	3.00	40.51200.0179	40.51201.0179
1.80	.0709	11.20	13.40	38	3.00	40.51200.0180	40.51201.0180
1.81	.0713	11.20	13.40	38	3.00	40.51200.0181	40.51201.0181
1.82	.0717	11.20	13.40	38	3.00	40.51200.0182	40.51201.0182
1.83	.0720	11.20	13.40	38	3.00	40.51200.0183	40.51201.0183
1.84	.0724	11.20	13.40	38	3.00	40.51200.0184	40.51201.0184
1.85	.0728	11.20	13.40	38	3.00	40.51200.0185	40.51201.0185
1.86	.0732	11.20	13.40	38	3.00	40.51200.0186	40.51201.0186
1.87	.0736	11.20	13.40	38	3.00	40.51200.0187	40.51201.0187
1.88	.0740	11.20	13.40	38	3.00	40.51200.0188	40.51201.0188
1.89	.0744	11.20	13.40	38	3.00	40.51200.0189	40.51201.0189
1.90	.0748	11.20	13.40	38	3.00	40.51200.0190	40.51201.0190
1.91	.0752	11.20	13.40	38	3.00	40.51200.0191	40.51201.0191
1.92	.0756	11.20	13.40	38	3.00	40.51200.0192	40.51201.0192
1.93	.0760	11.20	13.40	38	3.00	40.51200.0193	40.51201.0193
1.94	.0764	11.20	13.40	38	3.00	40.51200.0194	40.51201.0194
1.95	.0768	11.20	13.40	38	3.00	40.51200.0195	40.51201.0195
1.96	.0772	11.20	13.40	38	3.00	40.51200.0196	40.51201.0196
1.97	.0776	11.20	13.40	38	3.00	40.51200.0197	40.51201.0197
1.98	.0780	11.20	13.40	38	3.00	40.51200.0198	40.51201.0198

MICRO DRILLS

Ø3MM SHANK 6XD — ART. 51200 & 51201

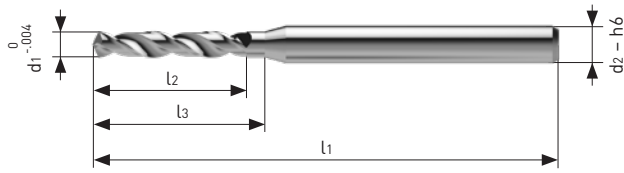
※ All dimensions are millimeters unless otherwise noted

d1	d1 [in.]	l2	l3	l1	d2	Art. 51200	Art. 51201
						Catalog Number	Catalog Number
1.99	.0783	11.20	13.40	38	3.00	40.51200.0199	40.51201.0199
2.00	.0787	11.20	13.40	38	3.00	40.51200.0200	40.51201.0200
2.01	.0791	12.50	14.00	38	3.00	40.51200.0201	40.51201.0201
2.02	.0795	12.50	14.00	38	3.00	40.51200.0202	40.51201.0202
2.03	.0799	12.50	14.00	38	3.00	40.51200.0203	40.51201.0203
2.04	.0803	12.50	14.00	38	3.00	40.51200.0204	40.51201.0204
2.05	.0807	12.50	14.00	38	3.00	40.51200.0205	40.51201.0205
2.06	.0811	12.50	14.00	38	3.00	40.51200.0206	40.51201.0206
2.07	.0815	12.50	14.00	38	3.00	40.51200.0207	40.51201.0207
2.08	.0819	12.50	14.00	38	3.00	40.51200.0208	40.51201.0208
2.09	.0823	12.50	14.00	38	3.00	40.51200.0209	40.51201.0209
2.10	.0827	12.50	14.00	38	3.00	40.51200.0210	40.51201.0210
2.11	.0831	12.50	14.00	38	3.00	40.51200.0211	40.51201.0211
2.12	.0835	12.50	14.00	38	3.00	40.51200.0212	40.51201.0212
2.13	.0839	12.50	14.00	38	3.00	40.51200.0213	40.51201.0213
2.14	.0843	12.50	14.00	38	3.00	40.51200.0214	40.51201.0214
2.15	.0846	12.50	14.00	38	3.00	40.51200.0215	40.51201.0215
2.16	.0850	12.50	14.00	38	3.00	40.51200.0216	40.51201.0216
2.17	.0854	12.50	14.00	38	3.00	40.51200.0217	40.51201.0217
2.18	.0858	12.50	14.00	38	3.00	40.51200.0218	40.51201.0218
2.19	.0862	12.50	14.00	38	3.00	40.51200.0219	40.51201.0219
2.20	.0866	12.50	14.00	38	3.00	40.51200.0220	40.51201.0220
2.21	.0870	12.50	14.00	38	3.00	40.51200.0221	40.51201.0221
2.22	.0874	12.50	14.00	38	3.00	40.51200.0222	40.51201.0222
2.23	.0878	12.50	14.00	38	3.00	40.51200.0223	40.51201.0223
2.24	.0882	12.50	14.00	38	3.00	40.51200.0224	40.51201.0224
2.25	.0886	12.50	14.00	38	3.00	40.51200.0225	40.51201.0225
2.26	.0890	12.50	14.00	38	3.00	40.51200.0226	40.51201.0226
2.27	.0894	12.50	14.00	38	3.00	40.51200.0227	40.51201.0227
2.28	.0898	12.50	14.00	38	3.00	40.51200.0228	40.51201.0228
2.29	.0902	12.50	14.00	38	3.00	40.51200.0229	40.51201.0229
2.30	.0906	12.50	14.00	38	3.00	40.51200.0230	40.51201.0230
2.31	.0909	12.50	14.00	38	3.00	40.51200.0231	40.51201.0231
2.32	.0913	12.50	14.00	38	3.00	40.51200.0232	40.51201.0232
2.33	.0917	12.50	14.00	38	3.00	40.51200.0233	40.51201.0233
2.34	.0921	12.50	14.00	38	3.00	40.51200.0234	40.51201.0234
2.35	.0925	12.50	14.00	38	3.00	40.51200.0235	40.51201.0235
2.36	.0929	12.50	14.00	38	3.00	40.51200.0236	40.51201.0236
2.37	.0933	12.50	14.00	38	3.00	40.51200.0237	40.51201.0237
2.38	.0937	12.50	14.00	38	3.00	40.51200.0238	40.51201.0238
2.39	.0941	12.50	14.00	38	3.00	40.51200.0239	40.51201.0239
2.40	.0945	12.50	14.00	38	3.00	40.51200.0240	40.51201.0240
2.41	.0949	12.50	14.00	38	3.00	40.51200.0241	40.51201.0241
2.42	.0953	12.50	14.00	38	3.00	40.51200.0242	40.51201.0242
2.43	.0957	12.50	14.00	38	3.00	40.51200.0243	40.51201.0243
2.44	.0961	12.50	14.00	38	3.00	40.51200.0244	40.51201.0244

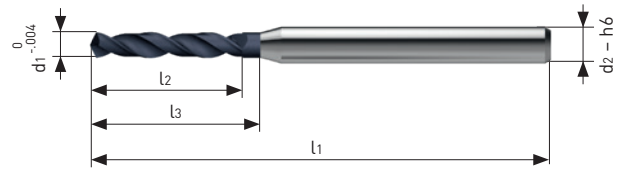
MICRO DRILLS

Ø3MM SHANK 6XD — ART. 51200 & 51201

Art. 51200 Cont.



Art. 51201 Cont.



※ All dimensions are millimeters unless otherwise noted

d1	d1 [in.]	l2	l3	l1	d2	Art. 51200	Art. 51201
						Catalog Number	Catalog Number
2.45	.0965	12.50	14.00	38	3.00	40.51200.0245	40.51201.0245
2.46	.0969	12.50	14.00	38	3.00	40.51200.0246	40.51201.0246
2.47	.0972	12.50	14.00	38	3.00	40.51200.0247	40.51201.0247
2.48	.0976	12.50	14.00	38	3.00	40.51200.0248	40.51201.0248
2.49	.0980	12.50	14.00	38	3.00	40.51200.0249	40.51201.0249
2.50	.0984	14.00	17.00	38	3.00	40.51200.0250	40.51201.0250
2.51	.0988	14.00	17.00	38	3.00	40.51200.0251	40.51201.0251
2.52	.0992	14.00	17.00	38	3.00	40.51200.0252	40.51201.0252
2.53	.0996	14.00	17.00	38	3.00	40.51200.0253	40.51201.0253
2.54	.1000	14.00	17.00	38	3.00	40.51200.0254	40.51201.0254
2.55	.1004	14.00	17.00	38	3.00	40.51200.0255	40.51201.0255
2.56	.1008	14.00	17.00	38	3.00	40.51200.0256	40.51201.0256
2.57	.1012	14.00	17.00	38	3.00	40.51200.0257	40.51201.0257
2.58	.1016	14.00	17.00	38	3.00	40.51200.0258	40.51201.0258
2.59	.1020	14.00	17.00	38	3.00	40.51200.0259	40.51201.0259
2.60	.1024	14.00	17.00	38	3.00	40.51200.0260	40.51201.0260
2.61	.1028	14.00	17.00	38	3.00	40.51200.0261	40.51201.0261
2.62	.1031	14.00	17.00	38	3.00	40.51200.0262	40.51201.0262
2.63	.1035	14.00	17.00	38	3.00	40.51200.0263	40.51201.0263
2.64	.1039	14.00	17.00	38	3.00	40.51200.0264	40.51201.0264
2.65	.1043	14.00	17.00	38	3.00	40.51200.0265	40.51201.0265
2.66	.1047	14.00	17.00	38	3.00	40.51200.0266	40.51201.0266
2.67	.1051	14.00	17.00	38	3.00	40.51200.0267	40.51201.0267
2.68	.1055	14.00	17.00	38	3.00	40.51200.0268	40.51201.0268
2.69	.1059	14.00	17.00	38	3.00	40.51200.0269	40.51201.0269
2.70	.1063	14.00	17.00	38	3.00	40.51200.0270	40.51201.0270
2.71	.1067	14.00	17.00	38	3.00	40.51200.0271	40.51201.0271
2.72	.1071	14.00	17.00	38	3.00	40.51200.0272	40.51201.0272
2.73	.1075	14.00	17.00	38	3.00	40.51200.0273	40.51201.0273
2.74	.1079	14.00	17.00	38	3.00	40.51200.0274	40.51201.0274
2.75	.1083	14.00	17.00	38	3.00	40.51200.0275	40.51201.0275
2.76	.1087	14.00	17.00	38	3.00	40.51200.0276	40.51201.0276
2.77	.1091	14.00	17.00	38	3.00	40.51200.0277	40.51201.0277
2.78	.1094	14.00	17.00	38	3.00	40.51200.0278	40.51201.0278
2.79	.1098	14.00	17.00	38	3.00	40.51200.0279	40.51201.0279
2.80	.1102	14.00	17.00	38	3.00	40.51200.0280	40.51201.0280
2.81	.1106	14.00	17.00	38	3.00	40.51200.0281	40.51201.0281
2.82	.1110	14.00	17.00	38	3.00	40.51200.0282	40.51201.0282
2.83	.1114	14.00	17.00	38	3.00	40.51200.0283	40.51201.0283
2.84	.1118	14.00	17.00	38	3.00	40.51200.0284	40.51201.0284

MICRO DRILLS
Ø3MM SHANK 6XD — ART. 51200 & 51201

※ All dimensions are millimeters unless otherwise noted

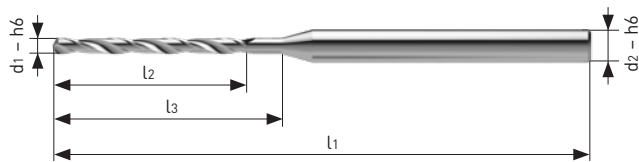
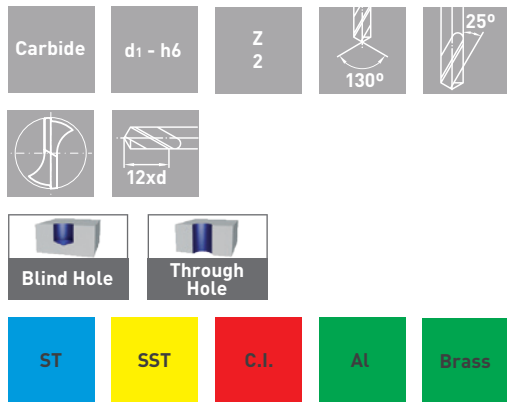
d1	d1 (in.)	l2	l3	l1	d2	Art. 51200	Art. 51201
						Catalog Number	Catalog Number
2.85	.1122	14.00	17.00	38	3.00	40.51200.0285	40.51201.0285
2.86	.1126	14.00	17.00	38	3.00	40.51200.0286	40.51201.0286
2.87	.1130	14.00	17.00	38	3.00	40.51200.0287	40.51201.0287
2.88	.1134	14.00	17.00	38	3.00	40.51200.0288	40.51201.0288
2.89	.1138	14.00	17.00	38	3.00	40.51200.0289	40.51201.0289
2.90	.1142	14.00	17.00	38	3.00	40.51200.0290	40.51201.0290
2.91	.1146	14.00	17.00	38	3.00	40.51200.0291	40.51201.0291
2.92	.1150	14.00	17.00	38	3.00	40.51200.0292	40.51201.0292
2.93	.1154	14.00	17.00	38	3.00	40.51200.0293	40.51201.0293
2.94	.1157	14.00	17.00	38	3.00	40.51200.0294	40.51201.0294
2.95	.1161	14.00	17.00	38	3.00	40.51200.0295	40.51201.0295
2.96	.1165	14.00	17.00	38	3.00	40.51200.0296	40.51201.0296
2.97	.1169	14.00	17.00	38	3.00	40.51200.0297	40.51201.0297
2.98	.1173	14.00	17.00	38	3.00	40.51200.0298	40.51201.0298
2.99	.1177	14.00	17.00	38	3.00	40.51200.0299	40.51201.0299
3.00	.1181	14.00	17.00	38	3.00	40.51200.0300	40.51201.0300



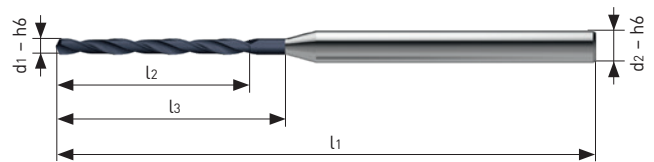
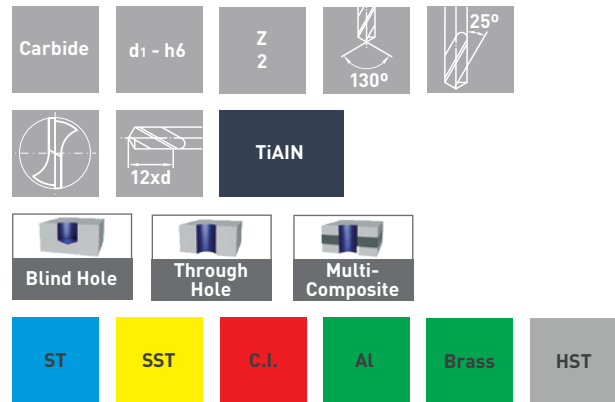
MICRO DRILLS

Ø3MM SHANK 12XD — ART. 50621 & 50622

Art. 50621



Art. 50622



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Art. 50621	Art. 50622
						Catalog Number	Catalog Number
.15	.0059	2.50	3.50	38	3.00	40.50621.0015	—
.16	.0063	2.50	3.50	38	3.00	40.50621.0016	—
.17	.0067	2.60	3.50	38	3.00	40.50621.0017	—
.18	.0071	2.60	3.50	38	3.00	40.50621.0018	—
.19	.0075	2.60	3.50	38	3.00	40.50621.0019	—
.20	.0079	2.40	3.50	38	3.00	40.50621.0020	40.50622.0020
.21	.0083	2.50	3.50	38	3.00	40.50621.0021	40.50622.0021
.22	.0087	2.70	3.50	38	3.00	40.50621.0022	40.50622.0022
.23	.0091	2.80	3.50	38	3.00	40.50621.0023	40.50622.0023
.24	.0094	2.90	4.00	38	3.00	40.50621.0024	40.50622.0024
.25	.0098	3.00	4.00	38	3.00	40.50621.0025	40.50622.0025
.26	.0102	3.10	4.00	38	3.00	40.50621.0026	40.50622.0026
.27	.0106	3.30	4.00	38	3.00	40.50621.0027	40.50622.0027
.28	.0110	3.40	4.50	38	3.00	40.50621.0028	40.50622.0028
.29	.0114	3.50	4.50	38	3.00	40.50621.0029	40.50622.0029
.30	.0118	3.60	4.50	38	3.00	40.50621.0030	40.50622.0030
.31	.0122	3.70	4.50	38	3.00	40.50621.0031	40.50622.0031
.32	.0126	3.90	5.00	38	3.00	40.50621.0032	40.50622.0032
.33	.0130	4.00	5.00	38	3.00	40.50621.0033	40.50622.0033
.34	.0134	4.10	5.00	38	3.00	40.50621.0034	40.50622.0034
.35	.0138	4.20	5.00	38	3.00	40.50621.0035	40.50622.0035
.36	.0142	4.30	5.50	38	3.00	40.50621.0036	40.50622.0036
.37	.0146	4.50	5.50	38	3.00	40.50621.0037	40.50622.0037
.38	.0150	4.60	5.50	38	3.00	40.50621.0038	40.50622.0038
.39	.0154	4.70	5.50	38	3.00	40.50621.0039	40.50622.0039
.40	.0157	4.80	6.00	38	3.00	40.50621.0040	40.50622.0040

• Pilot drill recommended

MICRO DRILLS

Ø3MM SHANK 12XD — ART. 50621 & 50622

※ All dimensions are millimeters unless otherwise noted

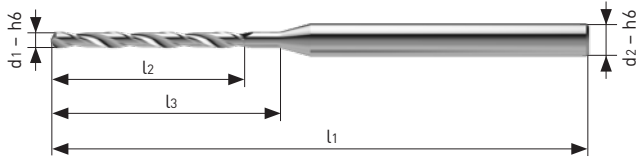
d1	d1 (in.)	l2	l3	l1	d2	Art. 50621	Art. 50622
						Catalog Number	Catalog Number
.41	.0161	4.90	6.00	38	3.00	40.50621.0041	40.50622.0041
.42	.0165	5.10	6.00	38	3.00	40.50621.0042	40.50622.0042
.43	.0169	5.20	6.00	38	3.00	40.50621.0043	40.50622.0043
.44	.0173	5.30	6.50	38	3.00	40.50621.0044	40.50622.0044
.45	.0177	5.40	6.50	38	3.00	40.50621.0045	40.50622.0045
.46	.0181	5.50	6.50	38	3.00	40.50621.0046	40.50622.0046
.47	.0185	5.70	6.50	38	3.00	40.50621.0047	40.50622.0047
.48	.0189	5.80	7.00	38	3.00	40.50621.0048	40.50622.0048
.49	.0193	5.90	7.00	38	3.00	40.50621.0049	40.50622.0049
.50	.0197	6.00	7.00	38	3.00	40.50621.0050	40.50622.0050
.51	.0201	6.10	7.00	38	3.00	40.50621.0051	40.50622.0051
.52	.0205	6.30	7.50	38	3.00	40.50621.0052	40.50622.0052
.53	.0209	6.40	7.50	38	3.00	40.50621.0053	40.50622.0053
.54	.0213	6.50	7.50	38	3.00	40.50621.0054	40.50622.0054
.55	.0217	6.60	7.50	38	3.00	40.50621.0055	40.50622.0055
.56	.0220	6.70	8.00	38	3.00	40.50621.0056	40.50622.0056
.57	.0224	6.90	8.00	38	3.00	40.50621.0057	40.50622.0057
.58	.0228	7.00	8.00	38	3.00	40.50621.0058	40.50622.0058
.59	.0232	7.10	8.00	38	3.00	40.50621.0059	40.50622.0059
.60	.0236	7.20	9.00	38	3.00	40.50621.0060	40.50622.0060
.61	.0240	7.30	9.00	38	3.00	40.50621.0061	40.50622.0061
.62	.0244	7.50	9.00	38	3.00	40.50621.0062	40.50622.0062
.63	.0248	7.60	9.00	38	3.00	40.50621.0063	40.50622.0063
.64	.0252	7.70	9.50	38	3.00	40.50621.0064	40.50622.0064
.65	.0256	7.80	9.50	38	3.00	40.50621.0065	40.50622.0065
.66	.0260	7.90	9.50	38	3.00	40.50621.0066	40.50622.0066
.67	.0264	8.10	9.50	38	3.00	40.50621.0067	40.50622.0067
.68	.0268	8.20	10.00	38	3.00	40.50621.0068	40.50622.0068
.69	.0272	8.30	10.00	38	3.00	40.50621.0069	40.50622.0069
.70	.0276	8.40	10.00	38	3.00	40.50621.0070	40.50622.0070
.71	.0280	8.50	10.00	38	3.00	40.50621.0071	40.50622.0071
.72	.0283	8.70	10.50	38	3.00	40.50621.0072	40.50622.0072
.73	.0287	8.80	10.50	38	3.00	40.50621.0073	40.50622.0073
.74	.0291	8.90	10.50	38	3.00	40.50621.0074	40.50622.0074
.75	.0295	9.00	10.50	38	3.00	40.50621.0075	40.50622.0075
.76	.0299	9.10	11.00	38	3.00	40.50621.0076	40.50622.0076
.77	.0303	9.30	11.00	38	3.00	40.50621.0077	40.50622.0077
.78	.0307	9.40	11.00	38	3.00	40.50621.0078	40.50622.0078
.79	.0311	9.50	11.00	38	3.00	40.50621.0079	40.50622.0079
.80	.0315	9.60	11.50	38	3.00	40.50621.0080	40.50622.0080
.81	.0319	9.70	11.50	38	3.00	40.50621.0081	40.50622.0081
.82	.0323	9.90	11.50	38	3.00	40.50621.0082	40.50622.0082
.83	.0327	10.00	11.50	38	3.00	40.50621.0083	40.50622.0083
.84	.0331	10.10	12.00	38	3.00	40.50621.0084	40.50622.0084
.85	.0335	10.20	12.00	38	3.00	40.50621.0085	40.50622.0085

• Pilot drill recommended

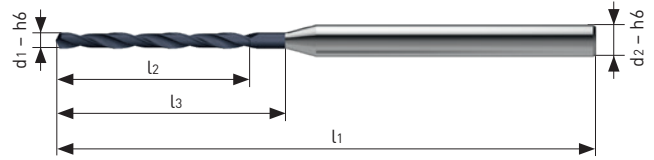
MICRO DRILLS

Ø3MM SHANK 12XD — ART. 50621 & 50622

Art. 50621 Cont.



Art. 50622 Cont.



※ All dimensions are millimeters unless otherwise noted

d1	d1 [in.]	l2	l3	l1	d2	Art. 50621	Art. 50622
						Catalog Number	Catalog Number
.86	.0339	10.30	12.00	38	3.00	40.50621.0086	40.50622.0086
.87	.0343	10.50	12.00	38	3.00	40.50621.0087	40.50622.0087
.88	.0346	10.60	12.50	38	3.00	40.50621.0088	40.50622.0088
.89	.0350	10.70	12.50	38	3.00	40.50621.0089	40.50622.0089
.90	.0354	10.80	12.50	38	3.00	40.50621.0090	40.50622.0090
.91	.0358	10.90	12.50	38	3.00	40.50621.0091	40.50622.0091
.92	.0362	11.10	13.00	38	3.00	40.50621.0092	40.50622.0092
.93	.0366	11.20	13.00	38	3.00	40.50621.0093	40.50622.0093
.94	.0370	11.30	13.00	38	3.00	40.50621.0094	40.50622.0094
.95	.0374	11.40	13.00	38	3.00	40.50621.0095	40.50622.0095
.96	.0378	11.50	13.50	38	3.00	40.50621.0096	40.50622.0096
.97	.0382	11.70	13.50	38	3.00	40.50621.0097	40.50622.0097
.98	.0386	11.80	13.50	38	3.00	40.50621.0098	40.50622.0098
.99	.0390	11.90	13.50	38	3.00	40.50621.0099	40.50622.0099
1.00	.0394	12.00	14.50	38	3.00	40.50621.0100	40.50622.0100
1.01	.0398	12.10	14.50	38	3.00	40.50621.0101	40.50622.0101
1.02	.0402	12.30	14.50	38	3.00	40.50621.0102	40.50622.0102
1.03	.0406	12.40	14.50	38	3.00	40.50621.0103	40.50622.0103
1.04	.0409	12.50	15.00	38	3.00	40.50621.0104	40.50622.0104
1.05	.0413	12.60	15.00	38	3.00	40.50621.0105	40.50622.0105
1.06	.0417	12.70	15.00	38	3.00	40.50621.0106	40.50622.0106
1.07	.0421	12.90	15.00	38	3.00	40.50621.0107	40.50622.0107
1.08	.0425	13.00	15.50	38	3.00	40.50621.0108	40.50622.0108
1.09	.0429	13.10	15.50	38	3.00	40.50621.0109	40.50622.0109
1.10	.0433	13.20	15.50	38	3.00	40.50621.0110	40.50622.0110
1.11	.0437	13.30	15.50	38	3.00	40.50621.0111	40.50622.0111
1.12	.0441	13.50	16.00	38	3.00	40.50621.0112	40.50622.0112
1.13	.0445	13.60	16.00	38	3.00	40.50621.0113	40.50622.0113
1.14	.0449	13.70	16.00	38	3.00	40.50621.0114	40.50622.0114
1.15	.0453	13.80	16.00	38	3.00	40.50621.0115	40.50622.0115
1.16	.0457	13.90	16.50	38	3.00	40.50621.0116	40.50622.0116
1.17	.0461	14.10	16.50	38	3.00	40.50621.0117	40.50622.0117
1.18	.0465	14.20	16.50	38	3.00	40.50621.0118	40.50622.0118
1.19	.0469	14.30	16.50	38	3.00	40.50621.0119	40.50622.0119
1.20	.0472	14.40	17.00	38	3.00	40.50621.0120	40.50622.0120
1.21	.0476	14.50	17.00	38	3.00	40.50621.0121	40.50622.0121
1.22	.0480	14.70	17.00	38	3.00	40.50621.0122	40.50622.0122
1.23	.0484	14.80	17.00	38	3.00	40.50621.0123	40.50622.0123
1.24	.0488	14.90	17.50	38	3.00	40.50621.0124	40.50622.0124

• Pilot drill recommended

MICRO DRILLS

Ø3MM SHANK 12XD — ART. 50621 & 50622

※ All dimensions are millimeters unless otherwise noted

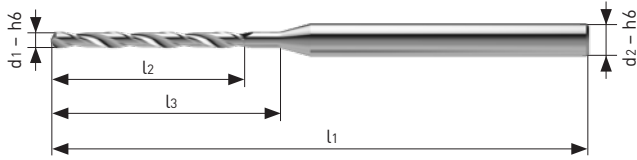
d1	d1 (in.)	l2	l3	l1	d2	Art. 50621	Art. 50622
						Catalog Number	Catalog Number
1.25	.0492	15.00	17.50	38	3.00	40.50621.0125	40.50622.0125
1.26	.0496	15.10	17.50	50	3.00	40.50621.0126	40.50622.0126
1.27	.0500	15.30	17.50	50	3.00	40.50621.0127	40.50622.0127
1.28	.0504	15.40	18.00	50	3.00	40.50621.0128	40.50622.0128
1.29	.0508	15.50	18.00	50	3.00	40.50621.0129	40.50622.0129
1.30	.0512	15.60	18.00	50	3.00	40.50621.0130	40.50622.0130
1.31	.0516	15.70	18.00	50	3.00	40.50621.0131	40.50622.0131
1.32	.0520	15.90	18.50	50	3.00	40.50621.0132	40.50622.0132
1.33	.0524	16.00	18.50	50	3.00	40.50621.0133	40.50622.0133
1.34	.0528	16.10	18.50	50	3.00	40.50621.0134	40.50622.0134
1.35	.0531	16.20	18.50	50	3.00	40.50621.0135	40.50622.0135
1.36	.0535	16.30	19.00	50	3.00	40.50621.0136	40.50622.0136
1.37	.0539	16.50	19.00	50	3.00	40.50621.0137	40.50622.0137
1.38	.0543	16.60	19.00	50	3.00	40.50621.0138	40.50622.0138
1.39	.0547	16.70	19.00	50	3.00	40.50621.0139	40.50622.0139
1.40	.0551	16.80	19.50	50	3.00	40.50621.0140	40.50622.0140
1.41	.0555	16.90	19.50	50	3.00	40.50621.0141	40.50622.0141
1.42	.0559	17.10	19.50	50	3.00	40.50621.0142	40.50622.0142
1.43	.0563	17.20	19.50	50	3.00	40.50621.0143	40.50622.0143
1.44	.0567	17.30	20.00	50	3.00	40.50621.0144	40.50622.0144
1.45	.0571	17.40	20.00	50	3.00	40.50621.0145	40.50622.0145
1.46	.0575	17.50	20.00	50	3.00	40.50621.0146	40.50622.0146
1.47	.0579	17.70	20.00	50	3.00	40.50621.0147	40.50622.0147
1.48	.0583	17.80	20.50	50	3.00	40.50621.0148	40.50622.0148
1.49	.0587	17.90	20.50	50	3.00	40.50621.0149	40.50622.0149
1.50	.0591	18.00	21.00	50	3.00	40.50621.0150	40.50622.0150
1.51	.0594	18.10	21.00	50	3.00	40.50621.0151	40.50622.0151
1.52	.0598	18.30	21.00	50	3.00	40.50621.0152	40.50622.0152
1.53	.0602	18.40	21.00	50	3.00	40.50621.0153	40.50622.0153
1.54	.0606	18.50	21.50	50	3.00	40.50621.0154	40.50622.0154
1.55	.0610	18.60	21.50	50	3.00	40.50621.0155	40.50622.0155
1.56	.0614	18.70	21.50	50	3.00	40.50621.0156	40.50622.0156
1.57	.0618	18.90	21.50	50	3.00	40.50621.0157	40.50622.0157
1.58	.0622	19.00	22.00	50	3.00	40.50621.0158	40.50622.0158
1.59	.0626	19.10	22.00	50	3.00	40.50621.0159	40.50622.0159
1.60	.0630	19.20	22.00	50	3.00	40.50621.0160	40.50622.0160
1.61	.0634	19.30	22.00	50	3.00	40.50621.0161	40.50622.0161
1.62	.0638	19.40	22.50	50	3.00	40.50621.0162	40.50622.0162
1.63	.0642	19.60	22.50	50	3.00	40.50621.0163	40.50622.0163
1.64	.0646	19.70	22.50	50	3.00	40.50621.0164	40.50622.0164
1.65	.0650	19.80	22.50	50	3.00	40.50621.0165	40.50622.0165
1.66	.0654	19.90	23.00	50	3.00	40.50621.0166	40.50622.0166
1.67	.0657	20.10	23.00	50	3.00	40.50621.0167	40.50622.0167
1.68	.0661	20.20	23.00	50	3.00	40.50621.0168	40.50622.0168
1.69	.0665	20.30	23.00	50	3.00	40.50621.0169	40.50622.0169

• Pilot drill recommended

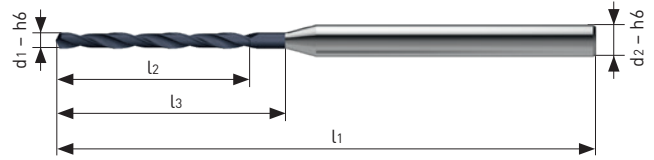
MICRO DRILLS

Ø3MM SHANK 12XD — ART. 50621 & 50622

Art. 50621 Cont.



Art. 50622 Cont.



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Art. 50621	Art. 50622
						Catalog Number	Catalog Number
1.70	.0669	20.40	23.50	50	3.00	40.50621.0170	40.50622.0170
1.71	.0673	20.50	23.50	50	3.00	40.50621.0171	40.50622.0171
1.72	.0677	20.70	23.50	50	3.00	40.50621.0172	40.50622.0172
1.73	.0681	20.80	23.50	50	3.00	40.50621.0173	40.50622.0173
1.74	.0685	20.90	24.00	50	3.00	40.50621.0174	40.50622.0174
1.75	.0689	21.00	24.00	50	3.00	40.50621.0175	40.50622.0175
1.76	.0693	21.10	24.00	50	3.00	40.50621.0176	40.50622.0176
1.77	.0697	21.30	24.00	50	3.00	40.50621.0177	40.50622.0177
1.78	.0701	21.40	24.50	50	3.00	40.50621.0178	40.50622.0178
1.79	.0705	21.50	24.50	50	3.00	40.50621.0179	40.50622.0179
1.80	.0709	21.60	25.00	50	3.00	40.50621.0180	40.50622.0180
1.81	.0713	21.70	25.00	50	3.00	40.50621.0181	40.50622.0181
1.82	.0717	21.90	25.00	50	3.00	40.50621.0182	40.50622.0182
1.83	.0720	22.00	25.00	50	3.00	40.50621.0183	40.50622.0183
1.84	.0724	22.10	25.50	50	3.00	40.50621.0184	40.50622.0184
1.85	.0728	22.20	25.50	50	3.00	40.50621.0185	40.50622.0185
1.86	.0732	22.30	25.50	50	3.00	40.50621.0186	40.50622.0186
1.87	.0736	22.50	25.50	50	3.00	40.50621.0187	40.50622.0187
1.88	.0740	22.60	26.00	50	3.00	40.50621.0188	40.50622.0188
1.89	.0744	22.70	26.00	50	3.00	40.50621.0189	40.50622.0189
1.90	.0748	22.80	26.00	50	3.00	40.50621.0190	40.50622.0190
1.91	.0752	22.90	26.00	50	3.00	40.50621.0191	40.50622.0191
1.92	.0756	23.10	26.50	50	3.00	40.50621.0192	40.50622.0192
1.93	.0760	23.20	26.50	50	3.00	40.50621.0193	40.50622.0193
1.94	.0764	23.30	26.50	50	3.00	40.50621.0194	40.50622.0194
1.95	.0768	23.40	26.50	50	3.00	40.50621.0195	40.50622.0195
1.96	.0772	23.50	27.00	50	3.00	40.50621.0196	40.50622.0196
1.97	.0776	23.70	27.00	50	3.00	40.50621.0197	40.50622.0197
1.98	.0780	23.80	27.00	50	3.00	40.50621.0198	40.50622.0198
1.99	.0783	23.90	27.00	50	3.00	40.50621.0199	40.50622.0199
2.00	.0787	24.00	27.00	50	3.00	40.50621.0200	40.50622.0200
2.01	.0791	24.10	27.50	60	3.00	40.50621.0201	40.50622.0201
2.02	.0795	24.20	27.50	60	3.00	40.50621.0202	40.50622.0202
2.03	.0799	24.40	27.50	60	3.00	40.50621.0203	40.50622.0203
2.04	.0803	24.50	27.50	60	3.00	40.50621.0204	40.50622.0204
2.05	.0807	24.60	28.00	60	3.00	40.50621.0205	40.50622.0205
2.06	.0811	24.70	28.00	60	3.00	40.50621.0206	40.50622.0206
2.07	.0815	24.80	28.00	60	3.00	40.50621.0207	40.50622.0207
2.08	.0819	25.00	28.00	60	3.00	40.50621.0208	40.50622.0208

• Pilot drill recommended

MICRO DRILLS

Ø3MM SHANK 12XD — ART. 50621 & 50622

※ All dimensions are millimeters unless otherwise noted

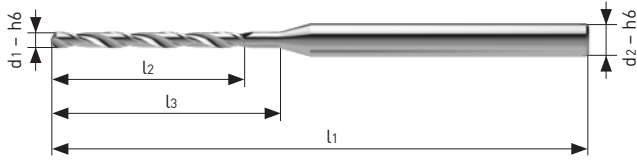
d1	d1 (in.)	l2	l3	l1	d2	Art. 50621	Art. 50622
						Catalog Number	Catalog Number
2.09	.0823	25.10	28.50	60	3.00	40.50621.0209	40.50622.0209
2.10	.0827	25.20	28.50	60	3.00	40.50621.0210	40.50622.0210
2.11	.0831	25.40	28.50	60	3.00	40.50621.0211	40.50622.0211
2.12	.0835	25.50	28.50	60	3.00	40.50621.0212	40.50622.0212
2.13	.0839	25.60	29.00	60	3.00	40.50621.0213	40.50622.0213
2.14	.0843	25.70	29.00	60	3.00	40.50621.0214	40.50622.0214
2.15	.0846	25.80	29.00	60	3.00	40.50621.0215	40.50622.0215
2.16	.0850	25.90	29.00	60	3.00	40.50621.0216	40.50622.0216
2.17	.0854	26.10	29.50	60	3.00	40.50621.0217	40.50622.0217
2.18	.0858	26.20	29.50	60	3.00	40.50621.0218	40.50622.0218
2.19	.0862	26.30	29.50	60	3.00	40.50621.0219	40.50622.0219
2.20	.0866	26.40	29.50	60	3.00	40.50621.0220	40.50622.0220
2.21	.0870	26.50	30.00	60	3.00	40.50621.0221	40.50622.0221
2.22	.0874	26.70	30.00	60	3.00	40.50621.0222	40.50622.0222
2.23	.0878	26.80	30.00	60	3.00	40.50621.0223	40.50622.0223
2.24	.0882	26.90	30.00	60	3.00	40.50621.0224	40.50622.0224
2.25	.0886	27.00	30.50	60	3.00	40.50621.0225	40.50622.0225
2.26	.0890	27.10	30.50	60	3.00	40.50621.0226	40.50622.0226
2.27	.0894	27.20	30.50	60	3.00	40.50621.0227	40.50622.0227
2.28	.0898	27.40	30.50	60	3.00	40.50621.0228	40.50622.0228
2.29	.0902	27.50	31.00	60	3.00	40.50621.0229	40.50622.0229
2.30	.0906	27.60	31.00	60	3.00	40.50621.0230	40.50622.0230
2.31	.0909	27.70	31.00	65	3.00	40.50621.0231	40.50622.0231
2.32	.0913	27.80	31.00	65	3.00	40.50621.0232	40.50622.0232
2.33	.0917	28.00	31.50	65	3.00	40.50621.0233	40.50622.0233
2.34	.0921	28.10	31.50	65	3.00	40.50621.0234	40.50622.0234
2.35	.0925	28.20	31.50	65	3.00	40.50621.0235	40.50622.0235
2.36	.0929	28.30	31.50	65	3.00	40.50621.0236	40.50622.0236
2.37	.0933	28.40	32.00	65	3.00	40.50621.0237	40.50622.0237
2.38	.0937	28.60	32.00	65	3.00	40.50621.0238	40.50622.0238
2.39	.0941	28.70	32.00	65	3.00	40.50621.0239	40.50622.0239
2.40	.0945	28.80	32.00	65	3.00	40.50621.0240	40.50622.0240
2.41	.0949	28.90	33.00	65	3.00	40.50621.0241	40.50622.0241
2.42	.0953	29.00	33.00	65	3.00	40.50621.0242	40.50622.0242
2.43	.0957	29.20	33.00	65	3.00	40.50621.0243	40.50622.0243
2.44	.0961	29.30	33.00	65	3.00	40.50621.0244	40.50622.0244
2.45	.0965	29.40	33.00	65	3.00	40.50621.0245	40.50622.0245
2.46	.0969	29.50	33.50	65	3.00	40.50621.0246	40.50622.0246
2.47	.0972	29.60	33.50	65	3.00	40.50621.0247	40.50622.0247
2.48	.0976	29.80	33.50	65	3.00	40.50621.0248	40.50622.0248
2.49	.0980	29.90	33.50	65	3.00	40.50621.0249	40.50622.0249
2.50	.0984	30.00	34.00	65	3.00	40.50621.0250	40.50622.0250
2.51	.0988	30.10	34.00	65	3.00	40.50621.0251	40.50622.0251
2.52	.0992	30.20	34.00	65	3.00	40.50621.0252	40.50622.0252
2.53	.0996	30.40	34.00	65	3.00	40.50621.0253	40.50622.0253

• Pilot drill recommended

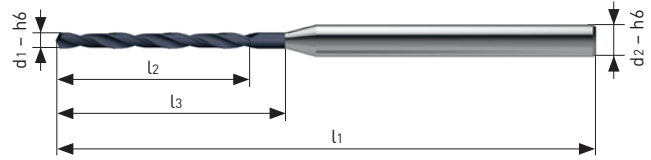
MICRO DRILLS

Ø3MM SHANK 12XD — ART. 50621 & 50622

Art. 50621 Cont.



Art. 50622 Cont.



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Art. 50621	Art. 50622
						Catalog Number	Catalog Number
2.54	.1000	30.50	34.50	65	3.00	40.50621.0254	40.50622.0254
2.55	.1004	30.60	34.50	65	3.00	40.50621.0255	40.50622.0255
2.56	.1008	30.70	34.50	65	3.00	40.50621.0256	40.50622.0256
2.57	.1012	30.80	34.50	65	3.00	40.50621.0257	40.50622.0257
2.58	.1016	31.00	35.00	65	3.00	40.50621.0258	40.50622.0258
2.59	.1020	31.10	35.00	65	3.00	40.50621.0259	40.50622.0259
2.60	.1024	31.20	35.00	65	3.00	40.50621.0260	40.50622.0260
2.61	.1028	31.30	35.00	65	3.00	40.50621.0261	40.50622.0261
2.62	.1031	31.40	35.50	65	3.00	40.50621.0262	40.50622.0262
2.63	.1035	31.60	35.50	65	3.00	40.50621.0263	40.50622.0263
2.64	.1039	31.70	35.50	65	3.00	40.50621.0264	40.50622.0264
2.65	.1043	31.80	35.50	65	3.00	40.50621.0265	40.50622.0265
2.66	.1047	31.90	36.00	65	3.00	40.50621.0266	40.50622.0266
2.67	.1051	32.00	36.00	65	3.00	40.50621.0267	40.50622.0267
2.68	.1055	32.20	36.00	65	3.00	40.50621.0268	40.50622.0268
2.69	.1059	32.30	36.00	65	3.00	40.50621.0269	40.50622.0269
2.70	.1063	32.40	36.50	65	3.00	40.50621.0270	40.50622.0270
2.71	.1067	32.50	36.50	65	3.00	40.50621.0271	40.50622.0271
2.72	.1071	32.60	36.50	65	3.00	40.50621.0272	40.50622.0272
2.73	.1075	32.80	36.50	65	3.00	40.50621.0273	40.50622.0273
2.74	.1079	32.90	37.00	65	3.00	40.50621.0274	40.50622.0274
2.75	.1083	33.00	37.00	65	3.00	40.50621.0275	40.50622.0275
2.76	.1087	33.10	37.00	65	3.00	40.50621.0276	40.50622.0276
2.77	.1091	33.20	37.00	65	3.00	40.50621.0277	40.50622.0277
2.78	.1094	33.40	37.50	65	3.00	40.50621.0278	40.50622.0278
2.79	.1098	33.50	37.50	65	3.00	40.50621.0279	40.50622.0279
2.80	.1102	33.60	37.50	65	3.00	40.50621.0280	40.50622.0280
2.81	.1106	33.70	37.50	65	3.00	40.50621.0281	40.50622.0281
2.82	.1110	33.80	38.00	65	3.00	40.50621.0282	40.50622.0282
2.83	.1114	34.00	38.00	65	3.00	40.50621.0283	40.50622.0283
2.84	.1118	34.10	38.00	65	3.00	40.50621.0284	40.50622.0284
2.85	.1122	34.20	38.00	65	3.00	40.50621.0285	40.50622.0285
2.86	.1126	34.30	38.50	65	3.00	40.50621.0286	40.50622.0286
2.87	.1130	34.40	38.50	65	3.00	40.50621.0287	40.50622.0287
2.88	.1134	34.60	38.50	65	3.00	40.50621.0288	40.50622.0288
2.89	.1138	34.70	38.50	65	3.00	40.50621.0289	40.50622.0289
2.90	.1142	34.80	39.00	65	3.00	40.50621.0290	40.50622.0290
2.91	.1146	34.90	39.00	65	3.00	40.50621.0291	40.50622.0291
2.92	.1150	35.00	39.00	65	3.00	40.50621.0292	40.50622.0292

• Pilot drill recommended

MICRO DRILLS
Ø3MM SHANK 12XD — ART. 50621 & 50622

※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Art. 50621	Art. 50622
						Catalog Number	Catalog Number
2.93	.1154	35.20	39.00	65	3.00	40.50621.0293	40.50622.0293
2.94	.1157	35.30	39.50	65	3.00	40.50621.0294	40.50622.0294
2.95	.1161	35.40	39.50	65	3.00	40.50621.0295	40.50622.0295
2.96	.1165	35.50	39.50	65	3.00	40.50621.0296	40.50622.0296
2.97	.1169	35.60	39.50	65	3.00	40.50621.0297	40.50622.0297
2.98	.1173	35.80	40.00	65	3.00	40.50621.0298	40.50622.0298
2.99	.1177	35.90	40.00	65	3.00	40.50621.0299	40.50622.0299
3.00	.1181	36.00	40.00	65	3.00	40.50621.0300	40.50622.0300

• Pilot drill recommended



MICRO DRILLS

DEEP HOLE 20XD — ART. 50720

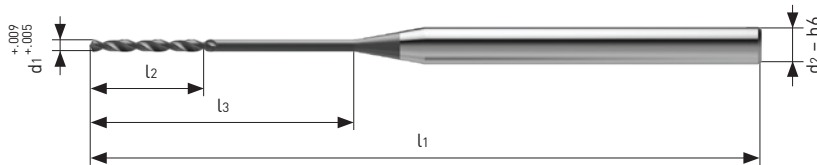
Art. 50720

Carbide
 $\begin{matrix} +.009 \\ d_1 \\ +.005 \end{matrix}$
Z
2
 129°
 30°

10xd
20xd
AlCrN

Blind Hole
Through Hole
Multi-Composite

ST
SST
C.I.
Al
Cu
Brass
Mg
Ti
HST
Plastic

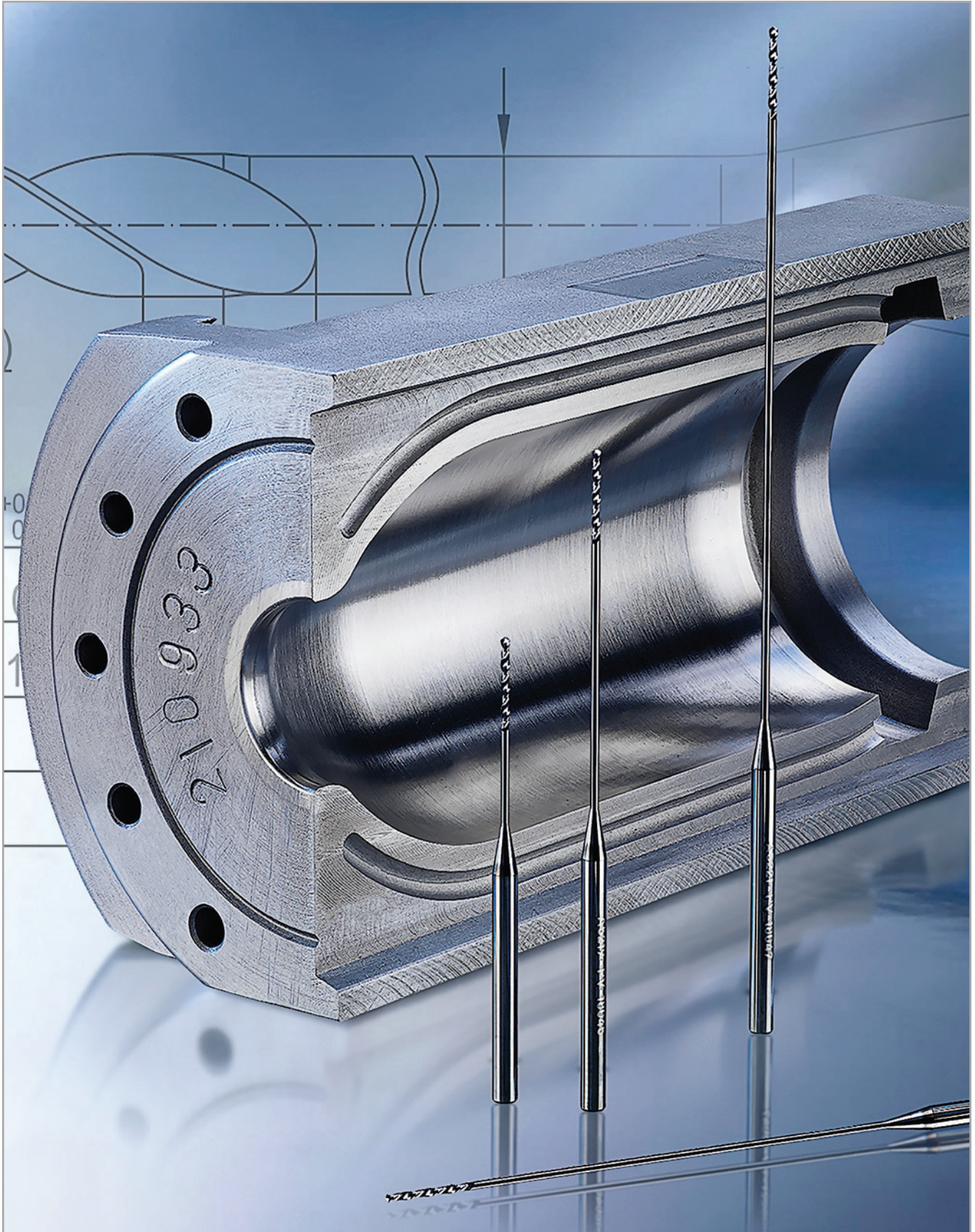


※ All dimensions are millimeters unless otherwise noted

d1	d1 (in)	d2	l2	l3	l1	Catalog Number
.20	.0079	3.00	2.50	4.00	38	40.50720.0020
.25	.0098	3.00	3.00	5.00	38	40.50720.0025
.30	.0118	3.00	3.50	6.00	38	40.50720.0030
.35	.0138	3.00	4.00	7.00	38	40.50720.0035
.40	.0157	3.00	4.50	8.00	38	40.50720.0040
.45	.0177	3.00	5.00	9.00	38	40.50720.0045
.50	.0197	3.00	5.50	10.00	50	40.50720.0050
.55	.0217	3.00	6.00	11.00	50	40.50720.0055
.60	.0236	3.00	6.50	12.00	50	40.50720.0060
.65	.0256	3.00	7.00	13.00	50	40.50720.0065
.70	.0276	3.00	7.50	14.00	50	40.50720.0070
.75	.0295	3.00	8.00	15.00	50	40.50720.0075
.80	.0315	3.00	8.50	16.00	55	40.50720.0080
.85	.0335	3.00	9.00	17.00	55	40.50720.0085

d1	d1 (in)	d2	l2	l3	l1	Catalog Number
.90	.0354	3.00	9.50	18.00	55	40.50720.0090
.95	.0374	3.00	10.00	19.00	55	40.50720.0095
1.00	.0394	3.00	10.50	20.00	55	40.50720.0100
1.05	.0413	3.00	11.00	21.00	60	40.50720.0105
1.10	.0433	3.00	11.50	22.00	60	40.50720.0110
1.15	.0453	3.00	12.00	23.00	60	40.50720.0115
1.20	.0472	3.00	12.50	24.00	60	40.50720.0120
1.25	.0492	3.00	13.00	25.00	60	40.50720.0125
1.30	.0512	3.00	13.50	26.00	65	40.50720.0130
1.35	.0531	3.00	14.00	27.00	65	40.50720.0135
1.40	.0551	3.00	14.50	28.00	65	40.50720.0140
1.45	.0571	3.00	15.00	29.00	65	40.50720.0145
1.50	.0591	3.00	15.50	30.00	65	40.50720.0150

- Pilot drill recommended
- Machining process instructions on Pg. 152



MICRO DRILLS

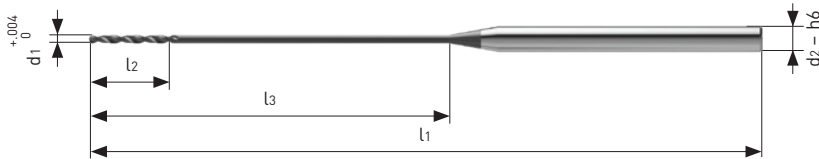
DEEP HOLE 40XD— ART. 50740

Art. 50740

Carbide $+0.004$
 $d_1 \ 0$ Z
2 126° 30° 10xd 40xd ALCrN

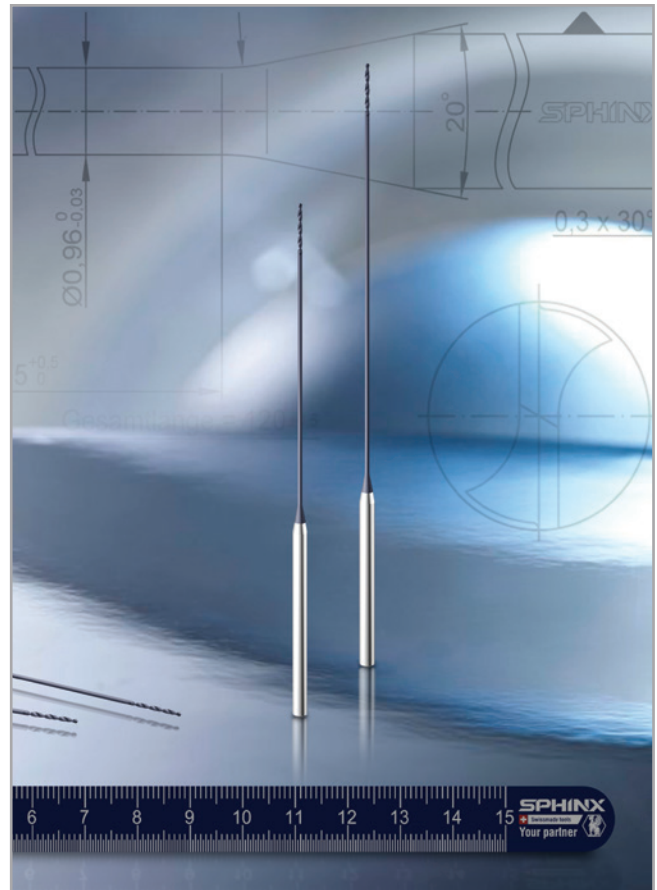
Blind Hole Through Hole Multi-Composite

ST SST C.I. Al Cu Brass Mg Ti HST Plastic



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in)	d2	l2	l3	l1	Catalog Number
.40	.0157	3.00	4.50	16.00	50	40.50740.0040
.45	.0177	3.00	5.00	18.00	50	40.50740.0045
.50	.0197	3.00	5.50	20.00	70	40.50740.0050
.55	.0217	3.00	6.00	22.00	70	40.50740.0055
.60	.0236	3.00	6.50	24.00	70	40.50740.0060
.65	.0256	3.00	7.00	26.00	70	40.50740.0065
.70	.0276	3.00	7.50	28.00	70	40.50740.0070
.75	.0295	3.00	8.00	30.00	70	40.50740.0075
.80	.0315	3.00	8.50	32.00	78	40.50740.0080
.85	.0335	3.00	9.00	34.00	78	40.50740.0085
.90	.0354	3.00	9.50	36.00	78	40.50740.0090
.95	.0374	3.00	10.00	38.00	78	40.50740.0095
1.00	.0394	3.00	10.50	40.00	78	40.50740.0100
1.05	.0413	3.00	11.00	42.00	88	40.50740.0105
1.10	.0433	3.00	11.50	44.00	88	40.50740.0110
1.15	.0453	3.00	12.00	46.00	88	40.50740.0115
1.20	.0472	3.00	12.50	48.00	88	40.50740.0120
1.25	.0492	3.00	13.00	50.00	88	40.50740.0125
1.30	.0512	3.00	13.50	52.00	98	40.50740.0130
1.35	.0531	3.00	14.00	54.00	98	40.50740.0135
1.40	.0551	3.00	14.50	56.00	98	40.50740.0140
1.45	.0571	3.00	15.00	58.00	98	40.50740.0145
1.50	.0591	3.00	15.50	60.00	98	40.50740.0150



- Pilot drill recommended
- Machining process instructions on Pg. 153

MICRO DRILLS

DEEP HOLE 60XD & 80XD — ART. 50760 & 50780

Art. 50760

Carbide $d_1 \pm .004$ Z 2 126° 30°

AlCrN

Blind Hole Through Hole Multi-Composite

ST SST C.I. Al Cu Brass

Mg Ti HST Plastic

Art. 50780

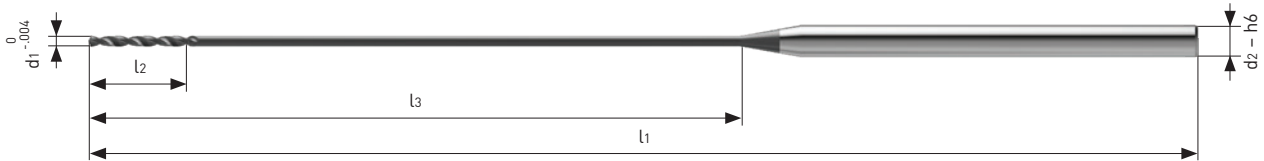
Carbide $d_1 \pm .004$ Z 2 126° 30°

AlCrN

Blind Hole Through Hole Multi-Composite

ST SST C.I. Al Cu Brass

Mg Ti HST Plastic



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in)	d2	Art. 50760				Art. 50780			
			l2	l3	l1	Catalog Number	l2	l3	l1	Catalog Number
.40	.0157	3.00	4.50	24.00	60	40.50760.0040	4.50	32.00	70	40.50780.0040
.45	.0177	3.00	5.00	27.00	60	40.50760.0045	5.00	36.00	70	40.50780.0045
.50	.0197	3.00	5.50	30.00	85	40.50760.0050	5.50	40.00	100	40.50780.0050
.55	.0217	3.00	6.00	33.00	85	40.50760.0055	6.00	44.00	100	40.50780.0055
.60	.0236	3.00	6.50	36.00	85	40.50760.0060	6.50	48.00	100	40.50780.0060
.65	.0256	3.00	7.00	39.00	85	40.50760.0065	7.00	52.00	100	40.50780.0065
.70	.0276	3.00	7.50	42.00	85	40.50760.0070	7.50	56.00	100	40.50780.0070
.75	.0295	3.00	8.00	45.00	85	40.50760.0075	8.00	60.00	100	40.50780.0075
.80	.0315	3.00	8.50	48.00	100	40.50760.0080	8.50	64.00	120	40.50780.0080
.85	.0335	3.00	9.00	51.00	100	40.50760.0085	9.00	68.00	120	40.50780.0085
.90	.0354	3.00	9.50	54.00	100	40.50760.0090	9.50	72.00	120	40.50780.0090
.95	.0374	3.00	10.00	57.00	100	40.50760.0095	10.00	76.00	120	40.50780.0095
1.00	.0394	3.00	10.50	60.00	100	40.50760.0100	10.50	80.00	120	40.50780.0100
1.05	.0413	3.00	11.00	63.00	115	40.50760.0105	11.00	84.00	140	40.50780.0105
1.10	.0433	3.00	11.50	66.00	115	40.50760.0110	11.50	88.00	140	40.50780.0110
1.15	.0453	3.00	12.00	69.00	115	40.50760.0115	12.00	92.00	140	40.50780.0115
1.20	.0472	3.00	12.50	72.00	115	40.50760.0120	12.50	96.00	140	40.50780.0120
1.25	.0492	3.00	13.00	75.00	115	40.50760.0125	13.00	100.00	140	40.50780.0125
1.30	.0512	3.00	13.50	78.00	130	40.50760.0130	13.50	104.00	160	40.50780.0130
1.35	.0531	3.00	14.00	81.00	130	40.50760.0135	14.00	108.00	160	40.50780.0135
1.40	.0551	3.00	14.50	84.00	130	40.50760.0140	14.50	112.00	160	40.50780.0140
1.45	.0571	3.00	15.00	87.00	130	40.50760.0145	15.00	116.00	160	40.50780.0145
1.50	.0591	3.00	15.50	90.00	130	40.50760.0150	15.50	120.00	160	40.50780.0150

- Pilot drill recommended
- Machining process instructions on Pg. 153

MICRO DRILLS CUTTING DATA

PILOT/SPOTTING 130°, HSS

Art. 16004								
Material	ø.10-.30mm		ø.35-.50mm		ø.55-.80mm		ø.85-1.50mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	3.5-6.5	.00005-.00020	5-20	.00015-.00030	10-35	.00025-.00045	30-50	.00040-.00060
P2	2.5-5	.00005-.00010	5-15	.00010-.00025	10-25	.00020-.00030	25-40	.00025-.00040
P3	1.5-5	.00005-.00010	5-10	.00010-.00015	5-15	.00010-.00025	10-25	.00020-.00040
M1	2.5-5	.00005-.00010	5-15	.00010-.00015	10-25	.00010-.00025	25-40	.00020-.00040
M2	1.5-5	.00005-.00010	5-10	.00010-.00015	5-25	.00010-.00020	10-25	.00015-.00030
K1	3.5-6.5	.00005-.00020	5-20	.00015-.00030	10-35	.00030-.00045	30-50	.00040-.00060
K2	2.5-5	.00005-.00010	5-15	.00010-.00025	10-25	.00020-.00045	25-40	.00025-.00040
N1	3.5-6.5	.00005-.00025	5-20	.00020-.00040	10-35	.00030-.00060	30-50	.00050-.00100
N2	2.5-5	.00010-.00025	5-15	.00020-.00040	10-25	.00030-.00060	25-40	.00050-.00100
N3	—	—	—	—	—	—	—	—
N4	—	—	—	—	—	—	—	—
N5	3.5-6.5	.00010-.00025	5-20	.00020-.00040	10-35	.00030-.00060	30-50	.00050-.00080
N6	—	—	—	—	—	—	—	—
N7	—	—	—	—	—	—	—	—
N8	—	—	—	—	—	—	—	—
S1	—	—	—	—	—	—	—	—
S2	—	—	—	—	—	—	—	—
H1	—	—	—	—	—	—	—	—
H2	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—
O1	—	—	—	—	—	—	—	—
O2	—	—	—	—	—	—	—	—
O3	—	—	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO DRILLS CUTTING DATA

PILOT/SPOTTING 130°, CARBIDE

Art. 56005						
Material	ø.10-.30mm		ø.35-.80mm		ø.85-1.50mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	25-60	.00005-.00010	50-100	.00010-.00040	100-195	.00040-.00080
P2	20-50	.00005-.00010	40-80	.00010-.00030	65-130	.00025-.00060
P3	20-40	.00005-.00010	35-65	.00010-.00020	60-115	.00015-.00050
M1	15-40	.00005-.00010	35-60	.00010-.00020	50-100	.00015-.00040
M2	15-35	.00005-.00010	25-50	.00010-.00015	45-80	.00010-.00035
K1	25-60	.00010-.00030	50-100	.00025-.00040	100-195	.00030-.00100
K2	20-50	.00010-.00015	40-80	.00020-.00030	65-130	.00030-.00080
N1	40-65	.00005-.00015	60-115	.00010-.00030	115-215	.00025-.00060
N2	35-60	.00010-.00020	50-100	.00015-.00040	80-165	.00030-.00100
N3	25-60	.00010-.00020	50-100	.00015-.00030	100-195	.00025-.00080
N4	25-60	.00005-.00015	50-100	.00010-.00025	100-195	.00020-.00060
N5	40-65	.00010-.00020	60-115	.00015-.00040	115-215	.00035-.00100
N6	25-60	.00010-.00020	50-100	.00015-.00030	100-195	.00030-.00080
N7	25-60	.00010-.00020	50-100	.00015-.00030	100-195	.00030-.00080
N8	20-45	.00005-.00015	35-65	.00010-.00030	60-115	.00020-.00060
S1	50-100	.00010-.00025	90-150	.00020-.00040	100-150	.00030-.00080
S2	—	—	—	—	—	—
H1						
H2	—	—	—	—	—	—
H3						
O1	25-60	.00020-.00040	50-100	.00030-.00060	100-195	.00050-.00140
O2	—	—	—	—	—	—
O3						

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO DRILLS CUTTING DATA

SPIREC PILOT 2XD & PILOT Ø3MM SHANK 2XD

Art. 56030/56033										
Material	ø.03-.10mm		ø.11-.50mm		ø.51-1.00mm		ø1.01-2.00mm		ø2.01-3.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	5-15	.00005-.00010	15-35	.00010-.00040	35-100	.00040-.00070	100-195	.00070-.00110	100-195	.00110-.00175
P2	5-15	.00005-.00010	15-25	.00010-.00030	25-80	.00030-.00065	80-165	.00065-.00100	80-165	.00100-.00155
P3	5-10	.00005-.00010	10-20	.00010-.00030	20-65	.00030-.00050	65-150	.00050-.00095	65-150	.00095-.00140
M1	5-15	.00005-.00010	15-25	.00010-.00030	25-65	.00030-.00050	65-150	.00050-.00090	65-150	.00090-.00130
M2	5-10	.00005-.00010	10-20	.00010-.00020	15-50	.00020-.00040	50-100	.00040-.00080	50-100	.00080-.00120
K1	5-15	.00005-.00015	15-35	.00015-.00030	35-100	.00030-.00060	100-195	.00060-.00120	100-195	.00120-.00175
K2	5-15	.00005-.00010	15-25	.00010-.00030	25-80	.00030-.00050	80-165	.00050-.00100	80-165	.00100-.00155
N1	5-20	.00005-.00010	15-35	.00010-.00025	50-130	.00025-.00045	130-230	.00045-.00090	130-230	.00090-.00140
N2	5-20	.00005-.00010	15-50	.00010-.00030	50-130	.00030-.00050	130-215	.00050-.00100	130-215	.00100-.00155
N3	5-15	.00005-.00010	15-40	.00010-.00025	40-100	.00025-.00045	100-195	.00045-.00085	100-195	.00085-.00140
N4	5-15	.00005-.00010	15-40	.00010-.00020	40-100	.00020-.00040	100-195	.00040-.00080	100-195	.00080-.00120
N5	5-20	.00005-.00010	15-50	.00010-.00025	50-115	.00025-.00050	115-215	.00050-.00100	115-215	.00100-.00155
N6	5-15	.00005-.00010	15-40	.00010-.00015	40-100	.00015-.00040	100-195	.00040-.00085	100-195	.00085-.00140
N7	5-15	.00005-.00010	15-40	.00010-.00015	40-100	.00015-.00035	100-195	.00035-.00080	100-195	.00080-.00120
N8	5-10	.00005-.00010	10-20	.00010-.00015	20-65	.00015-.00030	65-150	.00030-.00065	65-150	.00065-.00120
S1	5-15	.00005-.00010	15-25	.00010-.00015	25-50	.00015-.00035	50-100	.00035-.00070	50-100	.00070-.00120
S2	—	—	—	—	—	—	—	—	—	—
H1										
H2	—	—	—	—	—	—	—	—	—	—
H3										
O1	5-15	.00005-.00010	15-35	.00010-.00030	35-80	.00030-.00055	65-115	.00055-.00140	65-115	.00140-.00235
O2	—	—	—	—	—	—	—	—	—	—
O3										

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO DRILLS CUTTING DATA

TRICUT 5XD

Art. 55652								
Material	ø.20-.50mm		ø.51-1.00mm		ø1.01-2.00mm		ø2.01-2.99mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	35-80	.0002-.0003	80-130	.0003-.0006	130-195	.0005-.0016	130-195	.0014-.0020
P2	25-65	.0002-.0003	65-100	.0002-.0006	100-165	.0005-.0014	100-165	.0012-.0018
P3	—	—	—	—	—	—	—	—
M1	25-50	.0001-.0002	50-80	.0002-.0005	80-130	.0004-.0008	80-130	.0007-.0012
M2	—	—	—	—	—	—	—	—
K1	65-150	.0002-.0003	150-195	.0003-.0006	195-330	.0005-.0016	195-330	.0014-.0020
K2	50-100	.0001-.0002	100-130	.0002-.0005	130-260	.0004-.0013	130-260	.0012-.0018
N1	—	—	—	—	—	—	—	—
N2	65-165	.0002-.0004	165-260	.0003-.0008	260-395	.0007-.0020	260-395	.0016-.0031
N3	65-130	.0002-.0004	100-230	.0003-.0008	195-330	.0007-.0020	195-330	.0016-.0031
N4	—	—	—	—	—	—	—	—
N5	—	—	—	—	—	—	—	—
N6	65-130	.0002-.0003	100-230	.0003-.0006	195-330	.0006-.0015	195-330	.0014-.0025
N7	—	—	—	—	—	—	—	—
N8	—	—	—	—	—	—	—	—
S1	35-65	.0001-.0002	65-100	.0002-.0004	100-165	.0003-.0012	100-165	.0011-.0016
S2	—	—	—	—	—	—	—	—
H1	—	—	—	—	—	—	—	—
H2	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—
O1	25-65	.0002-.0003	65-100	.0002-.0006	100-165	.0005-.0014	100-165	.0012-.0018
O2	—	—	—	—	—	—	—	—
O3	—	—	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO DRILLS CUTTING DATA

HIGH PERFORMANCE PHOENIX 6XD

Art. 50941						
Material	ø.50-.90mm		ø1.00-1.60mm		ø1.70-2.40mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	130-260	.0008-.0020	260-425	.0020-.0035	260-425	.0035-.0059
P2	115-245	.0006-.0016	230-330	.0016-.0031	230-330	.0031-.0055
P3	100-165	.0004-.0008	165-295	.0008-.0024	165-295	.0024-.0039
M1	100-130	.0002-.0003	130-260	.0003-.0016	130-260	.0016-.0031
M2	65-100	.0002-.0003	100-230	.0003-.0024	100-230	.0024-.0039
K1	165-330	.0008-.0020	330-490	.0020-.0039	330-490	.0039-.0059
K2	130-260	.0006-.0016	260-425	.0016-.0031	260-425	.0031-.0047
N1	—	—	—	—	—	—
N2	195-395	.0008-.0016	395-490	.0016-.0035	395-490	.0035-.0059
N3	195-395	.0008-.0016	395-590	.0016-.0035	395-590	.0035-.0059
N4						
N5						
N6	—	—	—	—	—	—
N7						
N8						
S1	65-100	.0001-.0002	100-195	.0002-.0006	100-195	.0005-.0012
S2	—	—	—	—	—	—
H1	35-65	.0001-.0002	50-100	.0001-.0005	50-100	.0004-.0006
H2						
H3	—	—	—	—	—	—
O1						
O2	—	—	—	—	—	—
O3						

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO DRILLS CUTTING DATA

SPIREC 6XD, HSS

Art. 12604								
Material	ø.05-.30mm		ø.31-.80mm		ø.81-1.50mm		ø1.55-3.175mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	3.5-6.5	.00005-.00020	5-25	.00020-.00045	25-65	.00040-.00060	25-65	.00055-.00085
P2	1.5-5	.00005-.00010	5-25	.00010-.00025	25-50	.00020-.00035	25-50	.00030-.00045
P3	—	—	—	—	—	—	—	—
M1	1.5-5	.00005-.00010	5-25	.00010-.00025	25-50	.00020-.00035	25-50	.00030-.00060
M2	1.5-4	.00005-.00010	5-20	.00010-.00020	20-50	.00015-.00030	20-50	.00025-.00045
K1	5-15	.00005-.00020	15-35	.00015-.00045	35-65	.00040-.00060	35-65	.00055-.00080
K2	5-15	.00005-.00015	15-25	.00010-.00030	25-60	.00030-.00045	25-60	.00040-.00065
N1	5-25	.00005-.00015	25-45	.00010-.00040	45-80	.00035-.00065	45-80	.00060-.00085
N2	5-20	.00005-.00020	20-40	.00015-.00045	40-70	.00040-.00080	40-70	.00070-.00140
N3	—	—	—	—	—	—	—	—
N4	—	—	—	—	—	—	—	—
N5	5-25	.00005-.00015	25-45	.00010-.00040	45-80	.00035-.00070	45-80	.00065-.00120
N6	—	—	—	—	—	—	—	—
N7	—	—	—	—	—	—	—	—
N8	—	—	—	—	—	—	—	—
S1	—	—	—	—	—	—	—	—
S2	—	—	—	—	—	—	—	—
H1	—	—	—	—	—	—	—	—
H2	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—
O1	—	—	—	—	—	—	—	—
O2	—	—	—	—	—	—	—	—
O3	—	—	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO DRILLS CUTTING DATA

SPIREC PILOT 6XD & SPIREC 6XD

Art. 50695/50699										
Material	ø.05-.30mm		ø.31-.50mm		ø.51-.80mm		ø.81-1.20mm		ø1.21-2.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	5-20	.00005-.00015	20-50	.00010-.00030	35-75	.00030-.00050	75-195	.00045-.00070	75-195	.00065-.00100
P2	5-20	.00005-.00010	5-35	.00010-.00030	15-50	.00025-.00045	25-100	.00040-.00065	25-100	.00055-.00085
P3	5-15	.00005-.00010	5-25	.00010-.00025	10-45	.00025-.00040	15-80	.00030-.00055	15-80	.00045-.00080
M1	5-10	.00005-.00010	5-20	.00010-.00020	15-35	.00015-.00030	25-60	.00030-.00045	25-60	.00040-.00065
M2	—	—	—	—	—	—	—	—	—	—
K1	5-25	.00005-.00015	20-50	.00010-.00030	35-75	.00030-.00050	75-195	.00045-.00070	75-195	.00065-.00100
K2	5-20	.00005-.00010	5-35	.00010-.00030	15-50	.00025-.00045	25-100	.00040-.00065	25-100	.00055-.00085
N1	—	—	—	—	—	—	—	—	—	—
N2	10-50	.00005-.00015	25-85	.00015-.00030	45-180	.00030-.00045	100-330	.00040-.00065	100-330	.00060-.00085
N3	10-45	.00005-.00015	20-70	.00015-.00025	35-130	.00020-.00040	65-260	.00035-.00060	65-260	.00055-.00080
N4	5-25	.00005-.00010	20-50	.00010-.00020	35-75	.00015-.00030	75-195	.00030-.00065	75-195	.00040-.00065
N5	10-50	.00005-.00015	25-85	.00015-.00025	45-180	.00020-.00040	100-330	.00035-.00060	100-330	.00055-.00080
N6	—	—	—	—	—	—	—	—	—	—
N7	5-25	.00005-.00015	20-50	.00015-.00025	35-75	.00020-.00040	75-195	.00035-.00060	75-195	.00055-.00080
N8	5-20	.00005-.00010	5-35	.00010-.00020	15-50	.00015-.00030	25-100	.00030-.00040	25-100	.00030-.00050
S1	—	—	—	—	—	—	—	—	—	—
S2	—	—	—	—	—	—	—	—	—	—
H1	—	—	—	—	—	—	—	—	—	—
H2	—	—	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—	—	—
O1	—	—	—	—	—	—	—	—	—	—
O2	—	—	—	—	—	—	—	—	—	—
O3	—	—	—	—	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO DRILLS CUTTING DATA

Ø3MM SHANK 6XD

Art. 51200										
Material	ø.03-.30mm		ø.31-.50mm		ø.51-1.00mm		ø1.01-2.00mm		ø2.01-3.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	5-15	.00005-.00015	15-35	.00010-.00030	35-100	.00030-.00060	100-195	.00055-.00100	100-195	.00090-.00140
P2	5-15	.00005-.00010	15-25	.00010-.00030	25-80	.00025-.00055	80-165	.00045-.00090	80-165	.00085-.00125
P3	5-10	.00005-.00010	10-20	.00010-.00025	20-65	.00020-.00050	65-150	.00045-.00080	65-150	.00070-.00120
M1	5-15	.00005-.00010	15-25	.00010-.00020	25-65	.00015-.00045	65-150	.00040-.00070	65-150	.00065-.00110
M2	5-10	.00005-.00010	10-20	.00010-.00015	15-50	.00010-.00035	50-100	.00030-.00065	50-100	.00065-.00110
K1	5-15	.00005-.00015	15-35	.00010-.00030	35-100	.00030-.00060	100-195	.00055-.00100	100-195	.00090-.00140
K2	5-15	.00005-.00010	15-25	.00010-.00030	25-80	.00025-.00055	80-165	.00045-.00085	80-165	.00080-.00125
N1	5-20	.00005-.00010	15-50	.00010-.00025	50-130	.00020-.00050	130-230	.00045-.00080	130-230	.00070-.00120
N2	5-20	.00005-.00015	15-50	.00010-.00030	50-130	.00025-.00060	130-215	.00055-.00085	130-215	.00080-.00140
N3	5-15	.00005-.00015	15-40	.00010-.00025	40-100	.00025-.00050	100-195	.00045-.00080	100-195	.00070-.00125
N4	5-15	.00005-.00010	15-40	.00010-.00020	40-100	.00015-.00040	100-195	.00035-.00065	100-195	.00060-.00100
N5	5-20	.00005-.00015	15-50	.00010-.00025	50-115	.00020-.00050	115-215	.00045-.00080	115-215	.00070-.00125
N6	5-15	.00005-.00010	15-40	.00010-.00020	40-100	.00015-.00040	100-195	.00035-.00065	100-195	.00060-.00080
N7	5-15	.00005-.00015	15-40	.00010-.00025	40-100	.00020-.00045	100-195	.00045-.00070	100-195	.00065-.00100
N8	5-10	.00005-.00010	10-20	.00010-.00020	20-65	.00015-.00035	65-150	.00030-.00050	65-150	.00045-.00070
S1	5-15	.00005-.00010	15-25	.00010-.00025	25-50	.00020-.00050	50-100	.00045-.00080	50-100	.00070-.00120
S2	—	—	—	—	—	—	—	—	—	—
H1										
H2	—	—	—	—	—	—	—	—	—	—
H3										
O1	5-15	.00005-.00015	15-35	.00010-.00040	35-80	.00035-.00070	65-115	.00065-.00110	65-115	.00100-.00155
O2	—	—	—	—	—	—	—	—	—	—
O3										

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO DRILLS CUTTING DATA

Ø3MM SHANK 6XD

Art. 51201								
Material	ø.30-.50mm		ø.51-1.00mm		ø1.01-2.00mm		ø2.01-3.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	15-40	.00010-.00030	40-115	.00030-.00060	115-215	.00055-.00100	115-215	.00090-.00140
P2	15-30	.00010-.00030	30-90	.00025-.00055	90-180	.00045-.00090	90-180	.00085-.00125
P3	10-25	.00010-.00025	25-75	.00020-.00050	75-165	.00045-.00080	75-165	.00070-.00120
M1	15-30	.00010-.00020	30-90	.00015-.00045	90-180	.00040-.00070	90-180	.00065-.00110
M2	10-25	.00010-.00015	25-65	.00010-.00035	60-115	.00030-.00065	60-115	.00065-.00110
K1	15-40	.00010-.00030	40-115	.00030-.00060	115-215	.00055-.00100	115-215	.00090-.00140
K2	15-30	.00010-.00030	35-100	.00025-.00055	100-180	.00045-.00085	100-180	.00080-.00125
N1	20-65	.00010-.00025	60-150	.00020-.00050	150-260	.00045-.00080	150-260	.00070-.00120
N2	20-55	.00010-.00030	55-150	.00025-.00060	150-230	.00055-.00085	150-230	.00080-.00140
N3	20-50	.00010-.00025	50-115	.00025-.00050	115-215	.00045-.00080	115-215	.00070-.00125
N4	20-50	.00010-.00020	50-115	.00015-.00040	115-215	.00035-.00065	115-215	.00060-.00100
N5	20-60	.00010-.00025	60-130	.00020-.00050	130-230	.00045-.00080	130-230	.00070-.00125
N6	20-50	.00010-.00020	50-115	.00015-.00040	115-215	.00035-.00065	115-215	.00060-.00080
N7	20-50	.00010-.00025	50-115	.00020-.00045	115-215	.00045-.00070	115-215	.00065-.00100
N8	10-25	.00010-.00020	25-75	.00015-.00035	75-165	.00030-.00050	75-165	.00045-.00070
S1	15-25	.00010-.00025	25-60	.00020-.00050	60-115	.00045-.00080	60-115	.00070-.00120
S2	10-25	.00010-.00015	20-40	.00010-.00030	35-65	.00025-.00045	35-65	.00040-.00070
H1	10-25	.00010-.00015	20-40	.00010-.00030	35-65	.00025-.00045	35-65	.00040-.00070
H2	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—
O1	15-40	.00010-.00040	40-115	.00035-.00070	115-215	.00065-.00110	115-215	.00100-.00155
O2	10-20	.00010-.00035	20-65	.00030-.00065	65-150	.00060-.00100	65-150	.00085-.00140
O3	—	—	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO DRILLS CUTTING DATA

Ø3MM SHANK 12XD

Art. 50621								
Material	ø.15-.50mm		ø.51-1.00mm		ø1.01-2.00mm		ø2.01-3.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	20-50	.00005-.00040	50-115	.00040-.00080	50-115	.00080-.00120	50-115	.00120-.00175
P2	15-45	.00005-.00030	45-100	.00030-.00070	45-100	.00070-.00110	45-100	.00110-.00165
P3	15-40	.00005-.00030	40-80	.00030-.00065	40-80	.00065-.00100	40-80	.00100-.00150
M1	15-40	.00005-.00030	40-80	.00030-.00065	40-80	.00065-.00100	40-80	.00100-.00150
M2	—	—	—	—	—	—	—	—
K1	20-50	.00005-.00040	50-115	.00040-.00080	50-115	.00080-.00120	50-115	.00120-.00175
K2	15-45	.00005-.00030	45-100	.00030-.00070	45-100	.00070-.00110	45-100	.00110-.00165
N1	—	—	—	—	—	—	—	—
N2	25-65	.00005-.00040	65-150	.00040-.00080	65-150	.00080-.00120	65-150	.00120-.00175
N3	20-60	.00005-.00030	60-130	.00030-.00070	60-130	.00070-.00110	60-130	.00110-.00165
N4	—	—	—	—	—	—	—	—
N5	20-60	.00005-.00040	60-130	.00040-.00080	60-130	.00080-.00140	60-130	.00140-.00235
N6	—	—	—	—	—	—	—	—
N7	—	—	—	—	—	—	—	—
N8	—	—	—	—	—	—	—	—
S1	—	—	—	—	—	—	—	—
S2	—	—	—	—	—	—	—	—
H1	—	—	—	—	—	—	—	—
H2	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—
O1	—	—	—	—	—	—	—	—
O2	—	—	—	—	—	—	—	—
O3	—	—	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO DRILLS CUTTING DATA

Ø3MM SHANK 12XD

Art. 50622								
Material	ø.20-.50mm		ø.51-1.00mm		ø1.01-2.00mm		ø2.01-3.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	25-65	.00005-.00040	65-130	.00040-.00080	65-130	.00080-.00120	65-130	.00120-.00180
P2	20-60	.00005-.00030	60-125	.00030-.00070	60-125	.00070-.00110	60-125	.00110-.00170
P3	15-45	.00005-.00030	45-100	.00030-.00070	45-100	.00065-.00100	45-100	.00100-.00150
M1	15-45	.00005-.00030	45-100	.00030-.00070	45-100	.00065-.00100	45-100	.00100-.00150
M2	—	—	—	—	—	—	—	—
K1	25-65	.00005-.00040	65-130	.00040-.00080	65-130	.00080-.00120	65-130	.00120-.00180
K2	20-60	.00005-.00030	60-125	.00030-.00070	60-125	.00070-.00110	60-125	.00110-.00170
N1	—	—	—	—	—	—	—	—
N2	35-80	.00005-.00040	80-180	.00040-.00080	80-180	.00080-.00120	80-180	.00120-.00180
N3	25-70	.00005-.00030	70-165	.00030-.00070	70-165	.00070-.00110	70-165	.00110-.00170
N4	—	—	—	—	—	—	—	—
N5	25-70	.00005-.00040	70-165	.00040-.00080	70-165	.00080-.00140	70-165	.00140-.00240
N6	—	—	—	—	—	—	—	—
N7	—	—	—	—	—	—	—	—
N8	—	—	—	—	—	—	—	—
S1	—	—	—	—	—	—	—	—
S2	—	—	—	—	—	—	—	—
H1	5-15	.00005-.00020	15-40	.00015-.00030	15-40	.00030-.00060	15-40	.00060-.00100
H2	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—
O1	—	—	—	—	—	—	—	—
O2	—	—	—	—	—	—	—	—
O3	—	—	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO DRILLS CUTTING DATA

DEEP HOLE 20XD

Art. 50720								
Material	ø.20-.50mm		ø.55-.80mm		ø.85-1.20mm		ø1.25-1.50mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	25-65	.0001-.0004	65-130	.0004-.0007	65-130	.0007-.0010	65-130	.0010-.0014
P2	20-60	.0001-.0003	60-125	.0003-.0006	60-125	.0006-.0009	60-125	.0009-.0013
P3	15-45	.0001-.0003	45-100	.0003-.0006	45-100	.0006-.0008	45-100	.0008-.0012
M1	15-45	.0001-.0003	45-100	.0003-.0006	45-100	.0006-.0009	45-100	.0009-.0013
M2	10-40	.0001-.0002	40-80	.0002-.0004	40-80	.0004-.0006	40-80	.0006-.0008
K1	25-65	.0001-.0004	65-130	.0004-.0007	65-130	.0007-.0010	65-130	.0010-.0014
K2	20-60	.0001-.0003	20-60	.0003-.0006	20-60	.0006-.0009	20-60	.0009-.0013
N1	20-60	.0001-.0003	60-125	.0003-.0006	60-125	.0006-.0008	60-125	.0008-.0012
N2	35-80	.0001-.0004	80-180	.0004-.0007	80-180	.0007-.0010	80-180	.0010-.0014
N3	25-70	.0001-.0003	70-165	.0003-.0006	70-165	.0006-.0009	70-165	.0009-.0013
N4	15-45	.0001-.0002	45-100	.0002-.0004	45-100	.0004-.0006	45-100	.0006-.0008
N5	35-80	.0001-.0004	80-180	.0004-.0007	80-180	.0007-.0010	80-180	.0010-.0014
N6	15-50	.0001-.0002	50-100	.0002-.0004	50-100	.0004-.0006	50-100	.0006-.0008
N7	—	—	—	—	—	—	—	—
N8	—	—	—	—	—	—	—	—
S1	20-35	.0001-.0002	35-65	.0002-.0004	35-65	.0004-.0006	35-65	.0006-.0008
S2	—	—	—	—	—	—	—	—
H1	Please contact BIG DAISHOWA engineering department for operating parameters							
H2								
H3								
O1	Please contact BIG DAISHOWA engineering department for operating parameters							
O2								
O3								

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO DRILLS CUTTING DATA

DEEP HOLE 40XD, 60XD & 80XD

Art. 50740/50760/50780								
Material	ø.40-.50mm		ø.50-.80mm		ø.85-1.20mm		ø1.25-1.50mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	20-35	.00005-.00025	35-80	.00025-.00040	35-80	.00040-.00085	35-80	.00085-.00120
P2	15-25	.00005-.00020	25-65	.00020-.00030	25-65	.00030-.00060	25-65	.00060-.00080
P3	15-25	.00005-.00015	25-60	.00015-.00030	25-60	.00030-.00045	25-60	.00045-.00060
M1	15-20	.00005-.00010	20-50	.00010-.00025	20-50	.00025-.00045	20-50	.00045-.00070
M2	5-15	.00005-.00010	15-40	.00010-.00020	15-40	.00020-.00040	15-40	.00040-.00060
K1	20-35	.00005-.00025	35-80	.00025-.00040	35-80	.00040-.00085	35-80	.00085-.00120
K2	15-25	.00005-.00020	25-65	.00020-.00030	25-65	.00030-.00060	25-65	.00060-.00080
N1	15-20	.00005-.00015	20-60	.00015-.00030	20-60	.00030-.00045	20-60	.00045-.00060
N2	20-35	.00005-.00025	35-80	.00025-.00040	35-80	.00040-.00085	35-80	.00085-.00120
N3	15-25	.00005-.00020	25-65	.00020-.00030	25-65	.00030-.00060	25-65	.00060-.00080
N4	10-15	.00005-.00015	15-65	.00015-.00030	15-65	.00030-.00045	15-65	.00045-.00060
N5	20-35	.00005-.00025	35-80	.00025-.00040	35-80	.00040-.00085	35-80	.00085-.00120
N6	15-20	.00005-.00010	20-60	.00010-.00020	20-60	.00020-.00040	20-60	.00040-.00060
N7	—	—	—	—	—	—	—	—
N8	—	—	—	—	—	—	—	—
S1	10-15	.00005-.00010	15-40	.00010-.00020	15-40	.00020-.00040	15-40	.00040-.00060
S2	—	—	—	—	—	—	—	—
H1	Please contact BIG DAISHOWA engineering department for operating parameters							
H2								
H3								
O1	Please contact BIG DAISHOWA engineering department for operating parameters							
O2								
O3								

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO DRILLS CUTTING DATA

HIGH PERFORMANCE NIROX 9XD

Art.51609						
Material	Ø0.30-0.95		Ø1.00-1.95		Ø2.00-3.00	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	165-230	.0004-.0010	230-330	.0010-.0016	230-330	.0016-.0022
P2	130-195	.0004-.0010	195-260	.0010-.0014	195-260	.0014-.0020
P3	100-165	.0004-.0008	165-230	.0006-.0010	165-230	.0010-.0016
M1	65-115	.0002-.0003	100-150	.0006-.0010	100-150	.0010-.0014
M2	65-100	.0002-.0003	80-115	.0004-.0008	80-115	.0008-.0012
K1	230-360	.0008-.0020	360-490	.0012-.0016	360-490	.0016-.0020
K2	165-295	.0006-.0016	295-425	.0010-.0014	295-425	.0014-.0020
N1	230-330	.0008-.0012	330-425	.0012-.0016	330-425	.0016-.0020
N2	260-395	.0008-.0012	425-525	.0012-.0020	425-525	.0020-.0024
N3	260-395	.0008-.0012	425-525	.0012-.0020	425-525	.0020-.0024
N4	165-260	.0006-.0010	260-360	.0010-.0014	260-360	.0014-.0018
N5	260-395	.0006-.0010	425-525	.0010-.0014	425-525	.0014-.0018
N6						
N7	—	—	—	—	—	—
N8						
S1	65-100	.0002-.0004	65-100	.0004-.0008	65-100	.0008-.0012
S2	50-80	.0002-.0004	50-80	.0004-.0008	50-80	.0008-.0012
H1	65-100	.0002-.0006	80-130	.0006-.0010	80-130	.0010-.0014
H2	25-40	.0001-.0003	40-50	.0003-.0006	50-65	.0006-.0008
H3	—	—	—	—	—	—
O1	195-330	.0004-.0008	230-360	.0008-.0012	230-360	.0012-.0016
O2						
O3	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159
- Tool has 2 flutes/teeth

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$





Pilot/Step 140°/90°

Art. 56036..... Pg. 74-75



Phoenix 3xd & 12xd

Art. 50938 & 50942..... Pg. 76-79



Phoenix 6xd

Art. 50940..... Pg. 80-82



Phoenix TC2 3xd, 6xd & 9xd

Art. 52903, 52906 & 52909 Pg. 84-87



Phoenix TC2 12xd & 16xd

Art. 52912 & 52916..... Pg. 88-90



Phoenix TC2 20xd & 30xd

Art. 52920 & 52930..... Pg. 92



Quadro 15 Plus 6xd

Art. 52150..... Pg. 93



Quadro Plus 6xd & 12xd

Art. 52100 & 52200..... Pg. 94-95

Cutting Data

Art. 56036..... Pg. 96

Art. 50938..... Pg. 97

Art. 50942..... Pg. 98

Art. 50940..... Pg. 99

Art. 52903, 52906 & 52909 Pg. 100

Art. 52912 & 52916..... Pg. 101

Art. 52920 & 52930..... Pg. 102

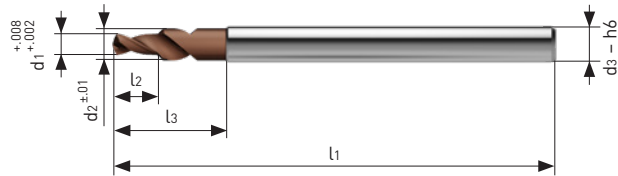
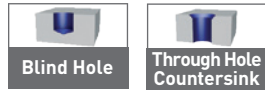
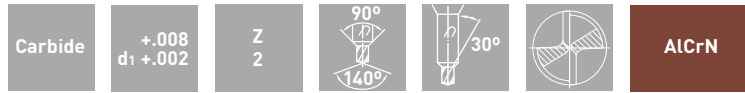
Art. 52150..... Pg. 103

Art. 52100 & 52200..... Pg. 104

HIGH PERFORMANCE DRILLS

PILOT/STEP 140°/90° — ART. 56036

Art. 56036



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	d2	l2	l3	l1	d3	Catalog Number
.30	.0118	.70	.60	2.50	50	4.00	40.56036.0030
.35	.0138	.70	.70	2.50	50	4.00	40.56036.0035
.40	.0157	1.00	.80	3.00	50	4.00	40.56036.0040
.50	.0197	1.20	1.00	3.50	50	4.00	40.56036.0050
.55	.0217	1.30	1.10	3.50	50	4.00	40.56036.0055
.60	.0236	1.40	1.20	4.30	50	4.00	40.56036.0060
.65	.0256	1.50	1.30	4.30	50	4.00	40.56036.0065
.70	.0276	1.80	1.40	5.30	50	4.00	40.56036.0070
.75	.0295	1.80	1.50	5.30	50	4.00	40.56036.0075
.80	.0315	2.00	1.60	6.00	50	4.00	40.56036.0080
.85	.0335	2.00	1.70	6.00	50	4.00	40.56036.0085
.90	.0354	2.00	1.80	6.00	50	4.00	40.56036.0090
.95	.0374	2.00	1.90	6.00	50	4.00	40.56036.0095
1.00	.0394	2.20	2.00	7.00	50	4.00	40.56036.0100
1.05	.0413	2.20	2.10	7.00	50	4.00	40.56036.0105
1.10	.0433	2.20	2.20	7.00	50	4.00	40.56036.0110
1.15	.0453	2.20	2.30	7.00	50	4.00	40.56036.0115
1.20	.0472	2.20	2.40	7.00	50	4.00	40.56036.0120
1.25	.0492	2.50	2.50	8.00	50	4.00	40.56036.0125
1.30	.0512	2.50	2.60	8.00	50	4.00	40.56036.0130
1.35	.0531	2.50	2.70	8.00	50	4.00	40.56036.0135
1.40	.0551	2.50	2.80	8.00	50	4.00	40.56036.0140
1.45	.0571	2.70	2.90	9.00	50	4.00	40.56036.0145
1.50	.0591	2.70	3.00	9.00	50	4.00	40.56036.0150
1.55	.061	2.70	3.10	9.00	50	4.00	40.56036.0155
1.60	.063	2.70	3.20	9.00	50	4.00	40.56036.0160
1.65	.065	2.80	3.30	9.50	50	4.00	40.56036.0165
1.70	.0669	2.80	3.40	9.50	50	4.00	40.56036.0170
1.75	.0689	2.80	3.50	9.50	50	4.00	40.56036.0175
1.80	.0709	2.80	3.60	9.50	50	4.00	40.56036.0180

d1	d1 (in.)	d2	l2	l3	l1	d3	Catalog Number
1.85	.0728	3.00	3.70	10.20	50	4.00	40.56036.0185
1.90	.0748	3.00	3.80	10.20	50	4.00	40.56036.0190
1.95	.0768	3.00	3.90	10.20	50	4.00	40.56036.0195
2.00	.0787	3.00	4.00	10.20	50	4.00	40.56036.0200
2.05	.0807	3.20	4.10	11.00	50	4.00	40.56036.0205
2.10	.0827	3.20	4.20	11.00	50	4.00	40.56036.0210
2.15	.0846	3.20	4.30	11.00	50	4.00	40.56036.0215
2.20	.0866	3.20	4.40	11.00	50	4.00	40.56036.0220
2.25	.0886	3.40	4.50	12.00	50	4.00	40.56036.0225
2.30	.0906	3.40	4.60	12.00	50	4.00	40.56036.0230
2.35	.0925	3.40	4.70	12.00	50	4.00	40.56036.0235
2.40	.0945	3.40	4.80	12.00	50	4.00	40.56036.0240
2.45	.0965	3.60	4.90	12.70	50	4.00	40.56036.0245
2.50	.0984	3.60	5.00	12.70	50	4.00	40.56036.0250
2.55	.1004	3.60	5.10	12.70	50	4.00	40.56036.0255
2.60	.1024	3.60	5.20	12.70	50	4.00	40.56036.0260
2.65	.1043	3.80	5.30	13.50	50	4.00	40.56036.0265
2.70	.1063	3.80	5.40	13.50	50	4.00	40.56036.0270
2.75	.1083	3.80	5.50	13.50	50	4.00	40.56036.0275
2.80	.1102	3.80	5.60	13.50	50	4.00	40.56036.0280
2.85	.1122	4.00	5.70	14.10	50	4.00	40.56036.0285
2.90	.1142	4.00	5.80	14.10	50	4.00	40.56036.0290
2.95	.1161	4.00	5.90	14.10	50	4.00	40.56036.0295
3.00	.1181	4.00	6.00	14.10	50	4.00	40.56036.0300
3.05	.1201	4.60	6.10	14.00	55	6.00	40.56036.0305
3.10	.122	4.60	6.20	14.50	55	6.00	40.56036.0310
3.15	.124	4.60	6.30	14.50	55	6.00	40.56036.0315
3.20	.126	4.60	6.40	14.50	55	6.00	40.56036.0320
3.25	.128	4.80	6.50	14.50	55	6.00	40.56036.0325
3.30	.1299	4.80	6.60	14.50	55	6.00	40.56036.0330

HIGH PERFORMANCE DRILLS

PILOT/STEP 140°/90° — ART. 56036

※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	d2	l2	l3	l1	d3	Catalog Number
3.35	.1319	4.80	6.70	15.00	55	6.00	40.56036.0335
3.40	.1339	4.80	6.80	15.00	55	6.00	40.56036.0340
3.45	.1358	5.00	6.90	15.00	55	6.00	40.56036.0345
3.50	.1378	5.00	7.00	15.00	55	6.00	40.56036.0350
3.55	.1398	5.00	7.10	15.50	55	6.00	40.56036.0355
3.60	.1417	5.00	7.20	15.50	55	6.00	40.56036.0360
3.65	.1437	5.20	7.30	15.50	55	6.00	40.56036.0365
3.70	.1457	5.20	7.40	15.50	55	6.00	40.56036.0370
3.75	.1476	5.20	7.50	16.00	55	6.00	40.56036.0375
3.80	.1496	5.20	7.60	16.00	55	6.00	40.56036.0380
3.85	.1516	5.40	7.70	16.00	55	6.00	40.56036.0385
3.90	.1535	5.40	7.80	16.00	55	6.00	40.56036.0390
3.95	.1555	5.40	7.90	16.50	55	6.00	40.56036.0395
4.00	.1575	5.40	8.00	16.50	55	6.00	40.56036.0400
4.05	.1594	5.60	8.10	16.50	55	6.00	40.56036.0405
4.10	.1614	5.60	8.20	16.50	55	6.00	40.56036.0410
4.15	.1634	5.60	8.30	17.00	55	6.00	40.56036.0415
4.20	.1654	5.60	8.40	17.00	55	6.00	40.56036.0420
4.25	.1673	5.80	8.50	17.00	64	8.00	40.56036.0425
4.30	.1693	5.80	8.60	17.00	64	8.00	40.56036.0430
4.35	.1713	5.80	8.70	17.50	64	8.00	40.56036.0435
4.40	.1732	5.80	8.80	17.50	64	8.00	40.56036.0440
4.45	.1752	6.00	8.90	17.50	64	8.00	40.56036.0445
4.50	.1772	6.00	9.00	18.00	64	8.00	40.56036.0450
4.55	.1791	6.00	9.10	18.00	64	8.00	40.56036.0455
4.60	.1811	6.00	9.20	18.00	64	8.00	40.56036.0460
4.65	.1831	6.20	9.30	18.50	64	8.00	40.56036.0465

d1	d1 (in.)	d2	l2	l3	l1	d3	Catalog Number
4.70	.185	6.20	9.40	18.50	64	8.00	40.56036.0470
4.75	.187	6.20	9.50	18.50	64	8.00	40.56036.0475
4.80	.189	6.20	9.60	19.00	64	8.00	40.56036.0480
4.85	.1909	6.40	9.70	19.00	64	8.00	40.56036.0485
4.90	.1929	6.40	9.80	19.00	64	8.00	40.56036.0490
4.95	.1949	6.40	9.90	19.50	64	8.00	40.56036.0495
5.00	.1969	6.40	10.00	19.50	64	8.00	40.56036.0500
5.05	.1988	6.60	10.10	19.50	64	8.00	40.56036.0505
5.10	.2008	6.60	10.20	20.00	64	8.00	40.56036.0510
5.15	.2028	6.60	10.30	20.00	64	8.00	40.56036.0515
5.20	.2047	6.60	10.40	20.00	64	8.00	40.56036.0520
5.25	.2067	6.80	10.50	20.50	64	8.00	40.56036.0525
5.30	.2087	6.80	10.60	20.50	64	8.00	40.56036.0530
5.35	.2106	6.80	10.70	20.50	64	8.00	40.56036.0535
5.40	.2126	6.80	10.80	21.00	64	8.00	40.56036.0540
5.45	.2146	7.00	10.90	21.00	64	8.00	40.56036.0545
5.50	.2165	7.00	11.00	21.00	64	8.00	40.56036.0550
5.55	.2185	7.00	11.10	21.50	64	8.00	40.56036.0555
5.60	.2205	7.00	11.20	21.50	64	8.00	40.56036.0560
5.65	.2224	7.20	11.30	21.50	64	8.00	40.56036.0565
5.70	.2244	7.20	11.40	22.00	64	8.00	40.56036.0570
5.75	.2264	7.20	11.50	22.00	64	8.00	40.56036.0575
5.80	.2283	7.20	11.60	22.00	64	8.00	40.56036.0580
5.85	.2303	7.40	11.70	22.50	64	8.00	40.56036.0585
5.90	.2323	7.40	11.80	22.50	64	8.00	40.56036.0590
5.95	.2343	7.40	11.90	22.50	64	8.00	40.56036.0595
6.00	.2362	7.40	12.00	23.00	64	8.00	40.56036.0600



HIGH PERFORMANCE DRILLS

PHOENIX 3XD & 12XD — ART. 50938 & 50942

Art. 50938

Carbide Z 2 140° 30°

>2.5mm 3xd AlCrN

Blind Hole Through Hole Multi-Composite

Cross Hole Round Surface

ST SST C.I. Al Ti

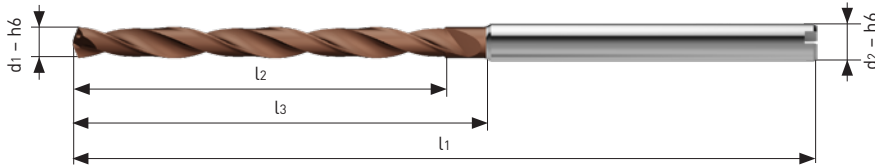
Art. 50942

Carbide Z 2 140° 30°

>2.5mm 12xd AlCrN

Blind Hole Through Hole Multi-Composite

ST SST C.I. Al Ti



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	d2	Art. 50938				Art. 50942			
			l2	l3	l1	Catalog Number	l2	l3	l1	Catalog Number
1.00	.0394	3.00	3.00	5.00	38	40.50938.0100	12.00	14.00	50	40.50942.0100
1.10	.0433	3.00	3.30	5.50	38	40.50938.0110	13.20	15.50	50	40.50942.0110
1.20	.0472	3.00	3.60	5.50	38	40.50938.0120	14.40	16.50	50	40.50942.0120
1.30	.0512	3.00	3.90	6.00	38	40.50938.0130	15.60	17.50	50	40.50942.0130
1.40	.0551	3.00	4.20	6.00	38	40.50938.0140	16.80	19.00	50	40.50942.0140
1.50	.0591	3.00	4.50	6.50	38	40.50938.0150	18.00	21.00	50	40.50942.0150
1.60	.0630	3.00	4.80	7.50	38	40.50938.0160	19.20	22.50	50	40.50942.0160
1.70	.0669	3.00	5.10	8.00	38	40.50938.0170	20.40	23.50	50	40.50942.0170
1.80	.0709	3.00	5.40	8.50	38	40.50938.0180	21.60	24.50	50	40.50942.0180
1.90	.0748	3.00	5.70	8.50	38	40.50938.0190	22.80	26.00	55	40.50942.0190
2.00	.0787	3.00	6.00	9.00	38	40.50938.0200	24.00	27.00	55	40.50942.0200
2.10	.0827	3.00	6.30	9.50	38	40.50938.0210	25.20	28.50	55	40.50942.0210
2.20	.0866	3.00	6.60	9.50	38	40.50938.0220	26.40	29.50	55	40.50942.0220
2.30	.0906	3.00	6.90	10.00	38	40.50938.0230	27.60	30.50	55	40.50942.0230
2.40	.0945	3.00	7.20	10.00	38	40.50938.0240	28.80	32.00	55	40.50942.0240
2.50	.0984	3.00	7.50	10.50	50	40.50938.0250	30.00	33.00	60	40.50942.0250
2.60	.1024	3.00	7.80	11.00	50	40.50938.0260	31.20	34.50	60	40.50942.0260
2.70	.1063	3.00	8.10	11.50	50	40.50938.0270	32.40	35.50	60	40.50942.0270
2.80	.1102	3.00	8.40	11.50	50	40.50938.0280	33.60	36.50	60	40.50942.0280
2.90	.1142	3.00	8.70	12.00	50	40.50938.0290	34.80	38.00	60	40.50942.0290
3.00	.1181	3.00	9.00	12.50	50	40.50938.0300	36.00	40.00	60	40.50942.0300
3.10	.1220	6.00	9.30	13.50	55	40.50938.0310	37.20	41.50	80	40.50942.0310
3.20	.1260	6.00	9.60	13.50	55	40.50938.0320	38.40	42.50	80	40.50942.0320
3.30	.1299	6.00	9.90	13.50	55	40.50938.0330	39.60	43.50	80	40.50942.0330

• Internal coolant beginning at ø2.5mm

HIGH PERFORMANCE DRILLS

PHOENIX 3XD & 12XD — ART. 50938 & 50942

※ All dimensions are millimeters unless otherwise noted

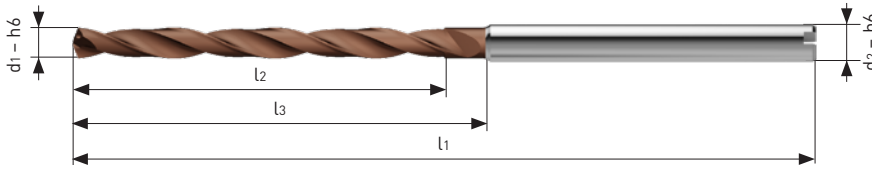
d1	d1 (in.)	d2	Art. 50938				Art. 50942			
			l2	l3	l1	Catalog Number	l2	l3	l1	Catalog Number
3.40	.1339	6.00	10.20	14.00	55	40.50938.0340	40.80	45.00	85	40.50942.0340
3.50	.1378	6.00	10.50	14.50	55	40.50938.0350	42.00	47.00	85	40.50942.0350
3.60	.1417	6.00	10.80	15.00	55	40.50938.0360	43.20	48.50	85	40.50942.0360
3.80	.1496	6.00	11.40	15.50	55	40.50938.0380	45.60	50.50	90	40.50942.0380
3.90	.1535	6.00	11.70	15.50	55	40.50938.0390	46.80	52.00	90	40.50942.0390
4.00	.1575	6.00	12.00	16.00	55	40.50938.0400	48.00	53.00	90	40.50942.0400
4.10	.1614	6.00	12.30	18.50	60	40.50938.0410	49.20	55.50	105	40.50942.0410
4.20	.1654	6.00	12.60	18.50	60	40.50938.0420	50.40	56.50	105	40.50942.0420
4.30	.1693	6.00	12.90	19.00	60	40.50938.0430	51.60	57.50	105	40.50942.0430
4.40	.1732	6.00	13.20	19.00	60	40.50938.0440	52.80	59.00	105	40.50942.0440
4.50	.1772	6.00	13.50	20.50	60	40.50938.0450	54.00	60.00	105	40.50942.0450
4.60	.1811	6.00	13.80	22.00	60	40.50938.0460	55.20	63.50	105	40.50942.0460
4.70	.1850	6.00	14.10	22.00	60	40.50938.0470	56.40	64.50	105	40.50942.0470
4.80	.1890	6.00	14.40	22.50	60	40.50938.0480	57.60	65.50	105	40.50942.0480
4.90	.1929	6.00	14.70	22.50	60	40.50938.0490	58.80	67.00	105	40.50942.0490
5.00	.1969	6.00	15.00	23.00	60	40.50938.0500	60.00	68.00	105	40.50942.0500
5.10	.2008	6.00	15.30	23.50	64	40.50938.0510	61.20	69.50	118	40.50942.0510
5.20	.2047	6.00	15.60	23.50	64	40.50938.0520	62.40	70.50	118	40.50942.0520
5.30	.2087	6.00	15.90	24.00	64	40.50938.0530	63.60	71.50	118	40.50942.0530
5.40	.2126	6.00	16.20	24.00	64	40.50938.0540	64.80	73.00	118	40.50942.0540
5.50	.2165	6.00	16.50	24.50	64	40.50938.0550	66.00	74.00	118	40.50942.0550
5.60	.2205	6.00	16.80	24.50	64	40.50938.0560	67.20	75.50	118	40.50942.0560
5.70	.2244	6.00	17.10	25.50	64	40.50938.0570	68.40	76.50	118	40.50942.0570
5.80	.2283	6.00	17.40	25.50	64	40.50938.0580	69.60	77.50	118	40.50942.0580
5.90	.2323	6.00	17.70	25.50	64	40.50938.0590	70.80	79.00	118	40.50942.0590
6.00	.2362	6.00	18.00	27.00	64	40.50938.0600	72.00	80.00	118	40.50942.0600
6.10	.2402	8.00	18.30	27.50	68	40.50938.0610	73.20	82.50	136	40.50942.0610
6.20	.2441	8.00	18.60	27.50	68	40.50938.0620	74.40	83.50	136	40.50942.0620
6.30	.2480	8.00	18.90	28.00	68	40.50938.0630	75.60	84.50	136	40.50942.0630
6.40	.2520	8.00	19.20	28.00	68	40.50938.0640	76.80	86.00	136	40.50942.0640
6.50	.2559	8.00	19.50	28.50	68	40.50938.0650	78.00	87.50	136	40.50942.0650
6.60	.2598	8.00	19.80	29.00	68	40.50938.0660	79.20	88.50	136	40.50942.0660
6.70	.2638	8.00	20.10	29.50	68	40.50938.0670	80.40	89.50	136	40.50942.0670
6.80	.2677	8.00	20.40	29.50	68	40.50938.0680	81.60	90.50	136	40.50942.0680
6.90	.2717	8.00	20.70	30.00	68	40.50938.0690	82.80	92.00	136	40.50942.0690
7.00	.2756	8.00	21.00	31.00	68	40.50938.0700	84.00	94.00	136	40.50942.0700
7.10	.2795	8.00	21.30	31.50	72	40.50938.0710	85.20	95.50	148	40.50942.0710
7.20	.2835	8.00	21.60	31.50	72	40.50938.0720	86.40	96.50	148	40.50942.0720
7.30	.2874	8.00	21.90	32.00	72	40.50938.0730	87.60	97.50	148	40.50942.0730
7.40	.2913	8.00	22.20	32.00	72	40.50938.0740	88.80	99.00	148	40.50942.0740
7.50	.2953	8.00	22.50	32.50	72	40.50938.0750	90.00	100.00	148	40.50942.0750
7.60	.2992	8.00	22.80	32.50	72	40.50938.0760	91.20	101.50	148	40.50942.0760
7.70	.3031	8.00	23.10	33.50	72	40.50938.0770	92.40	102.50	148	40.50942.0770
7.80	.3071	8.00	23.40	33.50	72	40.50938.0780	93.60	103.50	148	40.50942.0780
7.90	.3110	8.00	23.70	34.00	72	40.50938.0790	94.80	105.00	148	40.50942.0790

• Internal coolant beginning at ø2.5mm

HIGH PERFORMANCE DRILLS

PHOENIX 3XD & 12XD — ART. 50938 & 50942

Art. 50938 & 50942 Cont.



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	d2	Art. 50938				Art. 50942			
			l2	l3	l1	Catalog Number	l2	l3	l1	Catalog Number
8.00	.3150	8.00	24.00	34.00	72	40.50938.0800	96.00	106.00	148	40.50942.0800
8.10	.3189	10.00	24.30	35.50	79	40.50938.0810	97.20	108.50	162	40.50942.0810
8.20	.3228	10.00	24.60	35.50	79	40.50938.0820	98.40	109.50	162	40.50942.0820
8.30	.3268	10.00	24.90	36.00	79	40.50938.0830	99.60	110.50	162	40.50942.0830
8.40	.3307	10.00	25.20	36.00	79	40.50938.0840	100.80	112.00	162	40.50942.0840
8.50	.3346	10.00	25.50	36.50	79	40.50938.0850	102.00	113.00	162	40.50942.0850
8.60	.3386	10.00	25.80	37.00	79	40.50938.0860	103.20	114.50	162	40.50942.0860
8.70	.3425	10.00	26.10	37.00	79	40.50938.0870	104.40	115.50	162	40.50942.0870
8.80	.3465	10.00	26.40	37.50	79	40.50938.0880	105.60	116.50	162	40.50942.0880
8.90	.3504	10.00	26.70	37.50	79	40.50938.0890	106.80	118.00	162	40.50942.0890
9.00	.3543	10.00	27.00	38.00	79	40.50938.0900	108.00	119.00	162	40.50942.0900
9.10	.3583	10.00	27.30	38.50	85	40.50938.0910	109.20	120.50	175	40.50942.0910
9.20	.3622	10.00	27.60	38.50	85	40.50938.0920	110.40	121.50	175	40.50942.0920
9.30	.3661	10.00	27.90	39.00	85	40.50938.0930	111.60	122.50	175	40.50942.0930
9.40	.3701	10.00	28.20	39.00	85	40.50938.0940	112.80	124.00	175	40.50942.0940
9.50	.3740	10.00	28.50	40.00	85	40.50938.0950	114.00	125.00	175	40.50942.0950
9.60	.3780	10.00	28.80	40.00	85	40.50938.0960	115.20	126.50	175	40.50942.0960
9.70	.3819	10.00	29.10	40.50	85	40.50938.0970	116.40	127.50	175	40.50942.0970
9.80	.3858	10.00	29.40	40.50	85	40.50938.0980	117.60	128.50	175	40.50942.0980
9.90	.3898	10.00	29.70	41.00	85	40.50938.0990	118.80	130.00	175	40.50942.0990
10.00	.3937	10.00	30.00	42.00	85	40.50938.1000	120.00	132.00	175	40.50942.1000
10.10	.3976	12.00	30.30	42.50	93	40.50938.1010	121.20	133.50	193	40.50942.1010
10.20	.4016	12.00	30.60	42.50	93	40.50938.1020	122.40	134.50	193	40.50942.1020
10.30	.4055	12.00	30.90	43.00	93	40.50938.1030	123.60	135.50	193	40.50942.1030
10.40	.4094	12.00	31.20	43.00	93	40.50938.1040	124.80	137.00	193	40.50942.1040
10.50	.4134	12.00	31.50	43.50	93	40.50938.1050	126.00	138.00	193	40.50942.1050
10.60	.4173	12.00	31.80	44.00	93	40.50938.1060	127.20	139.50	193	40.50942.1060
10.70	.4213	12.00	32.10	44.00	93	40.50938.1070	128.40	140.50	193	40.50942.1070
10.80	.4252	12.00	32.40	44.50	93	40.50938.1080	129.60	141.50	193	40.50942.1080
10.90	.4291	12.00	32.70	44.50	93	40.50938.1090	130.80	143.00	193	40.50942.1090
11.00	.4331	12.00	33.00	46.00	93	40.50938.1100	132.00	145.00	193	40.50942.1100
11.10	.4370	12.00	33.30	46.50	97	40.50938.1110	133.20	146.50	205	40.50942.1110
11.20	.4409	12.00	33.60	46.50	97	40.50938.1120	134.40	147.50	205	40.50942.1120
11.30	.4449	12.00	33.90	47.00	97	40.50938.1130	135.60	148.50	205	40.50942.1130
11.40	.4488	12.00	34.20	47.00	97	40.50938.1140	136.80	150.00	205	40.50942.1140
11.50	.4528	12.00	34.50	48.00	97	40.50938.1150	138.00	151.00	205	40.50942.1150
11.60	.4567	12.00	34.80	48.00	97	40.50938.1160	139.20	152.50	205	40.50942.1160
11.70	.4606	12.00	35.10	48.00	97	40.50938.1170	140.40	153.50	205	40.50942.1170
11.80	.4646	12.00	35.40	48.50	97	40.50938.1180	141.60	154.50	205	40.50942.1180

• Internal coolant beginning at ø2.5mm

HIGH PERFORMANCE DRILLS

PHOENIX 3XD & 12XD — ART. 50938 & 50942

SPHINX+TOOLS

※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	d2	Art. 50938				Art. 50942			
			l2	l3	l1	Catalog Number	l2	l3	l1	Catalog Number
11.90	.4685	12.00	35.70	48.50	97	40.50938.1190	142.80	156.00	205	40.50942.1190
12.00	.4724	12.00	36.00	50.00	97	40.50938.1200	144.00	158.00	205	40.50942.1200
12.50	.4921	14.00	37.80	53.00	100	40.50938.1250	150.00	164.00	218	40.50942.1250
12.70	.5000	14.00	38.10	53.00	100	40.50938.1270	152.40	166.50	218	40.50942.1270

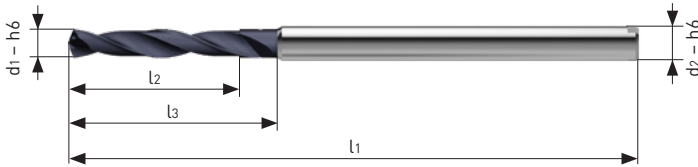
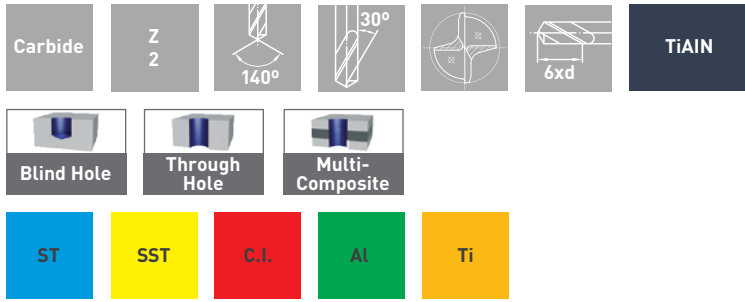
• Internal coolant beginning at ø2.5mm



HIGH PERFORMANCE DRILLS

PHOENIX 6XD — ART. 50940

Art. 50940



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
1.00	.0394	6.00	8.00	38	3.00	40.50940.0100
1.05	.0413	6.30	8.30	38	3.00	40.50940.0105
1.10	.0433	6.60	8.60	38	3.00	40.50940.0110
1.15	.0453	6.90	8.90	38	3.00	40.50940.0115
1.20	.0472	7.20	9.20	38	3.00	40.50940.0120
1.25	.0492	7.50	9.50	38	3.00	40.50940.0125
1.30	.0512	7.80	9.80	38	3.00	40.50940.0130
1.35	.0531	8.10	10.10	38	3.00	40.50940.0135
1.40	.0551	8.40	10.40	38	3.00	40.50940.0140
1.45	.0571	8.70	10.70	38	3.00	40.50940.0145
1.50	.0591	9.00	11.00	38	3.00	40.50940.0150
1.55	.0610	9.30	11.30	38	3.00	40.50940.0155
1.60	.0630	9.60	12.60	38	3.00	40.50940.0160
1.65	.0650	9.90	12.90	38	3.00	40.50940.0165
1.70	.0669	10.20	13.20	38	3.00	40.50940.0170
1.75	.0689	10.50	13.50	38	3.00	40.50940.0175
1.80	.0709	10.80	13.80	38	3.00	40.50940.0180
1.85	.0728	11.10	14.10	38	3.00	40.50940.0185
1.90	.0748	11.40	14.40	38	3.00	40.50940.0190
1.95	.0768	11.70	14.70	38	3.00	40.50940.0195
2.00	.0787	12.00	15.00	50	3.00	40.50940.0200
2.05	.0807	12.30	15.30	50	3.00	40.50940.0205
2.10	.0827	12.60	15.60	50	3.00	40.50940.0210
2.15	.0846	12.90	15.90	50	3.00	40.50940.0215
2.20	.0866	13.20	16.20	50	3.00	40.50940.0220
2.25	.0886	13.50	16.50	50	3.00	40.50940.0225
2.30	.0906	13.80	16.80	50	3.00	40.50940.0230
2.35	.0925	14.10	17.10	50	3.00	40.50940.0235
2.40	.0945	14.40	17.40	50	3.00	40.50940.0240
2.45	.0965	14.70	17.70	50	3.00	40.50940.0245

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
2.50	.0984	15.00	18.00	50	3.00	40.50940.0250
2.55	.1004	15.30	18.30	50	3.00	40.50940.0255
2.60	.1024	15.60	18.60	50	3.00	40.50940.0260
2.65	.1043	15.90	18.90	50	3.00	40.50940.0265
2.70	.1063	16.20	19.20	50	3.00	40.50940.0270
2.75	.1083	16.50	19.50	50	3.00	40.50940.0275
2.80	.1102	16.80	19.80	50	3.00	40.50940.0280
2.85	.1122	17.10	20.10	50	3.00	40.50940.0285
2.90	.1142	17.40	20.40	50	3.00	40.50940.0290
2.95	.1161	17.70	20.70	50	3.00	40.50940.0295
3.00	.1181	18.00	—	50	3.00	40.50940.0300
3.05	.1201	18.30	22.30	66	6.00	40.50940.0305
3.10	.1220	18.60	22.60	66	6.00	40.50940.0310
3.15	.1240	18.90	22.90	66	6.00	40.50940.0315
3.20	.1260	19.20	23.20	66	6.00	40.50940.0320
3.25	.1280	19.50	23.50	66	6.00	40.50940.0325
3.30	.1299	19.80	23.80	66	6.00	40.50940.0330
3.35	.1319	20.10	24.10	66	6.00	40.50940.0335
3.40	.1339	20.40	24.40	66	6.00	40.50940.0340
3.45	.1358	20.70	24.70	66	6.00	40.50940.0345
3.50	.1378	21.00	25.00	66	6.00	40.50940.0350
3.55	.1398	21.30	25.30	66	6.00	40.50940.0355
3.60	.1417	21.60	25.60	66	6.00	40.50940.0360
3.65	.1437	21.90	25.90	66	6.00	40.50940.0365
3.70	.1457	22.20	26.20	66	6.00	40.50940.0370
3.75	.1476	22.50	26.50	66	6.00	40.50940.0375
3.80	.1496	22.80	26.80	66	6.00	40.50940.0380
3.85	.1516	23.10	27.10	66	6.00	40.50940.0385
3.90	.1535	23.40	27.40	66	6.00	40.50940.0390
3.95	.1555	23.70	27.70	66	6.00	40.50940.0395

• Internal coolant for all sizes

HIGH PERFORMANCE DRILLS

PHOENIX 6XD — ART. 50940

※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
4.00	.1575	24.00	28.00	66	6.00	40.50940.0400
4.05	.1594	24.30	30.20	79	6.00	40.50940.0405
4.10	.1614	24.60	30.50	79	6.00	40.50940.0410
4.15	.1634	24.90	30.80	79	6.00	40.50940.0415
4.20	.1654	25.20	31.00	79	6.00	40.50940.0420
4.25	.1673	25.50	31.50	79	6.00	40.50940.0425
4.30	.1693	25.80	32.00	79	6.00	40.50940.0430
4.35	.1713	26.10	32.50	79	6.00	40.50940.0435
4.40	.1732	26.40	32.50	79	6.00	40.50940.0440
4.45	.1752	26.70	33.00	79	6.00	40.50940.0445
4.50	.1772	27.00	33.00	79	6.00	40.50940.0450
4.55	.1791	27.30	35.50	79	6.00	40.50940.0455
4.60	.1811	27.60	35.50	79	6.00	40.50940.0460
4.65	.1831	27.90	36.00	79	6.00	40.50940.0465
4.70	.1850	28.20	36.00	79	6.00	40.50940.0470
4.75	.1870	28.50	37.00	79	6.00	40.50940.0475
4.80	.1890	28.80	37.00	79	6.00	40.50940.0480
4.85	.1909	29.10	37.50	79	6.00	40.50940.0485
4.90	.1929	29.40	37.50	79	6.00	40.50940.0490
4.95	.1949	29.70	38.00	79	6.00	40.50940.0495
5.00	.1969	30.00	38.00	79	6.00	40.50940.0500
5.05	.1988	30.30	38.50	79	6.00	40.50940.0505
5.10	.2008	30.60	38.50	79	6.00	40.50940.0510
5.15	.2028	30.90	39.00	79	6.00	40.50940.0515
5.20	.2047	31.20	39.00	79	6.00	40.50940.0520
5.25	.2067	31.50	40.00	79	6.00	40.50940.0525
5.30	.2087	31.80	40.00	79	6.00	40.50940.0530
5.35	.2106	32.10	40.50	79	6.00	40.50940.0535
5.40	.2126	32.40	40.50	79	6.00	40.50940.0540
5.45	.2146	32.70	41.00	79	6.00	40.50940.0545
5.50	.2165	33.00	41.00	79	6.00	40.50940.0550
5.55	.2185	33.30	41.50	81	6.00	40.50940.0555
5.60	.2205	33.60	41.50	81	6.00	40.50940.0560
5.65	.2224	33.90	42.00	81	6.00	40.50940.0565
5.70	.2244	34.20	42.00	81	6.00	40.50940.0570
5.75	.2264	34.50	43.00	81	6.00	40.50940.0575
5.80	.2283	34.80	43.00	81	6.00	40.50940.0580
5.85	.2303	35.10	43.50	81	6.00	40.50940.0585
5.90	.2323	35.40	43.50	81	6.00	40.50940.0590
5.95	.2343	35.70	44.00	81	6.00	40.50940.0595
6.00	.2362	36.00	—	81	6.00	40.50940.0600
6.10	.2402	36.60	45.50	89	8.00	40.50940.0610
6.20	.2441	37.20	46.00	89	8.00	40.50940.0620
6.30	.2480	37.80	47.00	89	8.00	40.50940.0630
6.40	.2520	38.40	47.50	89	8.00	40.50940.0640

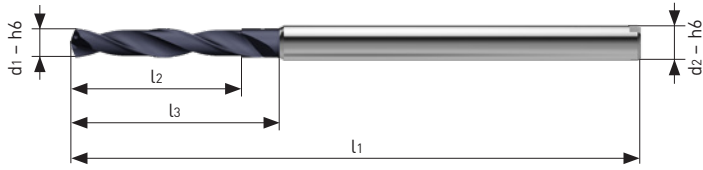
d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
6.50	.2559	39.00	48.00	89	8.00	40.50940.0650
6.60	.2598	39.60	48.50	89	8.00	40.50940.0660
6.70	.2638	40.20	49.00	89	8.00	40.50940.0670
6.80	.2677	40.80	50.00	89	8.00	40.50940.0680
6.90	.2717	41.40	50.50	89	8.00	40.50940.0690
7.00	.2756	42.00	52.00	89	8.00	40.50940.0700
7.10	.2795	42.60	52.50	95	8.00	40.50940.0710
7.20	.2835	43.20	53.50	95	8.00	40.50940.0720
7.30	.2874	43.80	54.00	95	8.00	40.50940.0730
7.40	.2913	44.40	54.50	95	8.00	40.50940.0740
7.50	.2953	45.00	55.00	95	8.00	40.50940.0750
7.60	.2992	45.60	55.50	95	8.00	40.50940.0760
7.70	.3031	46.20	56.00	95	8.00	40.50940.0770
7.80	.3071	46.80	57.00	95	8.00	40.50940.0780
7.90	.3110	47.40	57.50	95	8.00	40.50940.0790
8.00	.3150	48.00	58.00	95	8.00	40.50940.0800
8.10	.3189	48.60	59.50	106	10.00	40.50940.0810
8.20	.3228	49.20	60.00	106	10.00	40.50940.0820
8.30	.3268	49.80	61.00	106	10.00	40.50940.0830
8.40	.3307	50.40	61.50	106	10.00	40.50940.0840
8.50	.3346	51.00	62.00	106	10.00	40.50940.0850
8.60	.3386	51.60	62.50	106	10.00	40.50940.0860
8.70	.3425	52.20	63.00	106	10.00	40.50940.0870
8.80	.3465	52.80	64.00	106	10.00	40.50940.0880
8.90	.3504	53.40	64.50	106	10.00	40.50940.0890
9.00	.3543	54.00	65.00	106	10.00	40.50940.0900
9.10	.3583	54.60	65.50	113	10.00	40.50940.0910
9.20	.3622	55.20	66.00	113	10.00	40.50940.0920
9.30	.3661	55.80	67.00	113	10.00	40.50940.0930
9.40	.3701	56.40	67.50	113	10.00	40.50940.0940
9.50	.3740	57.00	68.00	113	10.00	40.50940.0950
9.60	.3780	57.60	68.50	113	10.00	40.50940.0960
9.70	.3819	58.20	69.00	113	10.00	40.50940.0970
9.80	.3858	58.80	70.00	113	10.00	40.50940.0980
9.90	.3898	59.40	70.50	113	10.00	40.50940.0990
10.00	.3937	60.00	72.00	113	10.00	40.50940.1000
10.10	.3976	60.60	72.50	125	12.00	40.50940.1010
10.20	.4016	61.20	73.00	125	12.00	40.50940.1020
10.30	.4055	61.80	74.00	125	12.00	40.50940.1030
10.40	.4094	62.40	74.50	125	12.00	40.50940.1040
10.50	.4134	63.00	75.00	125	12.00	40.50940.1050
10.60	.4173	63.60	75.50	125	12.00	40.50940.1060
10.70	.4213	64.20	76.00	125	12.00	40.50940.1070
10.80	.4252	64.80	77.00	125	12.00	40.50940.1080
10.90	.4291	65.40	77.50	125	12.00	40.50940.1090

• Internal coolant for all sizes

HIGH PERFORMANCE DRILLS

PHOENIX 6XD — ART. 50940

Art. 50940 Cont.



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
11.00	.4331	66.00	79.00	125	12.00	40.50940.1100
11.10	.4370	66.60	79.50	132	12.00	40.50940.1110
11.20	.4409	67.20	80.00	132	12.00	40.50940.1120
11.30	.4449	67.80	81.00	132	12.00	40.50940.1130
11.40	.4488	68.40	81.50	132	12.00	40.50940.1140
11.50	.4528	69.00	82.00	132	12.00	40.50940.1150
11.60	.4567	69.60	82.50	132	12.00	40.50940.1160

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
11.70	.4606	70.20	83.00	132	12.00	40.50940.1170
11.80	.4646	70.80	84.00	132	12.00	40.50940.1180
11.90	.4685	71.40	84.50	132	12.00	40.50940.1190
12.00	.4724	72.00	86.00	132	12.00	40.50940.1200
12.50	.4921	75.00	90.00	140	14.00	40.50940.1250
12.70	.5000	76.20	91.00	140	14.00	40.50940.1270

- Internal coolant for all sizes



HIGH PERFORMANCE DRILLS — PHOENIX TC2

3XD, 6XD & 9XD — ART. 52903, 52906 & 52909

Art. 52903

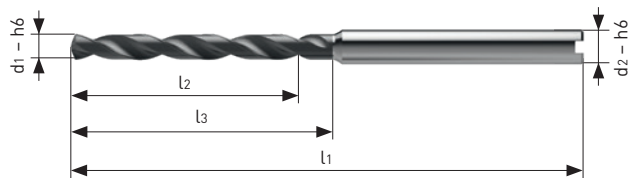
Carbide	Z 2	140°	30°		
	3xd	AlTiCrN+S			
ST	SST	C.I.	Al	Cu	Brass
Mg	Ti	HST	Plastic		

Art. 52906

Carbide	Z 2	140°	30°		
	6xd	AlTiCrN+S			
ST	SST	C.I.	Al	Cu	Brass
Mg	Ti	HST	Plastic		

Art. 52909

Carbide	Z 2	140°	30°		
	9xd	AlTiCrN+S			
ST	SST	C.I.	Al	Cu	Brass
Mg	Ti	HST	Plastic		



HIGH PERFORMANCE DRILLS — PHOENIX TC2

3XD, 6XD & 9XD — ART. 52903, 52906 & 52909

※ All dimensions are millimeters unless otherwise noted

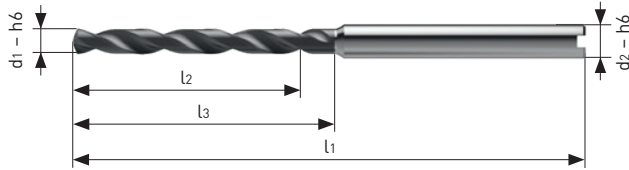
d1	d1 [in.]	d2	Art. 52903				Art. 52906				Art. 52909			
			l2	l3	l1	Catalog Number	l2	l3	l1	Catalog Number	l2	l3	l1	Catalog Number
1.00	.0394	3.00	3.00	5.00	38	40.52903.0100	6.00	8.00	38	40.52906.0100	9.00	11.00	51	40.52909.0100
1.05	.0413	3.00	3.15	5.25	38	40.52903.0105	6.30	8.30	38	40.52906.0105	—	—	—	—
1.10	.0433	3.00	3.30	5.50	38	40.52903.0110	6.60	8.60	38	40.52906.0110	9.90	12.00	51	40.52909.0110
1.15	.0453	3.00	3.45	5.50	38	40.52903.0115	6.90	8.90	38	40.52906.0115	—	—	—	—
1.20	.0472	3.00	3.60	5.50	38	40.52903.0120	7.20	9.20	38	40.52906.0120	10.80	13.00	51	40.52909.0120
1.25	.0492	3.00	3.75	6.00	38	40.52903.0125	7.50	9.50	38	40.52906.0125	—	—	—	—
1.30	.0512	3.00	3.90	6.00	38	40.52903.0130	7.80	9.80	38	40.52906.0130	11.70	14.00	51	40.52909.0130
1.35	.0531	3.00	4.05	6.00	38	40.52903.0135	8.10	10.10	38	40.52906.0135	—	—	—	—
1.40	.0551	3.00	4.20	6.50	38	40.52903.0140	8.40	10.40	38	40.52906.0140	12.60	15.00	51	40.52909.0140
1.45	.0571	3.00	4.35	6.50	38	40.52903.0145	8.70	10.70	38	40.52906.0145	—	—	—	—
1.50	.0591	3.00	4.50	6.50	38	40.52903.0150	9.00	11.00	38	40.52906.0150	13.50	16.50	51	40.52909.0150
1.55	.0610	3.00	4.65	7.50	38	40.52903.0155	9.30	11.30	38	40.52906.0155	—	—	—	—
1.60	.0630	3.00	4.80	7.50	38	40.52903.0160	9.60	12.60	38	40.52906.0160	14.40	17.50	51	40.52909.0160
1.65	.0650	3.00	4.95	8.00	38	40.52903.0165	9.90	12.90	38	40.52906.0165	—	—	—	—
1.70	.0669	3.00	5.10	8.00	38	40.52903.0170	10.20	13.20	38	40.52906.0170	15.30	18.50	51	40.52909.0170
1.75	.0689	3.00	5.25	8.00	38	40.52903.0175	10.50	13.50	38	40.52906.0175	—	—	—	—
1.80	.0709	3.00	5.40	8.50	38	40.52903.0180	10.80	13.80	38	40.52906.0180	16.20	19.00	51	40.52909.0180
1.85	.0728	3.00	5.55	8.50	38	40.52903.0185	11.10	14.10	38	40.52906.0185	—	—	—	—
1.90	.0748	3.00	5.70	8.50	38	40.52903.0190	11.40	14.40	38	40.52906.0190	17.10	20.00	51	40.52909.0190
1.95	.0768	3.00	5.85	9.00	38	40.52903.0195	11.70	14.70	38	40.52906.0195	—	—	—	—
2.00	.0787	3.00	6.00	9.00	38	40.52903.0200	12.00	15.00	50	40.52906.0200	18.00	21.00	51	40.52909.0200
2.05	.0807	3.00	6.15	9.00	38	40.52903.0205	12.30	15.30	50	40.52906.0205	—	—	—	—
2.10	.0827	3.00	6.30	9.50	38	40.52903.0210	12.60	15.60	50	40.52906.0210	18.90	22.00	61	40.52909.0210
2.15	.0846	3.00	6.45	9.50	38	40.52903.0215	12.90	15.90	50	40.52906.0215	—	—	—	—
2.20	.0866	3.00	6.60	9.50	38	40.52903.0220	13.20	16.20	50	40.52906.0220	19.80	23.00	61	40.52909.0220
2.25	.0886	3.00	6.75	10.00	38	40.52903.0225	13.50	16.50	50	40.52906.0225	—	—	—	—
2.30	.0906	3.00	6.90	10.00	38	40.52903.0230	13.80	16.80	50	40.52906.0230	20.70	24.00	61	40.52909.0230
2.35	.0925	3.00	7.05	10.00	38	40.52903.0235	14.10	17.10	50	40.52906.0235	—	—	—	—
2.40	.0945	3.00	7.20	10.00	38	40.52903.0240	14.40	17.40	50	40.52906.0240	21.60	24.50	61	40.52909.0240
2.45	.0965	3.00	7.35	10.00	38	40.52903.0245	14.70	17.70	50	40.52906.0245	—	—	—	—
2.50	.0984	3.00	7.50	10.50	50	40.52903.0250	15.00	18.00	50	40.52906.0250	22.50	25.50	61	40.52909.0250
2.55	.1004	3.00	7.65	11.00	50	40.52903.0255	15.30	18.30	50	40.52906.0255	—	—	—	—
2.60	.1024	3.00	7.80	11.00	50	40.52903.0260	15.60	18.60	50	40.52906.0260	23.40	26.50	61	40.52909.0260
2.65	.1043	3.00	7.95	11.00	50	40.52903.0265	15.90	18.90	50	40.52906.0265	—	—	—	—
2.70	.1063	3.00	8.10	11.50	50	40.52903.0270	16.20	19.20	50	40.52906.0270	24.30	27.50	61	40.52909.0270
2.75	.1083	3.00	8.25	11.50	50	40.52903.0275	16.50	19.50	50	40.52906.0275	—	—	—	—
2.80	.1102	3.00	8.40	11.50	50	40.52903.0280	16.80	19.80	50	40.52906.0280	25.20	28.00	61	40.52909.0280
2.85	.1122	3.00	8.55	12.00	50	40.52903.0285	17.10	20.10	50	40.52906.0285	—	—	—	—
2.90	.1142	3.00	8.70	12.00	50	40.52903.0290	17.40	20.40	50	40.52906.0290	26.10	29.00	61	40.52909.0290
2.95	.1161	3.00	8.85	12.00	50	40.52903.0295	17.70	20.70	50	40.52906.0295	—	—	—	—
3.00	.1181	3.00	9.00	12.50	50	40.52903.0300	18.00	21.00	50	40.52906.0300	27.00	31.00	61	40.52909.0300
3.05	.1201	6.00	9.15	12.50	55	40.52903.0305	18.30	22.30	66	40.52906.0305	—	—	—	—
3.10	.1220	6.00	9.30	12.50	55	40.52903.0310	18.60	22.60	66	40.52906.0310	27.90	32.00	79	40.52909.0310
3.15	.1240	6.00	9.45	12.50	55	40.52903.0315	18.90	22.90	66	40.52906.0315	—	—	—	—
3.20	.1260	6.00	9.60	12.50	55	40.52903.0320	19.20	23.20	66	40.52906.0320	28.80	33.00	79	40.52909.0320

- Internal coolant for all sizes
- Machining process instructions on Pg. 154-155

HIGH PERFORMANCE DRILLS — PHOENIX TC2

3XD, 6XD & 9XD — ART. 52903, 52906 & 52909

Art. 52903, 52906 & 52909 Cont.



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	d2	Art. 52903				Art. 52906				Art. 52909			
			l2	l3	l1	Catalog Number	l2	l3	l1	Catalog Number	l2	l3	l1	Catalog Number
3.25	.1280	6.00	9.75	12.50	55	40.52903.0325	19.50	23.50	66	40.52906.0325	—	—	—	—
3.30	.1299	6.00	9.90	12.50	55	40.52903.0330	19.80	23.80	66	40.52906.0330	29.70	34.00	79	40.52909.0330
3.35	.1319	6.00	10.05	14.00	55	40.52903.0335	20.10	24.10	66	40.52906.0335	—	—	—	—
3.40	.1339	6.00	10.20	14.00	55	40.52903.0340	20.40	24.40	66	40.52906.0340	30.60	35.00	79	40.52909.0340
3.45	.1358	6.00	10.35	14.00	55	40.52903.0345	20.70	24.70	66	40.52906.0345	—	—	—	—
3.50	.1378	6.00	10.50	14.50	55	40.52903.0350	21.00	25.00	66	40.52906.0350	31.50	36.50	79	40.52909.0350
3.55	.1398	6.00	10.65	14.50	55	40.52903.0355	21.30	25.30	66	40.52906.0355	—	—	—	—
3.60	.1417	6.00	10.80	15.00	55	40.52903.0360	21.60	25.60	66	40.52906.0360	32.40	37.50	79	40.52909.0360
3.65	.1437	6.00	10.95	15.00	55	40.52903.0365	21.90	25.90	66	40.52906.0365	—	—	—	—
3.70	.1457	6.00	11.10	15.00	55	40.52903.0370	22.20	26.20	66	40.52906.0370	33.30	38.50	79	40.52909.0370
3.75	.1476	6.00	11.25	15.00	55	40.52903.0375	22.50	26.50	66	40.52906.0375	—	—	—	—
3.80	.1496	6.00	11.40	15.50	55	40.52903.0380	22.80	26.80	66	40.52906.0380	34.20	39.00	79	40.52909.0380
3.85	.1516	6.00	11.55	15.50	55	40.52903.0385	23.10	27.10	66	40.52906.0385	—	—	—	—
3.90	.1535	6.00	11.70	15.50	55	40.52903.0390	23.40	27.40	66	40.52906.0390	35.10	40.00	79	40.52909.0390
3.95	.1555	6.00	11.85	15.50	55	40.52903.0395	23.70	27.70	66	40.52906.0395	—	—	—	—
4.00	.1575	6.00	12.00	15.50	55	40.52903.0400	24.00	28.00	66	40.52906.0400	36.00	41.00	79	40.52909.0400
4.05	.1594	6.00	12.15	16.50	60	40.52903.0405	24.30	30.20	79	40.52906.0405	—	—	—	—
4.10	.1614	6.00	12.30	18.50	60	40.52903.0410	24.60	30.50	79	40.52906.0410	36.90	43.00	91	40.52909.0410
4.15	.1634	6.00	12.45	18.50	60	40.52903.0415	24.90	30.80	79	40.52906.0415	—	—	—	—
4.20	.1654	6.00	12.60	18.50	60	40.52903.0420	25.20	31.00	79	40.52906.0420	37.80	44.00	91	40.52909.0420
4.25	.1673	6.00	12.75	18.50	60	40.52903.0425	25.50	31.50	79	40.52906.0425	—	—	—	—
4.30	.1693	6.00	12.90	19.00	60	40.52903.0430	25.80	32.00	79	40.52906.0430	38.70	45.00	91	40.52909.0430
4.35	.1713	6.00	13.05	19.00	60	40.52903.0435	26.10	32.50	79	40.52906.0435	—	—	—	—
4.40	.1732	6.00	13.20	19.00	60	40.52903.0440	26.40	32.50	79	40.52906.0440	39.60	45.50	91	40.52909.0440
4.45	.1752	6.00	13.35	20.50	60	40.52903.0445	26.70	33.00	79	40.52906.0445	—	—	—	—
4.50	.1772	6.00	13.50	20.50	60	40.52903.0450	27.00	33.00	79	40.52906.0450	40.50	46.50	91	40.52909.0450
4.55	.1791	6.00	13.65	20.50	60	40.52903.0455	27.30	35.50	79	40.52906.0455	—	—	—	—
4.60	.1811	6.00	13.80	22.00	60	40.52903.0460	27.60	35.50	79	40.52906.0460	41.40	49.50	91	40.52909.0460
4.65	.1831	6.00	13.95	22.00	60	40.52903.0465	27.90	36.00	79	40.52906.0465	—	—	—	—
4.70	.1850	6.00	14.10	22.00	60	40.52903.0470	28.20	36.00	79	40.52906.0470	42.30	50.50	91	40.52909.0470
4.75	.1870	6.00	14.25	22.00	60	40.52903.0475	28.50	37.00	79	40.52906.0475	—	—	—	—
4.80	.1890	6.00	14.40	22.50	60	40.52903.0480	28.80	37.00	79	40.52906.0480	43.20	51.00	91	40.52909.0480
4.85	.1909	6.00	14.55	22.50	60	40.52903.0485	29.10	37.50	79	40.52906.0485	—	—	—	—
4.90	.1929	6.00	14.70	22.50	60	40.52903.0490	29.40	37.60	79	40.52906.0490	44.10	52.00	91	40.52909.0490
4.95	.1949	6.00	14.85	23.00	60	40.52903.0495	29.70	38.00	79	40.52906.0495	—	—	—	—
5.00	.1969	6.00	15.00	23.00	60	40.52903.0500	30.00	38.00	79	40.52906.0500	45.00	53.00	91	40.52909.0500
5.05	.1988	6.00	15.15	23.00	64	40.52903.0505	30.30	38.50	79	40.52906.0505	—	—	—	—
5.10	.2008	6.00	15.30	23.50	64	40.52903.0510	30.60	38.50	79	40.52906.0510	45.90	54.00	100	40.52909.0510
5.15	.2028	6.00	15.45	23.50	64	40.52903.0515	30.90	39.00	79	40.52906.0515	—	—	—	—

- Internal coolant for all sizes
- Machining process instructions on Pg. 154-155

HIGH PERFORMANCE DRILLS — PHOENIX TC2

3XD, 6XD & 9XD — ART. 52903, 52906 & 52909

※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	d2	Art. 52903				Art. 52906				Art. 52909			
			l2	l3	l1	Catalog Number	l2	l3	l1	Catalog Number	l2	l3	l1	Catalog Number
5.20	.2047	6.00	15.60	23.50	64	40.52903.0520	31.20	39.00	79	40.52906.0520	46.80	55.00	100	40.52909.0520
5.25	.2067	6.00	15.75	23.50	64	40.52903.0525	31.50	40.00	79	40.52906.0525	—	—	—	—
5.30	.2087	6.00	15.90	24.00	64	40.52903.0530	31.80	40.00	79	40.52906.0530	47.70	56.00	100	40.52909.0530
5.35	.2106	6.00	16.05	24.00	64	40.52903.0535	32.10	40.50	79	40.52906.0535	—	—	—	—
5.40	.2126	6.00	16.20	24.00	64	40.52903.0540	32.40	40.50	79	40.52906.0540	48.60	57.00	100	40.52909.0540
5.45	.2146	6.00	16.35	24.00	64	40.52903.0545	32.70	41.00	79	40.52906.0545	—	—	—	—
5.50	.2165	6.00	16.50	24.50	64	40.52903.0550	33.00	41.00	79	40.52906.0550	49.50	57.50	100	40.52909.0550
5.55	.2185	6.00	16.65	24.50	64	40.52903.0555	33.30	41.50	81	40.52906.0555	—	—	—	—
5.60	.2205	6.00	16.80	24.50	64	40.52903.0560	33.60	41.50	81	40.52906.0560	50.40	58.50	100	40.52909.0560
5.65	.2224	6.00	16.95	24.50	64	40.52903.0565	33.90	42.00	81	40.52906.0565	—	—	—	—
5.70	.2244	6.00	17.10	25.50	64	40.52903.0570	34.20	42.00	81	40.52906.0570	51.30	59.50	100	40.52909.0570
5.75	.2264	6.00	17.25	25.50	64	40.52903.0575	34.50	43.00	81	40.52906.0575	—	—	—	—
5.80	.2283	6.00	17.40	25.50	64	40.52903.0580	34.80	43.00	81	40.52906.0580	52.20	60.00	100	40.52909.0580
5.85	.2303	6.00	17.55	25.50	64	40.52903.0585	35.10	43.50	81	40.52906.0585	—	—	—	—
5.90	.2323	6.00	17.70	26.00	64	40.52903.0590	35.40	43.50	81	40.52906.0590	53.10	61.00	100	40.52909.0590
5.95	.2343	6.00	17.85	26.00	64	40.52903.0595	35.70	44.00	81	40.52906.0595	—	—	—	—
6.00	.2362	6.00	18.00	27.00	64	40.52903.0600	36.00	44.00	81	40.52906.0600	54.00	62.00	100	40.52909.0600
6.10	.2402	8.00	18.30	27.50	68	40.52903.0610	36.60	45.50	89	40.52906.0610	54.90	64.00	111	40.52909.0610
6.20	.2441	8.00	18.60	27.50	68	40.52903.0620	37.20	46.00	89	40.52906.0620	55.80	65.00	111	40.52909.0620
6.30	.2480	8.00	18.90	28.00	68	40.52903.0630	37.80	47.00	89	40.52906.0630	56.70	66.00	111	40.52909.0630
6.40	.2520	8.00	19.20	28.00	68	40.52903.0640	38.40	47.50	89	40.52906.0640	57.60	66.50	111	40.52909.0640
6.50	.2559	8.00	19.50	28.50	68	40.52903.0650	39.00	48.00	89	40.52906.0650	58.50	67.50	111	40.52909.0650
6.60	.2598	8.00	19.80	29.00	68	40.52903.0660	39.60	48.50	89	40.52906.0660	59.40	68.50	111	40.52909.0660
6.70	.2638	8.00	20.10	29.50	68	40.52903.0670	40.20	49.00	89	40.52906.0670	60.30	69.50	111	40.52909.0670
6.80	.2677	8.00	20.40	29.50	68	40.52903.0680	40.80	50.00	89	40.52906.0680	61.20	70.00	111	40.52909.0680
6.90	.2717	8.00	20.70	30.00	68	40.52903.0690	41.40	50.50	89	40.52906.0690	62.10	71.00	111	40.52909.0690
7.00	.2756	8.00	21.00	31.00	68	40.52903.0700	42.00	52.00	89	40.52906.0700	63.00	73.00	111	40.52909.0700
7.10	.2795	8.00	21.30	31.50	72	40.52903.0710	42.60	52.50	95	40.52906.0710	63.90	74.00	120	40.52909.0710
7.20	.2835	8.00	21.60	31.50	72	40.52903.0720	43.20	53.50	95	40.52906.0720	64.80	75.00	120	40.52909.0720
7.30	.2874	8.00	21.90	32.00	72	40.52903.0730	43.80	54.00	95	40.52906.0730	65.70	76.00	120	40.52909.0730
7.40	.2913	8.00	22.20	32.00	72	40.52903.0740	44.40	54.50	95	40.52906.0740	66.60	76.50	120	40.52909.0740
7.50	.2953	8.00	22.50	32.50	72	40.52903.0750	45.00	55.00	95	40.52906.0750	67.50	77.50	120	40.52909.0750
7.60	.2992	8.00	22.80	32.50	72	40.52903.0760	45.60	55.50	95	40.52906.0760	68.40	78.50	120	40.52909.0760
7.70	.3031	8.00	23.10	33.50	72	40.52903.0770	46.20	56.00	95	40.52906.0770	69.30	79.50	120	40.52909.0770
7.80	.3071	8.00	23.40	33.50	72	40.52903.0780	46.80	57.00	95	40.52906.0780	70.20	80.00	120	40.52909.0780
7.90	.3110	8.00	23.70	34.00	72	40.52903.0790	47.40	57.50	95	40.52906.0790	72.00	81.00	120	40.52909.0790
8.00	.3150	8.00	24.00	34.00	72	40.52903.0800	48.00	58.00	95	40.52906.0800	72.00	82.00	120	40.52909.0800
8.50	.3346	10.00	25.50	36.50	79	40.52903.0850	51.00	62.00	106	40.52906.0850	76.50	87.50	134	40.52909.0850
9.00	.3543	10.00	27.00	38.00	79	40.52903.0900	54.00	65.00	106	40.52906.0900	81.00	92.00	134	40.52909.0900
9.50	.3740	10.00	28.50	40.00	85	40.52903.0950	57.00	68.00	113	40.52906.0950	85.50	96.50	144	40.52909.0950
10.00	.3937	10.00	30.00	42.00	85	40.52903.1000	60.00	72.00	113	40.52906.1000	90.00	102.00	144	40.52909.1000

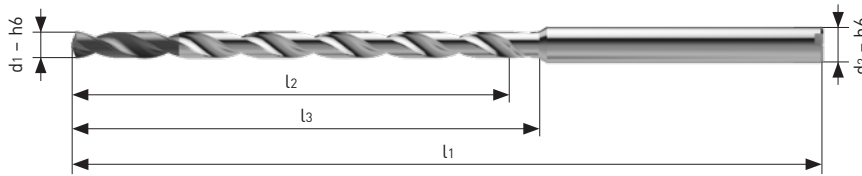
- Internal coolant for all sizes
- Machining process instructions on Pg. 154-155

HIGH PERFORMANCE DRILLS

PHOENIX TC2 12XD & 16XD — ART. 52912 & 52916

Art. 52912

Art. 52916



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	d2	Art. 52912				Art. 52916			
			l2	l3	l1	Catalog Number	l2	l3	l1	Catalog Number
1.00	.0394	3.00	12.00	14.00	50	40.52912.0100	16.00	18.00	65	40.52916.0100
1.10	.0433	3.00	13.20	15.50	50	40.52912.0110	17.60	19.50	65	40.52916.0110
1.20	.0472	3.00	14.40	16.50	50	40.52912.0120	19.20	21.00	65	40.52916.0120
1.30	.0512	3.00	15.60	17.50	50	40.52912.0130	20.80	23.00	65	40.52916.0130
1.40	.0551	3.00	16.80	19.00	50	40.52912.0140	22.40	24.50	65	40.52916.0140
1.50	.0591	3.00	18.00	21.00	50	40.52912.0150	24.00	27.00	65	40.52916.0150
1.60	.0630	3.00	19.20	22.50	50	40.52912.0160	25.60	28.50	65	40.52916.0160
1.70	.0669	3.00	20.40	23.50	50	40.52912.0170	27.20	30.00	65	40.52916.0170
1.80	.0709	3.00	21.60	24.50	50	40.52912.0180	28.80	32.00	65	40.52916.0180
1.90	.0748	3.00	22.80	26.00	55	40.52912.0190	30.40	33.50	65	40.52916.0190
2.00	.0787	3.00	24.00	27.00	55	40.52912.0200	32.00	35.00	65	40.52916.0200
2.10	.0827	3.00	25.20	28.50	55	40.52912.0210	33.60	36.50	82	40.52916.0210
2.20	.0866	3.00	26.40	29.50	55	40.52912.0220	35.20	38.00	82	40.52916.0220
2.30	.0906	3.00	27.60	30.50	55	40.52912.0230	36.80	40.00	82	40.52916.0230
2.40	.0945	3.00	28.80	32.00	55	40.52912.0240	38.40	41.50	82	40.52916.0240
2.50	.0984	3.00	30.00	33.00	60	40.52912.0250	40.00	43.00	82	40.52916.0250
2.60	.1024	3.00	31.20	34.50	60	40.52912.0260	41.60	44.50	82	40.52916.0260
2.70	.1063	3.00	32.40	35.50	60	40.52912.0270	43.20	46.00	82	40.52916.0270
2.80	.1102	3.00	33.60	36.50	60	40.52912.0280	44.80	48.00	82	40.52916.0280
2.90	.1142	3.00	34.80	38.00	60	40.52912.0290	46.40	49.50	82	40.52916.0290
3.00	.1181	3.00	36.00	40.00	60	40.52912.0300	48.00	52.00	82	40.52916.0300

- Internal coolant for all sizes
- Machining process instructions on Pg. 154-155

HIGH PERFORMANCE DRILLS

PHOENIX TC2 12XD & 16XD — ART. 52912 & 52916

※ All dimensions are millimeters unless otherwise noted

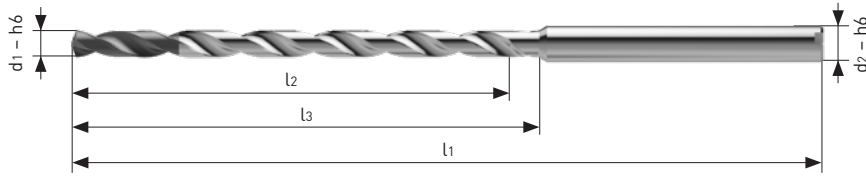
d1	d1 (in.)	d2	Art. 52912				Art. 52916			
			l2	l3	l1	Catalog Number	l2	l3	l1	Catalog Number
3.10	.1220	6.00	37.20	41.50	80	40.52912.0310	49.60	53.50	107	40.52916.0310
3.20	.1260	6.00	38.40	42.50	80	40.52912.0320	51.20	55.00	107	40.52916.0320
3.30	.1299	6.00	39.60	43.50	80	40.52912.0330	52.80	57.00	107	40.52916.0330
3.40	.1339	6.00	40.80	45.00	85	40.52912.0340	54.40	58.50	107	40.52916.0340
3.50	.1378	6.00	42.00	47.00	85	40.52912.0350	56.00	61.00	107	40.52916.0350
3.60	.1417	6.00	43.20	48.50	85	40.52912.0360	57.60	62.50	107	40.52916.0360
3.70	.1457	6.00	44.40	49.50	90	40.52912.0370	59.20	64.00	107	40.52916.0370
3.80	.1496	6.00	45.60	50.50	90	40.52912.0380	60.80	66.00	107	40.52916.0380
3.90	.1535	6.00	46.80	52.00	90	40.52912.0390	62.40	67.50	107	40.52916.0390
4.00	.1575	6.00	48.00	53.00	90	40.52912.0400	64.00	69.00	107	40.52916.0400
4.10	.1614	6.00	49.20	55.50	105	40.52912.0410	65.60	71.50	126	40.52916.0410
4.20	.1654	6.00	50.40	56.50	105	40.52912.0420	67.20	73.00	126	40.52916.0420
4.30	.1693	6.00	51.60	57.50	105	40.52912.0430	68.80	75.00	126	40.52916.0430
4.40	.1732	6.00	52.80	59.00	105	40.52912.0440	70.40	76.50	126	40.52916.0440
4.50	.1772	6.00	54.00	60.00	105	40.52912.0450	72.00	78.00	126	40.52916.0450
4.60	.1811	6.00	55.20	63.50	105	40.52912.0460	73.60	81.50	126	40.52916.0460
4.70	.1850	6.00	56.40	64.50	105	40.52912.0470	75.20	83.00	126	40.52916.0470
4.80	.1890	6.00	57.60	65.50	105	40.52912.0480	76.80	85.00	126	40.52916.0480
4.90	.1929	6.00	58.80	67.00	105	40.52912.0490	78.40	86.50	126	40.52916.0490
5.00	.1969	6.00	60.00	68.00	105	40.52912.0500	80.00	88.00	126	40.52916.0500
5.10	.2008	6.00	61.20	69.50	118	40.52912.0510	81.60	89.50	142	40.52916.0510
5.20	.2047	6.00	62.40	70.50	118	40.52912.0520	83.20	91.00	142	40.52916.0520
5.30	.2087	6.00	63.60	71.50	118	40.52912.0530	84.80	93.00	142	40.52916.0530
5.40	.2126	6.00	64.80	73.00	118	40.52912.0540	86.40	94.50	142	40.52916.0540
5.50	.2165	6.00	66.00	74.00	118	40.52912.0550	88.00	96.00	142	40.52916.0550
5.60	.2205	6.00	67.20	75.50	118	40.52912.0560	89.60	97.50	142	40.52916.0560
5.70	.2244	6.00	68.40	76.50	118	40.52912.0570	91.20	99.00	142	40.52916.0570
5.80	.2283	6.00	69.60	77.50	118	40.52912.0580	92.80	101.00	142	40.52916.0580
5.90	.2323	6.00	70.80	79.00	118	40.52912.0590	94.40	102.50	142	40.52916.0590
6.00	.2362	6.00	72.00	80.00	118	40.52912.0600	96.00	104.00	142	40.52916.0600
6.10	.2402	8.00	73.20	82.50	136	40.52912.0610	97.60	106.50	160	40.52916.0610
6.20	.2441	8.00	74.40	83.50	136	40.52912.0620	99.20	108.00	160	40.52916.0620
6.30	.2480	8.00	75.60	84.50	136	40.52912.0630	100.80	110.00	160	40.52916.0630
6.40	.2520	8.00	76.80	86.00	136	40.52912.0640	102.40	111.50	160	40.52916.0640
6.50	.2559	8.00	78.00	87.50	136	40.52912.0650	104.00	113.00	160	40.52916.0650
6.60	.2598	8.00	79.20	88.50	136	40.52912.0660	105.60	114.50	160	40.52916.0660
6.70	.2638	8.00	80.40	89.50	136	40.52912.0670	107.20	116.00	160	40.52916.0670
6.80	.2677	8.00	81.60	90.50	136	40.52912.0680	108.80	118.00	160	40.52916.0680
6.90	.2717	8.00	82.80	92.00	136	40.52912.0690	110.40	119.50	160	40.52916.0690
7.00	.2756	8.00	84.00	94.00	136	40.52912.0700	112.00	122.00	160	40.52916.0700
7.10	.2795	8.00	85.20	95.50	148	40.52912.0710	113.60	123.50	176	40.52916.0710
7.20	.2835	8.00	86.40	96.50	148	40.52912.0720	115.20	125.00	176	40.52916.0720
7.30	.2874	8.00	87.60	97.50	148	40.52912.0730	116.80	127.00	176	40.52916.0730
7.40	.2913	8.00	88.80	99.00	148	40.52912.0740	118.40	128.50	176	40.52916.0740
7.50	.2953	8.00	90.00	100.00	148	40.52912.0750	120.00	130.00	176	40.52916.0750
7.60	.2992	8.00	91.20	101.50	148	40.52912.0760	121.60	131.50	176	40.52916.0760

- Internal coolant for all sizes
- Machining process instructions on Pg. 154-155

HIGH PERFORMANCE DRILLS

PHOENIX TC2 12XD & 16XD — ART. 52912 & 52916

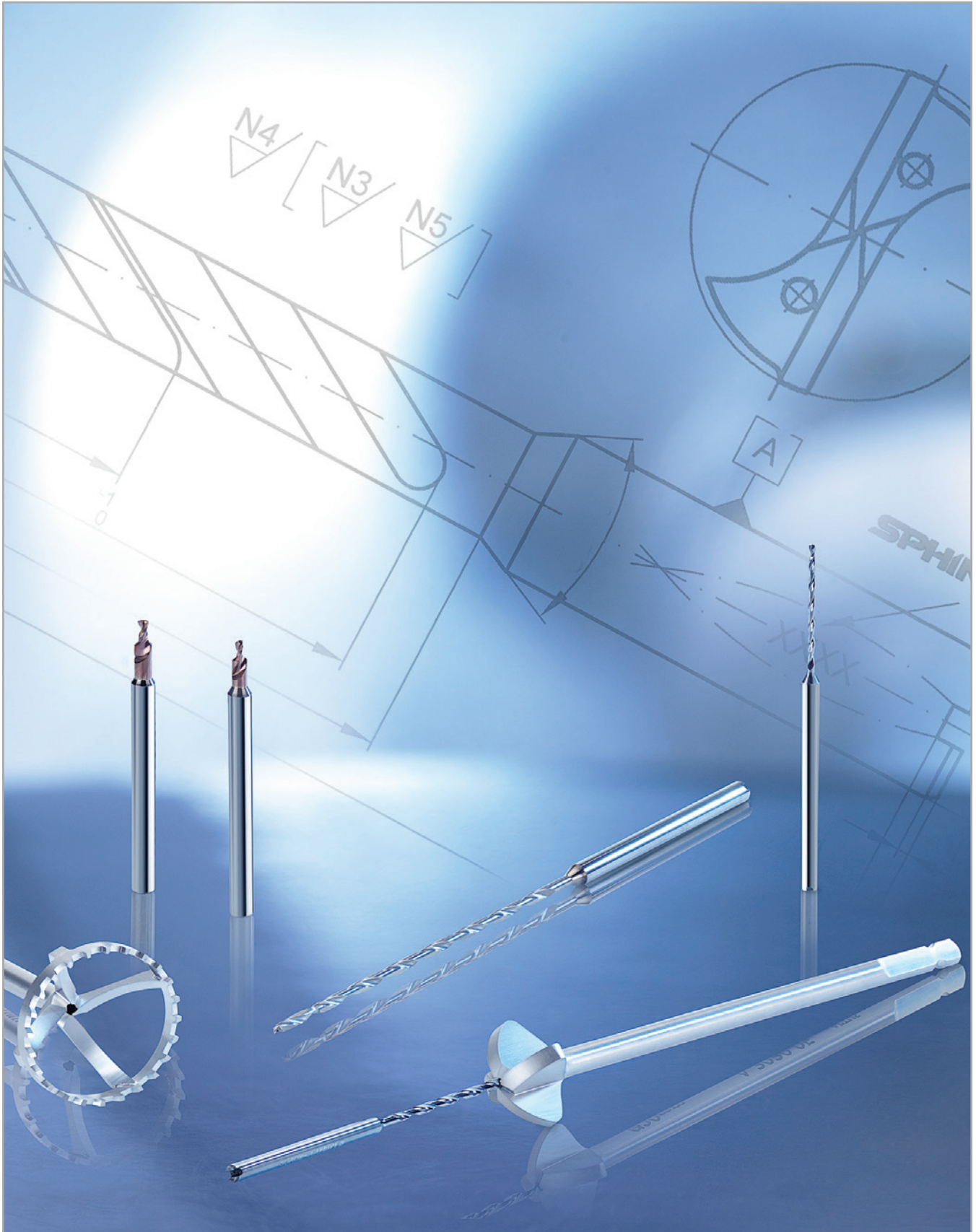
Art. 52912 & 52916 Cont.



※ All dimensions are millimeters unless otherwise noted

d ₁	d ₁ (in.)	d ₂	Art. 52912				Art. 52916			
			l ₂	l ₃	l ₁	Catalog Number	l ₂	l ₃	l ₁	Catalog Number
7.70	.3031	8.00	92.40	102.50	148	40.52912.0770	123.20	133.00	176	40.52916.0770
7.80	.3071	8.00	93.60	103.50	148	40.52912.0780	124.80	135.00	176	40.52916.0780
7.90	.3110	8.00	94.80	105.00	148	40.52912.0790	126.40	136.50	176	40.52916.0790
8.00	.3150	8.00	96.00	106.00	148	40.52912.0800	128.00	138.00	176	40.52916.0800
8.50	.3346	10.00	102.00	113.00	162	40.52912.0850	136.00	147.00	197	40.52916.0850
9.00	.3543	10.00	108.00	119.00	162	40.52912.0900	144.00	155.00	197	40.52916.0900
9.50	.3740	10.00	114.00	125.00	175	40.52912.0950	152.00	163.00	214	40.52916.0950
10.00	.3937	10.00	120.00	132.00	175	40.52912.1000	160.00	172.00	214	40.52916.1000

- Internal coolant for all sizes
- Machining process instructions on Pg. 154-155



HIGH PERFORMANCE DRILLS

PHOENIX TC2 — ART. 52920 & 52930

Art. 52920

Carbide Z 2 137° 30°

AlCrTiN 20xd

Blind Hole Through Hole Multi-Composite

ST SST C.I. Al Ti

HST Plastic

Art. 52930

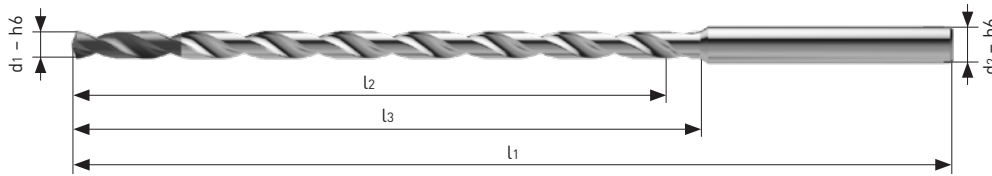
Carbide Z 2 137° 30°

AlCrTiN 30xd

Blind Hole Through Hole Multi-Composite

ST SST C.I. Al Ti

HST Plastic



※ All dimensions are millimeters unless otherwise noted

d1	d1 [in.]	d2	Art. 52920				Art. 52930			
			l2	l3	l1	Catalog Number	l2	l3	l1	Catalog Number
3.00	.1181	6.00	60.00	69.00	108	40.52920.0300	90.00	99.00	138	40.52930.0300
3.30	.1299	6.00	66.00	75.00	113	40.52920.0330	99.00	108.00	146	40.52930.0330
4.00	.1575	6.00	80.00	94.00	132	40.52920.0400	120.00	134.00	172	40.52930.0400
4.20	.1654	6.00	84.00	98.00	136	40.52920.0420	126.00	140.00	178	40.52930.0420
5.00	.1969	6.00	100.00	107.00	145	40.52920.0500	150.00	167.00	205	40.52930.0500
6.00	.2362	6.00	120.00	138.00	176	40.52920.0600	180.00	198.00	236	40.52930.0600
6.80	.2677	8.00	136.00	156.00	196	40.52920.0680	204.00	224.00	264	40.52930.0680
7.00	.2756	8.00	140.00	161.00	201	40.52920.0700	210.00	231.00	271	40.52930.0700
8.00	.3150	8.00	160.00	182.00	222	40.52920.0800	240.00	262.00	302	40.52930.0800
8.50	.3346	10.00	170.00	195.00	240	40.52920.0850	255.00	280.00	325	40.52930.0850
9.00	.3543	10.00	180.00	207.00	252	40.52920.0900	270.00	297.00	342	40.52930.0900
10.00	.3937	10.00	200.00	230.00	275	40.52920.1000	285.00	300.00	345	40.52930.1000

- Internal coolant for all sizes
- Machining process instructions on Pg. 154-155



HIGH PERFORMANCE DRILLS

QUADRO 15 PLUS 6XD — ART. 52150

Art. 52150

Carbide

H7-H9

Z
2

140°

15°

6xd

TiAlN

Blind Hole

Through Hole

Multi-Composite

Cross Hole

ST

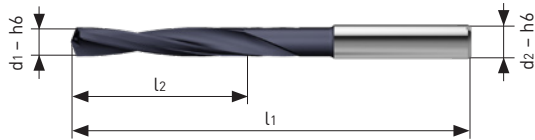
C.I.

Al

Brass

Mg

HST

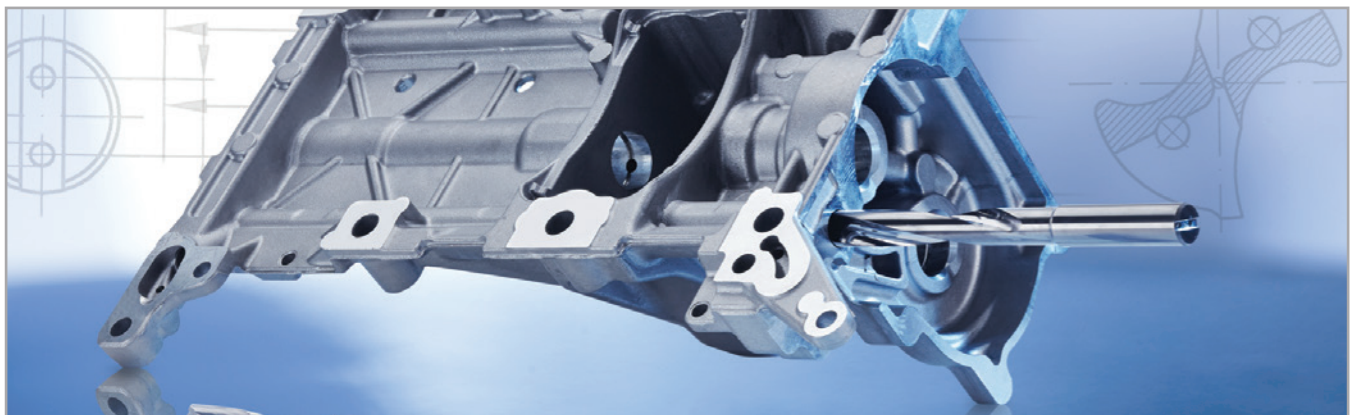


※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l1	d2	Catalog Number
4.00	.1575	24.00	75	6.00	40.52150.0040
4.20	.1654	25.50	75	6.00	40.52150.0042
4.50	.1772	27.00	75	6.00	40.52150.0045
5.00	.1969	30.00	87	6.00	40.52150.0050
5.50	.2165	33.00	87	6.00	40.52150.0055
6.00	.2362	36.00	87	6.00	40.52150.0060
6.50	.2559	39.00	100	8.00	40.52150.0065
6.80	.2677	41.00	100	8.00	40.52150.0068
7.00	.2756	42.00	100	8.00	40.52150.0070
7.50	.2953	45.00	100	8.00	40.52150.0075
8.00	.3150	48.00	100	8.00	40.52150.0080
8.50	.3346	51.00	118	10.00	40.52150.0085
9.00	.3543	54.00	118	10.00	40.52150.0090
9.50	.3740	57.00	118	10.00	40.52150.0095
10.00	.3937	60.00	118	10.00	40.52150.1000
10.20	.4016	62.00	135	12.00	40.52150.1020
10.50	.4134	63.00	135	12.00	40.52150.1050
11.00	.4331	66.00	135	12.00	40.52150.1100

d1	d1 (in.)	l2	l1	d2	Catalog Number
11.50	.4528	69.00	135	12.00	40.52150.1150
12.00	.4724	72.00	135	12.00	40.52150.1200
12.50	.4921	75.00	147	14.00	40.52150.1250
13.00	.5118	78.00	147	14.00	40.52150.1300
13.50	.5315	81.00	147	14.00	40.52150.1350
14.00	.5512	84.00	147	14.00	40.52150.1400
14.50	.5709	87.00	164	16.00	40.52150.1450
15.00	.5906	90.00	164	16.00	40.52150.1500
15.50	.6102	93.00	164	16.00	40.52150.1550
16.00	.6299	96.00	164	16.00	40.52150.1600
16.50	.6496	99.00	178	18.00	40.52150.1650
17.00	.6693	102.00	178	18.00	40.52150.1700
17.50	.6890	105.00	178	18.00	40.52150.1750
18.00	.7087	108.00	178	18.00	40.52150.1800
18.50	.7283	111.00	195	20.00	40.52150.1850
19.00	.7480	114.00	195	20.00	40.52150.1900
19.50	.7677	117.00	195	20.00	40.52150.1950
20.00	.7874	120.00	195	20.00	40.52150.2000

• Internal coolant for all sizes

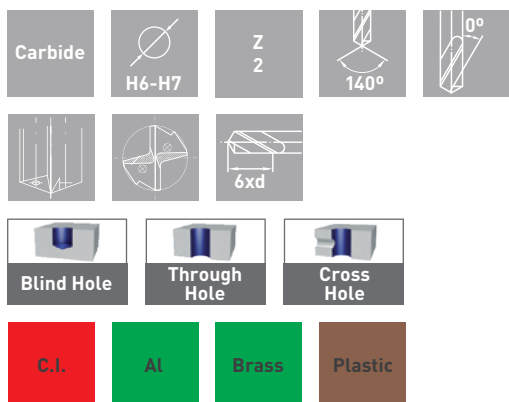


HIGH PERFORMANCE DRILLS

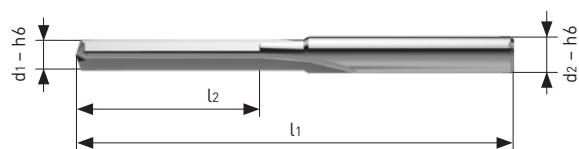
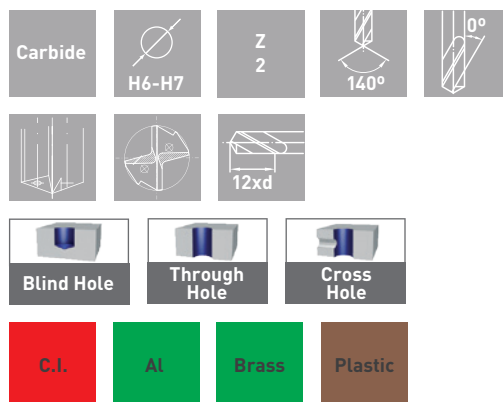
QUADRO PLUS 6XD & 12XD — ART. 52100 & 52200

SPHINX+TOOLS

Art. 52100



Art. 52200



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	d2	Art. 52100			Art. 52200		
			l2	l1	Catalog Number	l2	l1	Catalog Number
3.00	.1181	6.00	18.00	82	40.52100.0030	36.00	106	40.52200.0030
3.20	.1260	6.00	—	—	—	39.00	106	40.52200.0032
3.30	.1299	6.00	20.00	82	40.52100.0033	40.00	106	40.52200.0033
3.50	.1378	6.00	21.00	82	40.52100.0035	42.00	106	40.52200.0035
4.00	.1575	6.00	24.00	82	40.52100.0040	48.00	106	40.52200.0040
4.20	.1654	6.00	26.00	88	40.52100.0042	51.00	118	40.52200.0042
4.50	.1772	6.00	27.00	88	40.52100.0045	54.00	118	40.52200.0045
4.80	.1890	6.00	—	—	—	58.00	118	40.52200.0048
5.00	.1969	6.00	30.00	88	40.52100.0050	60.00	118	40.52200.0050
5.50	.2165	6.00	33.00	94	40.52100.0055	66.00	130	40.52200.0055
6.00	.2362	6.00	36.00	94	40.52100.0060	72.00	130	40.52200.0060
6.40	.2520	8.00	—	—	—	78.00	144	40.52200.0064
6.50	.2559	8.00	39.00	102	40.52100.0065	78.00	144	40.52200.0065
6.80	.2677	8.00	41.00	102	40.52100.0068	82.00	144	40.52200.0068
7.00	.2756	8.00	42.00	102	40.52100.0070	84.00	144	40.52200.0070
7.50	.2953	8.00	45.00	108	40.52100.0075	90.00	156	40.52200.0075
7.60	.2992	8.00	—	—	—	92.00	156	40.52200.0076
8.00	.3150	8.00	48.00	108	40.52100.0080	96.00	156	40.52200.0080
8.50	.3346	10.00	51.00	121	40.52100.0085	102.00	175	40.52200.0085
9.00	.3543	10.00	54.00	121	40.52100.0090	108.00	175	40.52200.0090
9.50	.3740	10.00	57.00	127	40.52100.0095	114.00	187	40.52200.0095
10.00	.3937	10.00	60.00	127	40.52100.1000	120.00	187	40.52200.1000
10.20	.4016	12.00	62.00	141	40.52100.1020	123.00	207	40.52200.1020
10.50	.4134	12.00	63.00	141	40.52100.1050	126.00	207	40.52200.1050
11.00	.4331	12.00	66.00	141	40.52100.1100	132.00	207	40.52200.1100
11.50	.4528	12.00	69.00	147	40.52100.1150	138.00	219	40.52200.1150
12.00	.4724	12.00	72.00	147	40.52100.1200	144.00	219	40.52200.1200
12.50	.4921	14.00	75.00	155	40.52100.1250	150.00	233	40.52200.1250

• Internal coolant for all sizes

HIGH PERFORMANCE DRILLS

QUADRO PLUS 6XD & 12XD — ART. 52100 & 52200

※ All dimensions are millimeters unless otherwise noted

d ₁	d ₁ (in.)	d ₂	Art. 52100			Art. 52200		
			l ₂	l ₁	Catalog Number	l ₂	l ₁	Catalog Number
12.70	.5000	14.00	—	—	—	153.00	233	40.52200.1270
13.00	.5118	14.00	78.00	155	40.52100.1300	156.00	233	40.52200.1300
13.50	.5315	14.00	81.00	162	40.52100.1350	162.00	245	40.52200.1350
14.00	.5512	14.00	84.00	162	40.52100.1400	168.00	245	40.52200.1400
14.50	.5709	16.00	87.00	172	40.52100.1450	174.00	262	40.52200.1450
15.00	.5906	16.00	90.00	172	40.52100.1500	180.00	262	40.52200.1500
15.50	.6102	16.00	93.00	178	40.52100.1550	186.00	274	40.52200.1550
15.90	.6260	16.00	—	—	—	191.00	274	40.52200.1590
16.00	.6299	16.00	96.00	178	40.52100.1600	192.00	274	40.52200.1600
16.50	.6496	18.00	99.00	192	40.52100.1650	198.00	300	40.52200.1650
17.00	.6693	18.00	102.00	192	40.52100.1700	204.00	300	40.52200.1700
17.50	.6890	18.00	105.00	192	40.52100.1750	210.00	300	40.52200.1750
18.00	.7087	18.00	108.00	192	40.52100.1800	216.00	300	40.52200.1800
18.50	.7283	20.00	111.00	207	40.52100.1850	222.00	327	40.52200.1850
19.00	.7480	20.00	114.00	207	40.52100.1900	228.00	327	40.52200.1900
19.50	.7677	20.00	117.00	207	40.52100.1950	234.00	327	40.52200.1950
20.00	.7874	20.00	120.00	207	40.52100.2000	240.00	327	40.52200.2000

• Internal coolant for all sizes



HIGH PERFORMANCE DRILLS CUTTING DATA

PILOT/STEP 140°/90°

Art. 56036										
Material	ø.30-.95mm		ø1.00-1.95mm		ø2.00-2.95mm		ø3.00-3.95mm		ø4.00-6.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	130-195	.0004-.0010	195-295	.0010-.0016	195-295	.0016-.0022	195-295	.0022-.0028	195-295	.0028-.0039
P2	100-165	.0004-.0009	165-230	.0009-.0014	165-230	.0014-.0020	165-230	.0020-.0026	165-230	.0026-.0031
P3	65-130	.0002-.0006	130-195	.0006-.0010	130-195	.0010-.0016	130-195	.0016-.0022	130-195	.0022-.0028
M1	65-115	.0002-.0005	115-165	.0005-.0009	115-165	.0009-.0014	115-165	.0014-.0020	115-165	.0020-.0026
M2	65-100	.0002-.0004	100-150	.0004-.0008	100-150	.0008-.0013	100-150	.0013-.0018	100-150	.0018-.0024
K1	195-330	.0006-.0010	330-490	.0010-.0015	330-490	.0015-.0022	330-490	.0022-.0030	330-490	.0030-.0051
K2	130-260	.0005-.0009	260-425	.0009-.0014	260-425	.0014-.0020	260-425	.0020-.0028	260-425	.0028-.0035
N1	195-295	.0006-.0010	295-395	.0010-.0014	295-395	.0014-.0020	295-395	.0020-.0028	295-395	.0028-.0033
N2	230-395	.0006-.0011	395-490	.0011-.0017	395-490	.0017-.0024	395-490	.0024-.0031	395-490	.0031-.0043
N3	230-395	.0006-.0010	395-490	.0010-.0014	395-490	.0014-.0020	395-490	.0020-.0028	395-490	.0028-.0033
N4	130-230	.0005-.0009	230-330	.0009-.0013	230-330	.0013-.0018	230-330	.0018-.0024	230-330	.0024-.0031
N5	230-395	.0006-.0010	395-490	.0010-.0014	395-490	.0014-.0020	395-490	.0020-.0028	395-490	.0028-.0039
N6										
N7	—	—	—	—	—	—	—	—	—	—
N8										
S1	100-130	.0004-.0009	130-230	.0009-.0014	130-230	.0014-.0020	130-230	.0020-.0028	130-230	.0028-.0035
S2	—	—	—	—	—	—	—	—	—	—
H1	50-80	.0002-.0004	65-115	.0004-.0008	65-115	.0008-.0012	65-115	.0012-.0016	65-115	.0016-.0022
H2										
H3	—	—	—	—	—	—	—	—	—	—
O1										
O2	—	—	—	—	—	—	—	—	—	—
O3										

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

HIGH PERFORMANCE DRILLS CUTTING DATA

PHOENIX 3XD

Art. 50938								
Material	ø1.00-2.40mm		ø2.50-5.00mm		ø5.10-8.00mm		ø8.10-12.70mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	165-260	.0020-.0059	395-590	.0047-.0098	395-590	.0079-.0118	395-590	.0110-.0157
P2	150-230	.0016-.0055	330-525	.0039-.0087	330-525	.0071-.0110	330-525	.0102-.0150
P3	130-195	.0008-.0039	295-490	.0031-.0079	295-490	.0071-.0098	295-490	.0091-.0138
M1	100-165	.0004-.0031	260-425	.0024-.0059	260-425	.0051-.0079	260-425	.0071-.0102
M2	80-150	.0004-.0028	230-395	.0024-.0055	230-395	.0051-.0071	230-395	.0067-.0094
K1	195-260	.0016-.0059	490-655	.0047-.0087	490-655	.0079-.0138	490-655	.0118-.0197
K2	165-230	.0016-.0047	425-590	.0039-.0091	425-590	.0079-.0122	425-590	.0110-.0177
N1	—	—	—	—	—	—	—	—
N2	260-360	.0016-.0059	490-655	.0051-.0110	490-655	.0098-.0130	490-655	.0122-.0197
N3	295-425	.0016-.0059	655-820	.0051-.0118	655-820	.0110-.0157	655-820	.0150-.0217
N4								
N5								
N6	—	—	—	—	—	—	—	—
N7								
N8								
S1	65-130	.0004-.0012	130-195	.0010-.0020	130-195	.0016-.0028	130-195	.0024-.0039
S2	—	—	—	—	—	—	—	—
H1								
H2	—	—	—	—	—	—	—	—
H3								
O1								
O2	—	—	—	—	—	—	—	—
O3								

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

HIGH PERFORMANCE DRILLS CUTTING DATA

PHOENIX 12XD

Art. 50942								
Material	ø1.00-2.40mm		ø2.50-5.00mm		ø5.10-8.00mm		ø8.10-12.70mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	165-260	.0016-.0031	395-590	.0024-.0059	395-590	.0051-.0087	395-590	.0079-.0130
P2	150-230	.0016-.0030	330-525	.0028-.0075	330-525	.0051-.0079	330-525	.0071-.0118
P3	130-195	.0012-.0028	295-490	.0024-.0051	295-490	.0047-.0075	295-490	.0067-.0102
M1	100-165	.0004-.0020	260-425	.0016-.0047	260-425	.0039-.0063	260-425	.0059-.0087
M2	80-150	.0004-.0018	230-395	.0016-.0039	230-395	.0031-.0055	230-395	.0051-.0079
K1	195-260	.0020-.0039	490-655	.0035-.0091	490-655	.0083-.0126	490-655	.0118-.0157
K2	165-230	.0016-.0031	425-590	.0028-.0071	425-590	.0063-.0110	425-590	.0098-.0138
N1	—	—	—	—	—	—	—	—
N2	260-360	.0016-.0051	490-655	.0047-.0102	490-655	.0094-.0142	490-655	.0126-.0177
N3	295-425	.0016-.0055	655-820	.0051-.0110	655-820	.0102-.0150	655-820	.0138-.0189
N4								
N5								
N6	—	—	—	—	—	—	—	—
N7								
N8								
S1	65-130	.0004-.0012	130-195	.0010-.0016	130-195	.0014-.0028	130-195	.0024-.0047
S2	—	—	—	—	—	—	—	—
H1								
H2	—	—	—	—	—	—	—	—
H3								
O1								
O2	—	—	—	—	—	—	—	—
O3								

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

HIGH PERFORMANCE DRILLS CUTTING DATA

PHOENIX 6XD

Art. 50940								
Material	ø1.00-2.40mm		ø2.50-5.00mm		ø5.10-8.00mm		ø8.10-12.70mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	395-590	.0020-.0059	395-590	.0047-.0098	395-590	.0079-.0118	395-590	.0110-.0157
P2	330-525	.0016-.0055	330-525	.0039-.0087	330-525	.0071-.0110	330-525	.0102-.0150
P3	295-490	.0008-.0039	295-490	.0031-.0079	295-490	.0071-.0098	295-490	.0091-.0138
M1	260-425	.0004-.0031	260-425	.0024-.0059	260-425	.0051-.0079	260-425	.0071-.0102
M2	230-395	.0004-.0028	230-395	.0024-.0055	230-395	.0051-.0071	230-395	.0067-.0094
K1	490-655	.0016-.0059	490-655	.0047-.0087	490-655	.0079-.0138	490-655	.0118-.0197
K2	425-590	.0016-.0047	425-590	.0039-.0091	425-590	.0079-.0122	425-590	.0110-.0177
N1	—	—	—	—	—	—	—	—
N2	490-655	.0016-.0059	490-655	.0051-.0110	490-655	.0098-.0130	490-655	.0122-.0197
N3	655-820	.0016-.0059	655-820	.0051-.0118	655-820	.0110-.0157	655-820	.0150-.0217
N4								
N5								
N6	—	—	—	—	—	—	—	—
N7								
N8								
S1	65-130	.0004-.0012	130-195	.0010-.0020	130-195	.0016-.0028	130-195	.0024-.0039
S2	—	—	—	—	—	—	—	—
H1								
H2	—	—	—	—	—	—	—	—
H3								
O1								
O2	—	—	—	—	—	—	—	—
O3								

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

HIGH PERFORMANCE DRILLS CUTTING DATA

PHOENIX TC2 3XD, 6XD & 9XD

Art. 52903/52906/52909								
Material	ø1.00-1.90mm		ø2.00-5.00mm		ø5.10-8.00mm		ø8.10-10.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	230-360	.0010-.0022	230-360	.0020-.0051	230-360	.0049-.0067	230-360	.0065-.0085
P2	195-330	.0008-.0020	195-330	.0018-.0047	195-330	.0045-.0059	195-330	.0055-.0075
P3	195-330	.0008-.0020	195-330	.0018-.0047	195-330	.0045-.0059	195-330	.0055-.0075
M1	195-330	.0008-.0020	195-330	.0018-.0047	195-330	.0045-.0059	195-330	.0055-.0075
M2	165-295	.0006-.0018	165-295	.0016-.0039	165-295	.0035-.0051	165-295	.0047-.0059
K1	295-460	.0020-.0043	295-460	.0039-.0106	295-460	.0102-.0134	295-460	.0126-.0165
K2	260-395	.0016-.0039	260-395	.0035-.0098	260-395	.0094-.0118	260-395	.0110-.0142
N1	395-560	.0020-.0043	395-560	.0039-.0098	395-560	.0094-.0134	395-560	.0126-.0165
N2	490-655	.0020-.0043	490-655	.0039-.0098	490-655	.0094-.0134	490-655	.0126-.0165
N3	655-820	.0020-.0043	655-820	.0039-.0098	655-820	.0094-.0134	655-820	.0126-.0165
N4	295-425	.0020-.0043	295-425	.0039-.0098	295-425	.0094-.0134	295-425	.0126-.0165
N5	490-655	.0020-.0043	490-655	.0039-.0098	490-655	.0094-.0134	490-655	.0126-.0165
N6	195-330	.0008-.0020	195-330	.0018-.0047	195-330	.0045-.0059	195-330	.0055-.0075
N7	—	—	—	—	—	—	—	—
N8	—	—	—	—	—	—	—	—
S1	100-195	.0006-.0014	100-195	.0012-.0033	100-195	.0031-.0043	100-195	.0039-.0053
S2	65-165	.0008-.0020	65-165	.0018-.0047	65-165	.0045-.0059	65-165	.0055-.0075
H1	230-360	.0004-.0008	230-360	.0007-.0020	230-360	.0018-.0026	230-360	.0024-.0031
H2	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—
O1	230-360	.0010-.0022	230-360	.0020-.0051	230-360	.0049-.0067	230-360	.0065-.0085
O2	—	—	—	—	—	—	—	—
O3	—	—	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

HIGH PERFORMANCE DRILLS CUTTING DATA

PHOENIX TC2 12XD & 16XD

Art. 52912/52916								
Material	ø1.00-1.90mm		ø2.00-5.00mm		ø5.10-8.00mm		ø8.10-10.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	230-360	.0008-.0024	230-360	.0020-.0051	230-360	.0049-.0067	230-360	.0065-.0075
P2	195-330	.0006-.0020	195-330	.0018-.0047	195-330	.0045-.0059	195-330	.0055-.0063
P3	165-295	.0006-.0018	165-295	.0016-.0039	165-295	.0035-.0051	165-295	.0047-.0059
M1	195-330	.0008-.0020	195-330	.0018-.0047	195-330	.0045-.0059	195-330	.0055-.0063
M2	165-195	.0006-.0018	165-295	.0016-.0039	165-295	.0035-.0051	165-295	.0047-.0059
K1	295-460	.0020-.0043	295-460	.0039-.0106	295-460	.0102-.0134	295-460	.0126-.0138
K2	260-395	.0016-.0039	260-395	.0035-.0098	260-395	.0094-.0118	260-395	.0110-.0118
N1	295-425	.0020-.0043	295-425	.0039-.0098	295-425	.0094-.0134	295-425	.0126-.0138
N2	490-655	.0020-.0043	490-655	.0039-.0098	490-655	.0094-.0134	490-655	.0126-.0138
N3	560-720	.0020-.0043	560-720	.0039-.0098	560-720	.0094-.0134	560-720	.0126-.0138
N4	295-425	.0010-.0022	295-425	.0020-.0051	295-425	.0049-.0067	295-425	.0065-.0077
N5	490-655	.0016-.0039	490-655	.0035-.0098	490-655	.0094-.0118	490-655	.0110-.0126
N6	195-330	.0006-.0018	195-330	.0016-.0039	195-330	.0035-.0051	195-330	.0047-.0055
N7	—	—	—	—	—	—	—	—
N8	—	—	—	—	—	—	—	—
S1	100-195	.0006-.0014	100-195	.0012-.0033	100-195	.0031-.0043	100-195	.0039-.0047
S2	65-165	.0004-.0016	65-165	.0012-.0039	65-165	.0031-.0051	65-165	.0047-.0059
H1	195-330	.0004-.0008	195-330	.0007-.0020	195-330	.0018-.0026	195-330	.0024-.0031
H2	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—
O1	230-360	.0008-.0024	230-360	.0020-.0051	230-360	.0049-.0067	230-360	.0065-.0075
O2	—	—	—	—	—	—	—	—
O3	—	—	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

HIGH PERFORMANCE DRILLS CUTTING DATA

PHOENIX TC2 20XD & 30XD

Art. 52920/52930						
Material	ø3.00-5.00mm		ø5.10-8.00mm		ø8.10-10.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	—	—	—	—	—	—
P2	—	—	—	—	—	—
P3	130-260	.0020-.0033	130-260	.0031-.0043	130-260	.0039-.0059
M1	100-230	.0018-.0028	100-230	.0026-.0033	100-230	.0031-.0047
M2	80-180	.0014-.0020	80-180	.0018-.0026	80-180	.0024-.0043
K1	230-360	.0039-.0079	230-360	.0071-.0098	230-360	.0091-.0110
K2	195-330	.0035-.0071	195-330	.0067-.0094	195-330	.0087-.0102
N1	195-330	.0051-.0098	195-330	.0091-.0134	195-330	.0126-.0150
N2	215-330	.0051-.0098	215-330	.0091-.0134	215-330	.0126-.0150
N3	230-360	.0051-.0098	230-360	.0091-.0134	230-360	.0126-.0150
N4						
N5						
N6	—	—	—	—	—	—
N7						
N8						
S1	100-195	.0014-.0028	100-195	.0026-.0033	100-195	.0031-.0043
S2	65-165	.0012-.0024	65-165	.0020-.0031	65-165	.0028-.0039
H1	65-130	.0004-.0014	65-130	.0012-.0016	65-130	.0014-.0024
H2	—	—	—	—	—	—
H3	—	—	—	—	—	—
O1	195-330	.0035-.0071	195-330	.0067-.0094	195-330	.0087-.0102
O2	—	—	—	—	—	—
O3	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

HIGH PERFORMANCE DRILLS CUTTING DATA

QUADRO 15 PLUS 6XD

Art. 52150										
Material	ø4.00-7.00mm		ø7.10-10.00mm		ø10.10-13.00mm		ø13.10-16.00mm		ø13.10-16.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	295-395	.0031-.0079	295-395	.0071-.0138	295-395	.0118-.0157	295-395	.0138-.0177	295-395	.0157-.0236
P2	260-490	.0020-.0071	260-490	.0063-.0098	260-490	.0087-.0138	260-490	.0130-.0157	260-490	.0150-.0217
P3	—	—	—	—	—	—	—	—	—	—
M1	—	—	—	—	—	—	—	—	—	—
M2	—	—	—	—	—	—	—	—	—	—
K1	655-820	.0039-.0098	655-820	.0087-.0138	655-820	.0130-.0177	655-820	.0165-.0217	655-820	.0205-.0276
K2	525-655	.0031-.0071	525-655	.0063-.0098	525-655	.0091-.0138	525-655	.0130-.0197	525-655	.0177-.0217
N1	—	—	—	—	—	—	—	—	—	—
N2	—	—	—	—	—	—	—	—	—	—
N3	820-985	.0020-.0059	820-985	.0051-.0098	820-985	.0091-.0138	820-985	.0130-.0177	820-985	.0169-.0217
N4	—	—	—	—	—	—	—	—	—	—
N5	260-395	.0020-.0047	260-395	.0039-.0087	260-395	.0079-.0126	260-395	.0118-.0157	260-395	.0150-.0177
N6	—	—	—	—	—	—	—	—	—	—
N7	—	—	—	—	—	—	—	—	—	—
N8	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	—	—	—	—	—	—	—
S2	—	—	—	—	—	—	—	—	—	—
H1	230-330	.0020-.0039	230-330	.0031-.0071	230-330	.0063-.0102	230-330	.0094-.0118	230-330	.0110-.0138
H2	—	—	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—	—	—
O1	—	—	—	—	—	—	—	—	—	—
O2	—	—	—	—	—	—	—	—	—	—
O3	—	—	—	—	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

HIGH PERFORMANCE DRILLS CUTTING DATA

QUADRO PLUS 6XD & 12XD

Art. 52100/52200										
Material	ø3.00-4.00mm		ø4.10-8.00mm		ø8.10-12.00mm		ø12.10-16.00mm		ø16.10-20.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1										
P2	—	—	—	—	—	—	—	—	—	—
P3										
M1										
M2	—	—	—	—	—	—	—	—	—	—
K1	195-360	.0016-.0024	195-360	.0020-.0079	195-360	.0063-.0118	195-360	.0110-.0157	195-360	.0150-.0197
K2	165-330	.0008-.0020	165-330	.0016-.0063	165-330	.0055-.0098	165-330	.0087-.0138	165-330	.0126-.0157
N1	—	—	—	—	—	—	—	—	—	—
N2	655-820	.0016-.0024	655-820	.0020-.0059	655-820	.0055-.0102	655-820	.0098-.0157	655-820	.0150-.0236
N3	720-920	.0016-.0024	720-920	.0020-.0059	720-920	.0055-.0102	720-920	.0098-.0157	720-920	.0150-.0236
N4	—	—	—	—	—	—	—	—	—	—
N5	260-395	.0016-.0024	260-395	.0020-.0059	260-395	.0055-.0098	260-395	.0091-.0130	260-395	.0118-.0157
N6										
N7	—	—	—	—	—	—	—	—	—	—
N8										
S1										
S2	—	—	—	—	—	—	—	—	—	—
H1										
H2	—	—	—	—	—	—	—	—	—	—
H3										
O1	65-130	.0012-.0020	65-130	.0016-.0039	65-130	.0031-.0059	65-130	.0051-.0071	65-130	.0063-.0079
O2	—	—	—	—	—	—	—	—	—	—
O3										

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$







Spotting 90°, 123° & 142°

Art. 50810, 50812 & 50814Pg. 108



Spotting/Chamfering 142°/90°

Art. 50818.....Pg. 109



Fastcut Pilot 3xd

Art. 50950.....Pg. 110-111



Posicut 5xd

Art. 50830.....Pg. 112-113



Spirec 10xd

Art. 50838.....Pg. 114-115



Spicut 10xd

Art. 50820.....Pg. 116-117

Cutting Data

Art. 50810, 50812, 50814 & 50818.....Pg. 118

Art. 50950.....Pg. 119

Art. 50830.....Pg. 120

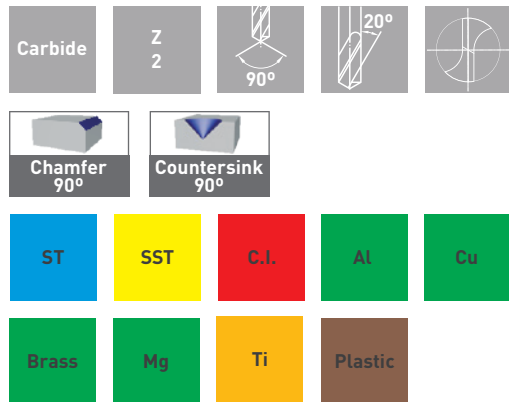
Art. 50838.....Pg. 121

Art. 50820.....Pg. 122

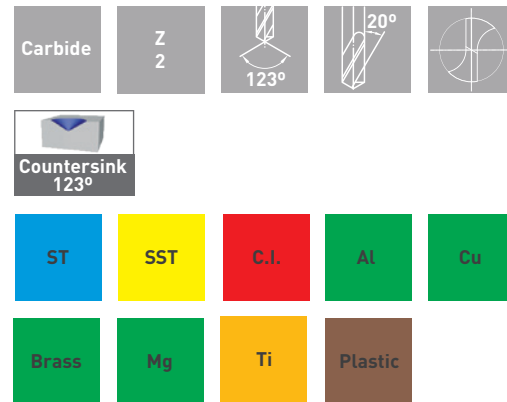
TWIST DRILLS — SPOTTING 90°, 123° & 142°

ART. 50810, 50812 & 50814

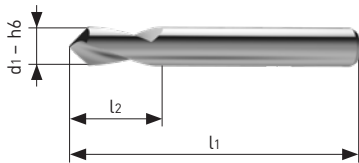
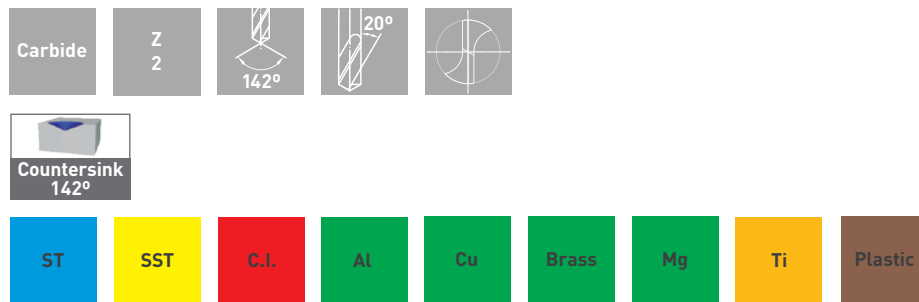
Art. 50810



Art. 50812



Art. 50814



※ All dimensions are millimeters unless otherwise noted

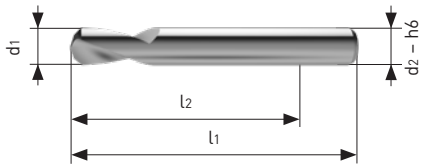
d ₁	d ₁ (in.)	l ₂	l ₁	Art. 50810	Art. 50812	Art. 50814
				Catalog Number	Catalog Number	Catalog Number
2.00	.0787	8.50	25	40.50810.0020	40.50812.0020	40.50814.0020
3.00	.1181	9.50	32	40.50810.0030	40.50812.0030	40.50814.0030
4.00	.1575	10.50	40	40.50810.0040	40.50812.0040	40.50814.0040
5.00	.1969	16.00	50	40.50810.0050	40.50812.0050	40.50814.0050
6.00	.2362	16.00	50	40.50810.0060	40.50812.0060	40.50814.0060
8.00	.3150	20.00	60	40.50810.0080	40.50812.0080	40.50814.0080
10.00	.3937	22.00	70	40.50810.0100	40.50812.0100	40.50814.0100
12.00	.4724	22.00	70	40.50810.0120	40.50812.0120	40.50814.0120
14.00	.5512	25.00	75	40.50810.0140	40.50812.0140	40.50814.0140
16.00	.6299	25.00	75	40.50810.0160	40.50812.0160	40.50814.0160
20.00	.7874	35.00	75	40.50810.0200	40.50812.0200	40.50814.0200

• TiAlSiN coated equivalent, Art. 50811, 50813, 50815 respectively, available upon request

TWIST DRILLS

SPOTTING/CHAMFERING 142°/90° — ART. 50818

Art. 50818



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l1	d2	Catalog Number
1.60	.0630	9.50	32	3.00	40.50818.0160
2.00	.0787	9.50	32	3.00	40.50818.0200
2.50	.0984	10.50	40	4.00	40.50818.0250
3.00	.1181	10.50	40	4.00	40.50818.0300
3.30	.1299	16.00	50	5.00	40.50818.0330
4.00	.1575	16.00	50	5.00	40.50818.0400
4.20	.1654	16.00	50	6.00	40.50818.0420
5.00	.1969	16.00	50	6.00	40.50818.0500
6.00	.2362	20.00	60	8.00	40.50818.0600

d1	d1 (in.)	l2	l1	d2	Catalog Number
6.80	.2677	20.00	60	8.00	40.50818.0680
7.00	.2756	20.00	60	8.00	40.50818.0700
8.00	.3150	22.00	70	10.00	40.50818.0800
8.50	.3346	22.00	70	10.00	40.50818.0850
9.00	.3543	22.00	70	10.00	40.50818.0900
10.00	.3937	22.00	70	12.00	40.50818.1000
10.20	.4016	22.00	70	12.00	40.50818.1020
11.00	.4331	25.00	75	14.00	40.50818.1100
12.00	.4724	25.00	75	14.00	40.50818.1200



TWIST DRILLS

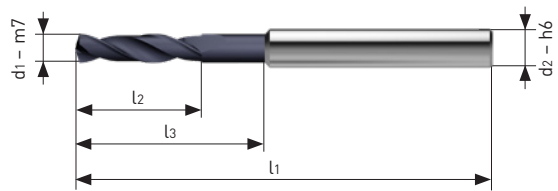
FASTCUT PILOT 3XD — ART. 50950

Art. 50950

Carbide d1 - m7 DIN 6537 Z 2 140° 30° 3xd **TiAlN**

Blind Hole Through Hole Multi-Composite Cross Hole Round Surface

ST SST C.I. Al Ti HST



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
3.00	.1181	14.00	20.00	62	6.00	40.50950.0300
3.10	.1220	14.00	20.00	62	6.00	40.50950.0310
3.20	.1260	14.00	20.00	62	6.00	40.50950.0320
3.30	.1299	14.00	20.00	62	6.00	40.50950.0330
3.40	.1339	14.00	20.00	62	6.00	40.50950.0340
3.50	.1378	14.00	20.00	62	6.00	40.50950.0350
3.60	.1417	14.00	20.00	62	6.00	40.50950.0360
3.70	.1457	14.00	20.00	62	6.00	40.50950.0370
3.80	.1496	17.00	24.00	66	6.00	40.50950.0380
3.90	.1535	17.00	24.00	66	6.00	40.50950.0390
4.00	.1575	17.00	24.00	66	6.00	40.50950.0400
4.10	.1614	17.00	24.00	66	6.00	40.50950.0410
4.20	.1654	17.00	24.00	66	6.00	40.50950.0420
4.30	.1693	17.00	24.00	66	6.00	40.50950.0430
4.40	.1732	17.00	24.00	66	6.00	40.50950.0440
4.50	.1772	17.00	24.00	66	6.00	40.50950.0450
4.60	.1811	17.00	24.00	66	6.00	40.50950.0460
4.70	.1850	17.00	24.00	66	6.00	40.50950.0470
4.80	.1890	20.00	28.00	66	6.00	40.50950.0480
4.90	.1929	20.00	28.00	66	6.00	40.50950.0490
5.00	.1969	20.00	28.00	66	6.00	40.50950.0500
5.10	.2008	20.00	28.00	66	6.00	40.50950.0510
5.20	.2047	20.00	28.00	66	6.00	40.50950.0520
5.30	.2087	20.00	28.00	66	6.00	40.50950.0530
5.40	.2126	20.00	28.00	66	6.00	40.50950.0540
5.50	.2165	20.00	28.00	66	6.00	40.50950.0550
5.60	.2205	20.00	28.00	66	6.00	40.50950.0560
5.70	.2244	20.00	28.00	66	6.00	40.50950.0570
5.80	.2283	20.00	28.00	66	6.00	40.50950.0580

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
5.90	.2323	20.00	28.00	66	6.00	40.50950.0590
6.00	.2362	20.00	28.00	66	6.00	40.50950.0600
6.10	.2402	24.00	34.00	79	8.00	40.50950.0610
6.20	.2441	24.00	34.00	79	8.00	40.50950.0620
6.30	.2480	24.00	34.00	79	8.00	40.50950.0630
6.40	.2520	24.00	34.00	79	8.00	40.50950.0640
6.50	.2559	24.00	34.00	79	8.00	40.50950.0650
6.60	.2598	24.00	34.00	79	8.00	40.50950.0660
6.70	.2638	24.00	34.00	79	8.00	40.50950.0670
6.80	.2677	24.00	34.00	79	8.00	40.50950.0680
6.90	.2717	24.00	34.00	79	8.00	40.50950.0690
7.00	.2756	24.00	34.00	79	8.00	40.50950.0700
7.10	.2795	29.00	41.00	79	8.00	40.50950.0710
7.20	.2835	29.00	41.00	79	8.00	40.50950.0720
7.30	.2874	29.00	41.00	79	8.00	40.50950.0730
7.40	.2913	29.00	41.00	79	8.00	40.50950.0740
7.50	.2953	29.00	41.00	79	8.00	40.50950.0750
7.60	.2992	29.00	41.00	79	8.00	40.50950.0760
7.70	.3031	29.00	41.00	79	8.00	40.50950.0770
7.80	.3071	29.00	41.00	79	8.00	40.50950.0780
7.90	.3110	29.00	41.00	79	8.00	40.50950.0790
8.00	.3150	29.00	41.00	79	8.00	40.50950.0800
8.10	.3189	35.00	47.00	89	10.00	40.50950.0810
8.20	.3228	35.00	47.00	89	10.00	40.50950.0820
8.30	.3268	35.00	47.00	89	10.00	40.50950.0830
8.40	.3307	35.00	47.00	89	10.00	40.50950.0840
8.50	.3346	35.00	47.00	89	10.00	40.50950.0850
8.60	.3386	35.00	47.00	89	10.00	40.50950.0860
8.70	.3425	35.00	47.00	89	10.00	40.50950.0870

TWIST DRILLS

FASTCUT PILOT 3XD — ART. 50950

※ All dimensions are millimeters unless otherwise noted

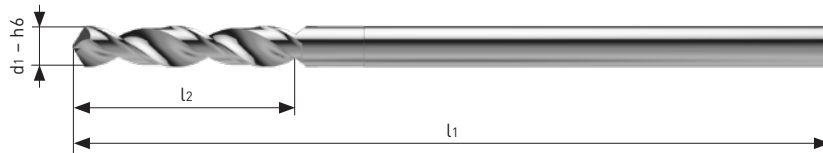
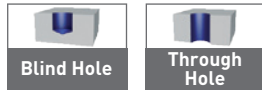
d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
8.80	.3465	35.00	47.00	89	10.00	40.50950.0880
8.90	.3504	35.00	47.00	89	10.00	40.50950.0890
9.00	.3543	35.00	47.00	89	10.00	40.50950.0900
9.10	.3583	35.00	47.00	89	10.00	40.50950.0910
9.20	.3622	35.00	47.00	89	10.00	40.50950.0920
9.30	.3661	35.00	47.00	89	10.00	40.50950.0930
9.40	.3701	35.00	47.00	89	10.00	40.50950.0940
9.50	.3740	35.00	47.00	89	10.00	40.50950.0950
9.60	.3780	35.00	47.00	89	10.00	40.50950.0960
9.70	.3819	35.00	47.00	89	10.00	40.50950.0970
9.80	.3858	35.00	47.00	89	10.00	40.50950.0980
9.90	.3898	35.00	47.00	89	10.00	40.50950.0990
10.00	.3937	35.00	47.00	89	10.00	40.50950.1000
10.10	.3976	40.00	55.00	102	12.00	40.50950.1010
10.20	.4016	40.00	55.00	102	12.00	40.50950.1020
10.30	.4055	40.00	55.00	102	12.00	40.50950.1030
10.40	.4094	40.00	55.00	102	12.00	40.50950.1040
10.50	.4134	40.00	55.00	102	12.00	40.50950.1050
10.60	.4173	40.00	55.00	102	12.00	40.50950.1060
10.70	.4213	40.00	55.00	102	12.00	40.50950.1070
10.80	.4252	40.00	55.00	102	12.00	40.50950.1080
10.90	.4291	40.00	55.00	102	12.00	40.50950.1090
11.00	.4331	40.00	55.00	102	12.00	40.50950.1100
11.10	.4370	40.00	55.00	102	12.00	40.50950.1110
11.20	.4409	40.00	55.00	102	12.00	40.50950.1120
11.30	.4449	40.00	55.00	102	12.00	40.50950.1130
11.40	.4488	40.00	55.00	102	12.00	40.50950.1140
11.50	.4528	40.00	55.00	102	12.00	40.50950.1150

d1	d1 (in.)	l2	l3	l1	d2	Catalog Number
11.60	.4567	40.00	55.00	102	12.00	40.50950.1160
11.70	.4606	40.00	55.00	102	12.00	40.50950.1170
11.80	.4646	40.00	55.00	102	12.00	40.50950.1180
11.90	.4685	40.00	55.00	102	12.00	40.50950.1190
12.00	.4724	40.00	55.00	102	12.00	40.50950.1200
12.50	.4921	43.00	60.00	107	14.00	40.50950.1250
12.80	.5039	43.00	60.00	107	14.00	40.50950.1280
13.00	.5118	43.00	60.00	107	14.00	40.50950.1300
13.50	.5315	43.00	60.00	107	14.00	40.50950.1350
13.80	.5433	43.00	60.00	107	14.00	40.50950.1380
14.00	.5512	43.00	60.00	107	14.00	40.50950.1400
14.50	.5709	45.00	65.00	115	16.00	40.50950.1450
14.80	.5827	45.00	65.00	115	16.00	40.50950.1480
15.00	.5906	45.00	65.00	115	16.00	40.50950.1500
15.50	.6102	45.00	65.00	115	16.00	40.50950.1550
15.80	.6220	45.00	65.00	115	16.00	40.50950.1580
16.00	.6299	45.00	65.00	115	16.00	40.50950.1600
16.50	.6496	51.00	73.00	123	18.00	40.50950.1650
17.00	.6693	51.00	73.00	123	18.00	40.50950.1700
17.50	.6890	51.00	73.00	123	18.00	40.50950.1750
18.00	.7087	51.00	73.00	123	18.00	40.50950.1800
18.50	.7283	55.00	79.00	131	20.00	40.50950.1850
18.80	.7402	55.00	79.00	131	20.00	40.50950.1880
19.00	.7480	55.00	79.00	131	20.00	40.50950.1900
19.50	.7677	55.00	79.00	131	20.00	40.50950.1950
19.80	.7795	55.00	79.00	131	20.00	40.50950.1980
20.00	.7874	55.00	79.00	131	20.00	40.50950.2000

TWIST DRILLS

POSICUT 5XD — ART. 50830

Art. 50830



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l1	Catalog Number
.30	.0118	1.50	19	40.50830.0003
.40	.0157	2.30	19	40.50830.0004
.50	.0197	2.80	20	40.50830.0005
.60	.0236	3.30	21	40.50830.0006
.70	.0276	4.30	23	40.50830.0007
.80	.0315	4.80	24	40.50830.0008
.90	.0354	5.30	25	40.50830.0009
1.00	.0394	5.70	26	40.50830.0010
1.10	.0433	6.70	28	40.50830.0011
1.20	.0472	7.70	30	40.50830.0012
1.30	.0512	7.70	30	40.50830.0013
1.40	.0551	8.70	32	40.50830.0014
1.50	.0591	8.70	32	40.50830.0015
1.60	.0630	9.70	34	40.50830.0016
1.70	.0669	9.70	34	40.50830.0017
1.80	.0709	10.70	36	40.50830.0018
1.90	.0748	10.70	36	40.50830.0019
2.00	.0787	11.50	38	40.50830.0020
2.10	.0827	11.50	38	40.50830.0021
2.20	.0866	12.50	40	40.50830.0022
2.30	.0906	12.50	40	40.50830.0023
2.40	.0945	13.50	43	40.50830.0024
2.50	.0984	13.50	43	40.50830.0025
2.60	.1024	13.50	43	40.50830.0026
2.70	.1063	15.50	46	40.50830.0027
2.80	.1102	15.50	46	40.50830.0028
2.90	.1142	15.50	46	40.50830.0029
3.00	.1181	15.50	46	40.50830.0030
3.10	.1220	17.50	49	40.50830.0031
3.20	.1260	17.50	49	40.50830.0032

d1	d1 (in.)	l2	l1	Catalog Number
3.30	.1299	17.50	49	40.50830.0033
3.40	.1339	19.50	52	40.50830.0034
3.50	.1378	19.50	52	40.50830.0035
3.60	.1417	19.50	52	40.50830.0036
3.70	.1457	19.50	52	40.50830.0037
3.80	.1496	21.50	55	40.50830.0038
3.90	.1535	21.50	55	40.50830.0039
4.00	.1575	21.50	55	40.50830.0040
4.10	.1614	21.50	55	40.50830.0041
4.20	.1654	21.50	55	40.50830.0042
4.30	.1693	23.00	58	40.50830.0043
4.40	.1732	23.00	58	40.50830.0044
4.50	.1772	23.00	58	40.50830.0045
4.60	.1811	23.00	58	40.50830.0046
4.70	.1850	23.00	58	40.50830.0047
4.80	.1890	25.00	62	40.50830.0048
4.90	.1929	25.00	62	40.50830.0049
5.00	.1969	25.00	62	40.50830.0050
5.10	.2008	25.00	62	40.50830.0051
5.20	.2047	25.00	62	40.50830.0052
5.30	.2087	25.00	62	40.50830.0053
5.40	.2126	27.00	66	40.50830.0054
5.50	.2165	27.00	66	40.50830.0055
5.60	.2205	27.00	66	40.50830.0056
5.70	.2244	27.00	66	40.50830.0057
5.80	.2283	27.00	66	40.50830.0058
5.90	.2323	27.00	66	40.50830.0059
6.00	.2362	27.00	66	40.50830.0060
6.10	.2402	30.00	70	40.50830.0061
6.20	.2441	30.00	70	40.50830.0062

TWIST DRILLS
POSICUT 5XD — ART. 50830

※ All dimensions are millimeters unless otherwise noted

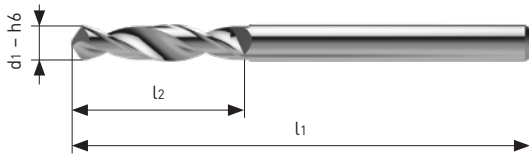
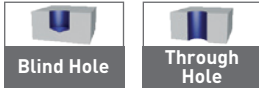
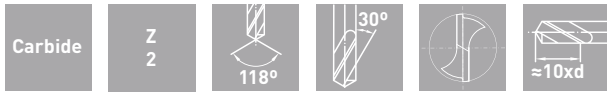
d1	d1 (in.)	l2	l1	Catalog Number
6.30	.2480	30.00	70	40.50830.0063
6.40	.2520	30.00	70	40.50830.0064
6.50	.2559	30.00	70	40.50830.0065
6.60	.2598	30.00	70	40.50830.0066
6.70	.2638	30.00	70	40.50830.0067
6.80	.2677	33.00	74	40.50830.0068
6.90	.2717	33.00	74	40.50830.0069
7.00	.2756	33.00	74	40.50830.0070
7.10	.2795	33.00	74	40.50830.0071
7.20	.2835	33.00	74	40.50830.0072
7.30	.2874	33.00	74	40.50830.0073
7.40	.2913	33.00	74	40.50830.0074
7.50	.2953	33.00	74	40.50830.0075
7.60	.2992	36.00	79	40.50830.0076
7.70	.3031	36.00	79	40.50830.0077
7.80	.3071	36.00	79	40.50830.0078
7.90	.3110	36.00	79	40.50830.0079
8.00	.3150	36.00	79	40.50830.0080
8.10	.3189	36.00	79	40.50830.0081
8.20	.3228	36.00	79	40.50830.0082
8.30	.3268	36.00	79	40.50830.0083
8.40	.3307	36.00	79	40.50830.0084
8.50	.3346	36.00	79	40.50830.0085
8.60	.3386	39.00	84	40.50830.0086
8.70	.3425	39.00	84	40.50830.0087
8.80	.3465	39.00	84	40.50830.0088
8.90	.3504	39.00	84	40.50830.0089

d1	d1 (in.)	l2	l1	Catalog Number
9.00	.3543	39.00	84	40.50830.0090
9.10	.3583	39.00	84	40.50830.0091
9.20	.3622	39.00	84	40.50830.0092
9.30	.3661	39.00	84	40.50830.0093
9.40	.3701	39.00	84	40.50830.0094
9.50	.3740	39.00	84	40.50830.0095
9.60	.3780	41.00	89	40.50830.0096
9.70	.3819	41.00	89	40.50830.0097
9.80	.3858	41.00	89	40.50830.0098
9.90	.3898	41.00	89	40.50830.0099
10.00	.3937	41.00	89	40.50830.0100
10.20	.4016	41.00	89	40.50830.0102
10.50	.4134	41.00	89	40.50830.0105
11.00	.4331	45.00	95	40.50830.0110
11.50	.4528	45.00	95	40.50830.0115
12.00	.4724	49.00	102	40.50830.0120
12.50	.4921	49.00	102	40.50830.0125
13.00	.5118	49.00	102	40.50830.0130
13.50	.5315	52.00	107	40.50830.0135
14.00	.5512	52.00	107	40.50830.0140
15.00	.5906	54.00	111	40.50830.0150
16.00	.6299	56.00	115	40.50830.0160
17.00	.6693	58.00	119	40.50830.0170
18.00	.7087	60.00	123	40.50830.0180
19.00	.7480	62.00	127	40.50830.0190
20.00	.7874	64.00	131	40.50830.0200

TWIST DRILLS

SPIREC 10XD — ART. 50838

Art. 50838



※ All dimensions are millimeters unless otherwise noted

d1	d1 [in.]	l2	l1	Catalog Number
.30	.0118	3.70	38	40.50838.0030
.35	.0138	3.70	38	40.50838.0035
.40	.0157	4.70	38	40.50838.0040
.45	.0177	4.70	38	40.50838.0045
.50	.0197	5.70	38	40.50838.0050
.55	.0217	5.70	38	40.50838.0055
.60	.0236	7.70	38	40.50838.0060
.65	.0256	7.70	38	40.50838.0065
.70	.0276	9.70	38	40.50838.0070
.75	.0295	9.70	38	40.50838.0075
.80	.0315	11.70	38	40.50838.0080
.85	.0335	11.70	38	40.50838.0085
.90	.0354	14.70	38	40.50838.0090
.95	.0374	14.70	38	40.50838.0095
1.00	.0394	14.70	38	40.50838.0100
1.05	.0413	14.70	38	40.50838.0105
1.10	.0433	14.70	38	40.50838.0110
1.15	.0453	14.70	38	40.50838.0115
1.20	.0472	14.70	38	40.50838.0120
1.25	.0492	14.70	38	40.50838.0125
1.30	.0512	14.70	38	40.50838.0130
1.35	.0531	14.70	38	40.50838.0135
1.40	.0551	14.70	38	40.50838.0140
1.45	.0571	14.70	38	40.50838.0145
1.50	.0591	14.70	38	40.50838.0150
1.55	.0610	14.70	38	40.50838.0155
1.60	.0630	14.70	38	40.50838.0160
1.65	.0650	14.70	38	40.50838.0165
1.70	.0669	14.70	38	40.50838.0170
1.75	.0689	14.70	38	40.50838.0175

d1	d1 [in.]	l2	l1	Catalog Number
1.80	.0709	14.70	38	40.50838.0180
1.85	.0728	14.70	38	40.50838.0185
1.90	.0748	14.70	38	40.50838.0190
1.95	.0768	14.70	38	40.50838.0195
2.00	.0787	14.70	38	40.50838.0200
2.05	.0807	14.70	38	40.50838.0205
2.10	.0827	14.70	38	40.50838.0210
2.15	.0846	14.70	38	40.50838.0215
2.20	.0866	14.70	38	40.50838.0220
2.25	.0886	14.70	38	40.50838.0225
2.30	.0906	14.70	38	40.50838.0230
2.35	.0925	14.70	38	40.50838.0235
2.40	.0945	14.70	38	40.50838.0240
2.45	.0965	14.70	38	40.50838.0245
2.50	.0984	14.70	38	40.50838.0250
2.55	.1004	14.70	38	40.50838.0255
2.60	.1024	14.70	38	40.50838.0260
2.65	.1043	14.70	38	40.50838.0265
2.70	.1063	14.70	38	40.50838.0270
2.75	.1083	14.70	38	40.50838.0275
2.80	.1102	14.70	38	40.50838.0280
2.85	.1122	14.70	38	40.50838.0285
2.90	.1142	14.70	38	40.50838.0290
2.95	.1161	14.70	38	40.50838.0295
3.00	.1181	14.70	38	40.50838.0300
3.05	.1201	14.70	38	40.50838.0305
3.10	.1220	14.70	38	40.50838.0310
3.15	.1240	14.70	38	40.50838.0315
3.175	.1250	14.70	38	40.50838.3175
3.20	.1260	19.70	50	40.50838.0320

TWIST DRILLS

SPIREC 10XD — ART. 50838

※ All dimensions are millimeters unless otherwise noted

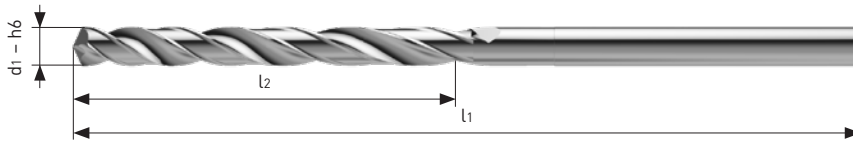
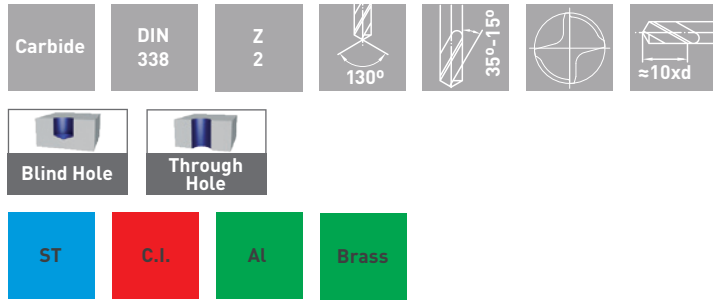
d1	d1 (in.)	l2	l1	Catalog Number
3.30	.1299	19.70	50	40.50838.0330
3.40	.1339	19.70	50	40.50838.0340
3.50	.1378	19.70	50	40.50838.0350
3.60	.1417	19.70	50	40.50838.0360
3.70	.1457	19.70	50	40.50838.0370
3.80	.1496	19.70	50	40.50838.0380
3.90	.1535	19.70	50	40.50838.0390
4.00	.1575	19.70	50	40.50838.0400
4.10	.1614	24.70	50	40.50838.0410
4.20	.1654	24.70	50	40.50838.0420
4.30	.1693	24.70	50	40.50838.0430
4.40	.1732	24.70	50	40.50838.0440
4.50	.1772	24.70	50	40.50838.0450
4.60	.1811	24.70	50	40.50838.0460
4.70	.1850	24.70	50	40.50838.0470
4.80	.1890	24.70	50	40.50838.0480
4.90	.1929	24.70	50	40.50838.0490
5.00	.1969	24.70	50	40.50838.0500
5.10	.2008	24.70	50	40.50838.0510
5.20	.2047	24.70	50	40.50838.0520
5.30	.2087	24.70	50	40.50838.0530
5.40	.2126	24.70	50	40.50838.0540
5.50	.2165	24.70	50	40.50838.0550
5.60	.2205	24.70	50	40.50838.0560
5.70	.2244	24.70	50	40.50838.0570
5.80	.2283	24.70	50	40.50838.0580
5.90	.2323	24.70	50	40.50838.0590
6.00	.2362	24.70	50	40.50838.0600



TWIST DRILLS

SPICUT 10XD — ART. 50820

Art. 50820



※ All dimensions are millimeters unless otherwise noted

d1	d1 [in.]	l2	l1	Catalog Number
.70	.0276	8.00	28	40.50820.0007
.80	.0315	9.00	30	40.50820.0008
.90	.0354	10.00	32	40.50820.0009
1.00	.0394	11.00	34	40.50820.0010
1.10	.0433	13.00	36	40.50820.0011
1.20	.0472	15.00	38	40.50820.0012
1.30	.0512	15.00	38	40.50820.0013
1.40	.0551	17.00	40	40.50820.0014
1.50	.0591	17.00	40	40.50820.0015
1.60	.0630	19.00	43	40.50820.0016
1.70	.0669	19.00	43	40.50820.0017
1.80	.0709	21.00	46	40.50820.0018
1.90	.0748	21.00	46	40.50820.0019
2.00	.0787	23.00	49	40.50820.0020
2.10	.0827	23.00	49	40.50820.0021
2.20	.0866	26.00	53	40.50820.0022
2.30	.0906	26.00	53	40.50820.0023
2.40	.0945	29.00	57	40.50820.0024
2.50	.0984	29.00	57	40.50820.0025
2.60	.1024	29.00	57	40.50820.0026
2.70	.1063	31.00	61	40.50820.0027
2.80	.1102	31.00	61	40.50820.0028
2.90	.1142	31.00	61	40.50820.0029
3.00	.1181	31.00	61	40.50820.0030
3.10	.1220	34.00	65	40.50820.0031
3.20	.1260	34.00	65	40.50820.0032
3.30	.1299	34.00	65	40.50820.0033
3.40	.1339	37.00	70	40.50820.0034
3.50	.1378	37.00	70	40.50820.0035
3.60	.1417	37.00	70	40.50820.0036

d1	d1 [in.]	l2	l1	Catalog Number
3.70	.1457	37.00	70	40.50820.0037
3.80	.1496	41.00	75	40.50820.0038
3.90	.1535	41.00	75	40.50820.0039
4.00	.1575	41.00	75	40.50820.0040
4.10	.1614	41.00	75	40.50820.0041
4.20	.1654	41.00	75	40.50820.0042
4.30	.1693	45.00	80	40.50820.0043
4.40	.1732	45.00	80	40.50820.0044
4.50	.1772	45.00	80	40.50820.0045
4.60	.1811	45.00	80	40.50820.0046
4.70	.1850	45.00	80	40.50820.0047
4.80	.1890	50.00	86	40.50820.0048
4.90	.1929	50.00	86	40.50820.0049
5.00	.1969	50.00	86	40.50820.0050
5.10	.2008	50.00	86	40.50820.0051
5.20	.2047	50.00	86	40.50820.0052
5.30	.2087	50.00	86	40.50820.0053
5.40	.2126	55.00	93	40.50820.0054
5.50	.2165	55.00	93	40.50820.0055
5.60	.2205	55.00	93	40.50820.0056
5.70	.2244	55.00	93	40.50820.0057
5.80	.2283	55.00	93	40.50820.0058
5.90	.2323	55.00	93	40.50820.0059
6.00	.2362	55.00	93	40.50820.0060
6.10	.2402	61.00	101	40.50820.0061
6.20	.2441	61.00	101	40.50820.0062
6.30	.2480	61.00	101	40.50820.0063
6.40	.2520	61.00	101	40.50820.0064
6.50	.2559	61.00	101	40.50820.0065
6.60	.2598	61.00	101	40.50820.0066

- Degressive helix from 35° to 15°
- Four margins beginning at ø2mm

TWIST DRILLS

SPICUT 10XD — ART. 50820

※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l1	Catalog Number
6.70	.2638	61.00	101	40.50820.0067
6.80	.2677	67.00	109	40.50820.0068
6.90	.2717	67.00	109	40.50820.0069
7.00	.2756	67.00	109	40.50820.0070
7.10	.2795	67.00	109	40.50820.0071
7.20	.2835	67.00	109	40.50820.0072
7.30	.2874	67.00	109	40.50820.0073
7.40	.2913	67.00	109	40.50820.0074
7.50	.2953	67.00	109	40.50820.0075
7.60	.2992	73.00	117	40.50820.0076
7.70	.3031	73.00	117	40.50820.0077
7.80	.3071	73.00	117	40.50820.0078
7.90	.3110	73.00	117	40.50820.0079
8.00	.3150	73.00	117	40.50820.0080
8.10	.3189	73.00	117	40.50820.0081
8.20	.3228	73.00	117	40.50820.0082
8.30	.3268	73.00	117	40.50820.0083
8.40	.3307	73.00	117	40.50820.0084
8.50	.3346	73.00	117	40.50820.0085
8.60	.3386	78.00	125	40.50820.0086
8.70	.3425	78.00	125	40.50820.0087
8.80	.3465	78.00	125	40.50820.0088

d1	d1 (in.)	l2	l1	Catalog Number
8.90	.3504	78.00	125	40.50820.0089
9.00	.3543	78.00	125	40.50820.0090
9.10	.3583	78.00	125	40.50820.0091
9.20	.3622	78.00	125	40.50820.0092
9.30	.3661	78.00	125	40.50820.0093
9.40	.3701	78.00	125	40.50820.0094
9.50	.3740	78.00	125	40.50820.0095
9.60	.3780	84.00	133	40.50820.0096
9.70	.3819	84.00	133	40.50820.0097
9.80	.3858	84.00	133	40.50820.0098
9.90	.3898	84.00	133	40.50820.0099
10.00	.3937	84.00	133	40.50820.0100
10.20	.4016	84.00	133	40.50820.0102
10.50	.4134	84.00	133	40.50820.0105
11.00	.4331	91.00	142	40.50820.0110
11.50	.4528	91.00	142	40.50820.0115
12.00	.4724	98.00	151	40.50820.0120
12.50	.4921	98.00	151	40.50820.0125
13.00	.5118	98.00	151	40.50820.0130
13.50	.5315	105.00	160	40.50820.0135
14.00	.5512	105.00	160	40.50820.0140

- Degressive helix from 35° to 15°
- Four margins beginning at ø2mm

TWIST DRILLS CUTTING DATA — SPOTTING 90°, 123° & 142° & SPOTTING/CHAMFERING 142°/90°

Art. 50810/50812/50814/50818						
Material	ø1.60-6.00mm		ø6.00-12.00mm		ø12.00-20.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	80-130	.0047-.0098	80-130	.0079-.0118	80-130	.0110-.0157
P2	65-115	.0039-.0079	65-115	.0059-.0098	65-115	.0079-.0138
P3	40-100	.0031-.0059	40-100	.0055-.0087	40-100	.0071-.0118
M1	35-65	.0020-.0059	35-65	.0043-.0079	35-65	.0059-.0098
M2	25-50	.0016-.0031	25-50	.0024-.0055	25-50	.0039-.0059
K1	80-130	.0028-.0059	80-130	.0051-.0079	80-130	.0071-.0138
K2	65-115	.0020-.0039	65-115	.0031-.0059	65-115	.0047-.0098
N1	150-195	.0039-.0098	150-195	.0079-.0118	150-195	.0102-.0138
N2	100-150	.0051-.0118	100-150	.0102-.0138	100-150	.0130-.0197
N3	80-130	.0039-.0098	80-130	.0079-.0118	80-130	.0102-.0138
N4	80-130	.0024-.0059	80-130	.0047-.0071	80-130	.0063-.0087
N5	150-195	.0039-.0098	150-195	.0079-.0118	150-195	.0102-.0138
N6	80-130	.0024-.0035	80-130	.0031-.0043	80-130	.0039-.0051
N7	80-130	.0020-.0051	80-130	.0039-.0071	80-130	.0063-.0098
N8	40-100	.0012-.0039	40-100	.0031-.0051	40-100	.0039-.0059
S1	100-150	.0016-.0047	100-150	.0031-.0063	100-150	.0059-.0087
S2	—	—	—	—	—	—
H1						
H2	—	—	—	—	—	—
H3						
O1	100-150	.0039-.0098	100-150	.0087-.0157	100-150	.0138-.0276
O2	—	—	—	—	—	—
O3						

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

TWIST DRILLS CUTTING DATA

FASTCUT PILOT 3XD

Art. 50950										
Material	ø3.00-5.00mm		ø5.10-8.00mm		ø8.10-12.00mm		ø12.10-16.00mm		ø16.10-20.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	260-395	.0024-.0059	260-395	.0047-.0098	260-395	.0087-.0138	260-395	.0126-.0177	260-395	.0157-.0197
P2	195-260	.0020-.0047	195-260	.0039-.0087	195-260	.0079-.0118	195-260	.0110-.0142	195-260	.0134-.0177
P3	165-230	.0016-.0039	165-230	.0035-.0071	165-230	.0063-.0102	165-230	.0094-.0126	165-230	.0118-.0150
M1	130-195	.0012-.0031	130-195	.0028-.0059	130-195	.0055-.0071	130-195	.0067-.0098	130-195	.0091-.0126
M2	100-165	.0012-.0031	100-165	.0028-.0051	100-165	.0047-.0063	100-165	.0059-.0087	100-165	.0079-.0118
K1	330-425	.0039-.0098	330-425	.0091-.0138	330-425	.0126-.0177	330-425	.0157-.0197	330-425	.0177-.0236
K2	195-260	.0024-.0079	195-260	.0071-.0110	195-260	.0098-.0138	195-260	.0126-.0177	195-260	.0165-.0197
N1	—	—	—	—	—	—	—	—	—	—
N2	425-525	.0039-.0098	425-525	.0087-.0126	425-525	.0118-.0150	425-525	.0142-.0177	425-525	.0165-.0197
N3	490-655	.0039-.0106	490-655	.0098-.0138	490-655	.0130-.0157	490-655	.0150-.0189	490-655	.0181-.0217
N4										
N5										
N6	—	—	—	—	—	—	—	—	—	—
N7										
N8										
S1	100-195	.0002-.0016	100-195	.0012-.0028	100-195	.0024-.0043	100-195	.0039-.0059	100-195	.0055-.0071
S2	—	—	—	—	—	—	—	—	—	—
H1	195-295	.0020-.0047	195-310	.0039-.0087	195-295	.0079-.0118	195-295	.0110-.0142	195-295	.0134-.0157
H2	130-195	.0012-.0028	130-195	.0024-.0051	130-195	.0043-.0071	130-195	.0063-.0094	130-195	.0079-.0102
H3	50-115	.0002-.0012	50-115	.0008-.0020	50-115	.0016-.0028	50-115	.0024-.0039	50-115	.0031-.0047
O1										
O2	—	—	—	—	—	—	—	—	—	—
O3										

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

Art. 50830										
Material	ø.30-1.00mm		ø1.10-5.00mm		ø5.10-10.00mm		ø10.10-15.00mm		ø15.10-20.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	100-195	.0004-.0016	165-295	.0015-.0031	165-295	.0030-.0043	165-295	.0039-.0071	165-295	.0067-.0102
P2	65-115	.0004-.0012	100-195	.0011-.0028	100-195	.0026-.0035	100-195	.0033-.0063	100-195	.0059-.0091
P3	50-100	.0002-.0008	80-165	.0007-.0024	80-165	.0022-.0033	80-165	.0031-.0051	80-165	.0049-.0079
M1	50-100	.0002-.0008	80-165	.0007-.0024	80-165	.0022-.0033	80-165	.0031-.0051	80-165	.0049-.0079
M2	35-65	.0002-.0007	50-130	.0006-.0020	50-130	.0019-.0035	50-130	.0033-.0047	50-130	.0043-.0063
K1	130-260	.0004-.0024	230-395	.0022-.0035	230-395	.0033-.0043	230-395	.0039-.0110	230-395	.0102-.0197
K2	100-165	.0004-.0012	130-260	.0011-.0028	130-260	.0026-.0039	130-260	.0037-.0071	130-260	.0067-.0118
N1	100-195	.0005-.0018	165-295	.0017-.0033	165-295	.0031-.0055	165-295	.0053-.0098	165-295	.0091-.0118
N2	130-260	.0006-.0020	230-395	.0019-.0039	230-395	.0037-.0071	230-395	.0067-.0110	230-395	.0102-.0177
N3	100-230	.0004-.0018	195-360	.0016-.0033	195-360	.0031-.0063	195-360	.0059-.0102	195-360	.0094-.0157
N4	65-130	.0002-.0012	100-230	.0011-.0028	100-230	.0026-.0035	100-230	.0033-.0063	100-230	.0059-.0091
N5	—	—	—	—	—	—	—	—	—	—
N6	50-100	.0005-.0018	80-165	.0017-.0033	80-165	.0031-.0055	80-165	.0053-.0098	80-165	.0091-.0118
N7	50-100	.0005-.0018	80-165	.0017-.0033	80-165	.0031-.0055	80-165	.0053-.0098	80-165	.0091-.0118
N8	35-65	.0002-.0007	50-115	.0006-.0020	50-115	.0019-.0035	50-115	.0033-.0047	50-115	.0043-.0071
S1	65-100	.0008-.0016	80-165	.0015-.0028	80-165	.0026-.0039	80-165	.0037-.0059	80-165	.0057-.0079
S2	35-65	.0002-.0007	50-115	.0006-.0020	50-115	.0019-.0035	50-115	.0033-.0047	50-115	.0043-.0071
H1										
H2	—	—	—	—	—	—	—	—	—	—
H3										
O1	65-130	.0006-.0020	100-230	.0019-.0039	100-230	.0037-.0071	100-230	.0067-.0110	100-230	.0102-.0177
O2										
O3	—	—	—	—	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

TWIST DRILLS CUTTING DATA

SPIREC 10XD

Art. 50838						
Material	ø.30-1.00mm		ø1.05-3.00mm		ø3.105-6.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	100-195	.0004-.0016	165-295	.0015-.0020	165-295	.0018-.0024
P2	65-115	.0004-.0012	100-195	.0011-.0018	100-195	.0016-.0022
P3	50-100	.0002-.0008	80-165	.0007-.0014	80-165	.0012-.0020
M1	50-100	.0002-.0008	80-165	.0007-.0014	80-165	.0012-.0020
M2	35-65	.0002-.0007	50-130	.0006-.0012	50-130	.0011-.0016
K1	130-260	.0004-.0024	230-395	.0022-.0028	230-395	.0026-.0039
K2	100-165	.0004-.0012	130-260	.0011-.0022	130-260	.0020-.0031
N1	100-195	.0005-.0018	165-295	.0017-.0024	165-295	.0022-.0035
N2	130-260	.0006-.0020	230-395	.0019-.0028	130-395	.0026-.0043
N3	100-230	.0004-.0018	195-360	.0016-.0026	195-360	.0024-.0039
N4	65-130	.0002-.0012	100-230	.0011-.0020	100-230	.0019-.0030
N5	100-195	.0006-.0020	165-295	.0019-.0028	165-295	.0026-.0043
N6	50-100	.0005-.0018	80-165	.0016-.0026	80-165	.0024-.0039
N7	—	—	—	—	—	—
N8	—	—	—	—	—	—
S1	65-115	.0004-.0012	100-195	.0011-.0018	100-195	.0016-.0022
S2	—	—	—	—	—	—
H1	—	—	—	—	—	—
H2	—	—	—	—	—	—
H3	—	—	—	—	—	—
O1	65-130	.0006-.0020	100-230	.0019-.0028	100-230	.0026-.0047
O2	—	—	—	—	—	—
O3	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

Art. 50820										
Material	ø.70-2.50mm		ø2.60-6.00mm		ø6.10-9.00mm		ø9.10-11.00mm		ø11.10-14.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	100-195	.0004-.0008	165-295	.0007-.0016	165-295	.0015-.0026	165-295	.0024-.0035	165-295	.0033-.0047
P2	65-115	.0003-.0007	100-195	.0006-.0014	100-195	.0013-.0022	100-195	.0020-.0030	100-195	.0028-.0039
P3	—	—	—	—	—	—	—	—	—	—
M1	—	—	—	—	—	—	—	—	—	—
M2	—	—	—	—	—	—	—	—	—	—
K1	65-130	.0004-.0010	100-230	.0009-.0014	100-230	.0017-.0030	100-230	.0028-.0043	100-230	.0039-.0059
K2	50-100	.0004-.0008	80-165	.0007-.0016	80-165	.0015-.0026	80-165	.0024-.0035	80-165	.0033-.0047
N1	—	—	—	—	—	—	—	—	—	—
N2	260-395	.0004-.0012	80-165	.0011-.0031	80-165	.0030-.0047	80-165	.0043-.0063	80-165	.0059-.0079
N3	195-330	.0004-.0012	165-395	.0011-.0031	165-395	.0030-.0047	165-395	.0043-.0063	165-395	.0059-.0079
N4	—	—	—	—	—	—	—	—	—	—
N5	130-230	.0004-.0010	195-395	.0009-.0018	195-395	.0017-.0030	195-395	.0028-.0043	195-395	.0039-.0059
N6	—	—	—	—	—	—	—	—	—	—
N7	—	—	—	—	—	—	—	—	—	—
N8	—	—	—	—	—	—	—	—	—	—
S1	—	—	—	—	—	—	—	—	—	—
S2	—	—	—	—	—	—	—	—	—	—
H1	—	—	—	—	—	—	—	—	—	—
H2	—	—	—	—	—	—	—	—	—	—
H3	—	—	—	—	—	—	—	—	—	—
O1	—	—	—	—	—	—	—	—	—	—
O2	—	—	—	—	—	—	—	—	—	—
O3	—	—	—	—	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$







Asycut 5xd

Art. 50840Pg. 126-127



Tricut 5xd & 10xd

Art. 55654 & 55338Pg. 128-130

Cutting Data

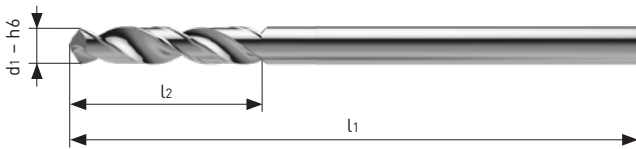
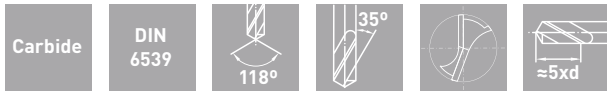
Art. 50840Pg. 132

Art. 55654 & 55338Pg. 133

DRILL REAMERS

ASYCUT 5XD — ART. 50840

Art. 50840



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l1	Catalog Number
2.00	.0787	11.5	38	40.50840.0020
2.10	.0827	11.5	38	40.50840.0021
2.20	.0866	12.5	40	40.50840.0022
2.30	.0906	12.5	40	40.50840.0023
2.40	.0945	13.5	43	40.50840.0024
2.50	.0984	13.5	43	40.50840.0025
2.60	.1024	13.5	43	40.50840.0026
2.70	.1063	15.5	46	40.50840.0027
2.80	.1102	15.5	46	40.50840.0028
2.90	.1142	15.5	46	40.50840.0029
3.00	.1181	15.5	46	40.50840.0030
3.10	.1220	17.5	49	40.50840.0031
3.20	.1260	17.5	49	40.50840.0032
3.30	.1299	17.5	49	40.50840.0033
3.40	.1339	19.5	52	40.50840.0034
3.50	.1378	19.5	52	40.50840.0035
3.60	.1417	19.5	52	40.50840.0036
3.70	.1457	19.5	52	40.50840.0037
3.80	.1496	21.5	55	40.50840.0038
3.90	.1535	21.5	55	40.50840.0039
4.00	.1575	21.5	55	40.50840.0040
4.10	.1614	21.5	55	40.50840.0041
4.20	.1654	21.5	55	40.50840.0042
4.30	.1693	23.0	58	40.50840.0043
4.40	.1732	23.0	58	40.50840.0044
4.50	.1772	23.0	58	40.50840.0045
4.60	.1811	23.0	58	40.50840.0046
4.70	.1850	23.0	58	40.50840.0047
4.80	.1890	25.0	62	40.50840.0048
4.90	.1929	25.0	62	40.50840.0049

d1	d1 (in.)	l2	l1	Catalog Number
5.00	.1969	25.0	62	40.50840.0050
5.10	.2008	25.0	62	40.50840.0051
5.20	.2047	25.0	62	40.50840.0052
5.30	.2087	25.0	62	40.50840.0053
5.40	.2126	27.0	66	40.50840.0054
5.50	.2165	27.0	66	40.50840.0055
5.60	.2205	27.0	66	40.50840.0056
5.70	.2244	27.0	66	40.50840.0057
5.80	.2283	27.0	66	40.50840.0058
5.90	.2323	27.0	66	40.50840.0059
6.00	.2362	27.0	66	40.50840.0060
6.10	.2402	30.0	70	40.50840.0061
6.20	.2441	30.0	70	40.50840.0062
6.30	.2480	30.0	70	40.50840.0063
6.40	.2520	30.0	70	40.50840.0064
6.50	.2559	30.0	70	40.50840.0065
6.60	.2598	30.0	70	40.50840.0066
6.70	.2638	30.0	70	40.50840.0067
6.80	.2677	33.0	74	40.50840.0068
6.90	.2717	33.0	74	40.50840.0069
7.00	.2756	33.0	74	40.50840.0070
7.10	.2795	33.0	74	40.50840.0071
7.20	.2835	33.0	74	40.50840.0072
7.30	.2874	33.0	74	40.50840.0073
7.40	.2913	33.0	74	40.50840.0074
7.50	.2953	33.0	74	40.50840.0075
7.60	.2992	36.0	79	40.50840.0076
7.70	.3031	36.0	79	40.50840.0077
7.80	.3071	36.0	79	40.50840.0078
7.90	.3110	36.0	79	40.50840.0079

• Three margin asymmetrical flute design

DRILL REAMERS

ASYCUT 5XD — ART. 50840

※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	l2	l1	Catalog Number
8.00	.3150	36.0	79	40.50840.0080
8.10	.3189	36.0	79	40.50840.0081
8.20	.3228	36.0	79	40.50840.0082
8.30	.3268	36.0	79	40.50840.0083
8.40	.3307	36.0	79	40.50840.0084
8.50	.3346	36.0	79	40.50840.0085
8.60	.3386	39.0	84	40.50840.0086
8.70	.3425	39.0	84	40.50840.0087
8.80	.3465	39.0	84	40.50840.0088
8.90	.3504	39.0	84	40.50840.0089
9.00	.3543	39.0	84	40.50840.0090
9.10	.3583	39.0	84	40.50840.0091
9.20	.3622	39.0	84	40.50840.0092
9.30	.3661	39.0	84	40.50840.0093
9.40	.3701	39.0	84	40.50840.0094

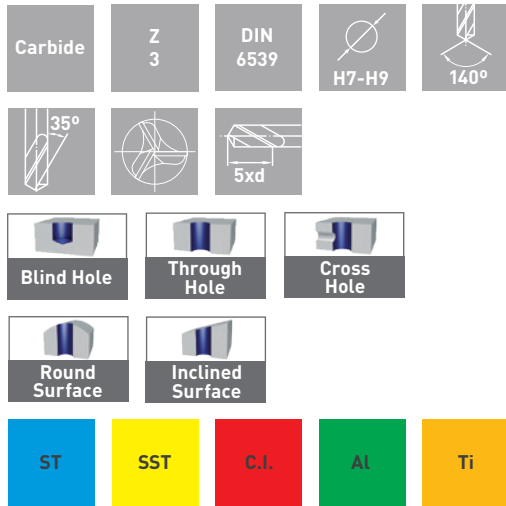
d1	d1 (in.)	l2	l1	Catalog Number
9.50	.3740	39.0	84	40.50840.0095
9.60	.3780	41.0	89	40.50840.0096
9.70	.3819	41.0	89	40.50840.0097
9.80	.3858	41.0	89	40.50840.0098
9.90	.3898	41.0	89	40.50840.0099
10.00	.3937	41.0	89	40.50840.0100
10.20	.4016	41.0	89	40.50840.0102
10.50	.4134	41.0	89	40.50840.0105
11.00	.4331	45.0	95	40.50840.0110
11.50	.4528	45.0	95	40.50840.0115
12.00	.4724	49.0	102	40.50840.0120
12.50	.4921	49.0	102	40.50840.0125
13.00	.5118	49.0	102	40.50840.0130
13.50	.5315	52.0	107	40.50840.0135
14.00	.5512	52.0	107	40.50840.0140

- Three margin asymmetrical flute design

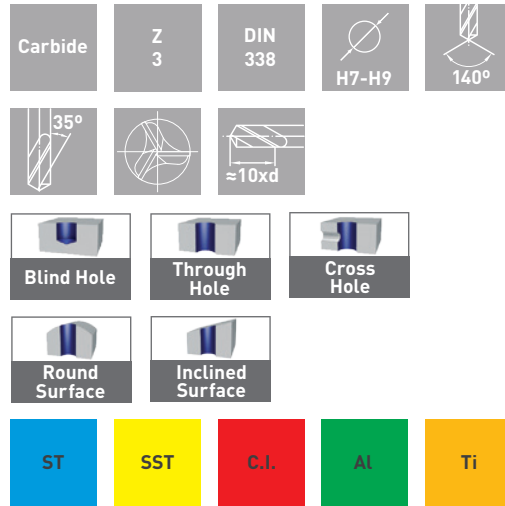
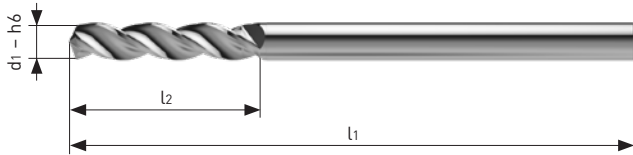
DRILL REAMERS

TRICUT 5XD & 10XD — ART. 55654 & 55338

Art. 55654



Art. 55338

※ All dimensions are millimeters unless otherwise noted

d ₁	d ₁ (in.)	Art. 55654			Art. 55338		
		l ₂	l ₁	Catalog Number	l ₂	l ₁	Catalog Number
1.00	.0394	6.00	26	40.55654.0010	11.50	34	40.55338.0010
1.10	.0433	6.50	28	40.55654.0011	13.00	36	40.55338.0011
1.20	.0472	7.50	30	40.55654.0012	15.00	38	40.55338.0012
1.30	.0512	7.50	30	40.55654.0013	15.00	38	40.55338.0013
1.40	.0551	8.50	32	40.55654.0014	17.00	40	40.55338.0014
1.50	.0591	8.50	32	40.55654.0015	17.00	40	40.55338.0015
1.60	.0630	9.50	34	40.55654.0016	19.00	43	40.55338.0016
1.70	.0669	9.50	34	40.55654.0017	19.00	43	40.55338.0017
1.80	.0709	10.50	36	40.55654.0018	21.00	46	40.55338.0018
1.90	.0748	10.50	36	40.55654.0019	21.00	46	40.55338.0019
2.00	.0787	11.50	38	40.55654.0020	22.00	49	40.55338.0020
2.10	.0827	11.50	38	40.55654.0021	22.00	49	40.55338.0021
2.20	.0866	12.50	40	40.55654.0022	25.00	53	40.55338.0022
2.30	.0906	12.50	40	40.55654.0023	25.00	53	40.55338.0023
2.40	.0945	13.50	43	40.55654.0024	28.00	57	40.55338.0024
2.50	.0984	13.50	43	40.55654.0025	28.00	57	40.55338.0025
2.60	.1024	13.50	43	40.55654.0026	28.00	57	40.55338.0026
2.70	.1063	15.50	46	40.55654.0027	31.00	61	40.55338.0027
2.80	.1102	15.50	46	40.55654.0028	31.00	61	40.55338.0028
2.90	.1142	15.50	46	40.55654.0029	31.00	61	40.55338.0029
3.00	.1181	15.50	46	40.55654.0030	31.00	61	40.55338.0030
3.10	.1220	17.00	49	40.55654.0031	34.00	65	40.55338.0031
3.175	.1250 (1/8)	17.00	49	40.55654.3175	—	—	—
3.20	.1260	17.00	49	40.55654.0032	34.00	65	40.55338.0032
3.30	.1299	17.00	49	40.55654.0033	34.00	65	40.55338.0033

DRILL REAMERS

TRICUT 5XD & 10XD — ART. 55654 & 55338

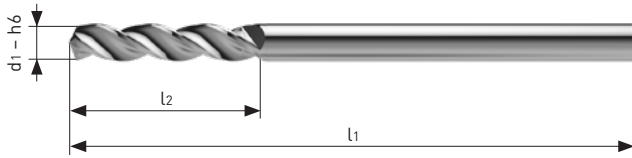
※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	Art. 55654			Art. 55338		
		l2	l1	Catalog Number	l2	l1	Catalog Number
3.40	.1339	19.00	52	40.55654.0034	37.00	70	40.55338.0034
3.50	.1378	19.00	52	40.55654.0035	37.00	70	40.55338.0035
3.60	.1417	19.00	52	40.55654.0036	37.00	70	40.55338.0036
3.70	.1457	19.00	52	40.55654.0037	37.00	70	40.55338.0037
3.80	.1496	21.00	55	40.55654.0038	41.00	75	40.55338.0038
3.90	.1535	21.00	55	40.55654.0039	41.00	75	40.55338.0039
3.969	.1563 [5/32]	21.00	55	40.55654.3969	—	—	—
4.00	.1575	21.00	55	40.55654.0040	41.00	75	40.55338.0040
4.10	.1614	21.00	55	40.55654.0041	41.00	75	40.55338.0041
4.20	.1654	21.00	55	40.55654.0042	41.00	75	40.55338.0042
4.30	.1693	22.50	58	40.55654.0043	45.00	80	40.55338.0043
4.40	.1732	22.50	58	40.55654.0044	45.00	80	40.55338.0044
4.50	.1772	22.50	58	40.55654.0045	45.00	80	40.55338.0045
4.60	.1811	22.50	58	40.55654.0046	45.00	80	40.55338.0046
4.70	.1850	22.50	58	40.55654.0047	45.00	80	40.55338.0047
4.763	.1875 [3/16]	24.50	62	40.55654.4763	—	—	—
4.80	.1890	24.50	62	40.55654.0048	50.00	86	40.55338.0048
4.90	.1929	24.50	62	40.55654.0049	50.00	86	40.55338.0049
5.00	.1969	24.50	62	40.55654.0050	50.00	86	40.55338.0050
5.10	.2008	24.50	62	40.55654.0051	50.00	86	40.55338.0051
5.20	.2047	24.50	62	40.55654.0052	50.00	86	40.55338.0052
5.30	.2087	24.50	62	40.55654.0053	50.00	86	40.55338.0053
5.40	.2126	26.00	66	40.55654.0054	55.00	93	40.55338.0054
5.50	.2165	26.00	66	40.55654.0055	55.00	93	40.55338.0055
5.556	.2187 [7/32]	26.00	66	40.55654.5556	—	—	—
5.60	.2205	26.00	66	40.55654.0056	55.00	93	40.55338.0056
5.70	.2244	26.00	66	40.55654.0057	55.00	93	40.55338.0057
5.80	.2283	26.00	66	40.55654.0058	55.00	93	40.55338.0058
5.90	.2323	26.00	66	40.55654.0059	55.00	93	40.55338.0059
6.00	.2362	26.00	66	40.55654.0060	55.00	93	40.55338.0060
6.10	.2402	28.50	70	40.55654.0061	60.00	101	40.55338.0061
6.20	.2441	28.50	70	40.55654.0062	60.00	101	40.55338.0062
6.30	.2480	28.50	70	40.55654.0063	60.00	101	40.55338.0063
6.35	.2500 [1/4]	28.50	70	40.55654.6350	—	—	—
6.40	.2520	28.50	70	40.55654.0064	60.00	101	40.55338.0064
6.50	.2559	28.50	70	40.55654.0065	60.00	101	40.55338.0065
6.60	.2598	28.50	70	40.55654.0066	60.00	101	40.55338.0066
6.70	.2638	28.50	70	40.55654.0067	60.00	101	40.55338.0067
6.80	.2677	31.00	74	40.55654.0068	66.00	109	40.55338.0068
6.90	.2717	31.00	74	40.55654.0069	66.00	109	40.55338.0069
7.00	.2756	31.00	74	40.55654.0070	66.00	109	40.55338.0070
7.10	.2795	31.00	74	40.55654.0071	66.00	109	40.55338.0071
7.144	.2813 [9/32]	31.00	74	40.55654.7144	—	—	—
7.20	.2835	31.00	74	40.55654.0072	66.00	109	40.55338.0072
7.30	.2874	31.00	74	40.55654.0073	66.00	109	40.55338.0073
7.40	.2913	31.00	74	40.55654.0074	66.00	109	40.55338.0074

DRILL REAMERS

TRICUT 5XD & 10XD — ART. 55654 & 55338

Art. 55654 & 55338 Cont.



※ All dimensions are millimeters unless otherwise noted

d1	d1 (in.)	Art. 55654			Art. 55338		
		l2	l1	Catalog Number	l2	l1	Catalog Number
7.50	.2953	31.00	74	40.55654.0075	66.00	109	40.55338.0075
7.60	.2992	34.00	79	40.55654.0076	72.00	117	40.55338.0076
7.70	.3031	34.00	79	40.55654.0077	72.00	117	40.55338.0077
7.80	.3071	34.00	79	40.55654.0078	72.00	117	40.55338.0078
7.90	.3110	34.00	79	40.55654.0079	72.00	117	40.55338.0079
7.938	.3125 (5/16)	34.00	79	40.55654.7938	—	—	—
8.00	.3150	34.00	79	40.55654.0080	72.00	117	40.55338.0080
8.10	.3189	34.00	79	40.55654.0081	72.00	117	40.55338.0081
8.20	.3228	34.00	79	40.55654.0082	72.00	117	40.55338.0082
8.30	.3268	34.00	79	40.55654.0083	72.00	117	40.55338.0083
8.40	.3307	34.00	79	40.55654.0084	72.00	117	40.55338.0084
8.50	.3346	34.00	79	40.55654.0085	72.00	117	40.55338.0085
8.60	.3386	36.50	84	40.55654.0086	78.00	125	40.55338.0086
8.70	.3425	36.50	84	40.55654.0087	78.00	125	40.55338.0087
8.80	.3465	36.50	84	40.55654.0088	78.00	125	40.55338.0088
8.90	.3504	36.50	84	40.55654.0089	78.00	125	40.55338.0089
9.00	.3543	36.50	84	40.55654.0090	78.00	125	40.55338.0090
9.10	.3583	36.50	84	40.55654.0091	78.00	125	40.55338.0091
9.20	.3622	36.50	84	40.55654.0092	78.00	125	40.55338.0092
9.30	.3661	36.50	84	40.55654.0093	78.00	125	40.55338.0093
9.40	.3701	36.50	84	40.55654.0094	78.00	125	40.55338.0094
9.50	.3740	36.50	84	40.55654.0095	78.00	125	40.55338.0095
9.525	.3750 (3/8)	39.00	89	40.55654.9525	—	—	—
9.60	.3780	39.00	89	40.55654.0096	84.00	133	40.55338.0096
9.70	.3819	39.00	89	40.55654.0097	84.00	133	40.55338.0097
9.80	.3858	39.00	89	40.55654.0098	84.00	133	40.55338.0098
9.90	.3898	39.00	89	40.55654.0099	84.00	133	40.55338.0099
10.00	.3937	39.00	89	40.55654.1000	84.00	133	40.55338.0100
10.20	.4016	39.00	89	40.55654.1020	84.00	133	40.55338.0102
10.50	.4134	39.00	89	40.55654.1050	84.00	133	40.55338.0105
11.00	.4331	43.00	95	40.55654.1100	91.00	142	40.55338.0110
11.113	.4375 (7/16)	43.00	95	40.55654.1111	—	—	—
11.50	.4528	43.00	95	40.55654.1150	91.00	142	40.55338.0115
12.00	.4724	47.00	102	40.55654.1200	98.00	151	40.55338.0120
12.50	.4921	47.00	102	40.55654.1250	98.00	151	40.55338.0125
12.70	.5000 (1/2)	47.00	102	40.55654.1270	—	—	—
13.00	.5118	47.00	102	40.55654.1300	98.00	151	40.55338.0130
13.50	.5315	50.00	107	40.55654.1350	105.00	160	40.55338.0135
14.00	.5512	50.00	107	40.55654.1400	105.00	160	40.55338.0140



TWIST DRILLS CUTTING DATA

ASYCUT 5XD

Art. 50840								
Material	ø2.00-5.00mm		ø5.10-8.00mm		ø8.10-11.00mm		ø11.10-14.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	100-195	.0008-.0020	100-195	.0018-.0035	100-195	.0031-.0059	100-195	.0051-.0079
P2	80-165	.0006-.0018	80-165	.0016-.0031	80-165	.0030-.0047	80-165	.0039-.0059
P3	—	—	—	—	—	—	—	—
M1	65-150	.0006-.0016	65-150	.0014-.0028	65-150	.0026-.0039	65-150	.0035-.0051
M2	50-115	.0004-.0014	50-115	.0012-.0024	50-115	.0022-.0033	50-115	.0031-.0043
K1	100-195	.0008-.0020	100-195	.0018-.0035	100-195	.0031-.0059	100-195	.0051-.0079
K2	80-165	.0006-.0018	80-165	.0016-.0031	80-165	.0030-.0047	80-165	.0039-.0059
N1	100-195	.0008-.0020	100-195	.0018-.0035	100-195	.0031-.0059	100-195	.0051-.0079
N2	195-330	.0012-.0031	195-330	.0028-.0059	195-330	.0055-.0087	195-330	.0079-.0118
N3	165-295	.0010-.0028	165-295	.0024-.0051	165-295	.0047-.0075	165-295	.0071-.0098
N4	165-295	.0012-.0035	165-295	.0031-.0059	165-295	.0051-.0079	165-295	.0071-.0118
N5								
N6								
N7	—	—	—	—	—	—	—	—
N8								
S1	—	—	—	—	—	—	—	—
S2								
H1								
H2	—	—	—	—	—	—	—	—
H3								
O1								
O2	—	—	—	—	—	—	—	—
O3								

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

DRILL REAMERS CUTTING DATA

TRICUT 5XD & 10XD

Art. 55654/55338										
Material	ø1.00-2.00mm		ø2.10-5.00mm		ø5.10-8.00mm		ø8.10-11.00mm		ø11.10-14.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	130-195	.0006-.0016	130-195	.0014-.0031	130-195	.0030-.0067	130-195	.0063-.0091	130-195	.0079-.0118
P2	100-165	.0004-.0014	100-165	.0012-.0030	100-165	.0028-.0061	100-165	.0059-.0083	100-165	.0075-.0098
P3	—	—	—	—	—	—	—	—	—	—
M1	80-130	.0004-.0012	80-130	.0010-.0028	80-130	.0024-.0039	80-130	.0035-.0055	80-130	.0047-.0079
M2	—	—	—	—	—	—	—	—	—	—
K1	195-330	.0008-.0020	195-330	.0016-.0035	195-330	.0031-.0071	195-330	.0063-.0110	195-330	.0098-.0138
K2	130-260	.0006-.0016	130-260	.0014-.0031	130-260	.0028-.0067	130-260	.0059-.0091	130-260	.0083-.0118
N1	—	—	—	—	—	—	—	—	—	—
N2	260-395	.0008-.0024	260-395	.0020-.0047	260-395	.0039-.0091	260-395	.0083-.0134	260-395	.0130-.0177
N3	195-330	.0008-.0024	195-330	.0020-.0047	195-330	.0039-.0091	195-330	.0083-.0134	195-330	.0130-.0177
N4										
N5										
N6	—	—	—	—	—	—	—	—	—	—
N7										
N8										
S1	100-165	.0004-.0012	100-165	.0010-.0028	100-165	.0024-.0051	100-165	.0039-.0063	100-165	.0059-.0079
S2	—	—	—	—	—	—	—	—	—	—
H1										
H2	—	—	—	—	—	—	—	—	—	—
H3										
O1										
O2	—	—	—	—	—	—	—	—	—	—
O3										

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$





End Mill ø3mm Shank 3xd

Art. 42000Pg. 136



Chamfering Mill 90°

Art. 73000Pg. 137



Engraving Mill 30°, 40°, 50°, 60° & 90° Flat Tip

Art. 70030, 70040, 70050, 70060 & 70090Pg. 138-139



Engraving Mill 30°, 40°, 50°, 60° & 90° Radius Tip

Art. 70130, 70140, 70150, 70160 & 70190Pg. 140-141

Cutting Data

Art. 42000Pg. 142

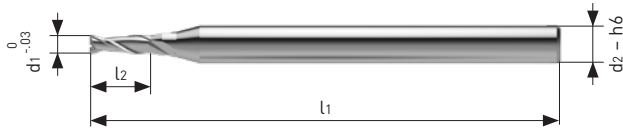
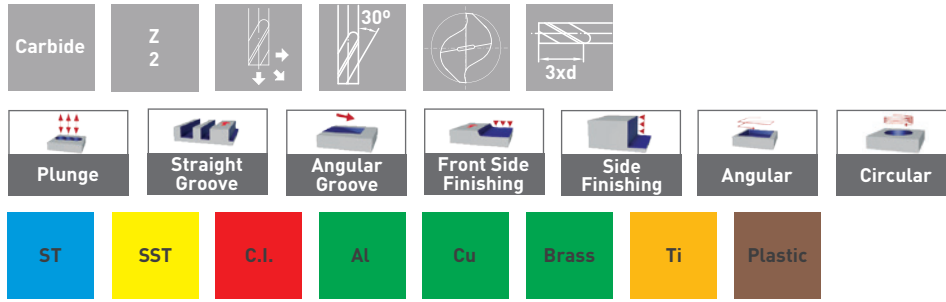
Art. 73000Pg. 143

Art. 70030, 70040, 70050, 70060, 70090, 70130, 70140, 70150, 70160 & 70190Pg. 144

MICRO END MILLS

END MILL Ø3MM SHANK 3XD — ART. 42000

Art. 42000



※ All dimensions are millimeters unless otherwise noted

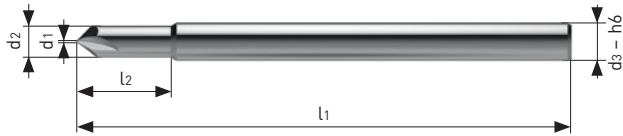
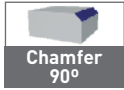
d1	d1 (in.)	l2	l1	d2	Catalog Number
.10	.0039	.30	38	3.00	40.42000.0010
.15	.0059	.45	38	3.00	40.42000.0015
.20	.0079	.60	38	3.00	40.42000.0020
.25	.0098	.75	38	3.00	40.42000.0025
.30	.0118	.90	38	3.00	40.42000.0030
.35	.0138	1.05	38	3.00	40.42000.0035
.40	.0157	1.20	38	3.00	40.42000.0040
.45	.0177	1.35	38	3.00	40.42000.0045
.50	.0197	1.50	38	3.00	40.42000.0050
.55	.0217	1.65	38	3.00	40.42000.0055
.60	.0236	1.80	38	3.00	40.42000.0060
.65	.0256	1.95	38	3.00	40.42000.0065
.70	.0276	2.10	38	3.00	40.42000.0070
.75	.0295	2.25	38	3.00	40.42000.0075
.80	.0315	2.40	38	3.00	40.42000.0080
.85	.0335	2.55	38	3.00	40.42000.0085
.90	.0354	2.70	38	3.00	40.42000.0090
.95	.0374	2.85	38	3.00	40.42000.0095
1.00	.0394	3.00	38	3.00	40.42000.0100
1.05	.0413	3.10	38	3.00	40.42000.0105
1.10	.0433	3.30	38	3.00	40.42000.0110
1.15	.0453	3.40	38	3.00	40.42000.0115
1.20	.0472	3.60	38	3.00	40.42000.0120
1.25	.0492	3.70	38	3.00	40.42000.0125
1.30	.0512	3.90	38	3.00	40.42000.0130

d1	d1 (in.)	l2	l1	d2	Catalog Number
1.35	.0531	4.00	38	3.00	40.42000.0135
1.40	.0551	4.20	38	3.00	40.42000.0140
1.45	.0571	4.30	38	3.00	40.42000.0145
1.50	.0591	4.50	38	3.00	40.42000.0150
1.55	.0610	4.60	38	3.00	40.42000.0155
1.60	.0630	4.80	38	3.00	40.42000.0160
1.65	.0650	4.90	38	3.00	40.42000.0165
1.70	.0669	5.10	38	3.00	40.42000.0170
1.75	.0689	5.20	38	3.00	40.42000.0175
1.80	.0709	5.40	38	3.00	40.42000.0180
1.85	.0728	5.50	38	3.00	40.42000.0185
1.90	.0748	5.70	38	3.00	40.42000.0190
1.95	.0768	5.80	38	3.00	40.42000.0195
2.00	.0787	6.00	38	3.00	40.42000.0200
2.10	.0827	6.30	38	3.00	40.42000.0210
2.20	.0866	6.60	38	3.00	40.42000.0220
2.30	.0906	6.90	38	3.00	40.42000.0230
2.40	.0945	7.20	38	3.00	40.42000.0240
2.50	.0984	7.50	38	3.00	40.42000.0250
2.60	.1024	7.80	38	3.00	40.42000.0260
2.70	.1063	8.10	38	3.00	40.42000.0270
2.80	.1102	8.40	38	3.00	40.42000.0280
2.90	.1142	8.70	38	3.00	40.42000.0290
3.00	.1181	9.00	38	3.00	40.42000.0300

MICRO END MILLS

CHAMFERING MILL 90° — ART. 73000

Art. 73000



※ All dimensions are millimeters unless otherwise noted

d1	d2	d2 (in.)	l2	l1	d3	z	Catalog Number
.10	.50	.0197	3.00	39	3.00	3	40.73000.0050
.10	1.00	.0394	3.00	39	3.00	3	40.73000.0100
.10	1.50	.0591	4.50	39	3.00	3	40.73000.0150
.10	2.00	.0787	6.00	39	3.00	3	40.73000.0200
.10	2.50	.0984	7.50	39	3.00	3	40.73000.0250
.10	3.00	.1181	7.50	39	3.00	3	40.73000.0300
.70	6.00	.2362	—	50	6.00	4	40.73000.0600
1.20	8.00	.3150	—	60	8.00	4	40.73000.0800

**MICRO END MILLS — ENGRAVING MILL 30°-90°
FLAT TIP — ART. 70030-70090**

Art. 70030

Carbide	Z 1				
ST	SST	C.I.	Al	Cu	
Brass	Mg	Ti	Plastic		

Art. 70040

Carbide	Z 1				
ST	SST	C.I.	Al	Cu	
Brass	Mg	Ti	Plastic		

Art. 70050

Carbide	Z 1				
ST	SST	C.I.	Al	Cu	
Brass	Mg	Ti	Plastic		

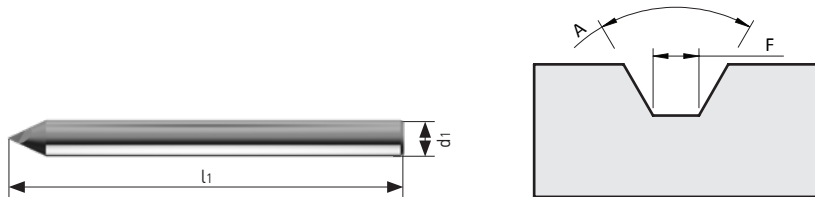
Art. 70060

Carbide	Z 1				
ST	SST	C.I.	Al	Cu	
Brass	Mg	Ti	Plastic		

Art. 70090

Carbide	Z 1				
ST	SST	C.I.	Al	Cu	
Brass	Mg	Ti	Plastic		

MICRO END MILLS — ENGRAVING MILL 30°-90° FLAT TIP — ART. 70030-70090



※ All dimensions are millimeters unless otherwise noted

Point Angle A	Flat Width		L1	d1	Catalog Number
	F	F (in.)			
30°	.02	.0008	33	3.00	40.70030.0002
	.03	.0012	33	3.00	40.70030.0003
	.04	.0016	33	3.00	40.70030.0004
	.05	.0020	33	3.00	40.70030.0005
	.06	.0024	33	3.00	40.70030.0006
	.07	.0028	33	3.00	40.70030.0007
	.08	.0031	33	3.00	40.70030.0008
	.09	.0035	33	3.00	40.70030.0009
	.10	.0039	33	3.00	40.70030.0010
	.12	.0047	33	3.00	40.70030.0012
	.15	.0059	33	3.00	40.70030.0015
40°	.02	.0008	33	3.00	40.70040.0002
	.03	.0012	33	3.00	40.70040.0003
	.04	.0016	33	3.00	40.70040.0004
	.05	.0020	33	3.00	40.70040.0005
	.06	.0024	33	3.00	40.70040.0006
	.07	.0028	33	3.00	40.70040.0007
	.08	.0031	33	3.00	40.70040.0008
	.09	.0035	33	3.00	40.70040.0009
	.10	.0039	33	3.00	40.70040.0010
	.12	.0047	33	3.00	40.70040.0012
	.15	.0059	33	3.00	40.70040.0015
50°	.02	.0008	33	3.00	40.70050.0002
	.03	.0012	33	3.00	40.70050.0003
	.04	.0016	33	3.00	40.70050.0004
	.05	.0020	33	3.00	40.70050.0005
	.06	.0024	33	3.00	40.70050.0006
	.07	.0028	33	3.00	40.70050.0007
	.08	.0031	33	3.00	40.70050.0008
	.09	.0035	33	3.00	40.70050.0009
	.10	.0039	33	3.00	40.70050.0010
	.12	.0047	33	3.00	40.70050.0012
	.15	.0059	33	3.00	40.70050.0015

Point Angle A	Flat Width		L1	d1	Catalog Number
	F	F (in.)			
60°	.02	.0008	33	3.00	40.70060.0002
	.03	.0012	33	3.00	40.70060.0003
	.04	.0016	33	3.00	40.70060.0004
	.05	.0020	33	3.00	40.70060.0005
	.06	.0024	33	3.00	40.70060.0006
	.07	.0028	33	3.00	40.70060.0007
	.08	.0031	33	3.00	40.70060.0008
	.09	.0035	33	3.00	40.70060.0009
	.10	.0039	33	3.00	40.70060.0010
	.12	.0047	33	3.00	40.70060.0012
	.15	.0059	33	3.00	40.70060.0015
90°	.02	.0008	33	3.00	40.70090.0002
	.03	.0012	33	3.00	40.70090.0003
	.04	.0016	33	3.00	40.70090.0004
	.05	.0020	33	3.00	40.70090.0005
	.06	.0024	33	3.00	40.70090.0006
	.07	.0028	33	3.00	40.70090.0007
	.08	.0031	33	3.00	40.70090.0008
	.09	.0035	33	3.00	40.70090.0009
	.10	.0039	33	3.00	40.70090.0010
	.12	.0047	33	3.00	40.70090.0012
	.15	.0059	33	3.00	40.70090.0015

**MICRO END MILLS — ENGRAVING MILL 30°-90°
RADIUS TIP — ART. 70130-70190**

Art. 70130

Carbide	Z 1				
ST	SST	C.I.	Al	Cu	
Brass	Mg	Ti	Plastic		

Art. 70140

Carbide	Z 1				
ST	SST	C.I.	Al	Cu	
Brass	Mg	Ti	Plastic		

Art. 70150

Carbide	Z 1				
ST	SST	C.I.	Al	Cu	
Brass	Mg	Ti	Plastic		

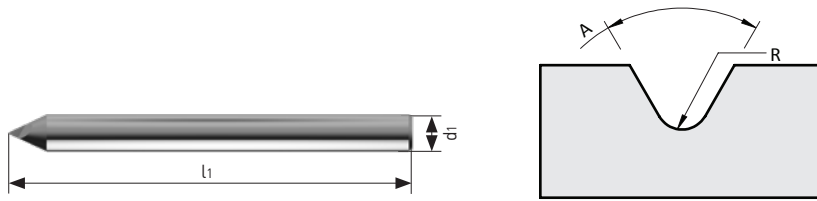
Art. 70160

Carbide	Z 1				
ST	SST	C.I.	Al	Cu	
Brass	Mg	Ti	Plastic		

Art. 70190

Carbide	Z 1				
ST	SST	C.I.	Al	Cu	
Brass	Mg	Ti	Plastic		

MICRO END MILLS — ENGRAVING MILL 30°-90° RADIUS TIP — ART. 70130-70190



※ All dimensions are millimeters unless otherwise noted

Point Angle A	Radius		L1	d1	Catalog Number
	R	R (in.)			
30°	.04	.0016	33	3.00	40.70130.0004
	.05	.0020	33	3.00	40.70130.0005
	.06	.0024	33	3.00	40.70130.0006
	.07	.0028	33	3.00	40.70130.0007
	.08	.0031	33	3.00	40.70130.0008
	.09	.0035	33	3.00	40.70130.0009
	.10	.0039	33	3.00	40.70130.0010
40°	.04	.0016	33	3.00	40.70140.0004
	.05	.0020	33	3.00	40.70140.0005
	.06	.0024	33	3.00	40.70140.0006
	.07	.0028	33	3.00	40.70140.0007
	.08	.0031	33	3.00	40.70140.0008
	.09	.0035	33	3.00	40.70140.0009
	.10	.0039	33	3.00	40.70140.0010
50°	.04	.0016	33	3.00	40.70150.0004
	.05	.0020	33	3.00	40.70150.0005
	.06	.0024	33	3.00	40.70150.0006
	.07	.0028	33	3.00	40.70150.0007
	.08	.0031	33	3.00	40.70150.0008
	.09	.0035	33	3.00	40.70150.0009
	.10	.0039	33	3.00	40.70150.0010
60°	.04	.0016	33	3.00	40.70160.0004
	.05	.0020	33	3.00	40.70160.0005
	.06	.0024	33	3.00	40.70160.0006
	.07	.0028	33	3.00	40.70160.0007
	.08	.0031	33	3.00	40.70160.0008
	.09	.0035	33	3.00	40.70160.0009
	.10	.0039	33	3.00	40.70160.0010
90°	.04	.0016	33	3.00	40.70190.0004
	.05	.0020	33	3.00	40.70190.0005
	.06	.0024	33	3.00	40.70190.0006
	.07	.0028	33	3.00	40.70190.0007
	.08	.0031	33	3.00	40.70190.0008
	.09	.0035	33	3.00	40.70190.0009
	.10	.0039	33	3.00	40.70190.0010



MICRO END MILLS CUTTING DATA

END MILL 3XD Ø3MM SHANK

Art. 42000						
Material	ø.10-.30mm		ø.40-1.50mm		ø1.50-3.00mm	
	Speed (SFM)	Feed (IPT)	Speed (SFM)	Feed (IPT)	Speed (SFM)	Feed (IPT)
P1	195-260	.00005-.00020	195-260	.00015-.00080	195-260	.00070-.00155
P2	165-230	.00005-.00020	165-230	.00015-.00080	165-230	.00070-.00155
P3	130-195	.00005-.00015	130-195	.00010-.00080	130-195	.00060-.00140
M1	100-165	.00005-.00015	100-165	.00010-.00080	100-165	.00060-.00140
M2	80-130	.00005-.00015	80-130	.00010-.00065	80-130	.00055-.00110
K1	130-230	.00005-.00020	130-230	.00015-.00080	130-230	.00070-.00155
K2	100-195	.00005-.00015	100-195	.00010-.00080	100-195	.00060-.00140
N1	230-330	.00005-.00015	230-330	.00010-.00080	230-330	.00060-.00140
N2	260-395	.00005-.00020	260-395	.00015-.00080	260-395	.00070-.00155
N3	195-330	.00005-.00020	195-330	.00015-.00080	195-330	.00070-.00155
N4	—	—	—	—	—	—
N5	130-260	.00005-.00020	130-260	.00015-.00080	130-260	.00070-.00155
N6	80-165	.00005-.00015	80-165	.00010-.00080	80-165	.00060-.00140
N7	—	—	—	—	—	—
N8	—	—	—	—	—	—
S1	80-165	.00005-.00010	80-165	.00010-.00060	80-165	.00045-.00120
S2	—	—	—	—	—	—
H1	—	—	—	—	—	—
H2	—	—	—	—	—	—
H3	—	—	—	—	—	—
O1	260-395	.00005-.00025	260-395	.00020-.00100	260-395	.00080-.00175
O2	—	—	—	—	—	—
O3	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO END MILLS CUTTING DATA

CHAMFERING MILL 90°

Art. 73000						
Material	ø.50-1.50mm		ø2.00-3.00mm		ø6.00-8.00mm	
	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
P1	230-395	.0002-.0006	230-395	.0006-.0012	230-395	.0020-.0047
P2	195-330	.0001-.0005	195-330	.0005-.0010	195-330	.0018-.0039
P3	130-260	.0001-.0005	130-260	.0005-.0009	130-260	.0016-.0035
M1	130-260	.0001-.0005	130-260	.0003-.0008	130-260	.0012-.0031
M2	100-230	.0001-.0004	100-230	.0003-.016	100-230	.0001-.0028
K1	395-490	.0002-.0006	395-490	.0006-.0012	395-490	.0020-.0047
K2	330-425	.0001-.0005	330-425	.0005-.0010	330-425	.008-.0039
N1	490-655	.0002-.0007	490-655	.0007-.0014	490-655	.0024-.0059
N2	490-655	.0002-.0007	490-655	.0007-.0014	490-655	.0024-.0059
N3	490-655	.0002-.0006	490-655	.0006-.0012	490-655	.0020-.0047
N4	490-655	.0002-.0007	490-655	.0007-.0014	490-655	.0024-.0059
N5	490-655	.0002-.0007	490-655	.0007-.0014	490-655	.0024-.0059
N6	—	—	—	—	—	—
N7	260-395	.0002-.0007	260-395	.0007-.0014	260-395	.0024-.0059
N8	260-395	.0002-.0007	260-395	.0007-.0014	260-395	.0024-.0059
S1	130-230	.0001-.0005	130-230	.0005-.0009	130-230	.0016-.0035
S2	—	—	—	—	—	—
H1	—	—	—	—	—	—
H2	—	—	—	—	—	—
H3	—	—	—	—	—	—
O1	—	—	—	—	—	—
O2	—	—	—	—	—	—
O3	—	—	—	—	—	—

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$\text{RPM} = \frac{\text{SFM} \times 97}{\text{Drill } \phi \text{ (mm)}}$$

Feed Rate:

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

MICRO END MILLS CUTTING DATA

ENGRAVING MILL 30°-90°, FLAT TIP & RADIUS TIP

Art. 70030-70090/70130-70190		
Material	Speed (SFM)	Feed (IPM)
P1	590-920	3.15-7.10
P2	590-920	2.75-6.30
P3	590-920	2.75-5.90
M1	590-920	2.75-5.90
M2	590-920	2.75-5.90
K1	590-920	3.15-7.10
K2	590-920	2.75-6.30
N1	590-920	2.35-5.50
N2	590-920	3.15-7.10
N3	590-920	2.75-6.30
N4	590-920	2.35-4.70
N5	590-920	3.15-7.90
N6	590-920	2.35-5.90
N7	590-920	3.15-7.90
N8	590-920	3.15-7.90
S1	590-920	1.95-4.70
S2	—	—
H1		
H2	—	—
H3		
O1	590-920	3.15-7.90
O2	—	—
O3		

- All cutting data without guarantee
- Material descriptions on Pg. 159

Cutting Speed:

$$RPM = \frac{SFM \times 97}{\text{Drill } \varnothing \text{ (mm)}}$$

Feed Rate:

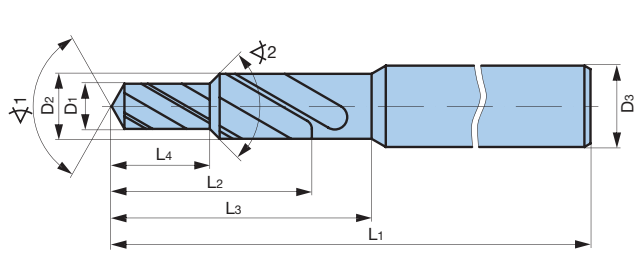
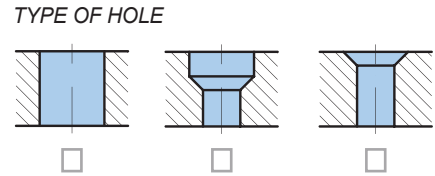
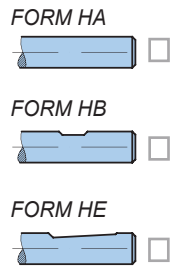
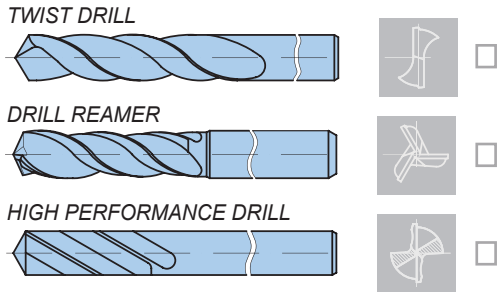
$$IPM = RPM \times IPR$$



CONTACT INFORMATION

NAME: _____ COMPANY: _____
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP: _____
 EMAIL: _____ PHONE: _____ FAX: _____

HOLE INFORMATION



INCH MM

D1 = _____ TOL. = _____ $\angle 1$ _____
 D2 = _____ TOL. = _____ $\angle 2$ _____
 D3 = _____ TOL. = _____
 L1 = _____ L3 = _____
 L2 = _____ L4 = _____

BASED ON CURRENT SPHINX ART. # _____

COOLANT: WITH INTERNAL COOLANT WITHOUT INTERNAL COOLANT

MATERIAL TO BE CUT: _____

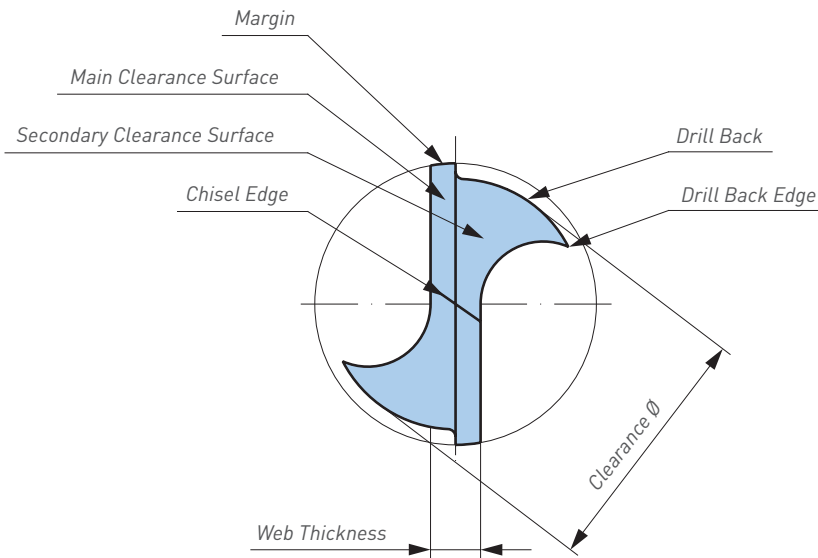
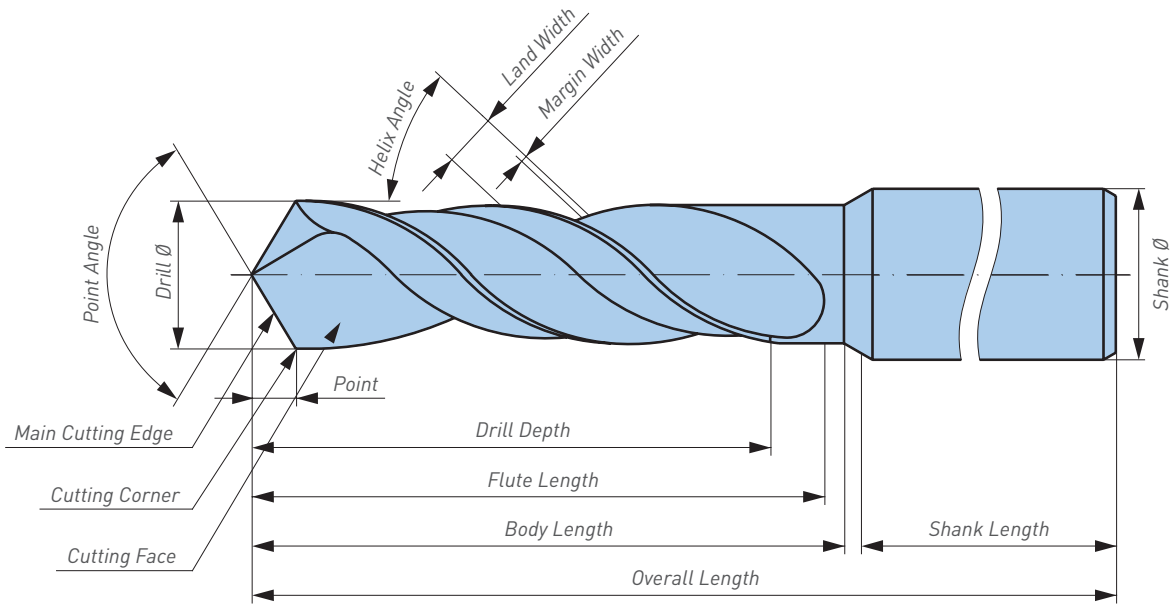
DIRECTION OF CUTTING: RIGHT HAND LEFT HAND

COATING: _____ WITHOUT

QUANTITY: _____ REQUIRED DELIVERY TIME: _____ WEEKS

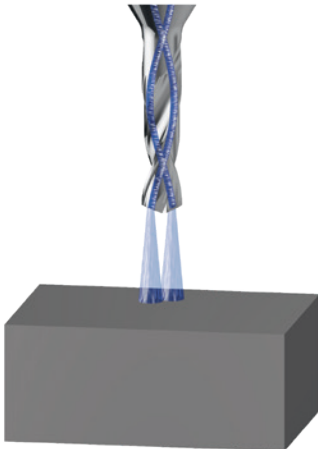
MACHINE INFO (MAKE, MODEL, TOOL HOLDER):

REMARKS:

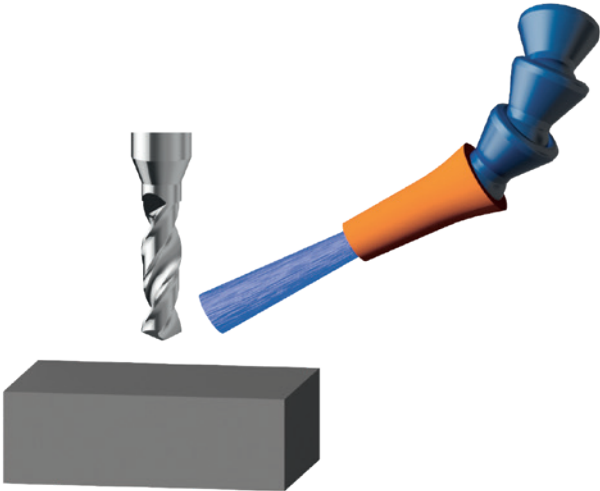


Coolant

Internal Coolant



External Coolant



≤5xd min. 150 PSI
>6xd min. 300 PSI

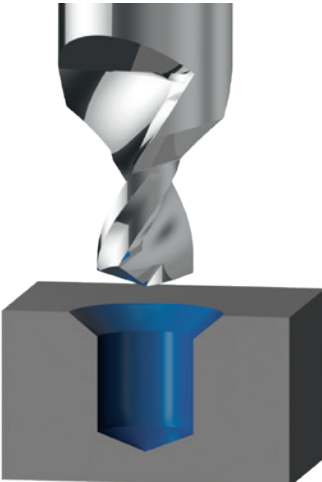


Spot Drilling

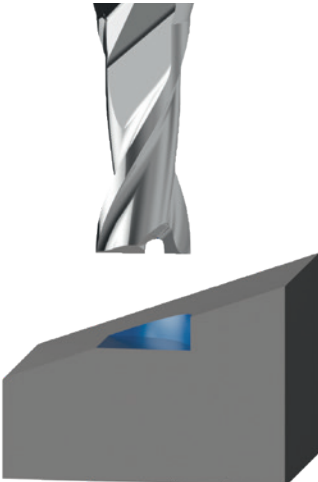
Centering



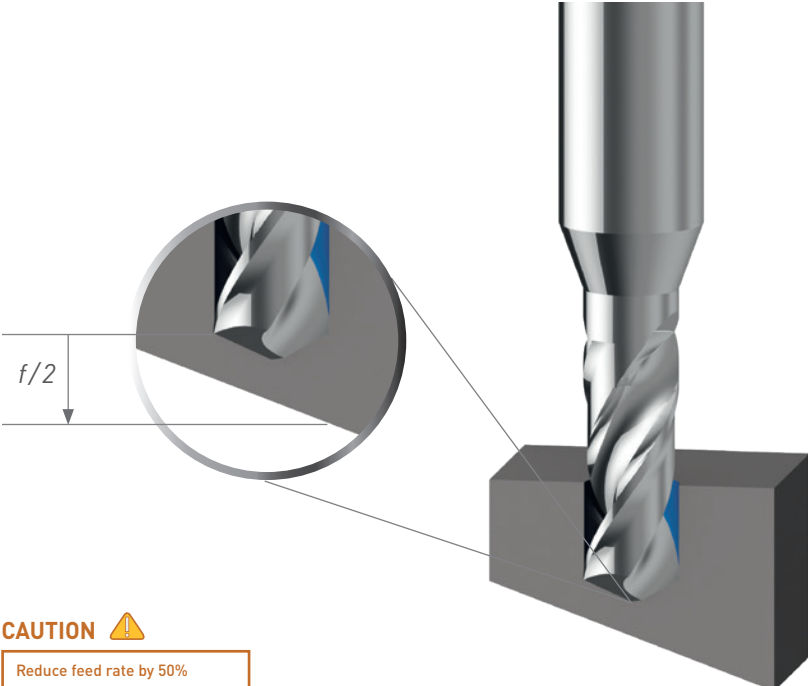
Pilot Hole



Milling a Flat

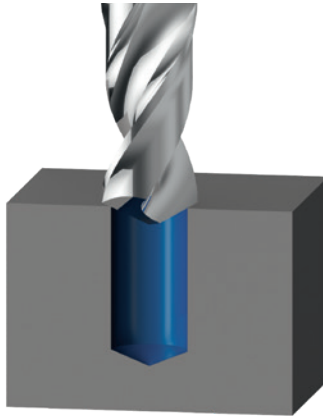
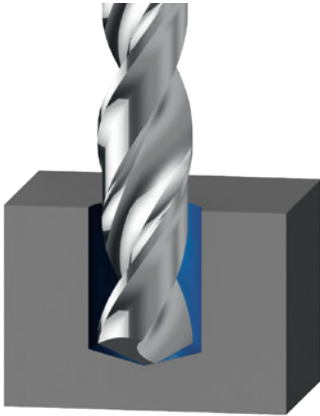


Drill Exit in an Inclined Surface

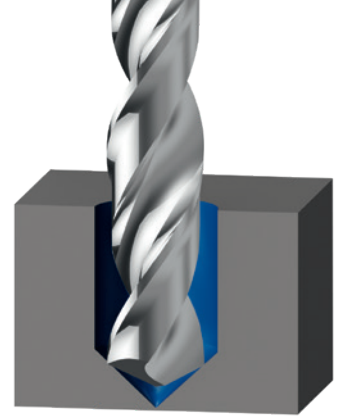


CAUTION ⚠
Reduce feed rate by 50%

Pilot Drilling (Subsequent tool shown, not pilot tool)

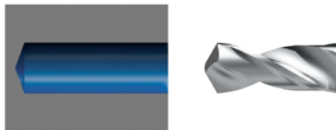
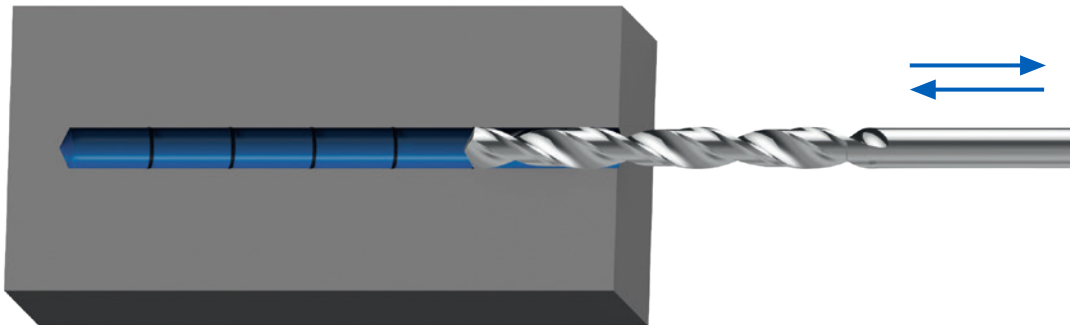


• Pilot diameter too small

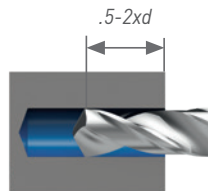


• Pilot point angle too small

Pecking Cycle

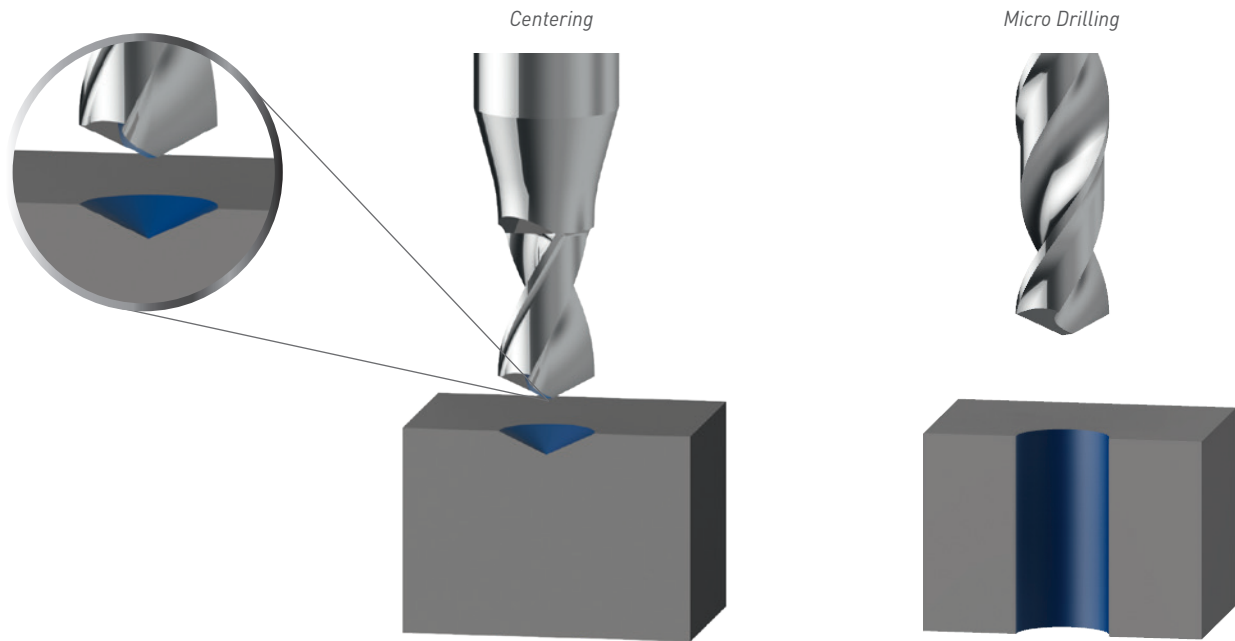


• No Pecking Cycle

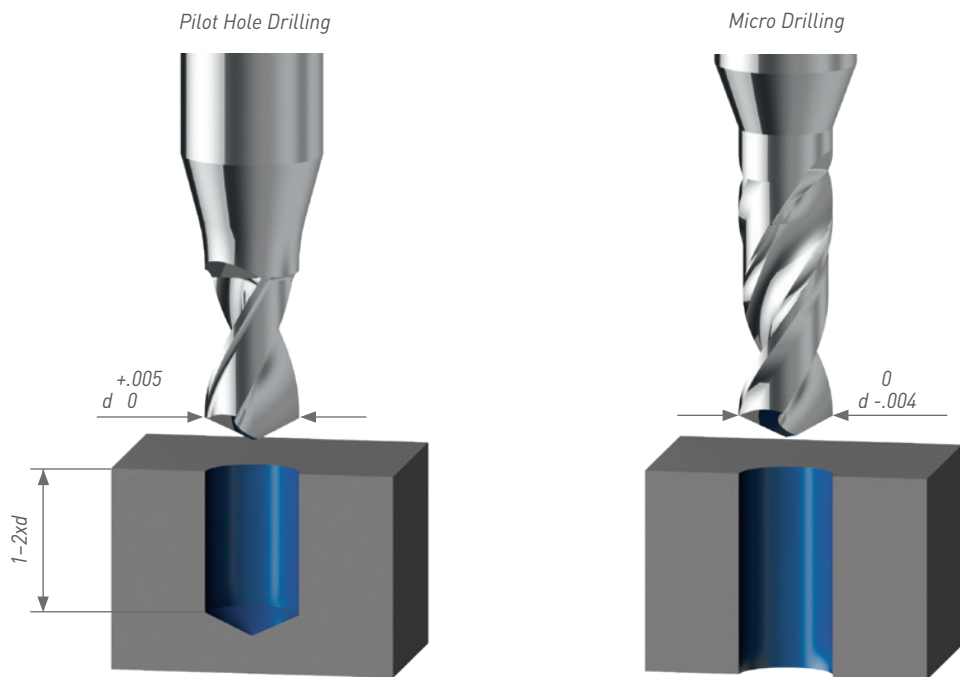
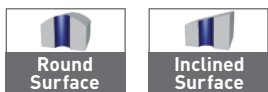


• Pecking $.5-2xd$

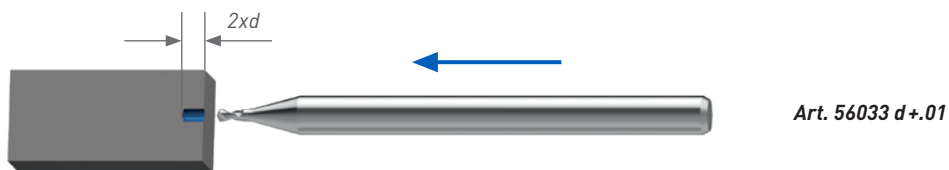
Centering $\leq 6xd$



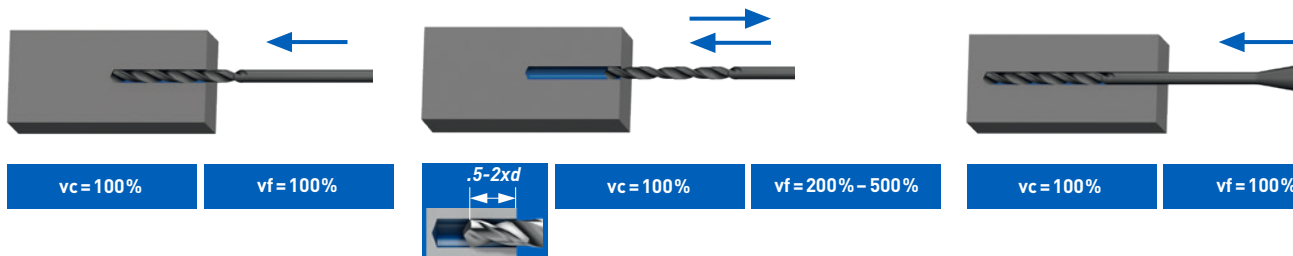
Pilot Hole drilling $\geq 6xd$



Micro Deep Hole Drilling — Art. 50720



n = Max 500 RPM **vf = 25% - 50%**



vc = 100% **vf = 200% - 500%**



n = Max 500 RPM **vf = Max**

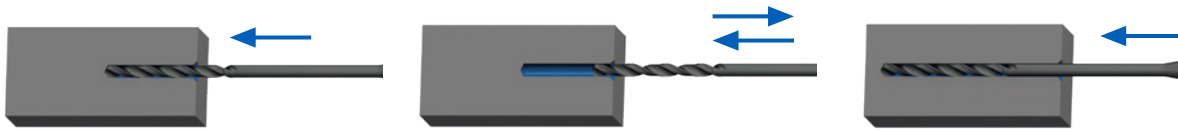
Micro Deep Hole Drilling — Art. 50740/50760/50780




Art. 56036 d+.01



n = Max 500 RPM vf = 25% - 50%



vc = 100% vf = 100%  vc = 100% vf = 200% - 500% vc = 100% vf = 100%



vc = 100% vf = 200% - 500%



n = Max 500 RPM vf = Max

Centering $\leq 9\text{xd}$ — Art. 50810/50812/50814/50818

Without Centering



- Smooth entering surface

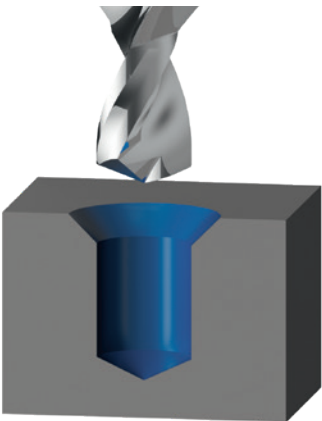
Center Drilling



- Rough or uneven entering surface

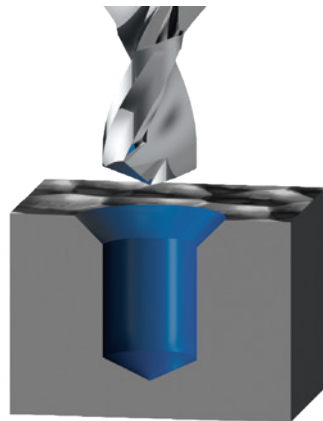
Pilot Hole Drilling $> 9\text{xd}$ — Art. 56036/50950

Pilot Hole Drilling



- Smooth entering surface

Pilot Hole Drilling

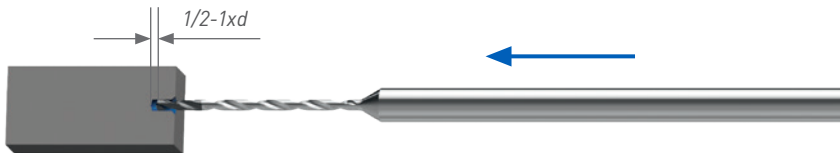


- Rough or uneven entering surface

Drilling Strategy >9xd



Art. 56036



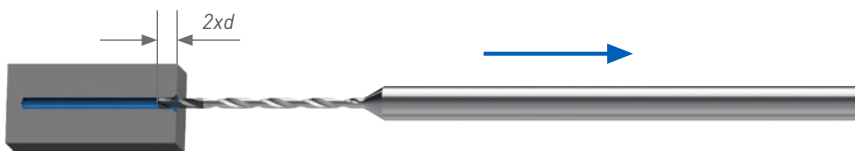
n = Max 500 RPM vf = 25% - 50%



vc = 100% → start vf vc = 100% vf = 100%



vc = 100% vf = 100%



vc = 100% vf = 200% - 500%



n = Max 500 RPM vf = Max

HOLE TOLERANCE CHART

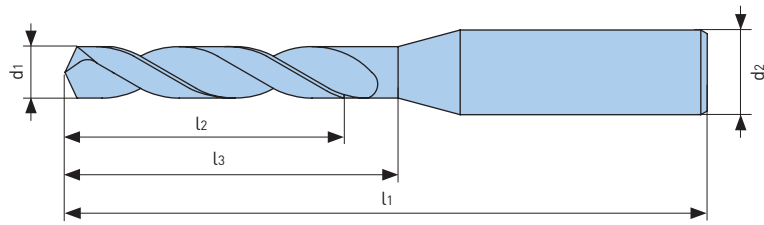
※ All dimensions are millimeters unless otherwise noted

Hole Dia. (Ø)	Tolerance (Upper Limit/Lower Limit)								
	H1	H2	H3	H4	H5	H6	H7	H8	H9
Ø ≤ 3	+0.008	+0.012	+0.002	+0.003	+0.004	+0.006	+0.010	+0.014	+0.025
	0	0	0	0	0	0	0	0	0
3 < Ø ≤ 6	+0.001	+0.0015	+0.0025	+0.004	+0.005	+0.008	+0.012	+0.018	+0.030
	0	0	0	0	0	0	0	0	0
6 < Ø ≤ 10	+0.001	+0.0015	+0.0025	+0.004	+0.006	+0.009	+0.015	+0.022	+0.036
	0	0	0	0	0	0	0	0	0
10 < Ø ≤ 18	+0.0012	+0.002	+0.003	+0.005	+0.008	+0.011	+0.018	+0.027	+0.043
	0	0	0	0	0	0	0	0	0
18 < Ø ≤ 30	+0.0015	+0.0025	+0.004	+0.006	+0.009	+0.013	+0.021	+0.033	+0.052
	0	0	0	0	0	0	0	0	0
30 < Ø ≤ 50	+0.0015	+0.0025	+0.004	+0.007	+0.011	+0.016	+0.025	+0.039	+0.062
	0	0	0	0	0	0	0	0	0
50 < Ø ≤ 80	+0.002	+0.003	+0.005	+0.008	+0.013	+0.019	+0.030	+0.046	+0.074
	0	0	0	0	0	0	0	0	0
80 < Ø ≤ 120	+0.0025	+0.004	+0.006	+0.010	+0.015	+0.022	+0.035	+0.054	+0.087
	0	0	0	0	0	0	0	0	0
120 < Ø ≤ 180	+0.0035	+0.005	+0.008	+0.012	+0.018	+0.025	+0.040	+0.063	+0.100
	0	0	0	0	0	0	0	0	0
180 < Ø ≤ 250	+0.0045	+0.007	+0.010	+0.014	+0.020	+0.029	+0.046	+0.072	+0.115
	0	0	0	0	0	0	0	0	0
250 < Ø ≤ 315	+0.006	+0.008	+0.012	+0.016	+0.023	+0.032	+0.052	+0.081	+0.130
	0	0	0	0	0	0	0	0	0
315 < Ø ≤ 400	+0.007	+0.009	+0.013	+0.018	+0.025	+0.036	+0.057	+0.089	+0.140
	0	0	0	0	0	0	0	0	0
400 < Ø ≤ 500	+0.008	+0.010	+0.015	+0.020	+0.027	+0.040	+0.063	+0.097	+0.155
	0	0	0	0	0	0	0	0	0

※ All dimensions are millimeters unless otherwise noted

Shaft Dia. (∅)	Tolerance (Upper Limit/Lower Limit)								
	h1	h2	h3	h4	h5	h6	h7	h8	h9
∅≤3	0	0	0	0	0	0	0	0	0
	-0.008	-0.012	-0.02	-0.03	-0.04	-0.06	-0.10	-0.14	-0.25
3<∅≤6	0	0	0	0	0	0	0	0	0
	-0.01	-0.015	-0.025	-0.04	-0.05	-0.08	-0.12	-0.18	-0.30
6<∅≤10	0	0	0	0	0	0	0	0	0
	-0.01	-0.015	-0.025	-0.04	-0.06	-0.09	-0.15	-0.22	-0.36
10<∅≤18	0	0	0	0	0	0	0	0	0
	-0.012	-0.02	-0.03	-0.05	-0.08	-0.11	-0.18	-0.27	-0.43
18<∅≤30	0	0	0	0	0	0	0	0	0
	-0.015	-0.025	-0.04	-0.06	-0.09	-0.13	-0.21	-0.33	-0.52
30<∅≤50	0	0	0	0	0	0	0	0	0
	-0.015	-0.025	-0.04	-0.07	-0.11	-0.16	-0.25	-0.39	-0.62
50<∅≤80	0	0	0	0	0	0	0	0	0
	-0.02	-0.03	-0.05	-0.08	-0.13	-0.19	-0.30	-0.46	-0.74
80<∅≤120	0	0	0	0	0	0	0	0	0
	-0.025	-0.04	-0.06	-0.10	-0.15	-0.22	-0.35	-0.54	-0.87
120<∅≤180	0	0	0	0	0	0	0	0	0
	-0.035	-0.05	-0.08	-0.12	-0.18	-0.25	-0.40	-0.63	-1.00
180<∅≤250	0	0	0	0	0	0	0	0	0
	-0.045	-0.07	-0.10	-0.14	-0.20	-0.29	-0.46	-0.72	-1.15
250<∅≤315	0	0	0	0	0	0	0	0	0
	-0.06	-0.08	-0.12	-0.16	-0.23	-0.32	-0.52	-0.81	-1.30
315<∅≤400	0	0	0	0	0	0	0	0	0
	-0.07	-0.09	-0.13	-0.18	-0.25	-0.36	-0.57	-0.89	-1.40
400<∅≤500	0	0	0	0	0	0	0	0	0
	-0.08	-0.10	-0.15	-0.20	-0.27	-0.40	-0.63	-0.97	-1.55

Drill Dimensions



d_1 = Drill Diameter
 d_2 = Shank Diameter
 l_1 = Overall Length
 l_2 = Drill Depth
 l_3 = Body Length

Drill Material

HSS	Carbide
High Speed Steel w/ 8% Cobalt	Solid Carbide

Drill Geometry

Drill Point Angle	Helix Angle	Length-to-Dia. Ratio	Achievable Hole Tolerance

Workpiece Material

ST Steel Alloys	SST Stainless Steel Alloys	C.I. Ductile & Grey Cast Iron	Al Aluminum Alloys	Cu Copper	Bronze Bronze
Mg Magnesium	Ti Titanium & High Temp. Alloys	HST Hardened Steel	Plastic Plastic		

		Material	Example
P	P1	Unalloyed Steels/Steel Casting	St37, St42, C22, GS38, St50, St60, C35, GS52
	P2	Alloyed Steels	St70, C45, GS62, 16MnCr5, 42CrMo4, 90MnCrV8, 100Cr6
	P3	High Alloyed/High-Grade Steels	S210Cr12, 34CrAlNi7
M	M1	Martensitische Ferritic/Martensitic Stainless Steels	—
	M2	Austenitic Stainless Steels	
K	K1	Grey Cast Iron	—
	K2	Spheroidal/Ductile Cast Iron	
N	N1	Malleable Aluminum Alloy	Al99.5, AlMg1, AlCuSiPb, G-AlCu5Ni1,5, AlZnMgCu0,5
	N2	Cast Aluminum Alloy <10% Si	G-AlCu4TiMg, G-ALSi7Mg, G-ALSi9Mg, G-ALSi10Mg, G-ALSi12
	N3	Cast Aluminum Alloy >10% Si	G-ALSi17Cu4, G-ALSi21CuNiMg
	N4	Magnesium/Magnesium Alloys	—
	N5	Copper Nickel Alloys, Brass	
	N6	Copper/Forging Copper Alloys	
	N7	Silver	
	N8	Gold	
S	S1	Titanium/ Titanium Alloys	Ti6Al4V, Ti-4Al-4Mo-2Sn
	S2	Ni/Co Based Super Alloys	—
H	H1	Hardened Steels 50-55 HRC	—
	H2	Hardened Steels 55-60 HRC	
	H3	Hardened Steels >60 HRC	
O	O1	Thermoplast/Thermosetting Plastics	—
	O2	Fiber-Reinforced Plastics	
	O3	Graphite	

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