GD series

Twist Drills for General Machining

Holemaking Tools

Drills
Reamers
Threading tools


ZSD
Indexable drill new series

Holemaking Tools

C

Drills	C2-C231
Solid carbide drills	C2-C176
Indexable drills	C177-C216
Interchangeable head drills	C217-C231
Reamers	C232-C243
Solid carbide reamers	C232-C243
Threading tools	C244-C272
Solid carbide taps	C250-C261
Solid carbide threading end mills	C262-C263
Recommended cutting parameters of solid carbide threading tools	C264
Technical information	C265-C270
Non-standard customization for solid carbide taps	C271
Non-standard customization for solid carbide thread milling cutters	C272

How to choose the right solid carbide drills

Shape

Size

Product category

ST series For machining of mild steel, stainless steel

- First choice for drilling mild steel and stainless steel.
- Sharp cutting edge can avoid build-up edge, suitable for drilling hole with high performance.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
3.0	3	Internal coolant	Straight shank	1534ST03C-0300	6	62	20	14	36	☆
	5			1536ST05C-0300	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0300	6	66	28	23	36	☆
3.1	3		Straight shank	1534ST03C-0310	6	62	20	14	36	☆
	5			1536ST05C-0310	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0310	6	66	28	23	36	☆
3.2	3		Straight shank	1534ST03C-0320	6	62	20	14	36	☆
	5			1536ST05C-0320	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0320	6	66	28	23	36	☆
3.25	3		Straight shank	1534ST03C-0325	6	62	20	14	36	☆
	5			1536ST05C-0325	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0325	6	66	28	23	36	☆
3.3	3		Straight shank	1534ST03C-0330	6	62	20	14	36	☆
	5			1536ST05C-0330	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0330	6	66	28	23	36	☆
3.4	3		Straight shank	1534ST03C-0340	6	62	20	14	36	☆
	5			1536ST05C-0340	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0340	6	66	28	23	36	☆
3.5	3		Straight shank	1534ST03C-0350	6	62	20	14	36	☆
	5			1536ST05C-0350	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0350	6	66	28	23	36	☆

☆:Recommended grade (produce according to order)

Applicable material table

●Very suitable ○Suitable

Grade	Workpiece material										
	Mild steel HB<180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
KDG303	●	○				●					○

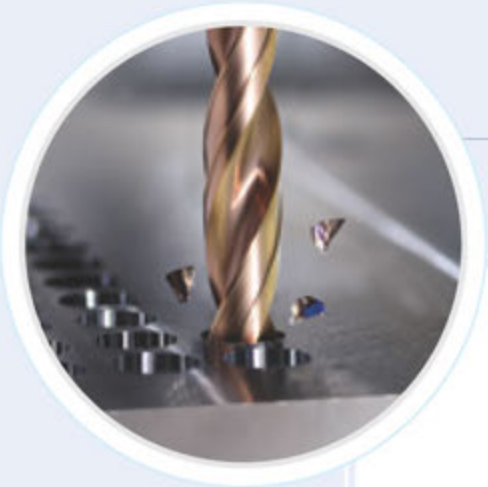
Code key C6 | Cutting parameters C160 | Technical information C165-C171 | Non-standard customization tools C172-C176

Applicable workpiece material range

Product features

Specifications
Type, depth of drilling, cooling system, type of shank, basic dimensions and grade.

Code key, cutting parameters, technical information, non-standard customization



HOLEMAKING TOOLS

C

Drills

Drilling tools overview C4

Solid carbide drills C5-C176

Grade introduction for solid carbide drills C5

Solid carbide drills code key C6

Solid carbide drills overview C9-C150

Recommended cutting parameters for solid carbide drills C151-C164

Technical information for solid carbide drills C165-C171

Non-standard customization tools C172-C176

Indexable drills C177-C216

Indexable drills code key C178

Indexable drills overview C181-C207

Indexable drills inserts code key C208-C209

Indexable drills inserts overview C210-C213

Technical information for indexable drills C214

Recommended cutting parameters for indexable drills C215-C216

Interchangeable head drills C217-C231

Interchangeable head drills code key C218

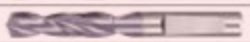
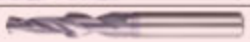
Interchangeable head drill tool holders overview C219-C223

Interchangeable head drills overview C224-C228

Technical information for interchangeable head drills C229-C230

Recommended cutting parameters for interchangeable head drills C231

Drilling tools overview

Application	Type of drills	Type	Shape of drills	Coolant mode	Diameter range	Workpiece material: P Soft steel	P Common steel	M Stainless steel	K Cast iron	N Non-ferrous metal	S Heat resistant alloy	H High hardness steel	Page: Specification	Page: Cutting parameters
General machining	Twist drill	GD03		External cooling	Ø2-Ø25	○	◎	○	◎	○	○		C9-C44	C151-C152
		GD03C		Internal cooling	Ø3-Ø25	○	◎	○	◎	○	○			
		GD05		External cooling	Ø2-Ø25	○	◎	○	◎	○	○			
		GD05C		Internal cooling	Ø3-Ø25	○	◎	○	◎	○	○			
		GD08C		Internal cooling	Ø3-Ø18	○	◎	○	◎	○	○			
	Twist drill	UD03		External cooling	Ø2-Ø25	◎	◎	◎	◎	○	○		C47-C82	C153-C158
		UD03C		Internal cooling	Ø3-Ø25	◎	◎	◎	◎	○	○			
		UD05		External cooling	Ø2-Ø25	◎	◎	◎	◎	○	○			
		UD05C		Internal cooling	Ø3-Ø25	◎	◎	◎	◎	○	○			
	Twist drill	1534SU03		External cooling	Ø2-Ø20	○	◎	○	◎	○	○		C84-C113	C155-C158
		1534SU03C		Internal cooling	Ø3-Ø20	○	◎	○	◎	○	○			
		1734SU03C		Internal cooling	Ø3-Ø20	○	◎	○	◎	○	○			
		1536SU05		External cooling	Ø2-Ø20	○	◎	○	◎	○	○			
		1536SU05C		Internal cooling	Ø3-Ø20	○	◎	○	◎	○	○			
		1736SU05C		Internal cooling	Ø3-Ø20	○	◎	○	◎	○	○			
		1538SU08C		Internal cooling	Ø3-Ø18	○	◎	○	◎	○	○			
	Twist drill	1557SU03		External cooling	Ø3.3-Ø14.5	○	◎	○	◎	○	○		C114	
Deep drilling	Twist drill	1588SL 12/20/30C		Internal cooling	Ø3-Ø20	○	◎	○	◎	○	○		C118-C121	C159
Guide hole drilling	Twist drill	1534SP		Internal cooling	Ø3-Ø14	○	◎	○	◎	○	○		C122-C123	C160
For soft steel, stainless steel	Twist drill	1534ST03C		Internal cooling	Ø3-Ø20	◎	○	◎			○		C125-C137	C160
		1536ST05C		Internal cooling	Ø3-Ø20	◎	○	◎			○			
		1736ST05C		Internal cooling	Ø3-Ø20	◎	○	◎			○			
For high hardness steel machining	Twist drill	1534SH03		External cooling	Ø3-Ø16							◎	C139	C161
For aluminum, cast iron	Twist drill	1105SC03		External cooling	Ø2-Ø16				◎	◎			C140-C143	C61
		1101SC05		External cooling	Ø2-Ø16				◎	◎				
	Three flute drill	1165PA03		External cooling	Ø3-Ø20			○	◎	◎	○		C144-C147	C162
	Straight flute drill	1576PC05		External cooling	Ø4-Ø20				◎	◎			C148-C149	C163
		1579PC15C		Internal cooling	Ø5-Ø14				◎	◎				
	Centering drill	1143SC90		External cooling	Ø5-Ø20				◎	◎			C150	C164
		1143SC120		External cooling	Ø5-Ø20				◎	◎				
Indexable drills series	Indexable drill	ZSD 02/03/04/05		Internal cooling	Ø12-Ø50	◎	◎	◎	◎	○	○		C181-C192	C215
		ZTD 02/03/04/05		Internal cooling	Ø13-Ø50	◎	◎	○	◎	○			C196-C199	C216
		ZD 02/03/04/05		Internal cooling	Ø16-Ø58	◎	◎	○	◎	○			C200-C207	C216
Interchangeable head drills drilling series	Interchange-able head drills	ZTK 015/03/04/ 05/08		Internal cooling	Ø12-Ø25	○	◎	○	◎	◎			C219-C223	C231

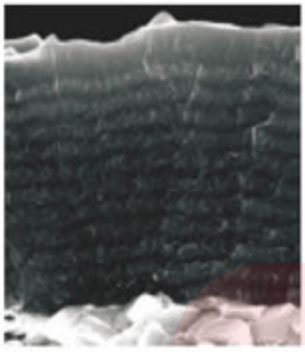
◎ Very suitable ○ Suitable

Grade introduction of solid carbide drills

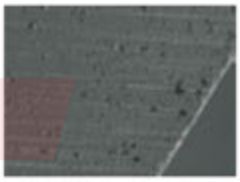
Coated grade

KDG3013

New AlCrN substrate composite coating, with excellent wear resistance and bonding resistance, improves the stability of the insert edge.
Unique coating post-treatment technology effectively reduces the cutting resistance for smoother chip evacuation and higher security.

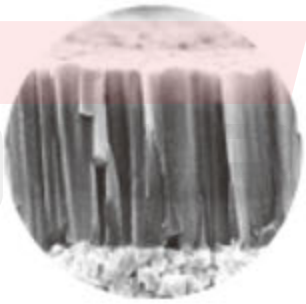

AlCrN substrate composite coating


KDG3013


Conventional coating

KDG303

Ultra-fine carbide substrate with high strength, toughness and wear resistance, in combination with nano-structured nc-TiAlN coating aiming at optimizing drilling operations, makes sure the tools have very high toughness and hardness. Unique coating technology gives the tools smooth surface and excellent wear resistance, and outstanding thermal stability and chemical stability provide effective protection for the cutting edge.


Common TiAlN coating


nc-TiAlN coating

Uncoated grade

YK20F

Ultra-fine grain carbide substrate with high hardness, outstanding wear resistance, and long tool life.

YK30F

Ultra-fine carbide substrate with high strength, toughness and wear resistance gives the cutting edge perfect strength.

Solid carbide drills code key

Type to tool
- GD ▶ Twist Drills for General Machining
- UD ▶ Twist Drills for General Machining

Mode of cooling
- C ▶ Intrnal cooling
- Default ▶ External cooling

Type of shank
- S ▶ slim shank
- Default ▶ meet DIN6535HA standard

GD 03 C -0600 S

Length code
- 03 ▶ 3d
- 05 ▶ 5d
- 08 ▶ 8d

Specification
- 0600 ▶ Nominal diameter

Code	Description
1	As per DIN338
2	As per DIN1897
3	As per QJ/ZZQ(TO)01.001.002
4	As per DIN6537K
5	As per DIN6537K
6	As per DIN6537K
7	As per the rule ZZC-C in QJ/ZZQ(TO)01.001.002
8	As per the rule ZZC-D in QJ/ZZQ(TO)01.001.002
9	As per the rule ZZC-E in QJ/ZZQ(TO)01.001.002

Length code

Code	Description
SU	Twist drill for general machining
SL	Deep twist drills
ST	Twist drill for soft steel, stainless steel
SH	Twist drill for high hardness steel
SC	Twist drill for AL alloy and cast iron
PA	Three flute drill for AL alloy and cast iron
PC	Straight flute drill for aluminum, cast iron

Geometry

Code	Description
1	Drills

Type to tool

Code	Description
C	Internal coolant
Default	External coolant

Mode of cooling

1 5 8 8 SL 12 C -0850

Type of shank

Code	Description
1	Straight shank
2	Square head straight shank as per DIN10
3	Double flattened straight shank as per DIN1809
5	Straight shank as per DIN6535HA
7	Whistle notch shank as per DIN6535HE
9	Tapered shank

Type of drill

Code	Description
0	Twist drill
3	Multiple functions twist drill
4	Centering drill
5	Step drill
6	Three flute drill
7	Straight flute drill
8	Deep drill

Specification

Code	Description
0850	Nominal diameter of drill

Identification of drilling depth

Cutting depth shown when the tool is non-pilot drill		Point angle identification shown when tool is pilot drill	
Code	Description	Code	Description
03	(2~3) d	90	pilot drill with 90° point angle
05	(4~5) d		
08	(7~8) d	120	pilot drill with 120° point angle
12	(12) d		
15	(15) d		
20	(20) d		
30	(30) d		

GD series

Twist Drills for General Machining

Application range

Versatile, for high efficiency machining in a variety of material e.g. P(steel), M(stainless steel), K (Cast iron).

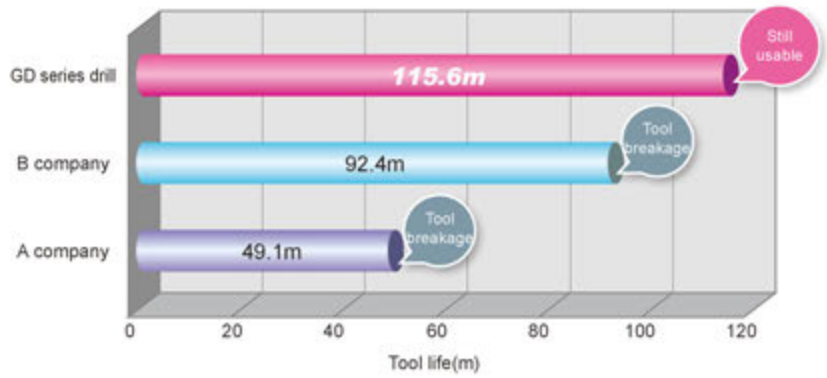
- Linear cutting edge with high strength.
  Optimized drill point structure for better cutting performance.

- Simulation in combination with testing for superior overall performance.

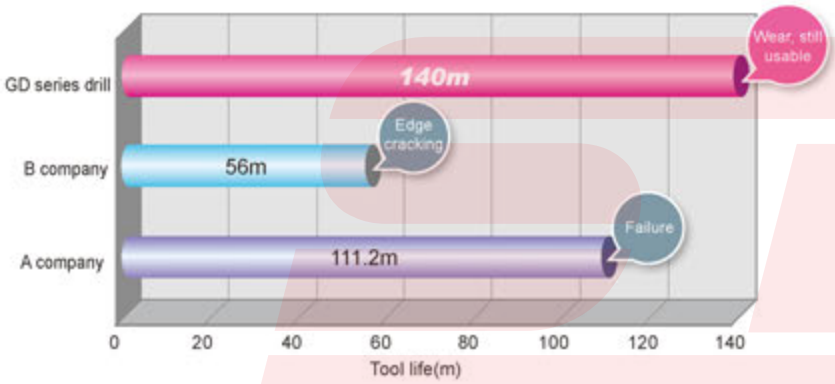
- Professional post-treatment for coating ensures low-resistance high-efficiency machining.

- Double edge-line design for improved machining stability.

Long and stable tool life



Tool: GD05C-0560
Workpiece material: C70S6(HRC30)
Vc=100m/min; f= 0.15mm/r; H=27mm
Cooling system: water soluble cooling

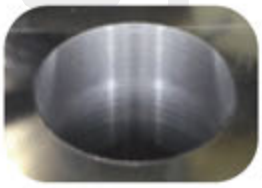


Tool: GD05C-1000
Workpiece material: 45#steel(HB180)
Vc=150m/min; f=0.25mm/r; H=40mm
Cooling system: water soluble cooling

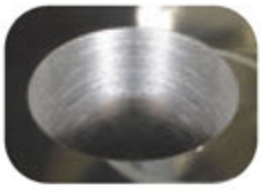
Outstanding machining precision

Quality of hole wall:

Tool: GD03C-0820
Workpiece material: C70S6(HRC30)
Vc=120m/min; f=0.23mm/r; H=30mm;
Cooling system: water soluble cooling



GD series drill



A company

Excellent chip breaking performance

Chip breaking performance:

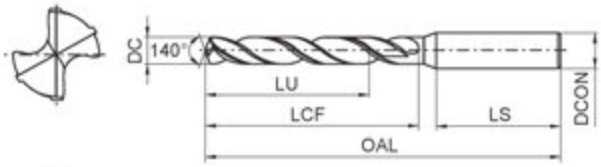
Tool: GD05C-0600
Workpiece material: 1Cr18Ni9Ti(HB180)
Vc=75m/min; f=0.2mm/r; H=30mm;
Cooling system: water soluble cooling

GD series drill

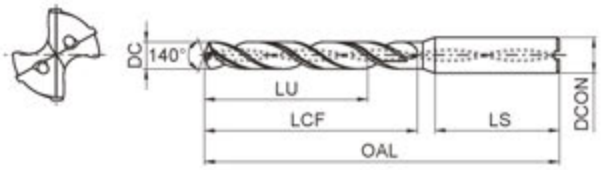
A company

GD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
2.0	3	External coolant	Straight shank	GD03-0200S	3	58	13	9	28		NO.2-64UNF	○
	5			GD05-0200S	3	58	18	14	28			○
	3			GD03-0200	4	58	13	9	28			●
	5			GD05-0200	4	58	18	14	28			●
2.1	3			GD03-0210S	3	58	13	9	28	NO.3-48UNC		○
	5			GD05-0210S	3	58	18	14	28			○
	3			GD03-0210	4	58	13	9	28			●
	5			GD05-0210	4	58	18	14	28			●
2.15	3			GD03-0215S	3	58	13	9	28	NO.3-56UNF		○
	5			GD05-0215S	3	58	18	14	28			○
	3			GD03-0215	4	58	13	9	28			●
	5			GD05-0215	4	58	18	14	28			●
2.2	3			GD03-0220S	3	58	13	9	28			○
	5			GD05-0220S	3	58	18	14	28			○
	3			GD03-0220	4	58	13	9	28			●
	5			GD05-0220	4	58	18	14	28			●
2.3	3			GD03-0230S	3	58	13	9	28		M2.5×0.45 NO.3-56UNF	○
	5			GD05-0230S	3	58	18	14	28			○
	3			GD03-0230	4	58	13	9	28			●
	5			GD05-0230	4	58	18	14	28			●

● Stock available ○ Make-to-order

Applicable material table

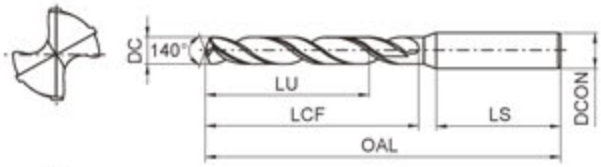
◎Very suitable ○Suitable

Grade	Workpiece material										
	Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
KDG3013	○	◎	◎			○	◎	◎			○

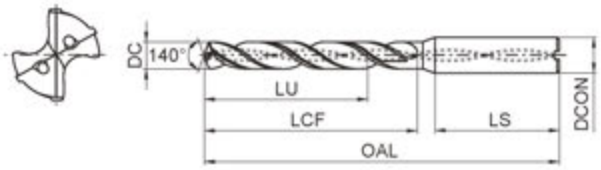
Code key C6
Cutting parameters C151-C152
Technical information C165-C171
Non-standard customization tools C172-C176

GD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
2.35	3	External coolant	Straight shank	GD03-0235S	3	58	17	12	28	NO.4-40UNC		○
	5			GD05-0235S	3	58	22	17	28			○
	3			GD03-0235	4	58	17	12	28			●
	5			GD05-0235	4	58	22	17	28			●
2.4	3			GD03-0240S	3	58	17	12	28	NO.4-48UNF		○
	5			GD05-0240S	3	58	22	17	28			○
	3			GD03-0240	4	58	17	12	28			●
	5			GD05-0240	4	58	22	17	28			●
2.5	3			GD03-0250S	3	58	17	12	28	M3×0.5		○
	5			GD05-0250S	3	58	22	17	28			○
	3			GD03-0250	4	58	17	12	28			●
	5			GD05-0250	4	58	22	17	28			●
2.55	3			GD03-0255S	3	58	17	12	28		NO.4-40UNC	○
	5			GD05-0255S	3	58	22	17	28			○
	3			GD03-0255	4	58	17	12	28			●
	5			GD05-0255	4	58	22	17	28			●
2.6	3			GD03-0260S	3	58	17	12	28		NO.4-48UNF	○
	5			GD05-0260S	3	58	22	17	28			○
	3			GD03-0260	4	58	17	12	28			●
	5			GD05-0260	4	58	22	17	28			●
2.65	3			GD03-0265S	3	58	17	12	28	NO.5-40UNC		○
	5			GD05-0265S	3	58	22	17	28			○
	3			GD03-0265	4	58	17	12	28			●
	5			GD05-0265	4	58	22	17	28			●
2.7	3			GD03-0270S	3	58	17	12	28	NO.5-44UNF		○
	5			GD05-0270S	3	58	22	17	28			○
	3			GD03-0270	4	58	17	12	28			●
	5			GD05-0270	4	58	22	17	28			●

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Forming taps	Grade KDG3013
2.8	3	External coolant	Straight shank	GD03-0280S	3	58	17	12	28		M3×0.5	○
	5			GD05-0280S	3	58	22	17	28			○
	3			GD03-0280	4	58	17	12	28			●
	5			GD05-0280	4	58	22	17	28			●
2.85	3			GD03-0285S	3	58	17	12	28	NO.6-32UNC		○
	5			GD05-0285S	3	58	22	17	28			○
	3			GD03-0285	4	58	17	12	28			●
	5			GD05-0285	4	58	22	17	28			●
2.9	3			GD03-0290S	3	58	17	12	28		NO.5-40UNC NO.5-44UNF	○
	5			GD05-0290S	3	58	22	17	28			○
	3			GD03-0290	4	58	17	12	28			●
	5			GD05-0290	4	58	22	17	28			●
2.95	3			GD03-0295S	3	58	17	12	28	NO.6-40UNF		○
	5			GD05-0295S	3	58	22	17	28			○
	3			GD03-0295	4	58	17	12	28			●
	5			GD05-0295	4	58	22	17	28			●
3.0	3			GD03-0300S	3	62	20	14	36			○
	5			GD05-0300S	3	66	28	23	36			○
	3	Internal coolant		GD03C-0300S	3	62	20	14	36			○
	5			GD05C-0300S	3	66	28	23	36			○
	3	External coolant		GD03-0300	6	62	20	14	36			●
	5			GD05-0300	6	66	28	23	36			●
	3	Internal coolant		GD03C-0300	6	62	20	14	36			●
	5			GD05C-0300	6	66	28	23	36			●
	8			GD08C-0300	6	72	34	29	36			
3.1	3	External coolant		GD03-0310S	4	62	20	14	36			●
	5			GD05-0310S	4	66	28	23	36			●
	3	Internal coolant		GD03C-0310S	4	62	20	14	36			●
	5			GD05C-0310S	4	66	28	23	36			●
	3	External coolant		GD03-0310	6	62	20	14	36			○
	5			GD05-0310	6	66	28	23	36			○
	3	Internal coolant		GD03C-0310	6	62	20	14	36			○
	5			GD05C-0310	6	66	28	23	36			○
	8			GD08C-0310	6	72	34	29	36			

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h_5. ● Stock available ○ Make-to-order

Applicable material table

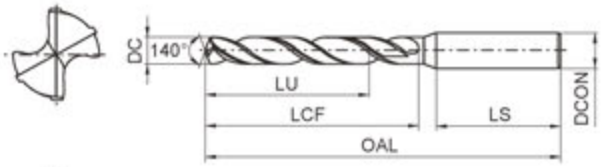
○ Very suitable ○ Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	○	○			○	○	○			○

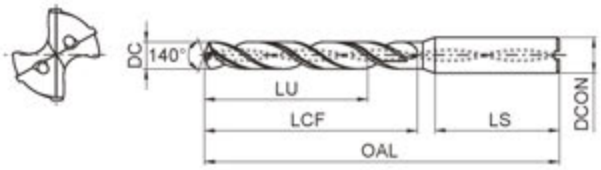
Code key C6 Cutting parameters C151-C152 Technical information C165-C171 Non-standard customization tools C172-C176

GD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
3.15	3	External coolant	Straight shank	GD03-0315S	4	62	20	14	36		NO.6-32UNC	●
	5			GD05-0315S	4	66	28	23	36			●
	3	Internal coolant		GD03C-0315S	4	62	20	14	36			●
	5			GD05C-0315S	4	66	28	23	36			●
	3	External coolant		GD03-0315	6	62	20	14	36			○
	5			GD05-0315	6	66	28	23	36			○
	3	Internal coolant		GD03C-0315	6	62	20	14	36			○
	5			GD05C-0315	6	66	28	23	36			○
3.2	3	External coolant		GD03-0320S	4	62	20	14	36		NO.6-40UNF	●
	5			GD05-0320S	4	66	28	23	36			●
	3	Internal coolant		GD03C-0320S	4	62	20	14	36			●
	5			GD05C-0320S	4	66	28	23	36			●
	3	External coolant		GD03-0320	6	62	20	14	36			○
	5			GD05-0320	6	66	28	23	36			○
	3	Internal coolant		GD03C-0320	6	62	20	14	36			○
	5			GD05C-0320	6	66	28	23	36			○
	8			GD08C-0320	6	72	34	29	36			○
3.25	3	External coolant		GD03-0325S	4	62	20	14	36			●
	5			GD05-0325S	4	66	28	23	36			●
	3	Internal coolant		GD03C-0325S	4	62	20	14	36			●
	5			GD05C-0325S	4	66	28	23	36			●
	3	External coolant		GD03-0325	6	62	20	14	36			○
	5			GD05-0325	6	66	28	23	36			○
	3	Internal coolant		GD03C-0325	6	62	20	14	36			○
	5			GD05C-0325	6	66	28	23	36			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread Cutting taps / Thread milling cutters	Forming taps	Grade KDG3013
3.3	3	External coolant	Straight shank	GD03-0330S	4	62	20	14	36	M4×0.7		●
	5			GD05-0330S	4	66	28	23	36			●
	3	Internal coolant		GD03C-0330S	4	62	20	14	36			●
	5			GD05C-0330S	4	66	28	23	36			●
	3	External coolant		GD03-0330	6	62	20	14	36			○
	5			GD05-0330	6	66	28	23	36			○
	3	Internal coolant		GD03C-0330	6	62	20	14	36			○
	5			GD05C-0330	6	66	28	23	36			○
	8			GD08C-0330	6	72	34	29	36			○
3.4	3	External coolant		GD03-0340S	4	62	20	14	36			●
	5			GD05-0340S	4	66	28	23	36			●
	3	Internal coolant		GD03C-0340S	4	62	20	14	36			●
	5			GD05C-0340S	4	66	28	23	36			●
	3	External coolant		GD03-0340	6	62	20	14	36			○
	5			GD05-0340	6	66	28	23	36			○
	3	Internal coolant		GD03C-0340	6	62	20	14	36			○
	5			GD05C-0340	6	66	28	23	36			○
	8			GD08C-0340	6	72	34	29	36			○
3.5	3	External coolant		GD03-0350S	4	62	20	14	36	M4×0.5 NO.8-32UNC NO.8-36UNF		●
	5			GD05-0350S	4	66	28	23	36			●
	3	Internal coolant		GD03C-0350S	4	62	20	14	36			●
	5			GD05C-0350S	4	66	28	23	36			●
	3	External coolant		GD03-0350	6	62	20	14	36			○
	5			GD05-0350	6	66	28	23	36			○
	3	Internal coolant		GD03C-0350	6	62	20	14	36			○
	5			GD05C-0350	6	66	28	23	36			○
	8			GD08C-0350	6	72	34	29	36			○
3.6	3	External coolant		GD03-0360S	4	62	20	14	36			●
	5			GD05-0360S	4	66	28	23	36			●
	3	Internal coolant		GD03C-0360S	4	62	20	14	36			●
	5			GD05C-0360S	4	66	28	23	36			●
	3	External coolant		GD03-0360	6	62	20	14	36			○
	5			GD05-0360	6	66	28	23	36			○
	3	Internal coolant		GD03C-0360	6	62	20	14	36			○
	5			GD05C-0360	6	66	28	23	36			○
	8			GD08C-0360	6	72	34	29	36			○

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h5. ● Stock available ○ Make-to-order

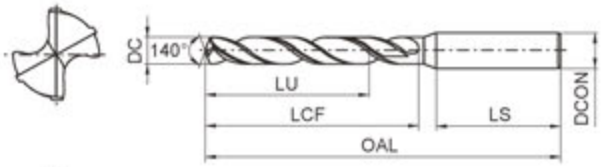
Applicable material table

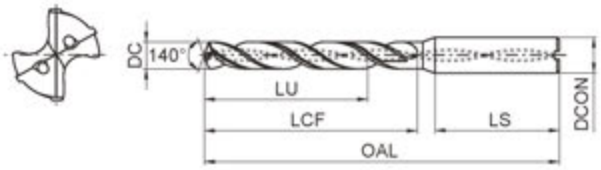
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	◎	◎			○	◎	◎			○

Code key C6 Cutting parameters C151-C152 Technical information C165-C171 Non-standard customization tools C172-C176

GD series General machining





● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
3.7	3	External coolant	Straight shank	GD03-0370S	4	62	20	14	36		M4×0.7	●
	5			GD05-0370S	4	66	28	23	36			●
	3	Internal coolant		GD03C-0370S	4	62	20	14	36			●
	5			GD05C-0370S	4	66	28	23	36			●
	3	External coolant		GD03-0370	6	62	20	14	36			○
	5			GD05-0370	6	66	28	23	36			○
	3	Internal coolant		GD03C-0370	6	62	20	14	36			○
	5			GD05C-0370	6	66	28	23	36			○
	8			GD08C-0370	6	72	34	29	36			○
3.8	3	External coolant		GD03-0380S	4	66	24	17	36		M4×0.5 NO.8-32UNC	●
	5			GD05-0380S	4	74	36	29	36			●
	3	Internal coolant		GD03C-0380S	4	66	24	17	36			●
	5			GD05C-0380S	4	74	36	29	36			●
	3	External coolant		GD03-0380	6	66	24	17	36			○
	5			GD05-0380	6	74	36	29	36			○
	3	Internal coolant		GD03C-0380	6	66	24	17	36			○
	5			GD05C-0380	6	74	36	29	36			○
	8			GD08C-0380	6	81	43	36	36			○
3.85	3	External coolant		GD03-0385S	4	66	24	17	36		NO.8-36UNF	●
	5			GD05-0385S	4	74	36	29	36			●
	3	Internal coolant		GD03C-0385S	4	66	24	17	36			●
	5			GD05C-0385S	4	74	36	29	36			●
	3	External coolant		GD03-0385	6	66	24	17	36			○
	5			GD05-0385	6	74	36	29	36			○
	3	Internal coolant		GD03C-0385	6	66	24	17	36			○
	5			GD05C-0385	6	74	36	29	36			○

● Stock available ○ Make-to-order

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Forming taps	Grade KDG3013
3.9	3	External coolant	Straight shank	GD03-0390S	4	66	24	17	36	NO.10-24UNC		●
	5			GD05-0390S	4	74	36	29	36			●
	3	Internal coolant		GD03C-0390S	4	66	24	17	36			●
	5			GD05C-0390S	4	74	36	29	36			●
	3	External coolant		GD03-0390	6	66	24	17	36			○
	5			GD05-0390	6	74	36	29	36			○
	3	Internal coolant		GD03C-0390	6	66	24	17	36			○
	5			GD05C-0390	6	74	36	29	36			○
	8			GD08C-0390	6	81	43	36	36			○
4.0	3	External coolant		GD03-0400S	4	66	24	17	36			●
	5			GD05-0400S	4	74	36	29	36			●
	3	Internal coolant		GD03C-0400S	4	66	24	17	36			●
	5			GD05C-0400S	4	74	36	29	36			●
	3	External coolant		GD03-0400	6	66	24	17	36			○
	5			GD05-0400	6	74	36	29	36			○
	3	Internal coolant		GD03C-0400	6	66	24	17	36			○
	5			GD05C-0400	6	74	36	29	36			○
	8			GD08C-0400	6	81	43	36	36			○
4.1	3	External coolant		GD03-0410S	5	66	24	17	36	NO.10-32UNF		○
	5			GD05-0410S	5	74	36	29	36			○
	3	Internal coolant		GD03C-0410S	5	66	24	17	36			○
	5			GD05C-0410S	5	74	36	29	36			○
	3	External coolant		GD03-0410	6	66	24	17	36			●
	5			GD05-0410	6	74	36	29	36			●
	3	Internal coolant		GD03C-0410	6	66	24	17	36			●
	5			GD05C-0410	6	74	36	29	36			●
	8			GD08C-0410	6	81	43	36	36			○
4.2	3	External coolant		GD03-0420S	5	66	24	17	36	M5×0.8		○
	5			GD05-0420S	5	74	36	29	36			○
	3	Internal coolant		GD03C-0420S	5	66	24	17	36			○
	5			GD05C-0420S	5	74	36	29	36			○
	3	External coolant		GD03-0420	6	66	24	17	36			●
	5			GD05-0420	6	74	36	29	36			●
	3	Internal coolant		GD03C-0420	6	66	24	17	36			●
	5			GD05C-0420	6	74	36	29	36			●
	8			GD08C-0420	6	81	43	36	36			○

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h5.

● Stock available ○ Make-to-order

Applicable material table

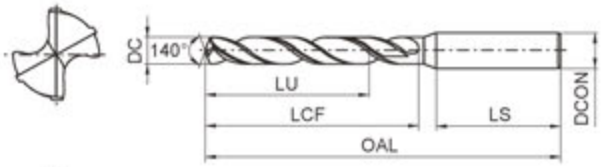
○ Very suitable ○ Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	○	○			○	○	○			○

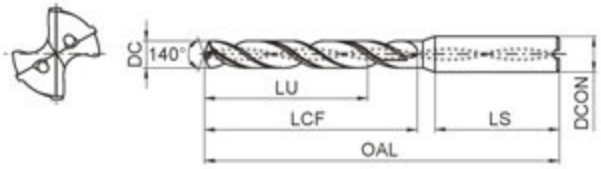
Code key C6 Cutting parameters C151-C152 Technical information C165-C171 Non-standard customization tools C172-C176

GD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
4.3	3	External coolant	Straight shank	GD03-0430S	5	66	24	17	36			○
	5			GD05-0430S	5	74	36	29	36			○
	3	Internal coolant		GD03C-0430S	5	66	24	17	36			○
	5			GD05C-0430S	5	74	36	29	36			○
	3	External coolant		GD03-0430	6	66	24	17	36			●
	5			GD05-0430	6	74	36	29	36			●
	3	Internal coolant		GD03C-0430	6	66	24	17	36			●
	5			GD05C-0430	6	74	36	29	36			●
	8			GD08C-0430	6	81	43	36	36			○
4.35	3	External coolant		GD03-0435S	5	66	24	17	36		NO.10-24UNC	○
	5			GD05-0435S	5	74	36	29	36			○
	3	Internal coolant		GD03C-0435S	5	66	24	17	36			○
	5			GD05C-0435S	5	74	36	29	36			○
	3	External coolant		GD03-0435	6	66	24	17	36			●
	5			GD05-0435	6	74	36	29	36			●
	3	Internal coolant		GD03C-0435	6	66	24	17	36			●
	5			GD05C-0435	6	74	36	29	36			●
4.4	3	External coolant		GD03-0440S	5	66	24	17	36			○
	5			GD05-0440S	5	74	36	29	36			○
	3	Internal coolant		GD03C-0440S	5	66	24	17	36			○
	5			GD05C-0440S	5	74	36	29	36			○
	3	External coolant		GD03-0440	6	66	24	17	36			●
	5			GD05-0440	6	74	36	29	36			●
	3	Internal coolant		GD03C-0440	6	66	24	17	36			●
	5			GD05C-0440	6	74	36	29	36			●
	8			GD08C-0440	6	81	43	36	36			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Forming taps	Grade KDG3013
4.45	3	External coolant	Straight shank	GD03-0445S	5	66	24	17	36		NO.10-32UNF	○
	5			GD05-0445S	5	74	36	29	36			○
	3	Internal coolant		GD03C-0445S	5	66	24	17	36			○
	5			GD05C-0445S	5	74	36	29	36			○
	3	External coolant		GD03-0445	6	66	24	17	36			●
	5			GD05-0445	6	74	36	29	36			●
	3	Internal coolant		GD03C-0445	6	66	24	17	36			●
	5			GD05C-0445	6	74	36	29	36			●
4.5	3	External coolant		GD03-0450S	5	66	24	17	36	NO.12-24UNC M5×0.5		○
	5			GD05-0450S	5	74	36	29	36			○
	3	Internal coolant		GD03C-0450S	5	66	24	17	36			○
	5			GD05C-0450S	5	74	36	29	36			○
	3	External coolant		GD03-0450	6	66	24	17	36			●
	5			GD05-0450	6	74	36	29	36			●
	3	Internal coolant		GD03C-0450	6	66	24	17	36			●
	5			GD05C-0450	6	74	36	29	36			●
	8			GD08C-0450	6	81	43	36	36			○
4.6	3	External coolant		GD03-0460S	5	66	24	17	36			○
	5			GD05-0460S	5	74	36	29	36			○
	3	Internal coolant		GD03C-0460S	5	66	24	17	36			○
	5			GD05C-0460S	5	74	36	29	36			○
	3	External coolant		GD03-0460	6	66	24	17	36			●
	5			GD05-0460	6	74	36	29	36			●
	3	Internal coolant		GD03C-0460	6	66	24	17	36			●
	5			GD05C-0460	6	74	36	29	36			●
	8			GD08C-0460	6	81	43	36	36			○
4.65	3	External coolant		GD03-0465S	5	66	24	17	36		M5×0.8	○
	5			GD05-0465S	5	74	36	29	36			○
	3	Internal coolant		GD03C-0465S	5	66	24	17	36			○
	5			GD05C-0465S	5	74	36	29	36			○
	3	External coolant		GD03-0465	6	66	24	17	36			●
	5			GD05-0465	6	74	36	29	36			●
	3	Internal coolant		GD03C-0465	6	66	24	17	36			●
	5			GD05C-0465	6	74	36	29	36			●

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h_5. ● Stock available ○ Make-to-order

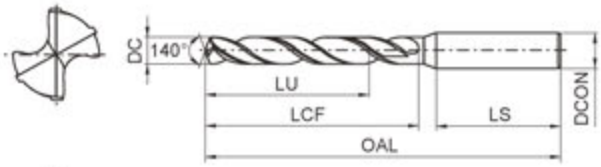
Applicable material table

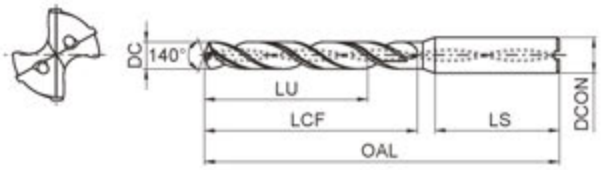
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	◎	◎			○	◎	◎			○

Code key C6 Cutting parameters C151-C152 Technical information C165-C171 Non-standard customization tools C172-C176

GD series General machining





● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
4.7	3	External coolant	Straight shank	GD03-0470S	5	66	24	17	36	NO.12-28UNF		○
	5			GD05-0470S	5	74	36	29	36			○
	3	Internal coolant		GD03C-0470S	5	66	24	17	36			○
	5			GD05C-0470S	5	74	36	29	36			○
	3	External coolant		GD03-0470	6	66	24	17	36			●
	5			GD05-0470	6	74	36	29	36			●
	3	Internal coolant		GD03C-0470	6	66	24	17	36			●
	5			GD05C-0470	6	74	36	29	36			●
	8			GD08C-0470	6	81	43	36	36			○
4.8	3	External coolant		GD03-0480S	5	66	28	20	36		M5×0.5	○
	5			GD05-0480S	5	82	44	35	36			○
	3	Internal coolant		GD03C-0480S	5	66	28	20	36			○
	5			GD05C-0480S	5	82	44	35	36			○
	3	External coolant		GD03-0480	6	66	28	20	36			●
	5			GD05-0480	6	82	44	35	36			●
	3	Internal coolant		GD03C-0480	6	66	28	20	36			●
	5			GD05C-0480	6	82	44	35	36			●
	8			GD08C-0480	6	95	57	48	36			○
4.9	3	External coolant		GD03-0490S	5	66	28	20	36			○
	5			GD05-0490S	5	82	44	35	36			○
	3	Internal coolant		GD03C-0490S	5	66	28	20	36			○
	5			GD05C-0490S	5	82	44	35	36			○
	3	External coolant		GD03-0490	6	66	28	20	36			●
	5			GD05-0490	6	82	44	35	36			●
	3	Internal coolant		GD03C-0490	6	66	28	20	36			●
	5			GD05C-0490	6	82	44	35	36			●
	8			GD08C-0490	6	95	57	48	36			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3013
5.0	3	External coolant	Straight shank	GD03-0500S	5	66	28	20	36	M6×1	NO.12-24UNC	○
	5			GD05-0500S	5	82	44	35	36			○
	3	Internal coolant		GD03C-0500S	5	66	28	20	36			○
	5			GD05C-0500S	5	82	44	35	36			○
	3	External coolant		GD03-0500	6	66	28	20	36			●
	5			GD05-0500	6	82	44	35	36			●
	3	Internal coolant		GD03C-0500	6	66	28	20	36			●
	5			GD05C-0500	6	82	44	35	36			●
	8			GD08C-0500	6	95	57	48	36			○
5.1	3	External coolant		GD03-0510	6	66	28	20	36	1/4-20UNC	NO.12-28UNF	●
	5			GD05-0510	6	82	44	35	36			●
	3	Internal coolant		GD03C-0510	6	66	28	20	36			●
	5			GD05C-0510	6	82	44	35	36			●
	8			GD08C-0510	6	95	57	48	36			○
5.2	3	External coolant		GD03-0520	6	66	28	20	36			●
	5			GD05-0520	6	82	44	35	36			●
	3	Internal coolant		GD03C-0520	6	66	28	20	36			●
	5			GD05C-0520	6	82	44	35	36			●
	8			GD08C-0520	6	95	57	48	36			○
5.25	3	External coolant		GD03-0525	6	66	28	20	36	M6×0.75		●
	5			GD05-0525	6	82	44	35	36			●
	3	Internal coolant		GD03C-0525	6	66	28	20	36			●
	5			GD05C-0525	6	82	44	35	36			●
5.3	3	External coolant		GD03-0530	6	66	28	20	36			●
	5			GD05-0530	6	82	44	35	36			●
	3	Internal coolant		GD03C-0530	6	66	28	20	36			●
	5			GD05C-0530	6	82	44	35	36			●
	8			GD08C-0530	6	95	57	48	36			○
5.4	3	External coolant		GD03-0540	6	66	28	20	36			●
	5			GD05-0540	6	82	44	35	36			●
	3	Internal coolant		GD03C-0540	6	66	28	20	36			●
	5			GD05C-0540	6	82	44	35	36			●
	8			GD08C-0540	6	95	57	48	36			○

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h_5. ● Stock available ○ Make-to-order

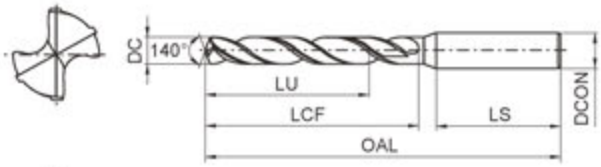
Applicable material table

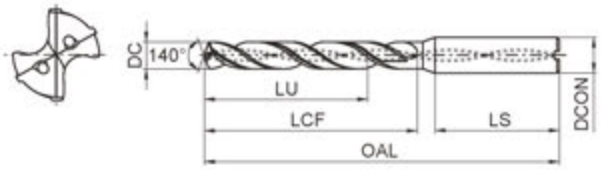
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	◎	◎			○	◎	◎			○

Code key C6 Cutting parameters C151-C152 Technical information C165-C171 Non-standard customization tools C172-C176

GD series General machining





● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
5.5	3	External coolant	Straight shank	GD03-0550	6	66	28	20	36	1/4-28UNF		●
	5			GD05-0550	6	82	44	35	36			●
	3	Internal coolant		GD03C-0550	6	66	28	20	36			●
	5			GD05C-0550	6	82	44	35	36			●
	8			GD08C-0550	6	95	57	48	36			○
5.55	3	External coolant		GD03-0555	6	66	28	20	36			●
	5			GD05-0555	6	82	44	35	36			●
	3	Internal coolant		GD03C-0555	6	66	28	20	36			●
	5			GD05C-0555	6	82	44	35	36			●
5.6	3	External coolant		GD03-0560	6	66	28	20	36		M6×1	●
	5			GD05-0560	6	82	44	35	36			●
	3	Internal coolant		GD03C-0560	6	66	28	20	36			●
	5			GD05C-0560	6	82	44	35	36			●
	8			GD08C-0560	6	95	57	48	36			○
5.7	3	External coolant		GD03-0570	6	66	28	20	36		M6×0.75	●
	5			GD05-0570	6	82	44	35	36			●
	3	Internal coolant		GD03C-0570	6	66	28	20	36			●
	5			GD05C-0570	6	82	44	35	36			●
	8			GD08C-0570	6	95	57	48	36			○
5.75	3	External coolant		GD03-0575	6	66	28	20	36		1/4-20UNC	●
	5			GD05-0575	6	82	44	35	36			●
	3	Internal coolant		GD03C-0575	6	66	28	20	36			●
	5			GD05C-0575	6	82	44	35	36			●
5.8	3	External coolant		GD03-0580	6	66	28	20	36			●
	5			GD05-0580	6	82	44	35	36			●
	3	Internal coolant		GD03C-0580	6	66	28	20	36			●
	5			GD05C-0580	6	82	44	35	36			●
	8			GD08C-0580	6	95	57	48	36			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Forming taps	Grade KDG3013
5.9	3	External coolant	Straight shank	GD03-0590	6	66	28	20	36			●
	5			GD05-0590	6	82	44	35	36			●
	3	Internal coolant		GD03C-0590	6	66	28	20	36			●
	5			GD05C-0590	6	82	44	35	36			●
	8			GD08C-0590	6	95	57	48	36			○
5.95	3	External coolant		GD03-0595	6	66	28	20	36		1/4-28UNF	●
	5			GD05-0595	6	82	44	35	36			●
	3	Internal coolant		GD03C-0595	6	66	28	20	36			●
	5			GD05C-0595	6	82	44	35	36			●
6.0	3	External coolant		GD03-0600	6	66	28	20	36	M7×1		●
	5			GD05-0600	6	82	44	35	36			●
	3	Internal coolant		GD03C-0600	6	66	28	20	36			●
	5			GD05C-0600	6	82	44	35	36			●
	8			GD08C-0600	6	95	57	48	36			○
6.1	3	External coolant		GD03-0610S	7	79	34	24	36			○
	5			GD05-0610S	7	91	53	43	36			○
	3	Internal coolant		GD03C-0610S	7	79	34	24	36			○
	5			GD05C-0610S	7	91	53	43	36			○
	3	External coolant		GD03-0610	8	79	34	24	36			●
	5			GD05-0610	8	91	53	43	36			●
	3	Internal coolant		GD03C-0610	8	79	34	24	36			●
	5			GD05C-0610	8	91	53	43	36			●
	8			GD08C-0610	8	114	76	66	36			○
6.2	3	External coolant		GD03-0620S	7	79	34	24	36			○
	5			GD05-0620S	7	91	53	43	36			○
	3	Internal coolant		GD03C-0620S	7	79	34	24	36			○
	5			GD05C-0620S	7	91	53	43	36			○
	3	External coolant		GD03-0620	8	79	34	24	36			●
	5			GD05-0620	8	91	53	43	36			●
	3	Internal coolant		GD03C-0620	8	79	34	24	36			●
	5			GD05C-0620	8	91	53	43	36			●
	8			GD08C-0620	8	114	76	66	36			○

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h5.

● Stock available ○ Make-to-order

Applicable material table

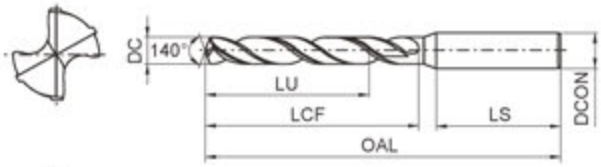
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	◎	◎			○	◎	◎			○

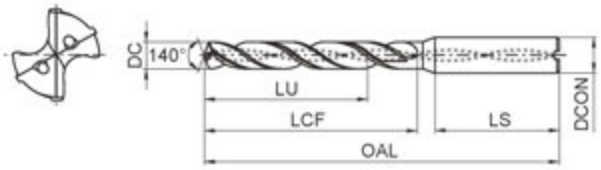
Code key C6
Cutting parameters C151-C152
Technical information C165-C171
Non-standard customization tools C172-C176

GD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
6.3	3	External coolant	Straight shank	GD03-0630S	7	79	34	24	36			○
	5			GD05-0630S	7	91	53	43	36			○
	3	Internal coolant		GD03C-0630S	7	79	34	24	36			○
	5			GD05C-0630S	7	91	53	43	36			○
	3	External coolant		GD03-0630	8	79	34	24	36			●
	5			GD05-0630	8	91	53	43	36			●
	3	Internal coolant		GD03C-0630	8	79	34	24	36			●
	5			GD05C-0630	8	91	53	43	36			●
	8			GD08C-0630	8	114	76	66	36			○
6.4	3	External coolant		GD03-0640S	7	79	34	24	36			○
	5			GD05-0640S	7	91	53	43	36			○
	3	Internal coolant		GD03C-0640S	7	79	34	24	36			○
	5			GD05C-0640S	7	91	53	43	36			○
	3	External coolant		GD03-0640	8	79	34	24	36			●
	5			GD05-0640	8	91	53	43	36			●
	3	Internal coolant		GD03C-0640	8	79	34	24	36			●
	5			GD05C-0640	8	91	53	43	36			●
	8			GD08C-0640	8	114	76	66	36			○
6.5	3	External coolant		GD03-0650S	7	79	34	24	36			○
	5			GD05-0650S	7	91	53	43	36			○
	3	Internal coolant		GD03C-0650S	7	79	34	24	36			○
	5			GD05C-0650S	7	91	53	43	36			○
	3	External coolant		GD03-0650	8	79	34	24	36			●
	5			GD05-0650	8	91	53	43	36			●
	3	Internal coolant		GD03C-0650	8	79	34	24	36			●
	5			GD05C-0650	8	91	53	43	36			●
	8			GD08C-0650	8	114	76	66	36			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Forming taps	Grade KDG3013
6.6	3	External coolant	Straight shank	GD03-0660S	7	79	34	24	36	5/16-18UNC	M7×1	○
	5			GD05-0660S	7	91	53	43	36			○
	3	Internal coolant		GD03C-0660S	7	79	34	24	36			○
	5			GD05C-0660S	7	91	53	43	36			○
	3	External coolant		GD03-0660	8	79	34	24	36			●
	5			GD05-0660	8	91	53	43	36			●
	3	Internal coolant		GD03C-0660	8	79	34	24	36			●
	5			GD05C-0660	8	91	53	43	36			●
	8			GD08C-0660	8	114	76	66	36			○
6.7	3	External coolant		GD03-0670S	7	79	34	24	36			○
	5			GD05-0670S	7	91	53	43	36			○
	3	Internal coolant		GD03C-0670S	7	79	34	24	36			○
	5			GD05C-0670S	7	91	53	43	36			○
	3	External coolant		GD03-0670	8	79	34	24	36			●
	5			GD05-0670	8	91	53	43	36			●
	3	Internal coolant		GD03C-0670	8	79	34	24	36			●
	5			GD05C-0670	8	91	53	43	36			●
	8			GD08C-0670	8	114	76	66	36			○
6.75	3	External coolant		GD03-0675S	7	79	34	24	36	M8×1.25		○
	5			GD05-0675S	7	91	53	43	36			○
	3	Internal coolant		GD03C-0675S	7	79	34	24	36			○
	5			GD05C-0675S	7	91	53	43	36			○
	3	External coolant		GD03-0675	8	79	34	24	36			●
	5			GD05-0675	8	91	53	43	36			●
	3	Internal coolant		GD03C-0675	8	79	34	24	36			●
	5			GD05C-0675	8	91	53	43	36			●
6.8	3	External coolant		GD03-0680S	7	79	34	24	36			○
	5			GD05-0680S	7	91	53	43	36			○
	3	Internal coolant		GD03C-0680S	7	79	34	24	36			○
	5			GD05C-0680S	7	91	53	43	36			○
	3	External coolant		GD03-0680	8	79	34	24	36			●
	5			GD05-0680	8	91	53	43	36			●
	3	Internal coolant		GD03C-0680	8	79	34	24	36			●
	5			GD05C-0680	8	91	53	43	36			●
	8			GD08C-0680	8	114	76	66	36			○

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h5. ● Stock available ○ Make-to-order

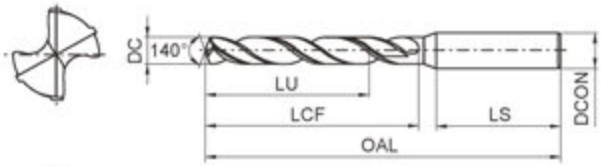
Applicable material table

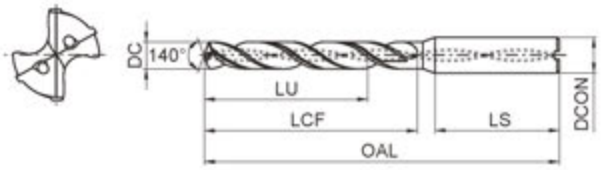
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	◎	◎			○	◎	◎			○

Code key C6 Cutting parameters C151-C152 Technical information C165-C171 Non-standard customization tools C172-C176

GD series General machining





● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
6.9	3	External coolant	Straight shank	GD03-0690S	7	79	34	24	36	5/16-24UNF		○
	5			GD05-0690S	7	91	53	43	36			○
	3	Internal coolant		GD03C-0690S	7	79	34	24	36			○
	5			GD05C-0690S	7	91	53	43	36			○
	3	External coolant		GD03-0690	8	79	34	24	36			●
	5			GD05-0690	8	91	53	43	36			●
	3	Internal coolant		GD03C-0690	8	79	34	24	36			●
	5			GD05C-0690	8	91	53	43	36			●
	8			GD08C-0690	8	114	76	66	36			○
7.0	3	External coolant		GD03-0700S	7	79	34	24	36	M8×1		○
	5			GD05-0700S	7	91	53	43	36			○
	3	Internal coolant		GD03C-0700S	7	79	34	24	36			○
	5			GD05C-0700S	7	91	53	43	36			○
	3	External coolant		GD03-0700	8	79	34	24	36			●
	5			GD05-0700	8	91	53	43	36			●
	3	Internal coolant		GD03C-0700	8	79	34	24	36			●
	5			GD05C-0700	8	91	53	43	36			●
	8			GD08C-0700	8	116	76	66	36			○
7.1	3	External coolant		GD03-0710	8	79	41	29	36			●
	5			GD05-0710	8	91	53	43	36			●
	3	Internal coolant		GD03C-0710	8	79	41	29	36			●
	5			GD05C-0710	8	91	53	43	36			●
	8			GD08C-0710	8	116	76	66	36			○
7.2	3	External coolant		GD03-0720	8	79	41	29	36			●
	5			GD05-0720	8	91	53	43	36			●
	3	Internal coolant		GD03C-0720	8	79	41	29	36			●
	5			GD05C-0720	8	91	53	43	36			●
	8			GD08C-0720	8	116	76	66	36			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
7.3	3	External coolant	Straight shank	GD03-0730	8	79	41	29	36		5/16-18UNC	●
	5			GD05-0730	8	91	53	43	36			●
	3	Internal coolant		GD03C-0730	8	79	41	29	36			●
	5			GD05C-0730	8	91	53	43	36			●
	8			GD08C-0730	8	116	76	66	36			○
7.4	3	External coolant		GD03-0740	8	79	41	29	36			●
	5			GD05-0740	8	91	53	43	36			●
	3	Internal coolant		GD03C-0740	8	79	41	29	36			●
	5			GD05C-0740	8	91	53	43	36			●
	8			GD08C-0740	8	116	76	66	36			○
7.45	3	External coolant		GD03-0745	8	79	41	29	36		M8×1.25 5/16-24UNF	●
	5			GD05-0745	8	91	53	43	36			●
	3	Internal coolant		GD03C-0745	8	79	41	29	36			●
	5			GD05C-0745	8	91	53	43	36			●
7.5	3	External coolant		GD03-0750	8	79	41	29	36			●
	5			GD05-0750	8	91	53	43	36			●
	3	Internal coolant		GD03C-0750	8	79	41	29	36			●
	5			GD05C-0750	8	91	53	43	36			●
	8			GD08C-0750	8	116	76	66	36			○
7.6	3	External coolant		GD03-0760	8	79	41	29	36		M8×1	●
	5			GD05-0760	8	91	53	43	36			●
	3	Internal coolant		GD03C-0760	8	79	41	29	36			●
	5			GD05C-0760	8	91	53	43	36			●
	8			GD08C-0760	8	116	76	66	36			○
7.7	3	External coolant		GD03-0770	8	79	41	29	36			●
	5			GD05-0770	8	91	53	43	36			●
	3	Internal coolant		GD03C-0770	8	79	41	29	36			●
	5			GD05C-0770	8	91	53	43	36			●
	8			GD08C-0770	8	116	76	66	36			○
7.8	3	External coolant		GD03-0780	8	79	41	29	36			●
	5			GD05-0780	8	91	53	43	36			●
	3	Internal coolant		GD03C-0780	8	79	41	29	36			●
	5			GD05C-0780	8	91	53	43	36			●
	8			GD08C-0780	8	116	76	66	36			○

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h_5. ● Stock available ○ Make-to-order

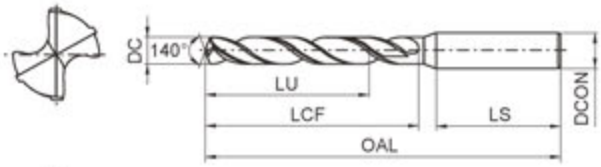
Applicable material table

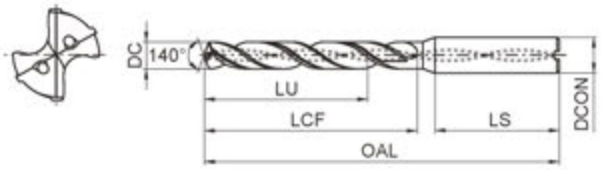
◎Very suitable ○Suitable

Grade	Workpiece material										
	Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
KDG3013	○	◎	◎			○	◎	◎			○

Code key C6 Cutting parameters C151-C152 Technical information C165-C171 Non-standard customization tools C172-C176

GD series General machining





● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3013
7.9	3	External coolant	Straight shank	GD03-0790	8	79	41	29	36	3/8-16UNC		●
	5			GD05-0790	8	91	53	43	36			●
	3	Internal coolant		GD03C-0790	8	79	41	29	36			●
	5			GD05C-0790	8	91	53	43	36			●
	8			GD08C-0790	8	116	76	66	36			○
8.0	3	External coolant		GD03-0800	8	79	41	29	36			●
	5			GD05-0800	8	91	53	43	36			●
	3	Internal coolant		GD03C-0800	8	79	41	29	36			●
	5			GD05C-0800	8	91	53	43	36			●
	8			GD08C-0800	8	116	76	66	36			○
8.1	3	External coolant		GD03-0810S	9	89	47	35	40			○
	5			GD05-0810S	9	103	61	49	40			○
	3	Internal coolant		GD03C-0810S	9	89	47	35	40			○
	5			GD05C-0810S	9	103	61	49	40			○
	3	External coolant		GD03-0810	10	89	47	35	40			●
	5			GD05-0810	10	103	61	49	40			●
	3	Internal coolant		GD03C-0810	10	89	47	35	40			●
	5			GD05C-0810	10	103	61	49	40			●
	8			GD08C-0810	10	142	95	83	40			○
8.2	3	External coolant		GD03-0820S	9	89	47	35	40			○
	5			GD05-0820S	9	103	61	49	40			○
	3	Internal coolant		GD03C-0820S	9	89	47	35	40			○
	5			GD05C-0820S	9	103	61	49	40			○
	3	External coolant		GD03-0820	10	89	47	35	40			●
	5			GD05-0820	10	103	61	49	40			●
	3	Internal coolant		GD03C-0820	10	89	47	35	40			●
	5			GD05C-0820	10	103	61	49	40			●
	8			GD08C-0820	10	142	95	83	40			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Forming taps	Grade KDG3013
8.3	3	External coolant	Straight shank	GD03-0830S	9	89	47	35	40	M10×1.5 3/8-24UNF		○
	5			GD05-0830S	9	103	61	49	40			○
	3	Internal coolant		GD03C-0830S	9	89	47	35	40			○
	5			GD05C-0830S	9	103	61	49	40			○
	3	External coolant		GD03-0830	10	89	47	35	40			●
	5			GD05-0830	10	103	61	49	40			●
	3	Internal coolant		GD03C-0830	10	89	47	35	40			●
	5			GD05C-0830	10	103	61	49	40			●
	8			GD08C-0830	10	142	95	83	40			○
8.4	3	External coolant		GD03-0840S	9	89	47	35	40			○
	5			GD05-0840S	9	103	61	49	40			○
	3	Internal coolant		GD03C-0840S	9	89	47	35	40			○
	5			GD05C-0840S	9	103	61	49	40			○
	3	External coolant		GD03-0840	10	89	47	35	40			●
	5			GD05-0840	10	103	61	49	40			●
	3	Internal coolant		GD03C-0840	10	89	47	35	40			●
	5			GD05C-0840	10	103	61	49	40			●
	8			GD08C-0840	10	142	95	83	40			○
8.5	3	External coolant		GD03-0850S	9	89	47	35	40			○
	5			GD05-0850S	9	103	61	49	40			○
	3	Internal coolant		GD03C-0850S	9	89	47	35	40			○
	5			GD05C-0850S	9	103	61	49	40			○
	3	External coolant		GD03-0850	10	89	47	35	40			●
	5			GD05-0850	10	103	61	49	40			●
	3	Internal coolant		GD03C-0850	10	89	47	35	40			●
	5			GD05C-0850	10	103	61	49	40			●
	8			GD08C-0850	10	142	95	83	40			○
8.6	3	External coolant		GD03-0860S	9	89	47	35	40			○
	5			GD05-0860S	9	103	61	49	40			○
	3	Internal coolant		GD03C-0860S	9	89	47	35	40			○
	5			GD05C-0860S	9	103	61	49	40			○
	3	External coolant		GD03-0860	10	89	47	35	40			●
	5			GD05-0860	10	103	61	49	40			●
	3	Internal coolant		GD03C-0860	10	89	47	35	40			●
	5			GD05C-0860	10	103	61	49	40			●
	8			GD08C-0860	10	142	95	83	40			○

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h5. ● Stock available ○ Make-to-order

Applicable material table

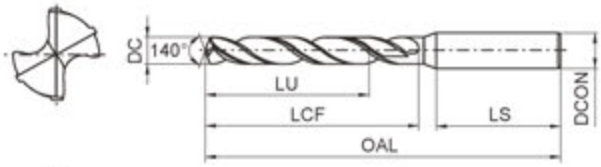
○ Very suitable ○ Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	○	○			○	○	○			○

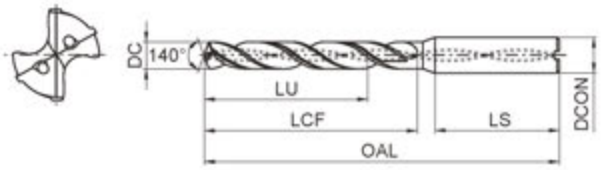
Code key C6 Cutting parameters C151-C152 Technical information C165-C171 Non-standard customization tools C172-C176

GD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
8.7	3	External coolant	Straight shank	GD03-0870S	9	89	47	35	40			○
	5			GD05-0870S	9	103	61	49	40			○
	3	Internal coolant		GD03C-0870S	9	89	47	35	40			○
	5			GD05C-0870S	9	103	61	49	40			○
	3	External coolant		GD03-0870	10	89	47	35	40			●
	5			GD05-0870	10	103	61	49	40			●
	3	Internal coolant		GD03C-0870	10	89	47	35	40			●
	5			GD05C-0870	10	103	61	49	40			●
	8			GD08C-0870	10	142	95	83	40			○
8.75	3	External coolant		GD03-0875S	9	89	47	35	40	M10×1.25		○
	5			GD05-0875S	9	103	61	49	40			○
	3	Internal coolant		GD03C-0875S	9	89	47	35	40			○
	5			GD05C-0875S	9	103	61	49	40			○
	3	External coolant		GD03-0875	10	89	47	35	40			●
	5			GD05-0875	10	103	61	49	40			●
	3	Internal coolant		GD03C-0875	10	89	47	35	40			●
	5			GD05C-0875	10	103	61	49	40			●
8.8	3	External coolant		GD03-0880S	9	89	47	35	40		3/8-16UNC	○
	5			GD05-0880S	9	103	61	49	40			○
	3	Internal coolant		GD03C-0880S	9	89	47	35	40			○
	5			GD05C-0880S	9	103	61	49	40			○
	3	External coolant		GD03-0880	10	89	47	35	40			●
	5			GD05-0880	10	103	61	49	40			●
	3	Internal coolant		GD03C-0880	10	89	47	35	40			●
	5			GD05C-0880	10	103	61	49	40			●
	8			GD08C-0880	10	142	95	83	40			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread Cutting taps / Thread milling cutters	Forming taps	Grade KDG3013
8.9	3	External coolant	Straight shank	GD03-0890S	9	89	47	35	40			○
	5			GD05-0890S	9	103	61	49	40			○
	3	Internal coolant		GD03C-0890S	9	89	47	35	40			○
	5			GD05C-0890S	9	103	61	49	40			○
	3	External coolant		GD03-0890	10	89	47	35	40			●
	5			GD05-0890	10	103	61	49	40			●
	3	Internal coolant		GD03C-0890	10	89	47	35	40			●
	5			GD05C-0890	10	103	61	49	40			●
	8			GD08C-0890	10	142	95	83	40			○
9.0	3	External coolant		GD03-0900S	9	89	47	35	40	M10×1	3/8-24UNF	○
	5			GD05-0900S	9	103	61	49	40			○
	3	Internal coolant		GD03C-0900S	9	89	47	35	40			○
	5			GD05C-0900S	9	103	61	49	40			○
	3	External coolant		GD03-0900	10	89	47	35	40			●
	5			GD05-0900	10	103	61	49	40			●
	3	Internal coolant		GD03C-0900	10	89	47	35	40			●
	5			GD05C-0900	10	103	61	49	40			●
	8			GD08C-0900	10	142	95	83	40			○
9.1	3	External coolant		GD03-0910	10	89	47	35	40			●
	5			GD05-0910	10	103	61	49	40			●
	3	Internal coolant		GD03C-0910	10	89	47	35	40			●
	5			GD05C-0910	10	103	61	49	40			●
	8			GD08C-0910	10	142	95	83	40			○
9.2	3	External coolant		GD03-0920	10	89	47	35	40			●
	5			GD05-0920	10	103	61	49	40			●
	3	Internal coolant		GD03C-0920	10	89	47	35	40			●
	5			GD05C-0920	10	103	61	49	40			●
	8			GD08C-0920	10	142	95	83	40			○
9.3	3	External coolant		GD03-0930	10	89	47	35	40			●
	5			GD05-0930	10	103	61	49	40			●
	3	Internal coolant		GD03C-0930	10	89	47	35	40			●
	5			GD05C-0930	10	103	61	49	40			●
	8			GD08C-0930	10	142	95	83	40			○

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h_5.

● Stock available ○ Make-to-order

Applicable material table

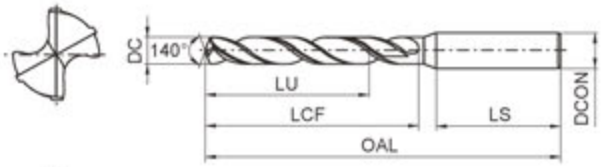
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	◎	◎			○	◎	◎			○

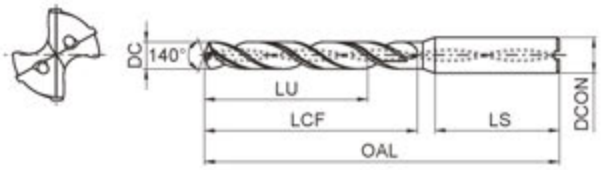
Code key C6
Cutting parameters C151-C152
Technical information C165-C171
Non-standard customization tools C172-C176

GD series General machining


External coolant — Straight shank




Internal coolant — Straight shank



● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Forming taps	Grade KDG3013
9.35	3	External coolant	Straight shank	GD03-0935	10	89	47	35	40	7/16-14UNC	M10×1.5	●
	5			GD05-0935	10	103	61	49	40			●
	3	Internal coolant		GD03C-0935	10	89	47	35	40			●
	5			GD05C-0935	10	103	61	49	40			●
9.4	3	External coolant		GD03-0940	10	89	47	35	40			●
	5			GD05-0940	10	103	61	49	40			●
	3	Internal coolant		GD03C-0940	10	89	47	35	40			●
	5			GD05C-0940	10	103	61	49	40			●
	8			GD08C-0940	10	142	95	83	40			○
9.45	3	External coolant		GD03-0945	10	89	47	35	40		M10×1.25	●
	5			GD05-0945	10	103	61	49	40			●
	3	Internal coolant		GD03C-0945	10	89	47	35	40			●
	5			GD05C-0945	10	103	61	49	40			●
9.5	3	External coolant		GD03-0950	10	89	47	35	40			●
	5			GD05-0950	10	103	61	49	40			●
	3	Internal coolant		GD03C-0950	10	89	47	35	40			●
	5			GD05C-0950	10	103	61	49	40			●
	8			GD08C-0950	10	142	95	83	40			○
9.6	3	External coolant		GD03-0960	10	89	47	35	40		M10×1	●
	5			GD05-0960	10	103	61	49	40			●
	3	Internal coolant		GD03C-0960	10	89	47	35	40			●
	5			GD05C-0960	10	103	61	49	40			●
	8			GD08C-0960	10	142	95	83	40			○
9.7	3	External coolant		GD03-0970	10	89	47	35	40			●
	5			GD05-0970	10	103	61	49	40			●
	3	Internal coolant		GD03C-0970	10	89	47	35	40			●
	5			GD05C-0970	10	103	61	49	40			●
	8			GD08C-0970	10	142	95	83	40			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread Cutting taps / Thread milling cutters	Forming taps	Grade KDG3013
9.8	3	External coolant	Straight shank	GD03-0980	10	89	47	35	40			●
	5			GD05-0980	10	103	61	49	40			●
	3	Internal coolant		GD03C-0980	10	89	47	35	40			●
	5			GD05C-0980	10	103	61	49	40			●
	8			GD08C-0980	10	142	95	83	40			○
9.9	3	External coolant		GD03-0990	10	89	47	35	40	7/16-20UNF		●
	5			GD05-0990	10	103	61	49	40			●
	3	Internal coolant		GD03C-0990	10	89	47	35	40			●
	5			GD05C-0990	10	103	61	49	40			●
	8			GD08C-0990	10	142	95	83	40			○
10.0	3	External coolant		GD03-1000	10	89	47	35	40			●
	5			GD05-1000	10	103	61	49	40			●
	3	Internal coolant		GD03C-1000	10	89	47	35	40			●
	5			GD05C-1000	10	103	61	49	40			●
	8			GD08C-1000	10	142	95	83	40			○
10.1	3	External coolant		GD03-1010S	11	102	55	40	45			○
	5			GD05-1010S	11	118	71	56	45			○
	3	Internal coolant		GD03C-1010S	11	102	55	40	45			○
	5			GD05C-1010S	11	118	71	56	45			○
	3	External coolant		GD03-1010	12	102	55	40	45			●
	5			GD05-1010	12	118	71	56	45			●
	3	Internal coolant		GD03C-1010	12	102	55	40	45			●
	5			GD05C-1010	12	118	71	56	45			●
	8			GD08C-1010	12	162	114	99	45			○
10.2	3	External coolant		GD03-1020S	11	102	55	40	45			○
	5			GD05-1020S	11	118	71	56	45			○
	3	Internal coolant		GD03C-1020S	11	102	55	40	45			○
	5			GD05C-1020S	11	118	71	56	45			○
	3	External coolant		GD03-1020	12	102	55	40	45			●
	5			GD05-1020	12	118	71	56	45			●
	3	Internal coolant		GD03C-1020	12	102	55	40	45			●
	5			GD05C-1020	12	118	71	56	45			●
	8			GD08C-1020	12	162	114	99	45			○

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h_5.

● Stock available ○ Make-to-order

Applicable material table

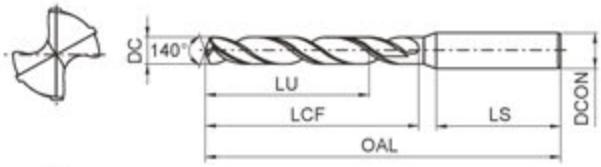
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	◎	◎			○	◎	◎			○

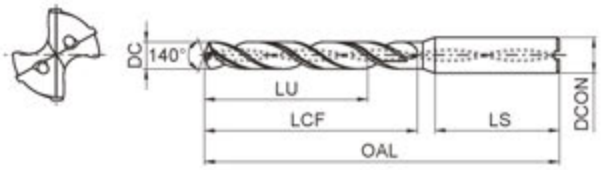
Code key C6
Cutting parameters C151-C152
Technical information C165-C171
Non-standard customization tools C172-C176

GD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
10.25	3	External coolant	Straight shank	GD03-1025S	11	102	55	40	45	M12×1.75		○
	5			GD05-1025S	11	118	71	56	45			○
	3	Internal coolant		GD03C-1025S	11	102	55	40	45			○
	5			GD05C-1025S	11	118	71	56	45			○
	3	External coolant		GD03-1025	12	102	55	40	45			●
	5			GD05-1025	12	118	71	56	45			●
	3	Internal coolant		GD03C-1025	12	102	55	40	45			●
	5			GD05C-1025	12	118	71	56	45			●
10.3	3	External coolant		GD03-1030S	11	102	55	40	45		7/16-14UNC	○
	5			GD05-1030S	11	118	71	56	45			○
	3	Internal coolant		GD03C-1030S	11	102	55	40	45			○
	5			GD05C-1030S	11	118	71	56	45			○
	3	External coolant		GD03-1030	12	102	55	40	45			●
	5			GD05-1030	12	118	71	56	45			●
	3	Internal coolant		GD03C-1030	12	102	55	40	45			●
	5			GD05C-1030	12	118	71	56	45			●
	8			GD08C-1030	12	162	114	99	45			○
10.4	3	External coolant		GD03-1040S	11	102	55	40	45			○
	5			GD05-1040S	11	118	71	56	45			○
	3	Internal coolant		GD03C-1040S	11	102	55	40	45			○
	5			GD05C-1040S	11	118	71	56	45			○
	3	External coolant		GD03-1040	12	102	55	40	45			●
	5			GD05-1040	12	118	71	56	45			●
	3	Internal coolant		GD03C-1040	12	102	55	40	45			●
	5			GD05C-1040	12	118	71	56	45			●
	8			GD08C-1040	12	162	114	99	45			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread Cutting taps / Thread milling cutters	Forming taps	Grade KDG3013
10.5	3	External coolant	Straight shank	GD03-1050S	11	102	55	40	45	M12×1.5	7/16-20UNF	○
	5			GD05-1050S	11	118	71	56	45			○
	3	Internal coolant		GD03C-1050S	11	102	55	40	45			○
	5			GD05C-1050S	11	118	71	56	45			○
	3	External coolant		GD03-1050	12	102	55	40	45			●
	5			GD05-1050	12	118	71	56	45			●
	3	Internal coolant		GD03C-1050	12	102	55	40	45			●
	5			GD05C-1050	12	118	71	56	45			●
	8			GD08C-1050	12	162	114	99	45			○
10.6	3	External coolant		GD03-1060S	11	102	55	40	45			○
	5			GD05-1060S	11	118	71	56	45			○
	3	Internal coolant		GD03C-1060S	11	102	55	40	45			○
	5			GD05C-1060S	11	118	71	56	45			○
	3	External coolant		GD03-1060	12	102	55	40	45			●
	5			GD05-1060	12	118	71	56	45			●
	3	Internal coolant		GD03C-1060	12	102	55	40	45			●
	5			GD05C-1060	12	118	71	56	45			●
	8			GD08C-1060	12	162	114	99	45			○
10.7	3	External coolant		GD03-1070S	11	102	55	40	45			○
	5			GD05-1070S	11	118	71	56	45			○
	3	Internal coolant		GD03C-1070S	11	102	55	40	45			○
	5			GD05C-1070S	11	118	71	56	45			○
	3	External coolant		GD03-1070	12	102	55	40	45			●
	5			GD05-1070	12	118	71	56	45			●
	3	Internal coolant		GD03C-1070	12	102	55	40	45			●
	5			GD05C-1070	12	118	71	56	45			●
	8			GD08C-1070	12	162	114	99	45			○
10.75	3	External coolant		GD03-1075S	11	102	55	40	45	M12×1.25		○
	5			GD05-1075S	11	118	71	56	45			○
	3	Internal coolant		GD03C-1075S	11	102	55	40	45			○
	5			GD05C-1075S	11	118	71	56	45			○
	3	External coolant		GD03-1075	12	102	55	40	45			●
	5			GD05-1075	12	118	71	56	45			●
	3	Internal coolant		GD03C-1075	12	102	55	40	45			●
	5			GD05C-1075	12	118	71	56	45			●

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h5. ● Stock available ○ Make-to-order

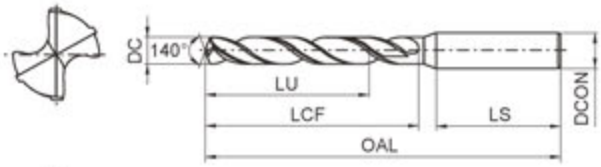
Applicable material table

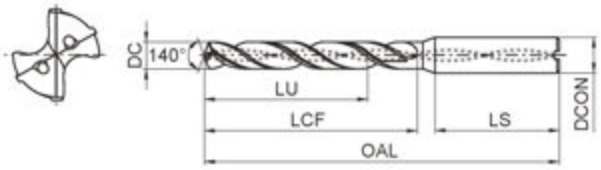
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	◎	◎			○	◎	◎			○

Code key C6 Cutting parameters C151-C152 Technical information C165-C171 Non-standard customization tools C172-C176

GD series General machining





● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
10.8	3	External coolant	Straight shank	GD03-1080S	11	102	55	40	45	1/2-13UNC		○
	5			GD05-1080S	11	118	71	56	45			○
	3	Internal coolant		GD03C-1080S	11	102	55	40	45			○
	5			GD05C-1080S	11	118	71	56	45			○
	3	External coolant		GD03-1080	12	102	55	40	45			●
	5			GD05-1080	12	118	71	56	45			●
	3	Internal coolant		GD03C-1080	12	102	55	40	45			●
	5			GD05C-1080	12	118	71	56	45			●
	8			GD08C-1080	12	162	114	99	45			○
10.9	3	External coolant		GD03-1090S	11	102	55	40	45			○
	5			GD05-1090S	11	118	71	56	45			○
	3	Internal coolant		GD03C-1090S	11	102	55	40	45			○
	5			GD05C-1090S	11	118	71	56	45			○
	3	External coolant		GD03-1090	12	102	55	40	45			●
	5			GD05-1090	12	118	71	56	45			●
	3	Internal coolant		GD03C-1090	12	102	55	40	45			●
	5			GD05C-1090	12	118	71	56	45			●
	8			GD08C-1090	12	162	114	99	45			○
11.0	3	External coolant		GD03-1100S	11	102	55	40	45			○
	5			GD05-1100S	11	118	71	56	45			○
	3	Internal coolant		GD03C-1100S	11	102	55	40	45			○
	5			GD05C-1100S	11	118	71	56	45			○
	3	External coolant		GD03-1100	12	102	55	40	45			●
	5			GD05-1100	12	118	71	56	45			●
	3	Internal coolant		GD03C-1100	12	102	55	40	45			●
	5			GD05C-1100	12	118	71	56	45			●
	8			GD08C-1100	12	162	114	99	45			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
11.1	3	External coolant	Straight shank	GD03-1110	12	102	55	40	45			●
	5			GD05-1110	12	118	71	56	45			●
	3	Internal coolant		GD03C-1110	12	102	55	40	45			●
	5			GD05C-1110	12	118	71	56	45			●
	8			GD08C-1110	12	162	114	99	45			○
11.2	3	External coolant		GD03-1120	12	102	55	40	45			●
	5			GD05-1120	12	118	71	56	45			●
	3	Internal coolant		GD03C-1120	12	102	55	40	45			●
	5			GD05C-1120	12	118	71	56	45			●
	8			GD08C-1120	12	162	114	99	45			○
11.25	3	External coolant		GD03-1125	12	102	55	40	45		M12×1.75	●
	5			GD05-1125	12	118	71	56	45			●
	3	Internal coolant		GD03C-1125	12	102	55	40	45			●
	5			GD05C-1125	12	118	71	56	45			●
11.3	3	External coolant		GD03-1130	12	102	55	40	45			●
	5			GD05-1130	12	118	71	56	45			●
	3	Internal coolant		GD03C-1130	12	102	55	40	45			●
	5			GD05C-1130	12	118	71	56	45			●
	8			GD08C-1130	12	162	114	99	45			○
11.35	3	External coolant		GD03-1135	12	102	55	40	45		M12×1.5	●
	5			GD05-1135	12	118	71	56	45			●
	3	Internal coolant		GD03C-1135	12	102	55	40	45			●
	5			GD05C-1135	12	118	71	56	45			●
11.4	3	External coolant		GD03-1140	12	102	55	40	45			●
	5			GD05-1140	12	118	71	56	45			●
	3	Internal coolant		GD03C-1140	12	102	55	40	45			●
	5			GD05C-1140	12	118	71	56	45			●
	8			GD08C-1140	12	162	114	99	45			○
11.45	3	External coolant		GD03-1145	12	102	55	40	45		M12×1.25	●
	5			GD05-1145	12	118	71	56	45			●
	3	Internal coolant		GD03C-1145	12	102	55	40	45			●
	5			GD05C-1145	12	118	71	56	45			●

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h5. ● Stock available ○ Make-to-order

Applicable material table

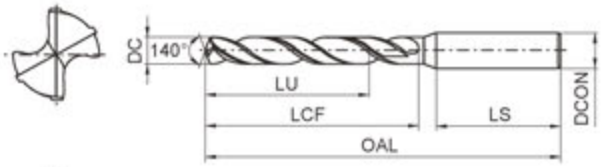
◎Very suitable ○Suitable

Grade	Workpiece material										
	Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
KDG3013	○	◎	◎			○	◎	◎			○

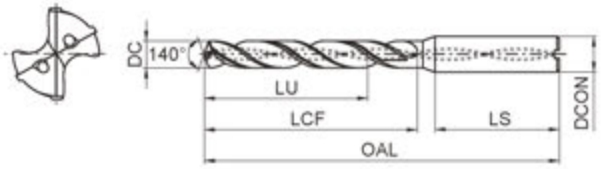
Code key C6
Cutting parameters C151-C152
Technical information C165-C171
Non-standard customization tools C172-C176

GD series General machining


External coolant — Straight shank




Internal coolant — Straight shank



● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3013
11.5	3	External coolant	Straight shank	GD03-1150	12	102	55	40	45	1/2-20UNF		●
	5			GD05-1150	12	118	71	56	45			●
	3	Internal coolant		GD03C-1150	12	102	55	40	45			●
	5			GD05C-1150	12	118	71	56	45			●
	8			GD08C-1150	12	162	114	99	45			○
11.6	3	External coolant		GD03-1160	12	102	55	40	45			●
	5			GD05-1160	12	118	71	56	45			●
	3	Internal coolant		GD03C-1160	12	102	55	40	45			●
	5			GD05C-1160	12	118	71	56	45			●
	8			GD08C-1160	12	162	114	99	45			○
11.7	3	External coolant		GD03-1170	12	102	55	40	45			●
	5			GD05-1170	12	118	71	56	45			●
	3	Internal coolant		GD03C-1170	12	102	55	40	45			●
	5			GD05C-1170	12	118	71	56	45			●
	8			GD08C-1170	12	162	114	99	45			○
11.8	3	External coolant		GD03-1180	12	102	55	40	45		1/2-13UNC	●
	5			GD05-1180	12	118	71	56	45			●
	3	Internal coolant		GD03C-1180	12	102	55	40	45			●
	5			GD05C-1180	12	118	71	56	45			●
	8			GD08C-1180	12	162	114	99	45			○
11.9	3	External coolant		GD03-1190	12	102	55	40	45			●
	5			GD05-1190	12	118	71	56	45			●
	3	Internal coolant		GD03C-1190	12	102	55	40	45			●
	5			GD05C-1190	12	118	71	56	45			●
	8			GD08C-1190	12	162	114	99	45			○
12.0	3	External coolant		GD03-1200	12	102	55	40	45	M14×2		●
	5			GD05-1200	12	118	71	56	45			●
	3	Internal coolant		GD03C-1200	12	102	55	40	45			●
	5			GD05C-1200	12	118	71	56	45			●
	8			GD08C-1200	12	162	114	99	45			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3013
12.1	3	External coolant	Straight shank	GD03-1210	14	107	60	43	45		1/2-20UNF	●
	5			GD05-1210	14	124	77	60	45			●
	3	Internal coolant		GD03C-1210	14	107	60	43	45			●
	5			GD05C-1210	14	124	77	60	45			●
12.2	3	External coolant		GD03-1220	14	107	60	43	45	9/16-12UNC		●
	5			GD05-1220	14	124	77	60	45			●
	3	Internal coolant		GD03C-1220	14	107	60	43	45			●
	5			GD05C-1220	14	124	77	60	45			●
12.25	3	External coolant		GD03-1225	14	107	60	43	45			●
	5			GD05-1225	14	124	77	60	45			●
	3	Internal coolant		GD03C-1225	14	107	60	43	45			●
	5			GD05C-1225	14	124	77	60	45			●
12.3	3	External coolant		GD03-1230	14	107	60	43	45			●
	5			GD05-1230	14	124	77	60	45			●
	3	Internal coolant		GD03C-1230	14	107	60	43	45			●
	5			GD05C-1230	14	124	77	60	45			●
12.5	3	External coolant		GD03-1250	14	107	60	43	45	M14×1.5		●
	5			GD05-1250	14	124	77	60	45			●
	3	Internal coolant		GD03C-1250	14	107	60	43	45			●
	5			GD05C-1250	14	124	77	60	45			●
	8			GD08C-1250	14	178	133	116	45			○
12.7	3	External coolant		GD03-1270	14	107	60	43	45			●
	5			GD05-1270	14	124	77	60	45			●
	3	Internal coolant		GD03C-1270	14	107	60	43	45			●
	5			GD05C-1270	14	124	77	60	45			●
	8			GD08C-1270	14	178	133	116	45			○
12.75	3	External coolant		GD03-1275	14	107	60	43	45			●
	5			GD05-1275	14	124	77	60	45			●
	3	Internal coolant		GD03C-1275	14	107	60	43	45			●
	5			GD05C-1275	14	124	77	60	45			●
12.8	3	External coolant		GD03-1280	14	107	60	43	45			●
	5			GD05-1280	14	124	77	60	45			●
	3	Internal coolant		GD03C-1280	14	107	60	43	45			●
	5			GD05C-1280	14	124	77	60	45			●
	8			GD08C-1280	14	178	133	116	45			○

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h5. ● Stock available ○ Make-to-order

Applicable material table

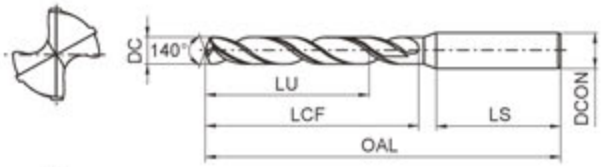
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	◎	◎			○	◎	◎			○

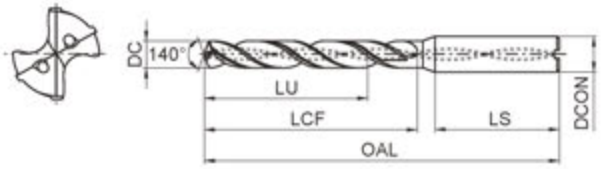
Code key C6
Cutting parameters C151-C152
Technical information C165-C171
Non-standard customization tools C172-C176

GD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3013
12.9	3	External coolant	Straight shank	GD03-1290	14	107	60	43	45	9/16-18UNF		●
	5			GD05-1290	14	124	77	60	45			●
	3	Internal coolant		GD03C-1290	14	107	60	43	45			●
	5			GD05C-1290	14	124	77	60	45			●
13.0	3	External coolant		GD03-1300	14	107	60	43	45			●
	5			GD05-1300	14	124	77	60	45			●
	3	Internal coolant		GD03C-1300	14	107	60	43	45			●
	5			GD05C-1300	14	124	77	60	45			●
	8			GD08C-1300	14	178	133	116	45			○
13.1	3	External coolant		GD03-1310	14	107	60	43	45		M14×2	●
	5			GD05-1310	14	124	77	60	45			●
	3	Internal coolant		GD03C-1310	14	107	60	43	45			●
	5			GD05C-1310	14	124	77	60	45			●
13.35	3	External coolant		GD03-1335	14	107	60	43	45		M14×1.5 9/16-12UNC	●
	5			GD05-1335	14	124	77	60	45			●
	3	Internal coolant		GD03C-1335	14	107	60	43	45			●
	5			GD05C-1335	14	124	77	60	45			●
13.5	3	External coolant		GD03-1350	14	107	60	43	45	5/8-11UNC		●
	5			GD05-1350	14	124	77	60	45			●
	3	Internal coolant		GD03C-1350	14	107	60	43	45			●
	5			GD05C-1350	14	124	77	60	45			●
	8			GD08C-1350	14	178	133	116	45			○
13.65	3	External coolant		GD03-1365	14	107	60	43	45		9/16-18UNF	●
	5			GD05-1365	14	124	77	60	45			●
	3	Internal coolant		GD03C-1365	14	107	60	43	45			●
	5			GD05C-1365	14	124	77	60	45			●

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3013
13.8	3	External coolant	Straight shank	GD03-1380	14	107	60	43	45			●
	5			GD05-1380	14	124	77	60	45			●
	3	Internal coolant		GD03C-1380	14	107	60	43	45			●
	5			GD05C-1380	14	124	77	60	45			●
14.0	3	External coolant		GD03-1400	14	107	60	43	45	M16×2		●
	5			GD05-1400	14	124	77	60	45			●
	3	Internal coolant		GD03C-1400	14	107	60	43	45			●
	5			GD05C-1400	14	124	77	60	45			●
	8			GD08C-1400	14	178	133	116	45			○
14.25	3	External coolant		GD03-1425	16	115	65	45	48			●
	5			GD05-1425	16	133	83	63	48			●
	3	Internal coolant		GD03C-1425	16	115	65	45	48			●
	5			GD05C-1425	16	133	83	63	48			●
14.3	3	External coolant		GD03-1430	16	115	65	45	48			●
	5			GD05-1430	16	133	83	63	48			●
	3	Internal coolant		GD03C-1430	16	115	65	45	48			●
	5			GD05C-1430	16	133	83	63	48			●
14.5	3	External coolant		GD03-1450	16	115	65	45	48	M16×1.5 5/8-18UNF		●
	5			GD05-1450	16	133	83	63	48			●
	3	Internal coolant		GD03C-1450	16	115	65	45	48			●
	5			GD05C-1450	16	133	83	63	48			●
	8			GD08C-1450	16	204	152	132	48			○
14.75	3	External coolant		GD03-1475	16	115	65	45	48			●
	5			GD05-1475	16	133	83	63	48			●
	3	Internal coolant		GD03C-1475	16	115	65	45	48			●
	5			GD05C-1475	16	133	83	63	48			●
14.8	3	External coolant		GD03-1480	16	115	65	45	48		5/8-11UNC	●
	5			GD05-1480	16	133	83	63	48			●
	3	Internal coolant		GD03C-1480	16	115	65	45	48			●
	5			GD05C-1480	16	133	83	63	48			●
	8			GD08C-1480	16	204	152	132	48			○
15.0	3	External coolant		GD03-1500	16	115	65	45	48			●
	5			GD05-1500	16	133	83	63	48			●
	3	Internal coolant		GD03C-1500	16	115	65	45	48			●
	5			GD05C-1500	16	133	83	63	48			●
	8			GD08C-1500	16	204	152	132	48			○

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h5. ● Stock available ○ Make-to-order

Applicable material table

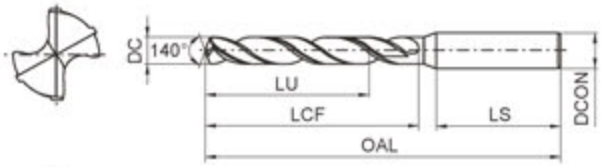
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	◎	◎			○	◎	◎			○

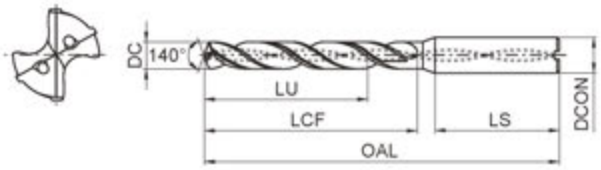
Code key C6 Cutting parameters C151-C152 Technical information C165-C171 Non-standard customization tools C172-C176

GD series General machining


External coolant — Straight shank




Internal coolant — Straight shank



● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Forming taps	Grade KDG3013
15.1	3	External coolant	Straight shank	GD03-1510	16	115	65	45	48		M16×2	●
	5			GD05-1510	16	133	83	63	48			●
	3	Internal coolant		GD03C-1510	16	115	65	45	48			●
	5			GD05C-1510	16	133	83	63	48			●
15.25	3	External coolant		GD03-1525	16	115	65	45	48		5/8-18UNF	●
	5			GD05-1525	16	133	83	63	48			●
	3	Internal coolant		GD03C-1525	16	115	65	45	48			●
	5			GD05C-1525	16	133	83	63	48			●
15.35	3	External coolant		GD03-1535	16	115	65	45	48		M16×1.5	●
	5			GD05-1535	16	133	83	63	48			●
	3	Internal coolant		GD03C-1535	16	115	65	45	48			●
	5			GD05C-1535	16	133	83	63	48			●
15.5	3	External coolant		GD03-1550	16	115	65	45	48	M18×2.5		●
	5			GD05-1550	16	133	83	63	48			●
	3	Internal coolant		GD03C-1550	16	115	65	45	48			●
	5			GD05C-1550	16	133	83	63	48			●
	8			GD08C-1550	16	204	152	132	48			○
15.8	3	External coolant		GD03-1580	16	115	65	45	48			●
	5			GD05-1580	16	133	83	63	48			●
	3	Internal coolant		GD03C-1580	16	115	65	45	48			●
	5			GD05C-1580	16	133	83	63	48			●
16.0	3	External coolant		GD03-1600	16	115	65	45	48	M18×2		●
	5			GD05-1600	16	133	83	63	48			●
	3	Internal coolant		GD03C-1600	16	115	65	45	48			●
	5			GD05C-1600	16	133	83	63	48			●
	8			GD08C-1600	16	204	152	132	48			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3013
16.5	3	External coolant	Straight shank	GD03-1650	18	123	73	51	48	3/4-10UNC		●
	5			GD05-1650	18	143	93	71	48			●
	3	Internal coolant		GD03C-1650	18	123	73	51	48			●
	5			GD05C-1650	18	143	93	71	48			●
	8			GD08C-1650	18	223	171	149	48			○
16.75	3	External coolant		GD03-1675	18	123	73	51	48			●
	5			GD05-1675	18	143	93	71	48			●
	3	Internal coolant		GD03C-1675	18	123	73	51	48			●
	5			GD05C-1675	18	143	93	71	48			●
16.8	3	External coolant		GD03-1680	18	123	73	51	48		M18×2.5	●
	5			GD05-1680	18	143	93	71	48			●
	3	Internal coolant		GD03C-1680	18	123	73	51	48			●
	5			GD05C-1680	18	143	93	71	48			●
17.0	3	External coolant		GD03-1700	18	123	73	51	48			●
	5			GD05-1700	18	143	93	71	48			●
	3	Internal coolant		GD03C-1700	18	123	73	51	48			●
	5			GD05C-1700	18	143	93	71	48			●
	8			GD08C-1700	18	223	171	149	48			○
17.5	3	External coolant		GD03-1750	18	123	73	51	48	M20×2.5 3/4-16UNF		●
	5			GD05-1750	18	143	93	71	48			●
	3	Internal coolant		GD03C-1750	18	123	73	51	48			●
	5			GD05C-1750	18	143	93	71	48			●
	8			GD08C-1750	18	223	171	149	48			○
17.8	3	External coolant		GD03-1780	18	123	73	51	48			●
	5			GD05-1780	18	143	93	71	48			●
	3	Internal coolant		GD03C-1780	18	123	73	51	48			●
	5			GD05C-1780	18	143	93	71	48			●
17.9	3	External coolant		GD03-1790	18	123	73	51	48		3/4-10UNC	●
	5			GD05-1790	18	143	93	71	48			●
	3	Internal coolant		GD03C-1790	18	123	73	51	48			●
	5			GD05C-1790	18	143	93	71	48			●
18.0	3	External coolant		GD03-1800	18	123	73	51	48	M20×2		●
	5			GD05-1800	18	143	93	71	48			●
	3	Internal coolant		GD03C-1800	18	123	73	51	48			●
	5			GD05C-1800	18	143	93	71	48			●
	8			GD08C-1800	18	223	171	149	48			○

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h_5.

● Stock available ○ Make-to-order

Applicable material table

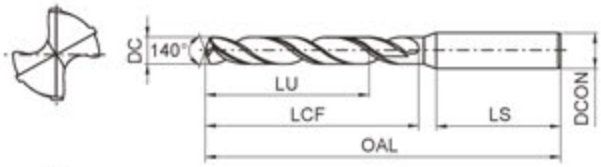
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	◎	◎			○	◎	◎			○

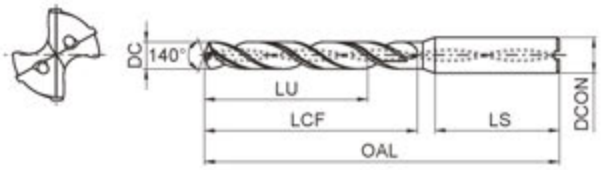
Code key C6
Cutting parameters C151-C152
Technical information C165-C171
Non-standard customization tools C172-C176

GD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3013
18.3	3	External coolant	Straight shank	GD03-1830	20	131	79	55	50		3/4-16UNF	●
	5			GD05-1830	20	153	101	77	50			●
	3	Internal coolant		GD03C-1830	20	131	79	55	50			●
	5			GD05C-1830	20	153	101	77	50			●
18.5	3	External coolant		GD03-1850	20	131	79	55	50			●
	5			GD05-1850	20	153	101	77	50			●
	3	Internal coolant		GD03C-1850	20	131	79	55	50			●
	5			GD05C-1850	20	153	101	77	50			●
18.8	3	External coolant		GD03-1880	20	131	79	55	50		M20×2.5	●
	5			GD05-1880	20	153	101	77	50			●
	3	Internal coolant		GD03C-1880	20	131	79	55	50			●
	5			GD05C-1880	20	153	101	77	50			●
19.0	3	External coolant		GD03-1900	20	131	79	55	50			●
	5			GD05-1900	20	153	101	77	50			●
	3	Internal coolant		GD03C-1900	20	131	79	55	50			●
	5			GD05C-1900	20	153	101	77	50			●
19.5	3	External coolant		GD03-1950	20	131	79	55	50			●
	5			GD05-1950	20	153	101	77	50	M22×2.5		●
	3	Internal coolant		GD03C-1950	20	131	79	55	50	7/8-9UNC		●
	5			GD05C-1950	20	153	101	77	50			●
19.8	3	External coolant		GD03-1980	20	131	79	55	50			●
	5			GD05-1980	20	153	101	77	50			●
	3	Internal coolant		GD03C-1980	20	131	79	55	50			●
	5			GD05C-1980	20	153	101	77	50			●
20.0	3	External coolant		GD03-2000	20	131	79	55	50			●
	5			GD05-2000	20	153	101	77	50	M22×2		●
	3	Internal coolant		GD03C-2000	20	131	79	55	50			●
	5			GD05C-2000	20	153	101	77	50			●

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Forming taps	Grade KDG3013
20.4	3	External coolant	Straight shank	GD03-2040	20	141	86	60	50	7/8-14UNF		○
	5			GD05-2040	20	167	112	85	50			○
	3	Internal coolant		GD03C-2040	20	141	86	60	50			○
	5			GD05C-2040	20	167	112	85	50			○
20.5	3	External coolant		GD03-2050	20	141	86	60	50			○
	5			GD05-2050	20	167	112	85	50			○
	3	Internal coolant		GD03C-2050	20	141	86	60	50			○
	5			GD05C-2050	20	167	112	85	50			○
21.0	3	External coolant		GD03-2100	20	141	86	60	50	M24×3	7/8-9UNC	○
	5			GD05-2100	20	167	112	85	50			○
	3	Internal coolant		GD03C-2100	20	141	86	60	50			○
	5			GD05C-2100	20	167	112	85	50			○
21.4	3	External coolant		GD03-2140	20	141	86	60	50		7/8-14UNF	○
	5			GD05-2140	20	167	112	85	50			○
	3	Internal coolant		GD03C-2140	20	141	86	60	50			○
	5			GD05C-2140	20	167	112	85	50			○
21.5	3	External coolant		GD03-2150	20	141	86	60	50			○
	5			GD05-2150	20	167	112	85	50			○
	3	Internal coolant		GD03C-2150	20	141	86	60	50			○
	5			GD05C-2150	20	167	112	85	50			○
22.0	3	External coolant		GD03-2200	20	141	86	60	50	M24×2		○
	5			GD05-2200	20	167	112	85	50			○
	3	Internal coolant		GD03C-2200	20	141	86	60	50			○
	5			GD05C-2200	20	167	112	85	50			○
22.25	3	External coolant		GD03-2225	25	153	95	65	56	1-8UNC		○
	5			GD05-2225	25	184	126	98	56			○
	3	Internal coolant		GD03C-2225	25	153	95	65	56			○
	5			GD05C-2225	25	184	126	98	56			○
22.5	3	External coolant		GD03-2250	25	153	95	65	56			○
	5			GD05-2250	25	184	126	98	56			○
	3	Internal coolant		GD03C-2250	25	153	95	65	56			○
	5			GD05C-2250	25	184	126	98	56			○
23.0	3	External coolant		GD03-2300	25	153	95	65	56	M25×2		○
	5			GD05-2300	25	184	126	98	56			○
	3	Internal coolant		GD03C-2300	25	153	95	65	56			○
	5			GD05C-2300	25	184	126	98	56			○

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h5. ● Stock available ○ Make-to-order

Applicable material table

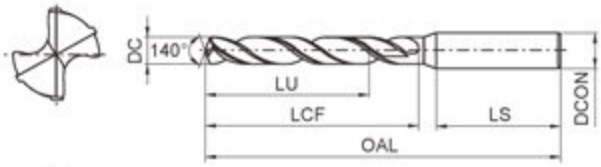
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	◎	◎			○	◎	◎			○

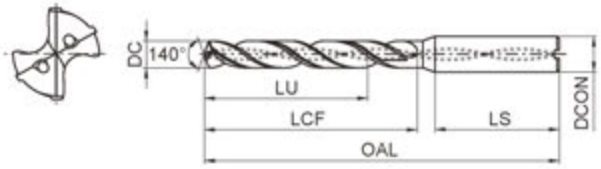
Code key C6 Cutting parameters C151-C152 Technical information C165-C171 Non-standard customization tools C172-C176

GD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



● Suitable for high efficiency drilling in a variety of materials e.g steel, stainless steel, cast iron.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Forming taps	Grade KDG3013
23.25	3	External coolant	Straight shank	GD03-2325	25	153	95	65	56	1-12UNF		○
	5			GD05-2325	25	184	126	98	56			○
	3	Internal coolant		GD03C-2325	25	153	95	65	56			○
	5			GD05C-2325	25	184	126	98	56			○
23.5	3	External coolant		GD03-2350	25	153	95	65	56			○
	5			GD05-2350	25	184	126	98	56			○
	3	Internal coolant		GD03C-2350	25	153	95	65	56			○
	5			GD05C-2350	25	184	126	98	56			○
24.0	3	External coolant		GD03-2400	25	153	95	65	56	M27×3	1-8UNC	○
	5			GD05-2400	25	184	126	98	56			○
	3	Internal coolant		GD03C-2400	25	153	95	65	56			○
	5			GD05C-2400	25	184	126	98	56			○
24.5	3	External coolant		GD03-2450	25	153	95	65	56		1-12UNF	○
	5			GD05-2450	25	184	126	98	56			○
	3	Internal coolant		GD03C-2450	25	153	95	65	56			○
	5			GD05C-2450	25	184	126	98	56			○
25.0	3	External coolant		GD03-2500	25	153	95	65	56	M27×2 11/8-7UNC		○
	5			GD05-2500	25	184	126	98	56			○
	3	Internal coolant		GD03C-2500	25	153	95	65	56			○
	5			GD05C-2500	25	184	126	98	56			○

Note: For drilling depth (ULDR) of 8, namely GD08C series, tolerance of shank diameter is h_5.

● Stock available ○ Make-to-order

Applicable material table

◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3013	○	◎	◎			○	◎	◎			○

Code key C6 — Cutting parameters C151-C152 — Technical information C165-C171 — Non-standard customization tools C172-C176

- New developed curve edge flutes take into account edge strength, tool rigidity, and chip flowing space.

- The new design on regrinding parameters of the chisel edge can improve cutting performance effectively.

- Optimized treatment on cutting edge to improve flutes strength and chipbreaking performance.

- Optimized coating post-treatment technology to significantly improve wear resistance.

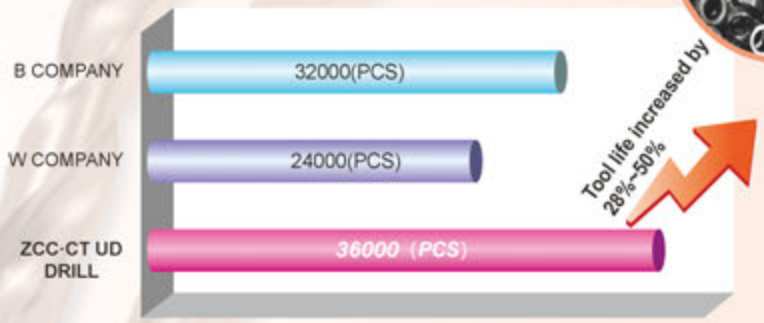
UD Series

Twist drill for general machining

Performance Advantages

UD drills have excellent rigidity, performance stability ,and good general machining application. It is widely used in machining of mild steel, stainless steel, alloy steel and cast iron. Special drill nose design brings lower cutting force.

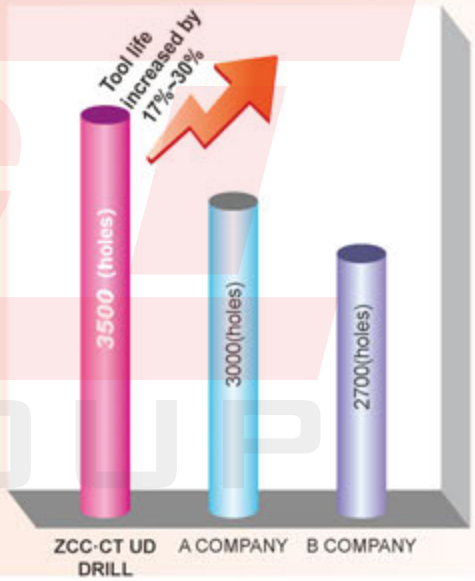
CASE 1



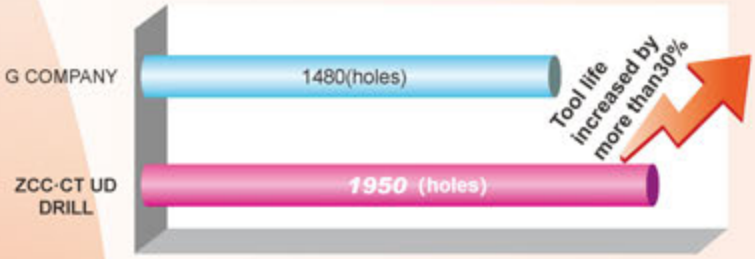
Industry: Automotive parts
Workpiece: Inner ring of bearing
Machined material: 100Cr6 HB185~235
Drill's type: D11.23*61*D10*120
Cutting Parameters: S=3100rpm, f=600mm/min, H=40mm(one cutting depth is 40mm, total 8 pcs workpiece)
Equipment: Composite Turning center, 8 station machine at same time
Coolant method: Oil water emulsion

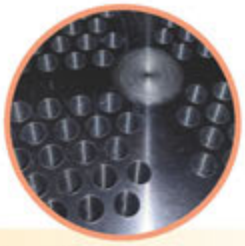
CASE 2

Industry: Automotive Parts
Workpiece: Hinge
Machined material: Q345B HB280
Drill's type: D14.2*50*D14*135
Cutting Parameters: S=3365rpm, f=673mm/min, H=25mm
Cooling method: External coolant with Oil water emulsion



CASE 3

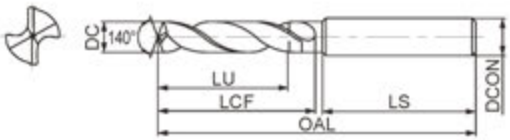




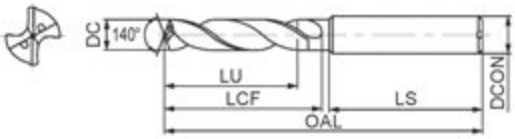
Workpiece: Plates of condenser pipe
Machined Material: 304 stainless steel, HB180
Drill's dimension: D9.7*55*D10*100
Cutting Parameters: S=2298rpm, f=344mm/min, H=36mm
Equipment: Vertical CNC
Cooling way: Internal coolant with Oil water emulsion

UD series General machining

External coolant Straight shank



Internal coolant Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
2	3	External coolant	Straight shank	UD03-0200S	3	46	13	9	30		NO.2-64UNF	○
	5			UD05-0200S	3	50	18	14	30			○
	3			UD03-0200	4	46	13	9	30			●
	5			UD05-0200	4	50	18	14	30			●
2.1	3			UD03-0210S	3	46	13	9	30	NO.3-48UNC		○
	5			UD05-0210S	3	50	18	14	30			○
	3			UD03-0210	4	46	13	9	30			●
	5			UD05-0210	4	50	18	14	30			●
2.15	3			UD03-0215S	3	46	13	9	30	NO.3-56UNF		○
	5			UD05-0215S	3	50	18	14	30			○
	3			UD03-0215	4	46	13	9	30			●
	5			UD05-0215	4	50	18	14	30			●
2.2	3			UD03-0220S	3	46	13	9	30			○
	5			UD05-0220S	3	50	18	14	30			○
	3			UD03-0220	4	46	13	9	30			●
	5			UD05-0220	4	50	18	14	30			●
2.3	3			UD03-0230S	3	46	13	9	30		M2.5*0.45; NO.3-56UNF	○
	5			UD05-0230S	3	50	18	14	30			○
	3			UD03-0230	4	46	13	9	30			●
	5			UD05-0230	4	50	18	14	30			●

● Stock available ○ Make-to-order

Applicable material table

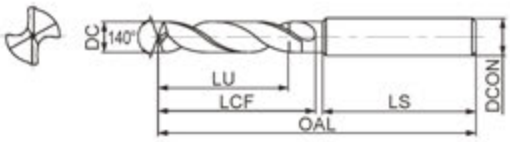
◎Very suitable ○Suitable

Grade	Workpiece material										
	Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
KDG3023	◎	◎	◎	○		◎	◎	◎			○

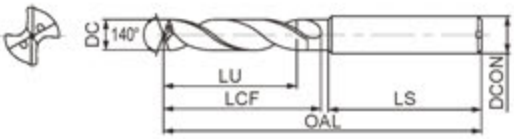
Code key C6
Cutting parameters C153-C154
Technical information C165-C171
Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
2.35	3	External coolant	Straight shank	UD03-0235S	3	46	13	9	30	NO.4-40UNC		○
	5			UD05-0235S	3	50	18	14	30			○
	3			UD03-0235	4	46	13	9	30			●
	5			UD05-0235	4	50	18	14	30			●
2.4	3			UD03-0240S	3	50	17	12	30	NO.4-48UNF		○
	5			UD05-0240S	3	55	22	17	30			○
	3			UD03-0240	4	50	17	12	30			●
	5			UD05-0240	4	55	22	17	30			●
2.5	3			UD03-0250S	3	50	17	12	30	M3*0.5		○
	5			UD05-0250S	3	55	22	17	30			○
	3			UD03-0250	4	50	17	12	30			●
	5			UD05-0250	4	55	22	17	30			●
2.55	3			UD03-0255S	3	50	17	12	30		NO.4-40UNC	○
	5			UD05-0255S	3	55	22	17	30			○
	3			UD03-0255	4	50	17	12	30			●
	5			UD05-0255	4	55	22	17	30			●
2.6	3			UD03-0260S	3	50	17	12	30		NO.4-48UNF	○
	5			UD05-0260S	3	55	22	17	30			○
	3			UD03-0260	4	50	17	12	30			●
	5			UD05-0260	4	55	22	17	30			●
2.65	3			UD03-0265S	3	50	17	12	30	NO.5-40UNC		○
	5			UD05-0265S	3	55	22	17	30			○
	3			UD03-0265	4	50	17	12	30			●
	5			UD05-0265	4	55	22	17	30			●
2.7	3			UD03-0270S	3	50	17	12	30	NO.5-44UNF		○
	5			UD05-0270S	3	55	22	17	30			○
	3			UD03-0270	4	50	17	12	30			●
	5			UD05-0270	4	55	22	17	30			●

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
2.8	3	External coolant	Straight shank	UD03-0280S	3	50	17	12	30		M3*0.5	○
	5			UD05-0280S	3	55	22	17	30			○
	3			UD03-0280	4	50	17	12	30			●
	5			UD05-0280	4	55	22	17	30			●
2.85	3			UD03-0285S	3	50	17	12	30	NO.6-32UNC		○
	5			UD05-0285S	3	55	22	17	30			○
	3			UD03-0285	4	50	17	12	30			●
	5			UD05-0285	4	55	22	17	30			●
2.9	3			UD03-0290S	3	50	17	12	30		NO.5-40UNC NO.5-44UNF	○
	5			UD05-0290S	3	55	22	17	30			○
	3			UD03-0290	4	50	17	12	30			●
	5			UD05-0290	4	55	22	17	30			●
2.95	3			UD03-0295S	3	50	17	12	30	NO.6-40UNF		○
	5			UD05-0295S	3	55	22	17	30			○
	3			UD03-0295	4	50	17	12	30			●
	5			UD05-0295	4	55	22	17	30			●
3	3	External coolant		UD03-0300S	3	62	20	14	36			○
	5			UD05-0300S	3	66	28	23	36			○
	3	Internal coolant		UD03C-0300S	3	62	20	14	36			○
	5			UD05C-0300S	3	66	28	23	36			○
	3	External coolant		UD03-0300	6	62	20	14	36			●
	5			UD05-0300	6	66	28	23	36			●
	3	Internal coolant		UD03C-0300	6	62	20	14	36			●
	5			UD05C-0300	6	66	28	23	36			●
3.1	3	External coolant		UD03-0310S	4	62	20	14	36			○
	5			UD05-0310S	4	66	28	23	36			○
	3	Internal coolant		UD03C-0310S	4	62	20	14	36			○
	5			UD05C-0310S	4	66	28	23	36			○
	3	External coolant		UD03-0310	6	62	20	14	36			●
	5			UD05-0310	6	66	28	23	36			●
	3	Internal coolant		UD03C-0310	6	62	20	14	36			●
	5			UD05C-0310	6	66	28	23	36			●

● Stock available ○ Make-to-order

Applicable material table

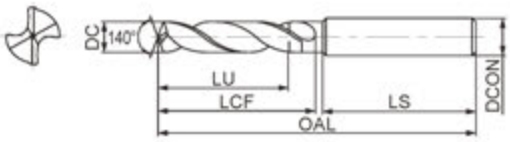
◎Very suitable ○Suitable

Grade	Workpiece material										
	Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
KDG3023	◎	◎	◎	○		◎	◎	◎			○

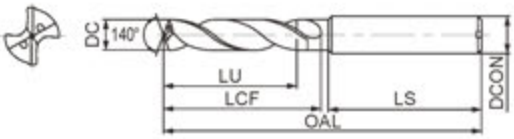
Code key C6
Cutting parameters C153-C154
Technical information C165-C171
Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
3.15	3	External coolant	Straight shank	UD03-0315S	4	62	20	14	36		NO.6-32UNC	○
	5			UD05-0315S	4	66	28	23	36			○
	3	Internal coolant		UD03C-0315S	4	62	20	14	36			○
	5			UD05C-0315S	4	66	28	23	36			○
	3	External coolant		UD03-0315	6	62	20	14	36			●
	5			UD05-0315	6	66	28	23	36			●
	3	Internal coolant		UD03C-0315	6	62	20	14	36			●
	5			UD05C-0315	6	66	28	23	36			●
3.2	3	External coolant		UD03-0320S	4	62	20	14	36		NO.6-40UNF	○
	5			UD05-0320S	4	66	28	23	36			○
	3	Internal coolant		UD03C-0320S	4	62	20	14	36			○
	5			UD05C-0320S	4	66	28	23	36			○
	3	External coolant		UD03-0320	6	62	20	14	36			●
	5			UD05-0320	6	66	28	23	36			●
	3	Internal coolant		UD03C-0320	6	62	20	14	36			●
	5			UD05C-0320	6	66	28	23	36			●
3.25	3	External coolant		UD03-0325S	4	62	20	14	36			○
	5			UD05-0325S	4	66	28	23	36			○
	3	Internal coolant		UD03C-0325S	4	62	20	14	36			○
	5			UD05C-0325S	4	66	28	23	36			○
	3	External coolant		UD03-0325	6	62	20	14	36			●
	5			UD05-0325	6	66	28	23	36			●
	3	Internal coolant		UD03C-0325	6	62	20	14	36			●
	5			UD05C-0325	6	66	28	23	36			●
3.3	3	External coolant		UD03-0330S	4	62	20	14	36	M4*0.7		○
	5			UD05-0330S	4	66	28	23	36			○
	3	Internal coolant		UD03C-0330S	4	62	20	14	36			○
	5			UD05C-0330S	4	66	28	23	36			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
3.3	3	External coolant	Straight shank	UD03-0330	6	62	20	14	36	M4*0.7		●
	5			UD05-0330	6	66	28	23	36			●
	3	Internal coolant		UD03C-0330	6	62	20	14	36			●
	5			UD05C-0330	6	66	28	23	36			●
3.4	3	External coolant		UD03-0340S	4	62	20	14	36			○
	5			UD05-0340S	4	66	28	23	36			○
	3	Internal coolant		UD03C-0340S	4	62	20	14	36			○
	5			UD05C-0340S	4	66	28	23	36			○
	3	External coolant		UD03-0340	6	62	20	14	36			●
	5			UD05-0340	6	66	28	23	36			●
	3	Internal coolant		UD03C-0340	6	62	20	14	36			●
	5			UD05C-0340	6	66	28	23	36			●
3.5	3	External coolant		UD03-0350S	4	62	20	14	36	M4*0.5 NO.8-32UNC NO.8-36UNF		○
	5			UD05-0350S	4	66	28	23	36			○
	3	Internal coolant		UD03C-0350S	4	62	20	14	36			○
	5			UD05C-0350S	4	66	28	23	36			○
	3	External coolant		UD03-0350	6	62	20	14	36			●
	5			UD05-0350	6	66	28	23	36			●
	3	Internal coolant		UD03C-0350	6	62	20	14	36			●
	5			UD05C-0350	6	66	28	23	36			●
3.6	3	External coolant		UD03-0360S	4	62	20	14	36			○
	5			UD05-0360S	4	66	28	23	36			○
	3	Internal coolant		UD03C-0360S	4	62	20	14	36			○
	5			UD05C-0360S	4	66	28	23	36			○
	3	External coolant		UD03-0360	6	62	20	14	36			●
	5			UD05-0360	6	66	28	23	36			●
	3	Internal coolant		UD03C-0360	6	62	20	14	36			●
	5			UD05C-0360	6	66	28	23	36			●
3.7	3	External coolant		UD03-0370S	4	62	20	14	36		M4*0.7	○
	5			UD05-0370S	4	66	28	23	36			○
	3	Internal coolant		UD03C-0370S	4	62	20	14	36			○
	5			UD05C-0370S	4	66	28	23	36			○

● Stock available ○ Make-to-order

Applicable material table

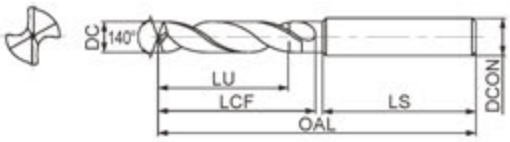
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

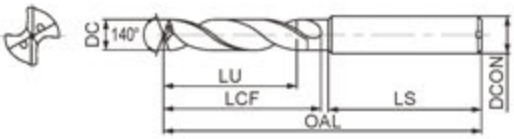
Code key C6 Cutting parameters C153-C154 Technical information C165-C171 Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
3.7	3	External coolant	Straight shank	UD03-0370	6	62	20	14	36		M4*0.7	●
	5			UD05-0370	6	66	28	23	36			●
	3	Internal coolant		UD03C-0370	6	62	20	14	36			●
	5			UD05C-0370	6	66	28	23	36			●
3.8	3	External coolant		UD03-0380S	4	66	24	17	36		M4*0.5 NO.8-32UNC	○
	5			UD05-0380S	4	74	36	29	36			○
	3	Internal coolant		UD03C-0380S	4	66	24	17	36			○
	5			UD05C-0380S	4	74	36	29	36			○
	3	External coolant		UD03-0380	6	66	24	17	36			●
	5			UD05-0380	6	74	36	29	36			●
	3	Internal coolant		UD03C-0380	6	66	24	17	36			●
	5			UD05C-0380	6	74	36	29	36			●
3.85	3	External coolant		UD03-0385S	4	66	24	17	36		NO.8-36UNF	○
	5			UD05-0385S	4	74	36	29	36			○
	3	Internal coolant		UD03C-0385S	4	66	24	17	36			○
	5			UD05C-0385S	4	74	36	29	36			○
	3	External coolant		UD03-0385	6	66	24	17	36			●
	5			UD05-0385	6	74	36	29	36			●
	3	Internal coolant		UD03C-0385	6	66	24	17	36			●
	5			UD05C-0385	6	74	36	29	36			●
3.9	3	External coolant		UD03-0390S	4	66	24	17	36	NO.10-24UNC		○
	5			UD05-0390S	4	74	36	29	36			○
	3	Internal coolant		UD03C-0390S	4	66	24	17	36			○
	5			UD05C-0390S	4	74	36	29	36			○
	3	External coolant		UD03-0390	6	66	24	17	36			●
	5			UD05-0390	6	74	36	29	36			●
	3	Internal coolant		UD03C-0390	6	66	24	17	36			●
	5			UD05C-0390	6	74	36	29	36			●

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
4	3	External coolant	Straight shank	UD03-0400S	4	66	24	17	36			○
	5			UD05-0400S	4	74	36	29	36			○
	3	Internal coolant		UD03C-0400S	4	66	24	17	36			○
	5			UD05C-0400S	4	74	36	29	36			○
	3	External coolant		UD03-0400	6	66	24	17	36			●
	5			UD05-0400	6	74	36	29	36			●
	3	Internal coolant		UD03C-0400	6	66	24	17	36			●
	5			UD05C-0400	6	74	36	29	36			●
4.1	3	External coolant		UD03-0410S	5	66	24	17	36	NO.10-32UNF		○
	5			UD05-0410S	5	74	36	29	36			○
	3	Internal coolant		UD03C-0410S	5	66	24	17	36			○
	5			UD05C-0410S	5	74	36	29	36			○
	3	External coolant		UD03-0410	6	66	24	17	36			●
	5			UD05-0410	6	74	36	29	36			●
	3	Internal coolant		UD03C-0410	6	66	24	17	36			●
	5			UD05C-0410	6	74	36	29	36			●
4.2	3	External coolant		UD03-0420S	5	66	24	17	36	M5*0.8		○
	5			UD05-0420S	5	74	36	29	36			○
	3	Internal coolant		UD03C-0420S	5	66	24	17	36			○
	5			UD05C-0420S	5	74	36	29	36			○
	3	External coolant		UD03-0420	6	66	24	17	36			●
	5			UD05-0420	6	74	36	29	36			●
	3	Internal coolant		UD03C-0420	6	66	24	17	36			●
	5			UD05C-0420	6	74	36	29	36			●
4.3	3	External coolant		UD03-0430S	5	66	24	17	36			○
	5			UD05-0430S	5	74	36	29	36			○
	3	Internal coolant		UD03C-0430S	5	66	24	17	36			○
	5			UD05C-0430S	5	74	36	29	36			○
	3	External coolant		UD03-0430	6	66	24	17	36			●
	5			UD05-0430	6	74	36	29	36			●
	3	Internal coolant		UD03C-0430	6	66	24	17	36			●
	5			UD05C-0430	6	74	36	29	36			●

● Stock available ○ Make-to-order

Applicable material table

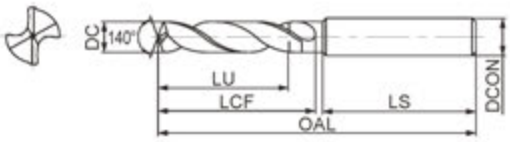
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

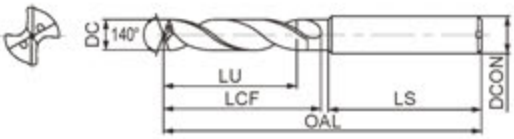
Code key C6 Cutting parameters C153-C154 Technical information C165-C171 Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
4.35	3	External coolant	Straight shank	UD03-0435S	5	66	24	17	36		NO.10-24UNC	○
	5			UD05-0435S	5	74	36	29	36			○
	3	Internal coolant		UD03C-0435S	5	66	24	17	36			○
	5			UD05C-0435S	5	74	36	29	36			○
	3	External coolant		UD03-0435	6	66	24	17	36			●
	5			UD05-0435	6	74	36	29	36			●
	3	Internal coolant		UD03C-0435	6	66	24	17	36			●
	5			UD05C-0435	6	74	36	29	36			●
4.4	3	External coolant		UD03-0440S	5	66	24	17	36			○
	5			UD05-0440S	5	74	36	29	36			○
	3	Internal coolant		UD03C-0440S	5	66	24	17	36			○
	5			UD05C-0440S	5	74	36	29	36			○
	3	External coolant		UD03-0440	6	66	24	17	36			●
	5			UD05-0440	6	74	36	29	36			●
	3	Internal coolant		UD03C-0440	6	66	24	17	36			●
	5			UD05C-0440	6	74	36	29	36			●
4.45	3	External coolant		UD03-0445S	5	66	24	17	36		NO.10-32UNF	○
	5			UD05-0445S	5	74	36	29	36			○
	3	Internal coolant		UD03C-0445S	5	66	24	17	36			○
	5			UD05C-0445S	5	74	36	29	36			○
	3	External coolant		UD03-0445	6	66	24	17	36			●
	5			UD05-0445	6	74	36	29	36			●
	3	Internal coolant		UD03C-0445	6	66	24	17	36			●
	5			UD05C-0445	6	74	36	29	36			●
4.5	3	External coolant		UD03-0450S	5	66	24	17	36	NO.12-24UNC		○
	5			UD05-0450S	5	74	36	29	36			○
	3	Internal coolant		UD03C-0450S	5	66	24	17	36			○
	5			UD05C-0450S	5	74	36	29	36			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
4.5	3	External coolant	Straight shank	UD03-0450	6	66	24	17	36	NO.12-24UNC		●
	5			UD05-0450	6	74	36	29	36			●
	3	Internal coolant		UD03C-0450	6	66	24	17	36			●
	5			UD05C-0450	6	74	36	29	36			●
4.6	3	External coolant		UD03-0460S	5	66	24	17	36			○
	5			UD05-0460S	5	74	36	29	36			○
	3	Internal coolant		UD03C-0460S	5	66	24	17	36			○
	5			UD05C-0460S	5	74	36	29	36			○
	3	External coolant		UD03-0460	6	66	24	17	36			●
	5			UD05-0460	6	74	36	29	36			●
	3	Internal coolant		UD03C-0460	6	66	24	17	36			●
	5			UD05C-0460	6	74	36	29	36			●
4.65	3	External coolant		UD03-0465S	5	66	24	17	36		M5*0.8	○
	5			UD05-0465S	5	74	36	29	36			○
	3	Internal coolant		UD03C-0465S	5	66	24	17	36			○
	5			UD05C-0465S	5	74	36	29	36			○
	3	External coolant		UD03-0465	6	66	24	17	36			●
	5			UD05-0465	6	74	36	29	36			●
	3	Internal coolant		UD03C-0465	6	66	24	17	36			●
	5			UD05C-0465	6	74	36	29	36			●
4.7	3	External coolant		UD03-0470S	5	66	24	17	36	NO.12-28UNF		○
	5			UD05-0470S	5	74	36	29	36			○
	3	Internal coolant		UD03C-0470S	5	66	24	17	36			○
	5			UD05C-0470S	5	74	36	29	36			○
	3	External coolant		UD03-0470	6	66	24	17	36			●
	5			UD05-0470	6	74	36	29	36			●
	3	Internal coolant		UD03C-0470	6	66	24	17	36			●
	5			UD05C-0470	6	74	36	29	36			●
4.8	3	External coolant		UD03-0480S	5	66	28	20	36		M5*0.5	○
	5			UD05-0480S	5	82	44	35	36			○
	3	Internal coolant		UD03C-0480S	5	66	28	20	36			○
	5			UD05C-0480S	5	82	44	35	36			○

● Stock available ○ Make-to-order

Applicable material table

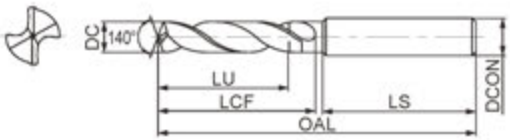
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

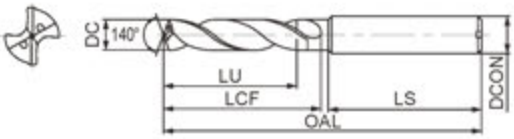
Code key C6 Cutting parameters C153-C154 Technical information C165-C171 Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
4.8	3	External coolant	Straight shank	UD03-0480	6	66	28	20	36		M5*0.5	●
	5			UD05-0480	6	82	44	35	36			●
	3	Internal coolant		UD03C-0480	6	66	28	20	36			●
	5			UD05C-0480	6	82	44	35	36			●
4.9	3	External coolant		UD03-0490S	5	66	28	20	36			○
	5			UD05-0490S	5	82	44	35	36			○
	3	Internal coolant		UD03C-0490S	5	66	28	20	36			○
	5			UD05C-0490S	5	82	44	35	36			○
	3	External coolant		UD03-0490	6	66	28	20	36			●
	5			UD05-0490	6	82	44	35	36			●
	3	Internal coolant		UD03C-0490	6	66	28	20	36			●
	5			UD05C-0490	6	82	44	35	36			●
5	3	External coolant		UD03-0500S	5	66	28	20	36	M6*1	NO.12-24UNC	○
	5			UD05-0500S	5	82	44	35	36			○
	3	Internal coolant		UD03C-0500S	5	66	28	20	36			○
	5			UD05C-0500S	5	82	44	35	36			○
	3	External coolant		UD03-0500	6	66	28	20	36			●
	5			UD05-0500	6	82	44	35	36			●
	3	Internal coolant		UD03C-0500	6	66	28	20	36			●
	5			UD05C-0500	6	82	44	35	36			●
5.1	3	External coolant		UD03-0510	6	66	28	20	36	1/4-20UNC	NO.12-28UNF	●
	5			UD05-0510	6	82	44	35	36			●
	3	Internal coolant		UD03C-0510	6	66	28	20	36			●
	5			UD05C-0510	6	82	44	35	36			●
5.2	3	External coolant		UD03-0520	6	66	28	20	36			●
	5			UD05-0520	6	82	44	35	36			●
	3	Internal coolant		UD03C-0520	6	66	28	20	36			●
	5			UD05C-0520	6	82	44	35	36			●

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
5.25	3	External coolant	Straight shank	UD03-0525	6	66	28	20	36	M6*0.75		●
	5			UD05-0525	6	82	44	35	36			●
	3	Internal coolant		UD03C-0525	6	66	28	20	36			●
	5			UD05C-0525	6	82	44	35	36			●
5.3	3	External coolant		UD03-0530	6	66	28	20	36			●
	5			UD05-0530	6	82	44	35	36			●
	3	Internal coolant		UD03C-0530	6	66	28	20	36			●
	5			UD05C-0530	6	82	44	35	36			●
5.4	3	External coolant		UD03-0540	6	66	28	20	36			●
	5			UD05-0540	6	82	44	35	36			●
	3	Internal coolant		UD03C-0540	6	66	28	20	36			●
	5			UD05C-0540	6	82	44	35	36			●
5.5	3	External coolant		UD03-0550	6	66	28	20	36	1/4-28UNF		●
	5			UD05-0550	6	82	44	35	36			●
	3	Internal coolant		UD03C-0550	6	66	28	20	36			●
	5			UD05C-0550	6	82	44	35	36			●
5.55	3	External coolant		UD03-0555	6	66	28	20	36			●
	5			UD05-0555	6	82	44	35	36			●
	3	Internal coolant		UD03C-0555	6	66	28	20	36			●
	5			UD05C-0555	6	82	44	35	36			●
5.6	3	External coolant		UD03-0560	6	66	28	20	36		M6*1	●
	5			UD05-0560	6	82	44	35	36			●
	3	Internal coolant		UD03C-0560	6	66	28	20	36			●
	5			UD05C-0560	6	82	44	35	36			●
5.7	3	External coolant		UD03-0570	6	66	28	20	36		M6*0.75	●
	5			UD05-0570	6	82	44	35	36			●
	3	Internal coolant		UD03C-0570	6	66	28	20	36			●
	5			UD05C-0570	6	82	44	35	36			●
5.75	3	External coolant		UD03-0575	6	66	28	20	36		1/4-20UNC	●
	5			UD05-0575	6	82	44	35	36			●
	3	Internal coolant		UD03C-0575	6	66	28	20	36			●
	5			UD05C-0575	6	82	44	35	36			●

● Stock available ○ Make-to-order

Applicable material table

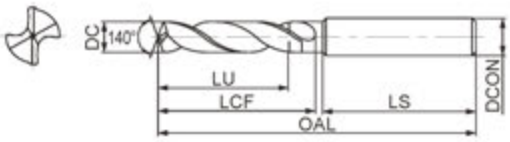
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

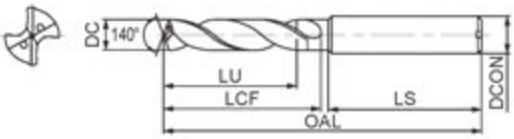
Code key C6 Cutting parameters C153-C154 Technical information C165-C171 Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
5.8	3	External coolant	Straight shank	UD03-0580	6	66	28	20	36			●
	5			UD05-0580	6	82	44	35	36			●
	3	Internal coolant		UD03C-0580	6	66	28	20	36			●
	5			UD05C-0580	6	82	44	35	36			●
5.9	3	External coolant		UD03-0590	6	66	28	20	36			●
	5			UD05-0590	6	82	44	35	36			●
	3	Internal coolant		UD03C-0590	6	66	28	20	36			●
	5			UD05C-0590	6	82	44	35	36			●
5.95	3	External coolant		UD03-0595	6	66	28	20	36			●
	5			UD05-0595	6	82	44	35	36		1/4-28UNF	●
	3	Internal coolant		UD03C-0595	6	66	28	20	36			●
	5			UD05C-0595	6	82	44	35	36			●
6	3	External coolant		UD03-0600	6	66	28	20	36			●
	5			UD05-0600	6	82	44	35	36	M7*1		●
	3	Internal coolant		UD03C-0600	6	66	28	20	36			●
	5			UD05C-0600	6	82	44	35	36			●
6.1	3	External coolant		UD03-0610S	7	79	34	24	36			○
	5			UD05-0610S	7	91	53	43	36			○
	3	Internal coolant		UD03C-0610S	7	79	34	24	36			○
	5			UD05C-0610S	7	91	53	43	36			○
	3	External coolant		UD03-0610	8	79	34	24	36			●
	5			UD05-0610	8	91	53	43	36			●
	3	Internal coolant		UD03C-0610	8	79	34	24	36			●
	5			UD05C-0610	8	91	53	43	36			●
6.2	3	External coolant		UD03-0620S	7	79	34	24	36			○
	5			UD05-0620S	7	91	53	43	36			○
	3	Internal coolant		UD03C-0620S	7	79	34	24	36			○
	5			UD05C-0620S	7	91	53	43	36			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Forming taps	Grade KDG3023
6.2	3	External coolant	Straight shank	UD03-0620	8	79	34	24	36			●
	5			UD05-0620	8	91	53	43	36			●
	3	Internal coolant		UD03C-0620	8	79	34	24	36			●
	5			UD05C-0620	8	91	53	43	36			●
6.3	3	External coolant		UD03-0630S	7	79	34	24	36			○
	5			UD05-0630S	7	91	53	43	36			○
	3	Internal coolant		UD03C-0630S	7	79	34	24	36			○
	5			UD05C-0630S	7	91	53	43	36			○
	3	External coolant		UD03-0630	8	79	34	24	36			●
	5			UD05-0630	8	91	53	43	36			●
	3	Internal coolant		UD03C-0630	8	79	34	24	36			●
	5			UD05C-0630	8	91	53	43	36			●
6.4	3	External coolant		UD03-0640S	7	79	34	24	36			○
	5			UD05-0640S	7	91	53	43	36			○
	3	Internal coolant		UD03C-0640S	7	79	34	24	36			○
	5			UD05C-0640S	7	91	53	43	36			○
	3	External coolant		UD03-0640	8	79	34	24	36			●
	5			UD05-0640	8	91	53	43	36			●
	3	Internal coolant		UD03C-0640	8	79	34	24	36			●
	5			UD05C-0640	8	91	53	43	36			●
6.5	3	External coolant		UD03-0650S	7	79	34	24	36			○
	5			UD05-0650S	7	91	53	43	36			○
	3	Internal coolant		UD03C-0650S	7	79	34	24	36			○
	5			UD05C-0650S	7	91	53	43	36			○
	3	External coolant		UD03-0650	8	79	34	24	36			●
	5			UD05-0650	8	91	53	43	36			●
	3	Internal coolant		UD03C-0650	8	79	34	24	36			●
	5			UD05C-0650	8	91	53	43	36			●
6.6	3	External coolant		UD03-0660S	7	79	34	24	36	5/16-18UNC	M7*1	○
	5			UD05-0660S	7	91	53	43	36			○
	3	Internal coolant		UD03C-0660S	7	79	34	24	36			○
	5			UD05C-0660S	7	91	53	43	36			○

● Stock available ○ Make-to-order

Applicable material table

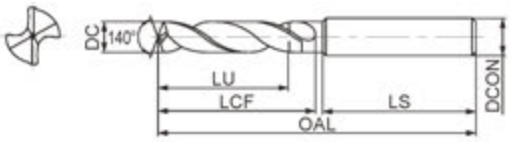
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

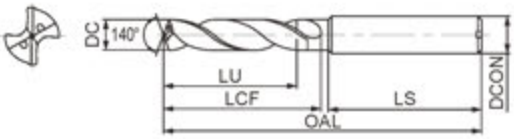
Code key C6 Cutting parameters C153-C154 Technical information C165-C171 Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
6.6	3	External coolant	Straight shank	UD03-0660	8	79	34	24	36	5/16-18UNC	M7*1	●
	5			UD05-0660	8	91	53	43	36			●
	3	Internal coolant		UD03C-0660	8	79	34	24	36			●
	5			UD05C-0660	8	91	53	43	36			●
6.7	3	External coolant		UD03-0670S	7	79	34	24	36			○
	5			UD05-0670S	7	91	53	43	36			○
	3	Internal coolant		UD03C-0670S	7	79	34	24	36			○
	5			UD05C-0670S	7	91	53	43	36			○
	3	External coolant		UD03-0670	8	79	34	24	36			●
	5			UD05-0670	8	91	53	43	36			●
	3	Internal coolant		UD03C-0670	8	79	34	24	36			●
	5			UD05C-0670	8	91	53	43	36			●
6.75	3	External coolant		UD03-0675S	7	79	34	24	36	M8*1.25		○
	5			UD05-0675S	7	91	53	43	36			○
	3	Internal coolant		UD03C-0675S	7	79	34	24	36			○
	5			UD05C-0675S	7	91	53	43	36			○
	3	External coolant		UD03-0675	8	79	34	24	36			●
	5			UD05-0675	8	91	53	43	36			●
	3	Internal coolant		UD03C-0675	8	79	34	24	36			●
	5			UD05C-0675	8	91	53	43	36			●
6.8	3	External coolant		UD03-0680S	7	79	34	24	36			○
	5			UD05-0680S	7	91	53	43	36			○
	3	Internal coolant		UD03C-0680S	7	79	34	24	36			○
	5			UD05C-0680S	7	91	53	43	36			○
	3	External coolant		UD03-0680	8	79	34	24	36			●
	5			UD05-0680	8	91	53	43	36			●
	3	Internal coolant		UD03C-0680	8	79	34	24	36			●
	5			UD05C-0680	8	91	53	43	36			●

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
6.9	3	External coolant	Straight shank	UD03-0690S	7	79	34	24	36	5/16-24UNF		○
	5			UD05-0690S	7	91	53	43	36			○
	3	Internal coolant		UD03C-0690S	7	79	34	24	36			○
	5			UD05C-0690S	7	91	53	43	36			○
	3	External coolant		UD03-0690	8	79	34	24	36			●
	5			UD05-0690	8	91	53	43	36			●
	3	Internal coolant		UD03C-0690	8	79	34	24	36			●
	5			UD05C-0690	8	91	53	43	36			●
7	3	External coolant		UD03-0700S	7	79	34	24	36	M8*1		○
	5			UD05-0700S	7	91	53	43	36			○
	3	Internal coolant		UD03C-0700S	7	79	34	24	36			○
	5			UD05C-0700S	7	91	53	43	36			○
	3	External coolant		UD03-0700	8	79	34	24	36			●
	5			UD05-0700	8	91	53	43	36			●
	3	Internal coolant		UD03C-0700	8	79	34	24	36			●
	5			UD05C-0700	8	91	53	43	36			●
7.1	3	External coolant		UD03-0710	8	79	41	29	36			●
	5			UD05-0710	8	91	53	43	36			●
	3	Internal coolant		UD03C-0710	8	79	41	29	36			●
	5			UD05C-0710	8	91	53	43	36			●
7.2	3	External coolant		UD03-0720	8	79	41	29	36			●
	5			UD05-0720	8	91	53	43	36			●
	3	Internal coolant		UD03C-0720	8	79	41	29	36			●
	5			UD05C-0720	8	91	53	43	36			●
7.3	3	External coolant		UD03-0730	8	79	41	29	36		5/16-18UNC	●
	5			UD05-0730	8	91	53	43	36			●
	3	Internal coolant		UD03C-0730	8	79	41	29	36			●
	5			UD05C-0730	8	91	53	43	36			●
7.4	3	External coolant		UD03-0740	8	79	41	29	36			●
	5			UD05-0740	8	91	53	43	36			●
	3	Internal coolant		UD03C-0740	8	79	41	29	36			●
	5			UD05C-0740	8	91	53	43	36			●

● Stock available ○ Make-to-order

Applicable material table

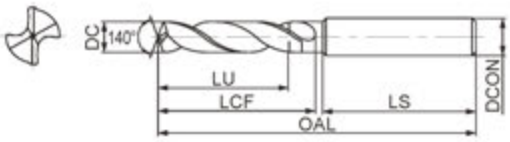
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

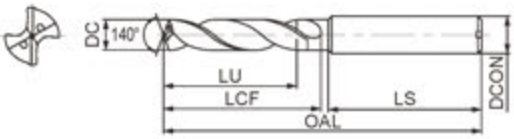
Code key C6 Cutting parameters C153-C154 Technical information C165-C171 Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
7.45	3	External coolant	Straight shank	UD03-0745	8	79	41	29	36		M8*1.25 5/16-24UNF	●
	5			UD05-0745	8	91	53	43	36			●
	3	Internal coolant		UD03C-0745	8	79	41	29	36			●
	5			UD05C-0745	8	91	53	43	36			●
7.5	3	External coolant		UD03-0750	8	79	41	29	36			●
	5			UD05-0750	8	91	53	43	36			●
	3	Internal coolant		UD03C-0750	8	79	41	29	36			●
	5			UD05C-0750	8	91	53	43	36			●
7.6	3	External coolant		UD03-0760	8	79	41	29	36		M8*1	●
	5			UD05-0760	8	91	53	43	36			●
	3	Internal coolant		UD03C-0760	8	79	41	29	36			●
	5			UD05C-0760	8	91	53	43	36			●
7.7	3	External coolant		UD03-0770	8	79	41	29	36			●
	5			UD05-0770	8	91	53	43	36			●
	3	Internal coolant		UD03C-0770	8	79	41	29	36			●
	5			UD05C-0770	8	91	53	43	36			●
7.8	3	External coolant		UD03-0780	8	79	41	29	36			●
	5			UD05-0780	8	91	53	43	36			●
	3	Internal coolant		UD03C-0780	8	79	41	29	36			●
	5			UD05C-0780	8	91	53	43	36			●
7.9	3	External coolant		UD03-0790	8	79	41	29	36			●
	5			UD05-0790	8	91	53	43	36			●
	3	Internal coolant		UD03C-0790	8	79	41	29	36			●
	5			UD05C-0790	8	91	53	43	36			●
8	3	External coolant		UD03-0800	8	79	41	29	36	3/8-16UNC		●
	5			UD05-0800	8	91	53	43	36			●
	3	Internal coolant		UD03C-0800	8	79	41	29	36			●
	5			UD05C-0800	8	91	53	43	36			●

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread Cutting taps / Thread milling cutters	Forming taps	Grade KDG3023
8.1	3	External coolant	Straight shank	UD03-0810S	9	89	47	35	40			○
	5			UD05-0810S	9	103	61	49	40			○
	3	Internal coolant		UD03C-0810S	9	89	47	35	40			○
	5			UD05C-0810S	9	103	61	49	40			○
	3	External coolant		UD03-0810	10	89	47	35	40			●
	5			UD05-0810	10	103	61	49	40			●
	3	Internal coolant		UD03C-0810	10	89	47	35	40			●
	5			UD05C-0810	10	103	61	49	40			●
8.2	3	External coolant		UD03-0820S	9	89	47	35	40			○
	5			UD05-0820S	9	103	61	49	40			○
	3	Internal coolant		UD03C-0820S	9	89	47	35	40			○
	5			UD05C-0820S	9	103	61	49	40			○
	3	External coolant		UD03-0820	10	89	47	35	40			●
	5			UD05-0820	10	103	61	49	40			●
	3	Internal coolant		UD03C-0820	10	89	47	35	40			●
	5			UD05C-0820	10	103	61	49	40			●
8.3	3	External coolant		UD03-0830S	9	89	47	35	40			○
	5			UD05-0830S	9	103	61	49	40			○
	3	Internal coolant		UD03C-0830S	9	89	47	35	40			○
	5			UD05C-0830S	9	103	61	49	40			○
	3	External coolant		UD03-0830	10	89	47	35	40			●
	5			UD05-0830	10	103	61	49	40			●
	3	Internal coolant		UD03C-0830	10	89	47	35	40			●
	5			UD05C-0830	10	103	61	49	40			●
8.4	3	External coolant		UD03-0840S	9	89	47	35	40			○
	5			UD05-0840S	9	103	61	49	40			○
	3	Internal coolant		UD03C-0840S	9	89	47	35	40			○
	5			UD05C-0840S	9	103	61	49	40			○
	3	External coolant		UD03-0840	10	89	47	35	40			●
	5			UD05-0840	10	103	61	49	40			●
	3	Internal coolant		UD03C-0840	10	89	47	35	40			●
	5			UD05C-0840	10	103	61	49	40			●

● Stock available ○ Make-to-order

Applicable material table

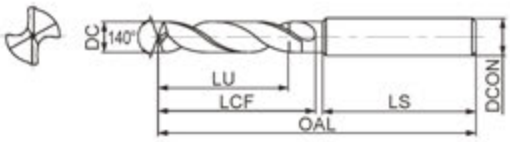
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

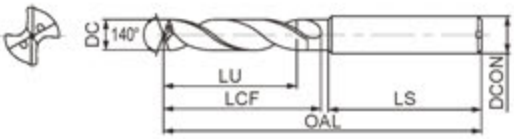
Code key C6 Cutting parameters C153-C154 Technical information C165-C171 Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
8.5	3	External coolant	Straight shank	UD03-0850S	9	89	47	35	40	M10*1.5; 3/8-24UNF		○
	5			UD05-0850S	9	103	61	49	40			○
	3	Internal coolant		UD03C-0850S	9	89	47	35	40			○
	5			UD05C-0850S	9	103	61	49	40			○
	3	External coolant		UD03-0850	10	89	47	35	40			●
	5			UD05-0850	10	103	61	49	40			●
	3	Internal coolant		UD03C-0850	10	89	47	35	40			●
	5			UD05C-0850	10	103	61	49	40			●
8.6	3	External coolant		UD03-0860S	9	89	47	35	40			○
	5			UD05-0860S	9	103	61	49	40			○
	3	Internal coolant		UD03C-0860S	9	89	47	35	40			○
	5			UD05C-0860S	9	103	61	49	40			○
	3	External coolant		UD03-0860	10	89	47	35	40			●
	5			UD05-0860	10	103	61	49	40			●
	3	Internal coolant		UD03C-0860	10	89	47	35	40			●
	5			UD05C-0860	10	103	61	49	40			●
8.7	3	External coolant		UD03-0870S	9	89	47	35	40			○
	5			UD05-0870S	9	103	61	49	40			○
	3	Internal coolant		UD03C-0870S	9	89	47	35	40			○
	5			UD05C-0870S	9	103	61	49	40			○
	3	External coolant		UD03-0870	10	89	47	35	40			●
	5			UD05-0870	10	103	61	49	40			●
	3	Internal coolant		UD03C-0870	10	89	47	35	40			●
	5			UD05C-0870	10	103	61	49	40			●
8.75	3	External coolant		UD03-0875S	9	89	47	35	40	M10*1.25		○
	5			UD05-0875S	9	103	61	49	40			○
	3	Internal coolant		UD03C-0875S	9	89	47	35	40			○
	5			UD05C-0875S	9	103	61	49	40			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
8.75	3	External coolant	Straight shank	UD03-0875	10	89	47	35	40	M10*1.25		●
	5			UD05-0875	10	103	61	49	40			●
	3	Internal coolant		UD03C-0875	10	89	47	35	40			●
	5			UD05C-0875	10	103	61	49	40			●
8.8	3	External coolant		UD03-0880S	9	89	47	35	40		3/8-16UNC	○
	5			UD05-0880S	9	103	61	49	40			○
	3	Internal coolant		UD03C-0880S	9	89	47	35	40			○
	5			UD05C-0880S	9	103	61	49	40			○
	3	External coolant		UD03-0880	10	89	47	35	40			●
	5			UD05-0880	10	103	61	49	40			●
	3	Internal coolant		UD03C-0880	10	89	47	35	40			●
	5			UD05C-0880	10	103	61	49	40			●
8.9	3	External coolant		UD03-0890S	9	89	47	35	40			○
	5			UD05-0890S	9	103	61	49	40			○
	3	Internal coolant		UD03C-0890S	9	89	47	35	40			○
	5			UD05C-0890S	9	103	61	49	40			○
	3	External coolant		UD03-0890	10	89	47	35	40			●
	5			UD05-0890	10	103	61	49	40			●
	3	Internal coolant		UD03C-0890	10	89	47	35	40			●
	5			UD05C-0890	10	103	61	49	40			●
9	3	External coolant		UD03-0900S	9	89	47	35	40			○
	5			UD05-0900S	9	103	61	49	40			○
	3	Internal coolant		UD03C-0900S	9	89	47	35	40			○
	5			UD05C-0900S	9	103	61	49	40			○
	3	External coolant		UD03-0900	10	89	47	35	40	M10*1	3/8-24UNF	●
	5			UD05-0900	10	103	61	49	40			●
	3	Internal coolant		UD03C-0900	10	89	47	35	40			●
	5			UD05C-0900	10	103	61	49	40			●
9.1	3	External coolant		UD03-0910	10	89	47	35	40			●
	5			UD05-0910	10	103	61	49	40			●
	3	Internal coolant		UD03C-0910	10	89	47	35	40			●
	5			UD05C-0910	10	103	61	49	40			●

● Stock available ○ Make-to-order

Applicable material table

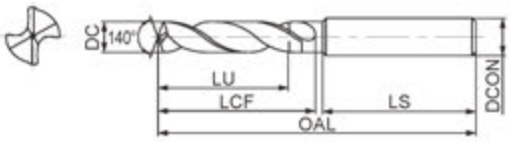
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

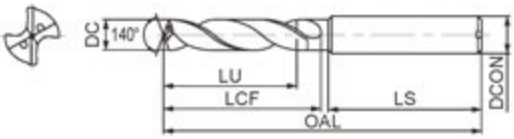
Code key C6
Cutting parameters C153-C154
Technical information C165-C171
Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
9.2	3	External coolant	Straight shank	UD03-0920	10	89	47	35	40			●
	5			UD05-0920	10	103	61	49	40			●
	3	Internal coolant		UD03C-0920	10	89	47	35	40			●
	5			UD05C-0920	10	103	61	49	40			●
9.3	3	External coolant		UD03-0930	10	89	47	35	40			●
	5			UD05-0930	10	103	61	49	40			●
	3	Internal coolant		UD03C-0930	10	89	47	35	40			●
	5			UD05C-0930	10	103	61	49	40			●
9.35	3	External coolant		UD03-0935	10	89	47	35	40			●
	5			UD05-0935	10	103	61	49	40		M10*1.5	●
	3	Internal coolant		UD03C-0935	10	89	47	35	40			●
	5			UD05C-0935	10	103	61	49	40			●
9.4	3	External coolant		UD03-0940	10	89	47	35	40			●
	5			UD05-0940	10	103	61	49	40	7/16-14UNC		●
	3	Internal coolant		UD03C-0940	10	89	47	35	40			●
	5			UD05C-0940	10	103	61	49	40			●
9.45	3	External coolant		UD03-0945	10	89	47	35	40			●
	5			UD05-0945	10	103	61	49	40		M10*1.25	●
	3	Internal coolant		UD03C-0945	10	89	47	35	40			●
	5			UD05C-0945	10	103	61	49	40			●
9.5	3	External coolant		UD03-0950	10	89	47	35	40			●
	5			UD05-0950	10	103	61	49	40			●
	3	Internal coolant		UD03C-0950	10	89	47	35	40			●
	5			UD05C-0950	10	103	61	49	40			●
9.6	3	External coolant		UD03-0960	10	89	47	35	40			●
	5			UD05-0960	10	103	61	49	40		M10*1	●
	3	Internal coolant		UD03C-0960	10	89	47	35	40			●
	5			UD05C-0960	10	103	61	49	40			●

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread Cutting taps / Thread milling cutters	Forming taps	Grade KDG3023
9.7	3	External coolant	Straight shank	UD03-0970	10	89	47	35	40			●
	5			UD05-0970	10	103	61	49	40			●
	3	Internal coolant		UD03C-0970	10	89	47	35	40			●
	5			UD05C-0970	10	103	61	49	40			●
9.8	3	External coolant		UD03-0980	10	89	47	35	40			●
	5			UD05-0980	10	103	61	49	40			●
	3	Internal coolant		UD03C-0980	10	89	47	35	40			●
	5			UD05C-0980	10	103	61	49	40			●
9.9	3	External coolant		UD03-0990	10	89	47	35	40	7/16-20UNF		●
	5			UD05-0990	10	103	61	49	40			●
	3	Internal coolant		UD03C-0990	10	89	47	35	40			●
	5			UD05C-0990	10	103	61	49	40			●
10	3	External coolant		UD03-1000	10	89	47	35	40			●
	5			UD05-1000	10	103	61	49	40			●
	3	Internal coolant		UD03C-1000	10	89	47	35	40			●
	5			UD05C-1000	10	103	61	49	40			●
10.1	3	External coolant		UD03-1010S	11	102	55	40	45			○
	5			UD05-1010S	11	118	71	56	45			○
	3	Internal coolant		UD03C-1010S	11	102	55	40	45			○
	5			UD05C-1010S	11	118	71	56	45			○
	3	External coolant		UD03-1010	12	102	55	40	45			●
	5			UD05-1010	12	118	71	56	45			●
	3	Internal coolant		UD03C-1010	12	102	55	40	45			●
	5			UD05C-1010	12	118	71	56	45			●
10.2	3	External coolant		UD03-1020S	11	102	55	40	45			○
	5			UD05-1020S	11	118	71	56	45			○
	3	Internal coolant		UD03C-1020S	11	102	55	40	45			○
	5			UD05C-1020S	11	118	71	56	45			○
	3	External coolant		UD03-1020	12	102	55	40	45			●
	5			UD05-1020	12	118	71	56	45			●
	3	Internal coolant		UD03C-1020	12	102	55	40	45			●
	5			UD05C-1020	12	118	71	56	45			●

● Stock available ○ Make-to-order

Applicable material table

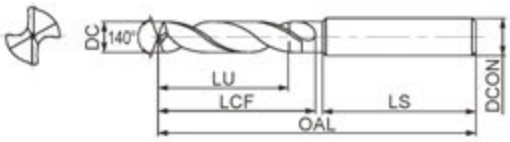
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

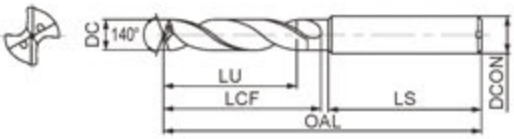
Code key C6 Cutting parameters C153-C154 Technical information C165-C171 Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
10.25	3	External coolant	Straight shank	UD03-1025S	11	102	55	40	45	M12*1.75		○
	5			UD05-1025S	11	118	71	56	45			○
	3	Internal coolant		UD03C-1025S	11	102	55	40	45			○
	5			UD05C-1025S	11	118	71	56	45			○
	3	External coolant		UD03-1025	12	102	55	40	45			●
	5			UD05-1025	12	118	71	56	45			●
	3	Internal coolant		UD03C-1025	12	102	55	40	45			●
	5			UD05C-1025	12	118	71	56	45			●
10.3	3	External coolant		UD03-1030S	12	102	55	40	45		7/16-14UNC	○
	5			UD05-1030S	12	118	71	56	45			○
	3	Internal coolant		UD03C-1030S	12	102	55	40	45			○
	5			UD05C-1030S	12	118	71	56	45			○
	3	External coolant		UD03-1030	12	102	55	40	45			●
	5			UD05-1030	12	118	71	56	45			●
	3	Internal coolant		UD03C-1030	12	102	55	40	45			●
	5			UD05C-1030	12	118	71	56	45			●
10.4	3	External coolant		UD03-1040S	11	102	55	40	45			○
	5			UD05-1040S	11	118	71	56	45			○
	3	Internal coolant		UD03C-1040S	11	102	55	40	45			○
	5			UD05C-1040S	11	118	71	56	45			○
	3	External coolant		UD03-1040	12	102	55	40	45			●
	5			UD05-1040	12	118	71	56	45			●
	3	Internal coolant		UD03C-1040	12	102	55	40	45			●
	5			UD05C-1040	12	118	71	56	45			●
10.5	3	External coolant		UD03-1050S	11	102	55	40	45	M12*1.5	7/16-20UNF	○
	5			UD05-1050S	11	118	71	56	45			○
	3	Internal coolant		UD03C-1050S	11	102	55	40	45			○
	5			UD05C-1050S	11	118	71	56	45			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
10.5	3	External coolant	Straight shank	UD03-1050	12	102	55	40	45	M12*1.5	7/16-20UNF	●
	5			UD05-1050	12	118	71	56	45			●
	3	Internal coolant		UD03C-1050	12	102	55	40	45			●
	5			UD05C-1050	12	118	71	56	45			●
10.6	3	External coolant		UD03-1060S	11	102	55	40	45			○
	5			UD05-1060S	11	118	71	56	45			○
	3	Internal coolant		UD03C-1060S	11	102	55	40	45			○
	5			UD05C-1060S	11	118	71	56	45			○
	3	External coolant		UD03-1060	12	102	55	40	45			●
	5			UD05-1060	12	118	71	56	45			●
	3	Internal coolant		UD03C-1060	12	102	55	40	45			●
	5			UD05C-1060	12	118	71	56	45			●
10.7	3	External coolant		UD03-1070S	11	102	55	40	45			○
	5			UD05-1070S	11	118	71	56	45			○
	3	Internal coolant		UD03C-1070S	11	102	55	40	45			○
	5			UD05C-1070S	11	118	71	56	45			○
	3	External coolant		UD03-1070	12	102	55	40	45			●
	5			UD05-1070	12	118	71	56	45			●
	3	Internal coolant		UD03C-1070	12	102	55	40	45			●
	5			UD05C-1070	12	118	71	56	45			●
10.75	3	External coolant		UD03-1075S	11	102	55	40	45	M12*1.25		○
	5			UD05-1075S	11	118	71	56	45			○
	3	Internal coolant		UD03C-1075S	11	102	55	40	45			○
	5			UD05C-1075S	11	118	71	56	45			○
	3	External coolant		UD03-1075	12	102	55	40	45			●
	5			UD05-1075	12	118	71	56	45			●
	3	Internal coolant		UD03C-1075	12	102	55	40	45			●
	5			UD05C-1075	12	118	71	56	45			●
10.8	3	External coolant		UD03-1080S	11	102	55	40	45	1/2-13UNC		○
	5			UD05-1080S	11	118	71	56	45			○
	3	Internal coolant		UD03C-1080S	11	102	55	40	45			○
	5			UD05C-1080S	11	118	71	56	45			○

● Stock available ○ Make-to-order

Applicable material table

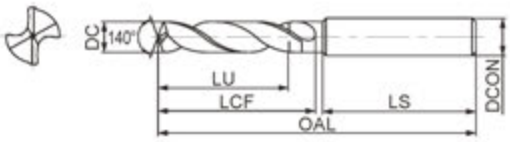
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

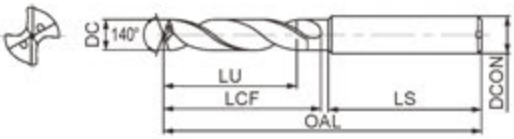
Code key C6 Cutting parameters C153-C154 Technical information C165-C171 Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
10.8	3	External coolant	Straight shank	UD03-1080	12	102	55	40	45	1/2-13UNC		●
	5			UD05-1080	12	118	71	56	45			●
	3	Internal coolant		UD03C-1080	12	102	55	40	45			●
	5			UD05C-1080	12	118	71	56	45			●
10.9	3	External coolant		UD03-1090S	11	102	55	40	45			○
	5			UD05-1090S	11	118	71	56	45			○
	3	Internal coolant		UD03C-1090S	11	102	55	40	45			○
	5			UD05C-1090S	11	118	71	56	45			○
	3	External coolant		UD03-1090	12	102	55	40	45			●
	5			UD05-1090	12	118	71	56	45			●
	3	Internal coolant		UD03C-1090	12	102	55	40	45			●
	5			UD05C-1090	12	118	71	56	45			●
11	3	External coolant		UD03-1100S	11	102	55	40	45			○
	5			UD05-1100S	11	118	71	56	45			○
	3	Internal coolant		UD03C-1100S	11	102	55	40	45			○
	5			UD05C-1100S	11	118	71	56	45			○
	3	External coolant		UD03-1100	12	102	55	40	45			●
	5			UD05-1100	12	118	71	56	45			●
	3	Internal coolant		UD03C-1100	12	102	55	40	45			●
	5			UD05C-1100	12	118	71	56	45			●
11.1	3	External coolant		UD03-1110	12	102	55	40	45			●
	5			UD05-1110	12	118	71	56	45			●
	3	Internal coolant		UD03C-1110	12	102	55	40	45			●
	5			UD05C-1110	12	118	71	56	45			●
11.2	3	External coolant		UD03-1120	12	102	55	40	45			●
	5			UD05-1120	12	118	71	56	45			●
	3	Internal coolant		UD03C-1120	12	102	55	40	45			●
	5			UD05C-1120	12	118	71	56	45			●

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
11.25	3	External coolant	Straight shank	UD03-1125	12	102	55	40	45		M12*1.75	●
	5			UD05-1125	12	118	71	56	45			●
	3	Internal coolant		UD03C-1125	12	102	55	40	45			●
	5			UD05C-1125	12	118	71	56	45			●
11.3	3	External coolant		UD03-1130	12	102	55	40	45			●
	5			UD05-1130	12	118	71	56	45			●
	3	Internal coolant		UD03C-1130	12	102	55	40	45			●
	5			UD05C-1130	12	118	71	56	45			●
11.35	3	External coolant		UD03-1135	12	102	55	40	45		M12*1.5	●
	5			UD05-1135	12	118	71	56	45			●
	3	Internal coolant		UD03C-1135	12	102	55	40	45			●
	5			UD05C-1135	12	118	71	56	45			●
11.4	3	External coolant		UD03-1140	12	102	55	40	45			●
	5			UD05-1140	12	118	71	56	45			●
	3	Internal coolant		UD03C-1140	12	102	55	40	45			●
	5			UD05C-1140	12	118	71	56	45			●
11.45	3	External coolant		UD03-1145	12	102	55	40	45		M12*1.25	●
	5			UD05-1145	12	118	71	56	45			●
	3	Internal coolant		UD03C-1145	12	102	55	40	45			●
	5			UD05C-1145	12	118	71	56	45			●
11.5	3	External coolant		UD03-1150	12	102	55	40	45	1/2-20UNF		●
	5			UD05-1150	12	118	71	56	45			●
	3	Internal coolant		UD03C-1150	12	102	55	40	45			●
	5			UD05C-1150	12	118	71	56	45			●
11.6	3	External coolant		UD03-1160	12	102	55	40	45			●
	5			UD05-1160	12	118	71	56	45			●
	3	Internal coolant		UD03C-1160	12	102	55	40	45			●
	5			UD05C-1160	12	118	71	56	45			●
11.7	3	External coolant		UD03-1170	12	102	55	40	45			●
	5			UD05-1170	12	118	71	56	45			●
	3	Internal coolant		UD03C-1170	12	102	55	40	45			●
	5			UD05C-1170	12	118	71	56	45			●

● Stock available ○ Make-to-order

Applicable material table

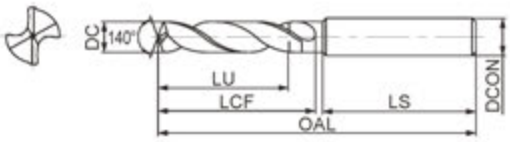
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

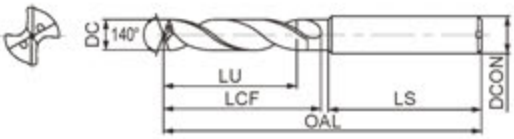
Code key C6
Cutting parameters C153-C154
Technical information C165-C171
Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
11.8	3	External coolant	Straight shank	UD03-1180	12	102	55	40	45		1/2-13UNC	●
	5			UD05-1180	12	118	71	56	45			●
	3	Internal coolant		UD03C-1180	12	102	55	40	45			●
	5			UD05C-1180	12	118	71	56	45			●
11.9	3	External coolant		UD03-1190	12	102	55	40	45			●
	5			UD05-1190	12	118	71	56	45			●
	3	Internal coolant		UD03C-1190	12	102	55	40	45			●
	5			UD05C-1190	12	118	71	56	45			●
12	3	External coolant		UD03-1200	12	102	55	40	45	M14*2		●
	5			UD05-1200	12	118	71	56	45			●
	3	Internal coolant		UD03C-1200	12	102	55	40	45			●
	5			UD05C-1200	12	118	71	56	45			●
12.1	3	External coolant		UD03-1210	14	107	60	43	45		1/2-20UNF	●
	5			UD05-1210	14	124	77	60	45			●
	3	Internal coolant		UD03C-1210	14	107	60	43	45			●
	5			UD05C-1210	14	124	77	60	45			●
12.2	3	External coolant		UD03-1220	14	107	60	43	45	9/16-12UNC		●
	5			UD05-1220	14	124	77	60	45			●
	3	Internal coolant		UD03C-1220	14	107	60	43	45			●
	5			UD05C-1220	14	124	77	60	45			●
12.25	3	External coolant		UD03-1225	14	107	60	43	45			●
	5			UD05-1225	14	124	77	60	45			●
	3	Internal coolant		UD03C-1225	14	107	60	43	45			●
	5			UD05C-1225	14	124	77	60	45			●
12.3	3	External coolant		UD03-1230	14	107	60	43	45			●
	5			UD05-1230	14	124	77	60	45			●
	3	Internal coolant		UD03C-1230	14	107	60	43	45			●
	5			UD05C-1230	14	124	77	60	45			●

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
12.4	3	External coolant	Straight shank	UD03-1240	14	107	60	43	45			○
	5			UD05-1240	14	124	77	60	45			○
	3	Internal coolant		UD03C-1240	14	107	60	43	45			○
	5			UD05C-1240	14	124	77	60	45			○
12.5	3	External coolant		UD03-1250	14	107	60	43	45	M14*1.5		●
	5			UD05-1250	14	124	77	60	45			●
	3	Internal coolant		UD03C-1250	14	107	60	43	45			●
	5			UD05C-1250	14	124	77	60	45			●
12.6	3	External coolant		UD03-1260	14	107	60	43	45			○
	5			UD05-1260	14	124	77	60	45			○
	3	Internal coolant		UD03C-1260	14	107	60	43	45			○
	5			UD05C-1260	14	124	77	60	45			○
12.7	3	External coolant		UD03-1270	14	107	60	43	45			●
	5			UD05-1270	14	124	77	60	45			●
	3	Internal coolant		UD03C-1270	14	107	60	43	45			●
	5			UD05C-1270	14	124	77	60	45			●
12.75	3	External coolant		UD03-1275	14	107	60	43	45			●
	5			UD05-1275	14	124	77	60	45			●
	3	Internal coolant		UD03C-1275	14	107	60	43	45			●
	5			UD05C-1275	14	124	77	60	45			●
12.8	3	External coolant		UD03-1280	14	107	60	43	45			●
	5			UD05-1280	14	124	77	60	45			●
	3	Internal coolant		UD03C-1280	14	107	60	43	45			●
	5			UD05C-1280	14	124	77	60	45			●
12.9	3	External coolant		UD03-1290	14	107	60	43	45	9/16-18UNF		●
	5			UD05-1290	14	124	77	60	45			●
	3	Internal coolant		UD03C-1290	14	107	60	43	45			●
	5			UD05C-1290	14	124	77	60	45			●
13	3	External coolant		UD03-1300	14	107	60	43	45			●
	5			UD05-1300	14	124	77	60	45			●
	3	Internal coolant		UD03C-1300	14	107	60	43	45			●
	5			UD05C-1300	14	124	77	60	45			●

● Stock available ○ Make-to-order

Applicable material table

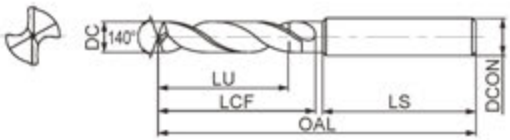
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

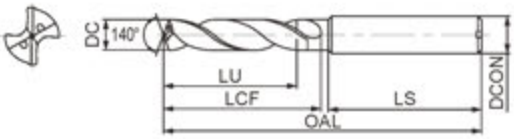
Code key C6 Cutting parameters C153-C154 Technical information C165-C171 Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
13.1	3	External coolant	Straight shank	UD03-1310	14	107	60	43	45		M14*2	●
	5			UD05-1310	14	124	77	60	45			●
	3	Internal coolant		UD03C-1310	14	107	60	43	45			●
	5			UD05C-1310	14	124	77	60	45			●
13.2	3	External coolant		UD03-1320	14	107	60	43	45			○
	5			UD05-1320	14	124	77	60	45			○
	3	Internal coolant		UD03C-1320	14	107	60	43	45			○
	5			UD05C-1320	14	124	77	60	45			○
13.3	3	External coolant		UD03-1330	14	107	60	43	45			○
	5			UD05-1330	14	124	77	60	45			○
	3	Internal coolant		UD03C-1330	14	107	60	43	45			○
	5			UD05C-1330	14	124	77	60	45			○
13.35	3	External coolant		UD03-1335	14	107	60	43	45		M14*1.5 9/16-12UNC	●
	5			UD05-1335	14	124	77	60	45			●
	3	Internal coolant		UD03C-1335	14	107	60	43	45			●
	5			UD05C-1335	14	124	77	60	45			●
13.4	3	External coolant		UD03-1340	14	107	60	43	45			○
	5			UD05-1340	14	124	77	60	45			○
	3	Internal coolant		UD03C-1340	14	107	60	43	45			○
	5			UD05C-1340	14	124	77	60	45			○
13.5	3	External coolant		UD03-1350	14	107	60	43	45	5/8-11UNC		●
	5			UD05-1350	14	124	77	60	45			●
	3	Internal coolant		UD03C-1350	14	107	60	43	45			●
	5			UD05C-1350	14	124	77	60	45			●
13.6	3	External coolant		UD03-1360	14	107	60	43	45			○
	5			UD05-1360	14	124	77	60	45			○
	3	Internal coolant		UD03C-1360	14	107	60	43	45			○
	5			UD05C-1360	14	124	77	60	45			○

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
13.65	3	External coolant	Straight shank	UD03-1365	14	107	60	43	45		9/16-18UNF	●
	5			UD05-1365	14	124	77	60	45			●
	3	Internal coolant		UD03C-1365	14	107	60	43	45			●
	5			UD05C-1365	14	124	77	60	45			●
13.7	3	External coolant		UD03-1370	14	107	60	43	45			○
	5			UD05-1370	14	124	77	60	45			○
	3	Internal coolant		UD03C-1370	14	107	60	43	45			○
	5			UD05C-1370	14	124	77	60	45			○
13.8	3	External coolant		UD03-1380	14	107	60	43	45			●
	5			UD05-1380	14	124	77	60	45			●
	3	Internal coolant		UD03C-1380	14	107	60	43	45			●
	5			UD05C-1380	14	124	77	60	45			●
13.9	3	External coolant		UD03-1390	14	107	60	43	45			○
	5			UD05-1390	14	124	77	60	45			○
	3	Internal coolant		UD03C-1390	14	107	60	43	45			○
	5			UD05C-1390	14	124	77	60	45			○
14	3	External coolant		UD03-1400	14	107	60	43	45	M16*2		●
	5			UD05-1400	14	124	77	60	45			●
	3	Internal coolant		UD03C-1400	14	107	60	43	45			●
	5			UD05C-1400	14	124	77	60	45			●
14.1	3	External coolant		UD03-1410	16	115	65	45	48			○
	5			UD05-1410	16	133	83	63	48			○
	3	Internal coolant		UD03C-1410	16	115	65	45	48			○
	5			UD05C-1410	16	133	83	63	48			○
14.2	3	External coolant		UD03-1420	16	115	65	45	48			○
	5			UD05-1420	16	133	83	63	48			○
	3	Internal coolant		UD03C-1420	16	115	65	45	48			○
	5			UD05C-1420	16	133	83	63	48			○
14.25	3	External coolant		UD03-1425	16	115	65	45	48			●
	5			UD05-1425	16	133	83	63	48			●
	3	Internal coolant		UD03C-1425	16	115	65	45	48			●
	5			UD05C-1425	16	133	83	63	48			●

● Stock available ○ Make-to-order

Applicable material table

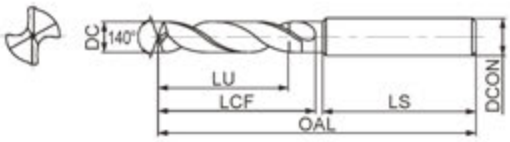
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

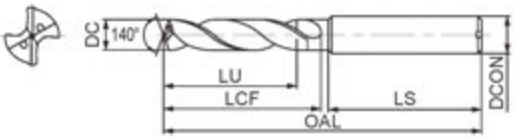
Code key C6 Cutting parameters C153-C154 Technical information C165-C171 Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
14.3	3	External coolant	Straight shank	UD03-1430	16	115	65	45	48	M16*1.5; 5/8-18UNF	5/8-11UNC	●
	5			UD05-1430	16	133	83	63	48			●
	3	Internal coolant		UD03C-1430	16	115	65	45	48			●
	5			UD05C-1430	16	133	83	63	48			●
14.4	3	External coolant		UD03-1440	16	115	65	45	48			○
	5			UD05-1440	16	133	83	63	48			○
	3	Internal coolant		UD03C-1440	16	115	65	45	48			○
	5			UD05C-1440	16	133	83	63	48			○
14.5	3	External coolant		UD03-1450	16	115	65	45	48			●
	5			UD05-1450	16	133	83	63	48			●
	3	Internal coolant		UD03C-1450	16	115	65	45	48			●
	5			UD05C-1450	16	133	83	63	48			●
14.6	3	External coolant		UD03-1460	16	115	65	45	48			○
	5			UD05-1460	16	133	83	63	48			○
	3	Internal coolant		UD03C-1460	16	115	65	45	48			○
	5			UD05C-1460	16	133	83	63	48			○
14.7	3	External coolant		UD03-1470	16	115	65	45	48			○
	5			UD05-1470	16	133	83	63	48			○
	3	Internal coolant		UD03C-1470	16	115	65	45	48			○
	5			UD05C-1470	16	133	83	63	48			○
14.75	3	External coolant		UD03-1475	16	115	65	45	48			●
	5			UD05-1475	16	133	83	63	48			●
	3	Internal coolant		UD03C-1475	16	115	65	45	48			●
	5			UD05C-1475	16	133	83	63	48			●
14.8	3	External coolant		UD03-1480	16	115	65	45	48			●
	5			UD05-1480	16	133	83	63	48			●
	3	Internal coolant		UD03C-1480	16	115	65	45	48			●
	5			UD05C-1480	16	133	83	63	48			●

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
14.9	3	External coolant	Straight shank	UD03-1490	16	115	65	45	48			○
	5			UD05-1490	16	133	83	63	48			○
	3	Internal coolant		UD03C-1490	16	115	65	45	48			○
	5			UD05C-1490	16	133	83	63	48			○
15	3	External coolant		UD03-1500	16	115	65	45	48			●
	5			UD05-1500	16	133	83	63	48			●
	3	Internal coolant		UD03C-1500	16	115	65	45	48			●
	5			UD05C-1500	16	133	83	63	48			●
15.1	3	External coolant		UD03-1510	16	115	65	45	48		M16*2	●
	5			UD05-1510	16	133	83	63	48			●
	3	Internal coolant		UD03C-1510	16	115	65	45	48			●
	5			UD05C-1510	16	133	83	63	48			●
15.2	3	External coolant		UD03-1520	16	115	65	45	48			○
	5			UD05-1520	16	133	83	63	48			○
	3	Internal coolant		UD03C-1520	16	115	65	45	48			○
	5			UD05C-1520	16	133	83	63	48			○
15.25	3	External coolant		UD03-1525	16	115	65	45	48		5/8-18UNF	●
	5			UD05-1525	16	133	83	63	48			●
	3	Internal coolant		UD03C-1525	16	115	65	45	48			●
	5			UD05C-1525	16	133	83	63	48			●
15.3	3	External coolant		UD03-1530	16	115	65	45	48			○
	5			UD05-1530	16	133	83	63	48			○
	3	Internal coolant		UD03C-1530	16	115	65	45	48			○
	5			UD05C-1530	16	133	83	63	48			○
15.35	3	External coolant		UD03-1535	16	115	65	45	48		M16*1.5	●
	5			UD05-1535	16	133	83	63	48			●
	3	Internal coolant		UD03C-1535	16	115	65	45	48			●
	5			UD05C-1535	16	133	83	63	48			●
15.4	3	External coolant		UD03-1540	16	115	65	45	48			○
	5			UD05-1540	16	133	83	63	48			○
	3	Internal coolant		UD03C-1540	16	115	65	45	48			○
	5			UD05C-1540	16	133	83	63	48			○

● Stock available ○ Make-to-order

Applicable material table

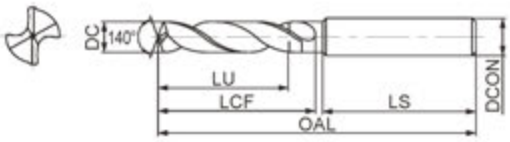
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

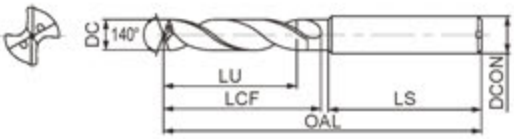
Code key C6
Cutting parameters C153-C154
Technical information C165-C171
Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
15.5	3	External coolant	Straight shank	UD03-1550	16	115	65	45	48	M18*2.5		●
	5			UD05-1550	16	133	83	63	48			●
	3	Internal coolant		UD03C-1550	16	115	65	45	48			●
	5			UD05C-1550	16	133	83	63	48			●
15.6	3	External coolant		UD03-1560	16	115	65	45	48			○
	5			UD05-1560	16	133	83	63	48			○
	3	Internal coolant		UD03C-1560	16	115	65	45	48			○
	5			UD05C-1560	16	133	83	63	48			○
15.7	3	External coolant		UD03-1570	16	115	65	45	48			○
	5			UD05-1570	16	133	83	63	48			○
	3	Internal coolant		UD03C-1570	16	115	65	45	48			○
	5			UD05C-1570	16	133	83	63	48			○
15.8	3	External coolant		UD03-1580	16	115	65	45	48			●
	5			UD05-1580	16	133	83	63	48			●
	3	Internal coolant		UD03C-1580	16	115	65	45	48			●
	5			UD05C-1580	16	133	83	63	48			●
15.9	3	External coolant		UD03-1590	16	115	65	45	48			○
	5			UD05-1590	16	133	83	63	48			○
	3	Internal coolant		UD03C-1590	16	115	65	45	48			○
	5			UD05C-1590	16	133	83	63	48			○
16	3	External coolant		UD03-1600	16	115	65	45	48	M18*2		●
	5			UD05-1600	16	133	83	63	48			●
	3	Internal coolant		UD03C-1600	16	115	65	45	48			●
	5			UD05C-1600	16	133	83	63	48			●
16.5	3	External coolant		UD03-1650	18	123	73	51	48	3/4-10UNC		●
	5			UD05-1650	18	143	93	71	48			●
	3	Internal coolant		UD03C-1650	18	123	73	51	48			●
	5			UD05C-1650	18	143	93	71	48			●

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
16.75	3	External coolant	Straight shank	UD03-1675	18	123	73	51	48			●
	5			UD05-1675	18	143	93	71	48			●
	3	Internal coolant		UD03C-1675	18	123	73	51	48			●
	5			UD05C-1675	18	143	93	71	48			●
16.8	3	External coolant		UD03-1680	18	123	73	51	48		M18*2.5	●
	5			UD05-1680	18	143	93	71	48			●
	3	Internal coolant		UD03C-1680	18	123	73	51	48			●
	5			UD05C-1680	18	143	93	71	48			●
17	3	External coolant		UD03-1700	18	123	73	51	48			●
	5			UD05-1700	18	143	93	71	48			●
	3	Internal coolant		UD03C-1700	18	123	73	51	48			●
	5			UD05C-1700	18	143	93	71	48			●
17.5	3	External coolant		UD03-1750	18	123	73	51	48	M20*2.5; 3/4-16UNF		●
	5			UD05-1750	18	143	93	71	48			●
	3	Internal coolant		UD03C-1750	18	123	73	51	48			●
	5			UD05C-1750	18	143	93	71	48			●
17.8	3	External coolant		UD03-1780	18	123	73	51	48			●
	5			UD05-1780	18	143	93	71	48			●
	3	Internal coolant		UD03C-1780	18	123	73	51	48			●
	5			UD05C-1780	18	143	93	71	48			●
17.9	3	External coolant		UD03-1790	18	123	73	51	48		3/4-10UNC	●
	5			UD05-1790	18	143	93	71	48			●
	3	Internal coolant		UD03C-1790	18	123	73	51	48			●
	5			UD05C-1790	18	143	93	71	48			●
18	3	External coolant		UD03-1800	18	123	73	51	48	M20*2		●
	5			UD05-1800	18	143	93	71	48			●
	3	Internal coolant		UD03C-1800	18	123	73	51	48			●
	5			UD05C-1800	18	143	93	71	48			●
18.3	3	External coolant		UD03-1830	20	131	79	55	50		3/4-16UNF	●
	5			UD05-1830	20	153	101	77	50			●
	3	Internal coolant		UD03C-1830	20	131	79	55	50			●
	5			UD05C-1830	20	153	101	77	50			●

● Stock available ○ Make-to-order

Applicable material table

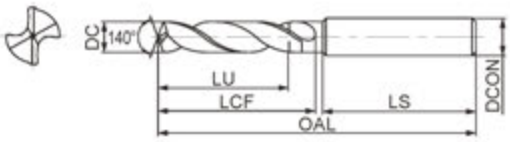
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

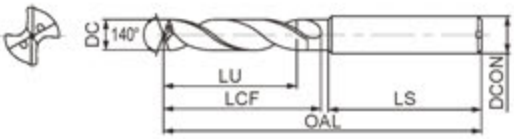
Code key C6 Cutting parameters C153-C154 Technical information C165-C171 Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Suitable for thread		Grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Cutting taps / Thread milling cutters	Forming taps	KDG3023
18.5	3	External coolant	Straight shank	UD03-1850	20	131	79	55	50			●
	5			UD05-1850	20	153	101	77	50			●
	3	Internal coolant		UD03C-1850	20	131	79	55	50			●
	5			UD05C-1850	20	153	101	77	50			●
18.8	3	External coolant		UD03-1880	20	131	79	55	50		M20*2.5	●
	5			UD05-1880	20	153	101	77	50			●
	3	Internal coolant		UD03C-1880	20	131	79	55	50			●
	5			UD05C-1880	20	153	101	77	50			●
19	3	External coolant		UD03-1900	20	131	79	55	50			●
	5			UD05-1900	20	153	101	77	50			●
	3	Internal coolant		UD03C-1900	20	131	79	55	50			●
	5			UD05C-1900	20	153	101	77	50			●
19.5	3	External coolant		UD03-1950	20	131	79	55	50	M22*2.5; 7/8-9UNC		●
	5			UD05-1950	20	153	101	77	50			●
	3	Internal coolant		UD03C-1950	20	131	79	55	50			●
	5			UD05C-1950	20	153	101	77	50			●
19.8	3	External coolant		UD03-1980	20	131	79	55	50			●
	5			UD05-1980	20	153	101	77	50			●
	3	Internal coolant		UD03C-1980	20	131	79	55	50			●
	5			UD05C-1980	20	153	101	77	50			●
20	3	External coolant		UD03-2000	20	131	79	55	50	M22*2		●
	5			UD05-2000	20	153	101	77	50			●
	3	Internal coolant		UD03C-2000	20	131	79	55	50			●
	5			UD05C-2000	20	153	101	77	50			●
20.4	3	External coolant		UD03-2040	20	141	86	60	50	7/8-14UNF		●
	5			UD05-2040	20	167	112	85	50			●
	3	Internal coolant		UD03C-2040	20	141	86	60	50			●
	5			UD05C-2040	20	167	112	85	50			●

● Stock available ○ Make-to-order

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
20.5	3	External coolant	Straight shank	UD03-2050	20	141	86	60	50			●
	5			UD05-2050	20	167	112	85	50			●
	3	Internal coolant		UD03C-2050	20	141	86	60	50			●
	5			UD05C-2050	20	167	112	85	50			●
21	3	External coolant		UD03-2100	20	141	86	60	50	M24*3	7/8-9UNC	●
	5			UD05-2100	20	167	112	85	50			●
	3	Internal coolant		UD03C-2100	20	141	86	60	50			●
	5			UD05C-2100	20	167	112	85	50			●
21.4	3	External coolant		UD03-2140	20	141	86	60	50		7/8-14UNF	●
	5			UD05-2140	20	167	112	85	50			●
	3	Internal coolant		UD03C-2140	20	141	86	60	50			●
	5			UD05C-2140	20	167	112	85	50			●
21.5	3	External coolant		UD03-2150	20	141	86	60	50			●
	5			UD05-2150	20	167	112	85	50			●
	3	Internal coolant		UD03C-2150	20	141	86	60	50			●
	5			UD05C-2150	20	167	112	85	50			●
22	3	External coolant		UD03-2200	20	141	86	60	50	M24*2		●
	5			UD05-2200	20	167	112	85	50			●
	3	Internal coolant		UD03C-2200	20	141	86	60	50			●
	5			UD05C-2200	20	167	112	85	50			●
22.25	3	External coolant		UD03-2225	25	153	95	65	56	1-8UNC		●
	5			UD05-2225	25	184	126	98	56			●
	3	Internal coolant		UD03C-2225	25	153	95	65	56			●
	5			UD05C-2225	25	184	126	98	56			●
22.5	3	External coolant		UD03-2250	25	153	95	65	56			●
	5			UD05-2250	25	184	126	98	56			●
	3	Internal coolant		UD03C-2250	25	153	95	65	56			●
	5			UD05C-2250	25	184	126	98	56			●
23	3	External coolant		UD03-2300	25	153	95	65	56	M25*2		●
	5			UD05-2300	25	184	126	98	56			●
	3	Internal coolant		UD03C-2300	25	153	95	65	56			●
	5			UD05C-2300	25	184	126	98	56			●

● Stock available ○ Make-to-order

Applicable material table

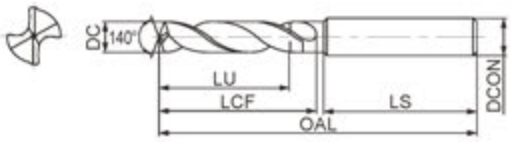
◎Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

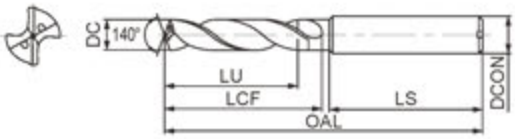
Code key C6 Cutting parameters C153-C154 Technical information C165-C171 Non-standard customization tools C172-C176

UD series General machining

External coolant — Straight shank



Internal coolant — Straight shank



Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Suitable for thread: Cutting taps / Thread milling cutters	Suitable for thread: Forming taps	Grade KDG3023
23.25	3	External coolant	Straight shank	UD03-2325	25	153	95	65	56	1-12UNF		●
	5			UD05-2325	25	184	126	98	56			●
	3	Internal coolant		UD03C-2325	25	153	95	65	56			●
	5			UD05C-2325	25	184	126	98	56			●
23.5	3	External coolant		UD03-2350	25	153	95	65	56			●
	5			UD05-2350	25	184	126	98	56			●
	3	Internal coolant		UD03C-2350	25	153	95	65	56			●
	5			UD05C-2350	25	184	126	98	56			●
24	3	External coolant		UD03-2400	25	153	95	65	56	M27*3	1-8UNC	●
	5			UD05-2400	25	184	126	98	56			●
	3	Internal coolant		UD03C-2400	25	153	95	65	56			●
	5			UD05C-2400	25	184	126	98	56			●
24.5	3	External coolant		UD03-2450	25	153	95	65	56		1-12UNF	●
	5			UD05-2450	25	184	126	98	56			●
	3	Internal coolant		UD03C-2450	25	153	95	65	56			●
	5			UD05C-2450	25	184	126	98	56			●
25	3	External coolant		UD03-2500	25	153	95	65	56	M27*2; 11/8-7UNC		●
	5			UD05-2500	25	184	126	98	56			●
	3	Internal coolant		UD03C-2500	25	153	95	65	56			●
	5			UD05C-2500	25	184	126	98	56			●

● Stock available ○ Make-to-order

Applicable material table

◎Very suitable ○Suitable

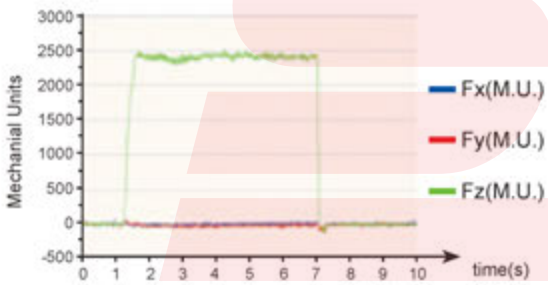
Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG3023	◎	◎	◎	○		◎	◎	◎			○

Code key C6 — Cutting parameters C153-C154 — Technical information C165-C171 — Non-standard customization tools C172-C176

SU series twist drill

General machining

- ★ Wide applications, for high efficient machining of various materials P (steel), M (stainless steel), K(cast iron), and S (heat-resistant alloy).
- ★ Optimized flute structure and corrugated cutting edge with outstanding sharpness and strength ensure unhampered chip flow.
- ★ 140° point angle reduces the feed force of drilling in the initial stage, achieving perfect self-centering capability and improving quality of hole machined.
- ★ Nano-structured TiAlN coating improves thermal hardness and avoids built-up edge.

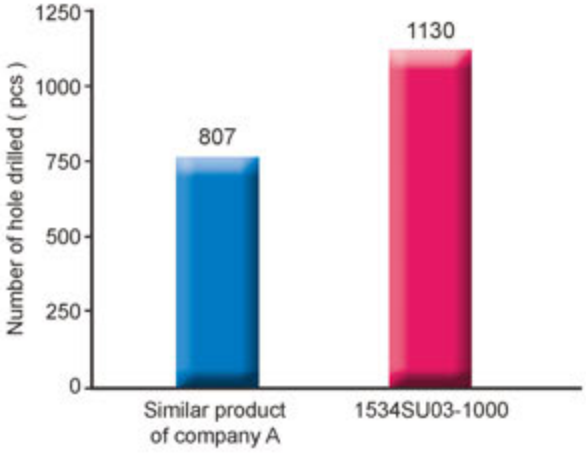


Cutting force chart of SU series

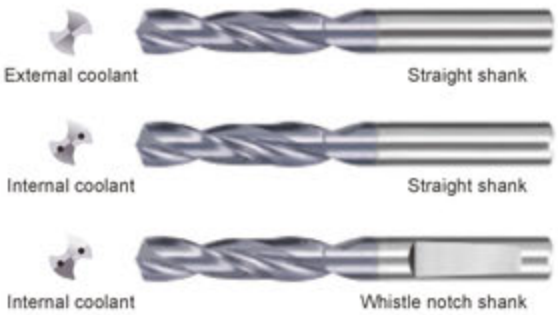
Drill diameter: Ø12mm
Workpiece material: 40Cr
Hardness: HB280
Cutting speed: 90m/min
Feed speed: 715mm/min
Drilling depth: 40mm
Cooling system: emulsion (internal coolant)

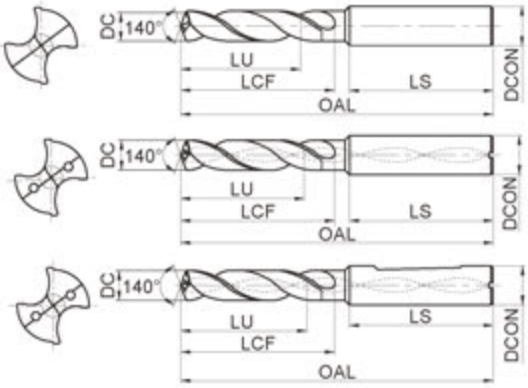
Comparison of SU series twist drills with similar product of overseas manufacturer A

Tool type: 1534SU03-1000
Size: Ø10mm
Workpiece material: 42CrMo(35HRC)
Cutting speed: 100m/min
Rotating speed: 3200r/min
Feed rate per revolution: 0.20mm/r
Feed speed: 640mm/min
Drilling depth: 30mm(L/D=3)
Cooling system: water soluble liquid (external coolant)
Machine tool: Mikron UCP 1000



SU series General machining





- For high-efficiently drilling from common steel to hard-to-cut materials.
- Corrugated cutting edges achieve outstanding sharpness and strength, facilitating chip removal.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
2.0	3	External coolant	Straight shank	1534SU03-0200	6	62	20	14	36	☆
	5			1536SU05-0200	6	66	28	23	36	☆
2.1	3			1534SU03-0210	6	62	20	14	36	☆
	5			1536SU05-0210	6	66	28	23	36	☆
2.2	3			1534SU03-0220	6	62	20	14	36	☆
	5			1536SU05-0220	6	66	28	23	36	☆
2.3	3			1534SU03-0230	6	62	20	14	36	☆
	5			1536SU05-0230	6	66	28	23	36	☆
2.4	3			1534SU03-0240	6	62	20	14	36	☆
	5			1536SU05-0240	6	66	28	23	36	☆
2.5	3			1534SU03-0250	6	62	20	14	36	☆
	5			1536SU05-0250	6	66	28	23	36	☆
2.6	3			1534SU03-0260	6	62	20	14	36	☆
	5			1536SU05-0260	6	66	28	23	36	☆
2.7	3			1534SU03-0270	6	62	20	14	36	☆
	5			1536SU05-0270	6	66	28	23	36	☆
2.8	3			1534SU03-0280	6	62	20	14	36	☆
	5			1536SU05-0280	6	66	28	23	36	☆
2.9	3			1534SU03-0290	6	62	20	14	36	☆
	5			1536SU05-0290	6	66	28	23	36	☆
3.0	3	External coolant		1534SU03-0300	6	62	20	14	36	☆
	5			1536SU05-0300	6	66	28	23	36	☆
	3	Internal coolant		1534SU03C-0300	6	62	20	14	36	☆
	5			1536SU05C-0300	6	66	28	23	36	☆
	3		Whistle notch shank	1734SU03C-0300	6	62	20	14	36	☆
	5			1736SU05C-0300	6	66	28	23	36	☆
	8		Straight shank	1538SU08C-0300	6	72	34	29	36	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
3.1	3	External coolant	Straight shank	1534SU03-0310	6	62	20	14	36	☆
	5			1536SU05-0310	6	66	28	23	36	☆
	3	Internal coolant		1534SU03C-0310	6	62	20	14	36	☆
	5			1536SU05C-0310	6	66	28	23	36	☆
	3		Whistle notch shank	1734SU03C-0310	6	62	20	14	36	☆
	5			1736SU05C-0310	6	66	28	23	36	☆
	8		Straight shank	1538SU08C-0310	6	72	34	29	36	☆
3.2	3	External coolant	Straight shank	1534SU03-0320	6	62	20	14	36	☆
	5			1536SU05-0320	6	66	28	23	36	☆
	3	Internal coolant		1534SU03C-0320	6	62	20	14	36	☆
	5			1536SU05C-0320	6	66	28	23	36	☆
	3		Whistle notch shank	1734SU03C-0320	6	62	20	14	36	☆
	5			1736SU05C-0320	6	66	28	23	36	☆
	8		Straight shank	1538SU08C-0320	6	72	34	29	36	☆
3.25	3	External coolant	Straight shank	1534SU03-0325	6	62	20	14	36	☆
	5			1536SU05-0325	6	66	28	23	36	☆
	3	Internal coolant		1534SU03C-0325	6	62	20	14	36	☆
	5			1536SU05C-0325	6	66	28	23	36	☆
	3		Whistle notch shank	1734SU03C-0325	6	62	20	14	36	☆
	5			1736SU05C-0325	6	66	28	23	36	☆
3.3	3	External coolant	Straight shank	1534SU03-0330	6	62	20	14	36	☆
	5			1536SU05-0330	6	66	28	23	36	☆
	3	Internal coolant		1534SU03C-0330	6	62	20	14	36	☆
	5			1536SU05C-0330	6	66	28	23	36	☆
	3		Whistle notch shank	1734SU03C-0330	6	62	20	14	36	☆
	5			1736SU05C-0330	6	66	28	23	36	☆
	8		Straight shank	1538SU08C-0330	6	72	34	29	36	☆
3.4	3	External coolant	Straight shank	1534SU03-0340	6	62	20	14	36	☆
	5			1536SU05-0340	6	66	28	23	36	☆
	3	Internal coolant		1534SU03C-0340	6	62	20	14	36	☆
	5			1536SU05C-0340	6	66	28	23	36	☆
	3		Whistle notch shank	1734SU03C-0340	6	62	20	14	36	☆
	5			1736SU05C-0340	6	66	28	23	36	☆
	8		Straight shank	1538SU08C-0340	6	72	34	29	36	☆

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h5.

☆ Recommended grade (produce according to order)

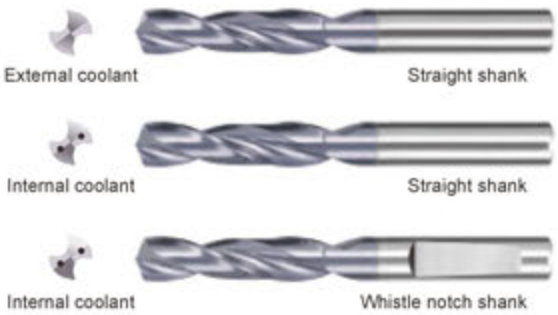
Applicable material table

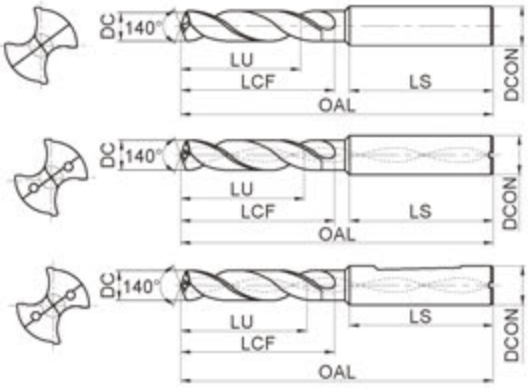
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

Code key C6
Cutting parameters C155-C158
Technical information C165-C171
Non-standard customization tools C172-C176

SU series General machining





- For high-efficiently drilling from common steel to hard-to-cut materials.
- Corrugated cutting edges achieve outstanding sharpness and strength, facilitating chip removal.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
3.5	3	External coolant	Straight shank	1534SU03-0350	6	62	20	14	36	☆
	5			1536SU05-0350	6	66	28	23	36	☆
	3	Internal coolant		1534SU03C-0350	6	62	20	14	36	☆
	5			1536SU05C-0350	6	66	28	23	36	☆
	3		Whistle notch shank	1734SU03C-0350	6	62	20	14	36	☆
	5			1736SU05C-0350	6	66	28	23	36	☆
	8		Straight shank	1538SU08C-0350	6	72	34	29	36	☆
3.6	3	External coolant	Straight shank	1534SU03-0360	6	62	20	14	36	☆
	5			1536SU05-0360	6	66	28	23	36	☆
	3	Internal coolant		1534SU03C-0360	6	62	20	14	36	☆
	5			1536SU05C-0360	6	66	28	23	36	☆
	3		Whistle notch shank	1734SU03C-0360	6	62	20	14	36	☆
	5			1736SU05C-0360	6	66	28	23	36	☆
	8		Straight shank	1538SU08C-0360	6	72	34	29	36	☆
3.7	3	External coolant	Straight shank	1534SU03-0370	6	62	20	14	36	☆
	5			1536SU05-0370	6	66	28	23	36	☆
	3	Internal coolant		1534SU03C-0370	6	62	20	14	36	☆
	5			1536SU05C-0370	6	66	28	23	36	☆
	3		Whistle notch shank	1734SU03C-0370	6	62	20	14	36	☆
	5			1736SU05C-0370	6	66	28	23	36	☆
	8		Straight shank	1538SU08C-0370	6	72	34	29	36	☆
3.8	3	External coolant	Straight shank	1534SU03-0380	6	66	24	17	36	☆
	5			1536SU05-0380	6	74	36	29	36	☆
	3	Internal coolant		1534SU03C-0380	6	66	24	17	36	☆
	5			1536SU05C-0380	6	74	36	29	36	☆
	3		Whistle notch shank	1734SU03C-0380	6	66	24	17	36	☆
	5			1736SU05C-0380	6	74	36	29	36	☆
	8		Straight shank	1538SU08C-0380	6	81	43	36	36	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
3.9	3	External coolant	Straight shank	1534SU03-0390	6	66	24	17	36	☆
	5			1536SU05-0390	6	74	36	29	36	☆
	3	Internal coolant		1534SU03C-0390	6	66	24	17	36	☆
	5			1536SU05C-0390	6	74	36	29	36	☆
	3		Whistle notch shank	1734SU03C-0390	6	66	24	17	36	☆
	5			1736SU05C-0390	6	74	36	29	36	☆
	8		Straight shank	1538SU08C-0390	6	81	43	36	36	☆
4.0	3	External coolant	Straight shank	1534SU03-0400	6	66	24	17	36	☆
	5			1536SU05-0400	6	74	36	29	36	☆
	3	Internal coolant		1534SU03C-0400	6	66	24	17	36	☆
	5			1536SU05C-0400	6	74	36	29	36	☆
	3		Whistle notch shank	1734SU03C-0400	6	66	24	17	36	☆
	5			1736SU05C-0400	6	74	36	29	36	☆
	8		Straight shank	1538SU08C-0400	6	81	43	36	36	☆
4.1	3	External coolant	Straight shank	1534SU03-0410	6	66	24	17	36	☆
	5			1536SU05-0410	6	74	36	29	36	☆
	3	Internal coolant		1534SU03C-0410	6	66	24	17	36	☆
	5			1536SU05C-0410	6	74	36	29	36	☆
	3		Whistle notch shank	1734SU03C-0410	6	66	24	17	36	☆
	5			1736SU05C-0410	6	74	36	29	36	☆
	8		Straight shank	1538SU08C-0410	6	81	43	36	36	☆
4.2	3	External coolant	Straight shank	1534SU03-0420	6	66	24	17	36	☆
	5			1536SU05-0420	6	74	36	29	36	☆
	3	Internal coolant		1534SU03C-0420	6	66	24	17	36	☆
	5			1536SU05C-0420	6	74	36	29	36	☆
	3		Whistle notch shank	1734SU03C-0420	6	66	24	17	36	☆
	5			1736SU05C-0420	6	74	36	29	36	☆
	8		Straight shank	1538SU08C-0420	6	81	43	36	36	☆
4.3	3	External coolant	Straight shank	1534SU03-0430	6	66	24	17	36	☆
	5			1536SU05-0430	6	74	36	29	36	☆
	3	Internal coolant		1534SU03C-0430	6	66	24	17	36	☆
	5			1536SU05C-0430	6	74	36	29	36	☆
	3		Whistle notch shank	1734SU03C-0430	6	66	24	17	36	☆
	5			1736SU05C-0430	6	74	36	29	36	☆
	8		Straight shank	1538SU08C-0430	6	81	43	36	36	☆

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h5.

☆ Recommended grade (produce according to order)

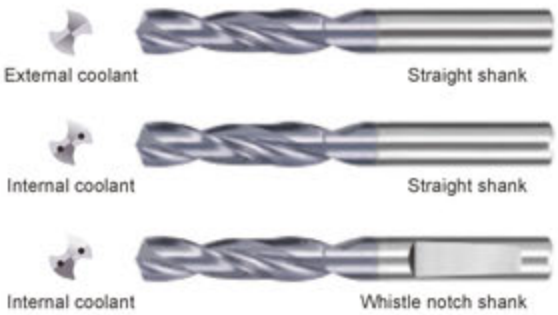
Applicable material table

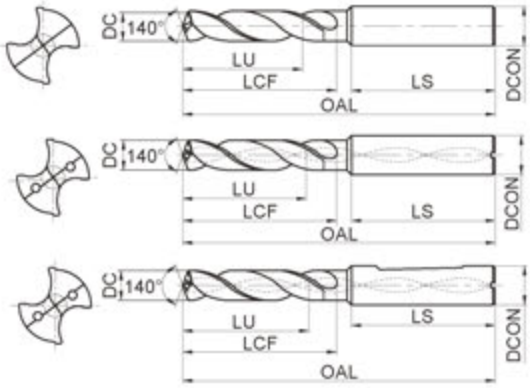
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

Code key C6 Cutting parameters C155-C158 Technical information C165-C171 Non-standard customization tools C172-C176

SU series General machining





- For high-efficiently drilling from common steel to hard-to-cut materials.
- Corrugated cutting edges achieve outstanding sharpness and strength, facilitating chip removal.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
4.4	3	External coolant	Straight shank	1534SU03-0440	6	66	24	17	36	☆
	5			1536SU05-0440	6	74	36	29	36	☆
	3	Internal coolant		1534SU03C-0440	6	66	24	17	36	☆
	5			1536SU05C-0440	6	74	36	29	36	☆
	3		Whistle notch shank	1734SU03C-0440	6	66	24	17	36	☆
	5			1736SU05C-0440	6	74	36	29	36	☆
	8		Straight shank	1538SU08C-0440	6	81	43	36	36	☆
4.5	3	External coolant	Straight shank	1534SU03-0450	6	66	24	17	36	☆
	5			1536SU05-0450	6	74	36	29	36	☆
	3	Internal coolant		1534SU03C-0450	6	66	24	17	36	☆
	5			1536SU05C-0450	6	74	36	29	36	☆
	3		Whistle notch shank	1734SU03C-0450	6	66	24	17	36	☆
	5			1736SU05C-0450	6	74	36	29	36	☆
	8		Straight shank	1538SU08C-0450	6	81	43	36	36	☆
4.6	3	External coolant	Straight shank	1534SU03-0460	6	66	24	17	36	☆
	5			1536SU05-0460	6	74	36	29	36	☆
	3	Internal coolant		1534SU03C-0460	6	66	24	17	36	☆
	5			1536SU05C-0460	6	74	36	29	36	☆
	3		Whistle notch shank	1734SU03C-0460	6	66	24	17	36	☆
	5			1736SU05C-0460	6	74	36	29	36	☆
	8		Straight shank	1538SU08C-0460	6	81	43	36	36	☆
4.65	3	External coolant	Straight shank	1534SU03-0465	6	66	24	17	36	☆
	5			1536SU05-0465	6	74	36	29	36	☆
	3	Internal coolant		1534SU03C-0465	6	66	24	17	36	☆
	5			1536SU05C-0465	6	74	36	29	36	☆
	3		Whistle notch shank	1734SU03C-0465	6	66	24	17	36	☆
	5			1736SU05C-0465	6	74	36	29	36	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
4.7	3	External coolant	Straight shank	1534SU03-0470	6	66	24	17	36	☆
	5			1536SU05-0470	6	74	36	29	36	☆
	3	Internal coolant		1534SU03C-0470	6	66	24	17	36	☆
	5			1536SU05C-0470	6	74	36	29	36	☆
	3		Whistle notch shank	1734SU03C-0470	6	66	24	17	36	☆
	5			1736SU05C-0470	6	74	36	29	36	☆
	8		Straight shank	1538SU08C-0470	6	81	43	36	36	☆
4.8	3	External coolant	Straight shank	1534SU03-0480	6	66	28	20	36	☆
	5			1536SU05-0480	6	82	44	35	36	☆
	3	Internal coolant		1534SU03C-0480	6	66	28	20	36	☆
	5			1536SU05C-0480	6	82	44	35	36	☆
	3		Whistle notch shank	1734SU03C-0480	6	66	28	20	36	☆
	5			1736SU05C-0480	6	82	44	35	36	☆
	8		Straight shank	1538SU08C-0480	6	95	57	48	36	☆
4.9	3	External coolant	Straight shank	1534SU03-0490	6	66	28	20	36	☆
	5			1536SU05-0490	6	82	44	35	36	☆
	3	Internal coolant		1534SU03C-0490	6	66	28	20	36	☆
	5			1536SU05C-0490	6	82	44	35	36	☆
	3		Whistle notch shank	1734SU03C-0490	6	66	28	20	36	☆
	5			1736SU05C-0490	6	82	44	35	36	☆
	8		Straight shank	1538SU08C-0490	6	95	57	48	36	☆
5.0	3	External coolant	Straight shank	1534SU03-0500	6	66	28	20	36	☆
	5			1536SU05-0500	6	82	44	35	36	☆
	3	Internal coolant		1534SU03C-0500	6	66	28	20	36	☆
	5			1536SU05C-0500	6	82	44	35	36	☆
	3		Whistle notch shank	1734SU03C-0500	6	66	28	20	36	☆
	5			1736SU05C-0500	6	82	44	35	36	☆
	8		Straight shank	1538SU08C-0500	6	95	57	48	36	☆
5.1	3	External coolant	Straight shank	1534SU03-0510	6	66	28	20	36	☆
	5			1536SU05-0510	6	82	44	35	36	☆
	3	Internal coolant		1534SU03C-0510	6	66	28	20	36	☆
	5			1536SU05C-0510	6	82	44	35	36	☆
	3		Whistle notch shank	1734SU03C-0510	6	66	28	20	36	☆
	5			1736SU05C-0510	6	82	44	35	36	☆
	8		Straight shank	1538SU08C-0510	6	95	57	48	36	☆

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h_5.

☆ Recommended grade (produce according to order)

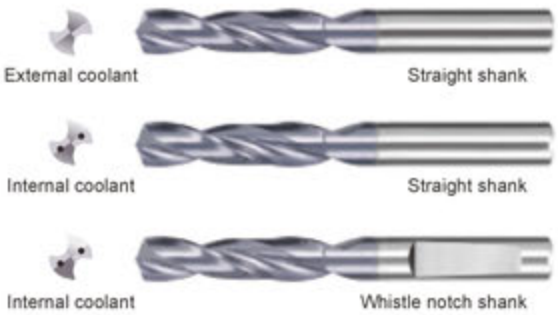
Applicable material table

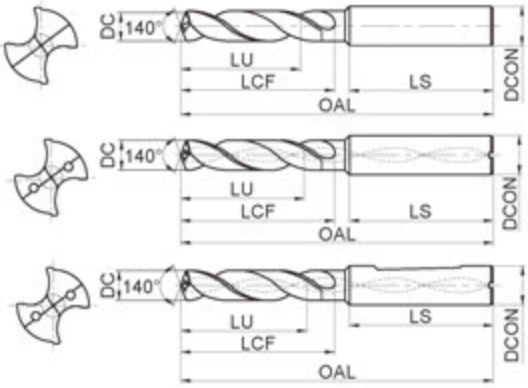
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

Code key C6
Cutting parameters C155-C158
Technical information C165-C171
Non-standard customization tools C172-C176

SU series General machining





- For high-efficiently drilling from common steel to hard-to-cut materials.
- Corrugated cutting edges achieve outstanding sharpness and strength, facilitating chip removal.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
5.2	3	External coolant	Straight shank	1534SU03-0520	6	66	28	20	36	☆
	5			1536SU05-0520	6	82	44	35	36	☆
	3	Internal coolant		1534SU03C-0520	6	66	28	20	36	☆
	5			1536SU05C-0520	6	82	44	35	36	☆
	3		Whistle notch shank	1734SU03C-0520	6	66	28	20	36	☆
	5			1736SU05C-0520	6	82	44	35	36	☆
	8		Straight shank	1538SU08C-0520	6	95	57	48	36	☆
5.3	3	External coolant	Straight shank	1534SU03-0530	6	66	28	20	36	☆
	5			1536SU05-0530	6	82	44	35	36	☆
	3	Internal coolant		1534SU03C-0530	6	66	28	20	36	☆
	5			1536SU05C-0530	6	82	44	35	36	☆
	3		Whistle notch shank	1734SU03C-0530	6	66	28	20	36	☆
	5			1736SU05C-0530	6	82	44	35	36	☆
	8		Straight shank	1538SU08C-0530	6	95	57	48	36	☆
5.4	3	External coolant	Straight shank	1534SU03-0540	6	66	28	20	36	☆
	5			1536SU05-0540	6	82	44	35	36	☆
	3	Internal coolant		1534SU03C-0540	6	66	28	20	36	☆
	5			1536SU05C-0540	6	82	44	35	36	☆
	3		Whistle notch shank	1734SU03C-0540	6	66	28	20	36	☆
	5			1736SU05C-0540	6	82	44	35	36	☆
	8		Straight shank	1538SU08C-0540	6	95	57	48	36	☆
5.5	3	External coolant	Straight shank	1534SU03-0550	6	66	28	20	36	☆
	5			1536SU05-0550	6	82	44	35	36	☆
	3	Internal coolant		1534SU03C-0550	6	66	28	20	36	☆
	5			1536SU05C-0550	6	82	44	35	36	☆
	3		Whistle notch shank	1734SU03C-0550	6	66	28	20	36	☆
	5			1736SU05C-0550	6	82	44	35	36	☆
	8		Straight shank	1538SU08C-0550	6	95	57	48	36	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
5.55	3	External coolant	Straight shank	1534SU03-0555	6	66	28	20	36	☆
	5			1536SU05-0555	6	82	44	35	36	☆
	3	Internal coolant		1534SU03C-0555	6	66	28	20	36	☆
	5			1536SU05C-0555	6	82	44	35	36	☆
	3		Whistle notch shank	1734SU03C-0555	6	66	28	20	36	☆
	5			1736SU05C-0555	6	82	44	35	36	☆
5.6	3	External coolant	Straight shank	1534SU03-0560	6	66	28	20	36	☆
	5			1536SU05-0560	6	82	44	35	36	☆
	3	Internal coolant		1534SU03C-0560	6	66	28	20	36	☆
	5			1536SU05C-0560	6	82	44	35	36	☆
	3		Whistle notch shank	1734SU03C-0560	6	66	28	20	36	☆
	5			1736SU05C-0560	6	82	44	35	36	☆
	8		Straight shank	1538SU08C-0560	6	95	57	48	36	☆
5.7	3	External coolant	Straight shank	1534SU03-0570	6	66	28	20	36	☆
	5			1536SU05-0570	6	82	44	35	36	☆
	3	Internal coolant		1534SU03C-0570	6	66	28	20	36	☆
	5			1536SU05C-0570	6	82	44	35	36	☆
	3		Whistle notch shank	1734SU03C-0570	6	66	28	20	36	☆
	5			1736SU05C-0570	6	82	44	35	36	☆
	8		Straight shank	1538SU08C-0570	6	95	57	48	36	☆
5.8	3	External coolant	Straight shank	1534SU03-0580	6	66	28	20	36	☆
	5			1536SU05-0580	6	82	44	35	36	☆
	3	Internal coolant		1534SU03C-0580	6	66	28	20	36	☆
	5			1536SU05C-0580	6	82	44	35	36	☆
	3		Whistle notch shank	1734SU03C-0580	6	66	28	20	36	☆
	5			1736SU05C-0580	6	82	44	35	36	☆
	8		Straight shank	1538SU08C-0580	6	95	57	48	36	☆
5.9	3	External coolant	Straight shank	1534SU03-0590	6	66	28	20	36	☆
	5			1536SU05-0590	6	82	44	35	36	☆
	3	Internal coolant		1534SU03C-0590	6	66	28	20	36	☆
	5			1536SU05C-0590	6	82	44	35	36	☆
	3		Whistle notch shank	1734SU03C-0590	6	66	28	20	36	☆
	5			1736SU05C-0590	6	82	44	35	36	☆
	8		Straight shank	1538SU08C-0590	6	95	57	48	36	☆

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h5.

☆ Recommended grade (produce according to order)

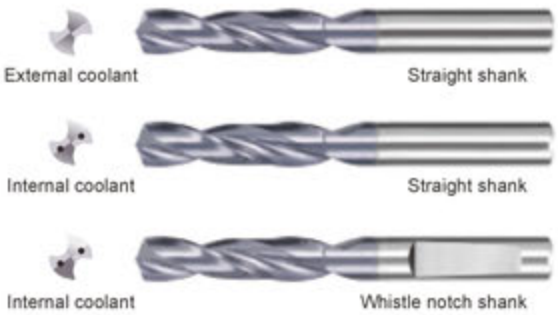
Applicable material table

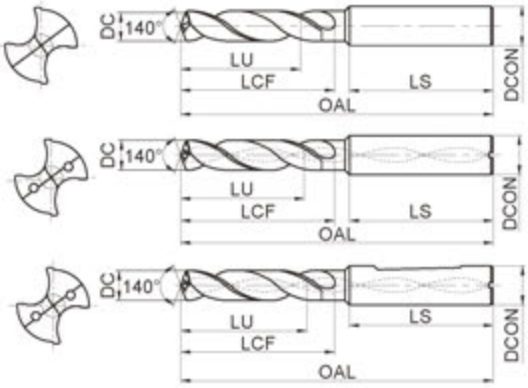
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

Code key C6
Cutting parameters C155-C158
Technical information C165-C171
Non-standard customization tools C172-C176

SU series General machining





- For high-efficiently drilling from common steel to hard-to-cut materials.
- Corrugated cutting edges achieve outstanding sharpness and strength, facilitating chip removal.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
6.0	3	External coolant	Straight shank	1534SU03-0600	6	66	28	20	36	☆
	5			1536SU05-0600	6	82	44	35	36	☆
	3	Internal coolant		1534SU03C-0600	6	66	28	20	36	☆
	5			1536SU05C-0600	6	82	44	35	36	☆
	3		Whistle notch shank	1734SU03C-0600	6	66	28	20	36	☆
	5			1736SU05C-0600	6	82	44	35	36	☆
	8		Straight shank	1538SU08C-0600	6	95	57	48	36	☆
6.1	3	External coolant	Straight shank	1534SU03-0610	8	79	34	24	36	☆
	5			1536SU05-0610	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0610	8	79	34	24	36	☆
	5			1536SU05C-0610	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0610	8	79	34	24	36	☆
	5			1736SU05C-0610	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0610	8	114	76	66	36	☆
6.2	3	External coolant	Straight shank	1534SU03-0620	8	79	34	24	36	☆
	5			1536SU05-0620	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0620	8	79	34	24	36	☆
	5			1536SU05C-0620	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0620	8	79	34	24	36	☆
	5			1736SU05C-0620	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0620	8	114	76	66	36	☆
6.3	3	External coolant	Straight shank	1534SU03-0630	8	79	34	24	36	☆
	5			1536SU05-0630	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0630	8	79	34	24	36	☆
	5			1536SU05C-0630	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0630	8	79	34	24	36	☆
	5			1736SU05C-0630	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0630	8	114	76	66	36	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
6.4	3	External coolant	Straight shank	1534SU03-0640	8	79	34	24	36	☆
	5			1536SU05-0640	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0640	8	79	34	24	36	☆
	5			1536SU05C-0640	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0640	8	79	34	24	36	☆
	5			1736SU05C-0640	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0640	8	114	76	66	36	☆
6.5	3	External coolant	Straight shank	1534SU03-0650	8	79	34	24	36	☆
	5			1536SU05-0650	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0650	8	79	34	24	36	☆
	5			1536SU05C-0650	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0650	8	79	34	24	36	☆
	5			1736SU05C-0650	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0650	8	114	76	66	36	☆
6.6	3	External coolant	Straight shank	1534SU03-0660	8	79	34	24	36	☆
	5			1536SU05-0660	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0660	8	79	34	24	36	☆
	5			1536SU05C-0660	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0660	8	79	34	24	36	☆
	5			1736SU05C-0660	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0660	8	114	76	66	36	☆
6.7	3	External coolant	Straight shank	1534SU03-0670	8	79	34	24	36	☆
	5			1536SU05-0670	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0670	8	79	34	24	36	☆
	5			1536SU05C-0670	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0670	8	79	34	24	36	☆
	5			1736SU05C-0670	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0670	8	114	76	66	36	☆
6.75	3	External coolant	Straight shank	1534SU03-0675	8	79	34	24	36	☆
	5			1536SU05-0675	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0675	8	79	34	24	36	☆
	5			1536SU05C-0675	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0675	8	79	34	24	36	☆
	5			1736SU05C-0675	8	91	53	43	36	☆

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h_5.

☆ Recommended grade (produce according to order)

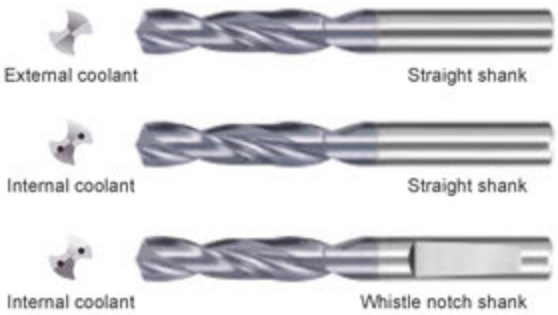
Applicable material table

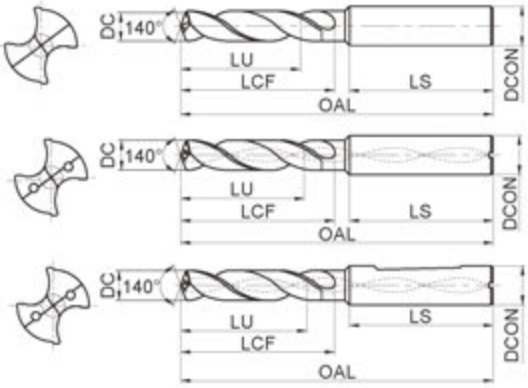
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

Code key C6 Cutting parameters C155-C158 Technical information C165-C171 Non-standard customization tools C172-C176

SU series General machining





- For high-efficiently drilling from common steel to hard-to-cut materials.
- Corrugated cutting edges achieve outstanding sharpness and strength, facilitating chip removal.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
6.8	3	External coolant	Straight shank	1534SU03-0680	8	79	34	24	36	☆
	5			1536SU05-0680	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0680	8	79	34	24	36	☆
	5			1536SU05C-0680	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0680	8	79	34	24	36	☆
	5			1736SU05C-0680	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0680	8	114	76	66	36	☆
6.9	3	External coolant	Straight shank	1534SU03-0690	8	79	34	24	36	☆
	5			1536SU05-0690	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0690	8	79	34	24	36	☆
	5			1536SU05C-0690	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0690	8	79	34	24	36	☆
	5			1736SU05C-0690	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0690	8	114	76	66	36	☆
7.0	3	External coolant	Straight shank	1534SU03-0700	8	79	34	24	36	☆
	5			1536SU05-0700	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0700	8	79	34	24	36	☆
	5			1536SU05C-0700	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0700	8	79	34	24	36	☆
	5			1736SU05C-0700	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0700	8	116	76	66	36	☆
7.1	3	External coolant	Straight shank	1534SU03-0710	8	79	41	29	36	☆
	5			1536SU05-0710	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0710	8	79	41	29	36	☆
	5			1536SU05C-0710	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0710	8	79	41	29	36	☆
	5			1736SU05C-0710	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0710	8	116	76	66	36	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
7.2	3	External coolant	Straight shank	1534SU03-0720	8	79	41	29	36	☆
	5			1536SU05-0720	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0720	8	79	41	29	36	☆
	5			1536SU05C-0720	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0720	8	79	41	29	36	☆
	5			1736SU05C-0720	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0720	8	116	76	66	36	☆
7.3	3	External coolant	Straight shank	1534SU03-0730	8	79	41	29	36	☆
	5			1536SU05-0730	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0730	8	79	41	29	36	☆
	5			1536SU05C-0730	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0730	8	79	41	29	36	☆
	5			1736SU05C-0730	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0730	8	116	76	66	36	☆
7.4	3	External coolant	Straight shank	1534SU03-0740	8	79	41	29	36	☆
	5			1536SU05-0740	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0740	8	79	41	29	36	☆
	5			1536SU05C-0740	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0740	8	79	41	29	36	☆
	5			1736SU05C-0740	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0740	8	116	76	66	36	☆
7.5	3	External coolant	Straight shank	1534SU03-0750	8	79	41	29	36	☆
	5			1536SU05-0750	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0750	8	79	41	29	36	☆
	5			1536SU05C-0750	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0750	8	79	41	29	36	☆
	5			1736SU05C-0750	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0750	8	116	76	66	36	☆
7.6	3	External coolant	Straight shank	1534SU03-0760	8	79	41	29	36	☆
	5			1536SU05-0760	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0760	8	79	41	29	36	☆
	5			1536SU05C-0760	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0760	8	79	41	29	36	☆
	5			1736SU05C-0760	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0760	8	116	76	66	36	☆

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h5.

☆ Recommended grade (produce according to order)

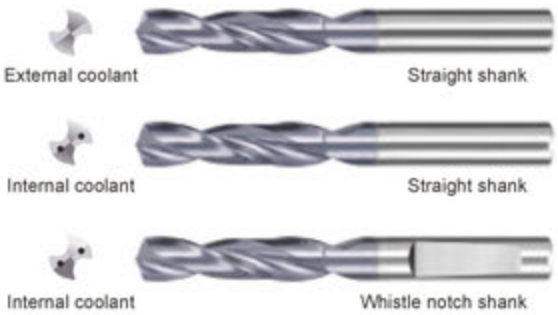
Applicable material table

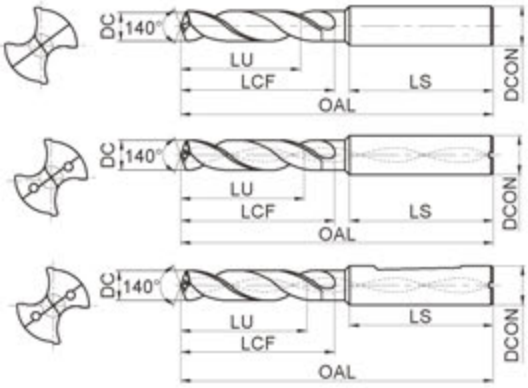
O Very suitable ○ Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	O	O			○	O	O	○		○

Code key C6
Cutting parameters C155-C158
Technical information C165-C171
Non-standard customization tools C172-C176

SU series General machining





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Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
7.7	3	External coolant	Straight shank	1534SU03-0770	8	79	41	29	36	☆
	5			1536SU05-0770	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0770	8	79	41	29	36	☆
	5			1536SU05C-0770	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0770	8	79	41	29	36	☆
	5			1736SU05C-0770	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0770	8	116	76	66	36	☆
7.8	3	External coolant	Straight shank	1534SU03-0780	8	79	41	29	36	☆
	5			1536SU05-0780	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0780	8	79	41	29	36	☆
	5			1536SU05C-0780	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0780	8	79	41	29	36	☆
	5			1736SU05C-0780	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0780	8	116	76	66	36	☆
7.9	3	External coolant	Straight shank	1534SU03-0790	8	79	41	29	36	☆
	5			1536SU05-0790	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0790	8	79	41	29	36	☆
	5			1536SU05C-0790	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0790	8	79	41	29	36	☆
	5			1736SU05C-0790	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0790	8	116	76	66	36	☆
8.0	3	External coolant	Straight shank	1534SU03-0800	8	79	41	29	36	☆
	5			1536SU05-0800	8	91	53	43	36	☆
	3	Internal coolant		1534SU03C-0800	8	79	41	29	36	☆
	5			1536SU05C-0800	8	91	53	43	36	☆
	3		Whistle notch shank	1734SU03C-0800	8	79	41	29	36	☆
	5			1736SU05C-0800	8	91	53	43	36	☆
	8		Straight shank	1538SU08C-0800	8	116	76	66	36	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
8.1	3	External coolant	Straight shank	1534SU03-0810	10	89	47	35	40	☆
	5			1536SU05-0810	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0810	10	89	47	35	40	☆
	5			1536SU05C-0810	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0810	10	89	47	35	40	☆
	5			1736SU05C-0810	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0810	10	142	95	83	40	☆
8.2	3	External coolant	Straight shank	1534SU03-0820	10	89	47	35	40	☆
	5			1536SU05-0820	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0820	10	89	47	35	40	☆
	5			1536SU05C-0820	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0820	10	89	47	35	40	☆
	5			1736SU05C-0820	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0820	10	142	95	83	40	☆
8.3	3	External coolant	Straight shank	1534SU03-0830	10	89	47	35	40	☆
	5			1536SU05-0830	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0830	10	89	47	35	40	☆
	5			1536SU05C-0830	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0830	10	89	47	35	40	☆
	5			1736SU05C-0830	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0830	10	142	95	83	40	☆
8.4	3	External coolant	Straight shank	1534SU03-0840	10	89	47	35	40	☆
	5			1536SU05-0840	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0840	10	89	47	35	40	☆
	5			1536SU05C-0840	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0840	10	89	47	35	40	☆
	5			1736SU05C-0840	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0840	10	142	95	83	40	☆
8.5	3	External coolant	Straight shank	1534SU03-0850	10	89	47	35	40	☆
	5			1536SU05-0850	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0850	10	89	47	35	40	☆
	5			1536SU05C-0850	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0850	10	89	47	35	40	☆
	5			1736SU05C-0850	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0850	10	142	95	83	40	☆

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h5.

☆ Recommended grade (produce according to order)

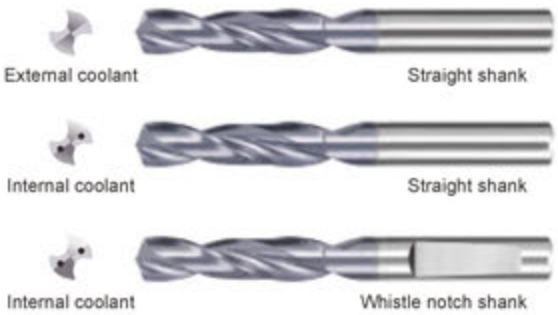
Applicable material table

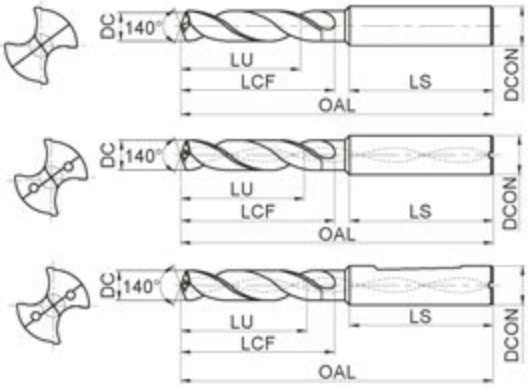
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

Code key C6 Cutting parameters C155-C158 Technical information C165-C171 Non-standard customization tools C172-C176

SU series General machining





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Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
8.6	3	External coolant	Straight shank	1534SU03-0860	10	89	47	35	40	☆
	5			1536SU05-0860	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0860	10	89	47	35	40	☆
	5			1536SU05C-0860	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0860	10	89	47	35	40	☆
	5			1736SU05C-0860	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0860	10	142	95	83	40	☆
8.7	3	External coolant	Straight shank	1534SU03-0870	10	89	47	35	40	☆
	5			1536SU05-0870	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0870	10	89	47	35	40	☆
	5			1536SU05C-0870	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0870	10	89	47	35	40	☆
	5			1736SU05C-0870	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0870	10	142	95	83	40	☆
8.8	3	External coolant	Straight shank	1534SU03-0880	10	89	47	35	40	☆
	5			1536SU05-0880	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0880	10	89	47	35	40	☆
	5			1536SU05C-0880	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0880	10	89	47	35	40	☆
	5			1736SU05C-0880	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0880	10	142	95	83	40	☆
8.9	3	External coolant	Straight shank	1534SU03-0890	10	89	47	35	40	☆
	5			1536SU05-0890	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0890	10	89	47	35	40	☆
	5			1536SU05C-0890	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0890	10	89	47	35	40	☆
	5			1736SU05C-0890	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0890	10	142	95	83	40	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
9.0	3	External coolant	Straight shank	1534SU03-0900	10	89	47	35	40	☆
	5			1536SU05-0900	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0900	10	89	47	35	40	☆
	5			1536SU05C-0900	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0900	10	89	47	35	40	☆
	5			1736SU05C-0900	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0900	10	142	95	83	40	☆
9.1	3	External coolant	Straight shank	1534SU03-0910	10	89	47	35	40	☆
	5			1536SU05-0910	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0910	10	89	47	35	40	☆
	5			1536SU05C-0910	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0910	10	89	47	35	40	☆
	5			1736SU05C-0910	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0910	10	142	95	83	40	☆
9.2	3	External coolant	Straight shank	1534SU03-0920	10	89	47	35	40	☆
	5			1536SU05-0920	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0920	10	89	47	35	40	☆
	5			1536SU05C-0920	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0920	10	89	47	35	40	☆
	5			1736SU05C-0920	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0920	10	142	95	83	40	☆
9.3	3	External coolant	Straight shank	1534SU03-0930	10	89	47	35	40	☆
	5			1536SU05-0930	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0930	10	89	47	35	40	☆
	5			1536SU05C-0930	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0930	10	89	47	35	40	☆
	5			1736SU05C-0930	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0930	10	142	95	83	40	☆
9.4	3	External coolant	Straight shank	1534SU03-0940	10	89	47	35	40	☆
	5			1536SU05-0940	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0940	10	89	47	35	40	☆
	5			1536SU05C-0940	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0940	10	89	47	35	40	☆
	5			1736SU05C-0940	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0940	10	142	95	83	40	☆

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h5.

☆ Recommended grade (produce according to order)

Applicable material table

○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

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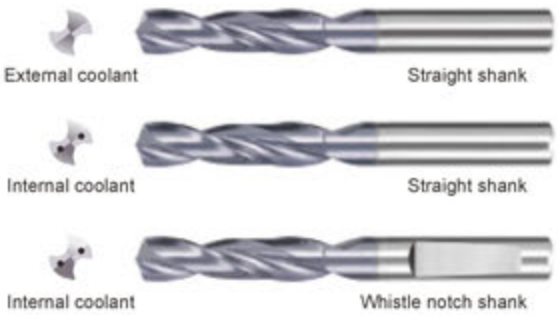
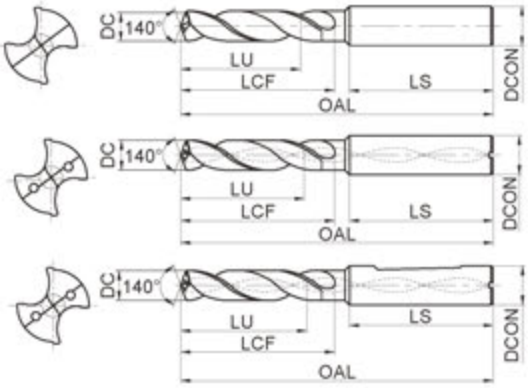
SU series General machining





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Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
9.5	3	External coolant	Straight shank	1534SU03-0950	10	89	47	35	40	☆
	5			1536SU05-0950	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0950	10	89	47	35	40	☆
	5			1536SU05C-0950	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0950	10	89	47	35	40	☆
	5			1736SU05C-0950	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0950	10	142	95	83	40	☆
9.6	3	External coolant	Straight shank	1534SU03-0960	10	89	47	35	40	☆
	5			1536SU05-0960	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0960	10	89	47	35	40	☆
	5			1536SU05C-0960	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0960	10	89	47	35	40	☆
	5			1736SU05C-0960	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0960	10	142	95	83	40	☆
9.7	3	External coolant	Straight shank	1534SU03-0970	10	89	47	35	40	☆
	5			1536SU05-0970	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0970	10	89	47	35	40	☆
	5			1536SU05C-0970	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0970	10	89	47	35	40	☆
	5			1736SU05C-0970	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0970	10	142	95	83	40	☆
9.8	3	External coolant	Straight shank	1534SU03-0980	10	89	47	35	40	☆
	5			1536SU05-0980	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0980	10	89	47	35	40	☆
	5			1536SU05C-0980	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0980	10	89	47	35	40	☆
	5			1736SU05C-0980	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0980	10	142	95	83	40	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
9.9	3	External coolant	Straight shank	1534SU03-0990	10	89	47	35	40	☆
	5			1536SU05-0990	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-0990	10	89	47	35	40	☆
	5			1536SU05C-0990	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-0990	10	89	47	35	40	☆
	5			1736SU05C-0990	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-0990	10	142	95	83	40	☆
10.0	3	External coolant	Straight shank	1534SU03-1000	10	89	47	35	40	☆
	5			1536SU05-1000	10	103	61	49	40	☆
	3	Internal coolant		1534SU03C-1000	10	89	47	35	40	☆
	5			1536SU05C-1000	10	103	61	49	40	☆
	3		Whistle notch shank	1734SU03C-1000	10	89	47	35	40	☆
	5			1736SU05C-1000	10	103	61	49	40	☆
	8		Straight shank	1538SU08C-1000	10	142	95	83	40	☆
10.1	3	External coolant	Straight shank	1534SU03-1010	12	102	55	40	45	☆
	5			1536SU05-1010	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1010	12	102	55	40	45	☆
	5			1536SU05C-1010	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1010	12	102	55	40	45	☆
	5			1736SU05C-1010	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1010	12	162	114	99	45	☆
10.2	3	External coolant	Straight shank	1534SU03-1020	12	102	55	40	45	☆
	5			1536SU05-1020	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1020	12	102	55	40	45	☆
	5			1536SU05C-1020	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1020	12	102	55	40	45	☆
	5			1736SU05C-1020	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1020	12	162	114	99	45	☆
10.25	3	External coolant	Straight shank	1534SU03-1025	12	102	55	40	45	☆
	5			1536SU05-1025	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1025	12	102	55	40	45	☆
	5			1536SU05C-1025	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1025	12	102	55	40	45	☆
	5			1736SU05C-1025	12	118	71	56	45	☆

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h5.

☆ Recommended grade (produce according to order)

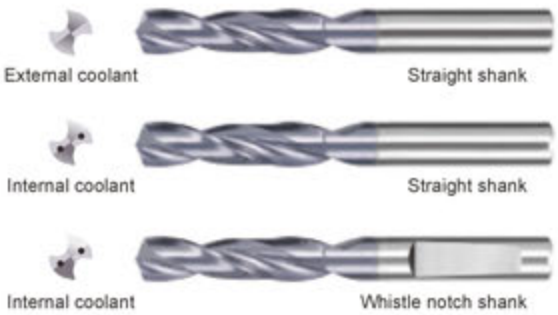
Applicable material table

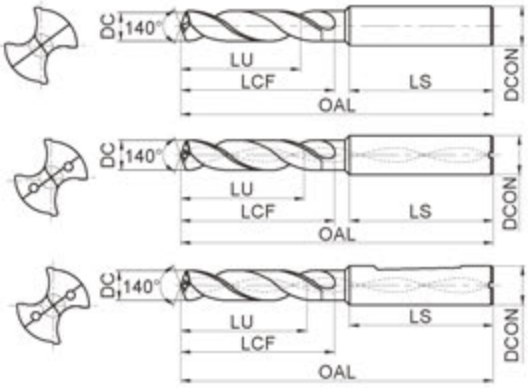
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

Code key C6 Cutting parameters C155-C158 Technical information C165-C171 Non-standard customization tools C172-C176

SU series General machining





- For high-efficiently drilling from common steel to hard-to-cut materials.
- Corrugated cutting edges achieve outstanding sharpness and strength, facilitating chip removal.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
10.3	3	External coolant	Straight shank	1534SU03-1030	12	102	55	40	45	☆
	5			1536SU05-1030	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1030	12	102	55	40	45	☆
	5			1536SU05C-1030	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1030	12	102	55	40	45	☆
	5			1736SU05C-1030	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1030	12	162	114	99	45	☆
10.4	3	External coolant	Straight shank	1534SU03-1040	12	102	55	40	45	☆
	5			1536SU05-1040	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1040	12	102	55	40	45	☆
	5			1536SU05C-1040	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1040	12	102	55	40	45	☆
	5			1736SU05C-1040	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1040	12	162	114	99	45	☆
10.5	3	External coolant	Straight shank	1534SU03-1050	12	102	55	40	45	☆
	5			1536SU05-1050	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1050	12	102	55	40	45	☆
	5			1536SU05C-1050	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1050	12	102	55	40	45	☆
	5			1736SU05C-1050	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1050	12	162	114	99	45	☆
10.6	3	External coolant	Straight shank	1534SU03-1060	12	102	55	40	45	☆
	5			1536SU05-1060	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1060	12	102	55	40	45	☆
	5			1536SU05C-1060	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1060	12	102	55	40	45	☆
	5			1736SU05C-1060	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1060	12	162	114	99	45	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
10.7	3	External coolant	Straight shank	1534SU03-1070	12	102	55	40	45	☆
	5			1536SU05-1070	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1070	12	102	55	40	45	☆
	5			1536SU05C-1070	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1070	12	102	55	40	45	☆
	5			1736SU05C-1070	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1070	12	162	114	99	45	☆
10.8	3	External coolant	Straight shank	1534SU03-1080	12	102	55	40	45	☆
	5			1536SU05-1080	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1080	12	102	55	40	45	☆
	5			1536SU05C-1080	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1080	12	102	55	40	45	☆
	5			1736SU05C-1080	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1080	12	162	114	99	45	☆
10.9	3	External coolant	Straight shank	1534SU03-1090	12	102	55	40	45	☆
	5			1536SU05-1090	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1090	12	102	55	40	45	☆
	5			1536SU05C-1090	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1090	12	102	55	40	45	☆
	5			1736SU05C-1090	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1090	12	162	114	99	45	☆
11.0	3	External coolant	Straight shank	1534SU03-1100	12	102	55	40	45	☆
	5			1536SU05-1100	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1100	12	102	55	40	45	☆
	5			1536SU05C-1100	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1100	12	102	55	40	45	☆
	5			1736SU05C-1100	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1100	12	162	114	99	45	☆
11.1	3	External coolant	Straight shank	1534SU03-1110	12	102	55	40	45	☆
	5			1536SU05-1110	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1110	12	102	55	40	45	☆
	5			1536SU05C-1110	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1110	12	102	55	40	45	☆
	5			1736SU05C-1110	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1110	12	162	114	99	45	☆

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h_5.

☆ Recommended grade (produce according to order)

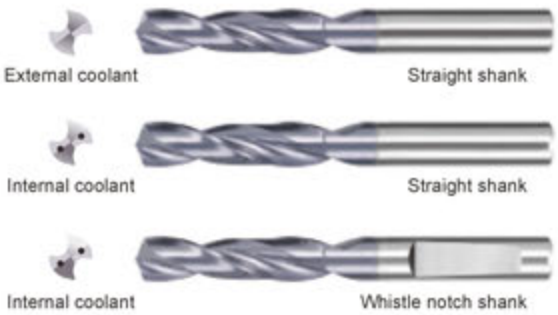
Applicable material table

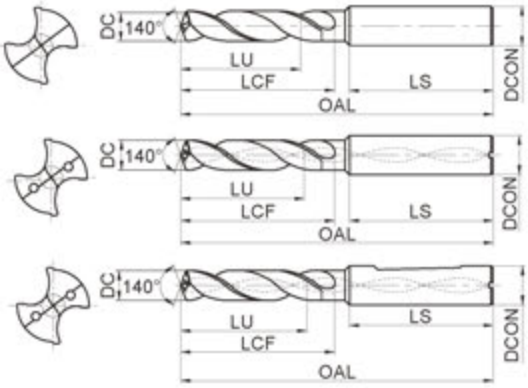
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

Code key C6
Cutting parameters C155-C158
Technical information C165-C171
Non-standard customization tools C172-C176

SU series General machining





- For high-efficiently drilling from common steel to hard-to-cut materials.
- Corrugated cutting edges achieve outstanding sharpness and strength, facilitating chip removal.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
11.2	3	External coolant	Straight shank	1534SU03-1120	12	102	55	40	45	☆
	5			1536SU05-1120	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1120	12	102	55	40	45	☆
	5			1536SU05C-1120	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1120	12	102	55	40	45	☆
	5			1736SU05C-1120	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1120	12	162	114	99	45	☆
11.3	3	External coolant	Straight shank	1534SU03-1130	12	102	55	40	45	☆
	5			1536SU05-1130	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1130	12	102	55	40	45	☆
	5			1536SU05C-1130	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1130	12	102	55	40	45	☆
	5			1736SU05C-1130	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1130	12	162	114	99	45	☆
11.4	3	External coolant	Straight shank	1534SU03-1140	12	102	55	40	45	☆
	5			1536SU05-1140	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1140	12	102	55	40	45	☆
	5			1536SU05C-1140	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1140	12	102	55	40	45	☆
	5			1736SU05C-1140	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1140	12	162	114	99	45	☆
11.5	3	External coolant	Straight shank	1534SU03-1150	12	102	55	40	45	☆
	5			1536SU05-1150	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1150	12	102	55	40	45	☆
	5			1536SU05C-1150	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1150	12	102	55	40	45	☆
	5			1736SU05C-1150	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1150	12	162	114	99	45	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
11.6	3	External coolant	Straight shank	1534SU03-1160	12	102	55	40	45	☆
	5			1536SU05-1160	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1160	12	102	55	40	45	☆
	5			1536SU05C-1160	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1160	12	102	55	40	45	☆
	5			1736SU05C-1160	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1160	12	162	114	99	45	☆
11.7	3	External coolant	Straight shank	1534SU03-1170	12	102	55	40	45	☆
	5			1536SU05-1170	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1170	12	102	55	40	45	☆
	5			1536SU05C-1170	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1170	12	102	55	40	45	☆
	5			1736SU05C-1170	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1170	12	162	114	99	45	☆
11.8	3	External coolant	Straight shank	1534SU03-1180	12	102	55	40	45	☆
	5			1536SU05-1180	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1180	12	102	55	40	45	☆
	5			1536SU05C-1180	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1180	12	102	55	40	45	☆
	5			1736SU05C-1180	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1180	12	162	114	99	45	☆
11.9	3	External coolant	Straight shank	1534SU03-1190	12	102	55	40	45	☆
	5			1536SU05-1190	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1190	12	102	55	40	45	☆
	5			1536SU05C-1190	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1190	12	102	55	40	45	☆
	5			1736SU05C-1190	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1190	12	162	114	99	45	☆
12.0	3	External coolant	Straight shank	1534SU03-1200	12	102	55	40	45	☆
	5			1536SU05-1200	12	118	71	56	45	☆
	3	Internal coolant		1534SU03C-1200	12	102	55	40	45	☆
	5			1536SU05C-1200	12	118	71	56	45	☆
	3		Whistle notch shank	1734SU03C-1200	12	102	55	40	45	☆
	5			1736SU05C-1200	12	118	71	56	45	☆
	8		Straight shank	1538SU08C-1200	12	162	114	99	45	☆

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h5.

☆ Recommended grade (produce according to order)

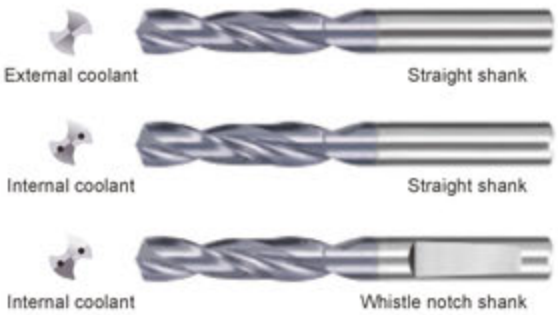
Applicable material table

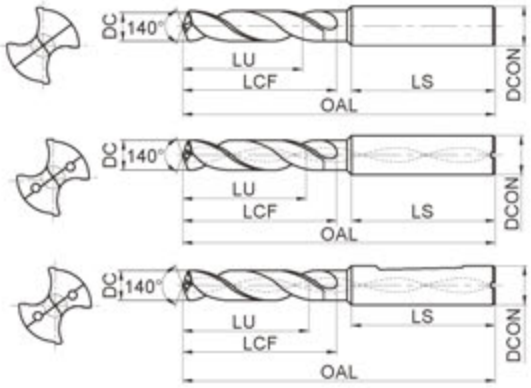
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

Code key C6
Cutting parameters C155-C158
Technical information C165-C171
Non-standard customization tools C172-C176

SU series General machining





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- Corrugated cutting edges achieve outstanding sharpness and strength, facilitating chip removal.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
12.25	3	External coolant	Straight shank	1534SU03-1225	14	107	60	43	45	☆
	5			1536SU05-1225	14	124	77	60	45	☆
	3	Internal coolant		1534SU03C-1225	14	107	60	43	45	☆
	5			1536SU05C-1225	14	124	77	60	45	☆
	3		Whistle notch shank	1734SU03C-1225	14	107	60	43	45	☆
	5			1736SU05C-1225	14	124	77	60	45	☆
12.3	3	External coolant	Straight shank	1534SU03-1230	14	107	60	43	45	☆
	5			1536SU05-1230	14	124	77	60	45	☆
	3	Internal coolant		1534SU03C-1230	14	107	60	43	45	☆
	5			1536SU05C-1230	14	124	77	60	45	☆
	3		Whistle notch shank	1734SU03C-1230	14	107	60	43	45	☆
	5			1736SU05C-1230	14	124	77	60	45	☆
12.5	3	External coolant	Straight shank	1534SU03-1250	14	107	60	43	45	☆
	5			1536SU05-1250	14	124	77	60	45	☆
	3	Internal coolant		1534SU03C-1250	14	107	60	43	45	☆
	5			1536SU05C-1250	14	124	77	60	45	☆
	3		Whistle notch shank	1734SU03C-1250	14	107	60	43	45	☆
	5			1736SU05C-1250	14	124	77	60	45	☆
	8		Straight shank	1538SU08C-1250	14	178	133	116	45	☆
12.7	3	External coolant	Straight shank	1534SU03-1270	14	107	60	43	45	☆
	5			1536SU05-1270	14	124	77	60	45	☆
	3	Internal coolant		1534SU03C-1270	14	107	60	43	45	☆
	5			1536SU05C-1270	14	124	77	60	45	☆
	3		Whistle notch shank	1734SU03C-1270	14	107	60	43	45	☆
	5			1736SU05C-1270	14	124	77	60	45	☆
	8		Straight shank	1538SU08C-1270	14	178	133	116	45	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
12.75	3	External coolant	Straight shank	1534SU03-1275	14	107	60	43	45	☆
	5			1536SU05-1275	14	124	77	60	45	☆
	3	Internal coolant		1534SU03C-1275	14	107	60	43	45	☆
	5			1536SU05C-1275	14	124	77	60	45	☆
	3		Whistle notch shank	1734SU03C-1275	14	107	60	43	45	☆
	5			1736SU05C-1275	14	124	77	60	45	☆
12.8	3	External coolant	Straight shank	1534SU03-1280	14	107	60	43	45	☆
	5			1536SU05-1280	14	124	77	60	45	☆
	3	Internal coolant		1534SU03C-1280	14	107	60	43	45	☆
	5			1536SU05C-1280	14	124	77	60	45	☆
	3		Whistle notch shank	1734SU03C-1280	14	107	60	43	45	☆
	5			1736SU05C-1280	14	124	77	60	45	☆
	8		Straight shank	1538SU08C-1280	14	178	133	116	45	☆
13.0	3	External coolant	Straight shank	1534SU03-1300	14	107	60	43	45	☆
	5			1536SU05-1300	14	124	77	60	45	☆
	3	Internal coolant		1534SU03C-1300	14	107	60	43	45	☆
	5			1536SU05C-1300	14	124	77	60	45	☆
	3		Whistle notch shank	1734SU03C-1300	14	107	60	43	45	☆
	5			1736SU05C-1300	14	124	77	60	45	☆
	8		Straight shank	1538SU08C-1300	14	178	133	116	45	☆
13.1	3	External coolant	Straight shank	1534SU03-1310	14	107	60	43	45	☆
	5			1536SU05-1310	14	124	77	60	45	☆
	3	Internal coolant		1534SU03C-1310	14	107	60	43	45	☆
	5			1536SU05C-1310	14	124	77	60	45	☆
	3		Whistle notch shank	1734SU03C-1310	14	107	60	43	45	☆
	5			1736SU05C-1310	14	124	77	60	45	☆
13.5	3	External coolant	Straight shank	1534SU03-1350	14	107	60	43	45	☆
	5			1536SU05-1350	14	124	77	60	45	☆
	3	Internal coolant		1534SU03C-1350	14	107	60	43	45	☆
	5			1536SU05C-1350	14	124	77	60	45	☆
	3		Whistle notch shank	1734SU03C-1350	14	107	60	43	45	☆
	5			1736SU05C-1350	14	124	77	60	45	☆
	8		Straight shank	1538SU08C-1350	14	178	133	116	45	☆

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h_5.

☆ Recommended grade (produce according to order)

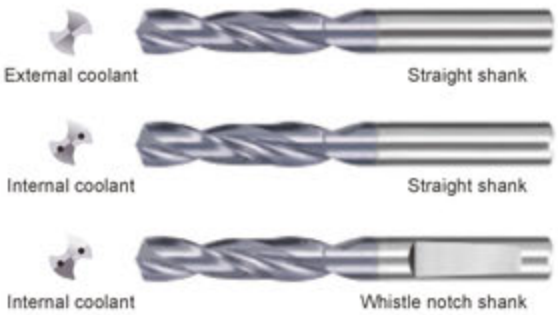
Applicable material table

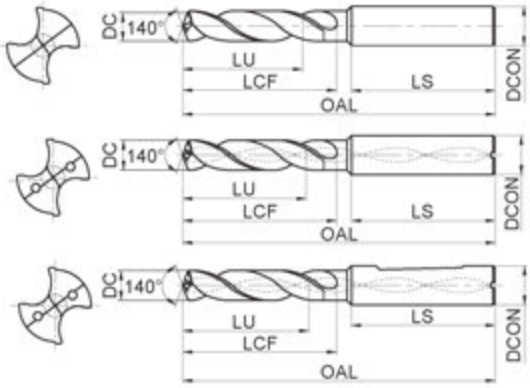
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

Code key C6
Cutting parameters C155-C158
Technical information C165-C171
Non-standard customization tools C172-C176

SU series General machining





- For high-efficiently drilling from common steel to hard-to-cut materials.
- Corrugated cutting edges achieve outstanding sharpness and strength, facilitating chip removal.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
13.8	3	External coolant	Straight shank	1534SU03-1380	14	107	60	43	45	☆
	5			1536SU05-1380	14	124	77	60	45	☆
	3	Internal coolant		1534SU03C-1380	14	107	60	43	45	☆
	5			1536SU05C-1380	14	124	77	60	45	☆
	3		Whistle notch shank	1734SU03C-1380	14	107	60	43	45	☆
	5			1736SU05C-1380	14	124	77	60	45	☆
14.0	3	External coolant	Straight shank	1534SU03-1400	14	107	60	43	45	☆
	5			1536SU05-1400	14	124	77	60	45	☆
	3	Internal coolant		1534SU03C-1400	14	107	60	43	45	☆
	5			1536SU05C-1400	14	124	77	60	45	☆
	3		Whistle notch shank	1734SU03C-1400	14	107	60	43	45	☆
	5			1736SU05C-1400	14	124	77	60	45	☆
	8		Straight shank	1538SU08C-1400	14	178	133	116	45	☆
14.25	3	External coolant	Straight shank	1534SU03-1425	16	115	65	45	48	☆
	5			1536SU05-1425	16	133	83	63	48	☆
	3	Internal coolant		1534SU03C-1425	16	115	65	45	48	☆
	5			1536SU05C-1425	16	133	83	63	48	☆
	3		Whistle notch shank	1734SU03C-1425	16	115	65	45	48	☆
	5			1736SU05C-1425	16	133	83	63	48	☆
14.3	3	External coolant	Straight shank	1534SU03-1430	16	115	65	45	48	☆
	5			1536SU05-1430	16	133	83	63	48	☆
	3	Internal coolant		1534SU03C-1430	16	115	65	45	48	☆
	5			1536SU05C-1430	16	133	83	63	48	☆
	3		Whistle notch shank	1734SU03C-1430	16	115	65	45	48	☆
	5			1736SU05C-1430	16	133	83	63	48	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
14.5	3	External coolant	Straight shank	1534SU03-1450	16	115	65	45	48	☆
	5			1536SU05-1450	16	133	83	63	48	☆
	3	Internal coolant		1534SU03C-1450	16	115	65	45	48	☆
	5			1536SU05C-1450	16	133	83	63	48	☆
	3		Whistle notch shank	1734SU03C-1450	16	115	65	45	48	☆
	5			1736SU05C-1450	16	133	83	63	48	☆
	8		Straight shank	1538SU08C-1450	16	204	152	132	48	☆
14.75	3	External coolant	Straight shank	1534SU03-1475	16	115	65	45	48	☆
	5			1536SU05-1475	16	133	83	63	48	☆
	3	Internal coolant		1534SU03C-1475	16	115	65	45	48	☆
	5			1536SU05C-1475	16	133	83	63	48	☆
	3		Whistle notch shank	1734SU03C-1475	16	115	65	45	48	☆
	5			1736SU05C-1475	16	133	83	63	48	☆
14.8	3	External coolant	Straight shank	1534SU03-1480	16	115	65	45	48	☆
	5			1536SU05-1480	16	133	83	63	48	☆
	3	Internal coolant		1534SU03C-1480	16	115	65	45	48	☆
	5			1536SU05C-1480	16	133	83	63	48	☆
	3		Whistle notch shank	1734SU03C-1480	16	115	65	45	48	☆
	5			1736SU05C-1480	16	133	83	63	48	☆
	8		Straight shank	1538SU08C-1480	16	204	152	132	48	☆
15.0	3	External coolant	Straight shank	1534SU03-1500	16	115	65	45	48	☆
	5			1536SU05-1500	16	133	83	63	48	☆
	3	Internal coolant		1534SU03C-1500	16	115	65	45	48	☆
	5			1536SU05C-1500	16	133	83	63	48	☆
	3		Whistle notch shank	1734SU03C-1500	16	115	65	45	48	☆
	5			1736SU05C-1500	16	133	83	63	48	☆
	8		Straight shank	1538SU08C-1500	16	204	152	132	48	☆
15.1	3	External coolant	Straight shank	1534SU03-1510	16	115	65	45	48	☆
	5			1536SU05-1510	16	133	83	63	48	☆
	3	Internal coolant		1534SU03C-1510	16	115	65	45	48	☆
	5			1536SU05C-1510	16	133	83	63	48	☆
	3		Whistle notch shank	1734SU03C-1510	16	115	65	45	48	☆
	5			1736SU05C-1510	16	133	83	63	48	☆

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h5.

☆ Recommended grade (produce according to order)

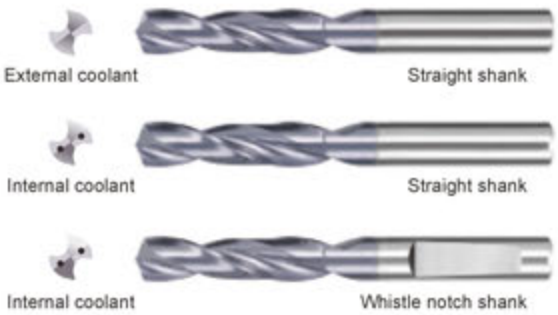
Applicable material table

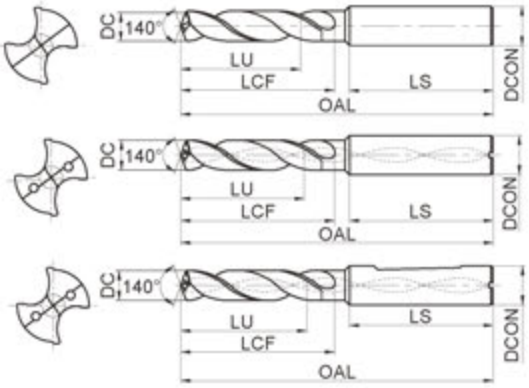
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

Code key C6
Cutting parameters C155-C158
Technical information C165-C171
Non-standard customization tools C172-C176

SU series General machining





- For high-efficiently drilling from common steel to hard-to-cut materials.
- Corrugated cutting edges achieve outstanding sharpness and strength, facilitating chip removal.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
15.5	3	External coolant	Straight shank	1534SU03-1550	16	115	65	45	48	☆
	5			1536SU05-1550	16	133	83	63	48	☆
	3	Internal coolant		1534SU03C-1550	16	115	65	45	48	☆
	5			1536SU05C-1550	16	133	83	63	48	☆
	3		Whistle notch shank	1734SU03C-1550	16	115	65	45	48	☆
	5			1736SU05C-1550	16	133	83	63	48	☆
	8		Straight shank	1538SU08C-1550	16	204	152	132	48	☆
15.8	3	External coolant	Straight shank	1534SU03-1580	16	115	65	45	48	☆
	5			1536SU05-1580	16	133	83	63	48	☆
	3	Internal coolant		1534SU03C-1580	16	115	65	45	48	☆
	5			1536SU05C-1580	16	133	83	63	48	☆
	3		Whistle notch shank	1734SU03C-1580	16	115	65	45	48	☆
	5			1736SU05C-1580	16	133	83	63	48	☆
16.0	3	External coolant	Straight shank	1534SU03-1600	16	115	65	45	48	☆
	5			1536SU05-1600	16	133	83	63	48	☆
	3	Internal coolant		1534SU03C-1600	16	115	65	45	48	☆
	5			1536SU05C-1600	16	133	83	63	48	☆
	3		Whistle notch shank	1734SU03C-1600	16	115	65	45	48	☆
	5			1736SU05C-1600	16	133	83	63	48	☆
	8		Straight shank	1538SU08C-1600	16	204	152	132	48	☆
16.5	3	External coolant	Straight shank	1534SU03-1650	18	123	73	51	48	☆
	5			1536SU05-1650	18	143	93	71	48	☆
	3	Internal coolant		1534SU03C-1650	18	123	73	51	48	☆
	5			1536SU05C-1650	18	143	93	71	48	☆
	3		Whistle notch shank	1734SU03C-1650	18	123	73	51	48	☆
	5			1736SU05C-1650	18	143	93	71	48	☆
	8		Straight shank	1538SU08C-1650	18	223	171	149	48	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
16.75	3	External coolant	Straight shank	1534SU03-1675	18	123	73	51	48	☆
	5			1536SU05-1675	18	143	93	71	48	☆
	3	Internal coolant		1534SU03C-1675	18	123	73	51	48	☆
	5			1536SU05C-1675	18	143	93	71	48	☆
	3		Whistle notch shank	1734SU03C-1675	18	123	73	51	48	☆
	5			1736SU05C-1675	18	143	93	71	48	☆
16.8	3	External coolant	Straight shank	1534SU03-1680	18	123	73	51	48	☆
	5			1536SU05-1680	18	143	93	71	48	☆
	3	Internal coolant		1534SU03C-1680	18	123	73	51	48	☆
	5			1536SU05C-1680	18	143	93	71	48	☆
	3		Whistle notch shank	1734SU03C-1680	18	123	73	51	48	☆
	5			1736SU05C-1680	18	143	93	71	48	☆
17.0	3	External coolant	Straight shank	1534SU03-1700	18	123	73	51	48	☆
	5			1536SU05-1700	18	143	93	71	48	☆
	3	Internal coolant		1534SU03C-1700	18	123	73	51	48	☆
	5			1536SU05C-1700	18	143	93	71	48	☆
	3		Whistle notch shank	1734SU03C-1700	18	123	73	51	48	☆
	5			1736SU05C-1700	18	143	93	71	48	☆
	8		Straight shank	1538SU08C-1700	18	223	171	149	48	☆
17.5	3	External coolant	Straight shank	1534SU03-1750	18	123	73	51	48	☆
	5			1536SU05-1750	18	143	93	71	48	☆
	3	Internal coolant		1534SU03C-1750	18	123	73	51	48	☆
	5			1536SU05C-1750	18	143	93	71	48	☆
	3		Whistle notch shank	1734SU03C-1750	18	123	73	51	48	☆
	5			1736SU05C-1750	18	143	93	71	48	☆
	8		Straight shank	1538SU08C-1750	18	223	171	149	48	☆
17.8	3	External coolant	Straight shank	1534SU03-1780	18	123	73	51	48	☆
	5			1536SU05-1780	18	143	93	71	48	☆
	3	Internal coolant		1534SU03C-1780	18	123	73	51	48	☆
	5			1536SU05C-1780	18	143	93	71	48	☆
	3		Whistle notch shank	1734SU03C-1780	18	123	73	51	48	☆
	5			1736SU05C-1780	18	143	93	71	48	☆

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h5.

☆ Recommended grade (produce according to order)

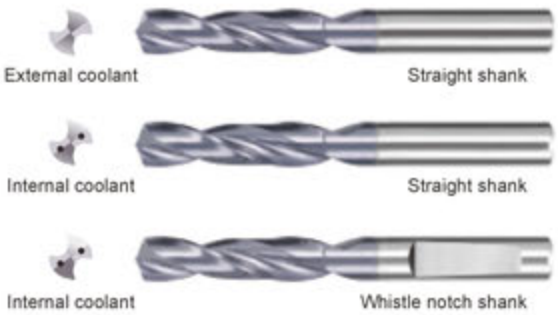
Applicable material table

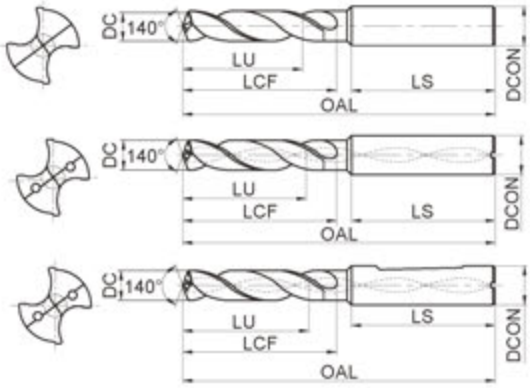
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

Code key C6
Cutting parameters C155-C158
Technical information C165-C171
Non-standard customization tools C172-C176

SU series General machining





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Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
18.0	3	External coolant	Straight shank	1534SU03-1800	18	123	73	51	48	☆
	5			1536SU05-1800	18	143	93	71	48	☆
	3	Internal coolant		1534SU03C-1800	18	123	73	51	48	☆
	5			1536SU05C-1800	18	143	93	71	48	☆
	3		Whistle notch shank	1734SU03C-1800	18	123	73	51	48	☆
	5			1736SU05C-1800	18	143	93	71	48	☆
	8		Straight shank	1538SU08C-1800	18	223	171	149	48	☆
18.5	3	External coolant	Straight shank	1534SU03-1850	20	131	79	55	50	☆
	5			1536SU05-1850	20	153	101	77	50	☆
	3	Internal coolant		1534SU03C-1850	20	131	79	55	50	☆
	5			1536SU05C-1850	20	153	101	77	50	☆
	3		Whistle notch shank	1734SU03C-1850	20	131	79	55	50	☆
	5			1736SU05C-1850	20	153	101	77	50	☆
18.8	3	External coolant	Straight shank	1534SU03-1880	20	131	79	55	50	☆
	5			1536SU05-1880	20	153	101	77	50	☆
	3	Internal coolant		1534SU03C-1880	20	131	79	55	50	☆
	5			1536SU05C-1880	20	153	101	77	50	☆
	3		Whistle notch shank	1734SU03C-1880	20	131	79	55	50	☆
	5			1736SU05C-1880	20	153	101	77	50	☆
19.0	3	External coolant	Straight shank	1534SU03-1900	20	131	79	55	50	☆
	5			1536SU05-1900	20	153	101	77	50	☆
	3	Internal coolant		1534SU03C-1900	20	131	79	55	50	☆
	5			1536SU05C-1900	20	153	101	77	50	☆
	3		Whistle notch shank	1734SU03C-1900	20	131	79	55	50	☆
	5			1736SU05C-1900	20	153	101	77	50	☆

☆ Recommended grade (produce according to order)

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
19.5	3	External coolant	Straight shank	1534SU03-1950	20	131	79	55	50	☆
	5			1536SU05-1950	20	153	101	77	50	☆
	3	Internal coolant		1534SU03C-1950	20	131	79	55	50	☆
	5			1536SU05C-1950	20	153	101	77	50	☆
	3		Whistle notch shank	1734SU03C-1950	20	131	79	55	50	☆
	5			1736SU05C-1950	20	153	101	77	50	☆
19.8	3	External coolant	Straight shank	1534SU03-1980	20	131	79	55	50	☆
	5			1536SU05-1980	20	153	101	77	50	☆
	3	Internal coolant		1534SU03C-1980	20	131	79	55	50	☆
	5			1536SU05C-1980	20	153	101	77	50	☆
	3		Whistle notch shank	1734SU03C-1980	20	131	79	55	50	☆
	5			1736SU05C-1980	20	153	101	77	50	☆
20.0	3	External coolant	Straight shank	1534SU03-2000	20	131	79	55	50	☆
	5			1536SU05-2000	20	153	101	77	50	☆
	3	Internal coolant		1534SU03C-2000	20	131	79	55	50	☆
	5			1536SU05C-2000	20	153	101	77	50	☆
	3		Whistle notch shank	1734SU03C-2000	20	131	79	55	50	☆
	5			1736SU05C-2000	20	153	101	77	50	☆

☆ Recommended grade (produce according to order)

Note: For drills with a drilling depth (ULDR) of 8, namely 1538SU08C series, tolerance of shank length is h5.

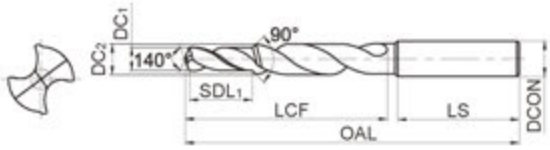
Applicable material table

○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

Code key C6
Cutting parameters C155-C158
Technical information C165-C171
Non-standard customization tools C172-C176

SU series General machining(step drill)



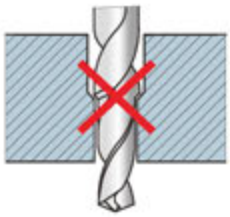
● For thread pre-hole, chamfering.

Drill diameter DC1(m8)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)							Recommended grade
					Thread size	DCON	DC2	OAL	LCF	LS	SDL1	KDG303
3.3	3	External coolant	Straight shank	1557SU03-M4	M4	6.0	4.5	66	28	36	11.4	☆
4.2	3			1557SU03-M5	M5	6.0	6.0	66	28	36	13.6	☆
5.0	3			1557SU03-M6	M6	8.0	7.0	79	41	36	16.5	☆
6.75	3			1557SU03-M8	M8	10.0	9.5	89	47	40	21.0	☆
8.5	3			1557SU03-M10	M10	12.0	12.0	102	55	45	25.5	☆
10.25	3			1557SU03-M12	M12	14.0	14.0	107	60	45	30.0	☆
12.0	3			1557SU03-M14	M14	16.0	16.0	115	65	48	34.5	☆
14.0	3			1557SU03-M16	M16	18.0	18.0	123	73	48	38.5	☆
7.0	3			1557SU03-M8×1.0	M8×1.0	10.0	9.8	89	47	40	21.0	☆
9.0	3			1557SU03-M10×1.0	M10×1.0	12.0	12.0	102	55	45	25.5	☆
10.5	3			1557SU03-M12×1.5	M12×1.5	14.0	14.0	107	60	45	30.0	☆
12.5	3			1557SU03-M14×1.5	M14×1.5	16.0	16.0	115	65	48	34.5	☆
14.5	3			1557SU03-M16×1.5	M16×1.5	18.0	18.0	123	73	48	38.5	☆

☆ Recommended grade (produce according to order)

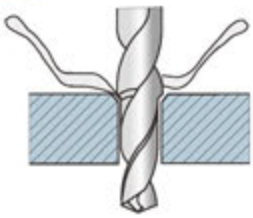
Notes for using step drill

A



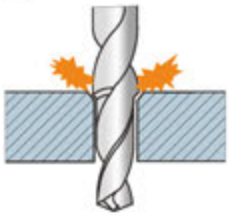
Because of no grind on the large diameter, countersinking (shown above) is not possible.

B



Long chips during countersinking will wind around the drill and obstruct machining. Thus small feed is recommended in order to break the chips.

C



When countersinking, cutting force increases at initial stage. Please reduce the feed.

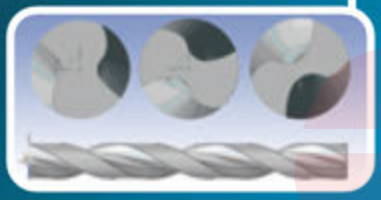
Applicable material table

○Very suitable ○Suitable

Grade	Workpiece material										
	Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
KDG303	○	○	○			○	○	○	○		○

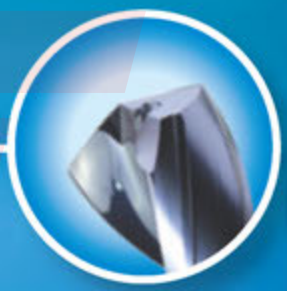
Code key C6
Cutting parameters C155-C158
Technical information C165-C171
Non-standard customization tools C172-C176

Achieving the optimization of tool structure through analysis of simulated cutting.



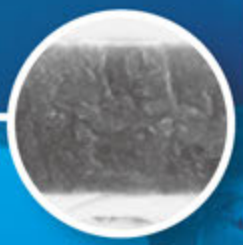
Design with variable parameter helical flute, good rigidity and chip removal capability.

Double special guiding margin, more credible guiding and more stable machining.



Unique cutting edge design, good chip breaking capability even for sticky, softer materials, high versatility.

Special nano structure coating with better self-lubricating capability and superb wear resistance.



1588SL series

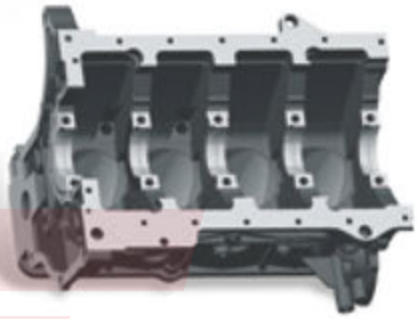
deep hole twist drills

1588SL series deep hole twist drills

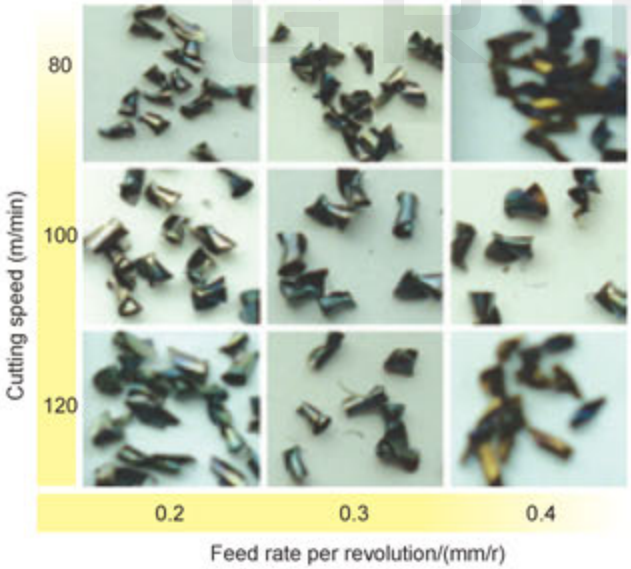
Outstandingly chip breaking capability

Workpiece: crank shaft
Workpiece material: 40Cr
Machining area: inclined oil hole
Tool type: 1588SL20C-0690/KDG303
Cutting parameters: V_c =80~120m/min
f_r=0.2~0.4mm/r
Cooling system: Water soluble liquid
Drilling depth: 105mm

Extremely high efficiency and long tool life

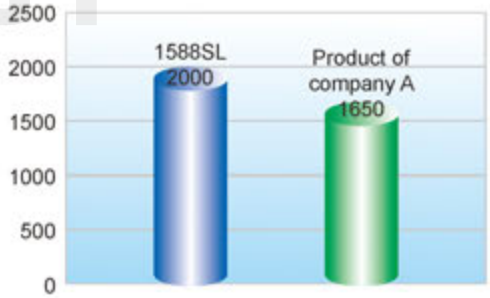


Workpiece: cylinder
Workpiece material: HT300
Machined area: crank shaft joint surface drilling
Drilling depth: 30mm
Tool type: 1588SL12C-0850/KDG303
Recommend parameters: Vc=80m/min f_r=0.2mm/r
Cooling system: water-soluble liquid



Good chip breaking capability and stable machining with different cutting speed and feed rate.

Comparison of tool life(number of machined holes)



Comparison of tool life(tool wear)

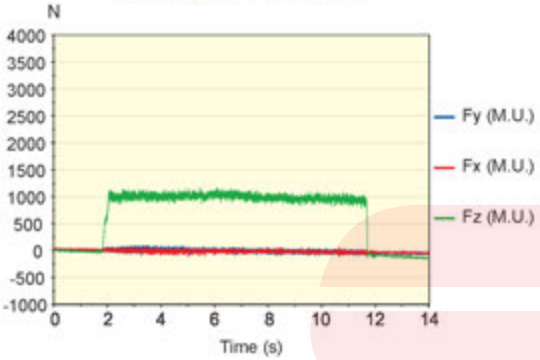
1588SL(regular wear)

Product of company A(falling)

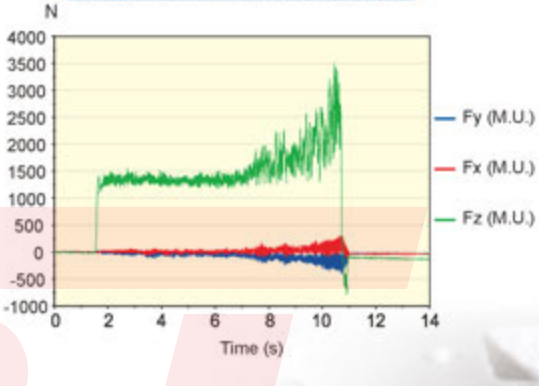
Good cutting performance

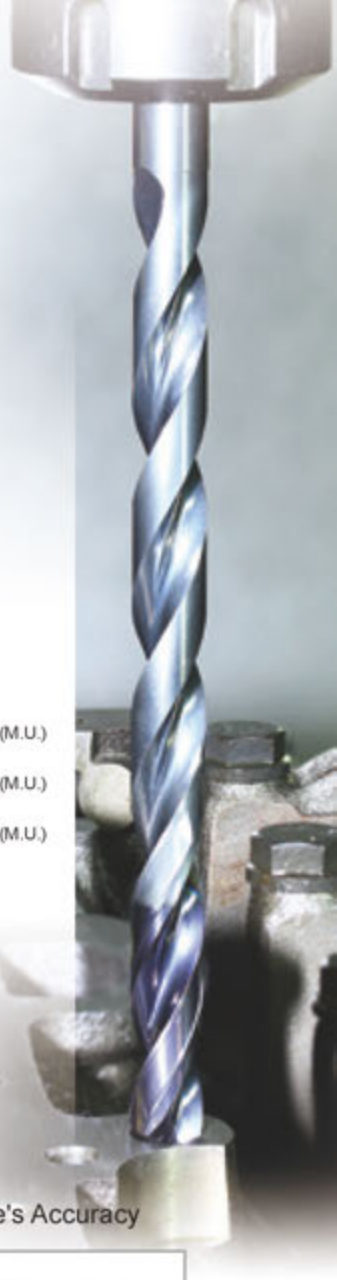
Tool type: 1588SL12C-0850/KDG303
Feed rate: 0.2mm/r Drilling depth: 72mm
Workpiece material: 42CrMo(HB250)
Cooling system: Emulsified liquid
Cutting speed: 80m/min
Machine equipment: Vertical machining center

Cutting force of 1588SL



Cutting force of Product of company A

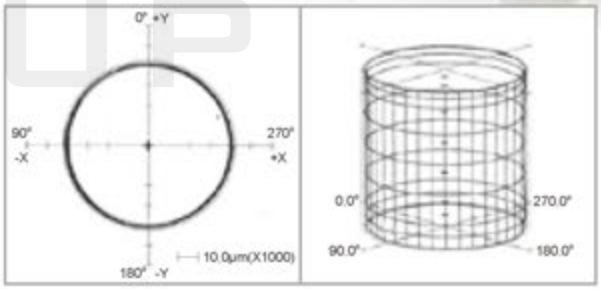




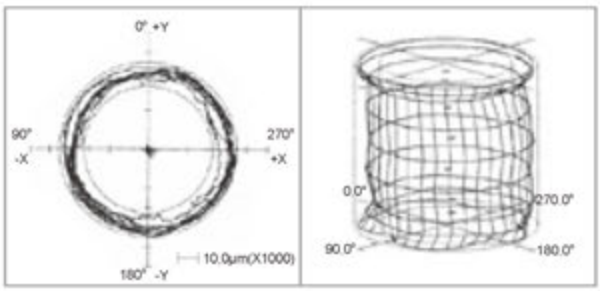
Stable machining precision

Workpiece: Die
Machined materials: 738H
Machined area: Hole of sidewall
Drilling depth: 70mm
Tool type: 1588SL12C-0600/KDG303
Recommended parameters: Vc=85m/min, f_r=0.2mm/r
Cooling system: Water-soluble liquid

Comparison of Machined Hole's Accuracy



1588SL

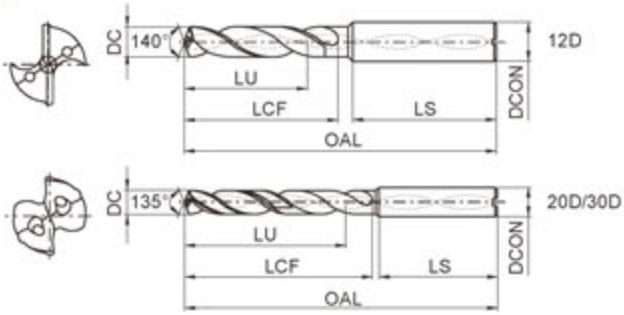


Product of company A

SL series Deep-hole machining

Internal coolant

Straight shank



● Suitable for deep-hole drilling of steel，cast iron etc.

Drill diameter DC 12D(m7) 20D/30D(h7)	Drilling depth (ULDR)	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS
3.0	12	1588SL12C-0300	6	90	50	40	36
	20	1588SL20C-0300	6	110	70	62	36
	30	1588SL30C-0300	6	140	100	92	36
3.1	12	1588SL12C-0310	6	90	50	40	36
	20	1588SL20C-0310	6	123	83	72	36
	30	1588SL30C-0310	6	160	120	108	36
3.2	12	1588SL12C-0320	6	90	50	40	36
	20	1588SL20C-0320	6	123	83	72	36
	30	1588SL30C-0320	6	160	120	108	36
3.3	12	1588SL12C-0330	6	90	50	40	36
	20	1588SL20C-0330	6	123	83	72	36
	30	1588SL30C-0330	6	160	120	108	36
3.4	12	1588SL12C-0340	6	90	50	40	36
	20	1588SL20C-0340	6	123	83	72	36
	30	1588SL30C-0340	6	160	120	108	36
3.5	12	1588SL12C-0350	6	90	50	40	36
	20	1588SL20C-0350	6	123	83	72	36
	30	1588SL30C-0350	6	160	120	108	36
3.6	12	1588SL12C-0360	6	90	50	40	36
	20	1588SL20C-0360	6	136	96	84	36
	30	1588SL30C-0360	6	176	136	124	36
3.7	12	1588SL12C-0370	6	90	50	46	36
	20	1588SL20C-0370	6	136	96	84	36
	30	1588SL30C-0370	6	176	136	124	36
3.8	12	1588SL12C-0380	6	90	50	46	36
	20	1588SL20C-0380	6	136	96	84	36
	30	1588SL30C-0380	6	176	136	124	36
3.9	12	1588SL12C-0390	6	90	50	46	36
	20	1588SL20C-0390	6	136	96	84	36
	30	1588SL30C-0390	6	176	136	124	36
4.0	12	1588SL12C-0400	6	102	64	56	36
	20	1588SL20C-0400	6	136	96	84	36
	30	1588SL30C-0400	6	176	136	124	36
4.1	12	1588SL12C-0410	6	102	64	56	36
	20	1588SL20C-0410	6	148	108	96	36
	30	1588SL30C-0410	6	192	152	140	36

Drill diameter DC 12D(m7) 20D/30D(h7)	Drilling depth (ULDR)	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS
4.2	12	1588SL12C-0420	6	102	64	56	36
	20	1588SL20C-0420	6	148	108	96	36
	30	1588SL30C-0420	6	192	152	140	36
4.3	12	1588SL12C-0430	6	102	64	56	36
	20	1588SL20C-0430	6	148	108	96	36
	30	1588SL30C-0430	6	192	152	140	36
4.4	12	1588SL12C-0440	6	102	64	56	36
	20	1588SL20C-0440	6	148	108	96	36
	30	1588SL30C-0440	6	192	152	140	36
4.5	12	1588SL12C-0450	6	102	64	56	36
	20	1588SL20C-0450	6	148	108	96	36
	30	1588SL30C-0450	6	192	152	140	36
4.6	12	1588SL12C-0460	6	102	64	56	36
	20	1588SL20C-0460	6	158	118	106	36
	30	1588SL30C-0460	6	208	168	156	36
4.7	12	1588SL12C-0470	6	102	64	56	36
	20	1588SL20C-0470	6	158	118	106	36
	30	1588SL30C-0470	6	208	168	156	36
4.8	12	1588SL12C-0480	6	102	64	56	36
	20	1588SL20C-0480	6	158	118	106	36
	30	1588SL30C-0480	6	208	168	156	36
4.9	12	1588SL12C-0490	6	102	64	56	36
	20	1588SL20C-0490	6	158	118	106	36
	30	1588SL30C-0490	6	208	168	156	36
5.0	12	1588SL12C-0500	6	116	78	72	36
	20	1588SL20C-0500	6	158	118	106	36
	30	1588SL30C-0500	6	208	168	156	36
5.1	12	1588SL12C-0510	6	116	78	72	36
	20	1588SL20C-0510	6	168	128	116	36
	30	1588SL30C-0510	6	228	188	170	36
5.2	12	1588SL12C-0520	6	116	78	72	36
	20	1588SL20C-0520	6	168	128	116	36
	30	1588SL30C-0520	6	228	188	170	36
5.3	12	1588SL12C-0530	6	116	78	72	36
	20	1588SL20C-0530	6	168	128	116	36
	30	1588SL30C-0530	6	228	188	170	36

Drill diameter DC 12D(m7) 20D/30D(h7)	Drilling depth (ULDR)	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS
5.4	12	1588SL12C-0540	6	116	78	72	36
	20	1588SL20C-0540	6	168	128	116	36
	30	1588SL30C-0540	6	228	188	170	36
5.5	12	1588SL12C-0550	6	116	78	72	36
	20	1588SL20C-0550	6	168	128	116	36
	30	1588SL30C-0550	6	228	188	170	36
5.6	12	1588SL12C-0560	6	116	78	72	36
	20	1588SL20C-0560	6	180	140	126	36
	30	1588SL30C-0560	6	240	200	182	36
5.7	12	1588SL12C-0570	6	116	78	72	36
	20	1588SL20C-0570	6	180	140	126	36
	30	1588SL30C-0570	6	240	200	182	36
5.8	12	1588SL12C-0580	6	116	78	72	36
	20	1588SL20C-0580	6	180	140	126	36
	30	1588SL30C-0580	6	240	200	182	36
5.9	12	1588SL12C-0590	6	116	78	72	36
	20	1588SL20C-0590	6	180	140	126	36
	30	1588SL30C-0590	6	240	200	182	36
6.0	12	1588SL12C-0600	6	116	78	72	36
	20	1588SL20C-0600	6	180	140	126	36
	30	1588SL30C-0600	6	240	200	182	36
6.1	12	1588SL12C-0610	8	131	93	84	36
	20	1588SL20C-0610	8	192	150	132	36
	30	1588SL30C-0610	8	260	220	202	36
6.2	12	1588SL12C-0620	8	131	93	84	36
	20	1588SL20C-0620	8	192	150	132	36
	30	1588SL30C-0620	8	260	220	202	36
6.3	12	1588SL12C-0630	8	131	93	84	36
	20	1588SL20C-0630	8	192	150	132	36
	30	1588SL30C-0630	8	260	220	202	36
6.4	12	1588SL12C-0640	8	131	93	84	36
	20	1588SL20C-0640	8	192	150	132	36
	30	1588SL30C-0640	8	260	220	202	36
6.5	12	1588SL12C-0650	8	131	93	84	36
	20	1588SL20C-0650	8	192	150	132	36
	30	1588SL30C-0650	8	260	220	202	36

Drill diameter DC 12D(m7) 20D/30D(h7)	Drilling depth (ULDR)	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS
6.6	12	1588SL12C-0660	8	131	93	84	36
	20	1588SL20C-0660	8	202	162	144	36
	30	1588SL30C-0660	8	272	232	214	36
6.7	12	1588SL12C-0670	8	131	93	84	36
	20	1588SL20C-0670	8	202	162	144	36
	30	1588SL30C-0670	8	272	232	214	36
6.8	12	1588SL12C-0680	8	131	93	84	36
	20	1588SL20C-0680	8	202	162	144	36
	30	1588SL30C-0680	8	272	232	214	36
6.9	12	1588SL12C-0690	8	131	93	84	36
	20	1588SL20C-0690	8	202	162	144	36
	30	1588SL30C-0690	8	272	232	214	36
7.0	12	1588SL12C-0700	8	131	93	84	36
	20	1588SL20C-0700	8	202	162	144	36
	30	1588SL30C-0700	8	272	232	214	36
7.1	12	1588SL12C-0710	8	146	108	96	36
	20	1588SL20C-0710	8	213	173	155	36
	30	1588SL30C-0710	8	290	250	232	36
7.2	12	1588SL12C-0720	8	146	108	96	36
	20	1588SL20C-0720	8	213	173	155	36
	30	1588SL30C-0720	8	290	250	232	36
7.3	12	1588SL12C-0730	8	146	108	96	36
	20	1588SL20C-0730	8	213	173	155	36
	30	1588SL30C-0730	8	290	250	232	36
7.4	12	1588SL12C-0740	8	146	108	96	36
	20	1588SL20C-0740	8	213	173	155	36
	30	1588SL30C-0740	8	290	250	232	36
7.5	12	1588SL12C-0750	8	146	108	96	36
	20	1588SL20C-0750	8	213	173	155	36
	30	1588SL30C-0750	8	290	250	232	36
7.6	12	1588SL12C-0760	8	146	108	96	36
	20	1588SL20C-0760	8	223	183	165	36
	30	1588SL30C-0760	8	305	265	246	36
7.7	12	1588SL12C-0770	8	146	108	96	36
	20	1588SL20C-0770	8	223	183	165	36
	30	1588SL30C-0770	8	305	265	246	36

Applicable material table

O Very suitable ○ Suitable

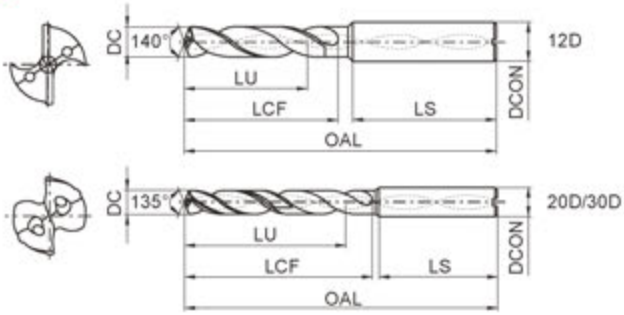
Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	O	O			○	O	O	○		○

Code key C6
Cutting parameters C159
Technical information C165-C171
Non-standard customization tools C172-C176

SL series Deep-hole machining

Internal coolant

Straight shank



● Suitable for deep-hole drilling of steel，cast iron etc.

Drill diameter DC 12D(m7) 20D/30D(h7)	Drilling depth (ULDR)	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS
7.8	12	1588SL12C-0780	8	146	108	96	36
	20	1588SL20C-0780	8	223	183	165	36
	30	1588SL30C-0780	8	305	265	246	36
7.9	12	1588SL12C-0790	8	146	108	96	36
	20	1588SL20C-0790	8	223	183	165	36
	30	1588SL30C-0790	8	305	265	246	36
8.0	12	1588SL12C-0800	8	146	108	96	36
	20	1588SL20C-0800	8	223	183	165	36
	30	1588SL30C-0800	8	305	265	246	36
8.1	12	1588SL12C-0810	10	162	120	108	40
	20	1588SL20C-0810	10	239	195	176	40
	30	1588SL30C-0810	10	330	285	265	40
8.2	12	1588SL12C-0820	10	162	120	108	40
	20	1588SL20C-0820	10	239	195	176	40
	30	1588SL30C-0820	10	330	285	265	40
8.3	12	1588SL12C-0830	10	162	120	108	40
	20	1588SL20C-0830	10	239	195	176	40
	30	1588SL30C-0830	10	330	285	265	40
8.4	12	1588SL12C-0840	10	162	120	108	40
	20	1588SL20C-0840	10	239	195	176	40
	30	1588SL30C-0840	10	330	285	265	40
8.5	12	1588SL12C-0850	10	162	120	108	40
	20	1588SL20C-0850	10	239	195	176	40
	30	1588SL30C-0850	10	330	285	265	40
8.6	12	1588SL12C-0860	10	162	120	108	40
	20	1588SL20C-0860	10	249	205	186	40
	30	1588SL30C-0860	10	340	295	275	40
8.7	12	1588SL12C-0870	10	162	120	108	40
	20	1588SL20C-0870	10	249	205	186	40
	30	1588SL30C-0870	10	340	295	275	40
8.8	12	1588SL12C-0880	10	162	120	108	40
	20	1588SL20C-0880	10	249	205	186	40
	30	1588SL30C-0880	10	340	295	275	40
8.9	12	1588SL12C-0890	10	162	120	108	40
	20	1588SL20C-0890	10	249	205	186	40
	30	1588SL30C-0890	10	340	295	275	40

Drill diameter DC 12D(m7) 20D/30D(h7)	Drilling depth (ULDR)	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS
9.0	12	1588SL12C-0900	10	162	120	108	40
	20	1588SL20C-0900	10	249	205	186	40
	30	1588SL30C-0900	10	340	295	275	40
9.1	12	1588SL12C-0910	10	174	132	120	40
	20	1588SL20C-0910	10	262	218	196	40
	30	1588SL30C-0910	10	360	315	292	40
9.2	12	1588SL12C-0920	10	174	132	120	40
	20	1588SL20C-0920	10	262	218	196	40
	30	1588SL30C-0920	10	360	315	292	40
9.3	12	1588SL12C-0930	10	174	132	120	40
	20	1588SL20C-0930	10	262	218	196	40
	30	1588SL30C-0930	10	360	315	292	40
9.4	12	1588SL12C-0940	10	174	132	120	40
	20	1588SL20C-0940	10	262	218	196	40
	30	1588SL30C-0940	10	360	315	292	40
9.5	12	1588SL12C-0950	10	174	132	120	40
	20	1588SL20C-0950	10	262	218	196	40
	30	1588SL30C-0950	10	360	315	292	40
9.6	12	1588SL12C-0960	10	174	132	120	40
	20	1588SL20C-0960	10	272	228	206	40
	30	1588SL30C-0960	10	372	328	305	40
9.7	12	1588SL12C-0970	10	174	132	120	40
	20	1588SL20C-0970	10	272	228	206	40
	30	1588SL30C-0970	10	372	328	305	40
9.8	12	1588SL12C-0980	10	174	132	120	40
	20	1588SL20C-0980	10	272	228	206	40
	30	1588SL30C-0980	10	372	328	305	40
9.9	12	1588SL12C-0990	10	174	132	120	40
	20	1588SL20C-0990	10	272	228	206	40
	30	1588SL30C-0990	10	372	328	305	40
10.0	12	1588SL12C-1000	10	174	132	120	40
	20	1588SL20C-1000	10	272	228	206	40
	30	1588SL30C-1000	10	372	328	305	40
10.1	12	1588SL12C-1010	12	204	156	144	45
	20	1588SL20C-1010	12	292	242	220	45

Drill diameter DC 12D(m7) 20D/30D(h7)	Drilling depth (ULDR)	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS
10.2	12	1588SL12C-1020	12	204	156	144	45
	20	1588SL20C-1020	12	292	242	220	45
10.3	12	1588SL12C-1030	12	204	156	144	45
	20	1588SL20C-1030	12	292	242	220	45
10.4	12	1588SL12C-1040	12	204	156	144	45
	20	1588SL20C-1040	12	292	242	220	45
10.5	12	1588SL12C-1050	12	204	156	144	45
	20	1588SL20C-1050	12	292	242	220	45
10.6	12	1588SL12C-1060	12	204	156	144	45
	20	1588SL20C-1060	12	300	250	228	45
10.7	12	1588SL12C-1070	12	204	156	144	45
	20	1588SL20C-1070	12	300	250	228	45
10.8	12	1588SL12C-1080	12	204	156	144	45
	20	1588SL20C-1080	12	300	250	228	45
10.9	12	1588SL12C-1090	12	204	156	144	45
	20	1588SL20C-1090	12	300	250	228	45
11.0	12	1588SL12C-1100	12	204	156	144	45
	20	1588SL20C-1100	12	300	250	228	45
11.1	12	1588SL12C-1110	12	204	156	144	45
	20	1588SL20C-1110	12	315	265	240	45
11.2	12	1588SL12C-1120	12	204	156	144	45
	20	1588SL20C-1120	12	315	265	240	45
11.3	12	1588SL12C-1130	12	204	156	144	45
	20	1588SL20C-1130	12	315	265	240	45
11.4	12	1588SL12C-1140	12	204	156	144	45
	20	1588SL20C-1140	12	315	265	240	45
11.5	12	1588SL12C-1150	12	204	156	144	45
	20	1588SL20C-1150	12	315	265	240	45
11.6	12	1588SL12C-1160	12	204	156	144	45
	20	1588SL20C-1160	12	325	275	250	45

Drill diameter DC 12D(m7) 20D/30D(h7)	Drilling depth (ULDR)	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS
11.7	12	1588SL12C-1170	12	204	156	144	45
	20	1588SL20C-1170	12	325	275	250	45
11.8	12	1588SL12C-1180	12	204	156	144	45
	20	1588SL20C-1180	12	325	275	250	45
11.9	12	1588SL12C-1190	12	204	156	144	45
	20	1588SL20C-1190	12	325	275	250	45
12.0	12	1588SL12C-1200	12	204	156	144	45
	20	1588SL20C-1200	12	325	275	250	45
12.5	12	1588SL12C-1250	14	230	182	168	45
	20	1588SL20C-1250	14	323	275	250	45
12.7	12	1588SL12C-1270	14	230	182	168	45
12.8	12	1588SL12C-1280	14	230	182	168	45
13.0	12	1588SL12C-1300	14	230	182	168	45
	20	1588SL20C-1300	14	338	290	265	45
13.5	12	1588SL12C-1350	14	230	182	168	45
	20	1588SL20C-1350	14	338	290	265	45
14.0	12	1588SL12C-1400	14	230	182	168	45
	20	1588SL20C-1400	14	367	318	290	45
14.5	12	1588SL12C-1450	16	260	208	194	48
15.0	12	1588SL12C-1500	16	260	208	194	48
15.5	12	1588SL12C-1550	16	260	208	194	48
16.0	12	1588SL12C-1600	16	260	208	194	48
16.5	12	1588SL12C-1650	18	286	234	218	48
17.0	12	1588SL12C-1700	18	286	234	218	48
17.5	12	1588SL12C-1750	18	286	234	218	48
18.0	12	1588SL12C-1800	18	286	234	218	48
18.5	12	1588SL12C-1850	20	310	258	240	48
19.0	12	1588SL12C-1900	20	310	258	240	48
19.5	12	1588SL12C-1950	20	310	258	240	48
20.0	12	1588SL12C-2000	20	310	258	240	48

Applicable material table

O Very suitable ○ Suitable

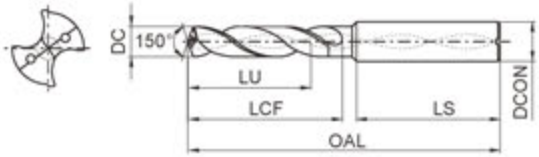
Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	O	O			○	O	O	○		○

Code key C6
Cutting parameters C159
Technical information C165-C171
Non-standard customization tools C172-C176

1534SP series Guide-hole machining

Internal coolant

Straight shank



Drill diameter DC(h7)	Drilling depth (ULDR)	Type	Basic dimension(mm)				
			Shank diameter	Overall length	Flute length	Recommended drilling depth	Shank length
			DCON	OAL	LCF	LU	LS
3.03	3	1534SP03C-0303	6	62	20	14	36
3.13	3	1534SP03C-0313	6	62	20	14	36
3.23	3	1534SP03C-0323	6	62	20	14	36
3.33	3	1534SP03C-0333	6	62	20	14	36
3.43	3	1534SP03C-0343	6	62	20	14	36
3.53	3	1534SP03C-0353	6	62	20	14	36
3.63	3	1534SP03C-0363	6	62	20	14	36
3.73	3	1534SP03C-0373	6	62	20	14	36
3.83	3	1534SP03C-0383	6	66	24	17	36
3.93	3	1534SP03C-0393	6	66	24	17	36
4.03	3	1534SP03C-0403	6	66	24	17	36
4.13	3	1534SP03C-0413	6	66	24	17	36
4.23	3	1534SP03C-0423	6	66	24	17	36
4.33	3	1534SP03C-0433	6	66	24	17	36
4.43	3	1534SP03C-0443	6	66	24	17	36
4.53	3	1534SP03C-0453	6	66	24	17	36
4.63	3	1534SP03C-0463	6	66	24	17	36
4.73	3	1534SP03C-0473	6	66	24	17	36
4.83	3	1534SP03C-0483	6	66	28	20	36
4.93	3	1534SP03C-0493	6	66	28	20	36
5.03	3	1534SP03C-0503	6	66	28	20	36
5.13	3	1534SP03C-0513	6	66	28	20	36
5.23	3	1534SP03C-0523	6	66	28	20	36
5.33	3	1534SP03C-0533	6	66	28	20	36
5.43	3	1534SP03C-0543	6	66	28	20	36
5.53	3	1534SP03C-0553	6	66	28	20	36
5.63	3	1534SP03C-0563	6	66	28	20	36
5.73	3	1534SP03C-0573	6	66	28	20	36
5.83	3	1534SP03C-0583	6	66	28	20	36
5.93	3	1534SP03C-0593	6	66	28	20	36
6.03	3	1534SP03C-0603	6	66	28	20	36
6.13	3	1534SP03C-0613	8	79	34	24	36
6.23	3	1534SP03C-0623	8	79	34	24	36
6.33	3	1534SP03C-0633	8	79	34	24	36
6.43	3	1534SP03C-0643	8	79	34	24	36
6.53	3	1534SP03C-0653	8	79	34	24	36

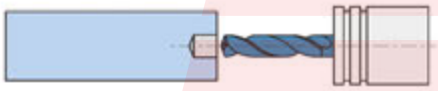
Drill diameter DC(h7)	Drilling depth (ULDR)	Type	Basic dimension(mm)				
			Shank diameter	Overall length	Flute length	Recommended drilling depth	Shank length
			DCON	OAL	LCF	LU	LS
6.63	3	1534SP03C-0663	8	79	34	24	36
6.73	3	1534SP03C-0673	8	79	34	24	36
6.83	3	1534SP03C-0683	8	79	34	24	36
6.93	3	1534SP03C-0693	8	79	34	24	36
7.03	3	1534SP03C-0703	8	79	34	24	36
7.13	3	1534SP03C-0713	8	79	41	29	36
7.23	3	1534SP03C-0723	8	79	41	29	36
7.33	3	1534SP03C-0733	8	79	41	29	36
7.43	3	1534SP03C-0743	8	79	41	29	36
7.53	3	1534SP03C-0753	8	79	41	29	36
7.63	3	1534SP03C-0763	8	79	41	29	36
7.73	3	1534SP03C-0773	8	79	41	29	36
7.83	3	1534SP03C-0783	8	79	41	29	36
7.93	3	1534SP03C-0793	8	79	41	29	36
8.03	3	1534SP03C-0803	8	79	41	29	36
8.13	3	1534SP03C-0813	10	89	47	35	40
8.23	3	1534SP03C-0823	10	89	47	35	40
8.33	3	1534SP03C-0833	10	89	47	35	40
8.43	3	1534SP03C-0843	10	89	47	35	40
8.53	3	1534SP03C-0853	10	89	47	35	40
8.63	3	1534SP03C-0863	10	89	47	35	40
8.73	3	1534SP03C-0873	10	89	47	35	40
8.83	3	1534SP03C-0883	10	89	47	35	40
8.93	3	1534SP03C-0893	10	89	47	35	40
9.03	3	1534SP03C-0903	10	89	47	35	40
9.13	3	1534SP03C-0913	10	89	47	35	40
9.23	3	1534SP03C-0923	10	89	47	35	40
9.33	3	1534SP03C-0933	10	89	47	35	40
9.43	3	1534SP03C-0943	10	89	47	35	40
9.53	3	1534SP03C-0953	10	89	47	35	40
9.63	3	1534SP03C-0963	10	89	47	35	40
9.73	3	1534SP03C-0973	10	89	47	35	40
9.83	3	1534SP03C-0983	10	89	47	35	40
9.93	3	1534SP03C-0993	10	89	47	35	40
10.03	3	1534SP03C-1003	10	89	47	35	40
10.13	3	1534SP03C-1013	12	102	55	40	45

Drill diameter DC(h7)	Drilling depth (ULDR)	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS
10.23	3	1534SP03C-1023	12	102	55	40	45
10.33	3	1534SP03C-1033	12	102	55	40	45
10.43	3	1534SP03C-1043	12	102	55	40	45
10.53	3	1534SP03C-1053	12	102	55	40	45
10.63	3	1534SP03C-1063	12	102	55	40	45
10.73	3	1534SP03C-1073	12	102	55	40	45
10.83	3	1534SP03C-1083	12	102	55	40	45
10.93	3	1534SP03C-1093	12	102	55	40	45
11.03	3	1534SP03C-1103	12	102	55	40	45
11.13	3	1534SP03C-1113	12	102	55	40	45
11.23	3	1534SP03C-1123	12	102	55	40	45
11.33	3	1534SP03C-1133	12	102	55	40	45
11.43	3	1534SP03C-1143	12	102	55	40	45

Drill diameter DC(h7)	Drilling depth (ULDR)	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS
11.53	3	1534SP03C-1153	12	102	55	40	45
11.63	3	1534SP03C-1163	12	102	55	40	45
11.73	3	1534SP03C-1173	12	102	55	40	45
11.83	3	1534SP03C-1183	12	102	55	40	45
11.93	3	1534SP03C-1193	12	102	55	40	45
12.03	3	1534SP03C-1203	12	102	55	40	45
12.53	3	1534SP03C-1253	14	107	60	43	45
12.73	3	1534SP03C-1273	14	107	60	43	45
12.83	3	1534SP03C-1283	14	107	60	43	45
13.03	3	1534SP03C-1303	14	107	60	43	45
13.53	3	1534SP03C-1353	14	107	60	43	45
14.03	3	1534SP03C-1403	14	107	60	43	45

Recommended Machining Method of SL series Deep-hole Drills

1.Hole-guided Machining

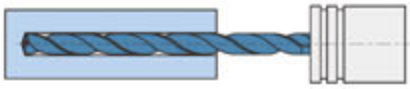


- Apex angle of drills used for hole-guided machining has to be greater than the apex angle of deep-hole drills.
- Diameter of drills used for hole-guided machining has to be respectively greater than the diameter of deep-hole drills. Generally the diameter gap is between 0 and positive 0.1.
- Generally the depth of pre-drilling hole is 1-3D (D is the diameter of pre-drilling holes). Also, it basically needs to ensure the accuracy of pre-drilling holes at the same time.

2.Deep-hole Machining (Inserting into the Pre-drilling Holes)

- lower speed should be applied in the process of inserting deep-hole drills into the pre-drilling holes.
- Insert deep hole drill to the location 1-3mm away from the bottom of pre-drilling holes (Please make sure that the parts of drilling point are entirely inserted).

3.Deep-hole Machining (Beginning machining, to the end)



- Non-stopped machining with fixed speed and feed rates. (Completed at one time, not a "Step-by-Step" machining).

4.Deep-hole Machining (Retract from hole)

- Reduce speed located 1-2mm away from hole bottom at the end of machining.
- Quickly secedes the deep-hole drills back to the location where it begins to machine.
- Retract under the same conditions of inserting pre-drilling holes.

Applicable material table

○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○	○			○	○	○	○		○

Code key C6 Cutting parameters C160 Technical information C165-C171 Non-standard customization tools C172-C176

ST machining of mild steel and stainless steel series twist drill

ST series drills with superior performance will solve the difficulties in machining of high-elongation materials such as mild steel, stainless steel, etc.

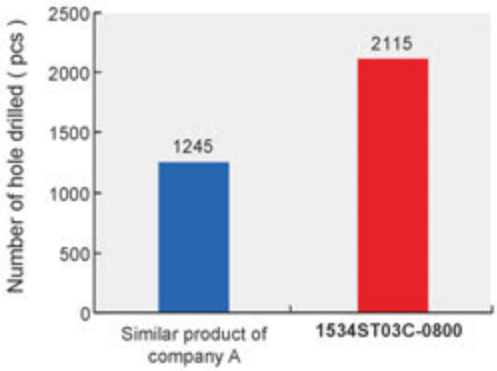
Optimized drill point design with strengthened chisel edge and ensures easy and fast cutting and excellent chip breaking.

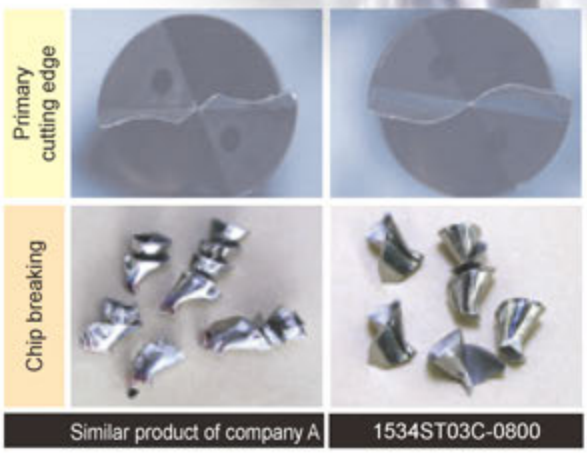
Nano-structured TiAlN coating, outstanding wear resistance and heat resistance.

Special flute profile with large chip pocket ensures good chip evacuation and smooth drilling.

Application of ST series twist drills

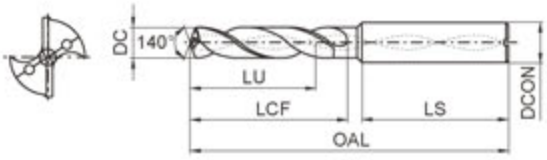
Tool type: 1534ST03C-0800
Workpiece material: 1Cr18Ni9Ti
Cooling system: Oil water emulsion(internal cooling)
Cutting speed: Vc=85m/min
Feed rate: fr=0.16mm/r
Drilling depth: 24mm(blind hole)



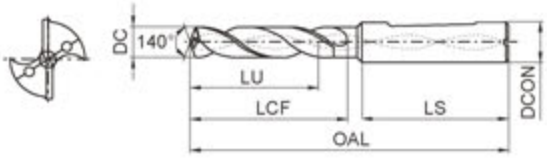


ST series For machining of mild steel, stainless steel

Internal coolant Straight shank



Internal coolant Whistle notch shank



- First choice for drilling mild steel and stainless steel.
- Sharp cutting edge can avoid build-up edge, suitable for drilling hole with high performance.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
3.0	3	Internal coolant	Straight shank	1534ST03C-0300	6	62	20	14	36	☆
	5			1536ST05C-0300	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0300	6	66	28	23	36	☆
3.1	3		Straight shank	1534ST03C-0310	6	62	20	14	36	☆
	5			1536ST05C-0310	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0310	6	66	28	23	36	☆
3.2	3		Straight shank	1534ST03C-0320	6	62	20	14	36	☆
	5			1536ST05C-0320	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0320	6	66	28	23	36	☆
3.25	3		Straight shank	1534ST03C-0325	6	62	20	14	36	☆
	5			1536ST05C-0325	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0325	6	66	28	23	36	☆
3.3	3		Straight shank	1534ST03C-0330	6	62	20	14	36	☆
	5			1536ST05C-0330	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0330	6	66	28	23	36	☆
3.4	3		Straight shank	1534ST03C-0340	6	62	20	14	36	☆
	5			1536ST05C-0340	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0340	6	66	28	23	36	☆
3.5	3		Straight shank	1534ST03C-0350	6	62	20	14	36	☆
	5			1536ST05C-0350	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0350	6	66	28	23	36	☆

☆Recommended grade (produce according to order)

Applicable material table

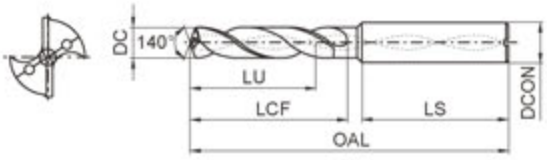
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○				○					○

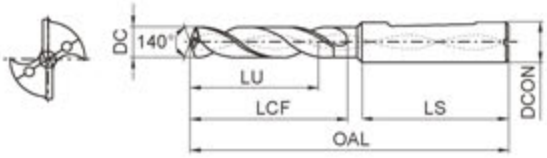
Code key C6 Cutting parameters C160 Technical information C165-C171 Non-standard customization tools C172-C176

ST series For machining of mild steel, stainless steel

Internal coolant — Straight shank



Internal coolant — Whistle notch shank



- First choice for drilling mild steel and stainless steel.
- Sharp cutting edge can avoid build-up edge, suitable for drilling hole with high performance.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
3.6	3	Internal coolant	Straight shank	1534ST03C-0360	6	62	20	14	36	☆
	5			1536ST05C-0360	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0360	6	66	28	23	36	☆
3.7	3		Straight shank	1534ST03C-0370	6	62	20	14	36	☆
	5			1536ST05C-0370	6	66	28	23	36	☆
	5		Whistle notch shank	1736ST05C-0370	6	66	28	23	36	☆
3.8	3		Straight shank	1534ST03C-0380	6	66	24	17	36	☆
	5			1536ST05C-0380	6	74	36	29	36	☆
	5		Whistle notch shank	1736ST05C-0380	6	74	36	29	36	☆
3.9	3		Straight shank	1534ST03C-0390	6	66	24	17	36	☆
	5			1536ST05C-0390	6	74	36	29	36	☆
	5		Whistle notch shank	1736ST05C-0390	6	74	36	29	36	☆
4.0	3		Straight shank	1534ST03C-0400	6	66	24	17	36	☆
	5			1536ST05C-0400	6	74	36	29	36	☆
	5		Whistle notch shank	1736ST05C-0400	6	74	36	29	36	☆
4.1	3		Straight shank	1534ST03C-0410	6	66	24	17	36	☆
	5			1536ST05C-0410	6	74	36	29	36	☆
	5		Whistle notch shank	1736ST05C-0410	6	74	36	29	36	☆
4.2	3		Straight shank	1534ST03C-0420	6	66	24	17	36	☆
	5			1536ST05C-0420	6	74	36	29	36	☆
	5		Whistle notch shank	1736ST05C-0420	6	74	36	29	36	☆
4.3	3		Straight shank	1534ST03C-0430	6	66	24	17	36	☆
	5			1536ST05C-0430	6	74	36	29	36	☆
	5		Whistle notch shank	1736ST05C-0430	6	74	36	29	36	☆
4.4	3		Straight shank	1534ST03C-0440	6	66	24	17	36	☆
	5			1536ST05C-0440	6	74	36	29	36	☆
	5		Whistle notch shank	1736ST05C-0440	6	74	36	29	36	☆
4.5	3		Straight shank	1534ST03C-0450	6	66	24	17	36	☆
	5			1536ST05C-0450	6	74	36	29	36	☆
	5		Whistle notch shank	1736ST05C-0450	6	74	36	29	36	☆

☆Recommended grade (produce according to order)

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
4.6	3	Internal coolant	Straight shank	1534ST03C-0460	6	66	24	17	36	☆
	5			1536ST05C-0460	6	74	36	29	36	☆
	5		Whistle notch shank	1736ST05C-0460	6	74	36	29	36	☆
4.65	3		Straight shank	1534ST03C-0465	6	66	24	17	36	☆
	5			1536ST05C-0465	6	74	36	29	36	☆
	5		Whistle notch shank	1736ST05C-0465	6	74	36	29	36	☆
4.7	3		Straight shank	1534ST03C-0470	6	66	24	17	36	☆
	5			1536ST05C-0470	6	74	36	29	36	☆
	5		Whistle notch shank	1736ST05C-0470	6	74	36	29	36	☆
4.8	3		Straight shank	1534ST03C-0480	6	66	28	20	36	☆
	5			1536ST05C-0480	6	82	44	35	36	☆
	5		Whistle notch shank	1736ST05C-0480	6	82	44	35	36	☆
4.9	3		Straight shank	1534ST03C-0490	6	66	28	20	36	☆
	5			1536ST05C-0490	6	82	44	35	36	☆
	5		Whistle notch shank	1736ST05C-0490	6	82	44	35	36	☆
5.0	3		Straight shank	1534ST03C-0500	6	66	28	20	36	☆
	5			1536ST05C-0500	6	82	44	35	36	☆
	5		Whistle notch shank	1736ST05C-0500	6	82	44	35	36	☆
5.1	3		Straight shank	1534ST03C-0510	6	66	28	20	36	☆
	5			1536ST05C-0510	6	82	44	35	36	☆
	5		Whistle notch shank	1736ST05C-0510	6	82	44	35	36	☆
5.2	3		Straight shank	1534ST03C-0520	6	66	28	20	36	☆
	5			1536ST05C-0520	6	82	44	35	36	☆
	5		Whistle notch shank	1736ST05C-0520	6	82	44	35	36	☆
5.3	3		Straight shank	1534ST03C-0530	6	66	28	20	36	☆
	5			1536ST05C-0530	6	82	44	35	36	☆
	5		Whistle notch shank	1736ST05C-0530	6	82	44	35	36	☆
5.4	3		Straight shank	1534ST03C-0540	6	66	28	20	36	☆
	5			1536ST05C-0540	6	82	44	35	36	☆
	5		Whistle notch shank	1736ST05C-0540	6	82	44	35	36	☆
5.5	3		Straight shank	1534ST03C-0550	6	66	28	20	36	☆
	5			1536ST05C-0550	6	82	44	35	36	☆
	5		Whistle notch shank	1736ST05C-0550	6	82	44	35	36	☆

☆Recommended grade (produce according to order)

Applicable material table

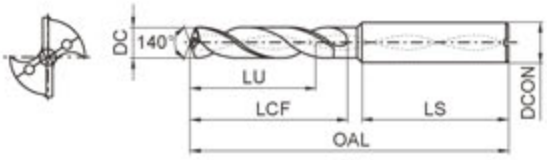
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○				○					○

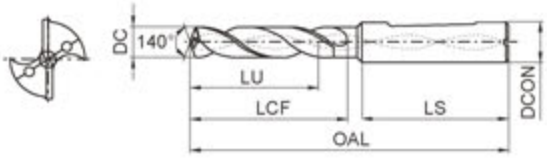
Code key C6 Cutting parameters C160 Technical information C165-C171 Non-standard customization tools C172-C176

ST series For machining of mild steel, stainless steel

Internal coolant — Straight shank



Internal coolant — Whistle notch shank



- First choice for drilling mild steel and stainless steel.
- Sharp cutting edge can avoid build-up edge, suitable for drilling hole with high performance.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
5.55	3	Internal coolant	Straight shank	1534ST03C-0555	6	66	28	20	36	☆
	5			1536ST05C-0555	6	82	44	35	36	☆
	5		Whistle notch shank	1736ST05C-0555	6	82	44	35	36	☆
5.6	3		Straight shank	1534ST03C-0560	6	66	28	20	36	☆
	5			1536ST05C-0560	6	82	44	35	36	☆
	5		Whistle notch shank	1736ST05C-0560	6	82	44	35	36	☆
5.7	3		Straight shank	1534ST03C-0570	6	66	28	20	36	☆
	5			1536ST05C-0570	6	82	44	35	36	☆
	5		Whistle notch shank	1736ST05C-0570	6	82	44	35	36	☆
5.8	3		Straight shank	1534ST03C-0580	6	66	28	20	36	☆
	5			1536ST05C-0580	6	82	44	35	36	☆
	5		Whistle notch shank	1736ST05C-0580	6	82	44	35	36	☆
5.9	3		Straight shank	1534ST03C-0590	6	66	28	20	36	☆
	5			1536ST05C-0590	6	82	44	35	36	☆
	5		Whistle notch shank	1736ST05C-0590	6	82	44	35	36	☆
6.0	3		Straight shank	1534ST03C-0600	6	66	28	20	36	☆
	5			1536ST05C-0600	6	82	44	35	36	☆
	5		Whistle notch shank	1736ST05C-0600	6	82	44	35	36	☆
6.1	3		Straight shank	1534ST03C-0610	8	79	34	24	36	☆
	5			1536ST05C-0610	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0610	8	91	53	43	36	☆
6.2	3		Straight shank	1534ST03C-0620	8	79	34	24	36	☆
	5			1536ST05C-0620	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0620	8	91	53	43	36	☆
6.3	3		Straight shank	1534ST03C-0630	8	79	34	24	36	☆
	5			1536ST05C-0630	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0630	8	91	53	43	36	☆
6.4	3		Straight shank	1534ST03C-0640	8	79	34	24	36	☆
	5			1536ST05C-0640	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0640	8	91	53	43	36	☆

☆Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
6.5	3	Internal coolant	Straight shank	1534ST03C-0650	8	79	34	24	36	☆
	5			1536ST05C-0650	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0650	8	91	53	43	36	☆
6.6	3		Straight shank	1534ST03C-0660	8	79	34	24	36	☆
	5			1536ST05C-0660	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0660	8	91	53	43	36	☆
6.7	3		Straight shank	1534ST03C-0670	8	79	34	24	36	☆
	5			1536ST05C-0670	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0670	8	91	53	43	36	☆
6.75	3		Straight shank	1534ST03C-0675	8	79	34	24	36	☆
	5			1536ST05C-0675	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0675	8	91	53	43	36	☆
6.9	3		Straight shank	1534ST03C-0690	8	79	34	24	36	☆
	5			1536ST05C-0690	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0690	8	91	53	43	36	☆
7.0	3		Straight shank	1534ST03C-0700	8	79	34	24	36	☆
	5			1536ST05C-0700	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0700	8	91	53	43	36	☆
7.1	3		Straight shank	1534ST03C-0710	8	79	41	29	36	☆
	5			1536ST05C-0710	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0710	8	91	53	43	36	☆
7.2	3		Straight shank	1534ST03C-0720	8	79	41	29	36	☆
	5			1536ST05C-0720	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0720	8	91	53	43	36	☆
7.3	3		Straight shank	1534ST03C-0730	8	79	41	29	36	☆
	5			1536ST05C-0730	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0730	8	91	53	43	36	☆
7.4	3		Straight shank	1534ST03C-0740	8	79	41	29	36	☆
	5			1536ST05C-0740	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0740	8	91	53	43	36	☆
7.5	3		Straight shank	1534ST03C-0750	8	79	41	29	36	☆
	5			1536ST05C-0750	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0750	8	91	53	43	36	☆

☆Recommended grade (produce according to order)

Applicable material table

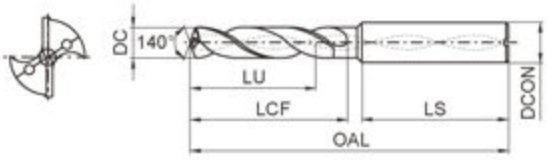
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○				○					○

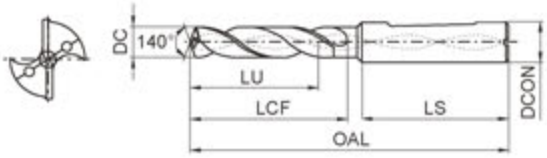
Code key C6 Cutting parameters C160 Technical information C165-C171 Non-standard customization tools C172-C176

ST series For machining of mild steel, stainless steel

Internal coolant — Straight shank



Internal coolant — Whistle notch shank



- First choice for drilling mild steel and stainless steel.
- Sharp cutting edge can avoid build-up edge, suitable for drilling hole with high performance.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
7.6	3	Internal coolant	Straight shank	1534ST03C-0760	8	79	41	29	36	☆
	5			1536ST05C-0760	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0760	8	91	53	43	36	☆
7.7	3		Straight shank	1534ST03C-0770	8	79	41	29	36	☆
	5			1536ST05C-0770	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0770	8	91	53	43	36	☆
7.8	3		Straight shank	1534ST03C-0780	8	79	41	29	36	☆
	5			1536ST05C-0780	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0780	8	91	53	43	36	☆
7.9	3		Straight shank	1534ST03C-0790	8	79	41	29	36	☆
	5			1536ST05C-0790	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0790	8	91	53	43	36	☆
8.0	3		Straight shank	1534ST03C-0800	8	79	41	29	36	☆
	5			1536ST05C-0800	8	91	53	43	36	☆
	5		Whistle notch shank	1736ST05C-0800	8	91	53	43	36	☆
8.1	3		Straight shank	1534ST03C-0810	10	89	47	35	40	☆
	5			1536ST05C-0810	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0810	10	103	61	49	40	☆
8.2	3		Straight shank	1534ST03C-0820	10	89	47	35	40	☆
	5			1536ST05C-0820	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0820	10	103	61	49	40	☆
8.3	3		Straight shank	1534ST03C-0830	10	89	47	35	40	☆
	5			1536ST05C-0830	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0830	10	103	61	49	40	☆
8.4	3		Straight shank	1534ST03C-0840	10	89	47	35	40	☆
	5			1536ST05C-0840	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0840	10	103	61	49	40	☆
8.5	3		Straight shank	1534ST03C-0850	10	89	47	35	40	☆
	5			1536ST05C-0850	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0850	10	103	61	49	40	☆

☆Recommended grade (produce according to order)

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
8.6	3	Internal coolant	Straight shank	1534ST03C-0860	10	89	47	35	40	☆
	5			1536ST05C-0860	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0860	10	103	61	49	40	☆
8.7	3		Straight shank	1534ST03C-0870	10	89	47	35	40	☆
	5			1536ST05C-0870	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0870	10	103	61	49	40	☆
8.8	3		Straight shank	1534ST03C-0880	10	89	47	35	40	☆
	5			1536ST05C-0880	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0880	10	103	61	49	40	☆
8.9	3		Straight shank	1534ST03C-0890	10	89	47	35	40	☆
	5			1536ST05C-0890	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0890	10	103	61	49	40	☆
9.0	3		Straight shank	1534ST03C-0900	10	89	47	35	40	☆
	5			1536ST05C-0900	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0900	10	103	61	49	40	☆
9.1	3		Straight shank	1534ST03C-0910	10	89	47	35	40	☆
	5			1536ST05C-0910	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0910	10	103	61	49	40	☆
9.3	3		Straight shank	1534ST03C-0930	10	89	47	35	40	☆
	5			1536ST05C-0930	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0930	10	103	61	49	40	☆
9.4	3		Straight shank	1534ST03C-0940	10	89	47	35	40	☆
	5			1536ST05C-0940	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0940	10	103	61	49	40	☆
9.5	3		Straight shank	1534ST03C-0950	10	89	47	35	40	☆
	5			1536ST05C-0950	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0950	10	103	61	49	40	☆
9.6	3		Straight shank	1534ST03C-0960	10	89	47	35	40	☆
	5			1536ST05C-0960	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0960	10	103	61	49	40	☆
9.7	3		Straight shank	1534ST03C-0970	10	89	47	35	40	☆
	5			1536ST05C-0970	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0970	10	103	61	49	40	☆

☆Recommended grade (produce according to order)

Applicable material table

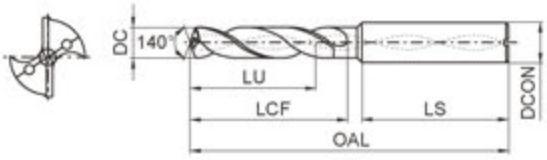
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○				○					○

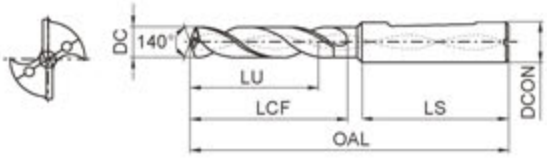
Code key C6 Cutting parameters C160 Technical information C165-C171 Non-standard customization tools C172-C176

ST series For machining of mild steel, stainless steel

Internal coolant — Straight shank



Internal coolant — Whistle notch shank



- First choice for drilling mild steel and stainless steel.
- Sharp cutting edge can avoid build-up edge, suitable for drilling hole with high performance.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
9.8	3	Internal coolant	Straight shank	1534ST03C-0980	10	89	47	35	40	☆
	5			1536ST05C-0980	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0980	10	103	61	49	40	☆
9.9	3		Straight shank	1534ST03C-0990	10	89	47	35	40	☆
	5			1536ST05C-0990	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-0990	10	103	61	49	40	☆
10.0	3		Straight shank	1534ST03C-1000	10	89	47	35	40	☆
	5			1536ST05C-1000	10	103	61	49	40	☆
	5		Whistle notch shank	1736ST05C-1000	10	103	61	49	40	☆
10.1	3		Straight shank	1534ST03C-1010	12	102	55	40	45	☆
	5			1536ST05C-1010	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1010	12	118	71	56	45	☆
10.25	3		Straight shank	1534ST03C-1025	12	102	55	40	45	☆
	5			1536ST05C-1025	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1025	12	118	71	56	45	☆
10.3	3		Straight shank	1534ST03C-1030	12	102	55	40	45	☆
	5			1536ST05C-1030	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1030	12	118	71	56	45	☆
10.4	3		Straight shank	1534ST03C-1040	12	102	55	40	45	☆
	5			1536ST05C-1040	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1040	12	118	71	56	45	☆
10.5	3		Straight shank	1534ST03C-1050	12	102	55	40	45	☆
	5			1536ST05C-1050	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1050	12	118	71	56	45	☆
10.6	3		Straight shank	1534ST03C-1060	12	102	55	40	45	☆
	5			1536ST05C-1060	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1060	12	118	71	56	45	☆
10.7	3		Straight shank	1534ST03C-1070	12	102	55	40	45	☆
	5			1536ST05C-1070	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1070	12	118	71	56	45	☆

☆Recommended grade (produce according to order)

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
10.8	3	Internal coolant	Straight shank	1534ST03C-1080	12	102	55	40	45	☆
	5			1536ST05C-1080	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1080	12	118	71	56	45	☆
10.9	3		Straight shank	1534ST03C-1090	12	102	55	40	45	☆
	5			1536ST05C-1090	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1090	12	118	71	56	45	☆
11.0	3		Straight shank	1534ST03C-1100	12	102	55	40	45	☆
	5			1536ST05C-1100	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1100	12	118	71	56	45	☆
11.1	3		Straight shank	1534ST03C-1110	12	102	55	40	45	☆
	5			1536ST05C-1110	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1110	12	118	71	56	45	☆
11.2	3		Straight shank	1534ST03C-1120	12	102	55	40	45	☆
	5			1536ST05C-1120	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1120	12	118	71	56	45	☆
11.3	3		Straight shank	1534ST03C-1130	12	102	55	40	45	☆
	5			1536ST05C-1130	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1130	12	118	71	56	45	☆
11.4	3		Straight shank	1534ST03C-1140	12	102	55	40	45	☆
	5			1536ST05C-1140	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1140	12	118	71	56	45	☆
11.5	3		Straight shank	1534ST03C-1150	12	102	55	40	45	☆
	5			1536ST05C-1150	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1150	12	118	71	56	45	☆
11.6	3		Straight shank	1534ST03C-1160	12	102	55	40	45	☆
	5			1536ST05C-1160	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1160	12	118	71	56	45	☆
11.7	3		Straight shank	1534ST03C-1170	12	102	55	40	45	☆
	5			1536ST05C-1170	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1170	12	118	71	56	45	☆
11.8	3		Straight shank	1534ST03C-1180	12	102	55	40	45	☆
	5			1536ST05C-1180	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1180	12	118	71	56	45	☆

☆Recommended grade (produce according to order)

Applicable material table

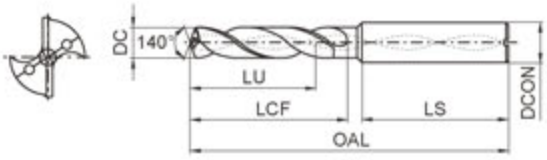
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○				○					○

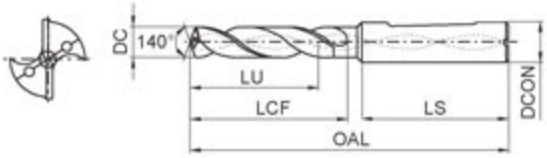
Code key C6 Cutting parameters C160 Technical information C165-C171 Non-standard customization tools C172-C176

ST series For machining of mild steel, stainless steel

Internal coolant — Straight shank



Internal coolant — Whistle notch shank



- First choice for drilling mild steel and stainless steel.
- Sharp cutting edge can avoid build-up edge, suitable for drilling hole with high performance.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
11.9	3	Internal coolant	Straight shank	1534ST03C-1190	12	102	55	40	45	☆
	5			1536ST05C-1190	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1190	12	118	71	56	45	☆
12.0	3		Straight shank	1534ST03C-1200	12	102	55	40	45	☆
	5			1536ST05C-1200	12	118	71	56	45	☆
	5		Whistle notch shank	1736ST05C-1200	12	118	71	56	45	☆
12.25	3		Straight shank	1534ST03C-1225	14	107	60	43	45	☆
	5			1536ST05C-1225	14	124	77	60	45	☆
	5		Whistle notch shank	1736ST05C-1225	14	124	77	60	45	☆
12.3	3		Straight shank	1534ST03C-1230	14	107	60	43	45	☆
	5			1536ST05C-1230	14	124	77	60	45	☆
	5		Whistle notch shank	1736ST05C-1230	14	124	77	60	45	☆
12.5	3		Straight shank	1534ST03C-1250	14	107	60	43	45	☆
	5			1536ST05C-1250	14	124	77	60	45	☆
	5		Whistle notch shank	1736ST05C-1250	14	124	77	60	45	☆
12.7	3		Straight shank	1534ST03C-1270	14	107	60	43	45	☆
	5			1536ST05C-1270	14	124	77	60	45	☆
	5		Whistle notch shank	1736ST05C-1270	14	124	77	60	45	☆
12.75	3		Straight shank	1534ST03C-1275	14	107	60	43	45	☆
	5			1536ST05C-1275	14	124	77	60	45	☆
	5		Whistle notch shank	1736ST05C-1275	14	124	77	60	45	☆
12.8	3		Straight shank	1534ST03C-1280	14	107	60	43	45	☆
	5			1536ST05C-1280	14	124	77	60	45	☆
	5		Whistle notch shank	1736ST05C-1280	14	124	77	60	45	☆
13.0	3		Straight shank	1534ST03C-1300	14	107	60	43	45	☆
	5			1536ST05C-1300	14	124	77	60	45	☆
	5		Whistle notch shank	1736ST05C-1300	14	124	77	60	45	☆
13.1	3		Straight shank	1534ST03C-1310	14	107	60	43	45	☆
	5			1536ST05C-1310	14	124	77	60	45	☆
	5		Whistle notch shank	1736ST05C-1310	14	124	77	60	45	☆

☆Recommended grade (produce according to order)

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
13.5	3	Internal coolant	Straight shank	1534ST03C-1350	14	107	60	43	45	☆
	5			1536ST05C-1350	14	124	77	60	45	☆
	5		Whistle notch shank	1736ST05C-1350	14	124	77	60	45	☆
13.8	3		Straight shank	1534ST03C-1380	14	107	60	43	45	☆
	5			1536ST05C-1380	14	124	77	60	45	☆
	5		Whistle notch shank	1736ST05C-1380	14	124	77	60	45	☆
14.0	3		Straight shank	1534ST03C-1400	14	107	60	43	45	☆
	5			1536ST05C-1400	14	124	77	60	45	☆
	5		Whistle notch shank	1736ST05C-1400	14	124	77	60	45	☆
14.25	3		Straight shank	1534ST03C-1425	16	115	65	45	48	☆
	5			1536ST05C-1425	16	133	83	63	48	☆
	5		Whistle notch shank	1736ST05C-1425	16	133	83	63	48	☆
14.3	3		Straight shank	1534ST03C-1430	16	115	65	45	48	☆
	5			1536ST05C-1430	16	133	83	63	48	☆
	5		Whistle notch shank	1736ST05C-1430	16	133	83	63	48	☆
14.5	3		Straight shank	1534ST03C-1450	16	115	65	45	48	☆
	5			1536ST05C-1450	16	133	83	63	48	☆
	5		Whistle notch shank	1736ST05C-1450	16	133	83	63	48	☆
14.75	3		Straight shank	1534ST03C-1475	16	115	65	45	48	☆
	5			1536ST05C-1475	16	133	83	63	48	☆
	5		Whistle notch shank	1736ST05C-1475	16	133	83	63	48	☆
14.8	3		Straight shank	1534ST03C-1480	16	115	65	45	48	☆
	5			1536ST05C-1480	16	133	83	63	48	☆
	5		Whistle notch shank	1736ST05C-1480	16	133	83	63	48	☆
15.0	3		Straight shank	1534ST03C-1500	16	115	65	45	48	☆
	5			1536ST05C-1500	16	133	83	63	48	☆
	5		Whistle notch shank	1736ST05C-1500	16	133	83	63	48	☆
15.1	3		Straight shank	1534ST03C-1510	16	115	65	45	48	☆
	5			1536ST05C-1510	16	133	83	63	48	☆
	5		Whistle notch shank	1736ST05C-1510	16	133	83	63	48	☆
15.5	3		Straight shank	1534ST03C-1550	16	115	65	45	48	☆
	5			1536ST05C-1550	16	133	83	63	48	☆
	5		Whistle notch shank	1736ST05C-1550	16	133	83	63	48	☆

☆Recommended grade (produce according to order)

Applicable material table

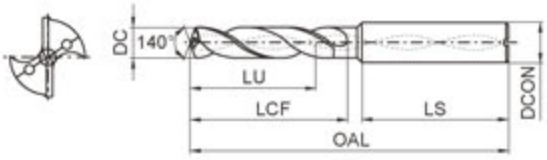
○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
KDG303	○	○				○					○

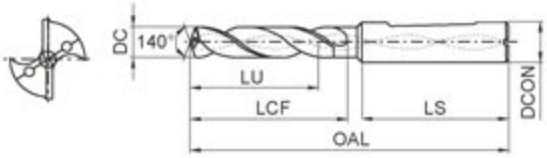
Code key C6 Cutting parameters C160 Technical information C165-C171 Non-standard customization tools C172-C176

ST series For machining of mild steel, stainless steel

Internal coolant — Straight shank



Internal coolant — Whistle notch shank



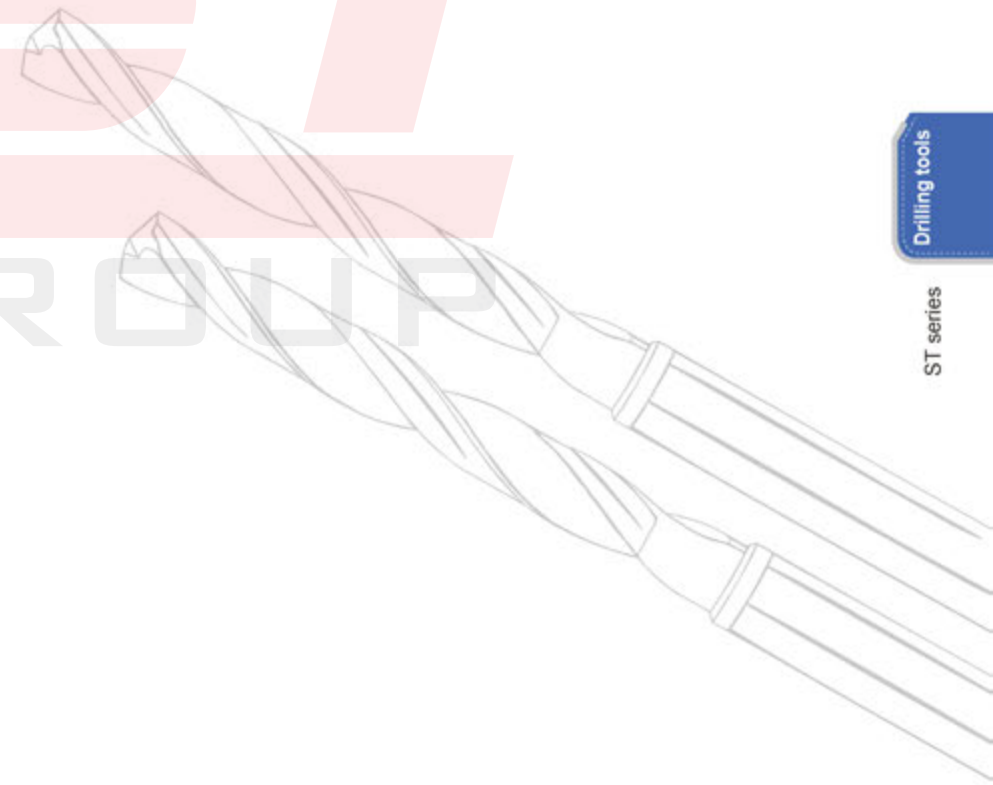
- First choice for drilling mild steel and stainless steel.
- Sharp cutting edge can avoid build-up edge, suitable for drilling hole with high performance.

Drill diameter DC(mm)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	Recommended grade KDG303
15.8	3	Internal coolant	Straight shank	1534ST03C-1580	16	115	65	45	48	☆
	5			1536ST05C-1580	16	133	83	63	48	☆
	5		Whistle notch shank	1736ST05C-1580	16	133	83	63	48	☆
16.0	3		Straight shank	1534ST03C-1600	16	115	65	45	48	☆
	5			1536ST05C-1600	16	133	83	63	48	☆
	5		Whistle notch shank	1736ST05C-1600	16	133	83	63	48	☆
16.5	3		Straight shank	1534ST03C-1650	18	123	73	51	48	☆
	5			1536ST05C-1650	18	143	93	71	48	☆
	5		Whistle notch shank	1736ST05C-1650	18	143	93	71	48	☆
16.75	3		Straight shank	1534ST03C-1675	18	123	73	51	48	☆
	5			1536ST05C-1675	18	143	93	71	48	☆
	5		Whistle notch shank	1736ST05C-1675	18	143	93	71	48	☆
16.8	3		Straight shank	1534ST03C-1680	18	123	73	51	48	☆
	5			1536ST05C-1680	18	143	93	71	48	☆
	5		Whistle notch shank	1736ST05C-1680	18	143	93	71	48	☆
17.0	3		Straight shank	1534ST03C-1700	18	123	73	51	48	☆
	5			1536ST05C-1700	18	143	93	71	48	☆
	5		Whistle notch shank	1736ST05C-1700	18	143	93	71	48	☆
17.5	3		Straight shank	1534ST03C-1750	18	123	73	51	48	☆
	5			1536ST05C-1750	18	143	93	71	48	☆
	5		Whistle notch shank	1736ST05C-1750	18	143	93	71	48	☆
17.8	3		Straight shank	1534ST03C-1780	18	123	73	51	48	☆
	5			1536ST05C-1780	18	143	93	71	48	☆
	5		Whistle notch shank	1736ST05C-1780	18	143	93	71	48	☆
18.0	3		Straight shank	1534ST03C-1800	18	123	73	51	48	☆
	5			1536ST05C-1800	18	143	93	71	48	☆
	5		Whistle notch shank	1736ST05C-1800	18	143	93	71	48	☆
18.5	3		Straight shank	1534ST03C-1850	20	131	79	55	50	☆
	5			1536ST05C-1850	20	153	101	77	50	☆
	5		Whistle notch shank	1736ST05C-1850	20	153	101	77	50	☆

☆Recommended grade (produce according to order)

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	KDG303
18.8	3	Internal coolant	Straight shank	1534ST03C-1880	20	131	79	55	50	☆
	5			1536ST05C-1880	20	153	101	77	50	☆
	5		Whistle notch shank	1736ST05C-1880	20	153	101	77	50	☆
19.0	3		Straight shank	1534ST03C-1900	20	131	79	55	50	☆
	5			1536ST05C-1900	20	153	101	77	50	☆
	5		Whistle notch shank	1736ST05C-1900	20	153	101	77	50	☆
19.5	3		Straight shank	1534ST03C-1950	20	131	79	55	50	☆
	5			1536ST05C-1950	20	153	101	77	50	☆
	5		Whistle notch shank	1736ST05C-1950	20	153	101	77	50	☆
19.8	3		Straight shank	1534ST03C-1980	20	131	79	55	50	☆
	5			1536ST05C-1980	20	153	101	77	50	☆
	5		Whistle notch shank	1736ST05C-1980	20	153	101	77	50	☆
20.0	3		Straight shank	1534ST03C-2000	20	131	79	55	50	☆
	5			1536ST05C-2000	20	153	101	77	50	☆
	5		Whistle notch shank	1736ST05C-2000	20	153	101	77	50	☆

☆Recommended grade (produce according to order)



Applicable material table

○Very suitable ○Suitable

Grade	Workpiece material										
	Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
KDG303	○	○				○					○

Code key C6
Cutting parameters C160
Technical information C165-C171
Non-standard customization tools C172-C176

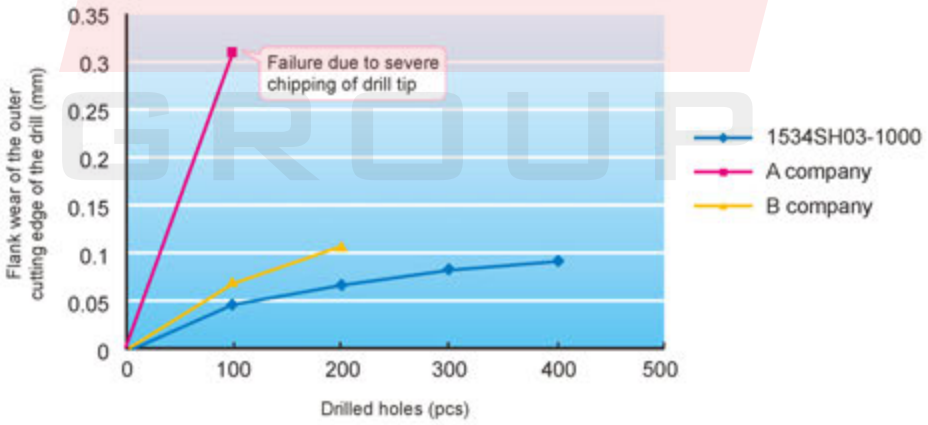
SH series twist drill

For high hardness steel machining

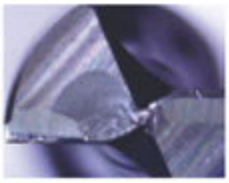
1. **Small helix angle and large core thickness design dramatically increase tool rigidity.**
2. **Adopting linear cutting edges, achieving superior edge strength.**
3. **The excellent oxidation resistance of substrate and the adoption of high hardness TiAlN coating significantly improve the tool durability.**

Cutting tool: 1534SH03-1000
Workpiece material: S136(HRC53)
Spindle speed: 800r/min
Feed speed: 64mm/min
Cooling method: water-soluble cutting fluid
Tool diameter: Ø10.0mm
Cutting speed: 25m/min
Feedrate: 0.08mm/r
Drilling depth: 20mm(Blind hole)
CNC machine type: MIKRON UCP 1000

Application of SH series drills in the machining of high hardness materials

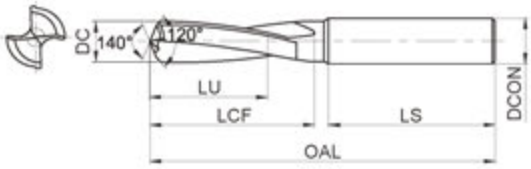


Drill wear condition during the machining:

Drill	1534SH03-1000	Similar products of A company	Similar products of B company
Drilled holes (pcs)	400	100	200
Wear value	0.08mm	Cutting edge wear value 0.31mm, chipping value 2.59mm	0.108mm
Wear condition			

SH series For high hardness steel machining

External coolant Straight shank



- Suitable for drilling and machining of high hardness steel (HRC 40-60).
- Small helix angle and large core thickness design increase tool rigidity.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter	Overall length	Flute length	Recommended drilling depth	Shank length	KDG303
					DCON	OAL	LCF	LU	LS	
3.0	3	External coolant	Straight shank	1534SH03-0300	6	62	20	14	36	☆
3.3	3			1534SH03-0330	6	62	20	14	36	☆
4.0	3			1534SH03-0400	6	66	24	17	36	☆
4.2	3			1534SH03-0420	6	66	24	17	36	☆
5.0	3			1534SH03-0500	6	66	28	20	36	☆
6.0	3			1534SH03-0600	6	66	28	20	36	☆
6.75	3			1534SH03-0675	8	79	34	24	36	☆
7.0	3			1534SH03-0700	8	79	34	24	36	☆
8.0	3			1534SH03-0800	8	79	41	29	36	☆
8.5	3			1534SH03-0850	10	89	47	35	40	☆
9.0	3			1534SH03-0900	10	89	47	35	40	☆
10.0	3			1534SH03-1000	10	89	47	35	40	☆
10.25	3			1534SH03-1025	12	102	55	40	45	☆
10.5	3			1534SH03-1050	12	102	55	40	45	☆
12.0	3			1534SH03-1200	12	102	55	40	45	☆
12.5	3			1534SH03-1250	14	107	60	43	45	☆
14.0	3			1534SH03-1400	14	107	60	43	45	☆
14.5	3			1534SH03-1450	16	115	65	45	48	☆
16.0	3			1534SH03-1600	16	115	65	45	48	☆

☆Recommended grade (produce according to order)

Applicable material table

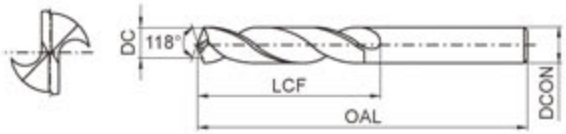
○Very suitable ○Suitable

Grade	Workpiece material										
	Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
YK20F				○	○						

Code key C6 Cutting parameters C161 Technical information C165-C171 Non-standard customization tools C172-C176

SC series(twist drill) For machining of cast iron, Al alloy

External coolant Straight shank



- For materials with short chips such as cast iron, silicon-aluminum alloy, etc.
- Cutting edge and shank with same diameter.

Drill diameter DC(h8)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)			Recommended grade
					Shank diameter	Overall length	Flute length	YK20F
					DCON	OAL	LCF	
2.0	3	External coolant	Straight shank	1105SC03-0200	2.0	38	12	☆
	5			1101SC05-0200	2.0	49	24	☆
2.5	3			1105SC03-0250	2.5	43	14	☆
	5			1101SC05-0250	2.5	57	30	☆
2.8	3			1105SC03-0280	2.8	46	16	☆
	5			1101SC05-0280	2.8	61	33	☆
3.0	3			1105SC03-0300	3.0	46	16	☆
	5			1101SC05-0300	3.0	61	33	☆
3.1	3			1105SC03-0310	3.1	49	18	☆
3.2	3			1105SC03-0320	3.2	49	18	☆
3.3	3			1105SC03-0330	3.3	49	18	☆
3.4	3			1105SC03-0340	3.4	52	20	☆
3.5	3			1105SC03-0350	3.5	52	20	☆
	5			1101SC05-0350	3.5	70	39	☆
3.6	3			1105SC03-0360	3.6	52	20	☆
3.7	3			1105SC03-0370	3.7	52	20	☆
3.8	3			1105SC03-0380	3.8	55	22	☆
	5			1101SC05-0380	3.8	75	43	☆
3.9	3			1105SC03-0390	3.9	55	22	☆
4.0	3			1105SC03-0400	4.0	55	22	☆
	5			1101SC05-0400	4.0	75	43	☆
4.1	3			1105SC03-0410	4.1	55	22	☆
4.2	3			1105SC03-0420	4.2	55	22	☆
	5			1101SC05-0420	4.2	75	43	☆
4.3	3			1105SC03-0430	4.3	58	24	☆
4.4	3			1105SC03-0440	4.4	58	24	☆
4.5	3			1105SC03-0450	4.5	58	24	☆
	5			1101SC05-0450	4.5	80	47	☆
4.6	3			1105SC03-0460	4.6	58	24	☆
4.7	3			1105SC03-0470	4.7	58	24	☆
4.8	3			1105SC03-0480	4.8	62	26	☆
	5			1101SC05-0480	4.8	86	52	☆

☆Recommended grade (produce according to order)

Drill diameter DC(h8)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)			Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	YK20F
4.9	3	External coolant	Straight shank	1105SC03-0490	4.9	62	26	☆
5.0	3			1105SC03-0500	5.0	62	26	☆
	5			1101SC05-0500	5.0	86	52	☆
5.1	3			1105SC03-0510	5.1	62	26	☆
5.2	3			1105SC03-0520	5.2	62	26	☆
5.3	3			1105SC03-0530	5.3	62	26	☆
5.4	3			1105SC03-0540	5.4	66	28	☆
5.5	3			1105SC03-0550	5.5	66	28	☆
	5			1101SC05-0550	5.5	93	57	☆
5.6	3			1105SC03-0560	5.6	66	28	☆
5.7	3			1105SC03-0570	5.7	66	28	☆
5.8	3			1105SC03-0580	5.8	66	28	☆
	5			1101SC05-0580	5.8	93	57	☆
5.9	3			1105SC03-0590	5.9	66	28	☆
6.0	3			1105SC03-0600	6.0	66	28	☆
	5			1101SC05-0600	6.0	93	57	☆
6.1	3			1105SC03-0610	6.1	70	31	☆
6.2	3			1105SC03-0620	6.2	70	31	☆
6.3	3			1105SC03-0630	6.3	70	31	☆
6.4	3			1105SC03-0640	6.4	70	31	☆
6.5	3			1105SC03-0650	6.5	70	31	☆
	5			1101SC05-0650	6.5	101	63	☆
6.6	3			1105SC03-0660	6.6	70	31	☆
6.7	3			1105SC03-0670	6.7	70	31	☆
6.8	3			1105SC03-0680	6.8	74	34	☆
	5			1101SC05-0680	6.8	109	69	☆
6.9	3			1105SC03-0690	6.9	74	34	☆
7.0	3			1105SC03-0700	7.0	74	34	☆
	5			1101SC05-0700	7.0	109	69	☆
7.1	3			1105SC03-0710	7.1	74	34	☆
7.2	3			1105SC03-0720	7.2	74	34	☆
7.3	3			1105SC03-0730	7.3	74	34	☆
7.4	3			1105SC03-0740	7.4	74	34	☆

☆Recommended grade (produce according to order)

Applicable material table

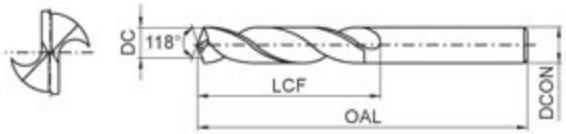
○Very suitable ○Suitable

Grade	Workpiece material										
	Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
YK20F							○	○	○		

Code key C6 Cutting parameters C161 Technical information C165-C171 Non-standard customization tools C172-C176

SC series(twist drill) For machining of cast iron, Al alloy

External coolant Straight shank



- For materials with short chips such as cast iron, silicon-aluminum alloy, etc.
- Cutting edge and shank with same diameter.

Drill diameter DC(h8)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)			Recommended grade
					Shank diameter	Overall length	Flute length	YK20F
					DCON	OAL	LCF	
7.5	3	External coolant	Straight shank	1105SC03-0750	7.5	74	34	☆
	5			1101SC05-0750	7.5	109	69	☆
7.6	3			1105SC03-0760	7.6	79	37	☆
7.7	3			1105SC03-0770	7.7	79	37	☆
7.8	3			1105SC03-0780	7.8	79	37	☆
	5			1101SC05-0780	7.8	117	75	☆
7.9	3			1105SC03-0790	7.9	79	37	☆
8.0	3			1105SC03-0800	8.0	79	37	☆
	5			1101SC05-0800	8.0	117	75	☆
8.1	3			1105SC03-0810	8.1	79	37	☆
8.2	3			1105SC03-0820	8.2	79	37	☆
8.3	3			1105SC03-0830	8.3	79	37	☆
8.4	3			1105SC03-0840	8.4	79	37	☆
8.5	3			1105SC03-0850	8.5	79	37	☆
	5			1101SC05-0850	8.5	117	75	☆
8.6	3			1105SC03-0860	8.6	84	40	☆
8.7	3			1105SC03-0870	8.7	84	40	☆
8.8	3			1105SC03-0880	8.8	84	40	☆
	5			1101SC05-0880	8.8	125	81	☆
8.9	3			1105SC03-0890	8.9	84	40	☆
9.0	3			1105SC03-0900	9.0	84	40	☆
	5			1101SC05-0900	9.0	125	81	☆
9.1	3			1105SC03-0910	9.1	84	40	☆
9.2	3			1105SC03-0920	9.2	84	40	☆
9.3	3			1105SC03-0930	9.3	84	40	☆
9.4	3			1105SC03-0940	9.4	84	40	☆
9.5	3			1105SC03-0950	9.5	84	40	☆
	5			1101SC05-0950	9.5	125	81	☆
9.6	3			1105SC03-0960	9.6	89	43	☆
9.7	3			1105SC03-0970	9.7	89	43	☆
9.8	3			1105SC03-0980	9.8	89	43	☆
	5			1101SC05-0980	9.8	133	87	☆
9.9	3			1105SC03-0990	9.9	89	43	☆

☆Recommended grade (produce according to order)

Drill diameter DC(h8)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)			Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	YK20F
10.0	3	External coolant	Straight shank	1105SC03-1000	10.0	89	43	☆
	5			1101SC05-1000	10.0	133	87	☆
10.1	3			1105SC03-1010	10.1	89	43	☆
10.2	3			1105SC03-1020	10.2	89	43	☆
10.4	3			1105SC03-1040	10.4	89	43	☆
10.5	3			1105SC03-1050	10.5	89	43	☆
	5			1101SC05-1050	10.5	133	87	☆
10.7	3			1105SC03-1070	10.7	95	47	☆
10.8	3			1105SC03-1080	10.8	95	47	☆
	5			1101SC05-1080	10.8	142	94	☆
11.0	3			1105SC03-1100	11.0	95	47	☆
	5			1101SC05-1100	11.0	142	94	☆
11.5	3			1105SC03-1150	11.5	95	47	☆
	5			1101SC05-1150	11.5	142	94	☆
12.0	3			1105SC03-1200	12.0	102	51	☆
	5			1101SC05-1200	12.0	151	101	☆
12.5	3			1105SC03-1250	12.5	102	51	☆
	5			1101SC05-1250	12.5	151	101	☆
12.8	3			1105SC03-1280	12.8	102	51	☆
13.0	3			1105SC03-1300	13.0	102	51	☆
	5			1101SC05-1300	13.0	151	101	☆
13.1	3			1105SC03-1310	13.1	102	51	☆
13.5	3			1105SC03-1350	13.5	107	54	☆
	5			1101SC05-1350	13.5	160	108	☆
14.0	3			1105SC03-1400	14.0	107	54	☆
	5			1101SC05-1400	14.0	160	108	☆
14.3	3			1105SC03-1430	14.3	111	56	☆
14.5	3			1105SC03-1450	14.5	111	56	☆
	5			1101SC05-1450	14.5	169	114	☆
15.0	3			1105SC03-1500	15.0	111	56	☆
	5			1101SC05-1500	15.0	169	114	☆
15.5	5			1101SC05-1550	15.5	178	120	☆
16.0	3			1105SC03-1600	16.0	115	58	☆
	5			1101SC05-1600	16.0	178	120	☆

☆Recommended grade (produce according to order)

Applicable material table

○Very suitable ○Suitable

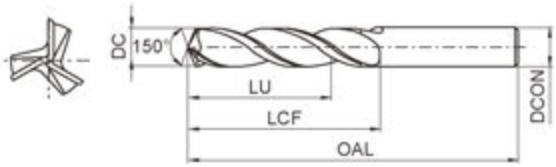
Grade	Workpiece material										
	Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
YK20F							○	○	○		

Code key C6
Cutting parameters C161
Technical information C165-C171
Non-standard customization tools C172-C176

PA series(three flute drill) For maching of cast iron, Al alloy

External coolant

Straight shank



- Suitable for drilling solid workpieces such as cast iron and Al alloy.
- Three-flute construction for high feed rates and excellent centering capability.
- High machining reliability, suitable for harsh working conditions, such as intermittent cutting, etc.

Drill diameter DC(h7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)				Recommended grade	
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	KDG303	YK30F
3.0	3	External coolant	Straight shank	1165PA03-0300	3.0	46	16	12	☆	☆
3.1	3			1165PA03-0310	3.1	49	18	14	☆	☆
3.2	3			1165PA03-0320	3.2	49	18	14	☆	☆
3.3	3			1165PA03-0330	3.3	49	18	14	☆	☆
3.4	3			1165PA03-0340	3.4	52	20	15	☆	☆
3.5	3			1165PA03-0350	3.5	52	20	15	☆	☆
3.6	3			1165PA03-0360	3.6	52	20	15	☆	☆
3.7	3			1165PA03-0370	3.7	52	20	15	☆	☆
3.8	3			1165PA03-0380	3.8	55	22	17	☆	☆
3.9	3			1165PA03-0390	3.9	55	22	17	☆	☆
4.0	3			1165PA03-0400	4.0	55	22	17	☆	☆
4.1	3			1165PA03-0410	4.1	55	22	17	☆	☆
4.2	3			1165PA03-0420	4.2	55	22	17	☆	☆
4.3	3			1165PA03-0430	4.3	58	24	18	☆	☆
4.4	3			1165PA03-0440	4.4	58	24	18	☆	☆
4.5	3			1165PA03-0450	4.5	58	24	18	☆	☆
4.6	3			1165PA03-0460	4.6	58	24	18	☆	☆
4.7	3			1165PA03-0470	4.7	58	24	18	☆	☆
4.8	3			1165PA03-0480	4.8	62	26	20	☆	☆
4.9	3			1165PA03-0490	4.9	62	26	20	☆	☆
5.0	3			1165PA03-0500	5.0	62	26	20	☆	☆
5.1	3			1165PA03-0510	5.1	62	26	20	☆	☆
5.2	3			1165PA03-0520	5.2	62	26	20	☆	☆
5.3	3			1165PA03-0530	5.3	62	26	20	☆	☆
5.4	3			1165PA03-0540	5.4	66	28	21	☆	☆
5.5	3			1165PA03-0550	5.5	66	28	21	☆	☆
5.6	3			1165PA03-0560	5.6	66	28	21	☆	☆
5.7	3			1165PA03-0570	5.7	66	28	21	☆	☆
5.8	3			1165PA03-0580	5.8	66	28	21	☆	☆

☆Recommended grade (produce according to order)

Drill diameter DC(h7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)				Recommended grade	
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	KDG303	YK30F
5.9	3	External coolant	Straight shank	1165PA03-0590	5.9	66	28	21	☆	☆
6.0	3			1165PA03-0600	6.0	66	28	21	☆	☆
6.1	3			1165PA03-0610	6.1	70	31	23	☆	☆
6.2	3			1165PA03-0620	6.2	70	31	23	☆	☆
6.3	3			1165PA03-0630	6.3	70	31	23	☆	☆
6.4	3			1165PA03-0640	6.4	70	31	23	☆	☆
6.5	3			1165PA03-0650	6.5	70	31	23	☆	☆
6.6	3			1165PA03-0660	6.6	70	31	23	☆	☆
6.7	3			1165PA03-0670	6.7	70	31	23	☆	☆
6.8	3			1165PA03-0680	6.8	74	34	25	☆	☆
6.9	3			1165PA03-0690	6.9	74	34	25	☆	☆
7.0	3			1165PA03-0700	7.0	74	34	25	☆	☆
7.1	3			1165PA03-0710	7.1	74	34	25	☆	☆
7.2	3			1165PA03-0720	7.2	74	34	25	☆	☆
7.3	3			1165PA03-0730	7.3	74	34	25	☆	☆
7.4	3			1165PA03-0740	7.4	74	34	25	☆	☆
7.5	3			1165PA03-0750	7.5	74	34	25	☆	☆
7.6	3			1165PA03-0760	7.6	79	37	27	☆	☆
7.7	3			1165PA03-0770	7.7	79	37	27	☆	☆
7.8	3			1165PA03-0780	7.8	79	37	27	☆	☆
7.9	3			1165PA03-0790	7.9	79	37	27	☆	☆
8.0	3			1165PA03-0800	8.0	79	37	27	☆	☆
8.1	3			1165PA03-0810	8.1	79	37	27	☆	☆
8.2	3			1165PA03-0820	8.2	79	37	27	☆	☆
8.3	3			1165PA03-0830	8.3	79	37	27	☆	☆
8.4	3			1165PA03-0840	8.4	79	37	27	☆	☆
8.5	3			1165PA03-0850	8.5	79	37	27	☆	☆
8.6	3			1165PA03-0860	8.6	84	40	29	☆	☆
8.7	3			1165PA03-0870	8.7	84	40	29	☆	☆

☆Recommended grade (produce according to order)

Applicable material table

○Very suitable ○Suitable

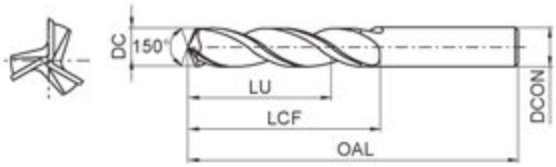
Grade	Workpiece material										
	Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
KDG303						○	○	○	○		○
YK30F						○	○	○	○		○

Code key C6
Cutting parameters C162
Technical information C165-C171
Non-standard customization tools C172-C176

PA series(three flute drill) For maching of cast iron, Al alloy

External coolant

Straight shank



- Suitable for drilling solid workpieces such as cast iron and Al alloy.
- Three-flute construction for high feed rates and excellent centering capability.
- High machining reliability, suitable for harsh working conditions, such as intermittent cutting, etc.

Drill diameter DC(h7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)				Recommended grade	
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	KDG303	YK30F
8.8	3	External coolant	Straight shank	1165PA03-0880	8.8	84	40	29	☆	☆
8.9	3			1165PA03-0890	8.9	84	40	29	☆	☆
9.0	3			1165PA03-0900	9.0	84	40	29	☆	☆
9.1	3			1165PA03-0910	9.1	84	40	29	☆	☆
9.2	3			1165PA03-0920	9.2	84	40	29	☆	☆
9.3	3			1165PA03-0930	9.3	84	40	29	☆	☆
9.4	3			1165PA03-0940	9.4	84	40	29	☆	☆
9.5	3			1165PA03-0950	9.5	84	40	29	☆	☆
9.6	3			1165PA03-0960	9.6	89	43	31	☆	☆
9.7	3			1165PA03-0970	9.7	89	43	31	☆	☆
9.8	3			1165PA03-0980	9.8	89	43	31	☆	☆
9.9	3			1165PA03-0990	9.9	89	43	31	☆	☆
10.0	3			1165PA03-1000	10.0	89	43	31	☆	☆
10.1	3			1165PA03-1010	10.1	89	43	31	☆	☆
10.2	3			1165PA03-1020	10.2	89	43	31	☆	☆
10.3	3			1165PA03-1030	10.3	89	43	31	☆	☆
10.5	3			1165PA03-1050	10.5	89	43	31	☆	☆
11.0	3			1165PA03-1100	11.0	95	47	33	☆	☆
11.2	3			1165PA03-1120	11.2	95	47	33	☆	☆
11.5	3			1165PA03-1150	11.5	95	47	33	☆	☆
11.8	3			1165PA03-1180	11.8	95	47	33	☆	☆
12.0	3			1165PA03-1200	12.0	102	51	35	☆	☆
12.1	3			1165PA03-1210	12.1	102	51	35	☆	☆
12.5	3			1165PA03-1250	12.5	102	51	35	☆	☆
13.0	3			1165PA03-1300	13.0	102	51	35	☆	☆
13.5	3			1165PA03-1350	13.5	107	54	37	☆	☆
14.0	3			1165PA03-1400	14.0	107	54	37	☆	☆
14.5	3			1165PA03-1450	14.5	111	56	38	☆	☆
15.0	3			1165PA03-1500	15.0	111	56	38	☆	☆

☆Recommended grade (produce according to order)

Drill diameter DC(h7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)				Recommended grade	
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	KDG303	YK30F
15.5	3	External coolant	Straight shank	**1165PA03-1550**	15.5	115	58	38	☆	☆
16.0	3			**1165PA03-1600**	16.0	115	58	38	☆	☆
16.5	3			**1165PA03-1650**	16.5	119	60	39	☆	☆
17.0	3			**1165PA03-1700**	17.0	119	60	39	☆	☆
17.5	3			**1165PA03-1750**	17.5	123	62	40	☆	☆
18.0	3			**1165PA03-1800**	18.0	123	62	40	☆	☆
18.5	3			**1165PA03-1850**	18.5	127	64	41	☆	☆
19.0	3			**1165PA03-1900**	19.0	127	64	41	☆	☆
19.5	3			**1165PA03-1950**	19.5	131	66	42	☆	☆
20.0	3			**1165PA03-2000**	20.0	131	66	42	☆	☆

☆Recommended grade (produce according to order)

Applicable material table

O Very suitable ○ Suitable

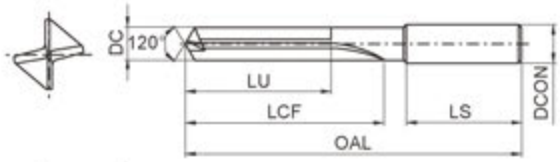
Grade	Workpiece material										
	Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
KDG303						○	O	○	O		○
YK30F						○	O	○	O		○

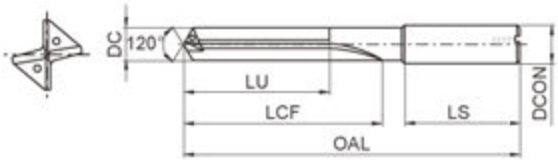
Code key C6
Cutting parameters C162
Technical information C165-C171
Non-standard customization tools C172-C176

PC series(straight flute drill) For machining of cast iron , Al alloy

External coolant — Straight shank

Internal coolant — Straight shank





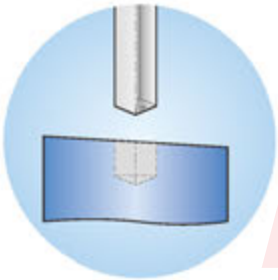
- For materials with short chips such as cast iron, silicon-aluminum alloy, etc.
- Excellent self centering capability, able to machine with high efficiency, the hole precision up to H7.
- High positional accuracy, high linearity and good surface finish can be obtained in the hole drilled.

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	YK20F
4.0	5	External coolant	Straight shank	1576PC05-0400	6.0	74	36	29	36	☆
4.2	5	External coolant	Straight shank	1576PC05-0420	6.0	74	36	29	36	☆
5.0	5	External coolant	Straight shank	1576PC05-0500	6.0	82	44	35	36	☆
	15	Internal coolant	Straight shank	1579PC15C-0500	6.0	145	105	96	36	☆
6.0	5	External coolant	Straight shank	1576PC05-0600	6.0	82	44	35	36	☆
	15	Internal coolant	Straight shank	1579PC15C-0600	6.0	145	105	96	36	☆
6.75	5	External coolant	Straight shank	1576PC05-0675	8.0	91	53	43	36	☆
7.0	5	External coolant	Straight shank	1576PC05-0700	8.0	91	53	43	36	☆
8.0	5	External coolant	Straight shank	1576PC05-0800	8.0	91	53	43	36	☆
	15	Internal coolant	Straight shank	1579PC15C-0800	8.0	180	137	127	36	☆
8.5	5	External coolant	Straight shank	1576PC05-0850	10.0	103	61	49	40	☆
9.0	5	External coolant	Straight shank	1576PC05-0900	10.0	103	61	49	40	☆
	15	Internal coolant	Straight shank	1579PC15C-0900	10.0	217	170	158	40	☆
10.0	5	External coolant	Straight shank	1576PC05-1000	10.0	103	61	49	40	☆
	15	Internal coolant	Straight shank	1579PC15C-1000	10.0	217	170	158	40	☆
10.25	5	External coolant	Straight shank	1576PC05-1025	12.0	118	71	56	45	☆
11.0	5	External coolant	Straight shank	1576PC05-1100	12.0	118	71	56	45	☆
	15	Internal coolant	Straight shank	1579PC15C-1100	12.0	258	205	190	45	☆
12.0	5	External coolant	Straight shank	1576PC05-1200	12.0	118	71	56	45	☆
	15	Internal coolant	Straight shank	1579PC15C-1200	12.0	258	205	190	45	☆
13.0	5	External coolant	Straight shank	1576PC05-1300	14.0	124	77	60	45	☆
14.0	5	External coolant	Straight shank	1576PC05-1400	14.0	124	77	60	45	☆
	15	Internal coolant	Straight shank	1579PC15C-1400	14.0	290	236	219	45	☆
15.0	5	External coolant	Straight shank	1576PC05-1500	16.0	133	83	63	48	☆
15.5	5	External coolant	Straight shank	1576PC05-1550	16.0	133	83	63	48	☆

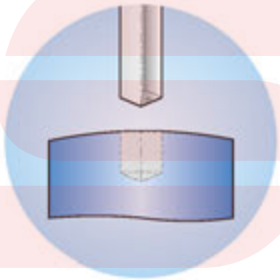
☆Recommended grade (produce according to order)

Drill diameter DC(m7)	Drilling depth (ULDR)	Cooling mode	Shank type	Type	Basic dimension(mm)					Recommended grade
					Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended drilling depth LU	Shank length LS	YK20F
16.0	5	External coolant	Straight shank	**1576PC05-1600**	16.0	133	83	63	48	☆
17.0	5			**1576PC05-1700**	18.0	143	93	71	48	☆
17.5	5			**1576PC05-1750**	18.0	143	93	71	48	☆
18.0	5			**1576PC05-1800**	18.0	143	93	71	48	☆
19.5	5			**1576PC05-1950**	20.0	153	101	77	50	☆
20.0	5			**1576PC05-2000**	20.0	153	101	77	50	☆

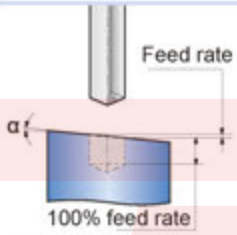
☆Recommended grade (produce according to order)



Inclined face drilling

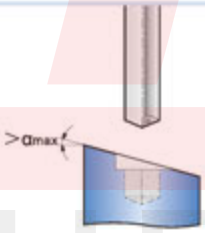


Curved face drilling



When drilling inclined face or curved face, feed rate should be reduced as recommended.

Inclined angle α	Max. feed rate
1°	80%
2°	50%
3°	30%



Surface with a large inclined angle should be pre-treated. Face milling should be conducted before drilling.

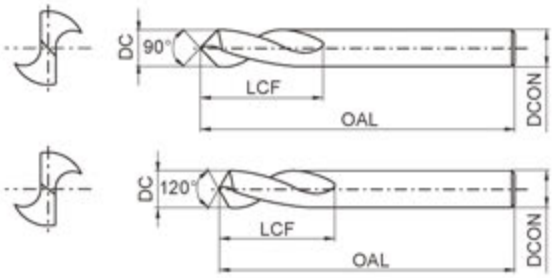
Applicable material table

O Very suitable ○ Suitable

Grade	Workpiece material										
	Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
			~40HRC	~50HRC	~60HRC						
YK20F							O	○	O		

Code key C6
Cutting parameters C163
Technical information C165-C171
Non-standard customization tools C172-C176

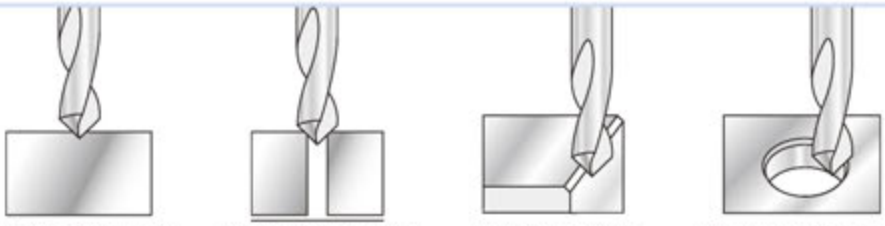
SC series(centering drill) For machining of cast iron, Al alloy



- Suitable for punching center holes and chamfering on CNC machines.
- Compared to conventional center drilling tools, centering drills are more stable and can be easily centered on sloping surfaces.

Drill diameter DC(h6)	Top angle	Cooling mode	Shank type	Type	Basic dimension(mm) Shank diameter DCON	Overall length OAL	Flute length LCF	Recommended grade YK20F
5	90°	External coolant	Straight shank	1143SC90-0500	5.00	62	10	☆
	120°			1143SC120-0500	5.00	62	10	☆
6	90°			1143SC90-0600	6.00	66	15	☆
	120°			1143SC120-0600	6.00	66	15	☆
8	90°			1143SC90-0800	8.00	79	17	☆
	120°			1143SC120-0800	8.00	79	17	☆
10	90°			1143SC90-1000	10.00	89	20	☆
	120°			1143SC120-1000	10.00	89	20	☆
12	90°			1143SC90-1200	12.00	102	25	☆
	120°			1143SC120-1200	12.00	102	25	☆
14	90°			1143SC90-1400	14.00	107	30	☆
	120°			1143SC120-1400	14.00	107	30	☆
16	90°			1143SC90-1600	16.00	115	35	☆
	120°			1143SC120-1600	16.00	115	35	☆
20	90°			1143SC90-2000	20.00	131	40	☆
	120°			1143SC120-2000	20.00	131	40	☆

☆Recommended grade (produce according to order)



Centering drilling machining | Hole chamfering machining | Chamfering machining | Hole chamfering machining

Applicable material table

○Very suitable ○Suitable

Grade	Workpiece material: Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel ~40HRC	~50HRC	~60HRC	Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
YK20F							○	○	○		

Code key C6 | Cutting parameters C164 | Technical information C165-C171 | Non-standard customization tools C172-C176

GD series twist drills(External coolant)

3D 5D

workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Pre-hardened steel ~40HRC		Stainless steel		Cast iron		Nodular cast iron		Heat resistant alloy	
Cutting speed	60~120m/min		60~120m/min		40~70m/min		25~40m/min		60~120m/min		50~100m/min		15~25m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
2	14000	0.06~0.08	14000	0.06~0.08	9500	0.06~0.08	5500	0.02~0.05	14000	0.06~0.08	11000	0.06~0.08	3200	0.02~0.04
3	9500	0.09~0.12	9500	0.09~0.12	6300	0.09~0.12	3700	0.03~0.07	9500	0.09~0.12	7400	0.09~0.12	2100	0.03~0.06
4	7000	0.10~0.15	7000	0.10~0.15	4700	0.10~0.15	2700	0.04~0.08	7000	0.10~0.15	5600	0.10~0.15	1600	0.04~0.07
5	5700	0.12~0.18	5700	0.12~0.18	3800	0.12~0.18	2200	0.05~0.10	5700	0.12~0.18	4500	0.12~0.18	1250	0.05~0.09
6	4700	0.14~0.20	4700	0.14~0.20	3100	0.14~0.20	1850	0.06~0.12	4700	0.14~0.20	3700	0.14~0.20	1050	0.06~0.11
8	3600	0.16~0.24	3600	0.16~0.24	2400	0.16~0.24	1400	0.08~0.16	3600	0.16~0.24	2800	0.16~0.24	800	0.08~0.14
10	2800	0.18~0.27	2800	0.18~0.27	1900	0.18~0.27	1100	0.10~0.18	2800	0.18~0.27	2200	0.18~0.27	600	0.10~0.16
12	2400	0.20~0.30	2400	0.20~0.30	1600	0.20~0.30	930	0.12~0.20	2400	0.20~0.30	1900	0.20~0.30	500	0.12~0.18
14	2100	0.22~0.35	2100	0.22~0.35	1400	0.22~0.35	800	0.13~0.22	2100	0.22~0.35	1600	0.22~0.35	450	0.13~0.20
16	1800	0.25~0.36	1800	0.25~0.36	1200	0.25~0.36	700	0.14~0.25	1800	0.25~0.36	1400	0.25~0.36	400	0.14~0.23
18	1600	0.28~0.38	1600	0.28~0.38	1100	0.28~0.38	620	0.15~0.28	1600	0.28~0.38	1200	0.28~0.38	350	0.15~0.25
20	1400	0.30~0.40	1400	0.30~0.40	950	0.30~0.40	550	0.16~0.30	1400	0.30~0.40	1100	0.30~0.40	320	0.16~0.28
25	1500	0.32~0.42	1500	0.32~0.42	900	0.32~0.42	700	0.17~0.32	1500	0.32~0.42	1100	0.32~0.42	250	0.17~0.3

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cutting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.
4. These conditions above are applicable for cutting depth under 5D.

Recommended cutting parameters

GD series twist drills(Internal coolant) 3D 5D

Workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Pre-hardened steel ~40HRC		Stainless steel		Cast iron		Nodular cast iron		Heat resistant alloy	
Cutting speed	80~150m/min		80~150m/min		50~80m/min		50~80m/min		80~150m/min		60~120m/min		15~25m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
3	12700	0.09~0.12	12700	0.09~0.12	7400	0.09~0.12	6300	0.03~0.07	12700	0.09~0.12	9500	0.09~0.12	2100	0.03~0.06
4	9600	0.10~0.15	9600	0.10~0.15	5600	0.10~0.15	4700	0.04~0.08	9600	0.10~0.15	7000	0.10~0.15	1600	0.04~0.07
5	7600	0.12~0.18	7600	0.12~0.18	4500	0.12~0.18	3800	0.05~0.10	7600	0.12~0.18	5700	0.12~0.18	1250	0.05~0.09
6	6400	0.14~0.20	6400	0.14~0.20	3700	0.14~0.20	3200	0.06~0.12	6400	0.14~0.20	4700	0.14~0.20	1050	0.06~0.11
8	4800	0.16~0.24	4800	0.16~0.24	2800	0.16~0.24	2400	0.08~0.16	4800	0.16~0.24	3600	0.16~0.24	800	0.08~0.14
10	3800	0.18~0.27	3800	0.18~0.27	2200	0.18~0.27	1900	0.10~0.18	3800	0.18~0.27	2800	0.18~0.27	600	0.10~0.16
12	3200	0.20~0.30	3200	0.20~0.30	1900	0.20~0.30	1600	0.12~0.20	3200	0.20~0.30	2400	0.20~0.30	500	0.12~0.18
14	2700	0.22~0.35	2700	0.22~0.35	1600	0.22~0.35	1350	0.13~0.22	2700	0.22~0.35	2100	0.22~0.35	450	0.13~0.20
16	2400	0.25~0.36	2400	0.25~0.36	1400	0.25~0.36	1200	0.14~0.25	2400	0.25~0.36	1800	0.25~0.36	400	0.14~0.23
18	2100	0.28~0.38	2100	0.28~0.38	1200	0.28~0.38	1050	0.15~0.28	2100	0.28~0.38	1600	0.28~0.38	350	0.15~0.25
20	1900	0.30~0.40	1900	0.30~0.40	1100	0.30~0.40	950	0.16~0.30	1900	0.30~0.40	1400	0.30~0.40	320	0.16~0.28
25	1500	0.32~0.42	1500	0.32~0.42	900	0.32~0.42	700	0.17~0.32	1500	0.32~0.42	1100	0.32~0.42	250	0.17~0.3

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cutting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.
4. These conditions above are applicable for cutting depth under 5D.

GD series twist drills(Internal coolant) 8D

Workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Pre-hardened steel ~40HRC		Stainless steel		Cast iron		Nodular cast iron		Aluminum alloy		Heat resistant alloy	
Cutting speed	80~150m/min		80~150m/min		50~80m/min		40~60m/min		80~150m/min		60~120m/min		100~180m/min		15~25m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
3	12700	0.06~0.10	12700	0.06~0.10	7400	0.06~0.10	5300	0.03~0.07	12700	0.06~0.10	9500	0.06~0.10	15000	0.09~0.12	2100	0.03~0.06
4	9600	0.08~0.12	9600	0.08~0.12	5600	0.08~0.12	4000	0.04~0.08	9600	0.08~0.12	7000	0.08~0.12	11100	0.10~0.15	1600	0.04~0.07
5	7600	0.10~0.14	7600	0.10~0.14	4500	0.10~0.14	3200	0.05~0.10	7600	0.10~0.14	5700	0.10~0.14	9000	0.10~0.14	1250	0.05~0.09
6	6400	0.11~0.16	6400	0.11~0.16	3700	0.11~0.16	2700	0.06~0.12	6400	0.11~0.16	4700	0.11~0.16	7400	0.11~0.16	1050	0.06~0.11
8	4800	0.13~0.19	4800	0.13~0.19	2800	0.13~0.19	2000	0.08~0.16	4800	0.13~0.19	3600	0.13~0.19	5600	0.13~0.19	800	0.08~0.14
10	3800	0.14~0.22	3800	0.14~0.22	2200	0.14~0.22	1600	0.10~0.18	3800	0.14~0.22	2800	0.14~0.22	4500	0.14~0.22	600	0.10~0.16
12	3200	0.16~0.24	3200	0.16~0.24	1900	0.16~0.24	1300	0.12~0.20	3200	0.16~0.24	2400	0.16~0.24	3700	0.16~0.24	500	0.12~0.18
14	2700	0.18~0.28	2700	0.18~0.28	1600	0.18~0.28	1100	0.13~0.22	2700	0.18~0.28	2100	0.18~0.28	3200	0.18~0.28	450	0.13~0.20
16	2400	0.20~0.29	2400	0.20~0.29	1400	0.20~0.29	1000	0.14~0.25	2400	0.20~0.29	1800	0.20~0.29	2800	0.20~0.29	400	0.14~0.23
18	2100	0.24~0.32	2100	0.24~0.32	1200	0.24~0.32	880	0.15~0.28	2100	0.24~0.32	1600	0.24~0.32	2500	0.24~0.32	350	0.15~0.25

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cutting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.
4. These conditions above are applicable for cutting depth under 8D.

UD series twist drills(External coolant)

3D 5D

Workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Pre-hardened steel ~40HRC		Stainless steel		Cast iron		Nodular cast iron		Heat resistant alloy	
Cutting speed	60~150m/min		60~150m/min		40~70m/min		25~60m/min		60~150m/min		50~120m/min		15~30m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
2	15000	0.06~0.10	15000	0.06~0.10	9500	0.06~0.10	5500	0.02~0.06	15000	0.06~0.10	11000	0.06~0.10	3200	0.02~0.05
3	10500	0.09~0.15	10500	0.09~0.15	6300	0.09~0.15	4500	0.03~0.09	10500	0.09~0.15	9000	0.09~0.15	2500	0.03~0.07
4	7700	0.10~0.18	7700	0.10~0.18	4700	0.10~0.18	3500	0.04~0.10	7700	0.10~0.18	6800	0.10~0.18	2000	0.04~0.09
5	6800	0.12~0.21	6800	0.12~0.21	3800	0.12~0.21	3000	0.05~0.12	6800	0.12~0.21	5500	0.12~0.21	1500	0.05~0.10
6	6400	0.14~0.24	6400	0.14~0.24	3100	0.14~0.24	2500	0.06~0.15	6400	0.14~0.24	4800	0.14~0.24	1200	0.06~0.12
8	5500	0.16~0.27	5500	0.16~0.27	2400	0.16~0.27	2000	0.08~0.18	5500	0.16~0.27	4000	0.16~0.27	1000	0.08~0.15
10	3500	0.18~0.30	3500	0.18~0.30	1900	0.18~0.30	1500	0.10~0.21	3500	0.18~0.30	3200	0.18~0.30	800	0.10~0.18
12	3000	0.20~0.33	3000	0.20~0.33	1600	0.20~0.33	1200	0.12~0.24	3000	0.20~0.33	2500	0.20~0.33	600	0.12~0.20
14	2800	0.22~0.35	2800	0.22~0.35	1400	0.22~0.35	1100	0.13~0.27	2800	0.22~0.35	2200	0.22~0.35	540	0.13~0.22
16	2500	0.25~0.36	2500	0.25~0.36	1200	0.25~0.36	900	0.14~0.30	2500	0.25~0.36	1800	0.25~0.36	480	0.14~0.24
18	2000	0.28~0.38	2000	0.28~0.38	1100	0.28~0.38	800	0.15~0.30	2000	0.28~0.38	1600	0.28~0.38	420	0.15~0.26
20	1800	0.30~0.40	1800	0.30~0.40	950	0.30~0.40	750	0.16~0.32	1800	0.30~0.40	1400	0.30~0.40	360	0.16~0.28
25	1600	0.32~0.42	1600	0.32~0.42	900	0.32~0.42	700	0.17~0.32	1600	0.32~0.42	1200	0.32~0.42	300	0.17~0.30

1. When the tool is used for first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. Cutting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collect without any defector dust, and keep the radial run-out of drill under 0.02mm.
4. These conditions above are applicable for cutting depth under 5D.

Recommended cutting parameters

UD series twist drills(Internal coolant)

3D 5D

Workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Pre-hardened steel ~40HRC		Stainless steel		Cast iron		Nodular cast iron		Heat resistant alloy	
Cutting speed	60~180m/min		60~180m/min		50~80m/min		50~100m/min		80~180m/min		60~150m/min		15~40m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
3	13000	0.09~0.15	13000	0.09~0.15	7400	0.09~0.15	8000	0.03~0.08	13000	0.09~0.15	10000	0.09~0.15	3000	0.03~0.08
4	10600	0.10~0.18	10600	0.10~0.18	5600	0.10~0.18	6000	0.04~0.10	10600	0.10~0.18	8000	0.10~0.18	2400	0.04~0.10
5	9000	0.12~0.21	9000	0.12~0.21	4500	0.12~0.21	5000	0.05~0.12	9000	0.12~0.21	6700	0.12~0.21	1800	0.05~0.12
6	8000	0.14~0.24	8000	0.14~0.24	3700	0.14~0.24	4000	0.06~0.15	8000	0.14~0.24	6000	0.14~0.24	1600	0.06~0.14
8	6400	0.16~0.27	6400	0.16~0.27	2800	0.16~0.27	3000	0.08~0.18	6400	0.16~0.27	4800	0.16~0.27	1200	0.08~0.16
10	4800	0.18~0.30	4800	0.18~0.30	2200	0.18~0.30	2500	0.10~0.21	4800	0.18~0.30	3500	0.18~0.30	800	0.10~0.18
12	4000	0.20~0.33	4000	0.20~0.33	1900	0.20~0.33	2000	0.12~0.24	4000	0.20~0.33	3000	0.20~0.33	700	0.12~0.20
14	3500	0.22~0.35	3500	0.22~0.35	1600	0.22~0.35	1500	0.13~0.26	3500	0.22~0.35	2500	0.22~0.35	600	0.13~0.22
16	3000	0.25~0.36	3000	0.25~0.36	1400	0.25~0.36	1200	0.14~0.28	3000	0.25~0.36	2200	0.25~0.36	500	0.14~0.24
18	2500	0.28~0.38	2500	0.28~0.38	1200	0.28~0.38	1050	0.15~0.30	2500	0.28~0.38	2000	0.28~0.38	450	0.15~0.26
20	2200	0.30~0.40	2200	0.30~0.40	1100	0.30~0.40	950	0.16~0.32	2200	0.30~0.40	1600	0.30~0.40	400	0.16~0.28
25	1800	0.32~0.42	1800	0.32~0.42	900	0.32~0.42	700	0.17~0.34	1800	0.32~0.42	1200	0.32~0.42	320	0.17~0.30

1. When the tool is used for first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. Cutting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collect without any defector dust, and keep the radial run-out of drill under 0.02mm
4. These conditions above are applicable for cutting depth under 5D.

SU series twist drills(External coolant)

3D 5D

Workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Pre-hardened steel ~40HRC		Stainless steel		Cast iron		Nodular cast iron		Aluminum alloy		Heat resistant alloy	
Cutting speed	60~120m/min		60~120m/min		40~70m/min		25~40m/min		60~120m/min		50~100m/min		60~140m/min		15~25m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
2	14000	0.06~0.08	14000	0.06~0.08	9500	0.06~0.08	5500	0.02~0.05	14000	0.06~0.08	11000	0.06~0.08	16000	0.06~0.08	3200	0.02~0.04
3	9500	0.09~0.12	9500	0.09~0.12	6300	0.09~0.12	3700	0.03~0.07	9500	0.09~0.12	7400	0.09~0.12	10600	0.09~0.12	2100	0.03~0.06
4	7000	0.10~0.15	7000	0.10~0.15	4700	0.10~0.15	2700	0.04~0.08	7000	0.10~0.15	5600	0.10~0.15	8000	0.10~0.15	1600	0.04~0.07
5	5700	0.12~0.18	5700	0.12~0.18	3800	0.12~0.18	2200	0.05~0.10	5700	0.12~0.18	4500	0.12~0.18	6400	0.12~0.18	1250	0.05~0.09
6	4700	0.14~0.20	4700	0.14~0.20	3100	0.14~0.20	1850	0.06~0.12	4700	0.14~0.20	3700	0.14~0.20	5300	0.14~0.20	1050	0.06~0.11
8	3600	0.16~0.24	3600	0.16~0.24	2400	0.16~0.24	1400	0.08~0.16	3600	0.16~0.24	2800	0.16~0.24	4000	0.16~0.24	800	0.08~0.14
10	2800	0.18~0.27	2800	0.18~0.27	1900	0.18~0.27	1100	0.10~0.18	2800	0.18~0.27	2200	0.18~0.27	3200	0.18~0.27	600	0.10~0.16
12	2400	0.20~0.30	2400	0.20~0.30	1600	0.20~0.30	930	0.12~0.20	2400	0.20~0.30	1900	0.20~0.30	2700	0.20~0.30	500	0.12~0.18
14	2100	0.22~0.35	2100	0.22~0.35	1400	0.22~0.35	800	0.13~0.22	2100	0.22~0.35	1600	0.22~0.35	2300	0.22~0.35	450	0.13~0.20
16	1800	0.25~0.36	1800	0.25~0.36	1200	0.25~0.36	700	0.14~0.25	1800	0.25~0.36	1400	0.25~0.36	2000	0.25~0.36	400	0.14~0.23
18	1600	0.28~0.38	1600	0.28~0.38	1100	0.28~0.38	620	0.15~0.28	1600	0.28~0.38	1200	0.28~0.38	1800	0.28~0.38	350	0.15~0.25
20	1400	0.30~0.40	1400	0.30~0.40	950	0.30~0.40	550	0.16~0.30	1400	0.30~0.40	1100	0.30~0.40	1600	0.30~0.40	320	0.16~0.28

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cutting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.
4. These conditions above are applicable for cutting depth under 5D.

Recommended cutting parameters

SU series twist drills(Internal coolant)

3D 5D

Workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Pre-hardened steel ~40HRC		Stainless steel		Cast iron		Nodular cast iron		Aluminum alloy		Heat resistant alloy	
Cutting speed	80~150m/min		80~150m/min		50~80m/min		50~80m/min		80~150m/min		60~120m/min		100~180m/min		15~25m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
3	12700	0.09~0.12	12700	0.09~0.12	7400	0.09~0.12	6300	0.03~0.07	12700	0.09~0.12	9500	0.09~0.12	15000	0.09~0.12	2100	0.03~0.06
4	9600	0.10~0.15	9600	0.10~0.15	5600	0.10~0.15	4700	0.04~0.08	9600	0.10~0.15	7000	0.10~0.15	11100	0.10~0.15	1600	0.04~0.07
5	7600	0.12~0.18	7600	0.12~0.18	4500	0.12~0.18	3800	0.05~0.10	7600	0.12~0.18	5700	0.12~0.18	9000	0.12~0.18	1250	0.05~0.09
6	6400	0.14~0.20	6400	0.14~0.20	3700	0.14~0.20	3200	0.06~0.12	6400	0.14~0.20	4700	0.14~0.20	7400	0.14~0.20	1050	0.06~0.11
8	4800	0.16~0.24	4800	0.16~0.24	2800	0.16~0.24	2400	0.08~0.16	4800	0.16~0.24	3600	0.16~0.24	5600	0.16~0.24	800	0.08~0.14
10	3800	0.18~0.27	3800	0.18~0.27	2200	0.18~0.27	1900	0.10~0.18	3800	0.18~0.27	2800	0.18~0.27	4500	0.18~0.27	600	0.10~0.16
12	3200	0.20~0.30	3200	0.20~0.30	1900	0.20~0.30	1600	0.12~0.20	3200	0.20~0.30	2400	0.20~0.30	3700	0.20~0.30	500	0.12~0.18
14	2700	0.22~0.35	2700	0.22~0.35	1600	0.22~0.35	1350	0.13~0.22	2700	0.22~0.35	2100	0.22~0.35	3200	0.22~0.35	450	0.13~0.20
16	2400	0.25~0.36	2400	0.25~0.36	1400	0.25~0.36	1200	0.14~0.25	2400	0.25~0.36	1800	0.25~0.36	2800	0.25~0.36	400	0.14~0.23
18	2100	0.28~0.38	2100	0.28~0.38	1200	0.28~0.38	1050	0.15~0.28	2100	0.28~0.38	1600	0.28~0.38	2500	0.28~0.38	350	0.15~0.25
20	1900	0.30~0.40	1900	0.30~0.40	1100	0.30~0.40	950	0.16~0.30	1900	0.30~0.40	1400	0.30~0.40	2300	0.30~0.40	320	0.16~0.28

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cutting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.
4. These conditions above are applicable for cutting depth under 5D.

SU series twist drills(Internal coolant)

8D

Workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Pre-hardened steel ~40HRC		Stainless steel		Cast iron		Nodular cast iron		Aluminum alloy		Heat resistant alloy	
Cutting speed	80~150m/min		80~150m/min		50~80m/min		40~60m/min		80~150m/min		60~120m/min		100~180m/min		15~25m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
3	12700	0.06~0.10	12700	0.06~0.10	7400	0.06~0.10	5300	0.03~0.07	12700	0.06~0.10	9500	0.06~0.10	15000	0.09~0.12	2100	0.03~0.06
4	9600	0.08~0.12	9600	0.08~0.12	5600	0.08~0.12	4000	0.04~0.08	9600	0.08~0.12	7000	0.08~0.12	11100	0.10~0.15	1600	0.04~0.07
5	7600	0.10~0.14	7600	0.10~0.14	4500	0.10~0.14	3200	0.05~0.10	7600	0.10~0.14	5700	0.10~0.14	9000	0.10~0.14	1250	0.05~0.09
6	6400	0.11~0.16	6400	0.11~0.16	3700	0.11~0.16	2700	0.06~0.12	6400	0.11~0.16	4700	0.11~0.16	7400	0.11~0.16	1050	0.06~0.11
8	4800	0.13~0.19	4800	0.13~0.19	2800	0.13~0.19	2000	0.08~0.16	4800	0.13~0.19	3600	0.13~0.19	5600	0.13~0.19	800	0.08~0.14
10	3800	0.14~0.22	3800	0.14~0.22	2200	0.14~0.22	1600	0.10~0.18	3800	0.14~0.22	2800	0.14~0.22	4500	0.14~0.22	600	0.10~0.16
12	3200	0.16~0.24	3200	0.16~0.24	1900	0.16~0.24	1300	0.12~0.20	3200	0.16~0.24	2400	0.16~0.24	3700	0.16~0.24	500	0.12~0.18
14	2700	0.18~0.28	2700	0.18~0.28	1600	0.18~0.28	1100	0.13~0.22	2700	0.18~0.28	2100	0.18~0.28	3200	0.18~0.28	450	0.13~0.20
16	2400	0.20~0.29	2400	0.20~0.29	1400	0.20~0.29	1000	0.14~0.25	2400	0.20~0.29	1800	0.20~0.29	2800	0.20~0.29	400	0.14~0.23
18	2100	0.24~0.32	2100	0.24~0.32	1200	0.24~0.32	880	0.15~0.28	2100	0.24~0.32	1600	0.24~0.32	2500	0.24~0.32	350	0.15~0.25

1.When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cutting conditions become stable, gradually increase the cutting speed and feed rate.
2.The cutting conditions above are applicable for drilling with emulsion.
3.When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.
4.These conditions above are applicable for cutting depth under 8D.

Recommended cutting parameters

SU series step drill(External coolant)

workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Pre-hardened steel ~40HRC		Stainless steel		Cast iron		Nodular cast iron		Aluminum alloy		Heat resistant alloy	
Cutting speed	50~100m/min		50~100m/min		30~50m/min		25~40m/min		50~100m/min		40~80m/min		60~120m/min		15~25m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
3.3	5800	0.09~0.12	5800	0.09~0.12	3850	0.09~0.12	2900	0.03~0.07	5800	0.09~0.12	5000	0.09~0.12	10000	0.09~0.12	1600	0.03~0.06
4.2	4550	0.10~0.15	4550	0.10~0.15	3000	0.10~0.15	2300	0.04~0.08	4550	0.10~0.15	3800	0.10~0.15	7600	0.10~0.15	1250	0.04~0.07
5	3800	0.12~0.18	3800	0.12~0.18	2550	0.12~0.18	1900	0.05~0.10	3800	0.12~0.18	3200	0.12~0.18	6400	0.12~0.18	1050	0.05~0.10
6.75	2850	0.14~0.20	2850	0.14~0.20	1900	0.14~0.20	1400	0.06~0.12	2850	0.14~0.20	2400	0.14~0.20	4800	0.14~0.20	800	0.06~0.11
7	2750	0.15~0.22	2750	0.15~0.22	1800	0.15~0.22	1350	0.07~0.14	2750	0.15~0.22	2300	0.15~0.22	4550	0.15~0.22	730	0.07~0.12
8.5	2250	0.16~0.24	2250	0.16~0.24	1500	0.16~0.24	1100	0.08~0.16	2250	0.16~0.24	1800	0.16~0.24	3600	0.16~0.24	600	0.08~0.14
9	2100	0.17~0.25	2100	0.17~0.25	1400	0.17~0.25	1050	0.09~0.17	2100	0.17~0.25	1750	0.17~0.25	3500	0.17~0.25	560	0.09~0.15
10.25	1850	0.18~0.27	1850	0.18~0.27	1250	0.18~0.27	930	0.10~0.18	1850	0.18~0.27	1550	0.18~0.27	3100	0.18~0.27	500	0.10~0.16
10.5	1800	0.19~0.28	1800	0.19~0.28	1200	0.19~0.28	900	0.11~0.19	1800	0.19~0.28	1500	0.19~0.28	3000	0.19~0.28	480	0.11~0.17
12	1600	0.20~0.30	1600	0.20~0.30	1050	0.20~0.30	800	0.12~0.20	1600	0.20~0.30	1300	0.20~0.30	2600	0.20~0.30	450	0.12~0.18
12.5	1550	0.20~0.30	1550	0.20~0.30	1000	0.20~0.30	760	0.12~0.20	1550	0.20~0.30	1250	0.20~0.30	2550	0.20~0.30	410	0.12~0.18
14	1350	0.22~0.35	1350	0.22~0.35	900	0.22~0.35	700	0.14~0.24	1350	0.22~0.35	1150	0.22~0.35	2300	0.22~0.35	370	0.13~0.20
14.5	1300	0.22~0.35	1300	0.22~0.35	880	0.22~0.35	650	0.14~0.24	1300	0.22~0.35	1050	0.22~0.35	2200	0.22~0.35	350	0.13~0.20

1.When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above.
As cutting conditions become stable, gradually increase the cutting speed and feed rate.
2.The cutting conditions above are applicable for drilling with emulsion.
3.When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.

SL series deep twist drills(Internal coolant) 12D

Workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Pre-hardened steel ~40HRC		Stainless steel		Cast iron		Nodular cast iron		Aluminum alloy		Heat resistant alloy	
Cutting speed	60~120m/min		60~120m/min		50~80m/min		40~60m/min		80~150m/min		60~120m/min		100~180m/min		10~20m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
3	10600	0.06~0.1	10600	0.06~0.1	7400	0.06~0.1	5300	0.03~0.07	12700	0.06~0.1	9500	0.06~0.1	15000	0.09~0.12	2100	0.03~0.06
4	8000	0.08~0.12	8000	0.08~0.12	5600	0.08~0.12	4000	0.04~0.08	96000	0.08~0.12	7000	0.08~0.12	11000	0.10~0.15	1600	0.04~0.07
5	6400	0.10~0.14	6400	0.10~0.14	4500	0.10~0.14	3200	0.05~0.10	7600	0.10~0.14	5700	0.10~0.14	9000	0.10~0.15	1250	0.05~0.9
6	5300	0.11~0.16	5300	0.11~0.16	3700	0.11~0.16	2700	0.06~0.12	6400	0.11~0.16	4700	0.11~0.16	7400	0.11~0.16	1050	0.06~0.11
8	4000	0.13~0.19	4000	0.13~0.19	2800	0.13~0.19	2000	0.08~0.16	4800	0.13~0.19	3600	0.13~0.19	5600	0.13~0.19	800	0.08~0.14
10	3200	0.14~0.22	3200	0.14~0.22	2200	0.14~0.22	1600	0.10~0.18	3800	0.14~0.22	2800	0.14~0.22	4500	0.14~0.22	600	0.10~0.16
12	2700	0.16~0.24	2700	0.16~0.24	1900	0.16~0.24	1300	0.12~0.20	3200	0.16~0.24	2400	0.16~0.24	3700	0.16~0.24	500	0.12~0.18
14	2300	0.18~0.28	2300	0.18~0.28	1600	0.18~0.28	1100	0.13~0.22	2700	0.18~0.28	2100	0.18~0.28	3200	0.18~0.28	450	0.13~0.20
16	2100	0.20~0.30	2100	0.20~0.30	1400	0.20~0.30	1050	0.14~0.25	2100	0.20~0.30	1800	0.20~0.30	2800	0.25~0.36	400	0.14~0.23
18	1800	0.22~0.32	1800	0.22~0.32	1200	0.22~0.32	950	0.15~0.28	1800	0.22~0.32	1600	0.22~0.32	2500	0.28~0.38	350	0.15~0.25
20	1600	0.25~0.35	1600	0.25~0.35	1100	0.25~0.35	800	0.16~0.30	1600	0.25~0.35	1400	0.25~0.35	2300	0.30~0.40	320	0.16~0.28

SL series deep twist drills(Internal coolant) 20D 30D

Workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Pre-hardened steel ~40HRC		Stainless steel		Cast iron		Nodular cast iron		Aluminum alloy		Heat resistant alloy	
Cutting speed	70~90m/min		50~80m/min		40~60m/min		40~60m/min		50~80m/min		60~80m/min		100~180m/min		8~15m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
3	8250	0.06~0.1	7650	0.06~0.1	5200	0.06~0.1	4750	0.03~0.07	7100	0.06~0.1	7600	0.06~0.1	12750	0.09~0.12	1350	0.03~0.06
4	6250	0.08~0.12	5750	0.08~0.12	3900	0.08~0.12	3600	0.04~0.08	5400	0.08~0.12	5600	0.08~0.12	9350	0.10~0.15	1050	0.04~0.07
5	5000	0.10~0.14	4600	0.10~0.14	3150	0.10~0.14	2900	0.05~0.10	4250	0.10~0.14	4550	0.10~0.14	7650	0.10~0.15	800	0.05~0.09
6	4150	0.11~0.16	3800	0.11~0.16	2600	0.11~0.16	2450	0.06~0.12	3600	0.11~0.16	3750	0.11~0.16	6300	0.11~0.16	700	0.06~0.11
8	3100	0.13~0.19	2900	0.13~0.19	1950	0.13~0.19	1800	0.08~0.16	2700	0.13~0.19	2900	0.13~0.19	4750	0.13~0.19	500	0.08~0.14
10	2500	0.14~0.22	2300	0.14~0.22	1550	0.14~0.22	1450	0.10~0.18	2150	0.14~0.22	2250	0.14~0.22	3850	0.14~0.22	400	0.10~0.16
12	2100	0.16~0.24	1950	0.16~0.24	1350	0.16~0.24	1150	0.12~0.20	1800	0.16~0.24	1900	0.16~0.24	3150	0.16~0.24	350	0.12~0.18~
14	1800	0.18~0.28	1650	0.18~0.28	1100	0.18~0.28	1000	0.13~0.22	1500	0.18~0.28	1700	0.18~0.28	2700	0.18~0.28	300	0.13~0.20

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cutting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.

SP series twist drills(Internal coolant)

3D

Workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Pre-hardened steel ~40HRC		Stainless steel		Cast iron		Nodular cast iron		Aluminum alloy		Heat resistant alloy	
Cutting speed	80~150m/min		80~150m/min		50~80m/min		50~80m/min		80~150m/min		60~120m/min		100~180m/min		15~25m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
3	12700	0.09~0.12	12700	0.09~0.12	7400	0.09~0.12	6300	0.03~0.07	12700	0.09~0.12	9500	0.09~0.12	15000	0.09~0.12	2100	0.03~0.06
4	9600	0.10~0.15	9600	0.10~0.15	5600	0.10~0.15	4700	0.04~0.08	9600	0.10~0.15	7000	0.10~0.15	11100	0.10~0.15	1600	0.04~0.07
5	7600	0.12~0.18	7600	0.12~0.18	4500	0.12~0.18	3800	0.05~0.10	7600	0.12~0.18	5700	0.12~0.18	9000	0.12~0.18	1250	0.05~0.09
6	6400	0.14~0.20	6400	0.14~0.20	3700	0.14~0.20	3200	0.06~0.12	6400	0.14~0.20	4700	0.14~0.20	7400	0.14~0.20	1050	0.06~0.11
8	4800	0.16~0.24	4800	0.16~0.24	2800	0.16~0.24	2400	0.08~0.16	4800	0.16~0.24	3600	0.16~0.24	5600	0.16~0.24	800	0.08~0.14
10	3800	0.18~0.27	3800	0.18~0.27	2200	0.18~0.27	1900	0.10~0.18	3800	0.18~0.27	2800	0.18~0.27	4500	0.18~0.27	600	0.10~0.16
12	3200	0.20~0.30	3200	0.20~0.30	1900	0.20~0.30	1600	0.12~0.20	3200	0.20~0.30	2400	0.20~0.30	3700	0.20~0.30	500	0.12~0.18
14	2700	0.22~0.35	2700	0.22~0.35	1600	0.22~0.35	1350	0.13~0.22	2700	0.22~0.35	2100	0.22~0.35	3200	0.22~0.35	450	0.13~0.20

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cuting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.
4. These conditions above are applicable for cutting depth under 3D.

ST series twist drills(Internal coolant)

3D 5D

Workpiece material	Mild steel HB≤180		Carbon steel, alloy steel ~30HRC		Stainless steel					
					Austenite		Martensite		Ferrite	
Cutting speed	80~150m/min		80~150m/min		40~80 m/min		50~100 m/min		60~120 m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
3	12700	0.09~0.12	12700	0.09~0.12	6300	0.03~0.07	7400	0.03~0.07	9000	0.03~0.07
4	9600	0.10~0.15	9600	0.10~0.15	4700	0.04~0.08	5600	0.04~0.08	6700	0.04~0.08
5	7600	0.12~0.18	7600	0.12~0.18	3800	0.05~0.10	4500	0.05~0.10	5400	0.05~0.10
6	6400	0.14~0.20	6400	0.14~0.20	3200	0.06~0.12	3700	0.06~0.12	4500	0.06~0.12
8	4800	0.16~0.24	4800	0.16~0.24	2400	0.08~0.16	2800	0.08~0.16	3400	0.08~0.16
10	3800	0.18~0.27	3800	0.18~0.27	1900	0.10~0.18	2200	0.10~0.18	2700	0.10~0.18
12	3200	0.20~0.30	3200	0.20~0.30	1600	0.12~0.20	1900	0.12~0.20	2300	0.12~0.20
14	2700	0.22~0.35	2700	0.22~0.35	1350	0.13~0.22	1600	0.13~0.22	1900	0.13~0.22
16	2400	0.25~0.36	2400	0.25~0.36	1200	0.14~0.25	1400	0.14~0.25	1700	0.14~0.25
18	2100	0.28~0.38	2100	0.28~0.38	1050	0.15~0.28	1200	0.15~0.28	1500	0.15~0.28
20	1900	0.30~0.40	1900	0.30~0.40	950	0.16~0.30	1100	0.16~0.30	1350	0.16~0.30

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cutting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.
4. These conditions above are applicable for cutting depth under 5D.

SH series twist drills(External coolant)

3D

Workpiece material	Hardened steel					
	40~50HRC		50~55HRC		55~60HRC	
Cutting speed	20~40m/min		15~30m/min		10~20m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
3	3200	0.02~0.03	2100	0.02~0.03	1060	0.015~0.02
4	2400	0.03~0.04	1600	0.03~0.04	800	0.02~0.025
5	1900	0.04~0.05	1250	0.04~0.05	640	0.025~0.03
6	1600	0.05~0.06	1050	0.05~0.06	530	0.03~0.04
8	1200	0.06~0.08	800	0.06~0.07	400	0.04~0.05
10	950	0.08~0.10	640	0.07~0.08	320	0.05~0.06
12	800	0.10~0.12	530	0.08~0.09	270	0.06~0.07
14	680	0.12~0.14	450	0.09~0.10	230	0.07~0.08
16	600	0.14~0.16	400	0.10~0.12	200	0.08~0.10

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cutting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.
4. These conditions above are applicable for cutting depth under 3D.

SC series twist drills(External coolant)

3D 5D

Workpiece material	Cast iron		Nodular cast iron		Silicon aluminium alloy				Aluminum alloy	
					Si≤10%		Si>10%			
Cutting speed	50~80m/min		40~70m/min		100~180m/min		80~140m/min		120~200m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
2	9550	0.06~ 0.08	8000	0.06~ 0.08	20000	0.07~0.16	18000	0.07~0.16	24000	0.07~0.16
3	6400	0.09~ 0.12	5300	0.09~ 0.12	15000	0.09~0.18	12700	0.09~0.18	16000	0.09~0.18
4	4800	0.10~ 0.15	4000	0.10~ 0.15	11000	0.10~0.22	9600	0.10~0.22	12000	0.10~0.22
5	3800	0.12~ 0.18	3200	0.12~ 0.18	9000	0.12~0.25	7600	0.12~0.25	10000	0.12~0.25
6	3100	0.14~ 0.20	2700	0.14~ 0.20	7400	0.14~0.28	6400	0.14~0.28	8500	0.14~0.28
8	2400	0.16~ 0.24	2000	0.16~ 0.24	5600	0.18~0.32	4800	0.18~0.32	6400	0.18~0.32
10	1900	0.18~ 0.27	1600	0.18~ 0.27	4500	0.22~0.36	3800	0.22~0.36	5000	0.22~0.36
12	1600	0.20~ 0.30	1300	0.20~ 0.30	3700	0.25~0.40	3200	0.25~0.40	4200	0.25~0.40
14	1350	0.22~ 0.35	1150	0.22~ 0.35	3200	0.27~0.44	2700	0.27~0.44	3600	0.27~0.44
16	1200	0.25~ 0.36	1000	0.25~ 0.36	2800	0.32~0.48	2400	0.32~0.48	3200	0.32~0.48

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cutting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.
4. These conditions above are applicable for cutting depth under 5D.

PA series coated 3 flutes drill(External coolant) 3D

Workpiece material	Cast iron		Nodular cast iron		Silicon aluminium alloy Si≤10%		Silicon aluminium alloy Si>10%		Aluminum alloy		Heat resistant alloy	
Cutting speed	60~120m/min		50~100m/min		100~180m/min		80~140m/min		120~200m/min		20~40m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
3	9500	0.09~0.12	7400	0.09~0.12	14000	0.07~0.16	12700	0.07~0.16	16000	0.07~0.16	3200	0.03~0.06
4	7000	0.10~0.15	5600	0.10~0.15	10000	0.09~0.18	9600	0.09~0.18	12000	0.09~0.18	2400	0.04~0.07
5	5700	0.12~0.18	4500	0.12~0.18	9000	0.10~0.22	7600	0.10~0.22	10000	0.10~0.22	1900	0.05~0.09
6	4700	0.14~0.20	3700	0.14~0.20	7400	0.12~0.25	6400	0.12~0.25	8500	0.12~0.25	1600	0.06~0.11
8	3600	0.16~0.24	2800	0.16~0.24	5600	0.14~0.28	4800	0.14~0.28	6400	0.14~0.28	1200	0.08~0.14
10	2800	0.18~0.27	2200	0.18~0.27	4500	0.18~0.32	3800	0.18~0.32	5000	0.18~0.32	950	0.10~0.16
12	2400	0.20~0.30	1900	0.20~0.30	3700	0.22~0.36	3200	0.22~0.36	4200	0.22~0.36	800	0.12~0.18
14	2100	0.22~0.35	1600	0.22~0.35	3200	0.25~0.40	2700	0.25~0.40	3600	0.25~0.40	700	0.13~0.20
16	1800	0.25~0.36	1400	0.25~0.36	2800	0.27~0.44	2400	0.27~0.44	3200	0.27~0.44	600	0.14~0.23
18	1600	0.28~0.38	1200	0.28~0.38	2500	0.32~0.48	2100	0.32~0.48	2800	0.32~0.48	530	0.15~0.25
20	1400	0.30~0.40	1100	0.30~0.40	2300	0.36~0.54	1900	0.36~0.54	2550	0.36~0.54	480	0.16~0.28

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cuting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.
4. These conditions above are applicable for cutting depth under 3D.

PA series non-coated 3 flutes drill(External coolant) 3D

Workpiece material	Cast iron		Nodular cast iron		Silicon aluminium alloy Si≤10%		Silicon aluminium alloy Si>10%		Aluminum alloy		Heat resistant alloy	
Cutting speed	50~100m/min		40~70m/min		80~160m/min		60~120m/min		100~180m/min		15~25m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
3	7400	0.09~0.12	5300	0.09~0.12	12700	0.07~0.16	10000	0.07~0.16	15000	0.07~0.16	2100	0.03~0.06
4	5600	0.10~0.15	4000	0.10~0.15	9600	0.09~0.18	8000	0.09~0.18	11000	0.09~0.18	1600	0.04~0.07
5	4500	0.12~0.18	3200	0.12~0.18	7600	0.10~0.22	6300	0.10~0.22	9000	0.10~0.22	1250	0.05~0.09
6	3700	0.14~0.20	2700	0.14~0.20	6400	0.12~0.25	5300	0.12~0.25	7400	0.12~0.25	1050	0.06~0.11
8	2800	0.16~0.24	2000	0.16~0.24	4800	0.14~0.28	4000	0.14~0.28	5600	0.14~0.28	800	0.08~0.14
10	2200	0.18~0.27	1600	0.18~0.27	3800	0.18~0.32	3200	0.18~0.32	4500	0.18~0.32	600	0.10~0.16
12	1900	0.20~0.30	1300	0.20~0.30	3200	0.22~0.36	2700	0.22~0.36	3700	0.22~0.36	500	0.12~0.18
14	1600	0.22~0.35	1100	0.22~0.35	2700	0.25~0.40	2300	0.25~0.40	3200	0.25~0.40	450	0.13~0.20
16	1400	0.25~0.36	1000	0.25~0.36	2400	0.27~0.44	2000	0.27~0.44	2800	0.27~0.44	400	0.14~0.23
18	1200	0.28~0.38	880	0.28~0.38	2100	0.32~0.48	1800	0.32~0.48	2500	0.32~0.48	350	0.15~0.25
20	1100	0.30~0.40	800	0.30~0.40	1900	0.36~0.54	1600	0.36~0.54	2300	0.36~0.54	320	0.16~0.28

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cuting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.
4. These conditions above are applicable for cutting depth under 3D.

PC series straight flute drill(External coolant) 5D

Workpiece material	Cast iron		Nodular cast iron		Silicon aluminium alloy				Aluminum alloy	
					Si≤10%		Si>10%			
Cutting speed	60~120m/min		50~100m/min		100~200m/min		80~160m/min		120~220m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
4	7000	0.10~ 0.15	5600	0.10~ 0.15	11000	0.12~ 0.20	9600	0.12~ 0.20	12000	0.12~ 0.20
5	5700	0.12~ 0.18	4500	0.12~ 0.18	9000	0.14~ 0.26	7600	0.14~ 0.26	10000	0.14~ 0.26
6	4700	0.14~ 0.20	3700	0.14~ 0.20	7400	0.16~ 0.28	6400	0.16~ 0.28	8500	0.16~ 0.28
8	3600	0.16~ 0.24	2800	0.16~ 0.24	5500	0.18~ 0.30	4800	0.18~ 0.30	6400	0.18~ 0.30
10	2800	0.18~ 0.27	2200	0.18~ 0.27	4500	0.20~ 0.32	3800	0.20~ 0.32	5000	0.20~ 0.32
12	2400	0.20~ 0.30	1900	0.20~ 0.30	3700	0.24~ 0.36	3200	0.24~ 0.36	4200	0.24~ 0.36
14	2100	0.22~ 0.35	1600	0.22~ 0.35	3200	0.28~ 0.44	2700	0.28~ 0.44	3600	0.28~ 0.44
16	1800	0.25~ 0.36	1400	0.25~ 0.36	2800	0.30~ 0.48	2400	0.30~ 0.48	3200	0.30~ 0.48
18	1600	0.28~0.38	1200	0.28~ 0.38	2500	0.34~ 0.52	2100	0.34~ 0.52	3000	0.34~ 0.52
20	1400	0.30~0.40	1100	0.30~ 0.40	2300	0.40~ 0.63	1900	0.40~ 0.63	2500	0.40~ 0.63

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cutting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.
4. These conditions above are applicable for cutting depth under 5D.

PC series straight flute drill(Internal coolant) 15D

Workpiece material	Cast iron		Nodular cast iron		Silicon aluminium alloy				Aluminum alloy	
					Si≤10%		Si>10%			
Cutting speed	60~120m/min		50~100m/min		100~200m/min		80~160m/min		120~220m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
5	5700	0.08~ 0.14	4500	0.08~ 0.14	9000	0.09~ 0.18	7600	0.09~ 0.18	10000	0.09~ 0.18
6	4700	0.10~ 0.16	3700	0.10~ 0.16	7400	0.12~ 0.20	6400	0.12~ 0.20	8500	0.12~ 0.20
8	3600	0.12~ 0.20	2800	0.12~ 0.20	5500	0.12~ 0.24	4800	0.12~ 0.24	6400	0.12~ 0.24
10	2800	0.14~ 0.23	2200	0.14~ 0.23	4500	0.16~ 0.28	3800	0.16~ 0.28	5000	0.16~ 0.28
12	2400	0.16~ 0.26	1900	0.16~ 0.26	3700	0.18~ 0.32	3200	0.18~ 0.32	4200	0.18~ 0.32
14	2100	0.18~ 0.32	1600	0.18~ 0.32	3200	0.20~ 0.36	2700	0.20~ 0.36	3600	0.20~ 0.36

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cutting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for drilling with emulsion.
3. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.
4. These conditions above are applicable for cutting depth under 15D.

SC series centering drill(External coolant)

Centering drilling

Workpiece material	Cast iron		Nodular cast iron		Silicon aluminium alloy				Aluminum alloy	
					Si≤10%		Si>10%			
Cutting speed	60~120m/min		50~100m/min		100~180m/min		80~140m/min		120~200m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
5	6400	0.09~0.14	5100	0.09~0.14	9000	0.12~0.25	7600	0.12~0.25	10000	0.12~0.25
6	5300	0.12~0.16	4200	0.12~0.16	7400	0.14~0.28	6400	0.14~0.28	8500	0.14~0.28
8	4000	0.13~0.20	3200	0.13~0.20	5600	0.18~0.32	4800	0.18~0.32	6400	0.18~0.32
10	3200	0.17~0.25	2500	0.17~0.25	4500	0.22~0.36	3800	0.22~0.36	5000	0.22~0.36
12	2700	0.20~0.30	2100	0.20~0.30	3700	0.25~0.40	3200	0.25~0.40	4200	0.25~0.40
14	2400	0.22~0.32	1800	0.22~0.32	3200	0.27~0.44	2700	0.27~0.44	3600	0.27~0.44
16	2000	0.24~0.34	1600	0.24~0.34	2800	0.32~0.48	2400	0.32~0.48	3200	0.32~0.48
20	1600	0.28~0. 40	1300	0.28~0. 40	2300	0.40~0.60	1900	0.40~0.60	2550	0.40~0.60

1. The cutting datas above are suitable for centering drilling machining.
2. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cuting conditions become stable, gradually increase the cutting speed and feed rate.
3. The cutting conditions above are applicable for drilling with emulsion.
4. When centering on bevels and toroidal surfaces, please reduce the feed speed.
5. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.

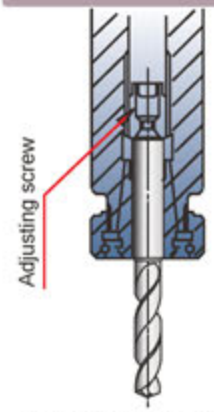
Chamfering

Workpiece material	Cast iron		Nodular cast iron		Silicon aluminium alloy				Aluminum alloy	
					Si≤10%		Si>10%			
Cutting speed	90~180m/min		70~150m/min		150~270m/min		120~210m/min		180~300m/min	
Diameter (mm)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)	Rotating speed (min^{-1})	Feed rate (mm/r)
5	9600	0.09~0.20	7600	0.09~0.20	13500	0.12~0.30	11500	0.12~0.30	15000	0.12~0.30
6	8000	0.12~0.22	6400	0.12~0.22	11100	0.14~0.34	9600	0.14~0.34	12700	0.14~0.34
8	6000	0.13~0.28	4800	0.13~0.28	8400	0.18~0.40	7200	0.18~0.40	9600	0.18~0.40
10	4800	0.17~0.32	3800	0.17~0.32	6800	0.22~0.44	5700	0.22~0.44	7600	0.22~0.44
12	4000	0.20~0.38	3200	0.20~0.38	5600	0.25~0.50	4800	0.25~0.50	6400	0.25~0.50
14	3600	0.22~0.42	2700	0.22~0.42	4800	0.27~0.56	4000	0.27~0.56	5400	0.27~0.56
16	3000	0.24~0.46	2400	0.24~0.46	4200	0.32~0.60	3600	0.32~0.60	4800	0.32~0.60
20	2400	0.28~0.58	1900	0.28~0.58	3500	0.40~0.76	2850	0.40~0.76	3800	0.40~0.76

1. When the tool is used for the first time, please do a test cutting with 90% of the cutting speed or 85% of the feed rate stated above. As cuting conditions become stable, gradually increase the cutting speed and feed rate.
2. The cutting datas above are suitable for chamfering machining.
3. The cutting conditions above are applicable for drilling with emulsion.
4. When clamping drill, please use a collet without any defect or dust, and keep the radial run-out of drill under 0.02mm.

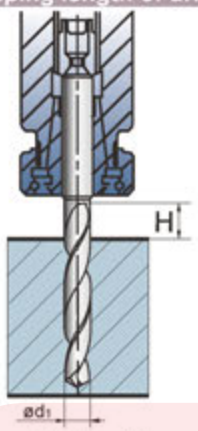
Application guide of drills

Drill clampling



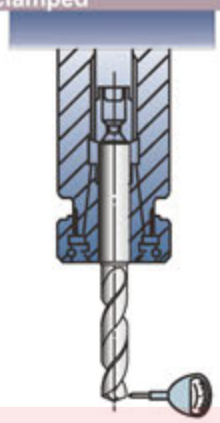
Guarantee tight clamping by using thrust bearing type collet chuck.

How to define the clamping length of drill



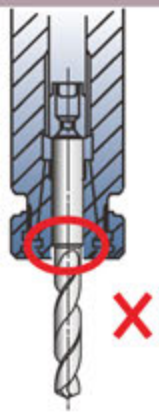
Ensure the size of H is over 1.5d1

Radial run-out of drill clamped



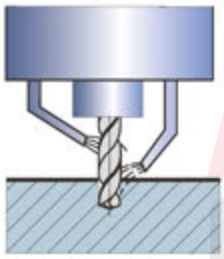
The Radial Run-out should be under 0.02mm.

Wrong drill clamping



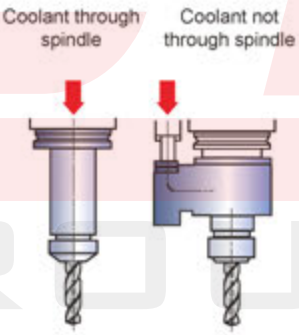
Do not clamp on the drill flutes.

Correct coolant method



The coolant liquid should be injected to the end and the middle of drill as shown in the figure.

Internal cooling: coolant supply method



coolant pressure is about 0.5~1MPa (coolant pressure is 2~3MPa when the diameter is less than Ø5 mm)
Coolant volume is 1.5~4L/min.

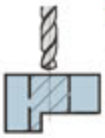
Cautions on coolant use

When using internal coolant

①The little chip particles and dust will cause jamming in the oil hole. A fine mesh filter should be used to prevent such jamming, especially for small-diameter drills.

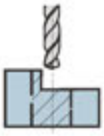
②Dirt and dust particles will adhere to the oil hole and lead to unsmooth coolant flow. Coolant change as early as possible is recommended.

Cautions on interrupted cutting



Can be drilled

Reduce the feed rate when drilling interrupted part.



Pre-machining prior to drilling

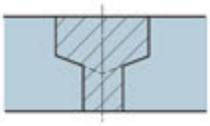
Countersink with end mill prior to drilling.

Correct method for thin workpiece

Bending occurs

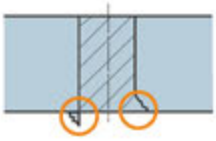
Add a supporter

Drilling method of stepped holes



①Divided to two drilling processes.
②Drill the larger diameter hole firstly.
※Multiple step and chamfer drill can be produced by us.

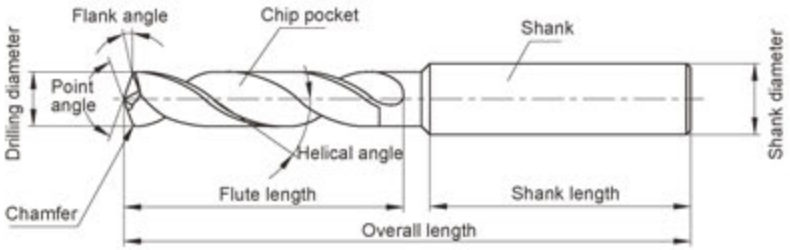
Burrs and workpiece chippings on exit

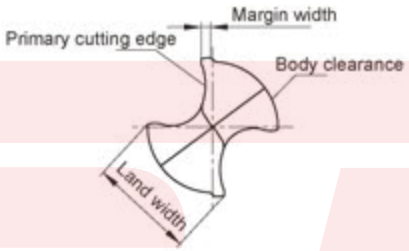


①Reduce the feed rate when approaching the exit.
②Machine chamfers at the point of exit.
③Change the point angle.

Parts terminology of drill

Terminology of drill





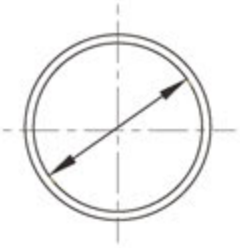
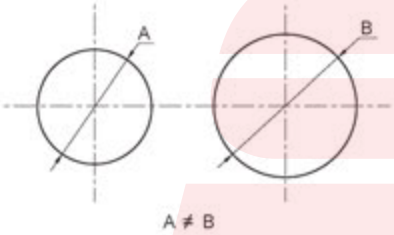
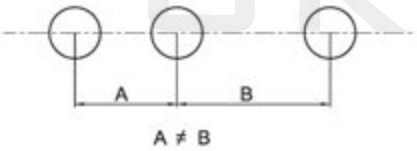
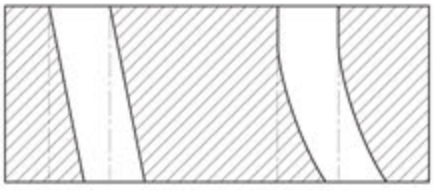
Representative cutting edge shapes

Shape	 (Conical)	 (Dual face)	 (Candler)
Features	● The flank face is conical and the clearance angel increases toward the center of drill. ● Wide applications, commonly used for both soft and hard materials	● Flank face with dual flats to facilitate cutting and initial entering. ● Often used for small-diameter drills.	● Two-stage point angle with perfect centering capability, less burr generated when drilling hole. ● First choice for drilling thin plate.

Structure specification and cutting characteristics

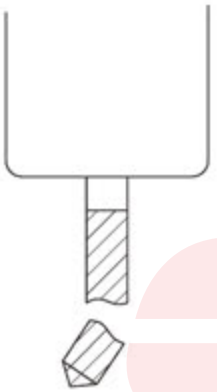
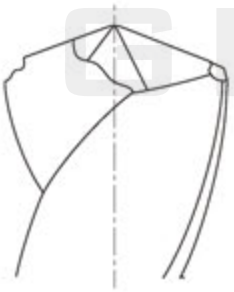
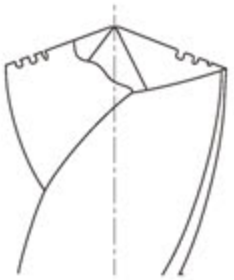
Chip pocket	The function of chip pocket is to remove the chips out of the hole. The larger the cross-sectional area is, the easier for chips to be evacuated.
Helical angle	The helical angle is the inclined angle of flute at the axial direction of a drill. It varies according to the different position of cutting edge. It decreases greatly from the peripheral toward the center. High hardness material Small ← Helical angle → Large Soft material
Flute length	It is determined by depth of hole, guide bushing length and regrinding allowance. The longer the flute is, the lower the drill rigidity is, which greatly affects tool life. So it is recommended to minimize the flute length as much as possible when other requirements are met. The minimal flute length generally is depth of hole plus 1.5 times of the hole diameter.
Point angle	Generally 118°, set differently as per various applications. Soft easy-to-cut material Small ← Point angle → Large for hard materials or high-efficiency machining
Core	It is an important factor that influence the rigidity and chip control of a drill. It is set according to applications. Low axial cutting force, Low rigidity, Easy-to-cut materials } Thin ← Core thickness → Thick { Large axial cutting force, High rigidity, For machining of high hardness materials, cross hole drilling etc.
Margin	As a drill guide during drilling process. The margin width need to take the hole friction into consideration. Low friction with hole wall, poor guiding performance small ← margin width → large Good guiding performance, high friction with hole wall
Back taper	In order to decrease the friction with inside wall of the drilled hole, there is a slight back taper from tool nose to shank. The degree is usually represented by the quantity decreasing in the diameter per 100 mm flute length.
Body clearance	It is the part formed on the clearance face after margin, mainly to reduce the friction between inside wall of hole and drill peripheral.

Common problems and solutions for drilling

	Problem	Cause	Solution
Hole	Oversize holes 	Poor clamping Large run-out around spindle	Select the holder and chuck with high precision Calibrating spindle Check and adjust after clamping drill
		Non-symmetric point angle Large run-out Chisel edge is off center	Regrind drill Check the precision after regrinding
	Irregular hole size 	Non-symmetric point angle Large run-out Chisel edge is off center Excessive margin abrasion	Select the holder and chuck with high precision Calibrating the spindle Check and adjust when clamping drill
		Poor clamping Large spindle run-out Workpiece is not firmly held	Select the holder and chuck with high precision Calibrating spindle Check and adjust after clamping drill
		Feed rate is too high	Reduce the feed speed
		Coolant provide is not enough	Change the coolant supply method, or increase coolant volume
	Low position accuracy 	Poor re-positioning precision of spindle Poor clamping Large run-out with spindle	Improve the re-positioning precision of machine Select the holder and chuck with high precision Calibrating the spindle Check and adjust after clamping drill
		The feed direction is not vertical to the workpiece surface	Adjust the feed direction vertical to the workpiece
		Top center not align with the spindle center (lathe)	Check and adjust alignment carefully before drilling
	Bad linearity Bad perpendicularity 	Excessive tool abrasion	Regrind
		Poor center hole accuracy	Increase the position accuracy of hole
		Non-symmetric point angle Large run-out Chisel edge is off center	Regrind drill Check the precision after regrinding
		Insufficient drill rigidity	Increase drill rigidity
		Uneven workpiece surface Top center does not align with the spindle center (lathe)	The workpiece must be horizontal or pre-machined to horizontal before drilling Pre-drill a center hole

	Problem	Cause	Solution
Hole	Poor roundness 	Non-symmetric point angle Large drill run-out Chisel edge is off center	Regrind drill Check the precision after regrinding
		Poor clamping Large spindle run-out Workpiece is not firmly held	Select the holder and chuck with high precision Calibrating the spindle Check run-out and adjust after clamping drill
		Clearance angle is too large	Regrind drill
		Insufficient drill rigidity	Increase drill rigidity
	Poor workpiece surface quality	Incorrect regrinding	Regrind calibration
		Insufficient coolant or unsuitable coolant type	Change coolant supply method, increase coolant volume Select the cutting oil with good lubricating property
		Poor clamping Large spindle run-out	Select the holder and chuck with high precision Calibrating the spindle
		Feed rate is too high	Decrease the feed rate
		Excessive abrasion on cutting edge Excessive build-up on margin	Regrind drill Select a coated drill
		Chip jamming	Select a suitable drill (considering flute geometry , helical angle etc) Change the cutting method (adjust feed rate, use step feed etc)
	Poor cylindricity 	Non-symmetric point angle Large drill run-out Chisel edge is off center Excessive margin abrasion	Regrind drill Check the precision after regrinding
		Feed speed is too low	Increase the feed speed

Common problems and solutions for drilling

	Problem	Cause	Solution
Drill	Drill breakage 	Bend ,distortion and slippage of machine and workpiece	Increase the rigidity of drill, machine, workpiece and clamping rigidity
		Clearance angle is too small	Regrind and calibrate
		Feed rate is too high	Decrease the feed rate
		Excessive drill abrasion	Regrind drill
		Chip jamming	Select a suitable drill (considering flute geometry , helical angle etc) Change the cutting method (adjust feed rate, use step feed etc)
		Difficult entering the workpiece	Increase the rigidity of drill and machine Increase rigidity of workpiece and clamping. Select the drill with a sharp point for easy entry Pre-drill a centre hole Adjust the level of workpiece or pre-machined to horizontal before drilling Use guide bushing or bushing plate
	Chipping on the cutting corner 	Unsuitable drill material	Select the suitable drill material
		Hard lump on the workpiece	Analyse the workpiece or select a suitable workpiece Change the cutting parameters(cutting speed , feed rate or machining method)
		Feed rate is too high	Reduce feed rate
		Insufficient coolant	Change coolant supply method, increase coolant volume
	Breakage 	Poor clamping Large spindle run-out	Select the holder and chuck with high precision Calibrating the spindle
		Cutting speed and feed speed are too high	Reduce the cutting speed and feed speed.
		Clearance angle is too large	Regrind and calibrate
		Unsuitable drill material	Select the suitable drill material

	Problem	Cause	Solution
Drill	Abnormal abrasion on cutting corner 	Regrinding delay	Regrind in time
		Drill point does not align with the spindle center (lathe)	Check and adjust alignment carefully before drilling
		Cutting speed is too high	Reduce cutting speed
		Cutting edge shape is inappropriate	Select appropriate cutting edge shape
		Unsuitable drill material	Select suitable drill material
		Incorrect coolant type	Change coolant
	Abrasion and chipping on chisel edge	Feed speed is too high	Reduce feed speed.
		Cutting edge shape is inappropriate	Select appropriate cutting edge shap
		Unsuitable drill material	Select suitable drill material
		Clearance angle is too small	Regrind drill
	Breakage on margin	The size of guide bushing or drill bushing is too large	Select another bush with correct size
	Margin build-up	Excessive abrasion on cutting edge generates high heat	Regrind drill
		Insufficient coolant	Change coolant supply method, increase coolant volume
		Incorrect coolant type	Change coolant
		Workpiece material is too soft	Change drill or machining method
	High vibration	Clearance angle is too large	Regrind drill
		Drill rigidity is not enough	Increase drill rigidity
	Chips roll around the drill	Long chips Chip removal is not fluent	Change the drill and adjust machining method and cutting parameters
	One-side abrasion	Drill point does not align with the spindle center (lathe)	Check and adjust the alignment carefully before drilling
		Poor clamping	Fix drill carefully, control the radial run-out

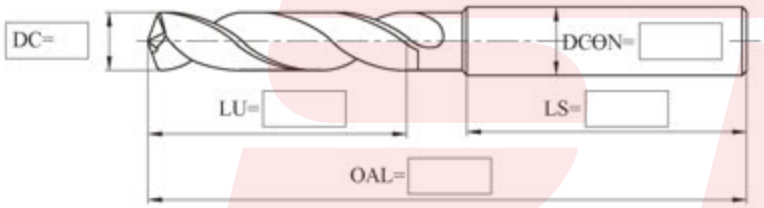
Company name:	ZCC·CT
Fax:	Huanghe Southern Road, Tianyuan Zone, Zhuzhou. Hunan province
Tel:	Fax: 0731-22882721 22885420 22887878
E-MAIL:	Zip code: 412007 E-mail:zccct@zccct.com

When the diameter specification or length specification on the catalog does not meet your needs, we provide more professional, more precise non-standard customization, you just need to easily choose the series you need.

Diameter Range	External coolant	Ø2.0～Ø20.0mm
	Internal coolant	Ø3.0～Ø20.0mm

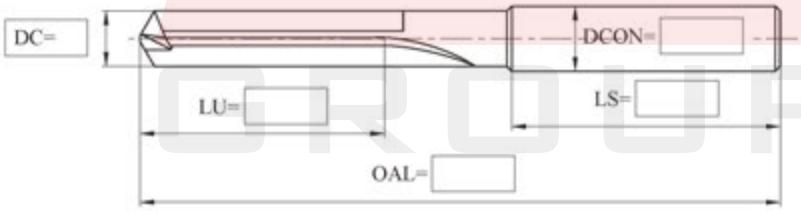
Coolant type
☐ External coolant
☐ Internal coolant

A. Twist drill



Twist drill bit series selection	
☐ GD series	☐ ST series
☐ SL series	☐ SC series

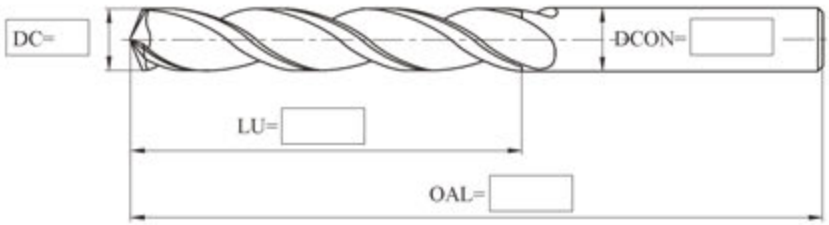
B. Straight groove drill



Straight groove drill bit series selection:

☐ PC series

C. Three flute drill



Three flute drill bit series selection:

☐ PA series

Note:

Order Quantity:	PCS	Expected delivery date:
Quotation:		Confirmation:
		Date:

Special non-standard tooling customization(twist drill)

Company name:	ZCC·CT
Fax:	Huanghe Southern Road, Tianyuan Zone, Zhuzhou. Hunan province
Tel:	Fax: 0731-22882721 22885420 22887878
E-MAIL:	Zip code: 412007 E-mail:zccct@zccct.com

Hole information and workpiece material

Size of processed hole= _____ mm

Tolerance of processed hole= _____

Depth of processed hole= _____ mm

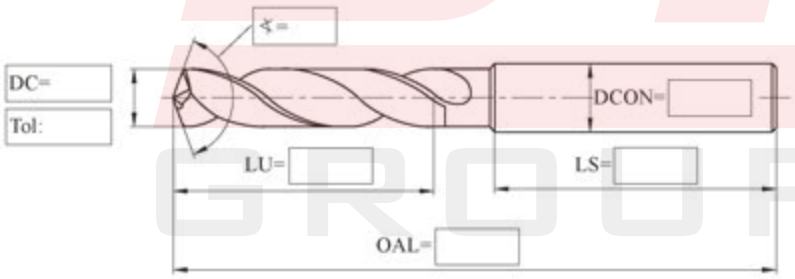
- ☐ Carbon Steel
- ☐ Alloy Steel
- ☐ Pre-hardened steel
- ☐ Hardened steel
- ☐ Stainless Steel
- ☐ Grey cast iron
- ☐ Ductile Iron
- ☐ Copper Alloy
- ☐ Aluminum alloy
- ☐ Titanium alloy
- ☐ Heat-resistant alloys

Material grade to be processed: _____

Tensile strength= _____ N/mm^2

Hardness= _____ Units:(HRC,HB,etc.)

Tool Information



Shank form	
DIN6535	☐ Form HA
	☐ Form HB
	☐ Form HE
	☐ Ordinary straight handle
	☐ With flat tail handle DIN 1809
	☐ Morse Taper Shank MT ☐
	Special shapes

Coolant type	
Internal coolant	
External coolant	

Coating	
Coated	☐
Non-Coated	☐

Note:

Order Quantity:	PCS	Expected delivery date:
Quotation:		Confirmation:
		Date:

Special non-standard tool customization(step twist drill)

Company name:	ZCC·CT
Fax:	Huanghe Southern Road, Tianyuan Zone, Zhuzhou. Hunan province
Tel:	Fax: 0731-22882721 22885420 22887878
E-MAIL:	Zip code: 412007 E-mail:zccct@zccct.com

Hole information and workpiece material

Hole shape to be machined: ☐ ☐

Small hole size= _____ mm

Small hole tolerance= _____

Large hole size= _____ mm

Large hole tolerance= _____

Depth of hole to be machined= _____ mm

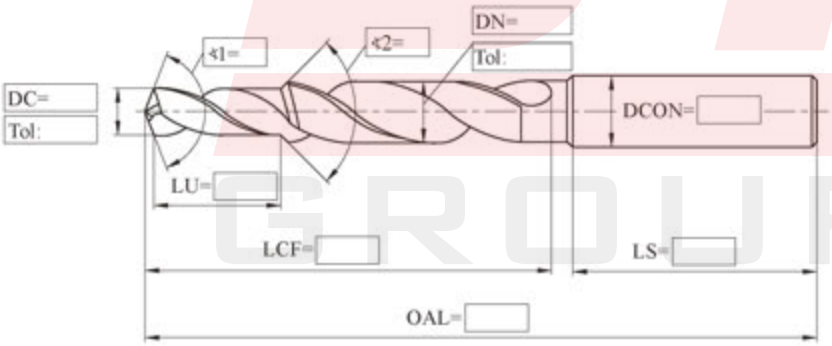
☐ Carbon Steel
☐ Alloy Steel
☐ Pre-hardened steel
☐ Hardened steel
☐ Stainless Steel
☐ Grey cast iron
☐ Ductile Iron
☐ Copper Alloy
☐ Aluminum alloy
☐ Titanium alloy
☐ Heat-resistant alloys

Material grade to be processed: _____

Tensile strength= _____ N/mm^2

Hardness= _____ Units:(HRC,HB,etc.)

Tool Information



Shank form	
DIN6535	☐ Form HA
	☐ Form HB
	☐ Form HE
	☐ Ordinary straight handle
	☐ With flat tail handle DIN 1809
	☐ Morse Taper Shank MT ☐
	Special shapes

Coolant type	
Internal coolant	
External coolant	

Coating	
Coated	☐
Non-Coated	☐

Note:

Order Quantity:	PCS	Expected delivery date:
Quotation:		Confirmation:
		Date:

Special non-standard tool customization(stepped straight groove drill)

Company name:	ZCC·CT
Fax:	Huanghe Southern Road, Tianyuan Zone, Zhuzhou. Hunan province
Tel:	Fax: 0731-22882721 22885420 22887878
E-MAIL:	Zip code: 412007 E-mail:zccct@zccct.com

Hole information and workpiece material

Size of processed hole= ____ mm

Tolerance of processed hole= ____

Depth of processed hole= ____ mm

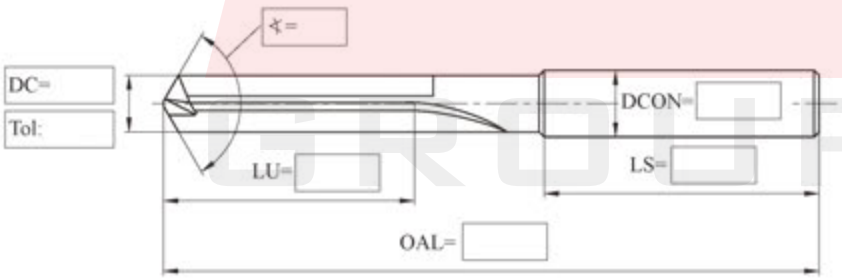
Straight groove drills are widely used for cutting short cutting materials, from cast iron, common aluminum alloys, to high silicon aluminum alloys.

- ☐ Grey cast iron
- ☐ Ductile Iron
- ☐ Aluminum alloy
- ☐ Silicon Aluminum Alloy Si<10%
- ☐ Silicon Aluminum Alloy Si≥10%

Material grade to be processed: ____

Tensile strength= ____ N/mm²

Hardness= ____ Units:(HRC,HB,etc.)



Shank form	
DIN6535	☐ Form HA
	☐ Form HB
	☐ Form HE
	☐ Ordinary straight handle
	☐ With flat tail handle DIN 1809
	☐ Morse Taper Shank MT☐
	Special shapes

Coolant type	
Internal coolant	
External coolant	

Coating	
Coated	☐
Non-Coated	☐

Note:

Order Quantity:	PCS	Expected delivery date:
Quotation:		Confirmation:
		Date:

Special non-standard tool customization(stepped straight groove drill)

Company name:	ZCC-CT
Fax:	Huanghe Southern Road, Tianyuan Zone, Zhuzhou. Hunan province
Tel:	Fax: 0731-22882721 22885420 22887878
E-MAIL:	Zip code: 412007 E-mail:zccct@zccct.com

Hole information and workpiece material

Hole shape to be machined: ☐ ☐

Small hole size= _____ mm

Small hole tolerance= _____

Large hole size= _____ mm

Large hole tolerance= _____

Depth of hole to be machined= _____ mm

Straight groove drills are widely used for cutting short cutting materials, from cast iron, common aluminum alloys, to high silicon aluminum alloys.

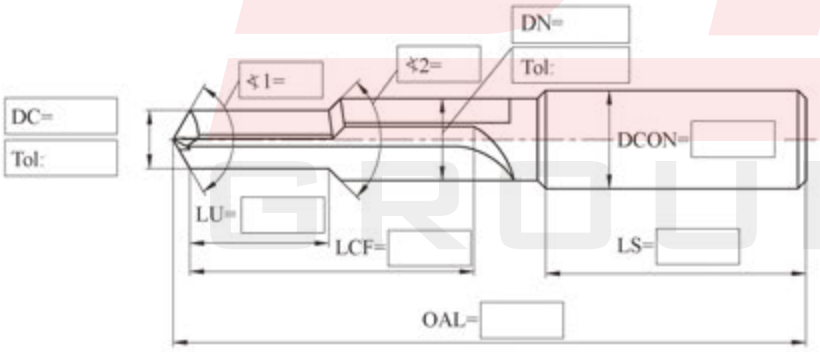
☐ Grey cast iron
☐ Ductile Iron
☐ Aluminum alloy
☐ Silicon Aluminum Alloy Si<10%
☐ Silicon Aluminum Alloy Si≥10%

Material grade to be processed: _____

Tensile strength= _____ N/mm²

Hardness= _____ Units:(HRC,HB,etc.)

Tool Information



Shank form	
DIN6535	☐ Form HA
	☐ Form HB
	☐ Form HE
	☐ Ordinary straight handle
	☐ With flat tail handle DIN 1809
	☐ Morse Taper Shank MT ☐
	Special shapes

Coolant type	
Internal coolant	
External coolant	

Coating	
Coated	☐
Non-Coated	☐

Note:

Order Quantity:	PCS	Expected delivery date:
Quotation:		Confirmation:
		Date:

How to choose the right Indexable drill

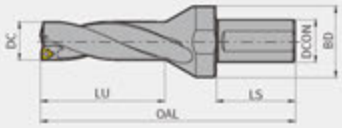
Shape

Product category

Cutting tool specification
Includes tool type, basic dimensions, applicable inserts, spare parts

Indexable drill

3D



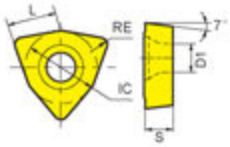
Type	Stock	Basic dimension(mm)						Applicable inserts	Insert screw	Wrench
		DC	DCON	BD	LS	LU	OAL			
ZD03-400-XP40-WC06-02	△	40	40	47	70	125	218	WCMX06T308	I60M3×9	WT09IP
ZD03-410-XP40-WC06-02	△	41	40	47	70	128	221	WCMX06T308	I60M3×9	WT09IP
ZD03-420-XP40-WC08-02	△	42	40	52	70	131	231	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-430-XP40-WC08-02	△	43	40	52	70	134	234	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-440-XP40-WC08-02	△	44	40	52	70	137	237	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-450-XP40-WC08-02	△	45	40	52	70	140	240	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-460-XP40-WC08-02	△	46	40	52	70	143	243	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-470-XP40-WC08-02	△	47	40	52	70	146	246	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-480-XP40-WC08-02	△	48	40	52	70	149	249	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-490-XP40-WC08-02	△	49	40	52	70	152	252	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-500-XP40-WC08-02	△	50	40	52	70	155	255	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-510-XP40-WC08-02	△	51	40	60	70	158	258	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-520-XP40-WC08-02	△	52	40	60	70	161	261	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-530-XP40-WC08-02	△	53	40	60	70	164	264	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-540-XP40-WC08-02	△	54	40	60	70	167	267	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-550-XP40-WC08-02	△	55	40	60	70	170	270	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-560-XP40-WC08-02	△	56	40	60	70	173	273	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-570-XP40-WC08-02	△	57	40	60	70	176	276	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-580-XP40-WC08-02	△	58	40	60	70	179	279	WCMX080412	I60M3.5×10.4	WT15IP

▲Stock available △Make-to-order

ZD03 applicable inserts

-53

-PG



Type	Basic dimension(mm)					PVD grade
	L	IC	S	D1	RE	YBG202
WCMX030208R-53	3.8	5.56	2.38	2.8	0.8	★
WCMX040208R-53	4.3	6.35	2.38	3.1	0.8	★
WCMX050308R-53	5.4	7.94	3.18	3.2	0.8	★
WCMX06T308R-53	6.5	9.525	3.97	3.7	0.8	★
WCMX080412R-53	8.7	12.7	4.76	4.3	1.2	★
WCMX030208R-PG	3.8	5.56	2.38	2.8	0.8	★
WCMX040208R-PG	4.3	6.35	2.38	3.1	0.8	★
WCMX050308R-PG	5.4	7.94	3.18	3.2	0.8	★
WCMX06T308R-PG	6.5	9.525	3.97	3.7	0.8	★
WCMX080412R-PG	8.7	12.7	4.76	4.3	1.2	★

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Shape

Product category

Inserts specification
Including type, dimension, grade and stock.

Indexable drill code key

ZD 03 - 300 - XP 32 - W C 05 - 02

The ratio of length and diameter

02, 03, 04, 05

Tool diameter

Range	130-580
	13mm-58mm

Insert shape

W	80°
S	

Insert clearance angle

C	7°
P	11°

Cutting edge length(mm)

Code	Edge length	
	W	S
03	3.8	
04	4.3	
05	5.4	5.0
06	6.5	6.0
07		7.94
08	8.7	
09		9.8
11		11.5

Tool type

Code	Description
ZD	Indexable drill
ZTD	Double helical inner coolant indexable shallow drill
ZSD	Indexable shallow drill

Coupling structure and type

Code	Description
XP	Weldon shank

Coupling size(mm)

20, 25, 32, 40

Number of tooth

High Efficient Indexable Drill

ZSD series

2 Patents

- Unique waved-edge geometry structure produces steady cutting and smooth chip evacuation;
- Insert designed for double balanced radial run-out control for achieving high accuracy and precision even in long overhang applications;
- Wiper technology produces excellent surface quality and diameter dimension consistency;
- Strong impact-resistance and highly rigid design structure helps achieve high speed, high efficiency, and high stability machining;
- Economical four-edges insert, design suitable for Deep-hole drilling in 2D~5D.

▲ -EM
Geometry for soft steels to prevent chip-wrapping.

▲ -XM
General-purpose geometry for stable machining operations.

▲ -LM
Geometry for Stainless steel and sticky chip materials.

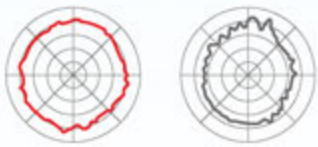
▲ -XR
Machining of hard materials, strengthen cutting edges.

There are four types of geometry, suitable for high efficiency and stability machining in multiple materials.

Case study

Workpiece material: 45°steel (HB170-220)
Tool: ZSD05-160-XP20-SP05-02
Insert: SPMX050204-XM/YB9320
Cutting data: Vc=120m/min, f=0.07mm/r, ap=80mm
Cooling: Internal coolant supply

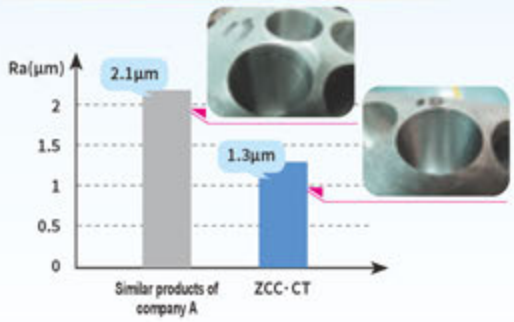
Aperture cylindricity



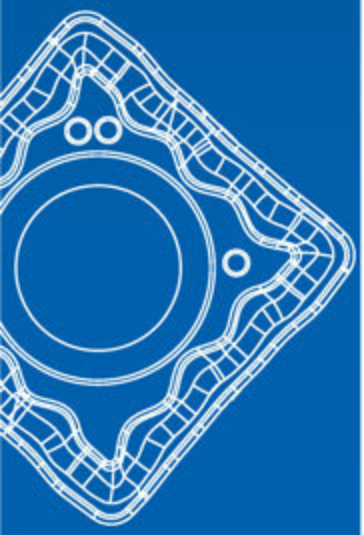
ZCC·CT Similar products of company A

Cylindricity	0.03mm	0.15mm

Hole surface quality



Conclusion: under the same working conditions, the machined hole surface quality by ZSD series indexable insert drill contributes to better hole precision than A company's similar products.



CVD Cemented Carbide Coating Grades

YB6338 (Peripheral edge inserts)

- The substrate is made of toughness gradient cemented carbide with enriched surface bonding phase, and adopts nano-dioxide gradient transition layer and nucleus pre-growth coating technology, with high wear resistance and heat resistance.
- Suitable for high speed, high feed, stable working conditions drilling. The first choice for steel and cast iron external edge drilling processing.

PVD Cemented Carbide Coating Grades

YBM215 (Inner/Peripheral edge inserts)

Nano-multilayer PVD coating grades

- Significantly improve the wear resistance and anti-temperature performance of the coating. Gradient transition layer technology effectively improves the coating stress state and interface state, reduces stress concentration, improves the strength between the coating and the substrate,and increases the stability of the tool, suitable for drilling stainless steel materials.

YBS203 (Inner/Peripheral edge inserts)

General grades for S materials

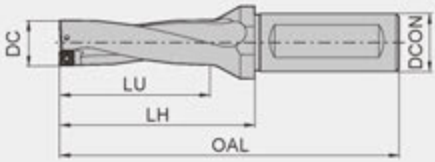
- Through the alloy toughness enhancement technology, the crack extension and high temperature oxidation resistance of the tool is improved while ensuring high wear resistance.
- The use of a new carbide matrix formula significantly improves the tool's high temperature performance, extends tool life, and ensures both the wear resistance and impact resistance.

YB9320 (Inner/Peripheral edge inserts)

Suitable for M material milling

- Atomic rearrangement technology, to achieve the long-range orderly arrangement of different coating materials, to achieve the perfect matching of hardness and toughness, effectively solving the problem of high temperature destabilisation of multi-coating interfaces, and improving the high temperature performance of coatings.
- High toughness matrix with TiAlN-based nanomultilayer coating, unique ion etching technology to strengthen the edge and improve the bond strength between the coating and the matrix.
- Advanced surface treatment technology to optimise stress distribution and ensure a better overall performance.

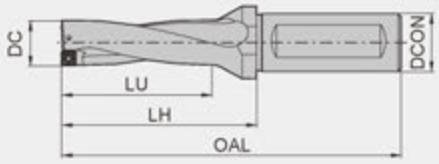
Indexable drill ZSD02 2D



Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LH	OAL			
ZSD02-120-XP20-SP04-02	▲	12.0	20	27	44	94	SPMX040203-XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD02-125-XP20-SP04-02	▲	12.5	20	28	45	95	SPMX040203-XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD02-130-XP20-SP04-02	▲	13.0	20	29	46	96	SPMX040203-XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD02-135-XP20-SP04-02	▲	13.5	20	30	47	97	SPMX040203-XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD02-140-XP20-SP04-02	▲	14.0	20	31	48	98	SPMX040203-XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD02-145-XP20-SP04-02	▲	14.5	20	32	49	99	SPMX040203-XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD02-150-XP20-SP05-02	▲	15.0	20	33	50	100	SPMX050204-XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD02-155-XP20-SP05-02	▲	15.5	20	34	51	101	SPMX050204-XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD02-160-XP20-SP05-02	▲	16.0	20	35	52	102	SPMX050204-XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD02-165-XP20-SP05-02	▲	16.5	20	36	53	103	SPMX050204-XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD02-170-XP20-SP05-02	▲	17.0	20	37	54	104	SPMX050204-XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD02-175-XP20-SP05-02	▲	17.5	20	38	55	105	SPMX050204-XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD02-180-XP25-SP06-02	▲	18.0	25	39	57	113	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD02-185-XP25-SP06-02	▲	18.5	25	40	58	114	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD02-190-XP25-SP06-02	▲	19.0	25	41	59	115	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD02-195-XP25-SP06-02	▲	19.5	25	42	60	116	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD02-200-XP25-SP06-02	▲	20.0	25	43	61	117	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD02-205-XP25-SP06-02	▲	20.5	25	44	62	118	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD02-210-XP25-SP06-02	▲	21.0	25	45	63	119	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD02-215-XP25-SP06-02	▲	21.5	25	46	64	120	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD02-220-XP25-SP06-02	▲	22.0	25	47	65	121	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD02-225-XP25-SP07-02	▲	22.5	25	48	66	122	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD02-230-XP25-SP07-02	▲	23.0	25	49	67	123	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD02-235-XP25-SP07-02	▲	23.5	25	50	68	124	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD02-240-XP25-SP07-02	▲	24.0	25	51	69	125	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD02-245-XP25-SP07-02	▲	24.5	25	52	70	126	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD02-250-XP25-SP07-02	▲	25.0	25	53	71	127	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD02-255-XP25-SP07-02	▲	25.5	25	54	72	128	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD02-260-XP25-SP07-02	▲	26.0	25	55	73	129	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD02-265-XP25-SP07-02	▲	26.5	25	56	74	130	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD02-270-XP25-SP07-02	▲	27.0	25	57	75	131	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP

▲Stock available △Make-to-order

Indexable drill ZSD02 2D



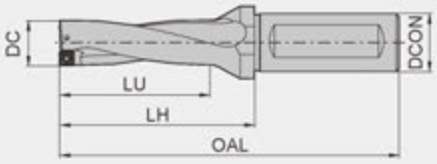
Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LH	OAL			
ZSD02-275-XP25-SP07-02	▲	27.5	25	58	76	132	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD02-280-XP32-SP09-02	▲	28.0	32	59	79	139	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD02-285-XP32-SP09-02	▲	28.5	32	60	80	140	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD02-290-XP32-SP09-02	▲	29.0	32	61	81	141	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD02-295-XP32-SP09-02	▲	29.5	32	62	82	142	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD02-300-XP32-SP09-02	▲	30.0	32	63	83	143	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD02-305-XP32-SP09-02	▲	30.5	32	64	84	144	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD02-310-XP32-SP09-02	▲	31.0	32	65	85	145	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD02-315-XP32-SP09-02	▲	31.5	32	66	86	146	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD02-320-XP32-SP09-02	▲	32.0	32	67	87	147	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD02-325-XP32-SP09-02	▲	32.5	32	68	88	148	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD02-330-XP32-SP09-02	▲	33.0	32	69	89	149	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD02-335-XP32-SP09-02	▲	33.5	32	70	90	150	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD02-340-XP40-SP11-02	▲	34.0	40	71	96	166	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-345-XP40-SP11-02	△	34.5	40	72	97	167	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-350-XP40-SP11-02	▲	35.0	40	73	98	168	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-355-XP40-SP11-02	△	35.5	40	74	99	169	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-360-XP40-SP11-02	▲	36.0	40	75	100	170	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-365-XP40-SP11-02	△	36.5	40	76	101	171	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-370-XP40-SP11-02	▲	37.0	40	77	102	172	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-375-XP40-SP11-02	△	37.5	40	78	103	173	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-380-XP40-SP11-02	▲	38.0	40	79	104	174	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-385-XP40-SP11-02	△	38.5	40	80	105	175	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-390-XP40-SP11-02	▲	39.0	40	81	106	176	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-395-XP40-SP11-02	△	39.5	40	82	107	177	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-400-XP40-SP11-02	▲	40.0	40	83	108	178	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-405-XP40-SP11-02	△	40.5	40	84	109	179	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-410-XP40-SP11-02	▲	41.0	40	85	110	180	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-415-XP40-SP11-02	△	41.5	40	86	111	181	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-420-XP40-SP11-02	▲	42.0	40	87	119	189	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD02-425-XP40-SP14-02	△	42.5	40	88	120	190	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP

▲Stock available △Make-to-order

Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LH	OAL			
ZSD02-430-XP40-SP14-02	▲	43.0	40	89	121	191	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD02-435-XP40-SP14-02	△	43.5	40	90	122	192	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD02-440-XP40-SP14-02	▲	44.0	40	91	123	193	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD02-445-XP40-SP14-02	△	44.5	40	92	124	194	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD02-450-XP40-SP14-02	▲	45.0	40	93	125	195	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD02-455-XP40-SP14-02	△	45.5	40	94	126	196	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD02-460-XP40-SP14-02	▲	46.0	40	95	127	197	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD02-465-XP40-SP14-02	△	46.5	40	96	128	198	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD02-470-XP40-SP14-02	▲	47.0	40	97	129	199	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD02-475-XP40-SP14-02	△	47.5	40	98	130	200	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD02-480-XP40-SP14-02	▲	48.0	40	99	131	201	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD02-485-XP40-SP14-02	△	48.5	40	100	132	202	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD02-490-XP40-SP14-02	▲	49.0	40	101	133	203	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD02-495-XP40-SP14-02	△	49.5	40	102	134	204	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD02-500-XP40-SP14-02	▲	50.0	40	103	135	205	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP

▲Stock available △Make-to-order

Indexable drill ZSD03 3D



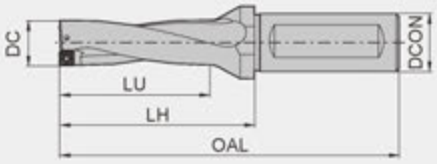
Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LH	OAL			
ZSD03-120-XP20-SP04-02	▲	12.0	20	39	55	105	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD03-125-XP20-SP04-02	▲	12.5	20	41	57	107	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD03-130-XP20-SP04-02	▲	13.0	20	42	58	108	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD03-135-XP20-SP04-02	▲	13.5	20	44	60	110	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD03-140-XP20-SP04-02	▲	14.0	20	45	61	111	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD03-145-XP20-SP04-02	▲	14.5	20	47	63	113	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD03-150-XP20-SP05-02	▲	15.0	20	48	64	114	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD03-155-XP20-SP05-02	▲	15.5	20	50	66	116	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD03-160-XP20-SP05-02	▲	16.0	20	51	67	117	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD03-165-XP20-SP05-02	▲	16.5	20	53	69	119	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD03-170-XP20-SP05-02	▲	17.0	20	54	70	120	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD03-175-XP20-SP05-02	▲	17.5	20	56	72	122	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD03-180-XP25-SP06-02	▲	18.0	25	57	75	131	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD03-185-XP25-SP06-02	▲	18.5	25	59	77	133	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD03-190-XP25-SP06-02	▲	19.0	25	60	78	134	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD03-195-XP25-SP06-02	▲	19.5	25	62	80	136	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD03-200-XP25-SP06-02	▲	20.0	25	63	81	137	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD03-205-XP25-SP06-02	▲	20.5	25	65	83	139	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD03-210-XP25-SP06-02	▲	21.0	25	66	84	140	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD03-215-XP25-SP06-02	▲	21.5	25	68	86	142	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD03-220-XP25-SP06-02	▲	22.0	25	69	87	143	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD03-225-XP25-SP07-02	▲	22.5	25	71	89	145	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD03-230-XP25-SP07-02	▲	23.0	25	72	91	147	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD03-235-XP25-SP07-02	▲	23.5	25	74	93	149	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD03-240-XP25-SP07-02	▲	24.0	25	75	94	150	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD03-245-XP25-SP07-02	▲	24.5	25	77	96	152	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP

▲Stock available △Make-to-order

Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LH	OAL			
ZSD03-250-XP25-SP07-02	▲	25.0	25	78	97	153	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD03-255-XP25-SP07-02	▲	25.5	25	80	99	155	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD03-260-XP25-SP07-02	▲	26.0	25	81	100	156	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD03-265-XP25-SP07-02	▲	26.5	25	83	102	158	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD03-270-XP25-SP07-02	▲	27.0	25	84	104	160	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD03-275-XP25-SP07-02	▲	27.5	25	86	106	162	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD03-280-XP32-SP09-02	▲	28.0	32	87	109	169	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD03-285-XP32-SP09-02	▲	28.5	32	89	111	171	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD03-290-XP32-SP09-02	▲	29.0	32	90	112	172	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD03-295-XP32-SP09-02	▲	29.5	32	92	114	174	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD03-300-XP32-SP09-02	▲	30.0	32	93	115	175	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD03-305-XP32-SP09-02	▲	30.5	32	95	117	177	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD03-310-XP32-SP09-02	▲	31.0	32	96	118	178	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD03-315-XP32-SP09-02	▲	31.5	32	98	120	180	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD03-320-XP32-SP09-02	▲	32.0	32	99	121	181	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD03-325-XP32-SP09-02	▲	32.5	32	101	123	183	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD03-330-XP32-SP09-02	▲	33.0	32	102	124	184	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD03-335-XP32-SP09-02	▲	33.5	32	104	126	186	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD03-340-XP40-SP11-02	▲	34.0	40	105	130	200	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-345-XP40-SP11-02	△	34.5	40	107	132	202	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-350-XP40-SP11-02	▲	35.0	40	108	133	203	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-355-XP40-SP11-02	△	35.5	40	100	135	205	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-360-XP40-SP11-02	▲	36.0	40	111	136	206	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-365-XP40-SP11-02	△	36.5	40	113	138	208	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-370-XP40-SP11-02	▲	37.0	40	114	139	209	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-375-XP40-SP11-02	△	37.5	40	116	141	211	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-380-XP40-SP11-02	▲	38.0	40	117	142	212	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-385-XP40-SP11-02	△	38.5	40	119	144	214	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-390-XP40-SP11-02	▲	39.0	40	120	145	215	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-395-XP40-SP11-02	△	39.5	40	122	147	217	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-400-XP40-SP11-02	▲	40.0	40	123	148	218	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-405-XP40-SP11-02	△	40.5	40	125	150	220	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-410-XP40-SP11-02	▲	41.0	40	126	151	221	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-415-XP40-SP11-02	△	41.5	40	128	153	223	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD03-420-XP40-SP11-02	▲	42.0	40	129	161	231	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP

▲Stock available △Make-to-order

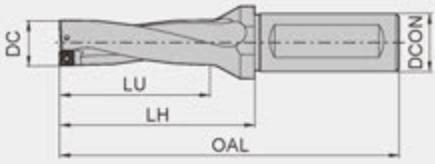
Indexable drill ZSD03 3D



Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LH	OAL			
ZSD03-425-XP40-SP14-02	△	42.5	40	131	163	233	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-430-XP40-SP14-02	▲	43.0	40	132	164	234	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-435-XP40-SP14-02	△	43.5	40	134	166	236	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-440-XP40-SP14-02	▲	44.0	40	135	167	237	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-445-XP40-SP14-02	△	44.5	40	137	169	239	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-450-XP40-SP14-02	▲	45.0	40	138	170	240	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-455-XP40-SP14-02	△	45.5	40	140	172	242	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-460-XP40-SP14-02	▲	46.0	40	141	173	243	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-465-XP40-SP14-02	△	46.5	40	142	175	245	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-470-XP40-SP14-02	▲	47.0	40	144	176	246	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-475-XP40-SP14-02	△	47.5	40	146	178	248	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-480-XP40-SP14-02	▲	48.0	40	147	179	249	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-485-XP40-SP14-02	△	48.5	40	149	181	251	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-490-XP40-SP14-02	▲	49.0	40	150	182	252	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-495-XP40-SP14-02	△	49.5	40	152	184	254	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD03-500-XP40-SP14-02	▲	50.0	40	153	185	255	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP

▲Stock available △Make-to-order

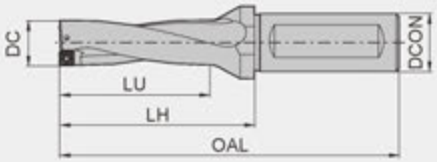
Indexable drill ZSD04 4D



Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LH	OAL			
ZSD04-120-XP20-SP04-02	▲	12.0	20	51	67	117	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD04-125-XP20-SP04-02	▲	12.5	20	53	69	119	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD04-130-XP20-SP04-02	▲	13.0	20	55	71	121	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD04-135-XP20-SP04-02	▲	13.5	20	57	73	123	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD04-140-XP20-SP04-02	▲	14.0	20	59	75	125	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD04-145-XP20-SP04-02	▲	14.5	20	61	77	127	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD04-150-XP20-SP05-02	▲	15.0	20	63	79	129	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD04-155-XP20-SP05-02	▲	15.5	20	65	81	131	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD04-160-XP20-SP05-02	▲	16.0	20	67	83	133	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD04-165-XP20-SP05-02	▲	16.5	20	69	85	135	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD04-170-XP20-SP05-02	▲	17.0	20	71	87	137	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD04-175-XP20-SP05-02	▲	17.5	20	73	89	139	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD04-180-XP25-SP06-02	▲	18.0	25	75	93	149	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD04-185-XP25-SP06-02	▲	18.5	25	77	95	151	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD04-190-XP25-SP06-02	▲	19.0	25	79	97	153	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD04-195-XP25-SP06-02	▲	19.5	25	81	99	155	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD04-200-XP25-SP06-02	▲	20.0	25	83	101	157	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD04-205-XP25-SP06-02	▲	20.5	25	85	103	159	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD04-210-XP25-SP06-02	▲	21.0	25	87	105	161	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD04-215-XP25-SP06-02	▲	21.5	25	89	107	163	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD04-220-XP25-SP06-02	▲	22.0	25	91	109	165	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD04-225-XP25-SP07-02	▲	22.5	25	93	111	167	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-230-XP25-SP07-02	▲	23.0	25	95	114	170	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-235-XP25-SP07-02	▲	23.5	25	97	116	172	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-240-XP25-SP07-02	▲	24.0	25	99	118	174	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-245-XP25-SP07-02	▲	24.5	25	101	120	176	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-250-XP25-SP07-02	▲	25.0	25	103	122	178	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-250-XP32-SP07-02	▲	25.0	32	103	122	182	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-255-XP25-SP07-02	▲	25.5	25	105	125	181	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-255-XP32-SP07-02	▲	25.5	32	105	125	185	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-260-XP25-SP07-02	▲	26.0	25	107	126	182	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP

▲Stock available △Make-to-order

Indexable drill ZSD04 4D



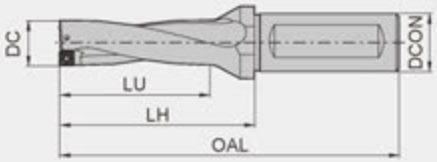
Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LH	OAL			
ZSD04-260-XP32-SP07-02	▲	26.0	32	107	126	186	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-265-XP25-SP07-02	▲	26.5	25	109	128	184	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-265-XP32-SP07-02	▲	26.5	32	109	128	188	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-270-XP25-SP07-02	▲	27.0	25	111	131	187	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-270-XP32-SP07-02	▲	27.0	32	111	131	191	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-275-XP25-SP07-02	▲	27.5	25	113	134	190	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-275-XP32-SP07-02	▲	27.5	32	113	134	194	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD04-280-XP32-SP09-02	▲	28.0	32	115	139	199	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-285-XP32-SP09-02	▲	28.5	32	117	141	201	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-290-XP32-SP09-02	▲	29.0	32	119	143	203	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-295-XP32-SP09-02	▲	29.5	32	121	145	205	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-300-XP32-SP09-02	▲	30.0	32	123	147	207	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-305-XP32-SP09-02	▲	30.5	32	125	149	209	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-310-XP32-SP09-02	▲	31.0	32	127	151	211	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-315-XP32-SP09-02	▲	31.5	32	129	153	213	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-320-XP32-SP09-02	▲	32.0	32	131	155	215	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-320-XP40-SP09-02	▲	32.0	40	131	155	225	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-325-XP32-SP09-02	▲	32.5	32	133	157	217	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-325-XP40-SP09-02	▲	32.5	40	133	157	227	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-330-XP32-SP09-02	▲	33.0	32	135	159	219	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-330-XP40-SP09-02	▲	33.0	40	135	159	229	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-335-XP32-SP09-02	▲	33.5	32	137	161	221	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-335-XP40-SP09-02	▲	33.5	40	137	161	231	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD04-340-XP40-SP11-02	▲	34.0	40	139	164	234	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-345-XP40-SP11-02	△	34.5	40	141	166	236	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-350-XP40-SP11-02	▲	35.0	40	143	168	238	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-355-XP40-SP11-02	△	35.5	40	145	170	240	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-360-XP40-SP11-02	▲	36.0	40	147	172	242	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-365-XP40-SP11-02	△	36.5	40	149	174	244	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-370-XP40-SP11-02	▲	37.0	40	151	176	246	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-375-XP40-SP11-02	△	37.5	40	153	178	248	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP

▲Stock available △Make-to-order

Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LH	OAL			
ZSD04-380-XP40-SP11-02	▲	38.0	40	155	180	250	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-385-XP40-SP11-02	△	38.5	40	157	182	252	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-390-XP40-SP11-02	▲	39.0	40	159	184	254	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-395-XP40-SP11-02	△	39.5	40	161	186	256	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-400-XP40-SP11-02	▲	40.0	40	163	188	258	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-405-XP40-SP11-02	△	40.5	40	165	190	260	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-410-XP40-SP11-02	▲	41.0	40	167	192	262	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-415-XP40-SP11-02	△	41.5	40	169	194	264	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-420-XP40-SP11-02	▲	42.0	40	171	203	273	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-420-XP50-SP11-02	△	42.0	50	171	203	283	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD04-425-XP40-SP14-02	△	42.5	40	173	205	275	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-425-XP50-SP14-02	△	42.5	50	173	205	285	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-430-XP40-SP14-02	▲	43.0	40	175	207	277	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-430-XP50-SP14-02	△	43.0	50	175	207	287	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-435-XP40-SP14-02	△	43.5	40	177	209	279	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-435-XP50-SP14-02	△	43.5	50	177	209	289	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-440-XP40-SP14-02	▲	44.0	40	179	211	281	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-440-XP50-SP14-02	△	44.0	50	179	211	291	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-445-XP40-SP14-02	△	44.5	40	181	213	283	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-445-XP50-SP14-02	△	44.5	50	181	213	293	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-450-XP40-SP14-02	▲	45.0	40	183	215	285	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-450-XP50-SP14-02	△	45.0	50	183	225	295	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-455-XP40-SP14-02	△	45.5	40	185	217	287	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-455-XP50-SP14-02	△	45.5	50	185	217	297	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-460-XP40-SP14-02	▲	46.0	40	187	219	289	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-460-XP50-SP14-02	△	46.0	50	187	219	299	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-465-XP40-SP14-02	△	46.5	40	189	221	291	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-465-XP50-SP14-02	△	46.5	50	189	221	301	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-470-XP40-SP14-02	▲	47.0	40	191	223	293	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-470-XP50-SP14-02	△	47.0	50	191	223	303	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-475-XP40-SP14-02	△	47.5	40	193	225	295	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-475-XP50-SP14-02	△	47.5	50	193	225	305	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-480-XP40-SP14-02	▲	48.0	40	195	227	297	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-480-XP50-SP14-02	△	48.0	50	195	227	307	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-485-XP40-SP14-02	△	48.5	40	197	229	299	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-485-XP50-SP14-02	△	48.5	50	197	229	309	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-490-XP40-SP14-02	▲	49.0	40	199	231	301	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-490-XP50-SP14-02	△	49.0	50	199	231	311	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-495-XP40-SP14-02	△	49.5	40	201	233	303	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-495-XP50-SP14-02	△	49.5	50	201	233	313	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-500-XP40-SP14-02	▲	50.0	40	203	235	305	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD04-500-XP50-SP14-02	△	50.0	50	203	235	315	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP

▲Stock available △Make-to-order

Indexable drill ZSD05 5D



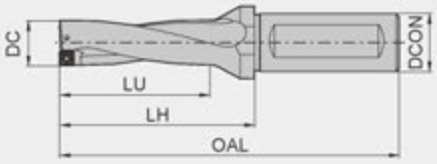
Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LH	OAL			
ZSD05-120-XP20-SP04-02	▲	12.0	20	63	79	129	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD05-125-XP20-SP04-02	▲	12.5	20	66	82	132	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD05-130-XP20-SP04-02	▲	13.0	20	68	84	134	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD05-135-XP20-SP04-02	▲	13.5	20	71	87	137	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD05-140-XP20-SP04-02	▲	14.0	20	73	89	139	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD05-145-XP20-SP04-02	▲	14.5	20	76	91	141	SPMX040203- XR/XM/LM/EM	I60M1.8×4.5	WT05IP
ZSD05-150-XP20-SP05-02	▲	15.0	20	78	94	144	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD05-155-XP20-SP05-02	▲	15.5	20	81	97	147	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD05-160-XP20-SP05-02	▲	16.0	20	83	99	149	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD05-165-XP20-SP05-02	▲	16.5	20	86	102	152	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD05-170-XP20-SP05-02	▲	17.0	20	88	104	154	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD05-175-XP20-SP05-02	▲	17.5	20	91	107	157	SPMX050204- XR/XM/LM/EM	I60M2×4.3	WT06P
ZSD05-180-XP25-SP06-02	▲	18.0	25	93	112	167	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD05-185-XP25-SP06-02	▲	18.5	25	96	114	170	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD05-190-XP25-SP06-02	▲	19.0	25	98	116	172	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD05-195-XP25-SP06-02	▲	19.5	25	101	119	175	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD05-200-XP25-SP06-02	▲	20.0	25	103	121	177	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD05-205-XP25-SP06-02	▲	20.5	25	106	124	180	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD05-210-XP25-SP06-02	▲	21.0	25	108	126	182	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD05-215-XP25-SP06-02	▲	21.5	25	111	129	185	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD05-220-XP25-SP06-02	▲	22.0	25	113	131	187	SPMX060204- XR/XM/LM/EM	I60M2.2×5.5	WT07IP
ZSD05-225-XP25-SP07-02	▲	22.5	25	116	134	190	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-230-XP25-SP07-02	▲	23.0	25	118	138	194	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-235-XP25-SP07-02	▲	23.5	25	121	141	197	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-240-XP25-SP07-02	▲	24.0	25	123	143	199	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-245-XP25-SP07-02	▲	24.5	25	126	146	202	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-250-XP25-SP07-02	▲	25.0	25	128	148	204	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-250-XP32-SP07-02	▲	25.0	32	128	148	208	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-255-XP25-SP07-02	▲	25.5	25	131	151	207	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-255-XP32-SP07-02	▲	25.5	32	131	151	211	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-260-XP25-SP07-02	▲	26.0	25	133	153	209	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-260-XP32-SP07-02	▲	26.0	32	133	153	213	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP

▲Stock available △Make-to-order

Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LH	OAL			
ZSD05-265-XP25-SP07-02	▲	26.5	25	136	156	212	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-265-XP32-SP07-02	▲	26.5	32	136	156	216	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-270-XP25-SP07-02	▲	27.0	25	138	158	214	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-270-XP32-SP07-02	▲	27.0	32	138	158	218	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-275-XP25-SP07-02	▲	27.5	25	141	161	217	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-275-XP32-SP07-02	▲	27.5	32	141	161	221	SPMX07T308- XR/XM/LM/EM	I60M2.5×7.4	WT07IP
ZSD05-280-XP32-SP09-02	▲	28.0	32	143	163	223	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-285-XP32-SP09-02	▲	28.5	32	146	166	226	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-290-XP32-SP09-02	▲	29.0	32	148	168	228	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-295-XP32-SP09-02	▲	29.5	32	151	171	231	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-300-XP32-SP09-02	▲	30.0	32	153	173	233	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-305-XP32-SP09-02	▲	30.5	32	156	176	236	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-310-XP32-SP09-02	▲	31.0	32	158	178	238	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-315-XP32-SP09-02	▲	31.5	32	161	181	241	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-320-XP32-SP09-02	▲	32.0	32	163	183	243	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-320-XP40-SP09-02	▲	32.0	40	163	183	253	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-325-XP32-SP09-02	▲	32.5	32	166	186	246	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-325-XP40-SP09-02	▲	32.5	40	166	186	256	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-330-XP32-SP09-02	▲	33.0	32	168	189	249	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-330-XP40-SP09-02	▲	33.0	40	168	189	259	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-335-XP32-SP09-02	▲	33.5	32	171	193	253	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-335-XP40-SP09-02	▲	33.5	40	171	193	263	SPMX090408- XR/XM/LM/EM	I60M3.5×8	WT15IP
ZSD05-340-XP40-SP11-02	▲	34.0	40	173	198	268	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-345-XP40-SP11-02	△	34.5	40	176	201	271	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-350-XP40-SP11-02	▲	35.0	40	178	203	273	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-355-XP40-SP11-02	△	35.5	40	181	206	276	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-360-XP40-SP11-02	▲	36.0	40	183	208	278	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-365-XP40-SP11-02	△	36.5	40	186	211	281	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-370-XP40-SP11-02	▲	37.0	40	188	213	283	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-375-XP40-SP11-02	△	37.5	40	191	216	286	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-380-XP40-SP11-02	▲	38.0	40	193	218	288	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-385-XP40-SP11-02	△	38.5	40	196	221	291	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-390-XP40-SP11-02	▲	39.0	40	198	223	293	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-395-XP40-SP11-02	△	39.5	40	201	226	296	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-400-XP40-SP11-02	▲	40.0	40	203	228	298	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-405-XP40-SP11-02	△	40.5	40	206	231	301	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-410-XP40-SP11-02	▲	41.0	40	208	233	303	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-415-XP40-SP11-02	△	41.5	40	211	236	306	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-420-XP40-SP11-02	▲	42.0	40	213	245	315	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-420-XP50-SP11-02	△	42.0	50	213	245	325	SPMX110408- XR/XM/LM/EM	I60M4×10	WT15IP
ZSD05-425-XP40-SP14-02	△	42.5	40	216	248	318	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP

▲Stock available △Make-to-order

Indexable drill ZSD05 5D

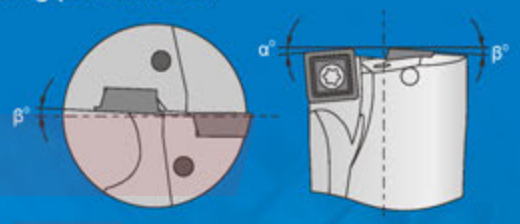


Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LH	OAL			
ZSD05-425-XP50-SP14-02	△	42.5	50	216	248	328	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-430-XP40-SP14-02	▲	43.0	40	218	250	320	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-430-XP50-SP14-02	△	43.0	50	218	250	330	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-435-XP40-SP14-02	△	43.5	40	221	253	323	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-435-XP50-SP14-02	△	43.5	50	221	253	333	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-440-XP40-SP14-02	▲	44.0	40	223	255	325	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-440-XP50-SP14-02	△	44.0	50	223	255	335	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-445-XP40-SP14-02	△	44.5	40	226	258	328	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-445-XP50-SP14-02	△	45.5	50	226	258	338	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-450-XP40-SP14-02	▲	45.0	40	228	260	330	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-450-XP50-SP14-02	△	45.0	50	228	260	340	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-455-XP40-SP14-02	△	45.5	40	231	263	333	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-455-XP50-SP14-02	△	45.5	50	231	263	343	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-460-XP40-SP14-02	▲	46.0	40	233	265	335	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-460-XP50-SP14-02	△	46.0	50	233	265	345	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-465-XP40-SP14-02	△	46.5	40	236	268	338	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-465-XP50-SP14-02	△	46.5	50	236	268	348	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-470-XP40-SP14-02	▲	47.0	40	238	270	340	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-470-XP50-SP14-02	△	47.0	50	238	270	350	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-475-XP40-SP14-02	△	47.5	40	241	273	343	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-475-XP50-SP14-02	△	47.5	50	241	273	353	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-480-XP40-SP14-02	▲	48.0	40	243	275	345	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-480-XP50-SP14-02	△	48.0	50	246	275	355	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-485-XP40-SP14-02	△	48.5	40	246	278	348	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-485-XP50-SP14-02	△	48.5	50	246	278	358	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-490-XP40-SP14-02	▲	49.0	40	248	280	350	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-490-XP50-SP14-02	△	49.0	50	248	280	360	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-495-XP40-SP14-02	△	49.5	40	251	283	353	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-495-XP50-SP14-02	△	49.5	50	251	283	363	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-500-XP40-SP14-02	▲	50.0	40	253	285	355	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP
ZSD05-500-XP50-SP14-02	△	50.0	50	253	285	365	SPMX140512- XR/XM/LM/EM	I60M5×13	WT20IP

▲Stock available △Make-to-order

Silver fox -New indexable drills for shallow holes

1. Internal coolant hose connecter, which is used in lathe.
2. New tool body material with greatly improved tool rigidity.
3. Tool body with specially treated coating for superior lubricating performance.



Innovative technology
fully upgrading

Optimized flutes and double spiraled internal coolant holes for high efficient drilling.

4. Optimized structure for better chip breaking, lower vibration during cutting, higher machining precision.

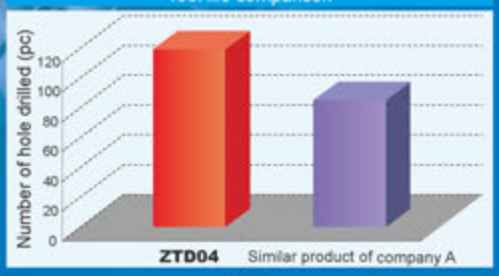
5. Extremely large chip pocket, innovative liquid angle, for smoother chip evacuation.

Case study

Tool applied: ZTD04-260-XP25-SP07-02
Insert applied: SPGT07T308-PM /YBG205(Peripheral edge)
SPGT07T308-PM /YBG212(Inner edge)
Workpiece material: 50Mn(HB240)
Cooling system: Double helical internal cooling
Cutting parameters: Vc=130m/min; f=210mm/min; ap=90mm

Machining situation

Tool life comparison



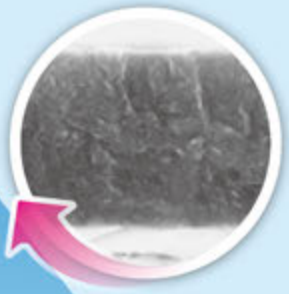
Chips

ZTD04-260-XP25-SP07-02

Similar product of company A

- Optimized cutting edge design ensures more stable cutting and better chip breaking.
- Meeting the requirements of central edge and peripheral edge with economy and efficiency.
- Perfect combination of grade and chipbreaker solves all your difficulties in machining.

Inner edge insert



YBG212

- Special coating technology makes insert surface smooth, reducing friction and ensuring unobstructed chip flow.
- Unique nano coating, stronger combination of substrate and highly wear-resistant TiAlN coating, higher toughness and hardness.
- Good thermal stability and chemical stability of coating provide more effective protection for the cutting edge.
- Ultra-fine solid carbide substrate with high toughness ensures high strength of cutting edge.

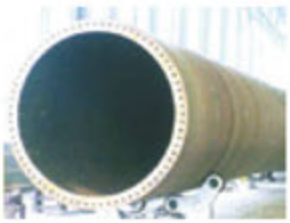
Peripheral edge insert

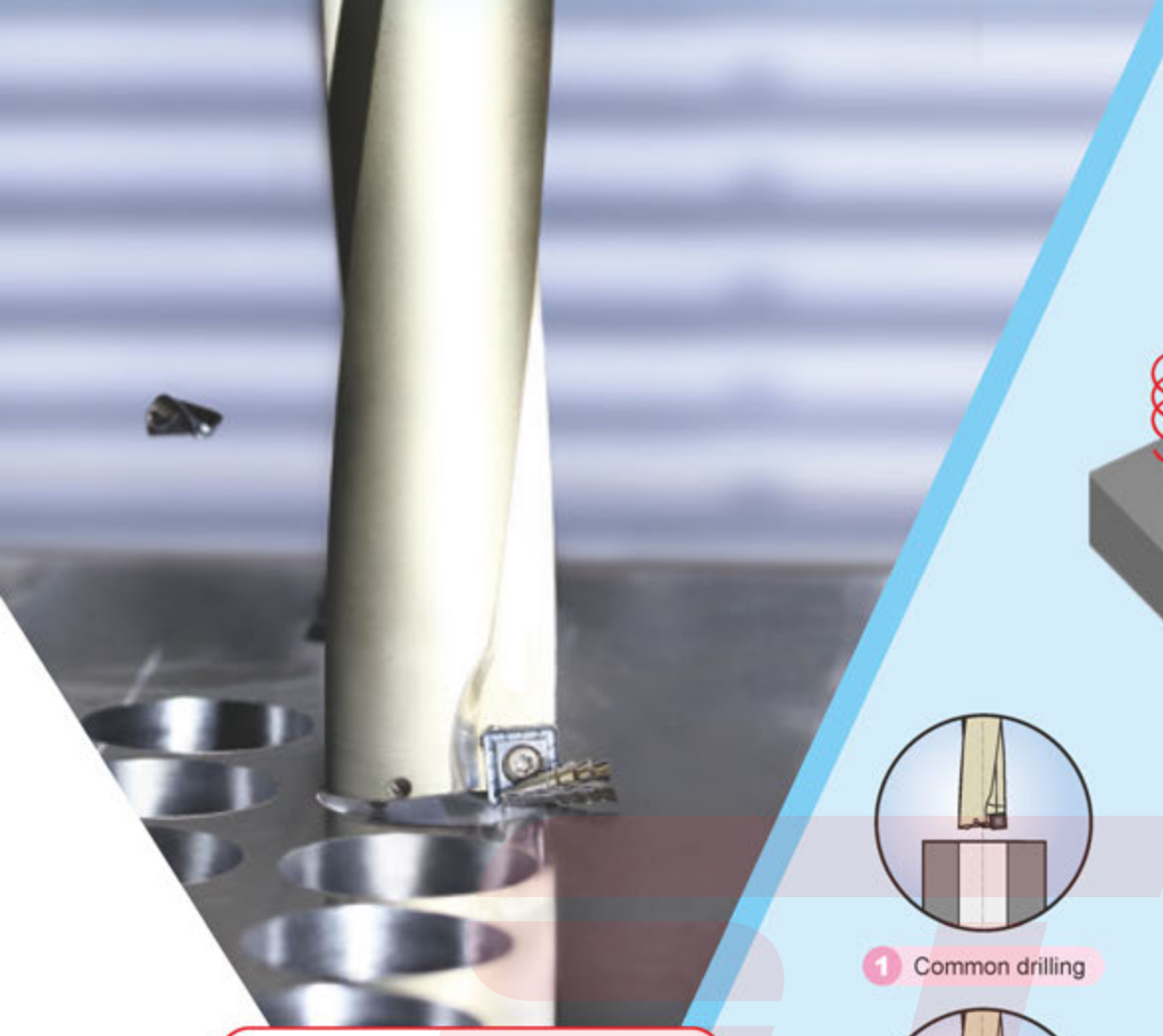
YBG205

- Ultra-fine TiAlN base nano coating added with wear-resistant and heat-resistant rare elements greatly improves over-all properties.
- Special coating technology ensures stronger combination of substrate and coating.
- Thin PVD coating, sharp cutting edge.
- Fine grain WC base solid carbide with high hardness and high toughness.
- Special surface treatment after coating improves surface finish while eliminating harmful stress.

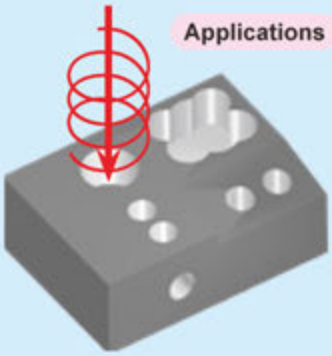
Because of the low speed of inner edge and the poor working condition, there is high requirement for insert toughness. Therefore, YBG212 with good over-all properties is recommended for inner edge and YBG205 with high wear resistance for peripheral edge.

Case study

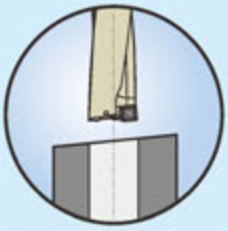
Workpiece		Cooling system	Double helical internal cooling	
		Insert applied	SPGT07T308-PM/YBG205	Similar product of company A
Workpiece material	42CrMo（HRC25）	Comparison of insert abrasion (after 15 minutes of machining)		
Cutting parameters	V_c=150m/min f_r=0.12mm/r a_p=80mm			



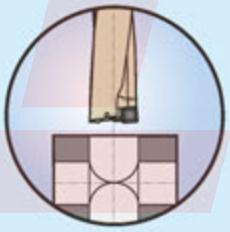
If stationary drilling method is used, the small ejected discs may lead to accidents when workpiece is drilled through, so please see to it that the machine has adequate safety measurements.



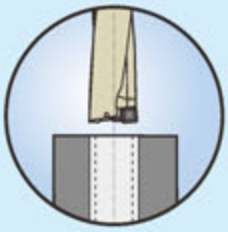
1 Common drilling



2 inclined face drilling



3 Cross-hole drilling



4 Counter boring

Safety information

Breakage

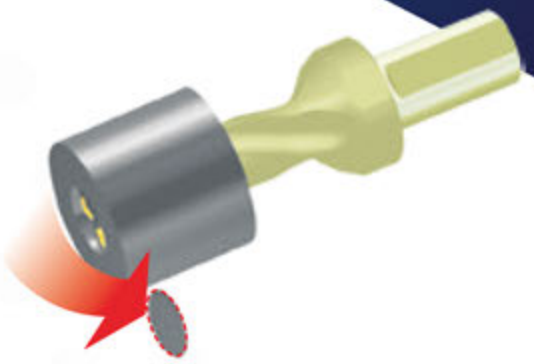
Chipping on cutting edges can be caused by various conditions:

- Off-center drill.
- Tool overhang or feed rate is too large.
- Incorrect inserts seating, tip seat was damaged.
- Poor insert stability.
- Insufficient coolant supply.
- Incorrect insert chipbreaker or grade.

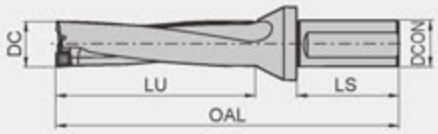
Insert abrasion

The two most common types of insert abrasion are flank and crater abrasion. The flank abrasion is generally natural abrasion, especially on the peripheral insert which is applied with higher cutting speed. However, this abrasion will finally result that the insert cutting edge cannot achieve the tolerance and/or surface quality required for the machining.

In drilling operations, if flank and crater abrasion exceed certain values, the inserts should be changed without delay for production security.



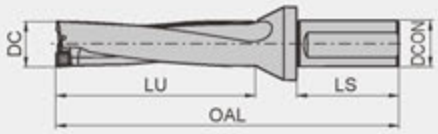
Indexable drill ZTD02 2D



Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LS	OAL			
ZTD02-130-XP20-SP04-02	▲	13	20	31	50	98	SPGT04T102-PM/EM	I60M1.8×4.0	WT05IP
ZTD02-140-XP20-SP04-02	▲	14	20	33	50	100	SPGT04T102-PM/EM	I60M1.8×4.0	WT05IP
ZTD02-150-XP20-SP05-02	▲	15	20	35	50	102	SPGT050204-PM/EM	I60M2×4.3	WT06P
ZTD02-160-XP20-SP05-02	▲	16	20	37	50	104	SPGT050204-PM/EM	I60M2×4.3	WT06P
ZTD02-170-XP25-SP05-02	▲	17	25	39	56	117	SPGT050204-PM/EM	I60M2×4.3	WT06P
ZTD02-180-XP25-SP06-02	▲	18	25	41	56	119	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD02-190-XP25-SP06-02	▲	19	25	43	56	121	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD02-200-XP25-SP06-02	▲	20	25	45	56	123	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD02-210-XP25-SP06-02	▲	21	25	47	56	125	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD02-220-XP25-SP07-02	▲	22	25	49	56	127	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD02-230-XP25-SP07-02	▲	23	25	51	56	129	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD02-240-XP25-SP07-02	▲	24	25	53	56	131	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD02-250-XP25-SP07-02	▲	25	25	55	56	133	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD02-260-XP25-SP07-02	▲	26	25	57	56	135	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD02-270-XP25-SP07-02	▲	27	25	59	56	137	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD02-280-XP32-SP09-02	▲	28	32	61	60	146	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD02-290-XP32-SP09-02	▲	29	32	63	60	148	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD02-300-XP32-SP09-02	▲	30	32	65	60	150	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD02-310-XP32-SP09-02	▲	31	32	67	60	152	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD02-320-XP32-SP09-02	▲	32	32	69	60	154	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD02-330-XP32-SP09-02	▲	33	32	71	60	156	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD02-340-XP40-SP11-02	▲	34	40	73	70	173	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD02-350-XP40-SP11-02	▲	35	40	75	70	175	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD02-360-XP40-SP11-02	▲	36	40	77	70	177	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD02-370-XP40-SP11-02	▲	37	40	79	70	179	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD02-380-XP40-SP11-02	▲	38	40	81	70	181	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD02-390-XP40-SP11-02	▲	39	40	83	70	183	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD02-400-XP40-SP11-02	▲	40	40	85	70	185	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD02-410-XP40-SP11-02	▲	41	40	87	70	187	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD02-420-XP40-SP14-02	△	42	40	89	70	199	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD02-430-XP40-SP14-02	△	43	40	91	70	201	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD02-440-XP40-SP14-02	△	44	40	93	70	203	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD02-450-XP40-SP14-02	△	45	40	95	70	205	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD02-460-XP40-SP14-02	△	46	40	97	70	207	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD02-470-XP40-SP14-02	△	47	40	99	70	209	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD02-480-XP40-SP14-02	△	48	40	101	70	211	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD02-490-XP40-SP14-02	△	49	40	103	70	213	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD02-500-XP40-SP14-02	△	50	40	105	70	215	SPGT140512-PM/EM	I60M5×13	WT20IP

▲Stock available △Make-to-order

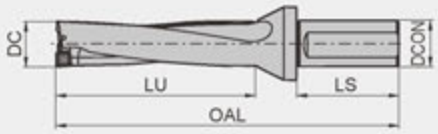
Indexable drill ZTD03 3D



Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LS	OAL			
ZTD03-130-XP20-SP04-02	▲	13	20	44	50	111	SPGT04T102-PM/EM	I60M1.8×4.0	WT05IP
ZTD03-140-XP20-SP04-02	▲	14	20	47	50	114	SPGT04T102-PM/EM	I60M1.8×4.0	WT05IP
ZTD03-150-XP20-SP05-02	▲	15	20	50	50	117	SPGT050204-PM/EM	I60M2×4.3	WT06P
ZTD03-160-XP20-SP05-02	▲	16	20	53	50	120	SPGT050204-PM/EM	I60M2×4.3	WT06P
ZTD03-170-XP25-SP05-02	▲	17	25	56	56	134	SPGT050204-PM/EM	I60M2×4.3	WT06P
ZTD03-180-XP25-SP06-02	▲	18	25	59	56	137	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD03-190-XP25-SP06-02	▲	19	25	62	56	140	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD03-200-XP25-SP06-02	▲	20	25	65	56	143	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD03-210-XP25-SP06-02	▲	21	25	68	56	146	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD03-220-XP25-SP07-02	▲	22	25	71	56	149	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD03-230-XP25-SP07-02	▲	23	25	74	56	152	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD03-240-XP25-SP07-02	▲	24	25	77	56	155	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD03-250-XP25-SP07-02	▲	25	25	80	56	158	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD03-260-XP25-SP07-02	▲	26	25	83	56	161	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD03-270-XP25-SP07-02	▲	27	25	86	56	164	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD03-280-XP32-SP09-02	▲	28	32	89	60	174	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD03-290-XP32-SP09-02	▲	29	32	92	60	177	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD03-300-XP32-SP09-02	▲	30	32	95	60	180	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD03-310-XP32-SP09-02	▲	31	32	98	60	183	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD03-320-XP32-SP09-02	▲	32	32	101	60	186	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD03-330-XP32-SP09-02	▲	33	32	104	60	189	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD03-340-XP40-SP11-02	▲	34	40	107	70	207	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD03-350-XP40-SP11-02	▲	35	40	110	70	210	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD03-360-XP40-SP11-02	▲	36	40	113	70	213	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD03-370-XP40-SP11-02	▲	37	40	116	70	216	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD03-380-XP40-SP11-02	▲	38	40	119	70	219	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD03-390-XP40-SP11-02	▲	39	40	122	70	222	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD03-400-XP40-SP11-02	▲	40	40	125	70	225	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD03-410-XP40-SP11-02	▲	41	40	128	70	228	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD03-420-XP40-SP14-02	△	42	40	131	70	241	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD03-430-XP40-SP14-02	△	43	40	134	70	244	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD03-440-XP40-SP14-02	△	44	40	137	70	247	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD03-450-XP40-SP14-02	△	45	40	140	70	250	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD03-460-XP40-SP14-02	△	46	40	143	70	253	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD03-470-XP40-SP14-02	△	47	40	146	70	256	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD03-480-XP40-SP14-02	△	48	40	149	70	259	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD03-490-XP40-SP14-02	△	49	40	152	70	262	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD03-500-XP40-SP14-02	△	50	40	155	70	265	SPGT140512-PM/EM	I60M5×13	WT20IP

▲Stock available △Make-to-order

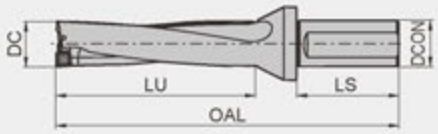
Indexable drill ZTD04 4D



Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LS	OAL			
ZTD04-130-XP20-SP04-02	▲	13	20	57	50	124	SPGT04T102-PM/EM	I60M1.8×4.0	WT05IP
ZTD04-140-XP20-SP04-02	▲	14	20	61	50	128	SPGT04T102-PM/EM	I60M1.8×4.0	WT05IP
ZTD04-150-XP20-SP05-02	▲	15	20	65	50	132	SPGT050204-PM/EM	I60M2×4.3	WT06P
ZTD04-160-XP20-SP05-02	▲	16	20	69	50	136	SPGT050204-PM/EM	I60M2×4.3	WT06P
ZTD04-170-XP25-SP05-02	▲	17	25	73	56	151	SPGT050204-PM/EM	I60M2×4.3	WT06P
ZTD04-180-XP25-SP06-02	▲	18	25	77	56	155	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD04-190-XP25-SP06-02	▲	19	25	81	56	159	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD04-200-XP25-SP06-02	▲	20	25	85	56	163	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD04-210-XP25-SP06-02	▲	21	25	89	56	167	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD04-220-XP25-SP07-02	▲	22	25	93	56	171	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD04-230-XP25-SP07-02	▲	23	25	97	56	175	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD04-240-XP25-SP07-02	▲	24	25	101	56	179	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD04-250-XP25-SP07-02	▲	25	25	105	56	183	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD04-260-XP25-SP07-02	▲	26	25	109	56	187	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD04-270-XP25-SP07-02	▲	27	25	113	56	191	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD04-280-XP32-SP09-02	▲	28	32	117	60	202	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD04-290-XP32-SP09-02	▲	29	32	121	60	206	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD04-300-XP32-SP09-02	▲	30	32	125	60	210	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD04-310-XP32-SP09-02	▲	31	32	129	60	214	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD04-320-XP32-SP09-02	▲	32	32	133	60	218	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD04-330-XP32-SP09-02	▲	33	32	137	60	222	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD04-340-XP40-SP11-02	▲	34	40	141	70	241	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD04-350-XP40-SP11-02	▲	35	40	145	70	245	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD04-360-XP40-SP11-02	▲	36	40	149	70	249	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD04-370-XP40-SP11-02	▲	37	40	153	70	253	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD04-380-XP40-SP11-02	▲	38	40	157	70	257	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD04-390-XP40-SP11-02	▲	39	40	161	70	261	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD04-400-XP40-SP11-02	▲	40	40	165	70	265	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD04-410-XP40-SP11-02	▲	41	40	169	70	269	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD04-420-XP40-SP14-02	△	42	40	173	70	283	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD04-430-XP40-SP14-02	△	43	40	177	70	287	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD04-440-XP40-SP14-02	△	44	40	181	70	291	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD04-450-XP40-SP14-02	△	45	40	185	70	295	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD04-460-XP40-SP14-02	△	46	40	189	70	299	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD04-470-XP40-SP14-02	△	47	40	193	70	303	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD04-480-XP40-SP14-02	△	48	40	197	70	307	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD04-490-XP40-SP14-02	△	49	40	201	70	311	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD04-500-XP40-SP14-02	△	50	40	205	70	315	SPGT140512-PM/EM	I60M5×13	WT20IP

▲Stock available △Make-to-order

Indexable drill ZTD05 5D

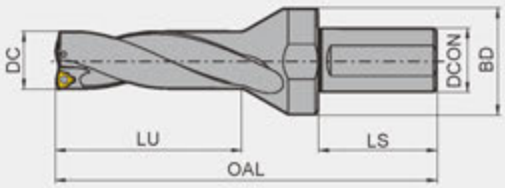


Type	Stock	Basic dimension(mm)					Applicable inserts	Insert screw	Wrench
		DC	DCON	LU	LS	OAL			
ZTD05-130-XP20-SP04-02	▲	13	20	70	50	137	SPGT04T102-PM/EM	I60M1.8×4	WT05IP
ZTD05-140-XP20-SP04-02	▲	14	20	75	50	142	SPGT04T102-PM/EM	I60M1.8×4	WT05IP
ZTD05-150-XP20-SP04-02	▲	15	20	80	50	147	SPGT0050204-PM/EM	I60M2.0×4.3	WT06P
ZTD05-160-XP20-SP04-02	▲	16	20	85	50	152	SPGT0050204-PM/EM	I60M2.0×4.3	WT06P
ZTD05-170-XP25-SP05-02	▲	17	25	90	56	168	SPGT050204-PM/EM	I60M2.2×5.5	WT06P
ZTD05-180-XP25-SP06-02	▲	18	25	95	56	173	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD05-190-XP25-SP06-02	▲	19	25	100	56	178	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD05-200-XP25-SP06-02	▲	20	25	105	56	183	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD05-210-XP25-SP06-02	▲	21	25	110	56	188	SPGT060204-PM/EM	I60M2.2×5.5	WT07IP
ZTD05-220-XP25-SP07-02	▲	22	25	115	56	193	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD05-230-XP25-SP07-02	▲	23	25	120	56	198	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD05-240-XP25-SP07-02	▲	24	25	125	56	203	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD05-250-XP25-SP07-02	▲	25	25	130	56	208	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD05-260-XP25-SP07-02	▲	26	25	135	56	213	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD05-270-XP25-SP07-02	▲	27	25	140	56	218	SPGT07T308-PM/EM	I60M2.5×6.5	WT07IP
ZTD05-280-XP32-SP09-02	▲	28	32	145	60	230	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD05-290-XP32-SP09-02	▲	29	32	150	60	235	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD05-300-XP32-SP09-02	▲	30	32	155	60	240	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD05-310-XP32-SP09-02	▲	31	32	160	60	245	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD05-320-XP32-SP09-02	▲	32	32	165	60	250	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD05-330-XP32-SP09-02	▲	33	32	170	60	255	SPGT090408-PM/EM	I60M3.5×8	WT15IP
ZTD05-340-XP40-SP11-02	▲	34	40	175	70	275	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD05-350-XP40-SP11-02	▲	35	40	180	70	280	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD05-360-XP40-SP11-02	▲	36	40	185	70	285	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD05-370-XP40-SP11-02	▲	37	40	190	70	290	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD05-380-XP40-SP11-02	▲	38	40	195	70	295	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD05-390-XP40-SP11-02	▲	39	40	200	70	300	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD05-400-XP40-SP11-02	▲	40	40	205	70	305	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD05-410-XP40-SP11-02	▲	41	40	210	70	310	SPGT110408-PM/EM	I60M4×10	WT15IP
ZTD05-420-XP40-SP14-02	△	42	40	215	70	325	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD05-430-XP40-SP14-02	△	43	40	220	70	330	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD05-440-XP40-SP14-02	△	44	40	225	70	335	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD05-450-XP40-SP14-02	△	45	40	230	70	340	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD05-460-XP40-SP14-02	△	46	40	235	70	345	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD05-470-XP40-SP14-02	△	47	40	240	70	350	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD05-480-XP40-SP14-02	△	48	40	245	70	355	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD05-490-XP40-SP14-02	△	49	40	250	70	360	SPGT140512-PM/EM	I60M5×13	WT20IP
ZTD05-500-XP40-SP14-02	△	50	40	255	70	365	SPGT140512-PM/EM	I60M5×13	WT20IP

▲Stock available △Make-to-order

Indexable drill

2D

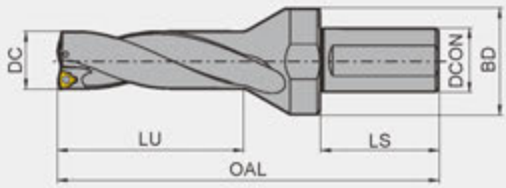


Type	Stock	Basic dimension(mm)						Applicable inserts	Insert screw	Wrench
		DC	DCON	BD	LS	LU	OAL			
ZD02-160-XP20-WC03-02	△	16	20	25	50	35	102	WCMX030208	I60M2.5×6.5	WT07IP
ZD02-170-XP25-WC03-02	△	17	25	32	56	37	111	WCMX030208	I60M2.5×6.5	WT07IP
ZD02-180-XP25-WC03-02	△	18	25	32	56	39	113	WCMX030208	I60M2.5×6.5	WT07IP
ZD02-190-XP25-WC03-02	△	19	25	32	56	41	115	WCMX030208	I60M2.5×6.5	WT07IP
ZD02-200-XP25-WC03-02	△	20	25	32	56	43	117	WCMX030208	I60M2.5×6.5	WT07IP
ZD02-210-XP25-WC04-02	△	21	25	32	56	45	119	WCMX040208	I60M2.5×6.5T	WT08IP
ZD02-220-XP25-WC04-02	△	22	25	32	56	47	121	WCMX040208	I60M2.5×6.5T	WT08IP
ZD02-230-XP25-WC04-02	△	23	25	32	56	49	123	WCMX040208	I60M2.5×6.5T	WT08IP
ZD02-240-XP25-WC04-02	△	24	25	32	56	51	125	WCMX040208	I60M2.5×6.5T	WT08IP
ZD02-250-XP25-WC04-02	△	25	25	32	56	53	127	WCMX040208	I60M2.5×6.5T	WT08IP
ZD02-260-XP25-WC05-02	△	26	25	32	60	55	137	WCMX050308	I60M3×9	WT09IP
ZD02-270-XP32-WC05-02	△	27	32	37	60	57	139	WCMX050308	I60M3×9	WT09IP
ZD02-280-XP32-WC05-02	△	28	32	37	60	59	141	WCMX050308	I60M3×9	WT09IP
ZD02-290-XP32-WC05-02	△	29	32	37	60	61	143	WCMX050308	I60M3×9	WT09IP
ZD02-300-XP32-WC05-02	△	30	32	37	60	63	145	WCMX050308	I60M3×9	WT09IP
ZD02-310-XP32-WC06-02	△	31	32	37	60	65	147	WCMX06T308	I60M3×9	WT09IP
ZD02-320-XP32-WC06-02	△	32	32	37	60	67	149	WCMX06T308	I60M3×9	WT09IP
ZD02-330-XP32-WC06-02	△	33	32	37	60	69	151	WCMX06T308	I60M3×9	WT09IP
ZD02-340-XP40-WC06-02	△	34	40	47	70	71	166	WCMX06T308	I60M3×9	WT09IP
ZD02-350-XP40-WC06-02	△	35	40	47	70	73	168	WCMX06T308	I60M3×9	WT09IP
ZD02-360-XP40-WC06-02	△	36	40	47	70	75	170	WCMX06T308	I60M3×9	WT09IP
ZD02-370-XP40-WC06-02	△	37	40	47	70	77	172	WCMX06T308	I60M3×9	WT09IP
ZD02-380-XP40-WC06-02	△	38	40	47	70	79	174	WCMX06T308	I60M3×9	WT09IP
ZD02-390-XP40-WC06-02	△	39	40	47	70	81	176	WCMX06T308	I60M3×9	WT09IP

▲Stock available △Make-to-order

Indexable drill

2D

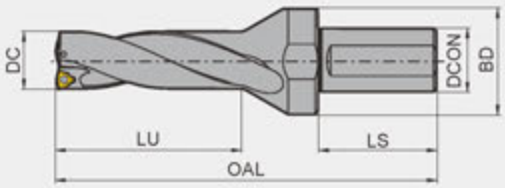


Type	Stock	Basic dimension(mm)						Applicable inserts	Insert screw	Wrench
		DC	DCON	BD	LS	LU	OAL			
ZD02-400-XP40-WC06-02	△	40	40	47	70	83	178	WCMX06T308	I60M3×9	WT09IP
ZD02-410-XP40-WC06-02	△	41	40	47	70	85	180	WCMX06T308	I60M3×9	WT09IP
ZD02-420-XP40-WC08-02	△	42	40	52	70	87	189	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-430-XP40-WC08-02	△	43	40	52	70	89	191	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-440-XP40-WC08-02	△	44	40	52	70	91	193	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-450-XP40-WC08-02	△	45	40	52	70	93	195	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-460-XP40-WC08-02	△	46	40	52	70	95	197	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-470-XP40-WC08-02	△	47	40	52	70	97	199	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-480-XP40-WC08-02	△	48	40	52	70	99	201	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-490-XP40-WC08-02	△	49	40	52	70	101	203	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-500-XP40-WC08-02	△	50	40	52	70	103	205	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-510-XP40-WC08-02	△	51	40	60	70	105	207	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-520-XP40-WC08-02	△	52	40	60	70	107	209	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-530-XP40-WC08-02	△	53	40	60	70	109	211	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-540-XP40-WC08-02	△	54	40	60	70	111	213	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-550-XP40-WC08-02	△	55	40	60	70	113	215	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-560-XP40-WC08-02	△	56	40	60	70	115	217	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-570-XP40-WC08-02	△	57	40	60	70	117	219	WCMX080412	I60M3.5×10.4	WT15IP
ZD02-580-XP40-WC08-02	△	58	40	60	70	119	221	WCMX080412	I60M3.5×10.4	WT15IP

▲Stock available △Make-to-order

Indexable drill

3D

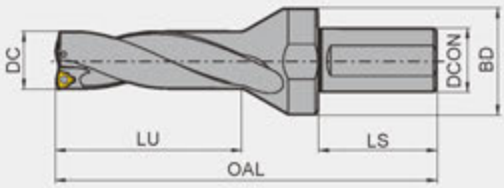


Type	Stock	Basic dimension(mm)						Applicable inserts	Insert screw	Wrench
		DC	DCON	BD	LS	LU	OAL			
ZD03-160-XP20-WC03-02	△	16	20	25	50	52	119	WCMX030208	I60M2.5×6.5	WT07IP
ZD03-170-XP25-WC03-02	△	17	25	32	56	55	128	WCMX030208	I60M2.5×6.5	WT07IP
ZD03-180-XP25-WC03-02	△	18	25	32	56	58	131	WCMX030208	I60M2.5×6.5	WT07IP
ZD03-190-XP25-WC03-02	△	19	25	32	56	61	134	WCMX030208	I60M2.5×6.5	WT07IP
ZD03-200-XP25-WC03-02	△	20	25	32	56	64	137	WCMX030208	I60M2.5×6.5	WT07IP
ZD03-210-XP25-WC04-02	△	21	25	32	56	67	140	WCMX040208	I60M2.5×6.5T	WT08IP
ZD03-220-XP25-WC04-02	△	22	25	32	56	70	143	WCMX040208	I60M2.5×6.5T	WT08IP
ZD03-230-XP25-WC04-02	△	23	25	32	56	73	146	WCMX040208	I60M2.5×6.5T	WT08IP
ZD03-240-XP25-WC04-02	△	24	25	32	56	76	149	WCMX040208	I60M2.5×6.5T	WT08IP
ZD03-250-XP25-WC04-02	△	25	25	32	56	79	152	WCMX040208	I60M2.5×6.5T	WT08IP
ZD03-260-XP25-WC05-02	△	26	25	32	60	83	163	WCMX050308	I60M3×9	WT09IP
ZD03-270-XP32-WC05-02	△	27	32	37	60	86	166	WCMX050308	I60M3×9	WT09IP
ZD03-280-XP32-WC05-02	△	28	32	37	60	89	169	WCMX050308	I60M3×9	WT09IP
ZD03-290-XP32-WC05-02	△	29	32	37	60	92	172	WCMX050308	I60M3×9	WT09IP
ZD03-300-XP32-WC05-02	△	30	32	37	60	95	175	WCMX050308	I60M3×9	WT09IP
ZD03-310-XP32-WC06-02	△	31	32	37	60	98	178	WCMX06T308	I60M3×9	WT09IP
ZD03-320-XP32-WC06-02	△	32	32	37	60	101	181	WCMX06T308	I60M3×9	WT09IP
ZD03-330-XP32-WC06-02	△	33	32	37	60	104	184	WCMX06T308	I60M3×9	WT09IP
ZD03-340-XP40-WC06-02	△	34	40	47	70	107	200	WCMX06T308	I60M3×9	WT09IP
ZD03-350-XP40-WC06-02	△	35	40	47	70	110	203	WCMX06T308	I60M3×9	WT09IP
ZD03-360-XP40-WC06-02	△	36	40	47	70	113	206	WCMX06T308	I60M3×9	WT09IP
ZD03-370-XP40-WC06-02	△	37	40	47	70	116	209	WCMX06T308	I60M3×9	WT09IP
ZD03-380-XP40-WC06-02	△	38	40	47	70	119	212	WCMX06T308	I60M3×9	WT09IP
ZD03-390-XP40-WC06-02	△	39	40	47	70	122	215	WCMX06T308	I60M3×9	WT09IP

▲Stock available △Make-to-order

Indexable drill

3D

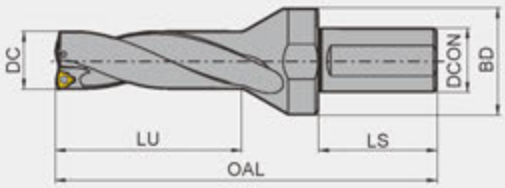


Type	Stock	Basic dimension(mm)						Applicable inserts	Insert screw	Wrench
		DC	DCON	BD	LS	LU	OAL			
ZD03-400-XP40-WC06-02	△	40	40	47	70	125	218	WCMX06T308	I60M3×9	WT09IP
ZD03-410-XP40-WC06-02	△	41	40	47	70	128	221	WCMX06T308	I60M3×9	WT09IP
ZD03-420-XP40-WC08-02	△	42	40	52	70	131	231	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-430-XP40-WC08-02	△	43	40	52	70	134	234	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-440-XP40-WC08-02	△	44	40	52	70	137	237	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-450-XP40-WC08-02	△	45	40	52	70	140	240	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-460-XP40-WC08-02	△	46	40	52	70	143	243	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-470-XP40-WC08-02	△	47	40	52	70	146	246	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-480-XP40-WC08-02	△	48	40	52	70	149	249	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-490-XP40-WC08-02	△	49	40	52	70	152	252	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-500-XP40-WC08-02	△	50	40	52	70	155	255	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-510-XP40-WC08-02	△	51	40	60	70	158	258	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-520-XP40-WC08-02	△	52	40	60	70	161	261	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-530-XP40-WC08-02	△	53	40	60	70	164	264	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-540-XP40-WC08-02	△	54	40	60	70	167	267	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-550-XP40-WC08-02	△	55	40	60	70	170	270	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-560-XP40-WC08-02	△	56	40	60	70	173	273	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-570-XP40-WC08-02	△	57	40	60	70	176	276	WCMX080412	I60M3.5×10.4	WT15IP
ZD03-580-XP40-WC08-02	△	58	40	60	70	179	279	WCMX080412	I60M3.5×10.4	WT15IP

▲Stock available △Make-to-order

Indexable drill

4D

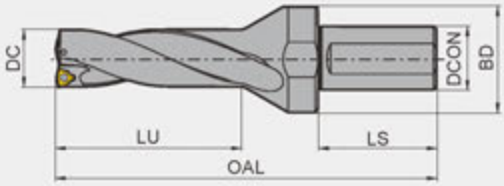


Type	Stock	Basic dimension(mm)						Applicable inserts	Insert screw	Wrench
		DC	DCON	BD	LS	LU	OAL			
ZD04-160-XP20-WC03-02	△	16	20	25	50	67	134	WCMX030208	I60M2.5×6.5	WT07IP
ZD04-170-XP25-WC03-02	△	17	25	32	56	71	145	WCMX030208	I60M2.5×6.5	WT07IP
ZD04-180-XP25-WC03-02	△	18	25	32	56	75	149	WCMX030208	I60M2.5×6.5	WT07IP
ZD04-190-XP25-WC03-02	△	19	25	32	56	79	153	WCMX030208	I60M2.5×6.5	WT07IP
ZD04-200-XP25-WC03-02	△	20	25	32	56	83	157	WCMX030208	I60M2.5×6.5	WT07IP
ZD04-210-XP25-WC04-02	△	21	25	32	56	87	161	WCMX040208	I60M2.5×6.5T	WT08IP
ZD04-220-XP25-WC04-02	△	22	25	32	56	91	165	WCMX040208	I60M2.5×6.5T	WT08IP
ZD04-230-XP25-WC04-02	△	23	25	32	56	95	169	WCMX040208	I60M2.5×6.5T	WT08IP
ZD04-240-XP25-WC04-02	△	24	25	32	56	99	173	WCMX040208	I60M2.5×6.5T	WT08IP
ZD04-250-XP25-WC04-02	△	25	25	32	56	103	177	WCMX040208	I60M2.5×6.5T	WT08IP
ZD04-260-XP25-WC05-02	△	26	25	32	60	107	189	WCMX050308	I60M3×9	WT09IP
ZD04-270-XP32-WC05-02	△	27	32	37	60	111	193	WCMX050308	I60M3×9	WT09IP
ZD04-280-XP32-WC05-02	△	28	32	37	60	115	197	WCMX050308	I60M3×9	WT09IP
ZD04-290-XP32-WC05-02	△	29	32	37	60	119	201	WCMX050308	I60M3×9	WT09IP
ZD04-300-XP32-WC05-02	△	30	32	37	60	123	205	WCMX050308	I60M3×9	WT09IP
ZD04-310-XP32-WC06-02	△	31	32	37	60	127	209	WCMX06T308	I60M3×9	WT09IP
ZD04-320-XP32-WC06-02	△	32	32	37	60	131	213	WCMX06T308	I60M3×9	WT09IP
ZD04-330-XP32-WC06-02	△	33	32	37	60	135	217	WCMX06T308	I60M3×9	WT09IP
ZD04-340-XP40-WC06-02	△	34	40	47	70	139	234	WCMX06T308	I60M3×9	WT09IP
ZD04-350-XP40-WC06-02	△	35	40	47	70	143	238	WCMX06T308	I60M3×9	WT09IP
ZD04-360-XP40-WC06-02	△	36	40	47	70	147	242	WCMX06T308	I60M3×9	WT09IP
ZD04-370-XP40-WC06-02	△	37	40	47	70	151	246	WCMX06T308	I60M3×9	WT09IP
ZD04-380-XP40-WC06-02	△	38	40	47	70	155	250	WCMX06T308	I60M3×9	WT09IP
ZD04-390-XP40-WC06-02	△	39	40	47	70	159	254	WCMX06T308	I60M3×9	WT09IP

▲Stock available △Make-to-order

Indexable drill

4D

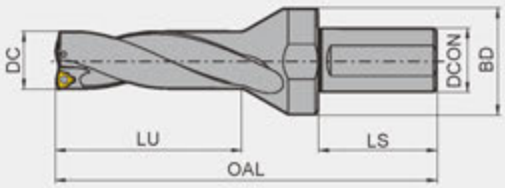


Type	Stock	Basic dimension(mm)						Applicable inserts	Insert screw	Wrench
		DC	DCON	BD	LS	LU	OAL			
ZD04-400-XP40-WC06-02	△	40	40	47	70	163	258	WCMX06T308	I60M3×9	WT09IP
ZD04-410-XP40-WC06-02	△	41	40	47	70	167	262	WCMX06T308	I60M3×9	WT09IP
ZD04-420-XP40-WC08-02	△	42	40	52	70	171	273	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-430-XP40-WC08-02	△	43	40	52	70	175	277	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-440-XP40-WC08-02	△	44	40	52	70	179	281	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-450-XP40-WC08-02	△	45	40	52	70	183	285	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-460-XP40-WC08-02	△	46	40	52	70	187	289	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-470-XP40-WC08-02	△	47	40	52	70	191	293	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-480-XP40-WC08-02	△	48	40	52	70	195	297	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-490-XP40-WC08-02	△	49	40	52	70	199	301	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-500-XP40-WC08-02	△	50	40	52	70	203	305	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-510-XP40-WC08-02	△	51	40	60	70	207	309	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-520-XP40-WC08-02	△	52	40	60	70	211	313	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-530-XP40-WC08-02	△	53	40	60	70	215	317	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-540-XP40-WC08-02	△	54	40	60	70	219	321	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-550-XP40-WC08-02	△	55	40	60	70	223	325	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-560-XP40-WC08-02	△	56	40	60	70	227	329	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-570-XP40-WC08-02	△	57	40	60	70	231	333	WCMX080412	I60M3.5×10.4	WT15IP
ZD04-580-XP40-WC08-02	△	58	40	60	70	235	337	WCMX080412	I60M3.5×10.4	WT15IP

▲Stock available △Make-to-order

Indexable drill

5D

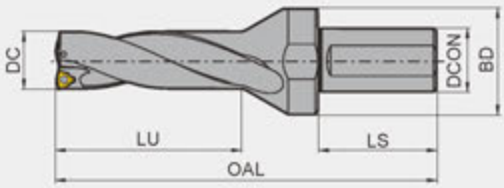


Type	Stock	Basic dimension(mm)						Applicable inserts	Insert screw	Wrench
		DC	DCON	BD	LS	LU	OAL			
ZD05-160-XP20-WC03-02	△	16	20	25	50	83	151	WCMX030208	I60M2.5×6.5	WT07IP
ZD05-170-XP25-WC03-02	△	17	25	32	56	88	162	WCMX030208	I60M2.5×6.5	WT07IP
ZD05-180-XP25-WC03-02	△	18	25	32	56	93	167	WCMX030208	I60M2.5×6.5	WT07IP
ZD05-190-XP25-WC03-02	△	19	25	32	56	98	172	WCMX030208	I60M2.5×6.5	WT07IP
ZD05-200-XP25-WC03-02	△	20	25	32	56	103	177	WCMX030208	I60M2.5×6.5	WT07IP
ZD05-210-XP25-WC04-02	△	21	25	32	56	108	182	WCMX040208	I60M2.5×6.5T	WT08IP
ZD05-220-XP25-WC04-02	△	22	25	32	56	113	187	WCMX040208	I60M2.5×6.5T	WT08IP
ZD05-230-XP25-WC04-02	△	23	25	32	56	118	192	WCMX040208	I60M2.5×6.5T	WT08IP
ZD05-240-XP25-WC04-02	△	24	25	32	56	123	197	WCMX040208	I60M2.5×6.5T	WT08IP
ZD05-250-XP25-WC04-02	△	25	25	32	56	128	202	WCMX040208	I60M2.5×6.5T	WT08IP
ZD05-260-XP25-WC05-02	△	26	25	32	56	133	211	WCMX050308	I60M3×9	WT09IP
ZD05-270-XP32-WC05-02	△	27	32	37	60	138	220	WCMX050308	I60M3×9	WT09IP
ZD05-280-XP32-WC05-02	△	28	32	37	60	143	225	WCMX050308	I60M3×9	WT09IP
ZD05-290-XP32-WC05-02	△	29	32	37	60	148	230	WCMX050308	I60M3×9	WT09IP
ZD05-300-XP32-WC05-02	△	30	32	37	60	153	235	WCMX050308	I60M3×9	WT09IP
ZD05-310-XP32-WC06-02	△	31	32	37	60	158	240	WCMX06T308	I60M3×9	WT09IP
ZD05-320-XP32-WC06-02	△	32	32	37	60	163	245	WCMX06T308	I60M3×9	WT09IP
ZD05-330-XP32-WC06-02	△	33	32	37	60	168	250	WCMX06T308	I60M3×9	WT09IP
ZD05-340-XP40-WC06-02	△	34	40	47	70	173	268	WCMX06T308	I60M3×9	WT09IP
ZD05-350-XP40-WC06-02	△	35	40	47	70	178	273	WCMX06T308	I60M3×9	WT09IP
ZD05-360-XP40-WC06-02	△	36	40	47	70	183	278	WCMX06T308	I60M3×9	WT09IP
ZD05-370-XP40-WC06-02	△	37	40	47	70	188	283	WCMX06T308	I60M3×9	WT09IP
ZD05-380-XP40-WC06-02	△	38	40	47	70	193	288	WCMX06T308	I60M3×9	WT09IP
ZD05-390-XP40-WC06-02	△	39	40	47	70	198	293	WCMX06T308	I60M3×9	WT09IP

▲Stock available △Make-to-order

Indexable drill

5D



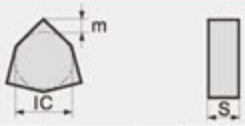
Type	Stock	Basic dimension(mm)						Applicable inserts	Insert screw	Wrench
		DC	DCON	BD	LS	LU	OAL			
ZD05-400-XP40-WC06-02	△	40	40	47	70	203	298	WCMX06T308	I60M3×9	WT09IP
ZD05-410-XP40-WC06-02	△	41	40	47	70	208	303	WCMX06T308	I60M3×9	WT09IP
ZD05-420-XP40-WC08-02	△	42	40	52	70	213	315	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-430-XP40-WC08-02	△	43	40	52	70	218	320	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-440-XP40-WC08-02	△	44	40	52	70	223	325	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-450-XP40-WC08-02	△	45	40	52	70	228	330	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-460-XP40-WC08-02	△	46	40	52	70	233	335	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-470-XP40-WC08-02	△	47	40	52	70	238	340	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-480-XP40-WC08-02	△	48	40	52	70	243	345	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-490-XP40-WC08-02	△	49	40	52	70	248	350	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-500-XP40-WC08-02	△	50	40	52	70	253	355	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-510-XP40-WC08-02	△	51	40	60	70	258	360	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-520-XP40-WC08-02	△	52	40	60	70	263	365	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-530-XP40-WC08-02	△	53	40	60	70	268	370	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-540-XP40-WC08-02	△	54	40	60	70	273	375	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-550-XP40-WC08-02	△	55	40	60	70	278	380	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-560-XP40-WC08-02	△	56	40	60	70	283	385	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-570-XP40-WC08-02	△	57	40	60	70	288	390	WCMX080412	I60M3.5×10.4	WT15IP
ZD05-580-XP40-WC08-02	△	58	40	60	70	293	395	WCMX080412	I60M3.5×10.4	WT15IP

▲Stock available △Make-to-order

Naming rules for insert of indexable drill

Code	Insert shape
S	
W	

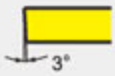
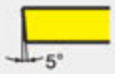
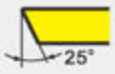
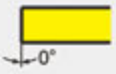
Insert shape / code



Code	Nose Height m Tolerance(mm)	Inscribed Circle IC Tolerance(mm)	Thickness S Tolerance(mm)	Code	Nose Height m Tolerance(mm)	Inscribed Circle IC Tolerance(mm)	Thickness S Tolerance(mm)
A	±0.005	±0.025	±0.025	J	±0.005	±0.05-±0.13	±0.025
F	±0.005	±0.013	±0.025	K	±0.013	±0.05-±0.13	±0.025
C	±0.013	±0.025	±0.025	L	±0.025	±0.05-±0.13	±0.025
H	±0.013	±0.013	±0.025	M	±0.08-±0.18	±0.05-±0.13	±0.13
E	±0.025	±0.025	±0.025	N	±0.08-±0.18	±0.05-±0.13	±0.025
G	±0.025	±0.025	±0.13	U	±0.13-±0.38	±0.08-±0.25	±0.13

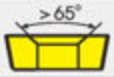
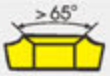
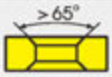
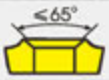
Tolerance

Clearance angle of main cutting edge

Code	Clearance angle	Code	Clearance angle
A		B	
C		D	
E		F	
G		N	
P		O	Other clearance angle

Chipbreaker and clamping system

Metric

Code	With/Without hole	With/Without chipbreaker	Section plane of Insert	Code	With/Without hole	With/Without chipbreaker	Section plane of Insert
B	With	Without		N	Without	Without	
H	With	Single-side		R	Without	Single-side	
C	With	Without		F	Without	Double-side	
J	With	Double-side		A	With	Without	
W	With	Without		M	With	Single-side	
T	With	Single-side		G	With	Double-side	
Q	With	Without		X	---	---	Special
U	With	Double-side					

Naming rules for insert of indexable drill

Thickness is defined as the height from the bottom of insert to the highest part of cutting edge.

Code	Insert thickness (mm)	Code	Insert thickness (mm)
00	0.79	05	5.96
T0	0.99	T5	5.95
01	1.59	06	6.35
T1	1.98	T6	6.75
02	2.38	07	7.94
T2	2.58	09	9.52
03	3.18	T9	9.72
T3	3.97	11	11.11
04	4.76	12	12.70
T4	4.96		

Insert thickness

Code	Length	
	W	S
03	3.8	
04	4.3	
05	5.4	
06	6.5	6.35
08	8.7	8.0
09		9.525
12		12.7

Length of cutting edge (mm)

08 04 12 R - PG

Nose radius

Code	Description
04	0.4mm
08	0.8mm
12	1.2mm

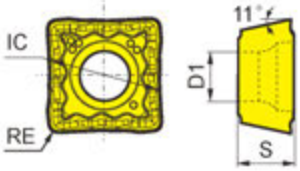
Cutting direction

Code	Description
R	Right hand
L	Left hand
N	Neutral

Chipbreaker code

ZSD applicable inserts

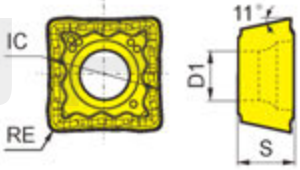
-EM



Type	Basic dimension(mm)				CVD grade	PVD grade		
	IC	S	D1	RE	YB6338 (Peripheral edge)	YBM215 (Inner/peripheral edge)	YBS203 (Inner/peripheral edge)	YB9320 (Inner/peripheral edge)
SPMX040204-EM	4.2	2.38	2.0	0.3	★	●	●	★
SPMX050204-EM	5.0	2.38	2.2	0.4	★	●	●	★
SPMX060204-EM	6.15	2.38	2.5	0.4	★	●	●	★
SPMX07T308-EM	7.94	3.97	2.8	0.8	★	●	●	★
SPMX090408-EM	9.8	4.3	4.1	0.8	★	●	●	★
SPMX110408-EM	11.8	4.76	4.4	0.8	★	●	●	★
SPMX140512-EM	14.8	5.2	5.5	1.2	★	●	●	★

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

-LM

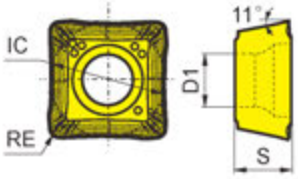


Type	Basic dimension(mm)				CVD grade	PVD grade		
	IC	S	D1	RE	YB6338 (Peripheral edge)	YBM215 (Inner/peripheral edge)	YBS203 (Inner/peripheral edge)	YB9320 (Inner/peripheral edge)
SPMX040204-LM	4.2	2.38	2.0	0.3	★	●	●	★
SPMX050204-LM	5.0	2.38	2.2	0.4	★	●	●	★
SPMX060204-LM	6.15	2.38	2.5	0.4	★	●	●	★
SPMX07T308-LM	7.94	3.97	2.8	0.8	★	●	●	★
SPMX090408-LM	9.8	4.3	4.1	0.8	★	●	●	★
SPMX110408-LM	11.8	4.76	4.4	0.8	★	●	●	★
SPMX140512-LM	14.8	5.2	5.5	1.2	★	●	●	★

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

ZSD applicable inserts

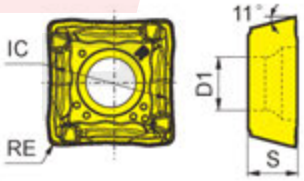
-XM



Type	Basic dimension(mm)				CVD grade	PVD grade		
	IC	S	D1	RE	YB6338 (Peripheral edge)	YBM215 (Inner/peripheral edge)	YBS203 (Inner/peripheral edge)	YB9320 (Inner/peripheral edge)
SPMX040203-XM	4.2	2.38	2.0	0.3	★	●	●	★
SPMX050204-XM	5.0	2.38	2.2	0.4	★	●	●	★
SPMX060204-XM	6.15	2.38	2.5	0.4	★	●	●	★
SPMX07T308-XM	7.94	3.97	2.8	0.8	★	●	●	★
SPMX090408-XM	9.8	4.3	4.1	0.8	★	●	●	★
SPMX110408-XM	11.8	4.76	4.4	0.8	★	●	●	★
SPMX140512-XM	14.3	5.2	5.5	1.2	★	●	●	★

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

-XR

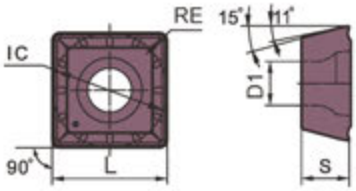


Type	Basic dimension(mm)				CVD grade	PVD grade		
	IC	S	D1	RE	YB6338 (Peripheral edge)	YBM215 (Inner/peripheral edge)	YBS203 (Inner/peripheral edge)	YB9320 (Inner/peripheral edge)
SPMX050204-XR	5.0	2.38	2.2	0.4	★	●	●	★
SPMX060204-XR	6.15	2.38	2.5	0.4	★	●	●	★
SPMX07T308-XR	7.94	3.97	2.8	0.8	★	●	●	★
SPMX090408-XR	9.8	4.30	4.1	0.8	★	●	●	★
SPMX110408-XR	11.8	4.76	4.4	0.8	★	●	●	★
SPMX140512-XR	14.8	5.20	5.5	1.2	★	●	●	★

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

ZTD applicable inserts

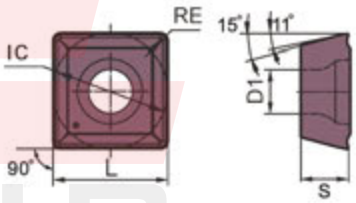




Type	Basic dimension(mm)					PVD grade	
	L	IC	S	D1	RE	YBG205 (Peripheral edge)	YBG212 (Inner edge)
SPGT050204-PM	5	5	2.38	2.2	0.4	★	★
SPGT060204-PM	6	6	2.38	2.6	0.4	★	★
SPGT07T308-PM	7.94	7.94	3.97	2.8	0.8	★	★
SPGT090408-PM	9.8	9.8	4.3	4.2	0.8	★	★
SPGT110408-PM	11.5	11.5	4.76	4.4	0.8	★	★
SPGT140512-PM	14.3	14.3	5.2	5.75	1.2	★	★

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order





Type	Basic dimension(mm)					PVD grade	
	L	IC	S	D1	RE	YBG205 (Peripheral edge)	YBG212 (Inner edge)
SPGT050204-EM	5	5	2.38	2.2	0.4	★	★
SPGT060204-EM	6	6	2.38	2.6	0.4	★	★
SPGT07T308-EM	7.94	7.94	3.97	2.8	0.8	★	★
SPGT090408-EM	9.8	9.8	4.3	4.2	0.8	★	★
SPGT110408-EM	11.5	11.5	4.76	4.4	0.8	★	★
SPGT140512-EM	14.3	14.3	5.2	5.75	1.2	★	★

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

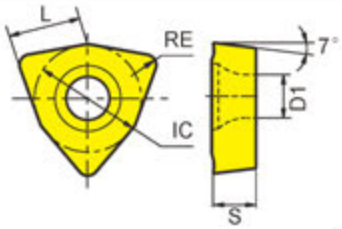

-EM chipbreaker characteristics

Recommended chipbreaker for M materials drilling.With G-class accuracy, sharp cutting edges, and high strength, better performance of resisting impacts. Inserts meet the required of machining adhesive material, It is also properly suited for machining Austenite Stainless steel etc adhesive materials.

ZD03 applicable inserts

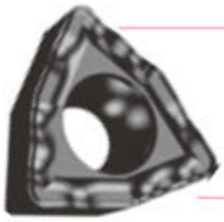
-53

-PG



Type	Basic dimension(mm)					PVD grade
	L	IC	S	D1	RE	YBG202
WCMX030208R-53	3.8	5.56	2.38	2.8	0.8	★
WCMX040208R-53	4.3	6.35	2.38	3.1	0.8	★
WCMX050308R-53	5.4	7.94	3.18	3.2	0.8	★
WCMX06T308R-53	6.5	9.525	3.97	3.7	0.8	★
WCMX080412R-53	8.7	12.7	4.76	4.3	1.2	★
WCMX030208R-PG	3.8	5.56	2.38	2.8	0.8	★
WCMX040208R-PG	4.3	6.35	2.38	3.1	0.8	★
WCMX050308R-PG	5.4	7.94	3.18	3.2	0.8	★
WCMX06T308R-PG	6.5	9.525	3.97	3.7	0.8	★
WCMX080412R-PG	8.7	12.7	4.76	4.3	1.2	★

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order



-PG chipbreaker characteristics

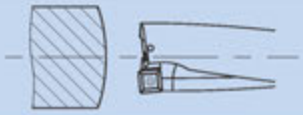
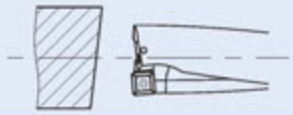
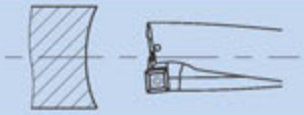
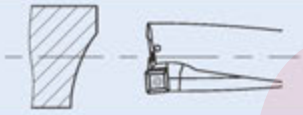
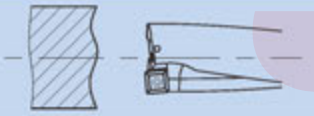
Unique design of corrugated edge ensures high edge strength and good chip breaking performance, for machining of carbon steel and alloy steel.

-53 chipbreaker characteristics

Sharp cutting edge beneficial to gaining low roughness surface, mainly applicable for low load cutting of aluminum alloy, mild steel and cast iron.

Initial drill penetration

Initial drill penetration is an important factor for successful drilling. One way of ensuring good hole quality is to make sure the penetration surface of the workpiece is vertical to the drill centre axis. In addition, an indexable drill can carry out initial penetration of convex, concave, inclined and irregular surfaces by adjusting feed rates.

Workpiece surface	Countermeasures
	For a convex surface, the conditions are relatively good and the centre of the drill ideally makes contact with the workpiece first, thus normal feed can be adopted.
	When penetrating an inclined surface, the cutting edges will be unevenly loaded, which may result in the premature drill abrasion. If the angle of the inclined surface is larger than 2°, the feed should be reduced to 1/3 of the value recommended for the drill.
	When drilling into concave surface, drill center axis normally tends to go off-center, the feed should be reduced to 1/3 of the value recommended for the drill.
	When drilling into non-symmetric curved surfaces, the drill tends to deviate from the centre because it is penetrating an inclined surface. The feed should be reduced to lower than the value recommended for the initial penetration of concave surfaces.
	When drilling into irregular surface, the insert faces the risk of chipping, which may also occur when drilling through the workpiece. Therefore, the feed rate should be reduced.

Calculations for shallow drilling

Cutting speed(Vc)

$$Vc = \frac{Dc \times \pi \times n}{1000}$$

V_c (m/min): Cutting speed
D_c(mm): Drill diameter
n (rev/min): Rotating speed

◆ Example

Spindle speed is1600 rev/min，drill diameter is 20mm，thus cutting speed is：

$$Vc = \frac{Dc \times \pi \times n}{1000} = \frac{20 \times 3.14 \times 1600}{1000} = 100\ (m/min)$$

Feed speed

$$V_f = fr \times n\ (mm/min)$$

V_f (mm/min): Feed speed
f_r (mm/rev): Feed rate per revolution
n (rev/min): Spindle speed

◆ Example

Spindle speed is1500 rev/min，feed rate per revolution is 0.1mm/rev，thus feed speed is：

$$V_f = fr \times n = 0.1 \times 1500 = 150\ (mm/min)$$

Machining time

$$Tc = \frac{I_d \times i}{n \times f}$$

T_c (min): Machining time
f_r (mm/rev): Feed rate per revolution
i: Number of holes Id (mm): Drilling depth
n (rev/min): Spindle speed

◆ Example

Drilling a hole with a diameter of 20mm and a depth of 40mm, cutting speed is 100m/min and feed rate per revolution is 0.1mm/rev. Calculate the drilling time.

$$n = \frac{Vc \times 1000}{Dc \times \pi} = \frac{100 \times 1000}{20 \times 3.14} = 1600\ (rev/min)$$

$$Tc = \frac{I_d \times i}{n \times fr} = \frac{40 \times 1}{1600 \times 0.1} = 0.25\ (min)$$

Metal removal rate

$$Q = \frac{V_f \times \pi \times Dc^2}{4 \times 1000}$$

Q (cm^3/min): Metal removal rate
D_c(mm): Drill diameter
V_f (mm/min): Feed speed

◆ Example

Drill diameter is 20mm, feed speed is 160mm/rev, thus metal removal rate is:

$$Q = \frac{V_f \times \pi \times Dc^2}{4 \times 1000} = \frac{160 \times 3.14 \times 20^2}{4 \times 1000} = 50.24\ (cm^3/min)$$

Recommended cutting parameters for ZSD

ISO	Materials	Hardness HB	Diameter Dc (mm)	Feed rate f (mm/r)	Cutting speed Vc (m/min)
P	Carbon steel	80-200	12.0-21.5 22.0-33.5 34.0-41.5 42.0-50.0	0.04-0.09 0.05-0.09 0.06-0.10 0.07-0.11	200(170-240)
	Low alloy steel	150-260	12.0-21.5 22.0-33.5 34.0-41.5 42.0-50.0	0.04-0.09 0.05-0.12 0.06-0.14 0.08-0.16	170(140-220)
	Hign alloy steel	150-320	12.0-21.5 22.0-33.5 34.0-41.5 42.0-50.0	0.04-0.09 0.05-0.12 0.06-0.16 0.08-0.18	150(120-180)
	Cast steel	180-250	12.0-21.5 22.0-33.5 34.0-41.5 42.0-50.0	0.04-0.08 0.05-0.08 0.06-0.10 0.07-0.11	140(120-170)
M	Stainless steel Ferrite Martensite	150-270	12.0-21.5 22.0-33.5 34.0-41.5 42.0-50.0	0.04-0.09 0.05-0.12 0.06-0.16 0.08-0.18	160(110-230)
	Austenite	150-275	12.0-21.5 22.0-33.5 34.0-41.5 42.0-50.0	0.04-0.09 0.05-0.11 0.06-0.13 0.08-0.14	140(110-220)
K	Malleable cast iron	150-230	12.0-21.5 22.0-33.5 34.0-41.5 42.0-50.0	0.04-0.10 0.05-0.14 0.08-0.16 0.10-0.20	160(120-220)
	Gray cast iron	150-220	12.0-21.5 22.0-33.5 34.0-41.5 42.0-50.0	0.04-0.10 0.05-0.14 0.08-0.16 0.10-0.20	200(170-240)
	Nodular cast iron	160-250	12.0-21.5 22.0-33.5 34.0-41.5 42.0-50.0	0.04-0.09 0.05-0.12 0.06-0.14 0.08-0.16	160(130-200)
N	Aluminum alloy	60-110	12.0-21.5 22.0-33.5 34.0-41.5 42.0-50.0	0.04-0.10 0.05-0.14 0.08-0.16 0.10-0.20	300(250-350)

Recommended cutting parameters for ZTD/ZD

ISO	Materials	Hardness HB	Diameter Dc (mm)	Feed rate f (mm/r)	Cutting speed Vc (m/min)
P	Carbon steel	80-200	13.0-21.0 22.0-33.0 34.0-41.0 42.0-50.0 51.0-58.0	0.05-0.09 0.05-0.09 0.06-0.10 0.07-0.11 0.08-0.12	200(170-240)
	Low alloy steel	150-260	13.0-21.0 22.0-33.0 34.0-41.0 42.0-50.0 51.0-58.0	0.05-0.09 0.05-0.12 0.06-0.14 0.08-0.16 0.10-0.20	170(140-220)
	High alloy steel	150-320	13.0-21.0 22.0-33.0 34.0-41.0 42.0-50.0 51.0-58.0	0.05-0.09 0.05-0.12 0.06-0.16 0.08-0.18 0.10-0.22	150(120-180)
	Cast steel	180-250	13.0-21.0 22.0-33.0 34.0-41.0 42.0-50.0 51.0-58.0	0.05-0.08 0.05-0.08 0.06-0.10 0.07-0.11 0.07-0.12	140(120-170)
M	Stainless steel Ferrite Martensite	150-270	13.0-21.0 22.0-33.0 34.0-41.0 42.0-50.0 51.0-58.0	0.05-0.09 0.05-0.12 0.06-0.16 0.08-0.18 0.10-0.22	160(110-230)
	Austenite	150-275	13.0-21.0 22.0-33.0 34.0-41.0 42.0-50.0 51.0-58.0	0.05-0.09 0.05-0.11 0.06-0.13 0.08-0.14 0.10-0.16	140(110-220)
K	Malleable cast iron	150-230	13.0-21.0 22.0-33.0 34.0-41.0 42.0-50.0 51.0-58.0	0.05-0.10 0.05-0.14 0.08-0.16 0.10-0.20 0.12-0.24	160(120-220)
	Gray cast iron	150-220	13.0-21.0 22.0-33.0 34.0-41.0 42.0-50.0 51.0-58.0	0.05-0.10 0.05-0.14 0.08-0.16 0.10-0.20 0.12-0.24	200(170-240)
	Nodular cast iron	160-250	13.0-21.0 22.0-33.0 34.0-41.0 42.0-50.0 51.0-58.0	0.05-0.09 0.05-0.12 0.06-0.14 0.08-0.16 0.10-0.20	160(130-200)
N	Aluminum alloy	60-110	13.0-21.0 22.0-33.0 34.0-41.0 42.0-50.0 51.0-58.0	0.05-0.10 0.05-0.14 0.08-0.16 0.10-0.20 0.12-0.24	300(250-350)

ZTK series

Interchangeable head drill

3 Patents

High-performance Interchangeable head drill with unique structure design, can reduce machining cost and improve production efficiency, Achieve high precision and high efficiency cutting.

Double helical internal coolant holes, provide accurate cooling supply and good chip control during machining;

Double clamping
Both axial, radial positioning surface and thread interface coordinately clamping to ensure stable and reliable tool head assembly;

Unique cutting edge design, with good versatility can ensure smooth cutting, achieve low resistance and efficient machining.

General-purpose machining-GD
The combination of curve and straight cutting edge generates good universality

For Cast Iron-KD
Enhanced cutting edge prolong tool life

For AL-LD
Low resistance design, achieve high efficiency cutting

Three types of drill-head, able to meet requirements for various materials, prolong tool life, achieve machining stability.

Case study

Excellent machining accuracy

Tool holder specification :
ZTK03-ED125-G16C
Tool head specification :
EDC1260-060-GD
Workpiece material: 42CrMo (HRC30)
Cutting data: Vc=100m/min,
f=0.20mm/r, ap=30mm
Cooling type: internal coolant supply

ZTK

Similar products of company A

Excellent chip-breaking performance

Tool holder specification: ZTK03-ED160-G20C
Tool head specification:
EDC1630-080-GD
Workpiece material: 50Mn (HB240)
Cutting data: Vc=120m/min,
f=0.30mm/r,
ap=30mm
Cooling type: internal coolant supply

ZTK

Similar products of company A

Conclusion: Under the same working conditions, the surface accuracy, verticality and chip breaking performance of our ZTK series interchangeable drill holes are better than similar products of Company A.

Interchangeable head drills code key

Code key of Interchangeable head drill tool holder

015	1.5D
03	3D
05	5D
08	8D

L/D

Range	120-250
	12.0mm-25.0mm

Tool diameter

Range	16
	20
	25
	32

Shank diameter

ZTK 03 - ED160 - G - 20 - C

Tool type

Code	Description
ZTK	Interchangeable head drill

Shank type

Code	Description
G	Cylindrical shank
XP	Weldon shank

Internal identification

Code key of Interchangeable head drill head

Range	1200-2590
	12.0mm-25.9mm

Tool diameter

GD	General machining
KD	Cast iron machining
LD	Aluminum machining

Application range

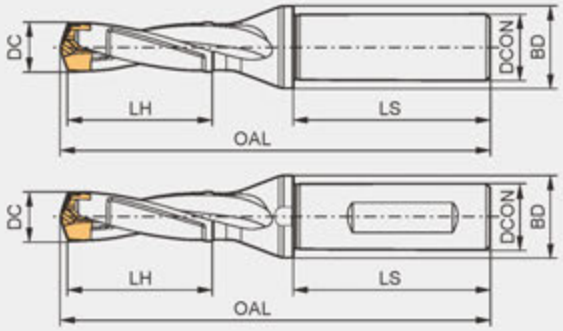
EDC - 1600 - 080 - GD

Product series

Coupling size code
060-125

Interchangeable head drill ZTK015 1.5D

Used for shanks with 12.0mm – 25.9mm diameter drill head

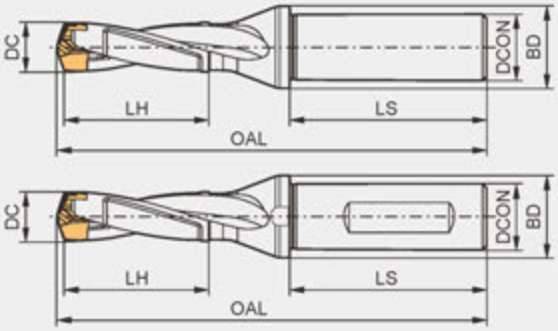


Type		Stock	Basic dimension(mm)						Coupling	Shank form	Wrench
			DC	LH	DCON	BD	LS	OAL			
ZTK015 Cylindrical shank	-ED120-G16C	▲	12-12.9	18.0	16	20	48	83.0	060	Picture 1	ZTK12-15.9
	-ED130-G16C	▲	13-13.9	19.5	16	20	48	85.5	065	Picture 1	ZTK12-15.9
	-ED140-G16C	▲	14-14.9	21.0	16	20	48	89.0	070	Picture 1	ZTK12-15.9
	-ED150-G20C	▲	15-15.9	22.5	20	25	50	96.5	075	Picture 1	ZTK12-15.9
	-ED160-G20C	▲	16-16.9	24.0	20	25	50	100.0	080	Picture 1	ZTK16-20.9
	-ED170-G20C	▲	17-17.9	25.5	20	25	50	102.5	085	Picture 1	ZTK16-20.9
	-ED180-G25C	▲	18-18.9	27.0	25	32	56	112.0	090	Picture 1	ZTK16-20.9
	-ED190-G25C	▲	19-19.9	28.5	25	32	56	114.5	095	Picture 1	ZTK16-20.9
	-ED200-G25C	▲	20-20.9	30.0	25	32	56	116.0	100	Picture 1	ZTK16-20.9
	-ED210-G25C	▲	21-21.9	31.5	25	32	56	125.5	105	Picture 1	ZTK21-25.9
	-ED220-G25C	▲	22-22.9	33.0	25	32	56	128.0	110	Picture 1	ZTK21-25.9
	-ED230-G32C	▲	23-23.9	34.5	32	42	60	131.5	115	Picture 1	ZTK21-25.9
	-ED240-G32C	▲	24-24.9	36.0	32	42	60	134.0	120	Picture 1	ZTK21-25.9
	-ED250-G32C	▲	25-25.9	37.5	32	42	60	137.5	125	Picture 1	ZTK21-25.9
Weldon shank	-ED120-XP16C	▲	12-12.9	18.0	16	20	48	83.0	060	Picture 2	ZTK12-15.9
	-ED130-XP16C	▲	13-13.9	19.5	16	20	48	85.5	065	Picture 2	ZTK12-15.9
	-ED140-XP16C	▲	14-14.9	21.0	16	20	48	89.0	070	Picture 2	ZTK12-15.9
	-ED150-XP20C	▲	15-15.9	22.5	20	25	50	96.5	075	Picture 2	ZTK12-15.9
	-ED160-XP20C	▲	16-16.9	24.0	20	25	50	100.0	080	Picture 2	ZTK16-20.9
	-ED170-XP20C	▲	17-17.9	25.5	20	25	50	102.5	085	Picture 2	ZTK16-20.9
	-ED180-XP25C	▲	18-18.9	27.0	25	32	56	112.0	090	Picture 2	ZTK16-20.9
	-ED190-XP25C	▲	19-19.9	28.5	25	32	56	114.5	095	Picture 2	ZTK16-20.9
	-ED200-XP25C	▲	20-20.9	30.0	25	32	56	116.0	100	Picture 2	ZTK16-20.9
	-ED210-XP25C	▲	21-21.9	31.5	25	32	56	125.5	105	Picture 2	ZTK21-25.9
	-ED220-XP25C	▲	22-22.9	33.0	25	32	56	128.0	110	Picture 2	ZTK21-25.9
	-ED230-XP32C	▲	23-23.9	34.5	32	42	60	131.5	115	Picture 2	ZTK21-25.9
	-ED240-XP32C	▲	24-24.9	36.0	32	42	60	134.0	120	Picture 2	ZTK21-25.9
	-ED250-XP32C	▲	25-25.9	37.5	32	42	60	137.5	125	Picture 2	ZTK21-25.9

▲Regular Stock △Made-to-order

Interchangeable head drill ZTK03 3D

Used for shanks with 12.0mm – 25.9mm diameter drill head

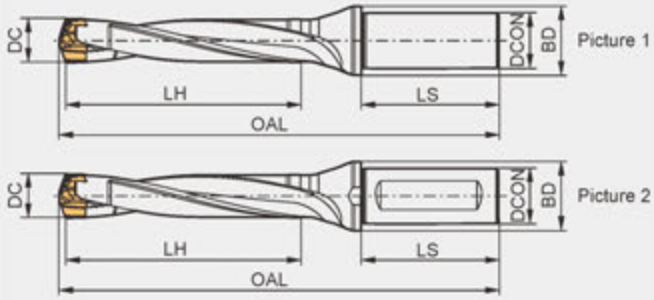


Type		Stock	Basic dimension(mm)						Coupling	Shank form	Wrench
			DC	LH	DCON	BD	LS	OAL			
ZTK03 Cylindrical shank	-ED120-G16C	▲	12-12.4	36.0	16	20	48	101.0	060	Picture 1	ZTK12-15.9
	-ED125-G16C	▲	12.5-12.9	37.0	16	20	48	103.0	060	Picture 1	ZTK12-15.9
	-ED130-G16C	▲	13-13.4	39.0	16	20	48	105.0	065	Picture 1	ZTK12-15.9
	-ED135-G16C	▲	13.5-13.9	41.0	16	20	48	107.0	065	Picture 1	ZTK12-15.9
	-ED140-G16C	▲	14-14.4	42.0	16	20	48	110.0	070	Picture 1	ZTK12-15.9
	-ED145-G16C	▲	14.5-14.9	44.0	16	20	48	112.0	070	Picture 1	ZTK12-15.9
	-ED150-G20C	▲	15-15.9	45.0	20	25	50	119.0	075	Picture 1	ZTK12-15.9
	-ED160-G20C	▲	16-16.9	48.0	20	25	50	124.0	080	Picture 1	ZTK16-20.9
	-ED170-G20C	▲	17-17.9	51.0	20	25	50	128.0	085	Picture 1	ZTK16-20.9
	-ED180-G25C	▲	18-18.9	54.0	25	32	56	139.0	090	Picture 1	ZTK16-20.9
	-ED190-G25C	▲	19-19.9	57.0	25	32	56	143.0	095	Picture 1	ZTK16-20.9
	-ED200-G25C	▲	20-20.9	60.0	25	32	56	146.0	100	Picture 1	ZTK16-20.9
	-ED210-G25C	▲	21-21.9	63.0	25	32	56	157.0	105	Picture 1	ZTK21-25.9
	-ED220-G25C	▲	22-22.9	66.0	25	32	56	161.0	110	Picture 1	ZTK21-25.9
	-ED230-G32C	▲	23-23.9	69.0	32	42	60	166.0	115	Picture 1	ZTK21-25.9
	-ED240-G32C	▲	24-24.9	72.0	32	42	60	170.0	120	Picture 1	ZTK21-25.9
	-ED250-G32C	▲	25-25.9	75.0	32	42	60	175.0	125	Picture 1	ZTK21-25.9
Weldon shank	-ED120-XP16C	▲	12-12.4	36.0	16	20	48	101.0	060	Picture 2	ZTK12-15.9
	-ED125-XP16C	▲	12.5-12.9	37.0	16	20	48	103.0	060	Picture 2	ZTK12-15.9
	-ED130-XP16C	▲	13-13.4	39.0	16	20	48	105.0	065	Picture 2	ZTK12-15.9
	-ED135-XP16C	▲	13.5-13.9	41.0	16	20	48	107.0	065	Picture 2	ZTK12-15.9
	-ED140-XP16C	▲	14-14.4	42.0	16	20	48	110.0	070	Picture 2	ZTK12-15.9
	-ED145-XP16C	▲	14.5-14.9	44.0	16	20	48	112.0	070	Picture 2	ZTK12-15.9
	-ED150-XP20C	▲	15-15.9	45.0	20	25	50	119.0	075	Picture 2	ZTK12-15.9
	-ED160-XP20C	▲	16-16.9	48.0	20	25	50	124.0	080	Picture 2	ZTK16-20.9
	-ED170-XP20C	▲	17-17.9	51.0	20	25	50	128.0	085	Picture 2	ZTK16-20.9
	-ED180-XP25C	▲	18-18.9	54.0	25	32	56	139.0	090	Picture 2	ZTK16-20.9
	-ED190-XP25C	▲	19-19.9	57.0	25	32	56	143.0	095	Picture 2	ZTK16-20.9
	-ED200-XP25C	▲	20-20.9	60.0	25	32	56	146.0	100	Picture 2	ZTK16-20.9
	-ED210-XP25C	▲	21-21.9	63.0	25	32	56	157.0	105	Picture 2	ZTK21-25.9
	-ED220-XP25C	▲	22-22.9	66.0	25	32	56	161.0	110	Picture 2	ZTK21-25.9
	-ED230-XP32C	▲	23-23.9	69.0	32	42	60	166.0	115	Picture 2	ZTK21-25.9
	-ED240-XP32C	▲	24-24.9	72.0	32	42	60	170.0	120	Picture 2	ZTK21-25.9
	-ED250-XP32C	▲	25-25.9	75.0	32	42	60	175.0	125	Picture 2	ZTK21-25.9

▲Regular Stock △Made-to-order

Interchangeable head drill ZTK04 4D

Used for shanks with 12.0mm – 25.9mm diameter drill head

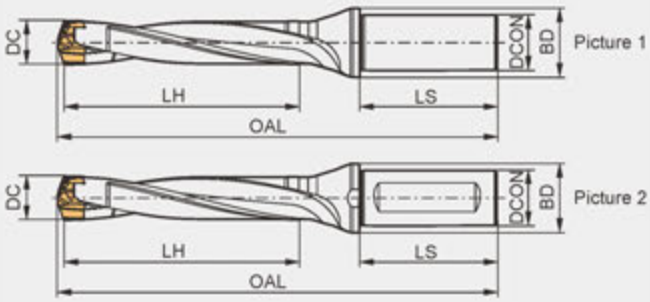


Type		Stock	Basic dimension(mm)						Coupling	Shank form	Wrench
			DC	LH	DCON	BD	LS	OAL			
ZTK04 Cylindrical shank	ED120-G16C	▲	12-12.4	48	16	20	48	115.0	060	Picture 1	ZTK12-15.9
	ED125-G16C	▲	12.5-12.9	50	16	20	48	117.0	060	Picture 1	ZTK12-15.9
	ED130-G16C	▲	13-13.4	52	16	20	48	119.0	065	Picture 1	ZTK12-15.9
	ED135-G16C	▲	13.5-13.9	54	16	20	48	121.0	065	Picture 1	ZTK12-15.9
	ED140-G20C	▲	14-14.4	56	16	20	48	123.5	070	Picture 1	ZTK12-15.9
	ED145-G20C	▲	14.5-14.9	58	16	20	48	125.5	070	Picture 1	ZTK12-15.9
	ED150-G20C	▲	15-15.9	60	20	25	50	132.5	075	Picture 1	ZTK12-15.9
	ED160-G20C	▲	16-16.9	64	20	25	50	136.5	080	Picture 1	ZTK16-20.9
	ED170-G20C	▲	17-17.9	68	20	25	50	141.0	085	Picture 1	ZTK16-20.9
	ED180-G25C	▲	18-18.9	72	25	32	56	151.0	090	Picture 1	ZTK16-20.9
	ED190-G25C	▲	19-19.9	76	25	32	56	155.0	095	Picture 1	ZTK16-20.9
	ED200-G25C	▲	20-20.9	80	25	32	56	159.5	100	Picture 1	ZTK16-20.9
	ED210-G25C	▲	21-21.9	84	25	32	56	163.5	105	Picture 1	ZTK21-25.9
	ED220-G25C	▲	22-22.9	88	25	32	56	168.0	110	Picture 1	ZTK21-25.9
	ED230-G32C	▲	23-23.9	92	32	42	60	186.0	115	Picture 1	ZTK21-25.9
	ED240-G32C	▲	24-24.9	96	32	42	60	190.0	120	Picture 1	ZTK21-25.9
	ED250-G32C	▲	25-25.9	100	32	42	60	194.5	125	Picture 1	ZTK21-25.9
Weldon shank	ED120-XP16C	▲	12-12.4	48	16	20	48	115.0	060	Picture 2	ZTK12-15.9
	ED125-XP16C	▲	12.5-12.9	50	16	20	48	117.0	060	Picture 2	ZTK12-15.9
	ED130-XP16C	▲	13-13.4	52	16	20	48	119.0	065	Picture 2	ZTK12-15.9
	ED135-XP16C	▲	13.5-13.9	54	16	20	48	121.0	065	Picture 2	ZTK12-15.9
	ED140-XP20C	▲	14-14.4	56	16	20	48	123.5	070	Picture 2	ZTK12-15.9
	ED145-XP20C	▲	14.5-14.9	58	16	20	48	125.5	070	Picture 2	ZTK12-15.9
	ED150-XP20C	▲	15-15.9	60	20	25	50	132.5	075	Picture 2	ZTK12-15.9
	ED160-XP20C	▲	16-16.9	64	20	25	50	136.5	080	Picture 2	ZTK16-20.9
	ED170-XP20C	▲	17-17.9	68	20	25	50	141.0	085	Picture 2	ZTK16-20.9
	ED180-XP25C	▲	18-18.9	72	25	32	56	151.0	090	Picture 2	ZTK16-20.9
	ED190-XP25C	▲	19-19.9	76	25	32	56	155.0	095	Picture 2	ZTK16-20.9
	ED200-XP25C	▲	20-20.9	80	25	32	56	159.5	100	Picture 2	ZTK16-20.9
	ED210-XP25C	▲	21-21.9	84	25	32	56	163.5	105	Picture 2	ZTK21-25.9
	ED220-XP25C	▲	22-22.9	88	25	32	56	168.0	110	Picture 2	ZTK21-25.9
	ED230-XP32C	▲	23-23.9	92	32	42	60	186.0	115	Picture 2	ZTK21-25.9
	ED240-XP32C	▲	24-24.9	96	32	42	60	190.0	120	Picture 2	ZTK21-25.9
	ED250-XP32C	▲	25-25.9	100	32	42	60	194.5	125	Picture 2	ZTK21-25.9

▲Regular Stock △Made-to-order

Interchangeable head drill ZTK05 5D

Used for shanks with 12.0mm – 25.9mm diameter drill head

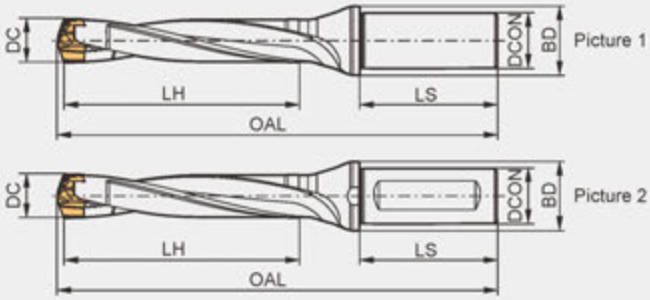


Type		Stock	Basic dimension(mm)						Coupling	Shank form	Wrench
			DC	LH	DCON	BD	LS	OAL			
ZTK05 Cylindrical shank	-ED120-G16C	▲	12-12.4	60.0	16	20	48	125.0	060	Picture 1	ZTK12-15.9
	-ED125-G16C	▲	12.5-12.9	62.0	16	20	48	128.0	060	Picture 1	ZTK12-15.9
	-ED130-G16C	▲	13-13.4	65.0	16	20	48	131.0	065	Picture 1	ZTK12-15.9
	-ED135-G16C	▲	13.5-13.9	68.0	16	20	48	134.0	065	Picture 1	ZTK12-15.9
	-ED140-G16C	▲	14-14.4	70.0	16	20	48	139.0	070	Picture 1	ZTK12-15.9
	-ED145-G16C	▲	14.5-14.9	73.0	16	20	48	141.0	070	Picture 1	ZTK12-15.9
	-ED150-G20C	▲	15-15.9	75.0	20	25	50	149.0	075	Picture 1	ZTK12-15.9
	-ED160-G20C	▲	16-16.9	80.0	20	25	50	156.0	080	Picture 1	ZTK16-20.9
	-ED170-G20C	▲	17-17.9	85.0	20	25	50	162.0	085	Picture 1	ZTK16-20.9
	-ED180-G25C	▲	18-18.9	90.0	25	32	56	175.0	090	Picture 1	ZTK16-20.9
	-ED190-G25C	▲	19-19.9	95.0	25	32	56	181.0	095	Picture 1	ZTK16-20.9
	-ED200-G25C	▲	20-20.9	100.0	25	32	56	188.0	100	Picture 1	ZTK16-20.9
	-ED210-G25C	▲	21-21.9	105.0	25	32	56	199.0	105	Picture 1	ZTK21-25.9
	-ED220-G25C	▲	22-22.9	110.0	25	32	56	205.0	110	Picture 1	ZTK21-25.9
	-ED230-G32C	▲	23-23.9	115.0	32	42	60	212.0	115	Picture 1	ZTK21-25.9
	-ED240-G32C	▲	24-24.9	120.0	32	42	60	218.0	120	Picture 1	ZTK21-25.9
	-ED250-G32C	▲	25-25.9	125.0	32	42	60	225.0	125	Picture 1	ZTK21-25.9
Weldon shank	-ED120-XP16C	▲	12-12.4	60.0	16	20	48	125.0	060	Picture 2	ZTK12-15.9
	-ED125-XP16C	▲	12.5-12.9	62.0	16	20	48	128.0	060	Picture 2	ZTK12-15.9
	-ED130-XP16C	▲	13-13.4	65.0	16	20	48	131.0	065	Picture 2	ZTK12-15.9
	-ED135-XP16C	▲	13.5-13.9	68.0	16	20	48	134.0	065	Picture 2	ZTK12-15.9
	-ED140-XP16C	▲	14-14.4	70.0	16	20	48	139.0	070	Picture 2	ZTK12-15.9
	-ED145-XP16C	▲	14.5-14.9	73.0	16	20	48	141.0	070	Picture 2	ZTK12-15.9
	-ED150-XP20C	▲	15-15.9	75.0	20	25	50	149.0	075	Picture 2	ZTK12-15.9
	-ED160-XP20C	▲	16-16.9	80.0	20	25	50	156.0	080	Picture 2	ZTK16-20.9
	-ED170-XP20C	▲	17-17.9	85.0	20	25	50	162.0	085	Picture 2	ZTK16-20.9
	-ED180-XP25C	▲	18-18.9	90.0	25	32	56	175.0	090	Picture 2	ZTK16-20.9
	-ED190-XP25C	▲	19-19.9	95.0	25	32	56	181.0	095	Picture 2	ZTK16-20.9
	-ED200-XP25C	▲	20-20.9	100.0	25	32	56	188.0	100	Picture 2	ZTK16-20.9
	-ED210-XP25C	▲	21-21.9	105.0	25	32	56	199.0	105	Picture 2	ZTK21-25.9
	-ED220-XP25C	▲	22-22.9	110.0	25	32	56	205.0	110	Picture 2	ZTK21-25.9
	-ED230-XP32C	▲	23-23.9	115.0	32	42	60	212.0	115	Picture 2	ZTK21-25.9
	-ED240-XP32C	▲	24-24.9	120.0	32	42	60	218.0	120	Picture 2	ZTK21-25.9
	-ED250-XP32C	▲	25-25.9	125.0	32	42	60	225.0	125	Picture 2	ZTK21-25.9

▲Regular Stock △Made-to-order

Interchangeable head drill ZTK08 8D

Used for shanks with 12.0mm – 25.9mm diameter drill head



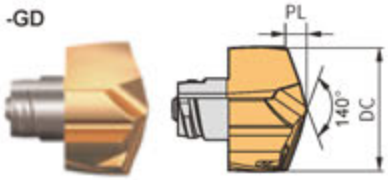
Type		Stock	Basic dimension(mm)						Coupling	Shank form	Wrench
			DC	LH	DCON	BD	LS	OAL			
ZTK08 Cylindrical shank	-ED120-G16C	▲	12-12.4	96.0	16	20	48	161.0	060	Picture 1	ZTK12-15.9
	-ED125-G16C	▲	12.5-12.9	99.5	16	20	48	165.5	060	Picture 1	ZTK12-15.9
	-ED130-G16C	▲	13-13.4	104.0	16	20	48	170.0	065	Picture 1	ZTK12-15.9
	-ED135-G16C	▲	13.5-13.9	108.5	16	20	48	174.5	065	Picture 1	ZTK12-15.9
	-ED140-G16C	▲	14-14.4	112.0	16	20	48	181.0	070	Picture 1	ZTK12-15.9
	-ED145-G16C	▲	14.5-14.9	116.5	16	20	48	184.5	070	Picture 1	ZTK12-15.9
	-ED150-G20C	▲	15-15.9	120.0	20	25	50	194.0	075	Picture 1	ZTK12-15.9
	-ED160-G20C	▲	16-16.9	128.0	20	25	50	204.0	080	Picture 1	ZTK16-20.9
	-ED170-G20C	▲	17-17.9	136.0	20	25	50	213.0	085	Picture 1	ZTK16-20.9
	-ED180-G25C	▲	18-18.9	144.0	25	32	56	229.0	090	Picture 1	ZTK16-20.9
	-ED190-G25C	▲	19-19.9	152.0	25	32	56	238.0	095	Picture 1	ZTK16-20.9
	-ED200-G25C	▲	20-20.9	160.0	25	32	56	248.0	100	Picture 1	ZTK16-20.9
	-ED210-G25C	▲	21-21.9	168.0	25	32	56	262.0	105	Picture 1	ZTK21-25.9
	-ED220-G25C	▲	22-22.9	176.0	25	32	56	271.0	110	Picture 1	ZTK21-25.9
	-ED230-G32C	▲	23-23.9	184.0	32	42	60	281.0	115	Picture 1	ZTK21-25.9
	-ED240-G32C	▲	24-24.9	192.0	32	42	60	290.0	120	Picture 1	ZTK21-25.9
	-ED250-G32C	▲	25-25.9	200.0	32	42	60	300.0	125	Picture 1	ZTK21-25.9
Weldon shank	-ED120-XP16C	▲	12-12.4	96.0	16	20	48	161.0	060	Picture 2	ZTK12-15.9
	-ED125-XP16C	▲	12.5-12.9	99.5	16	20	48	165.5	060	Picture 2	ZTK12-15.9
	-ED130-XP16C	▲	13-13.4	104.0	16	20	48	170.0	065	Picture 2	ZTK12-15.9
	-ED135-XP16C	▲	13.5-13.9	108.5	16	20	48	174.5	065	Picture 2	ZTK12-15.9
	-ED140-XP16C	▲	14-14.4	112.0	16	20	48	181.0	070	Picture 2	ZTK12-15.9
	-ED145-XP16C	▲	14.5-14.9	116.5	16	20	48	184.5	070	Picture 2	ZTK12-15.9
	-ED150-XP20C	▲	15-15.9	120.0	20	25	50	194.0	075	Picture 2	ZTK12-15.9
	-ED160-XP20C	▲	16-16.9	128.0	20	25	50	204.0	080	Picture 2	ZTK16-20.9
	-ED170-XP20C	▲	17-17.9	136.0	20	25	50	213.0	085	Picture 2	ZTK16-20.9
	-ED180-XP25C	▲	18-18.9	144.0	25	32	56	229.0	090	Picture 2	ZTK16-20.9
	-ED190-XP25C	▲	19-19.9	152.0	25	32	56	238.0	095	Picture 2	ZTK16-20.9
	-ED200-XP25C	▲	20-20.9	160.0	25	32	56	248.0	100	Picture 2	ZTK16-20.9
	-ED210-XP25C	▲	21-21.9	168.0	25	32	56	262.0	105	Picture 2	ZTK21-25.9
	-ED220-XP25C	▲	22-22.9	176.0	25	32	56	271.0	110	Picture 2	ZTK21-25.9
	-ED230-XP32C	▲	23-23.9	184.0	32	42	60	281.0	115	Picture 2	ZTK21-25.9
	-ED240-XP32C	▲	24-24.9	192.0	32	42	60	290.0	120	Picture 2	ZTK21-25.9
	-ED250-XP32C	▲	25-25.9	200.0	32	42	60	300.0	125	Picture 2	ZTK21-25.9

▲Regular Stock △Made-to-order

EDC Interchangeable head drill

Diameter 12.0mm – 25.9mm

-GD



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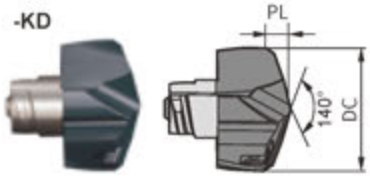

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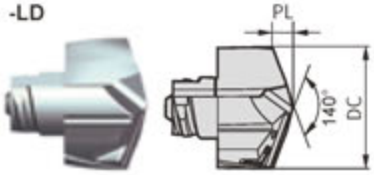


Type	Grade	Basic dimension(mm)		Compatible tool holder	Coupling	Wrench
	KDG3013	DC	PL			
EDC1200-060-GD/KD/LD	▲	12.0	2.18	ZTK015-ED120-□□ ZTK03-ED120-□□ ZTK04-ED120-□□ ZTK05-ED120-□□ ZTK08-ED120-□□	060	ZTK12-15.9
EDC1210-060-GD/KD/LD	△	12.1	2.20			
EDC1220-060-GD/KD/LD	△	12.2	2.22			
EDC1230-060-GD/KD/LD	△	12.3	2.24			
EDC1240-060-GD/KD/LD	△	12.4	2.26			
EDC1250-060-GD/KD/LD	▲	12.5	2.27	ZTK015-ED120-□□ ZTK03-ED125-□□ ZTK04-ED125-□□ ZTK05-ED125-□□ ZTK08-ED125-□□		
EDC1260-060-GD/KD/LD	△	12.6	2.29			
EDC1270-060-GD/KD/LD	△	12.7	2.31			
EDC1280-060-GD/KD/LD	△	12.8	2.33			
EDC1290-060-GD/KD/LD	△	12.9	2.35			
EDC1300-065-GD/KD/LD	▲	13.0	2.36	ZTK015-ED130-□□ ZTK03-ED130-□□ ZTK04-ED130-□□ ZTK05-ED130-□□ ZTK08-ED130-□□	065	
EDC1310-065-GD/KD/LD	△	13.1	2.38			
EDC1320-065-GD/KD/LD	△	13.2	2.40			
EDC1330-065-GD/KD/LD	△	13.3	2.42			
EDC1340-065-GD/KD/LD	△	13.4	2.44			
EDC1350-065-GD/KD/LD	▲	13.5	2.46	ZTK015-ED130-□□ ZTK03-ED135-□□ ZTK04-ED135-□□ ZTK05-ED135-□□ ZTK08-ED135-□□		
EDC1360-065-GD/KD/LD	△	13.6	2.47			
EDC1370-065-GD/KD/LD	△	13.7	2.49			
EDC1380-065-GD/KD/LD	△	13.8	2.51			
EDC1390-065-GD/KD/LD	△	13.9	2.53			
EDC1400-070-GD/KD/LD	▲	14.0	2.55	ZTK015-ED140-□□ ZTK03-ED140-□□ ZTK04-ED140-□□ ZTK05-ED140-□□ ZTK08-ED140-□□	070	
EDC1410-070-GD/KD/LD	△	14.1	2.56			
EDC1420-070-GD/KD/LD	△	14.2	2.58			
EDC1430-070-GD/KD/LD	△	14.3	2.60			
EDC1440-070-GD/KD/LD	△	14.4	2.62			
EDC1450-070-GD/KD/LD	▲	14.5	2.64	ZTK015-ED140-□□ ZTK03-ED145-□□ ZTK04-ED145-□□ ZTK05-ED145-□□ ZTK08-ED145-□□		
EDC1460-070-GD/KD/LD	△	14.6	2.66			
EDC1470-070-GD/KD/LD	△	14.7	2.67			
EDC1480-070-GD/KD/LD	△	14.8	2.69			
EDC1490-070-GD/KD/LD	△	14.9	2.71			
EDC1500-075-GD/KD/LD	▲	15.0	2.73	ZTK015-ED150-□□ ZTK03-ED150-□□ ZTK04-ED150-□□ ZTK05-ED150-□□ ZTK08-ED150-□□	075	
EDC1510-075-GD/KD/LD	△	15.1	2.75			
EDC1520-075-GD/KD/LD	△	15.2	2.76			
EDC1530-075-GD/KD/LD	△	15.3	2.78			
EDC1540-075-GD/KD/LD	△	15.4	2.80			

▲Regular Stock △Made-to-order

Type	Grade	Basic dimension(mm)		Compatible tool holder	Coupling	Wrench
	KDG3013	DC	PL			
EDC1550-075-GD/KD/LD	▲	15.5	2.82	ZTK015-ED150-□□ ZTK03-ED150-□□ ZTK04-ED150-□□ ZTK05-ED150-□□ ZTK08-ED150-□□	075	ZTK12-15.9
EDC1560-075-GD/KD/LD	△	15.6	2.84			
EDC1570-075-GD/KD/LD	△	15.7	2.86			
EDC1580-075-GD/KD/LD	△	15.8	2.87			
EDC1590-075-GD/KD/LD	△	15.9	2.89			
EDC1600-080-GD/KD/LD	▲	16.0	2.91	ZTK015-ED160-□□ ZTK03-ED160-□□ ZTK04-ED160-□□ ZTK05-ED160-□□ ZTK08-ED160-□□	080	ZTK16-20.9
EDC1610-080-GD/KD/LD	△	16.1	2.93			
EDC1620-080-GD/KD/LD	△	16.2	2.95			
EDC1630-080-GD/KD/LD	△	16.3	2.96			
EDC1640-080-GD/KD/LD	△	16.4	2.98			
EDC1650-080-GD/KD/LD	▲	16.5	3.00			
EDC1660-080-GD/KD/LD	△	16.6	3.02			
EDC1670-080-GD/KD/LD	△	16.7	3.04			
EDC1680-080-GD/KD/LD	△	16.8	3.06			
EDC1690-080-GD/KD/LD	△	16.9	3.07			
EDC1700-085-GD/KD/LD	▲	17.0	3.09	ZTK015-ED170-□□ ZTK03-ED170-□□ ZTK04-ED170-□□ ZTK05-ED170-□□ ZTK08-ED170-□□	085	
EDC1710-085-GD/KD/LD	△	17.1	3.11			
EDC1720-085-GD/KD/LD	△	17.2	3.13			
EDC1730-085-GD/KD/LD	△	17.3	3.15			
EDC1740-085-GD/KD/LD	△	17.4	3.16			
EDC1750-085-GD/KD/LD	▲	17.5	3.18			
EDC1760-085-GD/KD/LD	△	17.6	3.20			
EDC1770-085-GD/KD/LD	△	17.7	3.22			
EDC1780-085-GD/KD/LD	△	17.8	3.24			
EDC1790-085-GD/KD/LD	△	17.9	3.26			
EDC1800-090-GD/KD/LD	▲	18.0	3.27	ZTK015-ED180-□□ ZTK03-ED180-□□ ZTK04-ED180-□□ ZTK05-ED180-□□ ZTK08-ED180-□□	090	
EDC1810-090-GD/KD/LD	△	18.1	3.29			
EDC1820-090-GD/KD/LD	△	18.2	3.31			
EDC1830-090-GD/KD/LD	△	18.3	3.33			
EDC1840-090-GD/KD/LD	△	18.4	3.35			

▲Regular Stock △Made-to-order

Applicable material table

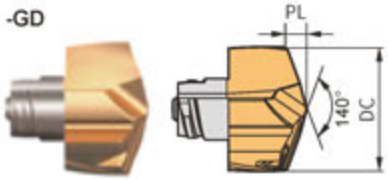
◎Very suitable ○Suitable

Workpiece material										
Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
		~40HRC	~50HRC	~60HRC						
○	◎	◎			○	◎	◎			

EDC Interchangeable head drill

Diameter 12.0mm – 25.9mm

-GD



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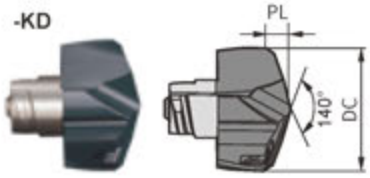

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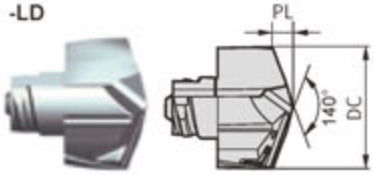


Type	Grade	Basic dimension(mm)		Compatible tool holder	Coupling	Wrench
	KDG3013	DC	PL			
EDC1850-090-GD/KD/LD	▲	18.5	3.36	ZTK015-ED180-□□ ZTK03-ED180-□□ ZTK04-ED180-□□ ZTK05-ED180-□□ ZTK08-ED180-□□	090	ZTK16-20.9
EDC1860-090-GD/KD/LD	△	18.6	3.38			
EDC1870-090-GD/KD/LD	△	18.7	3.40			
EDC1880-090-GD/KD/LD	△	18.8	3.42			
EDC1890-090-GD/KD/LD	△	18.9	3.44			
EDC1900-095-GD/KD/LD	▲	19.0	3.46	ZTK015-ED190-□□ ZTK03-ED190-□□ ZTK04-ED190-□□ ZTK05-ED190-□□ ZTK08-ED190-□□	095	
EDC1910-095-GD/KD/LD	△	19.1	3.47			
EDC1920-095-GD/KD/LD	△	19.2	3.49			
EDC1930-095-GD/KD/LD	△	19.3	3.51			
EDC1940-095-GD/KD/LD	△	19.4	3.53			
EDC1950-095-GD/KD/LD	▲	19.5	3.55			
EDC1960-095-GD/KD/LD	△	19.6	3.56			
EDC1970-095-GD/KD/LD	△	19.7	3.58			
EDC1980-095-GD/KD/LD	△	19.8	3.60			
EDC1990-095-GD/KD/LD	△	19.9	3.62			
EDC2000-100-GD/KD/LD	▲	20.0	3.64	ZTK015-ED200-□□ ZTK03-ED200-□□ ZTK04-ED200-□□ ZTK05-ED200-□□ ZTK08-ED200-□□	100	
EDC2010-100-GD/KD/LD	△	20.1	3.66			
EDC2020-100-GD/KD/LD	△	20.2	3.67			
EDC2030-100-GD/KD/LD	△	20.3	3.69			
EDC2040-100-GD/KD/LD	△	20.4	3.71			
EDC2050-100-GD/KD/LD	▲	20.5	3.73			
EDC2060-100-GD/KD/LD	△	20.6	3.75			
EDC2070-100-GD/KD/LD	△	20.7	3.77			
EDC2080-100-GD/KD/LD	△	20.8	3.78			
EDC2090-100-GD/KD/LD	△	20.9	3.80			
EDC2100-105-GD/KD/LD	▲	21.0	3.82	ZTK015-ED210-□□ ZTK03-ED210-□□ ZTK04-ED210-□□ ZTK05-ED210-□□ ZTK08-ED210-□□	105	ZTK21-25.9
EDC2110-105-GD/KD/LD	△	21.1	3.84			
EDC2120-105-GD/KD/LD	△	21.2	3.86			
EDC2130-105-GD/KD/LD	△	21.3	3.88			
EDC2140-105-GD/KD/LD	△	21.4	3.89			

▲Regular Stock △Made-to-order

Type	Grade	Basic dimension(mm)		Compatible tool holder	Coupling	Wrench
	KDG3013	DC	PL			
EDC2150-105-GD/KD/LD	▲	21.5	3.91	ZTK015-ED210-□□ ZTK03-ED210-□□ ZTK04-ED210-□□ ZTK05-ED210-□□ ZTK08-ED210-□□	105	ZTK21-25.9
EDC2160-105-GD/KD/LD	△	21.6	3.93			
EDC2170-105-GD/KD/LD	△	21.7	3.95			
EDC2180-105-GD/KD/LD	△	21.8	3.97			
EDC2190-105-GD/KD/LD	△	21.9	3.98			
EDC2200-110-GD/KD/LD	▲	22.0	4.00	ZTK015-ED220-□□ ZTK03-ED220-□□ ZTK04-ED220-□□ ZTK05-ED220-□□ ZTK08-ED220-□□	110	
EDC2210-110-GD/KD/LD	△	22.1	4.02			
EDC2220-110-GD/KD/LD	△	22.2	4.04			
EDC2230-110-GD/KD/LD	△	22.3	4.06			
EDC2240-110-GD/KD/LD	△	22.4	4.08			
EDC2250-110-GD/KD/LD	▲	22.5	4.09			
EDC2260-110-GD/KD/LD	△	22.6	4.11			
EDC2270-110-GD/KD/LD	△	22.7	4.13			
EDC2280-110-GD/KD/LD	△	22.8	4.15			
EDC2290-110-GD/KD/LD	△	22.9	4.17			
EDC2300-115-GD/KD/LD	▲	23.0	4.18	ZTK015-ED230-□□ ZTK03-ED230-□□ ZTK04-ED230-□□ ZTK05-ED230-□□ ZTK08-ED230-□□	115	
EDC2310-115-GD/KD/LD	△	23.1	4.20			
EDC2320-115-GD/KD/LD	△	23.2	4.22			
EDC2330-115-GD/KD/LD	△	23.3	4.24			
EDC2340-115-GD/KD/LD	△	23.4	4.26			
EDC2350-115-GD/KD/LD	▲	3.5	4.27			
EDC2360-115-GD/KD/LD	△	23.6	4.29			
EDC2370-115-GD/KD/LD	△	23.7	4.31			
EDC2380-115-GD/KD/LD	△	23.8	4.33			
EDC2390-115-GD/KD/LD	△	23.9	4.35			

▲Regular Stock △Made-to-order

Applicable material table

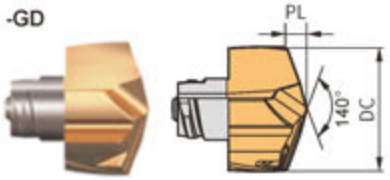
◎Very suitable ○Suitable

Workpiece material										
Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
		~40HRC	~50HRC	~60HRC						
○	◎	◎			○	◎	◎			

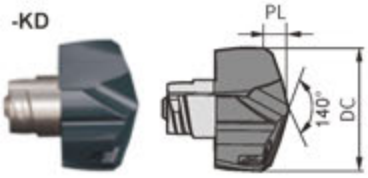
EDC Interchangeable head drill

Diameter 12.0mm – 25.9mm

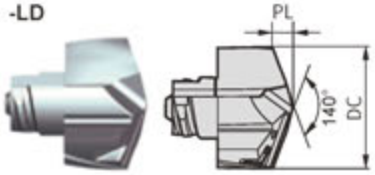
-GD



-KD



-LD



Type	Grade	Basic dimension(mm)		Compatible tool holder	Coupling	Wrench
	KDG3013	DC	PL			
EDC2400-120-GD/KD/LD	▲	24.0	4.37	ZTK015-ED240-□□ ZTK03-ED240-□□ ZTK04-ED240-□□ ZTK05-ED240-□□ ZTK08-ED240-□□	120	ZTK21-25.9
EDC2410-120-GD/KD/LD	△	24.1	4.38			
EDC2420-120-GD/KD/LD	△	24.2	4.40			
EDC2430-120-GD/KD/LD	△	24.3	4.42			
EDC2440-120-GD/KD/LD	△	24.4	4.44			
EDC2450-120-GD/KD/LD	▲	24.5	4.46			
EDC2460-120-GD/KD/LD	△	24.6	4.48			
EDC2470-120-GD/KD/LD	△	24.7	4.49			
EDC2480-120-GD/KD/LD	△	24.8	4.51			
EDC2490-120-GD/KD/LD	△	24.9	4.53			
EDC2500-125-GD/KD/LD	▲	25.0	4.55	ZTK015-ED250-□□ ZTK03-ED250-□□ ZTK04-ED250-□□ ZTK05-ED250-□□ ZTK08-ED250-□□	125	
EDC2510-125-GD/KD/LD	△	25.1	4.57			
EDC2520-125-GD/KD/LD	△	25.2	4.58			
EDC2530-125-GD/KD/LD	△	25.3	4.60			
EDC2540-125-GD/KD/LD	△	25.4	4.62			
EDC2550-125-GD/KD/LD	▲	25.5	4.64			
EDC2560-125-GD/KD/LD	△	25.6	4.66			
EDC2570-125-GD/KD/LD	△	25.7	4.68			
EDC2580-125-GD/KD/LD	△	25.8	4.69			
EDC2590-125-GD/KD/LD	△	25.9	4.70			

▲Regular Stock △Made-to-order

Applicable material table

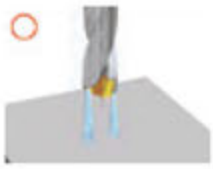
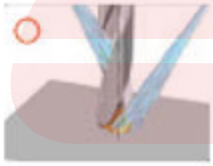
◎Very suitable ○Suitable

Workpiece material										
Mild steel HB≤180	Carbon steel, Alloy steel	Pre-hardened steel, Hardened steel			Stainless steel	Cast iron	Nodular cast iron	Aluminum alloy	Copper alloy	Heat resistant alloy
		~40HRC	~50HRC	~60HRC						
○	◎	◎			○	◎	◎			

Geometry selection and hole tolerance

Geometry	-GD				-KD				-LD			
Workpeice materials application ranges	P M K				K				P M			
L/D	1.5D、3D、5D		8D		1.5D、3D、5D		8D		1.5D、3D、5D		8D	
	12-18mm	18-26mm	12-18mm	18-26mm	12-18mm	18-26mm	12-18mm	18-26mm	12-18mm	18-26mm	12-18mm	18-26mm
Tolerance of hole	0/+0.043	0/+0.052	0/+0.070	0/+0.084	0/+0.043	0/+0.052	0/+0.070	0/+0.084	0/+0.043	0/+0.052	0/+0.070	0/+0.084

Cooling requirements

Internal coolant supply	External coolant supply (Drilling depth < 2D)	No dry cutting
○ 	○ 	× 

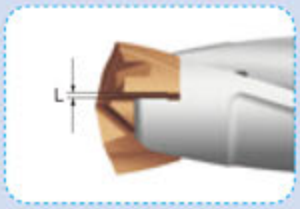
User guide for drills with 8D shanks

1 Pre-drill a hole whose depth is 0.5D to 1.5D with a standard 1.5xD drill;

2 The 8xD drill is fed slowly to the place 2~5mm away from the bottom of the pre-drilled hole, then the internal cooling is provided, and suspending for 2~3 seconds;

3 Strat drilling with normal parameters.

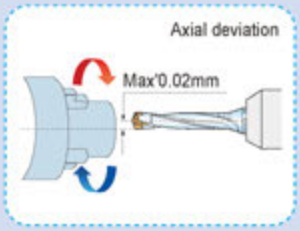
Assembly instructions:



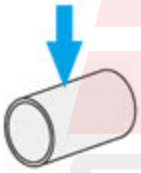
There will be a gap on radial direction after tightening with wrench L=0.05~0.1mm(the gap will be eliminated in cutting automatically).

After inserting the tip into the shanks, tighten it with a wrench. When removing, turn the wrench in the opposite direction.

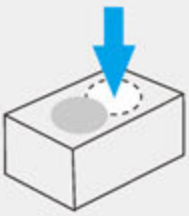
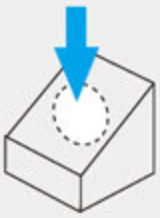
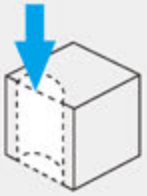
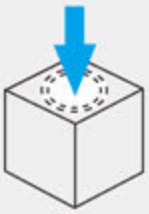
Maximum deviation in assembly:



Suitable workpiece shape

Processing content	Workpiece	Points for attention during processing
Plane surface		1、For Stainless steel machining, suggest set up feed rate below 0.15mm/rev from entrance to 0.5D depth position; 2、In order to removal chip, suggest internal cooling, Recommend internal coolant for better chip control, combine internal and external coolant when machining stainless steel materials.
Overlapping plate		1、In order to prevent dislocation, when processing the overlapping plate, The workpieces needed to be fixed.
Concave hole		1、There could be interrupted cuts, suggest to set feed rate under half of the recommended cutting parameters before peripheral edges fully entering the hole; 2、Fine adjustment are recommened when long chips apearing at entrence.
Cylindrical surface hole		1、It can be used for hole machining on the central axis of the shaft. 2、The curve part not recommend.  Center part machining  Curve part machining

Workpiece shape not recommend

Processing content	Overlapped hole	Slope	Half-section	Reaming
Workpiece shape				

Recommended cutting parameters of Interchangeable drills

Workpiece materials		Cutting speed (m/min)	Diameter(mm)					
			12-13.9	14-15.9	16-17.9	18-19.9	20-22.9	23-25.9
			Feed rate mm/r	Feed rate mm/r	Feed rate mm/r	Feed rate mm/r	Feed rate mm/r	Feed rate mm/r
P	Soft steel HB ≤ 180	80	0.12	0.14	0.16	0.18	0.20	0.22
		115	0.18	0.21	0.23	0.26	0.29	0.32
		150	0.25	0.28	0.31	0.34	0.37	0.40
	Carbon steel Alloy steel ~ 30HRC	70	0.11	0.13	0.15	0.17	0.19	0.21
		105	0.17	0.20	0.22	0.24	0.26	0.28
		140	0.23	0.26	0.29	0.32	0.34	0.36
	Pre-hardened steel ~ 40HRC	50	0.10	0.12	0.14	0.16	0.18	0.20
		65	0.15	0.17	0.20	0.22	0.24	0.26
		80	0.20	0.23	0.26	0.29	0.32	0.34
M	Stainless steel	30	0.10	0.11	0.12	0.13	0.14	0.15
		50	0.12	0.14	0.16	0.18	0.20	0.21
		70	0.15	0.28	0.20	0.23	0.26	0.28
K	Cast iron	80	0.11	0.13	0.15	0.17	0.19	0.21
		115	0.17	0.20	0.22	0.24	0.26	0.28
		150	0.23	0.26	0.29	0.32	0.34	0.36
	Nodular cast iron	60	0.11	0.13	0.15	0.17	0.19	0.21
		90	0.17	0.20	0.22	0.24	0.26	0.28
		120	0.23	0.26	0.29	0.32	0.34	0.36
N	Aluminum alloy	90	0.16	0.18	0.20	0.24	0.27	0.30
		140	0.20	0.23	0.25	0.28	0.31	0.35
		180	0.24	0.28	0.29	0.32	0.35	0.40
S	Heat resistant alloy	15	0.06	0.08	0.10	0.10	0.12	0.12
		20	0.08	0.10	0.12	0.14	0.16	0.17
		25	0.11	0.13	0.15	0.18	0.20	0.22

Note: please set feed rate below to the recommendation parameter referring to the drill head diameters increasing(1.5D→3D→5D→8D).
Criteria: for 1.5D, 3D, 5D=80% or below, 8D=60% or below.
Cooling: adopt internal cooling or external cooling drilling no more than 2D, dry cutting is prohibited!