

Catalog of **Drilling Solution** 2024/2025

C



Directory


C


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Carbide Drills


C1-C105


- **TTW/TTS SERIES**
For General Purpose 3D,5D,7D


 C1
- **TTS DEEP SERIES**
For General Purpose 12D,16D,20D,25D,30D


 C38
- **TKW/TKS SERIES**
For Cast Iron 3D,5D


 C45
- **CTW/CTS SERIES**
For General Steel 3D,5D


 C74
- **DTW/DTS SERIES**
For Stainless Steel 3D,5D


 C87
- **MICRO DRILL SERIES**
For General Purpose

 C92
- **MICRO DRILL SERIES**
For Aluminium Purpose

 C95
- **FSD HIGH EFFICIENCY FLAT SERIES**
For General Purpose

 C99
- **CCD CARBIDE CENTER DRILL**

 C105
- **CSD CARBIDE SPOTTING DRILL**

 C105

U Drills

C106-C117

- DRILL BODY 2D,3D,4D,5D C106
- SPMX05-14
For General Purpose P M K C114
- SPGX05-14
For Aluminium Purpose N C114

THCD Exchangable Head Drills

C118-C132

- DRILL BODY 1D,3D,5D,7D,8D,10D,12D C118
- THCD DRILL HEAD RANGE 12.5~40mm P M K C126

DTT Exchangable Head Drills

C133-C136

- DTT DRILL HEAD RANGE 12.0~30.5mm P M K C133
- DRILL BODY 3D,5D,8D C135

Deep Hole Drills

C137-C147

- BRAZED TYPE BTA DRILLS 16.XX-19.XX-25.XX P M K C137
- INDEXABLE DRILL EQUIVALENT TO 800 SERIES P M K C142

CDR 45° Chamfer Cutter

C148-C149

- SPMX05-14
For General Purpose P M K C148
- SPGX05-14
For Aluminium Purpose N C148

Non-Standard Drills

C149

HSS-PM Premium TAPS

C151-C163

- DIN STANDARD TAPS P M K C152
- JIS STANDARD TAPS P M K C154
- STANDARD CUTTING CONDITION C156

TT SERIES

P M K
[C1~C44]



- Curved cutting edge design disperse the cutting force, it is not easy to cause chipping and wear due to stress concentration, and facilitate chip removal.
- Nano composite Balzers-PT coating ,superior wear resistance,longer tool life.
- Specially suitable for hole machining of carbon steel, alloy steel,stainless steel and other materials.
- Deep hole drill series L/D=12~30.

CT SERIES

P K
[C74~C86]



- Suitable for steel(\leq HRC48),cast iron efficient drilling.
- Unique cutting edge preparation to add strength to the cutting edge and improve the drilling stability.
- Nano composite AlTiN coating ,superior wear resistance,longer tool life.

TK SERIES

K
[C45~C73]



- For cast iron processing for automotive engines and other industries .
- Waveform blade, reduce processing torque , improve hole wall quality and hole precision.
- Wide horizontal blade design and improve the intensity of the drill.

DT SERIES

M
[C87~C91]



- Suitable for stainless steel,heat-resistant alloy and titanium alloy efficient drilling.
- Unique drill point design,better chip evacuation performance and larger groove profile.
- New substrate material and coating,stronger toughness and wear resistance ability.
- Optimize the groove profile,with excellent chip removal performance.

TDM Micro-drill SERIES

TDMC SERIES



[C92~C94]



- Ultra fine particles and super wear resistant cemented carbide are used.
- New composite TiAlN coating is developed to enhance the fatigue resistance and wear resistance of drill.
- Specially suitable for hole machining of carbon steel, alloy steel, stainless steel and other materials.
- Long life, high efficiency.

TDMAL SERIES



[C95~C98]



- Ultra fine cemented carbide round bar was used.
- Ultra precision tolerance control, excellent cutting force and chip removal.
- Especially suitable for aluminium alloy, Copper alloy and resin precision hole processing.

FSD SERIES



[C99~C104]



- Point angle 180°
- Better centering ability, chip evacuation smoothly because of point geometry and flute design.
- Suitable for machining inclined hole, drilling on ball surface and thin sheet, restraining the burr also.

CCD SERIES



[C105]



- Carbide Center Drill with High-performance and Multi-Purpose Series.

CSD SERIES



[C105]



- Carbide Spotting Drill with High-performance and Multi-Purpose Series.

TTW/TKW/CTW/DTW Drills (mm)

Flute Dia.	Dia. Tolerance(m7)
=2-3	+0.002/+0.012
>3-6	+0.004/+0.016
>6-10	+0.006/+0.021
>10-18	+0.007/+0.025
>18-20	+0.008/+0.029

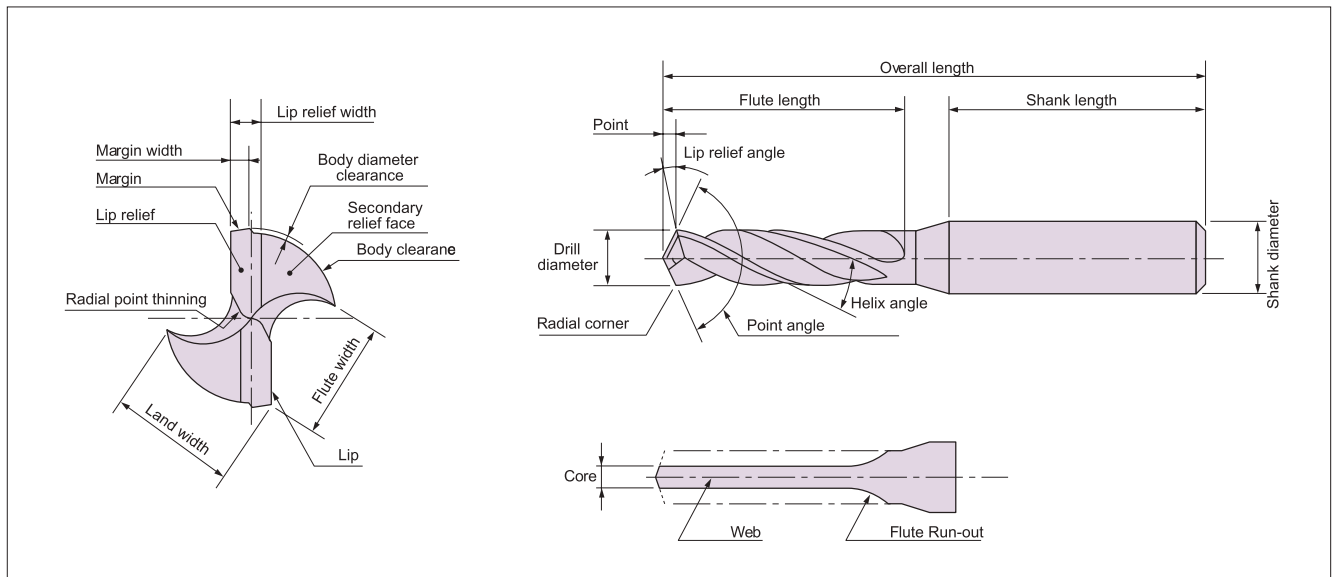
Shank Dia.	Shank Tolerance(h6)
=2-3	0.000/-0.006
>3-6	0.000/-0.008
>6-10	0.000/-0.009
>10-18	0.000/-0.011
>18-20	0.000/-0.013

TTS/TKS/CTS/DTS Drills (mm)

Flute Dia.	Dia. Tolerance(m7)
=2-3	+0.002/+0.012
>3-6	+0.004/+0.016
>6-10	+0.006/+0.021
>10-18	+0.007/+0.025
>18-20	+0.008/+0.029

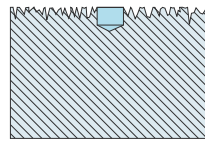
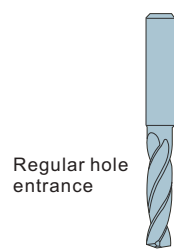
Shank Dia.	Shank Tolerance(h6)
=2-3	0.000/-0.006
>3-6	0.000/-0.008
>6-10	0.000/-0.009
>10-18	0.000/-0.011
>18-20	0.000/-0.013

Terminology



Irregular/Angled Hole Entrance

If irregular or angle entrance use pre operations accordingly

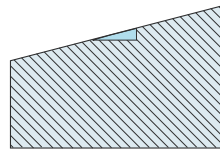


Pre drill with a short standard TT Series



Pre-machining alternatives

Angled hole entrance



Machine a flat using an end mill from the TOTIME range

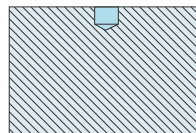
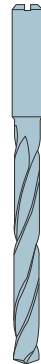
Recommended Tool Holders

3-12XD



No pre-drilling or entrance feed needed

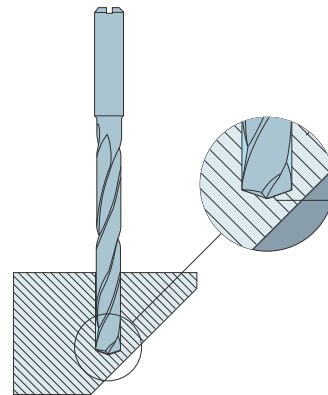
>12XD



When using a longer drill it's recommended to drill a pilot hole

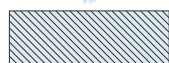
Angled Hole Exits

Before hole exit reduce the feed/rev by 50%



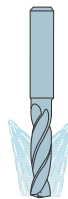
Coolant Recommendations

1



First choice

2



≤ 5 x D

1. Coolant pressure*

Minimum recommended coolant pressure
10 bar with $\leq 5 \times D$
Minimum recommended coolant pressure
30 bar with $> 5 \times D$
Minimum recommended coolant pressure
40 bar with $> 16 \times D$

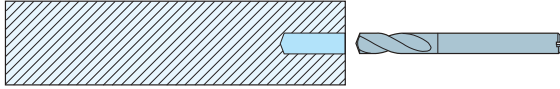
2. Coolant mix

Recommended emulsion mix 6-8%.
When drilling in stainless steels, superalloys and high strength steels a mix of 10% is recommended.

*If lower coolant pressure is used adjust by reducing cutting data accordingly.

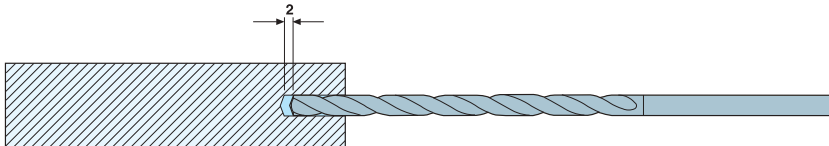
TTS16 (16 x D) up to TTS30 (30 x D) - STEP BY STEP

1.



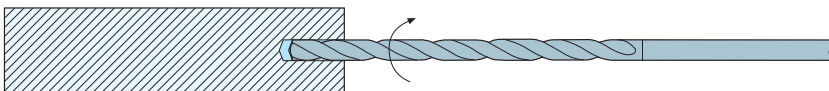
1. Drill a pilot hole 2-3 x D.
Use a standard drill with the same diameter i.e. TTS 3D. (with 140° point angle)

2.



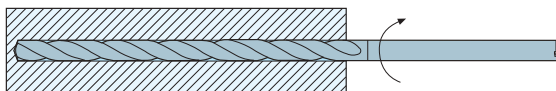
2. Enter the hole with the machine spindle stopped or use a low rpm (500). Stop 2 mm (0.080") above the pilot hole depth.

3.



3. Start the machine spindle and the coolant. drill with the recommended cutting data. (No peck drilling)

4.



4. When reaching full depth, reduce the rpm to 500 and then retract the drill with 4 times the work feed to avoid retraction marks.

TT Serie								
	TTW TTS	TTW05 TTS05	TTW07 TTS07	TTS12	TTS16	TTS20	TTS25	TTS30
Drill Depth	3XD	5XD	7XD	12XD	16XD	20XD	25XD	30XD
Range	3-20	3-20	4.5-20	3-12	3-12	3-12	3-12	3-12
Drill Tolerance	m7	m7	m7	m7	m7	m7	m7	m7
Shank Tolerance	h6	h6	h6	h6	h6	h6	h6	h6
Hole Tolerance	IT8-9	IT8-9	IT8-9	IT8-9	IT8-9	IT8-9	IT8-9	IT8-9
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Technological Innovation

1. Curved Cutting Edge



The edge design has two advantages, one is to disperse the cutting force, it is not easy to cause chipping and wear due to stress concentration, and the second is to facilitate chip removal.

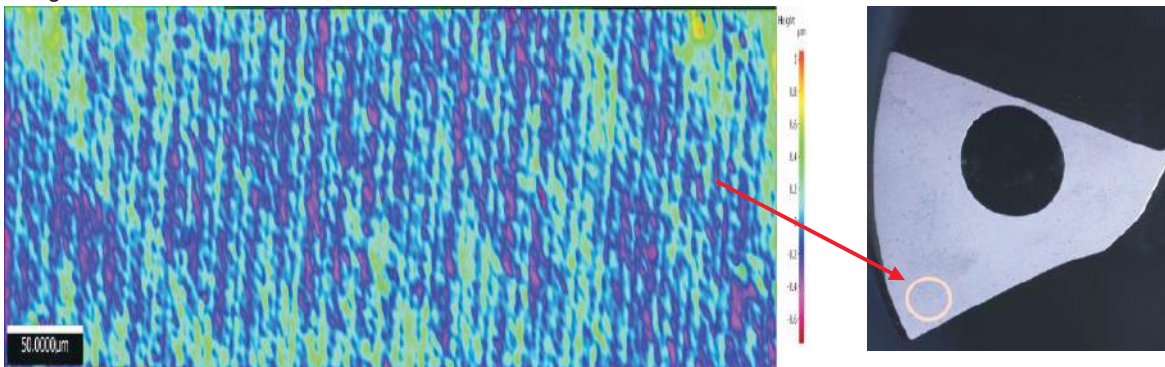
2. Narrow Cutting Edge



Some carbon steels have good ductility and shrinkage holes may occur. The cutting edge is narrow, which reduces friction and helps improve shrinkage holes.

3. Drill Surface Quality

Roughness: 0.14 μm



Initial check points

- Fixturing stability
- Machine spindle condition
- Tool holder condition
- Clamping of tool:
 - Run-out within 0,04 TIR
 - If using pre drilling within 0,04 TIR
- Chip evacuation:
 - Cutting data
- Coolant:
 - Pressure
 - Flow
 - Concentration

<p>Chipping/Center</p> <ul style="list-style-type: none"> ▪ Reduce feed during entrance ▪ Increase coolant pressure and adjust the feed to optimize the chip formation 		<p>Unsatisfactory surface finish- Feedmax</p> <ul style="list-style-type: none"> ▪ Reduce the feed/rev ▪ Increase the cutting speed 	
<p>Wear/Periphery land</p> <ul style="list-style-type: none"> ▪ Reduce the cutting speed ▪ Increase coolant concentration 		<p>Unsatisfactory positioning of the hole</p> <ul style="list-style-type: none"> ▪ Reduce feed/rev. on entrance ▪ Reduce feed/rev ▪ If drilling through rough, hard and angled surfaces - reduce the feed by 30% - 50% during entrance and exit ▪ Center drill with a 140° point angle 	
<p>Built-up edge</p> <ul style="list-style-type: none"> ▪ If closer to the periphery increase the cutting speed ▪ If closer to center increase feed/rev ▪ If the drill is worn, regrind it 		<p>Breakage on contact/at hole bottom</p> <ul style="list-style-type: none"> ▪ Reduce the feed/rev. during entrance/exit ▪ Adjust cutting data for improved chip evacuation 	
<p>Chipping/Outer corner, cutting edge</p> <ul style="list-style-type: none"> ▪ Reduce feed during entrance/exit ▪ Reduce the cutting speed ▪ Increase coolant concentration ▪ Regrind the drill 		<p>Burrs on exit</p> <ul style="list-style-type: none"> ▪ Reduce the feed/rev. on exit ▪ Reduce the width of edge preparation 	
<p>Rapid flank wear</p> <ul style="list-style-type: none"> ▪ Reduce the cutting speed ▪ Increase coolant concentration 		<p>Unsatisfactory diameter tolerance</p> <ul style="list-style-type: none"> ▪ Increase the feed/rev 	

Applications

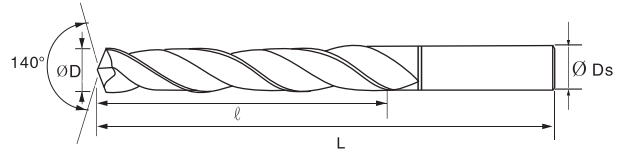
Industry: Automobile Manufacturing Industry
 Workpiece: Crankshaft
 Material: 42CrMo
 Machine: Machining Center
 Hardness: HRC28 - 32
 Cooling Method: Internal Cooling
 Tool: TTS25080D8 (8x25D)
 Vc (m/min) : 62. 8
 f (mm/rev) : 0. 2
 Depth (mm) : 150
 Tool live (Pieces) : 220

Industry: Automobile Manufacturing Industry
 Workpiece: Universal Joint
 Material: S50C
 Machine: Machining Center
 Hardness: HRC20
 Cooling Method: Internal Cooling
 Tool: TTS05083D10 (8. 3x5D)
 Vc (m/min) : 62. 5
 f (mm/rev) : 0. 12
 Depth (mm) : 38
 Tool live (Pieces) : 400



TTW Drill Series 3D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



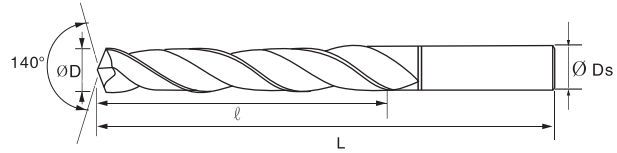
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TTW030D6	3.0	20	6	62	●
TTW031D6	3.1	20	6	62	●
TTW032D6	3.2	20	6	62	●
TTW033D6	3.3	20	6	62	●
TTW034D6	3.4	20	6	62	●
TTW035D6	3.5	20	6	62	●
TTW036D6	3.6	20	6	62	●
TTW037D6	3.7	20	6	62	●
TTW038D6	3.8	24	6	66	●
TTW039D6	3.9	24	6	66	●
TTW040D6	4.0	24	6	66	●
TTW041D6	4.1	24	6	66	●
TTW042D6	4.2	24	6	66	●
TTW043D6	4.3	24	6	66	●
TTW044D6	4.4	24	6	66	●
TTW045D6	4.5	24	6	66	●
TTW046D6	4.6	26	6	66	●
TTW047D6	4.7	26	6	66	●
TTW048D6	4.8	28	6	66	●
TTW049D6	4.9	28	6	66	●
TTW050D6	5.0	28	6	66	●
TTW051D6	5.1	28	6	66	●
TTW052D6	5.2	28	6	66	●
TTW053D6	5.3	28	6	66	●
TTW054D6	5.4	28	6	66	●
TTW055D6	5.5	28	6	66	●
TTW056D6	5.6	28	6	66	●
TTW057D6	5.7	28	6	66	●
TTW058D6	5.8	28	6	66	●
TTW059D6	5.9	28	6	66	●
TTW060D6	6.0	28	6	66	●
TTW061D8	6.1	34	8	79	●
TTW062D8	6.2	34	8	79	●
TTW063D8	6.3	34	8	79	●

● Stock ○ Non-stock

TTW Drill Series 3D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



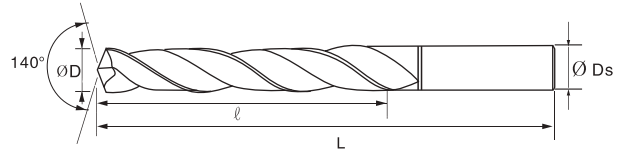
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTW064D8	6.4	34	8	79	●
TTW065D8	6.5	34	8	79	●
TTW066D8	6.6	34	8	79	●
TTW067D8	6.7	34	8	79	●
TTW068D8	6.8	34	8	79	●
TTW069D8	6.9	34	8	79	●
TTW070D8	7.0	34	8	79	●
TTW071D8	7.1	41	8	79	●
TTW072D8	7.2	41	8	79	●
TTW073D8	7.3	41	8	79	●
TTW074D8	7.4	41	8	79	●
TTW075D8	7.5	41	8	79	●
TTW076D8	7.6	41	8	79	●
TTW077D8	7.7	41	8	79	●
TTW078D8	7.8	41	8	79	●
TTW079D8	7.9	41	8	79	●
TTW080D8	8.0	41	8	79	●
TTW081D10	8.1	47	10	89	●
TTW082D10	8.2	47	10	89	●
TTW083D10	8.3	47	10	89	●
TTW084D10	8.4	47	10	89	●
TTW085D10	8.5	47	10	89	●
TTW086D10	8.6	47	10	89	●
TTW087D10	8.7	47	10	89	●
TTW088D10	8.8	47	10	89	●
TTW089D10	8.9	47	10	89	●
TTW090D10	9.0	47	10	89	●
TTW091D10	9.1	47	10	89	●
TTW092D10	9.2	47	10	89	●
TTW093D10	9.3	47	10	89	●
TTW094D10	9.4	47	10	89	●
TTW095D10	9.5	47	10	89	●
TTW096D10	9.6	47	10	89	●
TTW097D10	9.7	47	10	89	●

●Stock ○Non-stock

TTW Drill Series 3D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		

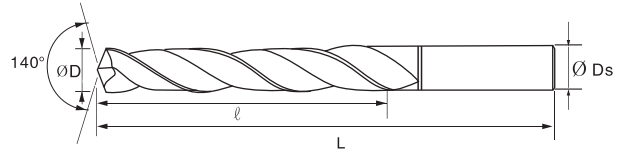


Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TTW098D10	9.8	47	10	89	●
TTW099D10	9.9	47	10	89	●
TTW100D10	10.0	47	10	89	●
TTW101D12	10.1	55	12	102	●
TTW102D12	10.2	55	12	102	●
TTW103D12	10.3	55	12	102	●
TTW104D12	10.4	55	12	102	●
TTW105D12	10.5	55	12	102	●
TTW106D12	10.6	55	12	102	●
TTW107D12	10.7	55	12	102	●
TTW108D12	10.8	55	12	102	●
TTW109D12	10.9	55	12	102	●
TTW110D12	11.0	55	12	102	●
TTW111D12	11.1	55	12	102	●
TTW112D12	11.2	55	12	102	●
TTW113D12	11.3	55	12	102	●
TTW114D12	11.4	55	12	102	●
TTW115D12	11.5	55	12	102	●
TTW116D12	11.6	55	12	102	●
TTW117D12	11.7	55	12	102	●
TTW118D12	11.8	55	12	102	●
TTW119D12	11.9	55	12	102	●
TTW120D12	12.0	55	12	102	●
TTW121D14	12.1	60	14	107	●
TTW122D14	12.2	60	14	107	●
TTW123D14	12.3	60	14	107	●
TTW124D14	12.4	60	14	107	●
TTW125D14	12.5	60	14	107	●
TTW126D14	12.6	60	14	107	●
TTW127D14	12.7	60	14	107	●
TTW128D14	12.8	60	14	107	●
TTW129D14	12.9	60	14	107	●
TTW130D14	13.0	60	14	107	●
TTW131D14	13.1	60	14	107	●

● Stock ○ Non-stock

TTW Drill Series 3D External Coolant					
Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



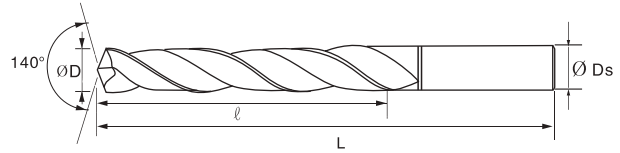
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTW132D14	13.2	60	14	107	●
TTW133D14	13.3	60	14	107	●
TTW134D14	13.4	60	14	107	●
TTW135D14	13.5	60	14	107	●
TTW136D14	13.6	60	14	107	●
TTW137D14	13.7	60	14	107	●
TTW138D14	13.8	60	14	107	●
TTW139D14	13.9	60	14	107	●
TTW140D14	14.0	60	14	107	●
TTW141D16	14.1	65	16	115	●
TTW142D16	14.2	65	16	115	●
TTW143D16	14.3	65	16	115	●
TTW144D16	14.4	65	16	115	●
TTW145D16	14.5	65	16	115	●
TTW146D16	14.6	65	16	115	●
TTW147D16	14.7	65	16	115	●
TTW148D16	14.8	65	16	115	●
TTW149D16	14.9	65	16	115	●
TTW150D16	15.0	65	16	115	●
TTW151D16	15.1	65	16	115	●
TTW152D16	15.2	65	16	115	●
TTW153D16	15.3	65	16	115	●
TTW154D16	15.4	65	16	115	●
TTW155D16	15.5	65	16	115	●
TTW156D16	15.6	65	16	115	●
TTW157D16	15.7	65	16	115	●
TTW158D16	15.8	65	16	115	●
TTW159D16	15.9	65	16	115	●
TTW160D16	16.0	65	16	115	●
TTW165D18	16.5	73	18	123	○
TTW170D18	17.0	73	18	123	○
TTW175D18	17.5	73	18	123	○
TTW180D18	18.0	73	18	123	○
TTW185D20	18.5	79	20	131	○

● Stock ○ Non-stock

TTW Drill Series 3D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TTW190D20	19.0	79	20	131	○
TTW195D20	19.5	79	20	131	○
TTW200D20	20.0	79	20	131	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

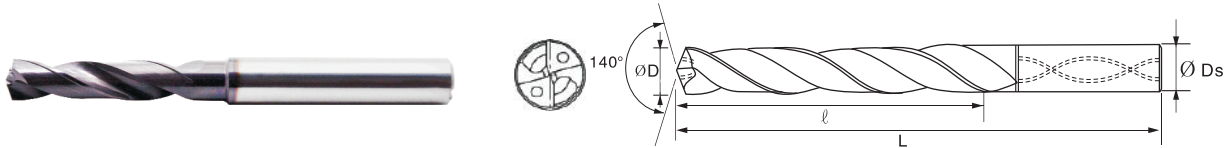
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TTS Drill Series 3D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



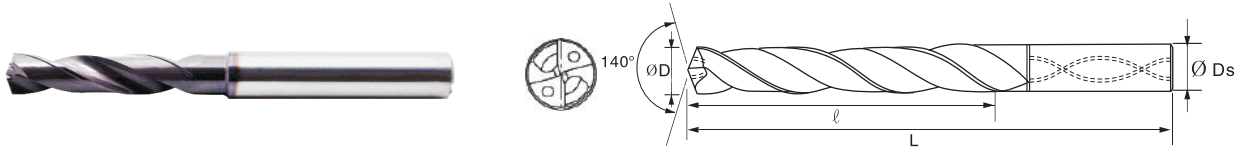
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TTS030D6	3.0	20	6	62	●
TTS031D6	3.1	20	6	62	●
TTS032D6	3.2	20	6	62	●
TTS033D6	3.3	20	6	62	●
TTS034D6	3.4	20	6	62	●
TTS035D6	3.5	20	6	62	●
TTS036D6	3.6	20	6	62	●
TTS037D6	3.7	20	6	62	●
TTS038D6	3.8	24	6	66	●
TTS039D6	3.9	24	6	66	●
TTS040D6	4.0	24	6	66	●
TTS041D6	4.1	24	6	66	●
TTS042D6	4.2	24	6	66	●
TTS043D6	4.3	24	6	66	●
TTS044D6	4.4	24	6	66	●
TTS045D6	4.5	24	6	66	●
TTS046D6	4.6	24	6	66	●
TTS047D6	4.7	24	6	66	●
TTS048D6	4.8	28	6	66	●
TTS049D6	4.9	28	6	66	●
TTS050D6	5.0	28	6	66	●
TTS051D6	5.1	28	6	66	●
TTS052D6	5.2	28	6	66	●
TTS053D6	5.3	28	6	66	●
TTS054D6	5.4	28	6	66	●
TTS055D6	5.5	28	6	66	●
TTS056D6	5.6	28	6	66	●
TTS057D6	5.7	28	6	66	●
TTS058D6	5.8	28	6	66	●
TTS059D6	5.9	28	6	66	●
TTS060D6	6.0	28	6	66	●
TTS061D8	6.1	34	8	79	●
TTS062D8	6.2	34	8	79	●

● Stock ○ Non-stock

TTS Drill Series 3D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzers-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TTS063D8	6.3	34	8	79	●
TTS064D8	6.4	34	8	79	●
TTS065D8	6.5	34	8	79	●
TTS066D8	6.6	34	8	79	●
TTS067D8	6.7	34	8	79	●
TTS068D8	6.8	34	8	79	●
TTS069D8	6.9	34	8	79	●
TTS070D8	7.0	34	8	79	●
TTS071D8	7.1	41	8	79	●
TTS072D8	7.2	41	8	79	●
TTS073D8	7.3	41	8	79	●
TTS074D8	7.4	41	8	79	●
TTS075D8	7.5	41	8	79	●
TTS076D8	7.6	41	8	79	●
TTS077D8	7.7	41	8	79	●
TTS078D8	7.8	41	8	79	●
TTS079D8	7.9	41	8	79	●
TTS080D8	8.0	41	8	79	●
TTS081D10	8.1	47	10	89	●
TTS082D10	8.2	47	10	89	●
TTS083D10	8.3	47	10	89	●
TTS084D10	8.4	47	10	89	●
TTS085D10	8.5	47	10	89	●
TTS086D10	8.6	47	10	89	●
TTS087D10	8.7	47	10	89	●
TTS088D10	8.8	47	10	89	●
TTS089D10	8.9	47	10	89	●
TTS090D10	9.0	47	10	89	●
TTS091D10	9.1	47	10	89	●
TTS092D10	9.2	47	10	89	●
TTS093D10	9.3	47	10	89	●
TTS094D10	9.4	47	10	89	●
TTS095D10	9.5	47	10	89	●

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

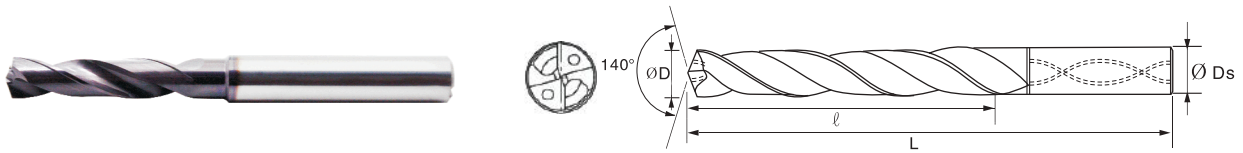
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TTS Drill Series 3D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzers-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTS096D10	9.6	47	10	89	●
TTS097D10	9.7	47	10	89	●
TTS098D10	9.8	47	10	89	●
TTS099D10	9.9	47	10	89	●
TTS100D10	10.0	47	10	89	●
TTS101D12	10.1	55	12	102	●
TTS102D12	10.2	55	12	102	●
TTS103D12	10.3	55	12	102	●
TTS104D12	10.4	55	12	102	●
TTS105D12	10.5	55	12	102	●
TTS106D12	10.6	55	12	102	●
TTS107D12	10.7	55	12	102	●
TTS108D12	10.8	55	12	102	●
TTS109D12	10.9	55	12	102	●
TTS110D12	11.0	55	12	102	●
TTS111D12	11.1	55	12	102	●
TTS112D12	11.2	55	12	102	●
TTS113D12	11.3	55	12	102	●
TTS114D12	11.4	55	12	102	●
TTS115D12	11.5	55	12	102	●
TTS116D12	11.6	55	12	102	●
TTS117D12	11.7	55	12	102	●
TTS118D12	11.8	55	12	102	●
TTS119D12	11.9	55	12	102	●
TTS120D12	12.0	55	12	102	●
TTS121D14	12.1	60	14	107	●
TTS122D14	12.2	60	14	107	●
TTS123D14	12.3	60	14	107	●
TTS124D14	12.4	60	14	107	●
TTS125D14	12.5	60	14	107	●
TTS126D14	12.6	60	14	107	●
TTS127D14	12.7	60	14	107	●
TTS128D14	12.8	60	14	107	●

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

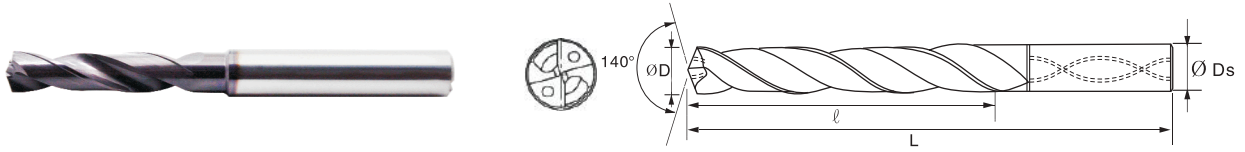
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TTS Drill Series 3D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



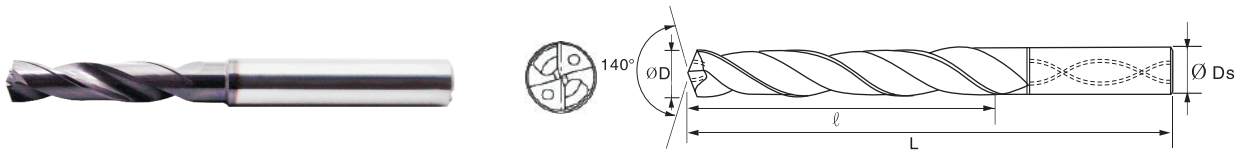
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TTS129D14	12.9	60	14	107	●
TTS130D14	13.0	60	14	107	●
TTS131D14	13.1	60	14	107	●
TTS132D14	13.2	60	14	107	●
TTS133D14	13.3	60	14	107	●
TTS134D14	13.4	60	14	107	●
TTS135D14	13.5	60	14	107	●
TTS136D14	13.6	60	14	107	●
TTS137D14	13.7	60	14	107	●
TTS138D14	13.8	60	14	107	●
TTS139D14	13.9	60	14	107	●
TTS140D14	14.0	60	14	107	●
TTS141D16	14.1	65	16	115	●
TTS142D16	14.2	65	16	115	●
TTS143D16	14.3	65	16	115	●
TTS144D16	14.4	65	16	115	●
TTS145D16	14.5	65	16	115	●
TTS146D16	14.6	65	16	115	●
TTS147D16	14.7	65	16	115	●
TTS148D16	14.8	65	16	115	●
TTS149D16	14.9	65	16	115	●
TTS150D16	15.0	65	16	115	●
TTS151D16	15.1	65	16	115	●
TTS152D16	15.2	65	16	115	●
TTS153D16	15.3	65	16	115	●
TTS154D16	15.4	65	16	115	●
TTS155D16	15.5	65	16	115	●
TTS156D16	15.6	65	16	115	●
TTS157D16	15.7	65	16	115	●
TTS158D16	15.8	65	16	115	●
TTS159D16	15.9	65	16	115	●
TTS160D16	16.0	65	16	115	●
TTS165D18	16.5	73	18	123	○

● Stock ○ Non-stock

TTS Drill Series 3D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzers-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TTS170D18	17.0	73	18	123	○
TTS175D18	17.5	73	18	123	○
TTS180D18	18.0	73	18	123	○
TTS185D20	18.5	79	20	131	○
TTS190D20	19.0	79	20	131	○
TTS195D20	19.5	79	20	131	○
TTS200D20	20.0	79	20	131	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

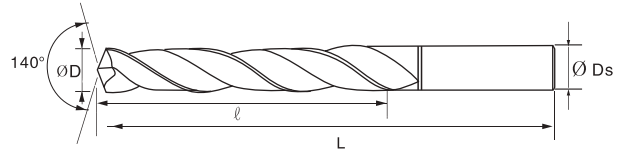
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TTW Drill Series 3D External Coolant(Inch)

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzers-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

Model No.	Cutting Diameter		Cutting Length <i>l</i>	Shank Diameter <i>Ds</i>	Total Length <i>L</i>	Stock
	D					
	mm	inch				
TTW0318D6	3.18	1/8	20	6	62	○
TTW0357D6	3.57	9/64	20	6	62	○
TTW0397D6	3.97	5/32	24	6	66	○
TTW0437D6	4.37	11/64	24	6	66	○
TTW0476D6	4.76	3/16	26	6	66	○
TTW0516D6	5.16	13/64	28	6	66	○
TTW0556D6	5.56	7/32	28	6	66	○
TTW0595D6	5.95	15/64	28	6	66	○
TTW0635D8	6.35	1/4	34	8	79	○
TTW0675D8	6.75	17/64	34	8	79	○
TTW0714D8	7.14	9/32	41	8	79	○
TTW0754D8	7.54	19/64	41	8	79	○
TTW0794D8	7.94	5/16	41	8	79	○
TTW0833D10	8.33	21/64	47	10	89	○
TTW0873D10	8.73	11/32	47	10	89	○
TTW0913D10	9.13	23/64	47	10	89	○
TTW0952D10	9.52	3/8	47	10	89	○
TTW0992D10	9.92	25/64	47	10	89	○
TTW1032D12	10.32	13/32	55	12	102	○
TTW1072D12	10.72	27/64	55	12	102	○
TTW1111D12	11.11	7/16	55	12	102	○
TTW1151D12	11.51	29/64	55	12	102	○
TTW1191D12	11.91	15/32	55	12	102	○
TTW1349D14	13.49	17/32	60	14	107	○
TTW1389D14	13.89	35/64	60	14	107	○
TTW1429D16	14.29	9/16	65	16	115	○
TTW1468D16	14.68	37/64	65	16	115	○
TTW1508D16	15.08	19/32	65	16	115	○
TTW1548D16	15.48	39/64	65	16	115	○
TTW1588D16	15.88	5/8	65	16	115	○
TTW1627D18	16.27	41/64	73	18	123	○
TTW1667D18	16.67	21/32	73	18	123	○
TTW1707D18	17.07	43/64	73	18	123	○
TTW1746D18	17.46	11/16	73	18	123	○

● Stock ○ Non-stock

High Performance Carbide Drill for General Purpose



Carbide Drills

U Drills

Head Exchangable Drills

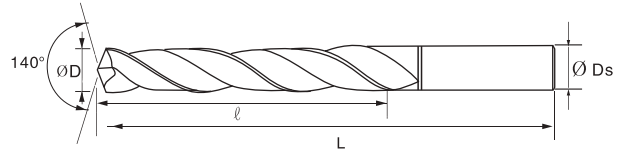
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TTW Drill Series 3D External Coolant(Inch)

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

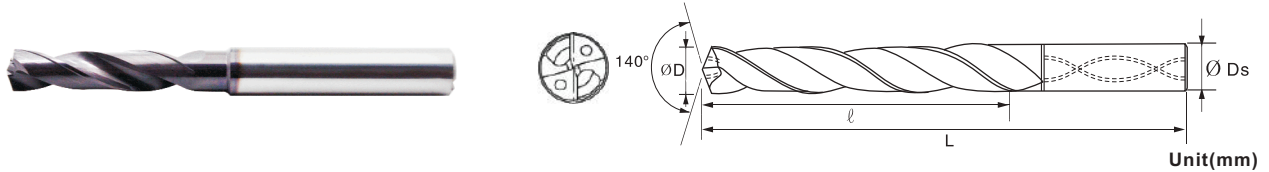
Model No.	Cutting Diameter		Cutting Length <i>l</i>	Shank Diameter <i>D_s</i>	Total Length <i>L</i>	Stock
	D					
	mm	inch				
TTW1786D18	17.86	45/64	73	18	123	○
TTW1826D20	18.26	23/32	79	20	131	○
TTW1865D20	18.65	47/64	79	20	131	○
TTW1905D20	19.05	3/4	79	20	131	○
TTW1945D20	19.45	49/64	79	20	131	○
TTW1984D20	19.84	25/32	79	20	131	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

TTS Drill Series 3D with Internal Coolant (Inch)

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzers-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



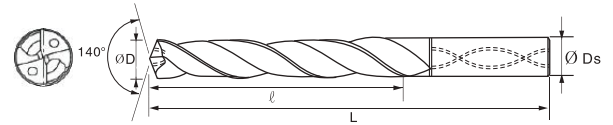
Unit(mm)

Model No.	Cutting Diameter		Cutting Length <i>l</i>	Shank Diameter <i>Ds</i>	Total Length <i>L</i>	Stock
	D					
	mm	inch				
TTS0318D6	3.18	1/8	20	6	62	○
TTS0357D6	3.57	9/64	20	6	62	○
TTS0397D6	3.97	5/32	24	6	66	○
TTS0437D6	4.37	11/64	24	6	66	○
TTS0476D6	4.76	3/16	26	6	66	○
TTS0516D6	5.16	13/64	28	6	66	○
TTS0556D6	5.56	7/32	28	6	66	○
TTS0595D6	5.95	15/64	28	6	66	○
TTS0635D8	6.35	1/4	34	8	79	○
TTS0675D8	6.75	17/64	34	8	79	○
TTS0714D8	7.14	9/32	41	8	79	○
TTS0754D8	7.54	19/64	41	8	79	○
TTS0794D8	7.94	5/16	41	8	79	○
TTS0833D10	8.33	21/64	47	10	89	○
TTS0873D10	8.73	11/32	47	10	89	○
TTS0913D10	9.13	23/64	47	10	89	○
TTS0952D10	9.52	3/8	47	10	89	○
TTS0992D10	9.92	25/64	47	10	89	○
TTS1032D12	10.32	13/32	55	12	102	○
TTS1072D12	10.72	27/64	55	12	102	○
TTS1111D12	11.11	7/16	55	12	102	○
TTS1151D12	11.51	29/64	55	12	102	○
TTS1191D12	11.91	15/32	55	12	102	○
TTS1349D14	13.49	17/32	60	14	107	○
TTS1389D14	13.89	35/64	65	14	115	○
TTS1429D16	14.29	9/16	65	16	115	○
TTS1468D16	14.68	37/64	65	16	115	○
TTS1508D16	15.08	19/32	65	16	115	○
TTS1548D16	15.48	39/64	65	16	115	○
TTS1588D16	15.88	5/8	65	16	115	○
TTS1627D18	16.27	41/64	73	18	123	○
TTS1667D18	16.67	21/32	73	18	123	○
TTS1707D18	17.07	43/64	73	18	123	○
TTS1746D18	17.46	11/16	73	18	123	○

● Stock ○ Non-stock

TTS Drill Series 3D with Internal Coolant (Inch)

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

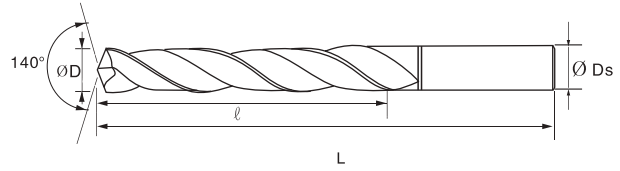
Model No.	Cutting Diameter		Cutting Length <i>l</i>	Shank Diameter <i>Ds</i>	Total Length <i>L</i>	Stock
	D					
	mm	inch				
TTS1786D18	17.86	45/64	73	18	123	○
TTS1826D20	18.26	23/32	79	20	131	○
TTS1865D20	18.65	47/64	79	20	131	○
TTS1905D20	19.05	3/4	79	20	131	○
TTS1945D20	19.45	49/64	79	20	131	○
TTS1984D20	19.84	25/32	79	20	131	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

TTW Drill Series 5D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



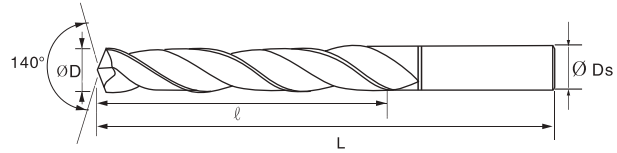
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TTW05030D6	3.0	26	6	66	●
TTW05031D6	3.1	26	6	66	●
TTW05032D6	3.2	26	6	66	●
TTW05033D6	3.3	26	6	66	●
TTW05034D6	3.4	26	6	66	●
TTW05035D6	3.5	26	6	66	●
TTW05036D6	3.6	26	6	66	●
TTW05037D6	3.7	26	6	66	●
TTW05038D6	3.8	34	6	74	●
TTW05039D6	3.9	34	6	74	●
TTW05040D6	4.0	34	6	74	●
TTW05041D6	4.1	34	6	74	●
TTW05042D6	4.2	34	6	74	●
TTW05043D6	4.3	34	6	74	●
TTW05044D6	4.4	34	6	74	●
TTW05045D6	4.5	34	6	74	●
TTW05046D6	4.6	34	6	74	●
TTW05047D6	4.7	34	6	74	●
TTW05048D6	4.8	44	6	82	●
TTW05049D6	4.9	44	6	82	●
TTW05050D6	5.0	44	6	82	●
TTW05051D6	5.1	44	6	82	●
TTW05052D6	5.2	44	6	82	●
TTW05053D6	5.3	44	6	82	●
TTW05054D6	5.4	44	6	82	●
TTW05055D6	5.5	44	6	82	●
TTW05056D6	5.6	44	6	82	●
TTW05057D6	5.7	44	6	82	●
TTW05058D6	5.8	44	6	82	●
TTW05059D6	5.9	44	6	82	●
TTW05060D6	6.0	44	6	82	●
TTW05061D8	6.1	44	8	82	●

● Stock ○ Non-stock

TTW Drill Series 5D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzers-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



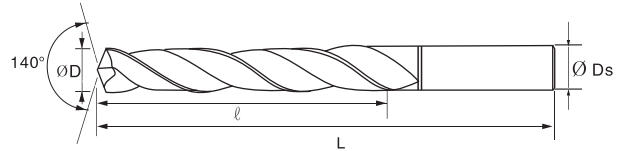
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TTW05062D8	6.2	53	8	91	●
TTW05063D8	6.3	53	8	91	●
TTW05064D8	6.4	53	8	91	●
TTW05065D8	6.5	53	8	91	●
TTW05066D8	6.6	53	8	91	●
TTW05067D8	6.7	53	8	91	●
TTW05068D8	6.8	53	8	91	●
TTW05069D8	6.9	53	8	91	●
TTW05070D8	7.0	53	8	91	●
TTW05071D8	7.1	53	8	91	●
TTW05072D8	7.2	53	8	91	●
TTW05073D8	7.3	53	8	91	●
TTW05074D8	7.4	53	8	91	●
TTW05075D8	7.5	53	8	91	●
TTW05076D8	7.6	53	8	91	●
TTW05077D8	7.7	53	8	91	●
TTW05078D8	7.8	53	8	91	●
TTW05079D8	7.9	53	8	91	●
TTW05080D8	8.0	53	8	91	●
TTW05081D10	8.1	61	10	103	●
TTW05082D10	8.2	61	10	103	●
TTW05083D10	8.3	61	10	103	●
TTW05084D10	8.4	61	10	103	●
TTW05085D10	8.5	61	10	103	●
TTW05086D10	8.6	61	10	103	●
TTW05087D10	8.7	61	10	103	●
TTW05088D10	8.8	61	10	103	●
TTW05089D10	8.9	61	10	103	●
TTW05090D10	9.0	61	10	103	●
TTW05091D10	9.1	61	10	103	●
TTW05092D10	9.2	61	10	103	●
TTW05093D10	9.3	61	10	103	●
TTW05094D10	9.4	61	10	103	●

● Stock ○ Non-stock

TTW Drill Series 5D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



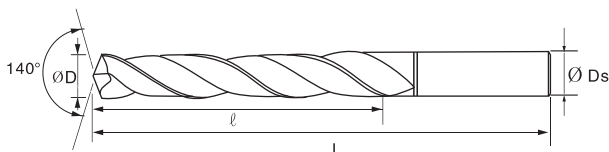
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTW05095D10	9.5	61	10	103	●
TTW05096D10	9.6	61	10	103	●
TTW05097D10	9.7	61	10	103	●
TTW05098D10	9.8	61	10	103	●
TTW05099D10	9.9	61	10	103	●
TTW05100D10	10.0	61	10	103	●
TTW05101D12	10.1	71	12	118	●
TTW05102D12	10.2	71	12	118	●
TTW05103D12	10.3	71	12	118	●
TTW05104D12	10.4	71	12	118	●
TTW05105D12	10.5	71	12	118	●
TTW05106D12	10.6	71	12	118	●
TTW05107D12	10.7	71	12	118	●
TTW05108D12	10.8	71	12	118	●
TTW05109D12	10.9	71	12	118	●
TTW05110D12	11.0	71	12	118	●
TTW05111D12	11.1	71	12	118	●
TTW05112D12	11.2	71	12	118	●
TTW05113D12	11.3	71	12	118	●
TTW05114D12	11.4	71	12	118	●
TTW05115D12	11.5	71	12	118	●
TTW05116D12	11.6	71	12	118	●
TTW05117D12	11.7	71	12	118	●
TTW05118D12	11.8	71	12	118	●
TTW05119D12	11.9	71	12	118	●
TTW05120D12	12.0	71	12	118	●
TTW05121D14	12.1	77	14	124	●
TTW05122D14	12.2	77	14	124	●
TTW05123D14	12.3	77	14	124	●
TTW05124D14	12.4	77	14	124	●
TTW05125D14	12.5	77	14	124	●
TTW05126D14	12.6	77	14	124	●
TTW05127D14	12.7	77	14	124	●

● Stock ○ Non-stock

TTW Drill Series 5D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTW05128D14	12.8	77	14	124	●
TTW05129D14	12.9	77	14	124	●
TTW05130D14	13.0	77	14	124	●
TTW05131D14	13.1	77	14	124	●
TTW05132D14	13.2	77	14	124	●
TTW05133D14	13.3	77	14	124	●
TTW05134D14	13.4	77	14	124	●
TTW05135D14	13.5	77	14	124	●
TTW05136D14	13.6	77	14	124	●
TTW05137D14	13.7	77	14	124	●
TTW05138D14	13.8	77	14	124	●
TTW05139D14	13.9	77	14	124	●
TTW05140D14	14.0	77	14	124	●
TTW05141D16	14.1	83	16	133	●
TTW05142D16	14.2	83	16	133	●
TTW05143D16	14.3	83	16	133	●
TTW05144D16	14.4	83	16	133	●
TTW05145D16	14.5	83	16	133	●
TTW05146D16	14.6	83	16	133	●
TTW05147D16	14.7	83	16	133	●
TTW05148D16	14.8	83	16	133	●
TTW05149D16	14.9	83	16	133	●
TTW05150D16	15.0	83	16	133	●
TTW05151D16	15.1	83	16	133	●
TTW05152D16	15.2	83	16	133	●
TTW05153D16	15.3	83	16	133	●
TTW05154D16	15.4	83	16	133	●
TTW05155D16	15.5	83	16	133	●
TTW05156D16	15.6	83	16	133	●
TTW05157D16	15.7	83	16	133	●
TTW05158D16	15.8	83	16	133	●
TTW05159D16	15.9	83	16	133	●
TTW05160D16	16.0	83	16	133	●

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

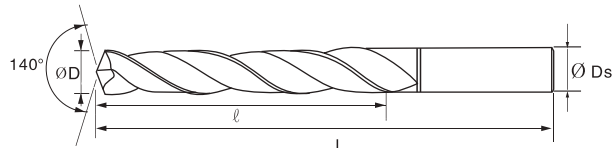
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TTW Drill Series 5D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTW05165D18	16.5	93	18	143	○
TTW05170D18	17.0	93	18	143	○
TTW05175D18	17.5	93	18	143	○
TTW05180D18	18.0	93	18	143	○
TTW05185D20	18.5	101	20	153	○
TTW05190D20	19.0	101	20	153	○
TTW05195D20	19.5	101	20	153	○
TTW05200D20	20.0	101	20	153	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

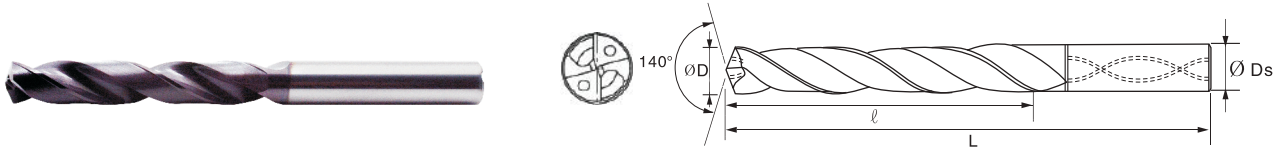
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TTS Drill Series 5D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTS05030D6	3.0	26	6	66	●
TTS05031D6	3.1	26	6	66	●
TTS05032D6	3.2	26	6	66	●
TTS05033D6	3.3	26	6	66	●
TTS05034D6	3.4	26	6	66	●
TTS05035D6	3.5	26	6	66	●
TTS05036D6	3.6	26	6	66	●
TTS05037D6	3.7	26	6	66	●
TTS05038D6	3.8	34	6	74	●
TTS05039D6	3.9	34	6	74	●
TTS05040D6	4.0	34	6	74	●
TTS05041D6	4.1	34	6	74	●
TTS05042D6	4.2	34	6	74	●
TTS05043D6	4.3	34	6	74	●
TTS05044D6	4.4	34	6	74	●
TTS05045D6	4.5	34	6	74	●
TTS05046D6	4.6	34	6	74	●
TTS05047D6	4.7	34	6	74	●
TTS05048D6	4.8	44	6	82	●
TTS05049D6	4.9	44	6	82	●
TTS05050D6	5.0	44	6	82	●
TTS05051D6	5.1	44	6	82	●
TTS05052D6	5.2	44	6	82	●
TTS05053D6	5.3	44	6	82	●
TTS05054D6	5.4	44	6	82	●
TTS05055D6	5.5	44	6	82	●
TTS05056D6	5.6	44	6	82	●
TTS05057D6	5.7	44	6	82	●
TTS05058D6	5.8	44	6	82	●
TTS05059D6	5.9	44	6	82	●
TTS05060D6	6.0	44	6	82	●
TTS05061D8	6.1	44	8	82	●
TTS05062D8	6.2	53	8	91	●
TTS05063D8	6.3	53	8	91	●
TTS05064D8	6.4	53	8	91	●
TTS05065D8	6.5	53	8	91	●

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

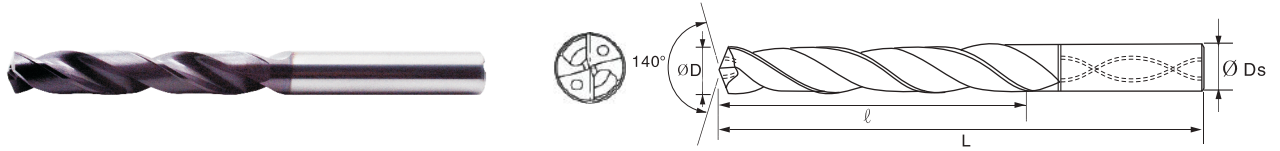
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TTS Drill Series 5D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



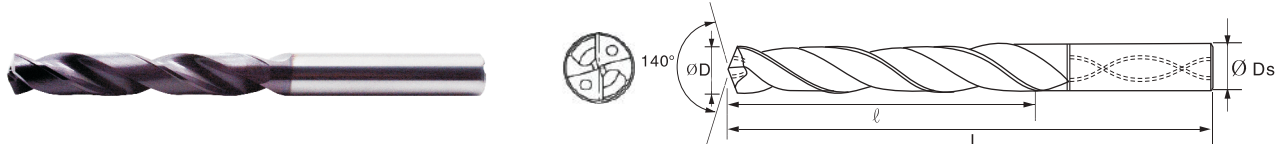
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTS05066D8	6.6	53	8	91	●
TTS05067D8	6.7	53	8	91	●
TTS05068D8	6.8	53	8	91	●
TTS05069D8	6.9	53	8	91	●
TTS05070D8	7.0	53	8	91	●
TTS05071D8	7.1	53	8	91	●
TTS05072D8	7.2	53	8	91	●
TTS05073D8	7.3	53	8	91	●
TTS05074D8	7.4	53	8	91	●
TTS05075D8	7.5	53	8	91	●
TTS05076D8	7.6	53	8	91	●
TTS05077D8	7.7	53	8	91	●
TTS05078D8	7.8	53	8	91	●
TTS05079D8	7.9	53	8	91	●
TTS05080D8	8.0	53	8	91	●
TTS05081D10	8.1	61	10	103	●
TTS05082D10	8.2	61	10	103	●
TTS05083D10	8.3	61	10	103	●
TTS05084D10	8.4	61	10	103	●
TTS05085D10	8.5	61	10	103	●
TTS05086D10	8.6	61	10	103	●
TTS05087D10	8.7	61	10	103	●
TTS05088D10	8.8	61	10	103	●
TTS05089D10	8.9	61	10	103	●
TTS05090D10	9.0	61	10	103	●
TTS05091D10	9.1	61	10	103	●
TTS05092D10	9.2	61	10	103	●
TTS05093D10	9.3	61	10	103	●
TTS05094D10	9.4	61	10	103	●
TTS05095D10	9.5	61	10	103	●
TTS05096D10	9.6	61	10	103	●
TTS05097D10	9.7	61	10	103	●
TTS05098D10	9.8	61	10	103	●
TTS05099D10	9.9	61	10	103	●
TTS05100D10	10.0	61	10	103	●
TTS05101D12	10.1	71	12	118	●
TTS05102D12	10.2	71	12	118	●

● Stock ○ Non-stock

TTS Drill Series 5D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzers-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



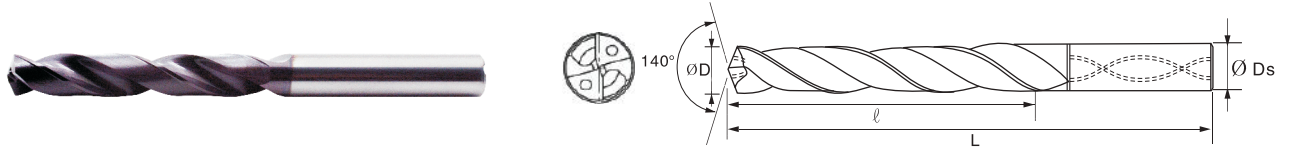
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTS05103D12	10.3	71	12	118	●
TTS05104D12	10.4	71	12	118	●
TTS05105D12	10.5	71	12	118	●
TTS05106D12	10.6	71	12	118	●
TTS05107D12	10.7	71	12	118	●
TTS05108D12	10.8	71	12	118	●
TTS05109D12	10.9	71	12	118	●
TTS05110D12	11.0	71	12	118	●
TTS05111D12	11.1	71	12	118	●
TTS05112D12	11.2	71	12	118	●
TTS05113D12	11.3	71	12	118	●
TTS05114D12	11.4	71	12	118	●
TTS05115D12	11.5	71	12	118	●
TTS05116D12	11.6	71	12	118	●
TTS05117D12	11.7	71	12	118	●
TTS05118D12	11.8	71	12	118	●
TTS05119D12	11.9	71	12	118	●
TTS05120D12	12.0	71	12	118	●
TTS05121D14	12.1	77	14	124	●
TTS05122D14	12.2	77	14	124	●
TTS05123D14	12.3	77	14	124	●
TTS05124D14	12.4	77	14	124	●
TTS05125D14	12.5	77	14	124	●
TTS05126D14	12.6	77	14	124	●
TTS05127D14	12.7	77	14	124	●
TTS05128D14	12.8	77	14	124	●
TTS05129D14	12.9	77	14	124	●
TTS05130D14	13.0	77	14	124	●
TTS05131D14	13.1	77	14	124	●
TTS05132D14	13.2	77	14	124	●
TTS05133D14	13.3	77	14	124	●
TTS05134D14	13.4	77	14	124	●
TTS05135D14	13.5	77	14	124	●
TTS05136D14	13.6	77	14	124	●
TTS05137D14	13.7	77	14	124	●
TTS05138D14	13.8	77	14	124	●
TTS05139D14	13.9	77	14	124	●

● Stock ○ Non-stock

TTS Drill Series 5D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

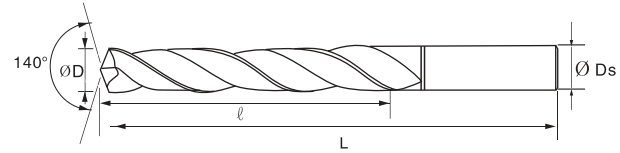
Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTS05140D14	14.0	77	14	124	●
TTS05141D16	14.1	83	16	133	●
TTS05142D16	14.2	83	16	133	●
TTS05143D16	14.3	83	16	133	●
TTS05144D16	14.4	83	16	133	●
TTS05145D16	14.5	83	16	133	●
TTS05146D16	14.6	83	16	133	●
TTS05147D16	14.7	83	16	133	●
TTS05148D16	14.8	83	16	133	●
TTS05149D16	14.9	83	16	133	●
TTS05150D16	15.0	83	16	133	●
TTS05151D16	15.1	83	16	133	●
TTS05152D16	15.2	83	16	133	●
TTS05153D16	15.3	83	16	133	●
TTS05154D16	15.4	83	16	133	●
TTS05155D16	15.5	83	16	133	●
TTS05156D16	15.6	83	16	133	●
TTS05157D16	15.7	83	16	133	●
TTS05158D16	15.8	83	16	133	●
TTS05159D16	15.9	83	16	133	●
TTS05160D16	16.0	83	16	133	●
TTS05165D18	16.5	93	18	143	○
TTS05170D18	17.0	93	18	143	○
TTS05175D18	17.5	93	18	143	○
TTS05180D18	18.0	93	18	143	○
TTS05185D20	18.5	101	20	153	○
TTS05190D20	19.0	101	20	153	○
TTS05195D20	19.5	101	20	153	○
TTS05200D20	20.0	101	20	153	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

TTW Drill Series 5D External Coolant (Inch)

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

Model No.	Cutting Diameter		Cutting Length <i>l</i>	Shank Diameter <i>D_s</i>	Total Length <i>L</i>	Stock
	D					
	mm	inch				
TTW050318D6	3.18	1/8	26	6	66	○
TTW050357D6	3.57	9/64	26	6	66	○
TTW050397D6	3.97	5/32	34	6	74	○
TTW050437D6	4.37	11/64	34	6	74	○
TTW050476D6	4.76	3/16	44	6	82	○
TTW050516D6	5.16	13/64	44	6	82	○
TTW050556D6	5.56	7/32	44	6	82	○
TTW050595D6	5.95	15/64	44	6	82	○
TTW050635D8	6.35	1/4	53	8	91	○
TTW050675D8	6.75	17/64	53	8	91	○
TTW050714D8	7.14	9/32	53	8	91	○
TTW050754D8	7.54	19/64	53	8	91	○
TTW050794D8	7.94	5/16	53	8	91	○
TTW050833D10	8.33	21/64	61	10	103	○
TTW050873D10	8.73	11/32	61	10	103	○
TTW050913D10	9.13	23/64	61	10	103	○
TTW050952D10	9.52	3/8	61	10	103	○
TTW050992D10	9.92	25/64	61	10	103	○
TTW051032D12	10.32	13/32	71	12	118	○
TTW051072D12	10.72	27/64	71	12	118	○
TTW051111D12	11.11	7/16	71	12	118	○
TTW051151D12	11.51	29/64	71	12	118	○
TTW051191D12	11.91	15/32	71	12	118	○
TTW051349D14	13.49	17/32	77	14	124	○
TTW051389D14	13.89	35/64	77	14	124	○
TTW051429D16	14.29	9/16	83	16	133	○
TTW051468D16	14.68	37/64	83	16	133	○
TTW051508D16	15.08	19/32	83	16	133	○
TTW051548D16	15.48	39/64	83	16	133	○
TTW051588D16	15.88	5/8	83	16	133	○
TTW051627D18	16.27	41/64	93	18	143	○
TTW051667D18	16.67	21/32	93	18	143	○
TTW051707D18	17.07	43/64	93	18	143	○
TTW051746D18	17.46	11/16	93	18	143	○

● Stock ○ Non-stock

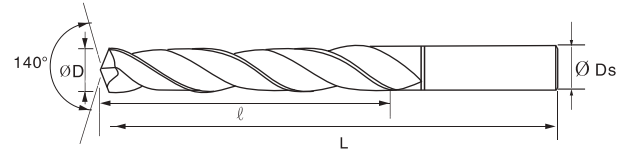
High Performance Carbide Drill for General Purpose



Carbide Drills

TTW Drill Series 5D External Coolant (Inch)

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

U Drills

Model No.	Cutting Diameter		Cutting Length <i>l</i>	Shank Diameter <i>D_s</i>	Total Length <i>L</i>	Stock
	D					
	mm	inch				
TTW051786D18	17.86	45/64	93	18	143	○
TTW051826D20	18.26	23/32	101	20	153	○
TTW051865D20	18.65	47/64	101	20	153	○
TTW051905D20	19.05	3/4	101	20	153	○
TTW051945D20	19.45	49/64	101	20	153	○
TTW051984D20	19.84	25/32	101	20	153	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

Head Exchangable Drills

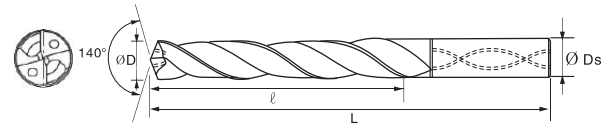
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TTS Drill Series 5D with Internal Coolant (Inch)

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



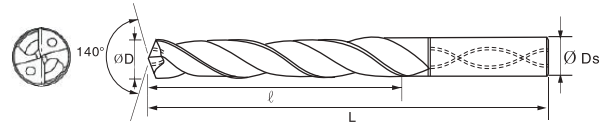
Unit(mm)

Model No.	Cutting Diameter		Cutting Length <i>l</i>	Shank Diameter <i>Ds</i>	Total Length <i>L</i>	Stock
	D					
	mm	inch				
TTS050318D6	3.18	1/8	26	6	66	○
TTS050357D6	3.57	9/64	26	6	66	○
TTS050397D6	3.97	5/32	34	6	74	○
TTS050437D6	4.37	11/64	34	6	74	○
TTS050476D6	4.76	3/16	44	6	82	○
TTS050516D6	5.16	13/64	44	6	82	○
TTS050556D6	5.56	7/32	44	6	82	○
TTS050595D6	5.95	15/64	44	6	82	○
TTS050635D8	6.35	1/4	53	8	91	○
TTS050675D8	6.75	17/64	53	8	91	○
TTS050714D8	7.14	9/32	53	8	91	○
TTS050754D8	7.54	19/64	53	8	91	○
TTS050794D8	7.94	5/16	53	8	91	○
TTS050833D10	8.33	21/64	61	10	103	○
TTS050873D10	8.73	11/32	61	10	103	○
TTS050913D10	9.13	23/64	61	10	103	○
TTS050952D10	9.52	3/8	61	10	103	○
TTS050992D10	9.92	25/64	61	10	103	○
TTS051032D12	10.32	13/32	71	12	118	○
TTS051072D12	10.72	27/64	71	12	118	○
TTS051111D12	11.11	7/16	71	12	118	○
TTS051151D12	11.51	29/64	71	12	118	○
TTS051191D12	11.91	15/32	71	12	118	○
TTS051349D14	13.49	17/32	77	14	124	○
TTS051389D14	13.89	35/64	77	14	124	○
TTS051429D16	14.29	9/16	83	16	133	○
TTS051468D16	14.68	37/64	83	16	133	○
TTS051508D16	15.08	19/32	83	16	133	○
TTS051548D16	15.48	39/64	83	16	133	○
TTS051588D16	15.88	5/8	83	16	133	○
TTS051627D18	16.27	41/64	93	18	143	○
TTS051667D18	16.67	21/32	93	18	143	○
TTS051707D18	17.07	43/64	93	18	143	○
TTS051746D18	17.46	11/16	93	18	143	○

● Stock ○ Non-stock

TTS Drill Series 5D with Internal Coolant (Inch)

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

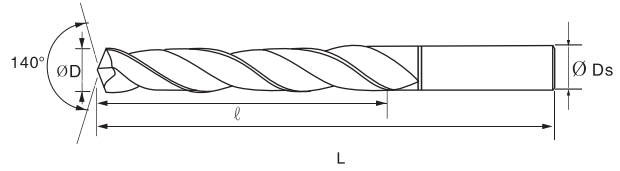
Model No.	Cutting Diameter		Cutting Length <i>l</i>	Shank Diameter <i>D_s</i>	Total Length <i>L</i>	Stock
	D					
	mm	inch				
TTS051786D18	17.86	45/64	93	18	143	○
TTS051826D20	18.26	23/32	101	20	153	○
TTS051865D20	18.65	47/64	101	20	153	○
TTS051905D20	19.05	3/4	101	20	153	○
TTS051945D20	19.45	49/64	101	20	153	○
TTS051984D20	19.84	25/32	101	20	153	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

TTW Drill Series 7D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTW07045D6	4.5	45	6	94	○
TTW07046D6	4.6	45	6	94	○
TTW07047D6	4.7	45	6	94	○
TTW07048D6	4.8	45	6	94	○
TTW07049D6	4.9	45	6	94	○
TTW07050D6	5.0	45	6	94	○
TTW07051D6	5.1	45	6	94	○
TTW07052D6	5.2	45	6	94	○
TTW07053D6	5.3	45	6	94	○
TTW07054D6	5.4	45	6	94	○
TTW07055D6	5.5	45	6	94	○
TTW07056D6	5.6	45	6	94	○
TTW07057D6	5.7	45	6	94	○
TTW07058D6	5.8	45	6	94	○
TTW07059D6	5.9	45	6	94	○
TTW07060D6	6.0	45	6	94	○
TTW07061D8	6.1	57	8	110	○
TTW07062D8	6.2	57	8	110	○
TTW07063D8	6.3	57	8	110	○
TTW07064D8	6.4	57	8	110	○
TTW07065D8	6.5	57	8	110	○
TTW07066D8	6.6	57	8	110	○
TTW07067D8	6.7	57	8	110	○
TTW07068D8	6.8	57	8	110	○
TTW07069D8	6.9	57	8	110	○
TTW07070D8	7.0	57	8	110	○
TTW07071D8	7.1	57	8	110	○
TTW07072D8	7.2	57	8	110	○
TTW07073D8	7.3	57	8	110	○
TTW07074D8	7.4	57	8	110	○
TTW07075D8	7.5	57	8	110	○
TTW07076D8	7.6	57	8	110	○

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

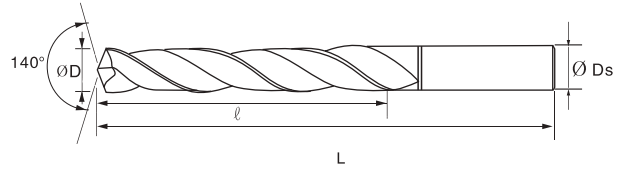
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TTW Drill Series 7D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



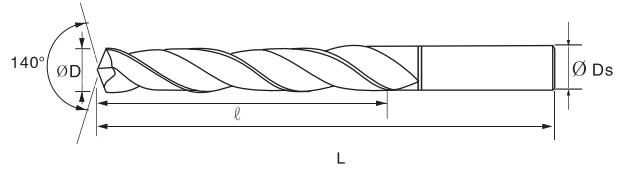
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TTW07077D8	7.7	57	8	110	○
TTW07078D8	7.8	57	8	110	○
TTW07079D8	7.9	57	8	110	○
TTW07080D8	8.0	57	8	110	○
TTW07081D10	8.1	62	10	122	○
TTW07082D10	8.2	62	10	122	○
TTW07083D10	8.3	62	10	122	○
TTW07084D10	8.4	62	10	122	○
TTW07085D10	8.5	62	10	122	○
TTW07086D10	8.6	62	10	122	○
TTW07087D10	8.7	62	10	122	○
TTW07088D10	8.8	62	10	122	○
TTW07089D10	8.9	62	10	122	○
TTW07090D10	9.0	62	10	122	○
TTW07091D10	9.1	62	10	122	○
TTW07092D10	9.2	62	10	122	○
TTW07093D10	9.3	62	10	122	○
TTW07094D10	9.4	62	10	122	○
TTW07095D10	9.5	62	10	122	○
TTW07096D10	9.6	62	10	122	○
TTW07097D10	9.7	62	10	122	○
TTW07098D10	9.8	62	10	122	○
TTW07099D10	9.9	62	10	122	○
TTW07100D10	10.0	62	10	122	○
TTW07101D12	10.1	72	12	141	○
TTW07102D12	10.2	72	12	141	○
TTW07103D12	10.3	72	12	141	○
TTW07104D12	10.4	72	12	141	○
TTW07105D12	10.5	72	12	141	○
TTW07106D12	10.6	72	12	141	○
TTW07107D12	10.7	72	12	141	○
TTW07108D12	10.8	72	12	141	○

● Stock ○ Non-stock

TTW Drill Series 7D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTW07109D12	10.9	72	12	141	○
TTW07110D12	11.0	72	12	141	○
TTW07111D12	11.1	72	12	141	○
TTW07112D12	11.2	72	12	141	○
TTW07113D12	11.3	72	12	141	○
TTW07114D12	11.4	72	12	141	○
TTW07115D12	11.5	72	12	141	○
TTW07116D12	11.6	72	12	141	○
TTW07117D12	11.7	72	12	141	○
TTW07118D12	11.8	72	12	141	○
TTW07119D12	11.9	72	12	141	○
TTW07120D12	12.0	72	12	141	○
TTW07121D14	12.1	83	14	155	○
TTW07122D14	12.2	83	14	155	○
TTW07123D14	12.3	83	14	155	○
TTW07124D14	12.4	83	14	155	○
TTW07125D14	12.5	83	14	155	○
TTW07126D14	12.6	83	14	155	○
TTW07127D14	12.7	83	14	155	○
TTW07128D14	12.8	83	14	155	○
TTW07129D14	12.9	83	14	155	○
TTW07130D14	13.0	83	14	155	○
TTW07131D14	13.1	83	14	155	○
TTW07132D14	13.2	83	14	155	○
TTW07133D14	13.3	83	14	155	○
TTW07134D14	13.4	83	14	155	○
TTW07135D14	13.5	83	14	155	○
TTW07136D14	13.6	83	14	155	○
TTW07137D14	13.7	83	14	155	○
TTW07138D14	13.8	83	14	155	○
TTW07139D14	13.9	83	14	155	○
TTW07140D14	14.0	83	14	155	○

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

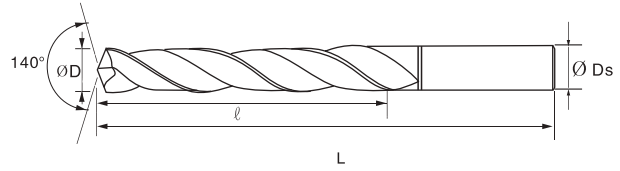
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TTW Drill Series 7D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzers-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

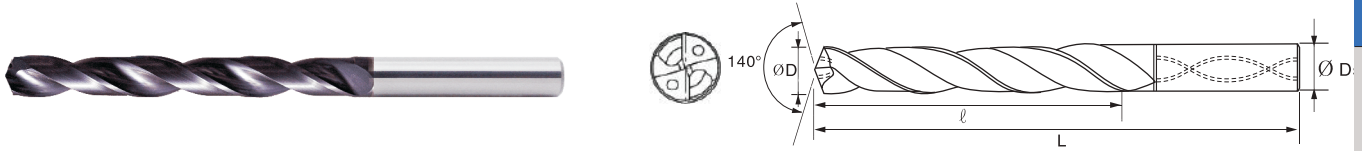
Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TTW07141D16	14.1	92	16	171	○
TTW07142D16	14.2	92	16	171	○
TTW07143D16	14.3	92	16	171	○
TTW07144D16	14.4	92	16	171	○
TTW07145D16	14.5	92	16	171	○
TTW07146D16	14.6	92	16	171	○
TTW07147D16	14.7	92	16	171	○
TTW07148D16	14.8	92	16	171	○
TTW07149D16	14.9	92	16	171	○
TTW07150D16	15.0	92	16	171	○
TTW07151D16	15.1	92	16	171	○
TTW07152D16	15.2	92	16	171	○
TTW07153D16	15.3	92	16	171	○
TTW07154D16	15.4	92	16	171	○
TTW07155D16	15.5	92	16	171	○
TTW07156D16	15.6	92	16	171	○
TTW07157D16	15.7	92	16	171	○
TTW07158D16	15.8	92	16	171	○
TTW07159D16	15.9	92	16	171	○
TTW07160D16	16.0	92	16	171	○
TTW07165D18	16.5	103	18	185	○
TTW07170D18	17.0	103	18	185	○
TTW07175D18	17.5	103	18	185	○
TTW07180D18	18.0	103	18	185	○
TTW07185D20	18.5	112	20	200	○
TTW07190D20	19.0	112	20	200	○
TTW07195D20	19.5	112	20	200	○
TTW07200D20	20.0	112	20	200	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

TTS Drill Series 7D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTS07045D6	4.5	45	6	94	○
TTS07046D6	4.6	45	6	94	○
TTS07047D6	4.7	45	6	94	○
TTS07048D6	4.8	45	6	94	○
TTS07049D6	4.9	45	6	94	○
TTS07050D6	5.0	45	6	94	○
TTS07051D6	5.1	45	6	94	○
TTS07052D6	5.2	45	6	94	○
TTS07053D6	5.3	45	6	94	○
TTS07054D6	5.4	45	6	94	○
TTS07055D6	5.5	45	6	94	○
TTS07056D6	5.6	45	6	94	○
TTS07057D6	5.7	45	6	94	○
TTS07058D6	5.8	45	6	94	○
TTS07059D6	5.9	45	6	94	○
TTS07060D6	6.0	45	6	94	○
TTS07061D8	6.1	57	8	110	○
TTS07062D8	6.2	57	8	110	○
TTS07063D8	6.3	57	8	110	○
TTS07064D8	6.4	57	8	110	○
TTS07065D8	6.5	57	8	110	○
TTS07066D8	6.6	57	8	110	○
TTS07067D8	6.7	57	8	110	○
TTS07068D8	6.8	57	8	110	○
TTS07069D8	6.9	57	8	110	○
TTS07070D8	7.0	57	8	110	○
TTS07071D8	7.1	57	8	110	○
TTS07072D8	7.2	57	8	110	○
TTS07073D8	7.3	57	8	110	○
TTS07074D8	7.4	57	8	110	○
TTS07075D8	7.5	57	8	110	○
TTS07076D8	7.6	57	8	110	○

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

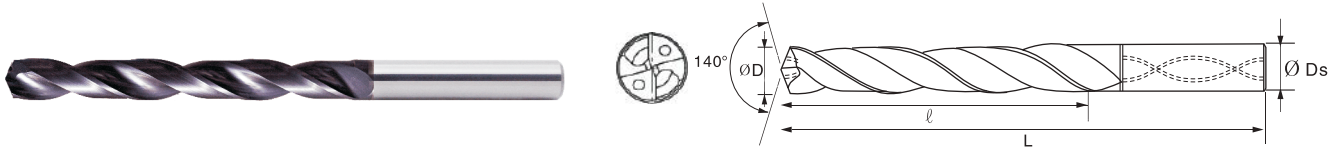
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TTS Drill Series 7D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



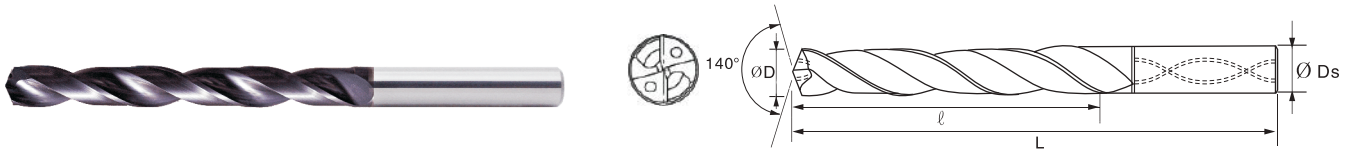
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTS07077D8	7.7	57	8	110	○
TTS07078D8	7.8	57	8	110	○
TTS07079D8	7.9	57	8	110	○
TTS07080D8	8.0	57	8	110	○
TTS07081D10	8.1	62	10	122	○
TTS07082D10	8.2	62	10	122	○
TTS07083D10	8.3	62	10	122	○
TTS07084D10	8.4	62	10	122	○
TTS07085D10	8.5	62	10	122	○
TTS07086D10	8.6	62	10	122	○
TTS07087D10	8.7	62	10	122	○
TTS07088D10	8.8	62	10	122	○
TTS07089D10	8.9	62	10	122	○
TTS07090D10	9.0	62	10	122	○
TTS07091D10	9.1	62	10	122	○
TTS07092D10	9.2	62	10	122	○
TTS07093D10	9.3	62	10	122	○
TTS07094D10	9.4	62	10	122	○
TTS07095D10	9.5	62	10	122	○
TTS07096D10	9.6	62	10	122	○
TTS07097D10	9.7	62	10	122	○
TTS07098D10	9.8	62	10	122	○
TTS07099D10	9.9	62	10	122	○
TTS07100D10	10.0	62	10	122	○
TTS07101D12	10.1	72	12	141	○
TTS07102D12	10.2	72	12	141	○
TTS07103D12	10.3	72	12	141	○
TTS07104D12	10.4	72	12	141	○
TTS07105D12	10.5	72	12	141	○
TTS07106D12	10.6	72	12	141	○
TTS07107D12	10.7	72	12	141	○
TTS07108D12	10.8	72	12	141	○

● Stock ○ Non-stock

TTS Drill Series 7D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TTS07109D12	10.9	72	12	141	○
TTS07110D12	11.0	72	12	141	○
TTS07111D12	11.1	72	12	141	○
TTS07112D12	11.2	72	12	141	○
TTS07113D12	11.3	72	12	141	○
TTS07114D12	11.4	72	12	141	○
TTS07115D12	11.5	72	12	141	○
TTS07116D12	11.6	72	12	141	○
TTS07117D12	11.7	72	12	141	○
TTS07118D12	11.8	72	12	141	○
TTS07119D12	11.9	72	12	141	○
TTS07120D12	12.0	72	12	141	○
TTS07121D14	12.1	83	14	155	○
TTS07122D14	12.2	83	14	155	○
TTS07123D14	12.3	83	14	155	○
TTS07124D14	12.4	83	14	155	○
TTS07125D14	12.5	83	14	155	○
TTS07126D14	12.6	83	14	155	○
TTS07127D14	12.7	83	14	155	○
TTS07128D14	12.8	83	14	155	○
TTS07129D14	12.9	83	14	155	○
TTS07130D14	13.0	83	14	155	○
TTS07131D14	13.1	83	14	155	○
TTS07132D14	13.2	83	14	155	○
TTS07133D14	13.3	83	14	155	○
TTS07134D14	13.4	83	14	155	○
TTS07135D14	13.5	83	14	155	○
TTS07136D14	13.6	83	14	155	○
TTS07137D14	13.7	83	14	155	○
TTS07138D14	13.8	83	14	155	○
TTS07139D14	13.9	83	14	155	○
TTS07140D14	14.0	83	14	155	○

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

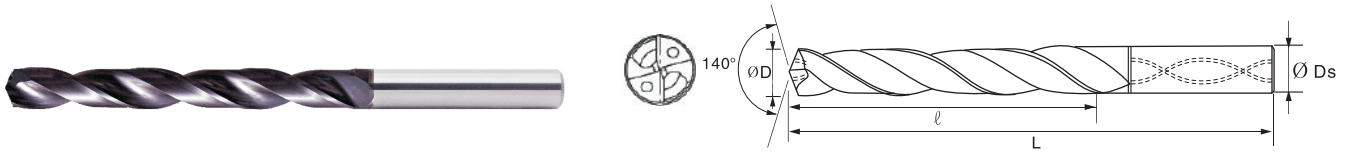
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TTS Drill Series 7D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

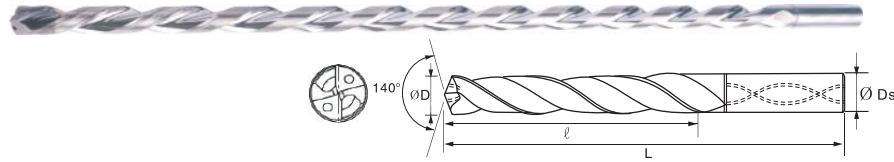
Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTS07141D16	14.1	92	16	171	○
TTS07142D16	14.2	92	16	171	○
TTS07143D16	14.3	92	16	171	○
TTS07144D16	14.4	92	16	171	○
TTS07145D16	14.5	92	16	171	○
TTS07146D16	14.6	92	16	171	○
TTS07147D16	14.7	92	16	171	○
TTS07148D16	14.8	92	16	171	○
TTS07149D16	14.9	92	16	171	○
TTS07150D16	15.0	92	16	171	○
TTS07151D16	15.1	92	16	171	○
TTS07152D16	15.2	92	16	171	○
TTS07153D16	15.3	92	16	171	○
TTS07154D16	15.4	92	16	171	○
TTS07155D16	15.5	92	16	171	○
TTS07156D16	15.6	92	16	171	○
TTS07157D16	15.7	92	16	171	○
TTS07158D16	15.8	92	16	171	○
TTS07159D16	15.9	92	16	171	○
TTS07160D16	16.0	92	16	171	○
TTS07165D18	16.5	103	18	185	○
TTS07170D18	17.0	103	18	185	○
TTS07175D18	17.5	103	18	185	○
TTS07180D18	18.0	103	18	185	○
TTS07185D20	18.5	112	20	200	○
TTS07190D20	19.0	112	20	200	○
TTS07195D20	19.5	112	20	200	○
TTS07200D20	20.0	112	20	200	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

TTS Drill Series 12D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzers-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

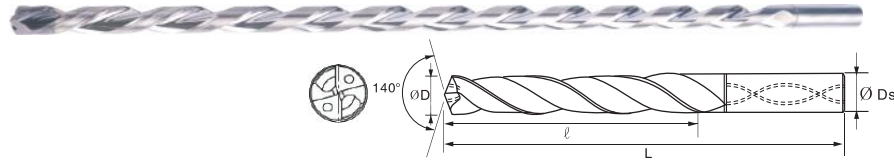
Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTS12030D4	3.0	45	4	80	○
TTS12035D4	3.5	45	4	80	○
TTS12040D4	4.0	50	4	88	○
TTS12045D6	4.5	55	6	106	○
TTS12050D6	5.0	66	6	116	○
TTS12055D6	5.5	66	6	116	○
TTS12060D6	6.0	66	6	116	○
TTS12065D8	6.5	84	8	138	○
TTS12070D8	7.0	84	8	138	○
TTS12075D8	7.5	84	8	138	○
TTS12080D8	8.0	84	8	138	○
TTS12085D10	8.5	108	10	169	○
TTS12090D10	9.0	108	10	169	○
TTS12095D10	9.5	108	10	169	○
TTS12100D10	10.0	108	10	169	○
TTS12105D12	10.5	132	12	201	○
TTS12110D12	11.0	132	12	201	○
TTS12115D12	11.5	132	12	201	○
TTS12120D12	12.0	132	12	201	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

TTS Drill Series 16D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

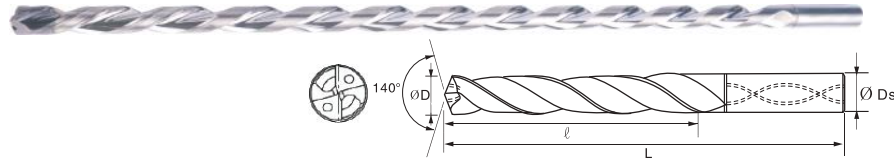
Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTS16030D4	3.0	50	4	88	○
TTS16035D4	3.5	60	4	99	○
TTS16040D4	4.0	60	4	99	○
TTS16045D6	4.5	70	6	117	○
TTS16050D6	5.0	90	6	142	○
TTS16055D6	5.5	90	6	142	○
TTS16060D6	6.0	90	6	142	○
TTS16065D8	6.5	120	8	177	○
TTS16070D8	7.0	120	8	177	○
TTS16075D8	7.5	120	8	177	○
TTS16080D8	8.0	120	8	177	○
TTS16085D10	8.5	150	10	216	○
TTS16090D10	9.0	150	10	216	○
TTS16095D10	9.5	150	10	216	○
TTS16100D10	10.0	150	10	216	○
TTS16105D12	10.5	180	12	256	○
TTS16110D12	11.0	180	12	256	○
TTS16115D12	11.5	180	12	256	○
TTS16120D12	12.0	180	12	256	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

TTS Drill Series 20D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzers-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

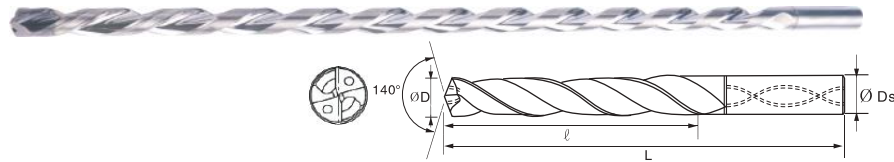
Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTS20030D4	3.0	63	4	101	○
TTS20035D4	3.5	70	4	114	○
TTS20040D4	4.0	70	4	114	○
TTS20045D6	4.5	90	6	138	○
TTS20050D6	5.0	110	6	160	○
TTS20055D6	5.5	110	6	160	○
TTS20060D6	6.0	110	6	160	○
TTS20065D8	6.5	145	8	199	○
TTS20070D8	7.0	145	8	199	○
TTS20075D8	7.5	145	8	199	○
TTS20080D8	8.0	145	8	199	○
TTS20085D10	8.5	185	10	246	○
TTS20090D10	9.0	185	10	246	○
TTS20095D10	9.5	185	10	246	○
TTS20100D10	10.0	185	10	246	○
TTS20105D12	10.5	225	12	294	○
TTS20110D12	11.0	225	12	294	○
TTS20115D12	11.5	225	12	294	○
TTS20120D12	12.0	225	12	294	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

TTS Drill Series 25D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

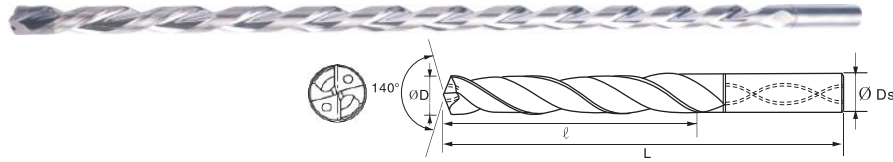
Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TTS25030D4	3.0	79	4	117	○
TTS25035D4	3.5	94	4	133	○
TTS25040D4	4.0	94	4	133	○
TTS25045D6	4.5	112	6	160	○
TTS25050D6	5.0	140	6	190	○
TTS25055D6	5.5	140	6	190	○
TTS25060D6	6.0	140	6	190	○
TTS25065D8	6.5	188	8	241	○
TTS25070D8	7.0	188	8	241	○
TTS25075D8	7.5	188	8	241	○
TTS25080D8	8.0	188	8	241	○
TTS25085D10	8.5	234	10	295	○
TTS25090D10	9.0	234	10	295	○
TTS25095D10	9.5	234	10	295	○
TTS25100D10	10.0	234	10	295	○
TTS25105D12	10.5	281	12	350	○
TTS25110D12	11.0	281	12	350	○
TTS25115D12	11.5	281	12	350	○
TTS25120D12	12.0	281	12	350	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

TTS Drill Series 30D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	Balzars-PT	Suitable for processing	Steel/Stainless steel/Cast iron		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TTS30030D4	3.0	105	4	133	○
TTS30035D4	3.5	112	4	151	○
TTS30040D4	4.0	112	4	151	○
TTS30045D6	4.5	135	6	185	○
TTS30050D6	5.0	170	6	220	○
TTS30055D6	5.5	170	6	220	○
TTS30060D6	6.0	170	6	220	○
TTS30065D8	6.5	225	8	279	○
TTS30070D8	7.0	225	8	279	○
TTS30075D8	7.5	225	8	279	○
TTS30080D8	8.0	225	8	279	○
TTS30085D10	8.5	285	10	346	○
TTS30090D10	9.0	285	10	346	○
TTS30095D10	9.5	285	10	346	○
TTS30100D10	10.0	285	10	346	○
TTS30105D12	10.5	300	12	369	○
TTS30110D12	11.0	300	12	369	○
TTS30115D12	11.5	300	12	369	○
TTS30120D12	12.0	300	12	369	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TTW Series 3D/5D (External Coolant)

Unit (mm)

ISO	Workpiece Material	Brinell hardness (HB)	Feed: f (mm/rev)										Vc (m/min)
			ø3	ø4	ø6	ø8	ø10	ø12	ø14	ø16	ø18	ø20	
P	Low carbon steels (C < 0.3) C15E4, E275A, E355D, etc.	~ 180	0.12	0.14	0.14	0.22	0.26	0.28	0.30	0.32	0.34	0.36	70.00
	Carbon steels (C > 0.3) C45, C55, etc.	180 ~ 300	0.12	0.14	0.14	0.22	0.26	0.28	0.30	0.32	0.34	0.36	60.00
	High alloy steels 42CrMo4, etc.	250 ~ 350	0.11	0.13	0.13	0.20	0.24	0.26	0.28	0.30	0.32	0.34	50.00
M	Stainless steels X5CrNi18-9, etc.	~ 200	0.11	0.13	0.13	0.20	0.24	0.26	0.28	0.30	0.32	0.34	30.00
K	Grey cast irons 250, etc.	~ 200	0.12	0.13	0.13	0.22	0.26	0.28	0.30	0.32	0.34	0.36	40.00
	Ductile cast irons 450-10S, etc.	~ 300	0.11	0.12	0.12	0.20	0.24	0.26	0.28	0.30	0.32	0.34	35.00
N	Aluminium alloys AlSi11Cu3, etc.	-	-	-	-	-	-	-	-	-	-	-	-

TTS Series 3D/5D (Internal Coolant)

Unit (mm)

ISO	Workpiece Material	Brinell hardness (HB)	Feed: f (mm/rev)										Vc (m/min)
			ø3	ø4	ø6	ø8	ø10	ø12	ø14	ø16	ø18	ø20	
P	Low carbon steels (C < 0.3) C15E4, E275A, E355D, etc.	~ 180	0.12	0.14	0.18	0.22	0.26	0.28	0.30	0.32	0.34	0.36	90.00
	Carbon steels (C > 0.3) C45, C55, etc.	180 ~ 300	0.12	0.14	0.18	0.22	0.26	0.28	0.30	0.32	0.34	0.36	80.00
	High alloy steels 42CrMo4, etc.	250 ~ 350	0.11	0.13	0.16	0.20	0.24	0.26	0.28	0.30	0.32	0.34	75.00
M	Stainless steels X5CrNi18-9, etc.	~ 200	0.11	0.13	0.16	0.20	0.24	0.26	0.28	0.30	0.32	0.34	50.00
K	Grey cast irons 250, etc.	~ 200	0.12	0.13	0.18	0.22	0.26	0.28	0.30	0.32	0.34	0.36	50.00
	Ductile cast irons 450-10S, etc.	~ 300	0.11	0.12	0.16	0.20	0.24	0.26	0.28	0.30	0.32	0.34	45.00
N	Aluminium alloys AlSi11Cu3, etc.	-	0.10	0.20	0.22	0.26	0.30	0.34	0.36	0.38	0.40	0.42	180.00

TTW Series 7D (External Coolant)

Unit (mm)

ISO	Workpiece Material	Brinell hardness (HB)	Feed: f (mm/rev)										Vc (m/min)
			ø4.5	ø6	ø8	ø10	ø12	ø14	ø16	ø18	ø20	ø3 ~ ø20	
P	Low carbon steels (C < 0.3) C15E4, E275A, E355D, etc.	~ 180	0.14	0.14	0.22	0.26	0.28	0.30	0.32	0.34	0.36	63.00	
	Carbon steels (C > 0.3) C45, C55, etc.	180 ~ 300	0.14	0.14	0.22	0.26	0.28	0.30	0.32	0.34	0.36	54.00	
	High alloy steels 42CrMo4, etc.	250 ~ 350	0.13	0.13	0.20	0.24	0.26	0.28	0.30	0.32	0.34	45.00	
M	Stainless steels X5CrNi18-9, etc.	~ 200	0.13	0.13	0.20	0.24	0.26	0.28	0.30	0.32	0.34	27.00	
K	Grey cast irons 250, etc.	~ 200	0.13	0.13	0.22	0.26	0.28	0.30	0.32	0.34	0.36	36.00	
	Ductile cast irons 450-10S, etc.	~ 300	0.12	0.12	0.20	0.24	0.26	0.28	0.30	0.32	0.34	30.00	
N	Aluminium alloys AlSi11Cu3, etc.	-	-	-	-	-	-	-	-	-	-	-	

TTS Series 7D (Internal Coolant)

Unit (mm)

ISO	Workpiece Material	Brinell hardness (HB)	Feed: f (mm/rev)									Vc (m/min)
			ø4.5	ø6	ø8	ø10	ø12	ø14	ø16	ø18	ø20	
P	Low carbon steels (C < 0.3) C15E4, E275A, E355D, etc.	~ 180	0.14	0.18	0.22	0.26	0.28	0.30	0.32	0.34	0.36	75.00
	Carbon steels (C > 0.3) C45, C55, etc.	180 ~ 300	0.14	0.18	0.22	0.26	0.28	0.30	0.32	0.34	0.36	66.00
	High alloy steels 42CrMo4, etc.	250 ~ 350	0.13	0.16	0.20	0.24	0.26	0.28	0.30	0.32	0.34	60.00
M	Stainless steels X5CrNi18-9, etc.	~ 200	0.13	0.16	0.20	0.24	0.26	0.28	0.30	0.32	0.34	40.00
K	Grey cast irons 250, etc.	~ 200	0.13	0.18	0.22	0.26	0.28	0.30	0.32	0.34	0.36	40.00
	Ductile cast irons 450-10S, etc.	~ 300	0.12	0.16	0.20	0.24	0.26	0.28	0.30	0.32	0.34	38.00
N	Aluminium alloys AlSi11Cu3, etc.	-	0.20	0.22	0.26	0.30	0.34	0.36	0.38	0.40	0.42	150.00

TTS Series 12D/16D/20D/25D/30D (Internal Coolant)

Unit (mm)

ISO	Workpiece Material	Brinell hardness (HB)	Feed: f (mm/rev)						Vc (m/min)
			ø3	ø4	ø6	ø8	ø10	ø12	
P	Low carbon steels (C < 0.3) C15E4, E275A, E355D, etc.	~ 180	0.12	0.14	0.18	0.22	0.26	0.28	81.00
	Carbon steels (C > 0.3) C45, C55, etc.	180 ~ 300	0.12	0.14	0.18	0.22	0.26	0.28	68.00
	High alloy steels 42CrMo4, etc.	250 ~ 350	0.11	0.13	0.16	0.20	0.24	0.26	58.00
M	Stainless steels X5CrNi18-9, etc.	~ 200	0.11	0.13	0.16	0.20	0.24	0.26	36.00
K	Grey cast irons 250, etc.	~ 200	0.12	0.13	0.18	0.22	0.26	0.28	45.00
	Ductile cast irons 450-10S, etc.	~ 300	0.11	0.12	0.16	0.20	0.24	0.26	40.00
N	Aluminium alloys AlSi11Cu3, etc.	-	0.12	0.14	0.20	0.24	0.28	0.32	135.00

Carbide Drills

U Drills

Head Exchangable Drills

Head Exchangable

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TK Series



General Features

TK Series is a special drill for cast iron that combines reduced cutting resistance and improved drill strength.

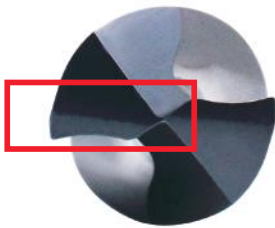
Product Range

Model No.	Diameter Range (mm)	Hole Depth (L/D)	Coolant Supply
TKW Type	D3.0-D20.0	up to 3	External
		up to 5	
TKS Type	D3.0-D20.0	up to 3	Internal
		up to 5	

※When the tensile strength is greater than 500, can be made on request.

Technological Innovation

1. Cutting Edge Design



Special cutting edge is designed for processing cast iron to enhance the cutting strength of drill and is conducive to chip removal.

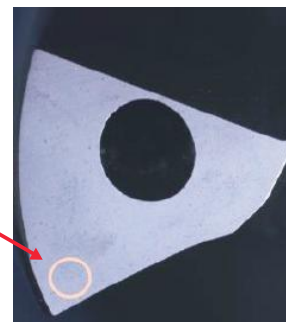
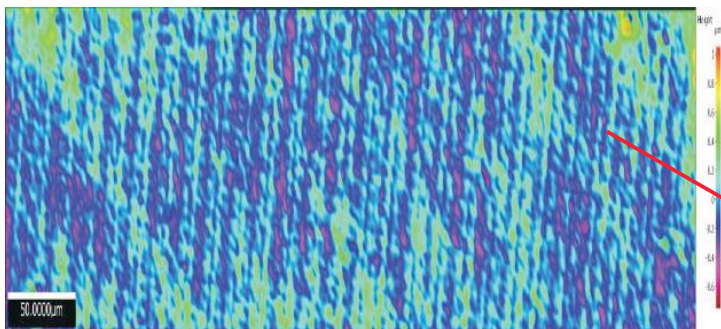
2. Point Angle Design and Coated



135° point angle design and wide transverse edge is designed to realize high-efficiency cutting of cast iron. The new TiAlN coating realizes the high wear resistance of the drill.

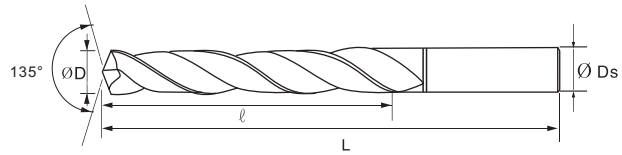
3. Drill Surface Quality

Roughness: 0.14 μm



TKW Drill Series 3D External Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TKW030D6	3.0	20	6	62	●
TKW031D6	3.1	20	6	62	●
TKW032D6	3.2	20	6	62	●
TKW033D6	3.3	20	6	62	●
TKW034D6	3.4	20	6	62	●
TKW035D6	3.5	20	6	62	●
TKW036D6	3.6	20	6	62	●
TKW037D6	3.7	20	6	62	●
TKW038D6	3.8	24	6	66	●
TKW039D6	3.9	24	6	66	●
TKW040D6	4.0	24	6	66	●
TKW041D6	4.1	24	6	66	●
TKW042D6	4.2	24	6	66	●
TKW043D6	4.3	24	6	66	●
TKW044D6	4.4	24	6	66	●
TKW045D6	4.5	24	6	66	●
TKW046D6	4.6	26	6	66	●
TKW047D6	4.7	26	6	66	●
TKW048D6	4.8	28	6	66	●
TKW049D6	4.9	28	6	66	●
TKW050D6	5.0	28	6	66	●
TKW051D6	5.1	28	6	66	●
TKW052D6	5.2	28	6	66	●
TKW053D6	5.3	28	6	66	●
TKW054D6	5.4	28	6	66	●
TKW055D6	5.5	28	6	66	●
TKW056D6	5.6	28	6	66	●
TKW057D6	5.7	28	6	66	●
TKW058D6	5.8	28	6	66	●
TKW059D6	5.9	28	6	66	●
TKW060D6	6.0	28	6	66	●
TKW061D8	6.1	34	8	79	●
TKW062D8	6.2	34	8	79	●
TKW063D8	6.3	34	8	79	●

● Stock ○ Non-stock

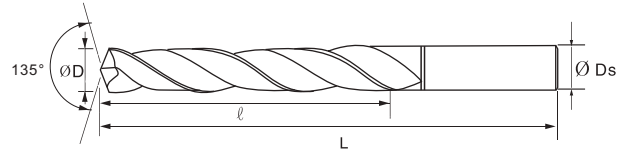
High Performance Carbide Drill for Cast Iron



Carbide Drills

TKW Drill Series 3D External Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TKW064D8	6.4	34	8	79	●
TKW065D8	6.5	34	8	79	●
TKW066D8	6.6	34	8	79	●
TKW067D8	6.7	34	8	79	●
TKW068D8	6.8	34	8	79	●
TKW069D8	6.9	34	8	79	●
TKW070D8	7.0	34	8	79	●
TKW071D8	7.1	41	8	79	●
TKW072D8	7.2	41	8	79	●
TKW073D8	7.3	41	8	79	●
TKW074D8	7.4	41	8	79	●
TKW075D8	7.5	41	8	79	●
TKW076D8	7.6	41	8	79	●
TKW077D8	7.7	41	8	79	●
TKW078D8	7.8	41	8	79	●
TKW079D8	7.9	41	8	79	●
TKW080D8	8.0	41	8	79	●
TKW081D10	8.1	47	10	89	●
TKW082D10	8.2	47	10	89	●
TKW083D10	8.3	47	10	89	●
TKW084D10	8.4	47	10	89	●
TKW085D10	8.5	47	10	89	●
TKW086D10	8.6	47	10	89	●
TKW087D10	8.7	47	10	89	●
TKW088D10	8.8	47	10	89	●
TKW089D10	8.9	47	10	89	●
TKW090D10	9.0	47	10	89	●
TKW091D10	9.1	47	10	89	●
TKW092D10	9.2	47	10	89	●
TKW093D10	9.3	47	10	89	●
TKW094D10	9.4	47	10	89	●
TKW095D10	9.5	47	10	89	●
TKW096D10	9.6	47	10	89	●
TKW097D10	9.7	47	10	89	●

●Stock ○Non-stock

U Drills

Head Exchangable Drills

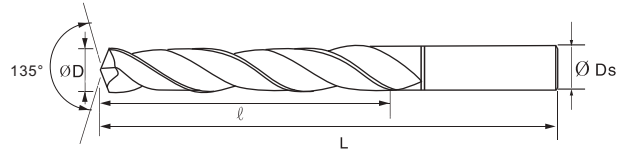
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TKW Drill Series 3D External Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TKW098D10	9.8	47	10	89	●
TKW099D10	9.9	47	10	89	●
TKW100D10	10.0	47	10	89	●
TKW101D12	10.1	55	12	102	●
TKW102D12	10.2	55	12	102	●
TKW103D12	10.3	55	12	102	●
TKW104D12	10.4	55	12	102	●
TKW105D12	10.5	55	12	102	●
TKW106D12	10.6	55	12	102	●
TKW107D12	10.7	55	12	102	●
TKW108D12	10.8	55	12	102	●
TKW109D12	10.9	55	12	102	●
TKW110D12	11.0	55	12	102	●
TKW111D12	11.1	55	12	102	●
TKW112D12	11.2	55	12	102	●
TKW113D12	11.3	55	12	102	●
TKW114D12	11.4	55	12	102	●
TKW115D12	11.5	55	12	102	●
TKW116D12	11.6	55	12	102	●
TKW117D12	11.7	55	12	102	●
TKW118D12	11.8	55	12	102	●
TKW119D12	11.9	55	12	102	●
TKW120D12	12.0	55	12	102	●
TKW121D14	12.1	60	14	107	●
TKW122D14	12.2	60	14	107	●
TKW123D14	12.3	60	14	107	●
TKW124D14	12.4	60	14	107	●
TKW125D14	12.5	60	14	107	●
TKW126D14	12.6	60	14	107	●
TKW127D14	12.7	60	14	107	●
TKW128D14	12.8	60	14	107	●
TKW129D14	12.9	60	14	107	●
TKW130D14	13.0	60	14	107	●
TKW131D14	13.1	60	14	107	●

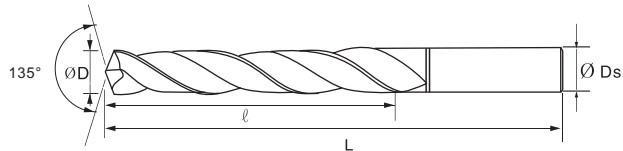
● Stock ○ Non-stock

High Performance Carbide Drill for Cast Iron



TKW Drill Series 3D External Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TKW132D14	13.2	60	14	107	●
TKW133D14	13.3	60	14	107	●
TKW134D14	13.4	60	14	107	●
TKW135D14	13.5	60	14	107	●
TKW136D14	13.6	60	14	107	●
TKW137D14	13.7	60	14	107	●
TKW138D14	13.8	60	14	107	●
TKW139D14	13.9	60	14	107	●
TKW140D14	14.0	60	14	107	●
TKW141D16	14.1	65	16	115	●
TKW142D16	14.2	65	16	115	●
TKW143D16	14.3	65	16	115	●
TKW144D16	14.4	65	16	115	●
TKW145D16	14.5	65	16	115	●
TKW146D16	14.6	65	16	115	●
TKW147D16	14.7	65	16	115	●
TKW148D16	14.8	65	16	115	●
TKW149D16	14.9	65	16	115	●
TKW150D16	15.0	65	16	115	●
TKW151D16	15.1	65	16	115	●
TKW152D16	15.2	65	16	115	●
TKW153D16	15.3	65	16	115	●
TKW154D16	15.4	65	16	115	●
TKW155D16	15.5	65	16	115	●
TKW156D16	15.6	65	16	115	●
TKW157D16	15.7	65	16	115	●
TKW158D16	15.8	65	16	115	●
TKW159D16	15.9	65	16	115	●
TKW160D16	16.0	65	16	115	●
TKW165D18	16.5	73	18	123	○
TKW170D18	17.0	73	18	123	○
TKW175D18	17.5	73	18	123	○
TKW180D18	18.0	73	18	123	○
TKW185D20	18.5	79	20	131	○

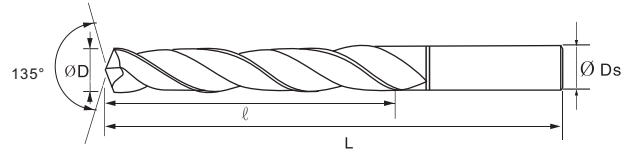
● Stock ○ Non-stock

High Performance Carbide Drill for Cast Iron



TKW Drill Series 3D External Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TKW190D20	19.0	79	20	131	○
TKW195D20	19.5	79	20	131	○
TKW200D20	20.0	79	20	131	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

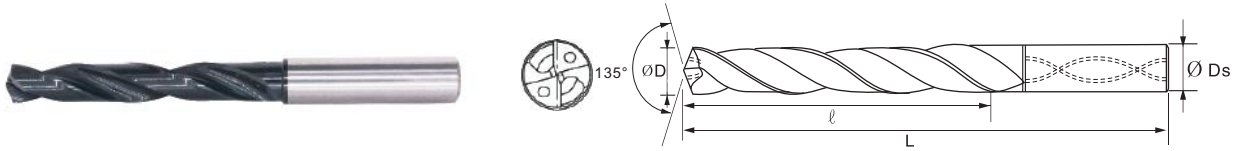
High Performance Carbide Drill for Cast Iron



Carbide Drills

TKS Drill Series 3D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TKS030D6	3.0	20	6	62	●
TKS031D6	3.1	20	6	62	●
TKS032D6	3.2	20	6	62	●
TKS033D6	3.3	20	6	62	●
TKS034D6	3.4	20	6	62	●
TKS035D6	3.5	20	6	62	●
TKS036D6	3.6	20	6	62	●
TKS037D6	3.7	20	6	62	●
TKS038D6	3.8	24	6	66	●
TKS039D6	3.9	24	6	66	●
TKS040D6	4.0	24	6	66	●
TKS041D6	4.1	24	6	66	●
TKS042D6	4.2	24	6	66	●
TKS043D6	4.3	24	6	66	●
TKS044D6	4.4	24	6	66	●
TKS045D6	4.5	24	6	66	●
TKS046D6	4.6	24	6	66	●
TKS047D6	4.7	24	6	66	●
TKS048D6	4.8	28	6	66	●
TKS049D6	4.9	28	6	66	●
TKS050D6	5.0	28	6	66	●
TKS051D6	5.1	28	6	66	●
TKS052D6	5.2	28	6	66	●
TKS053D6	5.3	28	6	66	●
TKS054D6	5.4	28	6	66	●
TKS055D6	5.5	28	6	66	●
TKS056D6	5.6	28	6	66	●
TKS057D6	5.7	28	6	66	●
TKS058D6	5.8	28	6	66	●
TKS059D6	5.9	28	6	66	●
TKS060D6	6.0	28	6	66	●
TKS061D8	6.1	34	8	79	●
TKS062D8	6.2	34	8	79	●

● Stock ○ Non-stock

U Drills

Head Exchangable Drills

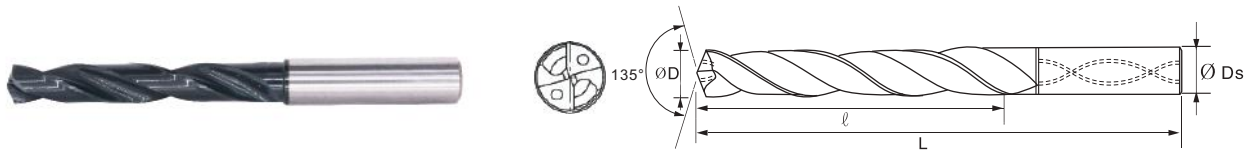
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TKS Drill Series 3D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TKS063D8	6.3	34	8	79	●
TKS064D8	6.4	34	8	79	●
TKS065D8	6.5	34	8	79	●
TKS066D8	6.6	34	8	79	●
TKS067D8	6.7	34	8	79	●
TKS068D8	6.8	34	8	79	●
TKS069D8	6.9	34	8	79	●
TKS070D8	7.0	34	8	79	●
TKS071D8	7.1	41	8	79	●
TKS072D8	7.2	41	8	79	●
TKS073D8	7.3	41	8	79	●
TKS074D8	7.4	41	8	79	●
TKS075D8	7.5	41	8	79	●
TKS076D8	7.6	41	8	79	●
TKS077D8	7.7	41	8	79	●
TKS078D8	7.8	41	8	79	●
TKS079D8	7.9	41	8	79	●
TKS080D8	8.0	41	8	79	●
TKS081D10	8.1	47	10	89	●
TKS082D10	8.2	47	10	89	●
TKS083D10	8.3	47	10	89	●
TKS084D10	8.4	47	10	89	●
TKS085D10	8.5	47	10	89	●
TKS086D10	8.6	47	10	89	●
TKS087D10	8.7	47	10	89	●
TKS088D10	8.8	47	10	89	●
TKS089D10	8.9	47	10	89	●
TKS090D10	9.0	47	10	89	●
TKS091D10	9.1	47	10	89	●
TKS092D10	9.2	47	10	89	●
TKS093D10	9.3	47	10	89	●
TKS094D10	9.4	47	10	89	●
TKS095D10	9.5	47	10	89	●

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

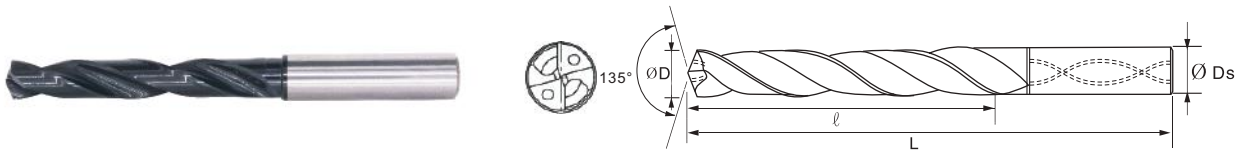
High Performance Carbide Drill for Cast Iron



Carbide Drills

TKS Drill Series 3D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength ≤ 500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TKS096D10	9.6	47	10	89	●
TKS097D10	9.7	47	10	89	●
TKS098D10	9.8	47	10	89	●
TKS099D10	9.9	47	10	89	●
TKS100D10	10.0	47	10	89	●
TKS101D12	10.1	55	12	102	●
TKS102D12	10.2	55	12	102	●
TKS103D12	10.3	55	12	102	●
TKS104D12	10.4	55	12	102	●
TKS105D12	10.5	55	12	102	●
TKS106D12	10.6	55	12	102	●
TKS107D12	10.7	55	12	102	●
TKS108D12	10.8	55	12	102	●
TKS109D12	10.9	55	12	102	●
TKS110D12	11.0	55	12	102	●
TKS111D12	11.1	55	12	102	●
TKS112D12	11.2	55	12	102	●
TKS113D12	11.3	55	12	102	●
TKS114D12	11.4	55	12	102	●
TKS115D12	11.5	55	12	102	●
TKS116D12	11.6	55	12	102	●
TKS117D12	11.7	55	12	102	●
TKS118D12	11.8	55	12	102	●
TKS119D12	11.9	55	12	102	●
TKS120D12	12.0	55	12	102	●
TKS121D14	12.1	60	14	107	●
TKS122D14	12.2	60	14	107	●
TKS123D14	12.3	60	14	107	●
TKS124D14	12.4	60	14	107	●
TKS125D14	12.5	60	14	107	●
TKS126D14	12.6	60	14	107	●
TKS127D14	12.7	60	14	107	●
TKS128D14	12.8	60	14	107	●

● Stock ○ Non-stock

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

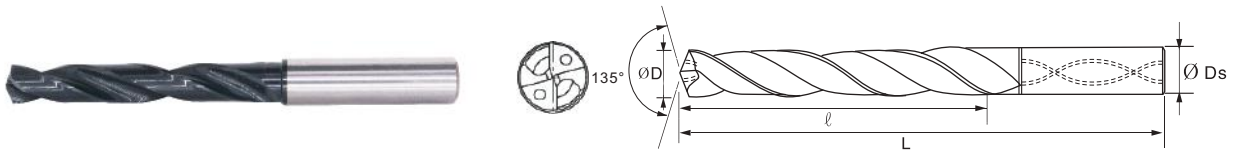
Non-standard Tools

High Performance Carbide Drill for Cast Iron



TKS Drill Series 3D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TKS129D14	12.9	60	14	107	●
TKS130D14	13.0	60	14	107	●
TKS131D14	13.1	60	14	107	●
TKS132D14	13.2	60	14	107	●
TKS133D14	13.3	60	14	107	●
TKS134D14	13.4	60	14	107	●
TKS135D14	13.5	60	14	107	●
TKS136D14	13.6	60	14	107	●
TKS137D14	13.7	60	14	107	●
TKS138D14	13.8	60	14	107	●
TKS139D14	13.9	60	14	107	●
TKS140D14	14.0	60	14	107	●
TKS141D16	14.1	65	16	115	●
TKS142D16	14.2	65	16	115	●
TKS143D16	14.3	65	16	115	●
TKS144D16	14.4	65	16	115	●
TKS145D16	14.5	65	16	115	●
TKS146D16	14.6	65	16	115	●
TKS147D16	14.7	65	16	115	●
TKS148D16	14.8	65	16	115	●
TKS149D16	14.9	65	16	115	●
TKS150D16	15.0	65	16	115	●
TKS151D16	15.1	65	16	115	●
TKS152D16	15.2	65	16	115	●
TKS153D16	15.3	65	16	115	●
TKS154D16	15.4	65	16	115	●
TKS155D16	15.5	65	16	115	●
TKS156D16	15.6	65	16	115	●
TKS157D16	15.7	65	16	115	●
TKS158D16	15.8	65	16	115	●
TKS159D16	15.9	65	16	115	●
TKS160D16	16.0	65	16	115	●
TKS165D18	16.5	73	18	123	○

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

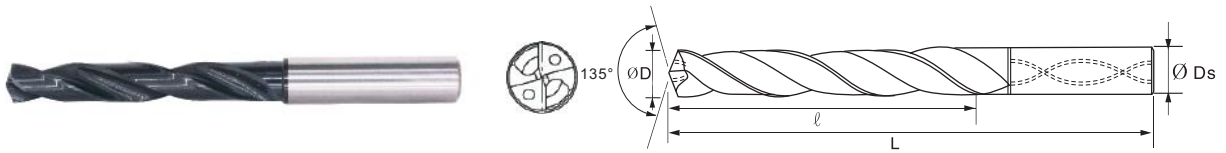
CDR 45° Chamfer Cutter

Non-standard Tools

Carbide Drills

TKS Drill Series 3D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TKS170D18	17.0	73	18	123	○
TKS175D18	17.5	73	18	123	○
TKS180D18	18.0	73	18	123	○
TKS185D20	18.5	79	20	131	○
TKS190D20	19.0	79	20	131	○
TKS195D20	19.5	79	20	131	○
TKS200D20	20.0	79	20	131	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

U Drills

Head Exchangable Drills

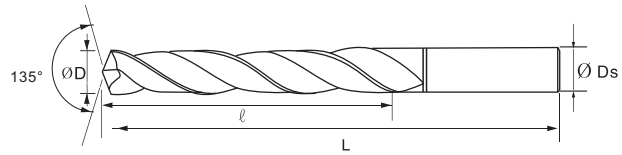
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TKW Drill Series 3D External Coolant(Inch)

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter		Cutting Length <i>l</i>	Shank Diameter <i>D_s</i>	Total Length <i>L</i>	Stock
	D					
	mm	inch				
TKW0318D6	3.18	1/8	20	6	62	○
TKW0357D6	3.57	9/64	20	6	62	○
TKW0397D6	3.97	5/32	24	6	66	○
TKW0437D6	4.37	11/64	24	6	66	○
TKW0476D6	4.76	3/16	26	6	66	○
TKW0516D6	5.16	13/64	28	6	66	○
TKW0556D6	5.56	7/32	28	6	66	○
TKW0595D6	5.95	15/64	28	6	66	○
TKW0635D8	6.35	1/4	34	8	79	○
TKW0675D8	6.75	17/64	34	8	79	○
TKW0714D8	7.14	9/32	41	8	79	○
TKW0754D8	7.54	19/64	41	8	79	○
TKW0794D8	7.94	5/16	41	8	79	○
TKW0833D10	8.33	21/64	47	10	89	○
TKW0873D10	8.73	11/32	47	10	89	○
TKW0913D10	9.13	23/64	47	10	89	○
TKW0952D10	9.52	3/8	47	10	89	○
TKW0992D10	9.92	25/64	47	10	89	○
TKW1032D12	10.32	13/32	55	12	102	○
TKW1072D12	10.72	27/64	55	12	102	○
TKW1111D12	11.11	7/16	55	12	102	○
TKW1151D12	11.51	29/64	55	12	102	○
TKW1191D12	11.91	15/32	55	12	102	○
TKW1349D14	13.49	17/32	60	14	107	○
TKW1389D14	13.89	35/64	60	14	107	○
TKW1429D16	14.29	9/16	65	16	115	○
TKW1468D16	14.68	37/64	65	16	115	○
TKW1508D16	15.08	19/32	65	16	115	○
TKW1548D16	15.48	39/64	65	16	115	○
TKW1588D16	15.88	5/8	65	16	115	○
TKW1627D18	16.27	41/64	73	18	123	○
TKW1667D18	16.67	21/32	73	18	123	○
TKW1707D18	17.07	43/64	73	18	123	○
TKW1746D18	17.46	11/16	73	18	123	○

● Stock ○ Non-stock

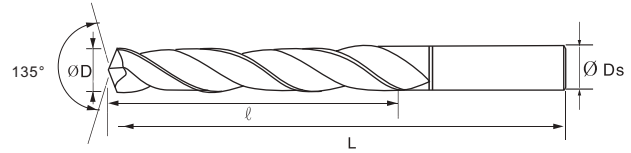
High Performance Carbide Drill for Cast Iron



Carbide Drills

TKW Drill Series 3D External Coolant(Inch)

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

U Drills

Model No.	Cutting Diameter		Cutting Length <i>ℓ</i>	Shank Diameter <i>Ds</i>	Total Length <i>L</i>	Stock
	D					
	mm	inch				
TKW1786D18	17.86	45/64	73	18	123	○
TKW1826D20	18.26	23/32	79	20	131	○
TKW1865D20	18.65	47/64	79	20	131	○
TKW1905D20	19.05	3/4	79	20	131	○
TKW1945D20	19.45	49/64	79	20	131	○
TKW1984D20	19.84	25/32	79	20	131	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

Head Exchangable Drills

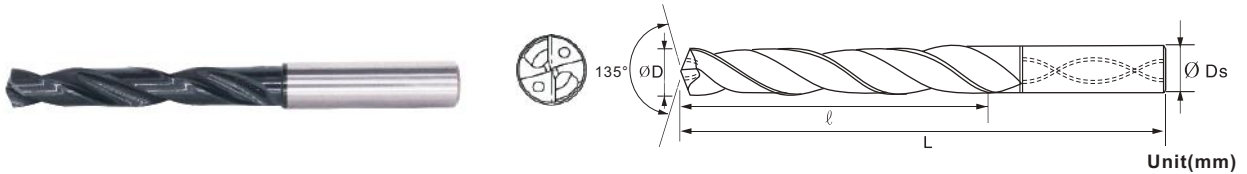
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TKS Drill Series 3D with Internal Coolant (Inch)

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		

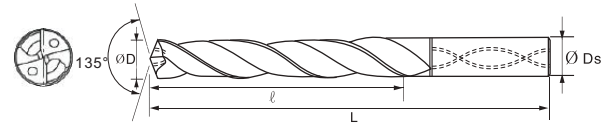


Model No.	Cutting Diameter		Cutting Length ℓ	Shank Diameter Ds	Total Length L	Stock
	D					
	mm	inch				
TKS0318D6	3.18	1/8	20	6	62	○
TKS0357D6	3.57	9/64	20	6	62	○
TKS0397D6	3.97	5/32	24	6	66	○
TKS0437D6	4.37	11/64	24	6	66	○
TKS0476D6	4.76	3/16	26	6	66	○
TKS0516D6	5.16	13/64	28	6	66	○
TKS0556D6	5.56	7/32	28	6	66	○
TKS0595D6	5.95	15/64	28	6	66	○
TKS0635D8	6.35	1/4	34	8	79	○
TKS0675D8	6.75	17/64	34	8	79	○
TKS0714D8	7.14	9/32	41	8	79	○
TKS0754D8	7.54	19/64	41	8	79	○
TKS0794D8	7.94	5/16	41	8	79	○
TKS0833D10	8.33	21/64	47	10	89	○
TKS0873D10	8.73	11/32	47	10	89	○
TKS0913D10	9.13	23/64	47	10	89	○
TKS0952D10	9.52	3/8	47	10	89	○
TKS0992D10	9.92	25/64	47	10	89	○
TKS1032D12	10.32	13/32	55	12	102	○
TKS1072D12	10.72	27/64	55	12	102	○
TKS1111D12	11.11	7/16	55	12	102	○
TKS1151D12	11.51	29/64	55	12	102	○
TKS1191D12	11.91	15/32	55	12	102	○
TKS1349D14	13.49	17/32	60	14	107	○
TKS1389D14	13.89	35/64	60	14	107	○
TKS1429D16	14.29	9/16	65	16	115	○
TKS1468D16	14.68	37/64	65	16	115	○
TKS1508D16	15.08	19/32	65	16	115	○
TKS1548D16	15.48	39/64	65	16	115	○
TKS1588D16	15.88	5/8	65	16	115	○
TKS1627D18	16.27	41/64	73	18	123	○
TKS1667D18	16.67	21/32	73	18	123	○
TKS1707D18	17.07	43/64	73	18	123	○
TKS1746D18	17.46	11/16	73	18	123	○

● Stock ○ Non-stock

TKS Drill Series 3D with Internal Coolant (Inch)

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

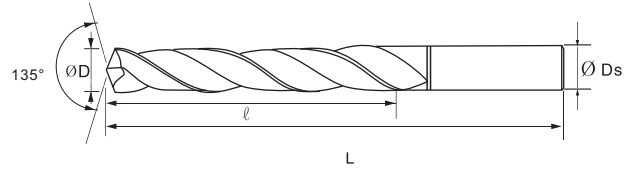
Model No.	Cutting Diameter		Cutting Length <i>l</i>	Shank Diameter <i>D_s</i>	Total Length <i>L</i>	Stock
	D					
	mm	inch				
TKS1786D18	17.86	45/64	73	18	123	○
TKS1826D20	18.26	23/32	79	20	131	○
TKS1865D20	18.65	47/64	79	20	131	○
TKS1905D20	19.05	3/4	79	20	131	○
TKS1945D20	19.45	49/64	79	20	131	○
TKS1984D20	19.84	25/32	79	20	131	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

TKW Drill Series 5D External Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TKW05030D6	3.0	26	6	66	●
TKW05031D6	3.1	26	6	66	●
TKW05032D6	3.2	26	6	66	●
TKW05033D6	3.3	26	6	66	●
TKW05034D6	3.4	26	6	66	●
TKW05035D6	3.5	26	6	66	●
TKW05036D6	3.6	26	6	66	●
TKW05037D6	3.7	26	6	66	●
TKW05038D6	3.8	34	6	74	●
TKW05039D6	3.9	34	6	74	●
TKW05040D6	4.0	34	6	74	●
TKW05041D6	4.1	34	6	74	●
TKW05042D6	4.2	34	6	74	●
TKW05043D6	4.3	34	6	74	●
TKW05044D6	4.4	34	6	74	●
TKW05045D6	4.5	34	6	74	●
TKW05046D6	4.6	34	6	74	●
TKW05047D6	4.7	34	6	74	●
TKW05048D6	4.8	44	6	82	●
TKW05049D6	4.9	44	6	82	●
TKW05050D6	5.0	44	6	82	●
TKW05051D6	5.1	44	6	82	●
TKW05052D6	5.2	44	6	82	●
TKW05053D6	5.3	44	6	82	●
TKW05054D6	5.4	44	6	82	●
TKW05055D6	5.5	44	6	82	●
TKW05056D6	5.6	44	6	82	●
TKW05057D6	5.7	44	6	82	●
TKW05058D6	5.8	44	6	82	●
TKW05059D6	5.9	44	6	82	●
TKW05060D6	6.0	44	6	82	●
TKW05061D8	6.1	44	8	82	●

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

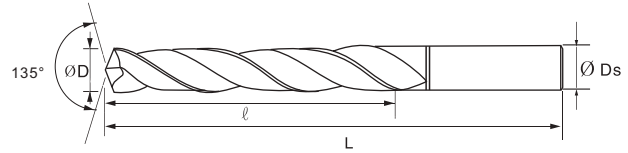
High Performance Carbide Drill for Cast Iron



Carbide Drills

TKW Drill Series 5D External Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



U Drills

Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TKW05062D8	6.2	53	8	91	●
TKW05063D8	6.3	53	8	91	●
TKW05064D8	6.4	53	8	91	●
TKW05065D8	6.5	53	8	91	●
TKW05066D8	6.6	53	8	91	●
TKW05067D8	6.7	53	8	91	●
TKW05068D8	6.8	53	8	91	●
TKW05069D8	6.9	53	8	91	●
TKW05070D8	7.0	53	8	91	●
TKW05071D8	7.1	53	8	91	●
TKW05072D8	7.2	53	8	91	●
TKW05073D8	7.3	53	8	91	●
TKW05074D8	7.4	53	8	91	●
TKW05075D8	7.5	53	8	91	●
TKW05076D8	7.6	53	8	91	●
TKW05077D8	7.7	53	8	91	●
TKW05078D8	7.8	53	8	91	●
TKW05079D8	7.9	53	8	91	●
TKW05080D8	8.0	53	8	91	●
TKW05081D10	8.1	61	10	103	●
TKW05082D10	8.2	61	10	103	●
TKW05083D10	8.3	61	10	103	●
TKW05084D10	8.4	61	10	103	●
TKW05085D10	8.5	61	10	103	●
TKW05086D10	8.6	61	10	103	●
TKW05087D10	8.7	61	10	103	●
TKW05088D10	8.8	61	10	103	●
TKW05089D10	8.9	61	10	103	●
TKW05090D10	9.0	61	10	103	●
TKW05091D10	9.1	61	10	103	●
TKW05092D10	9.2	61	10	103	●
TKW05093D10	9.3	61	10	103	●
TKW05094D10	9.4	61	10	103	●

● Stock ○ Non-stock

Head Exchangable Drills

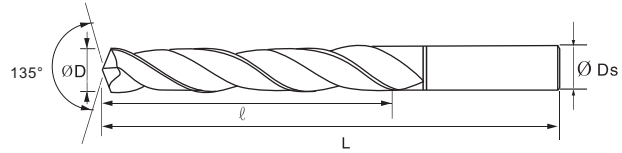
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TKW Drill Series 5D External Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TKW05095D10	9.5	61	10	103	●
TKW05096D10	9.6	61	10	103	●
TKW05097D10	9.7	61	10	103	●
TKW05098D10	9.8	61	10	103	●
TKW05099D10	9.9	61	10	103	●
TKW05100D10	10.0	61	10	103	●
TKW05101D12	10.1	71	12	118	●
TKW05102D12	10.2	71	12	118	●
TKW05103D12	10.3	71	12	118	●
TKW05104D12	10.4	71	12	118	●
TKW05105D12	10.5	71	12	118	●
TKW05106D12	10.6	71	12	118	●
TKW05107D12	10.7	71	12	118	●
TKW05108D12	10.8	71	12	118	●
TKW05109D12	10.9	71	12	118	●
TKW05110D12	11.0	71	12	118	●
TKW05111D12	11.1	71	12	118	●
TKW05112D12	11.2	71	12	118	●
TKW05113D12	11.3	71	12	118	●
TKW05114D12	11.4	71	12	118	●
TKW05115D12	11.5	71	12	118	●
TKW05116D12	11.6	71	12	118	●
TKW05117D12	11.7	71	12	118	●
TKW05118D12	11.8	71	12	118	●
TKW05119D12	11.9	71	12	118	●
TKW05120D12	12.0	71	12	118	●
TKW05121D14	12.1	77	14	124	●
TKW05122D14	12.2	77	14	124	●
TKW05123D14	12.3	77	14	124	●
TKW05124D14	12.4	77	14	124	●
TKW05125D14	12.5	77	14	124	●
TKW05126D14	12.6	77	14	124	●
TKW05127D14	12.7	77	14	124	●

● Stock ○ Non-stock

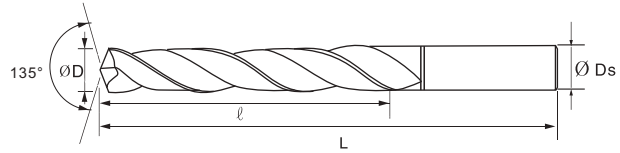
High Performance Carbide Drill for Cast Iron



Carbide Drills

TKW Drill Series 5D External Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



U Drills

Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TKW05128D14	12.8	77	14	124	●
TKW05129D14	12.9	77	14	124	●
TKW05130D14	13.0	77	14	124	●
TKW05131D14	13.1	77	14	124	●
TKW05132D14	13.2	77	14	124	●
TKW05133D14	13.3	77	14	124	●
TKW05134D14	13.4	77	14	124	●
TKW05135D14	13.5	77	14	124	●
TKW05136D14	13.6	77	14	124	●
TKW05137D14	13.7	77	14	124	●
TKW05138D14	13.8	77	14	124	●
TKW05139D14	13.9	77	14	124	●
TKW05140D14	14.0	77	14	124	●
TKW05141D16	14.1	83	16	133	●
TKW05142D16	14.2	83	16	133	●
TKW05143D16	14.3	83	16	133	●
TKW05144D16	14.4	83	16	133	●
TKW05145D16	14.5	83	16	133	●
TKW05146D16	14.6	83	16	133	●
TKW05147D16	14.7	83	16	133	●
TKW05148D16	14.8	83	16	133	●
TKW05149D16	14.9	83	16	133	●
TKW05150D16	15.0	83	16	133	●
TKW05151D16	15.1	83	16	133	●
TKW05152D16	15.2	83	16	133	●
TKW05153D16	15.3	83	16	133	●
TKW05154D16	15.4	83	16	133	●
TKW05155D16	15.5	83	16	133	●
TKW05156D16	15.6	83	16	133	●
TKW05157D16	15.7	83	16	133	●
TKW05158D16	15.8	83	16	133	●
TKW05159D16	15.9	83	16	133	●
TKW05160D16	16.0	83	16	133	●

● Stock ○ Non-stock

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

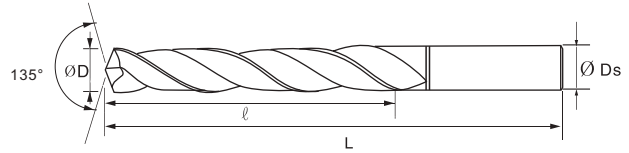
Non-standard Tools

High Performance Carbide Drill for Cast Iron



TKW Drill Series 5D External Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TKW05165D18	16.5	93	18	143	○
TKW05170D18	17.0	93	18	143	○
TKW05175D18	17.5	93	18	143	○
TKW05180D18	18.0	93	18	143	○
TKW05185D20	18.5	101	20	153	○
TKW05190D20	19.0	101	20	153	○
TKW05195D20	19.5	101	20	153	○
TKW05200D20	20.0	101	20	153	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

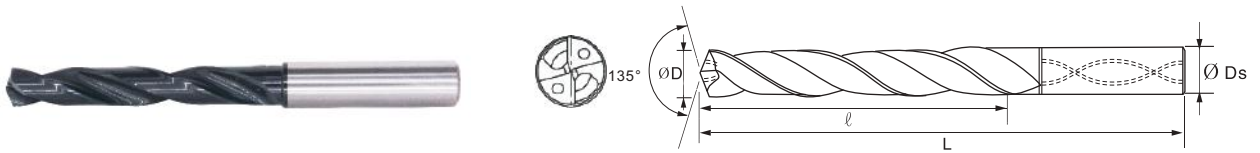
High Performance Carbide Drill for Cast Iron



Carbide Drills

TKS Drill Series 5D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TKS05030D6	3.0	26	6	66	●
TKS05031D6	3.1	26	6	66	●
TKS05032D6	3.2	26	6	66	●
TKS05033D6	3.3	26	6	66	●
TKS05034D6	3.4	26	6	66	●
TKS05035D6	3.5	26	6	66	●
TKS05036D6	3.6	26	6	66	●
TKS05037D6	3.7	26	6	66	●
TKS05038D6	3.8	34	6	74	●
TKS05039D6	3.9	34	6	74	●
TKS05040D6	4.0	34	6	74	●
TKS05041D6	4.1	34	6	74	●
TKS05042D6	4.2	34	6	74	●
TKS05043D6	4.3	34	6	74	●
TKS05044D6	4.4	34	6	74	●
TKS05045D6	4.5	34	6	74	●
TKS05046D6	4.6	34	6	74	●
TKS05047D6	4.7	34	6	74	●
TKS05048D6	4.8	44	6	82	●
TKS05049D6	4.9	44	6	82	●
TKS05050D6	5.0	44	6	82	●
TKS05051D6	5.1	44	6	82	●
TKS05052D6	5.2	44	6	82	●
TKS05053D6	5.3	44	6	82	●
TKS05054D6	5.4	44	6	82	●
TKS05055D6	5.5	44	6	82	●
TKS05056D6	5.6	44	6	82	●
TKS05057D6	5.7	44	6	82	●
TKS05058D6	5.8	44	6	82	●
TKS05059D6	5.9	44	6	82	●
TKS05060D6	6.0	44	6	82	●
TKS05061D8	6.1	44	8	82	●
TKS05062D8	6.2	53	8	91	●
TKS05063D8	6.3	53	8	91	●
TKS05064D8	6.4	53	8	91	●
TKS05065D8	6.5	53	8	91	●

● Stock ○ Non-stock

U Drills

Head Exchangable Drills

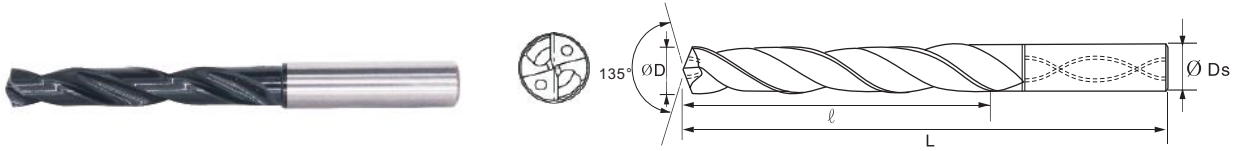
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TKS Drill Series 5D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TKS05066D8	6.6	53	8	91	●
TKS05067D8	6.7	53	8	91	●
TKS05068D8	6.8	53	8	91	●
TKS05069D8	6.9	53	8	91	●
TKS05070D8	7.0	53	8	91	●
TKS05071D8	7.1	53	8	91	●
TKS05072D8	7.2	53	8	91	●
TKS05073D8	7.3	53	8	91	●
TKS05074D8	7.4	53	8	91	●
TKS05075D8	7.5	53	8	91	●
TKS05076D8	7.6	53	8	91	●
TKS05077D8	7.7	53	8	91	●
TKS05078D8	7.8	53	8	91	●
TKS05079D8	7.9	53	8	91	●
TKS05080D8	8.0	53	8	91	●
TKS05081D10	8.1	61	10	103	●
TKS05082D10	8.2	61	10	103	●
TKS05083D10	8.3	61	10	103	●
TKS05084D10	8.4	61	10	103	●
TKS05085D10	8.5	61	10	103	●
TKS05086D10	8.6	61	10	103	●
TKS05087D10	8.7	61	10	103	●
TKS05088D10	8.8	61	10	103	●
TKS05089D10	8.9	61	10	103	●
TKS05090D10	9.0	61	10	103	●
TKS05091D10	9.1	61	10	103	●
TKS05092D10	9.2	61	10	103	●
TKS05093D10	9.3	61	10	103	●
TKS05094D10	9.4	61	10	103	●
TKS05095D10	9.5	61	10	103	●
TKS05096D10	9.6	61	10	103	●
TKS05097D10	9.7	61	10	103	●
TKS05098D10	9.8	61	10	103	●
TKS05099D10	9.9	61	10	103	●
TKS05100D10	10.0	61	10	103	●
TKS05101D12	10.1	71	12	118	●
TKS05102D12	10.2	71	12	118	●

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

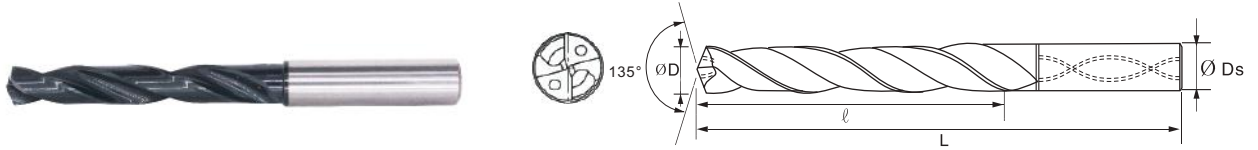
Non-standard Tools

High Performance Carbide Drill for Cast Iron



TKS Drill Series 5D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TKS05103D12	10.3	71	12	118	●
TKS05104D12	10.4	71	12	118	●
TKS05105D12	10.5	71	12	118	●
TKS05106D12	10.6	71	12	118	●
TKS05107D12	10.7	71	12	118	●
TKS05108D12	10.8	71	12	118	●
TKS05109D12	10.9	71	12	118	●
TKS05110D12	11.0	71	12	118	●
TKS05111D12	11.1	71	12	118	●
TKS05112D12	11.2	71	12	118	●
TKS05113D12	11.3	71	12	118	●
TKS05114D12	11.4	71	12	118	●
TKS05115D12	11.5	71	12	118	●
TKS05116D12	11.6	71	12	118	●
TKS05117D12	11.7	71	12	118	●
TKS05118D12	11.8	71	12	118	●
TKS05119D12	11.9	71	12	118	●
TKS05120D12	12.0	71	12	118	●
TKS05121D14	12.1	77	14	124	●
TKS05122D14	12.2	77	14	124	●
TKS05123D14	12.3	77	14	124	●
TKS05124D14	12.4	77	14	124	●
TKS05125D14	12.5	77	14	124	●
TKS05126D14	12.6	77	14	124	●
TKS05127D14	12.7	77	14	124	●
TKS05128D14	12.8	77	14	124	●
TKS05129D14	12.9	77	14	124	●
TKS05130D14	13.0	77	14	124	●
TKS05131D14	13.1	77	14	124	●
TKS05132D14	13.2	77	14	124	●
TKS05133D14	13.3	77	14	124	●
TKS05134D14	13.4	77	14	124	●
TKS05135D14	13.5	77	14	124	●
TKS05136D14	13.6	77	14	124	●
TKS05137D14	13.7	77	14	124	●
TKS05138D14	13.8	77	14	124	●
TKS05139D14	13.9	77	14	124	●

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

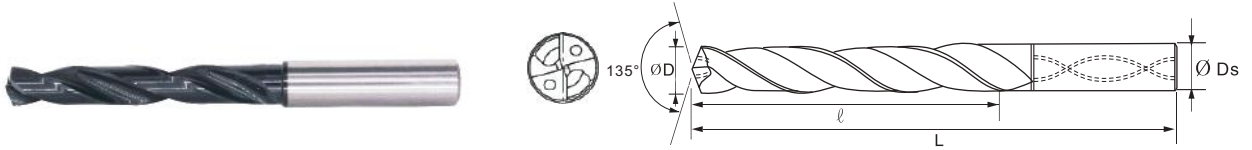
Non-standard Tools

High Performance Carbide Drill for Cast Iron



TKS Drill Series 5D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength ≤ 500)		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
TKS05140D14	14.0	77	14	124	●
TKS05141D16	14.1	83	16	133	●
TKS05142D16	14.2	83	16	133	●
TKS05143D16	14.3	83	16	133	●
TKS05144D16	14.4	83	16	133	●
TKS05145D16	14.5	83	16	133	●
TKS05146D16	14.6	83	16	133	●
TKS05147D16	14.7	83	16	133	●
TKS05148D16	14.8	83	16	133	●
TKS05149D16	14.9	83	16	133	●
TKS05150D16	15.0	83	16	133	●
TKS05151D16	15.1	83	16	133	●
TKS05152D16	15.2	83	16	133	●
TKS05153D16	15.3	83	16	133	●
TKS05154D16	15.4	83	16	133	●
TKS05155D16	15.5	83	16	133	●
TKS05156D16	15.6	83	16	133	●
TKS05157D16	15.7	83	16	133	●
TKS05158D16	15.8	83	16	133	●
TKS05159D16	15.9	83	16	133	●
TKS05160D16	16.0	83	16	133	●
TKS05165D18	16.5	93	18	143	○
TKS05170D18	17.0	93	18	143	○
TKS05175D18	17.5	93	18	143	○
TKS05180D18	18.0	93	18	143	○
TKS05185D20	18.5	101	20	153	○
TKS05190D20	19.0	101	20	153	○
TKS05195D20	19.5	101	20	153	○
TKS05200D20	20.0	101	20	153	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

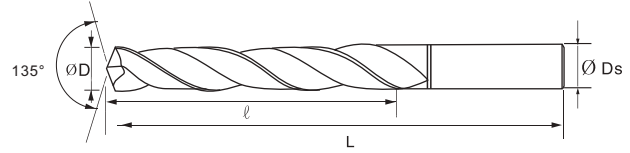
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TKW Drill Series 5D External Coolant (Inch)

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength ≤500)		



Unit(mm)

Model No.	Cutting Diameter		Cutting Length ℓ	Shank Diameter Ds	Total Length L	Stock
	D					
	mm	inch				
TKW050318D6	3.18	1/8	26	6	66	○
TKW050357D6	3.57	9/64	26	6	66	○
TKW050397D6	3.97	5/32	34	6	74	○
TKW050437D6	4.37	11/64	34	6	74	○
TKW050476D6	4.76	3/16	44	6	82	○
TKW050516D6	5.16	13/64	44	6	82	○
TKW050556D6	5.56	7/32	44	6	82	○
TKW050595D6	5.95	15/64	44	6	82	○
TKW050635D8	6.35	1/4	53	8	91	○
TKW050675D8	6.75	17/64	53	8	91	○
TKW050714D8	7.14	9/32	53	8	91	○
TKW050754D8	7.54	19/64	53	8	91	○
TKW050794D8	7.94	5/16	53	8	91	○
TKW050833D10	8.33	21/64	61	10	103	○
TKW050873D10	8.73	11/32	61	10	103	○
TKW050913D10	9.13	23/64	61	10	103	○
TKW050952D10	9.52	3/8	61	10	103	○
TKW050992D10	9.92	25/64	61	10	103	○
TKW051032D12	10.32	13/32	71	12	118	○
TKW051072D12	10.72	27/64	71	12	118	○
TKW051111D12	11.11	7/16	71	12	118	○
TKW051151D12	11.51	29/64	71	12	118	○
TKW051191D12	11.91	15/32	71	12	118	○
TKW051349D14	13.49	17/32	77	14	124	○
TKW051389D14	13.89	35/64	77	14	124	○
TKW051429D16	14.29	9/16	83	16	133	○
TKW051468D16	14.68	37/64	83	16	133	○
TKW051508D16	15.08	19/32	83	16	133	○
TKW051548D16	15.48	39/64	83	16	133	○
TKW051588D16	15.88	5/8	83	16	133	○
TKW051627D18	16.27	41/64	93	18	143	○
TKW051667D18	16.67	21/32	93	18	143	○
TKW051707D18	17.07	43/64	93	18	143	○
TKW051746D18	17.46	11/16	93	18	143	○

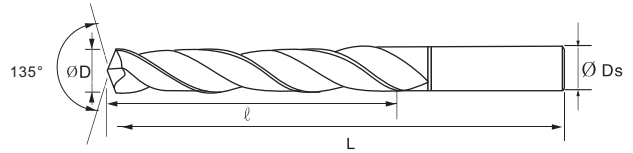
● Stock ○ Non-stock

High Performance Carbide Drill for Cast Iron



TKW Drill Series 5D External Coolant (Inch)

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength≤500)		



Unit(mm)

Model No.	Cutting Diameter		Cutting Length	Shank Diameter	Total Length	Stock
	D					
	mm	inch	ℓ	Ds	L	
TKW051786D18	17.86	45/64	93	18	143	○
TKW051826D20	18.26	23/32	101	20	153	○
TKW051865D20	18.65	47/64	101	20	153	○
TKW051905D20	19.05	3/4	101	20	153	○
TKW051945D20	19.45	49/64	101	20	153	○
TKW051984D20	19.84	25/32	101	20	153	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

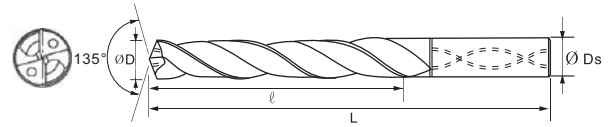
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TKS Drill Series 5D with Internal Coolant (Inch)

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAlN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength ≤ 500)		



Unit(mm)

Model No.	Cutting Diameter		Cutting Length <i>l</i>	Shank Diameter <i>D_s</i>	Total Length <i>L</i>	Stock
	D					
	mm	inch				
TKS050318D6	3.18	1/8	26	6	66	○
TKS050357D6	3.57	9/64	26	6	66	○
TKS050397D6	3.97	5/32	34	6	74	○
TKS050437D6	4.37	11/64	34	6	74	○
TKS050476D6	4.76	3/16	44	6	82	○
TKS050516D6	5.16	13/64	44	6	82	○
TKS050556D6	5.56	7/32	44	6	82	○
TKS050595D6	5.95	15/64	44	6	82	○
TKS050635D8	6.35	1/4	53	8	91	○
TKS050675D8	6.75	17/64	53	8	91	○
TKS050714D8	7.14	9/32	53	8	91	○
TKS050754D8	7.54	19/64	53	8	91	○
TKS050794D8	7.94	5/16	53	8	91	○
TKS050833D10	8.33	21/64	61	10	103	○
TKS050873D10	8.73	11/32	61	10	103	○
TKS050913D10	9.13	23/64	61	10	103	○
TKS050952D10	9.52	3/8	61	10	103	○
TKS050992D10	9.92	25/64	61	10	103	○
TKS051032D12	10.32	13/32	71	12	118	○
TKS051072D12	10.72	27/64	71	12	118	○
TKS051111D12	11.11	7/16	71	12	118	○
TKS051151D12	11.51	29/64	71	12	118	○
TKS051191D12	11.91	15/32	71	12	118	○
TKS051349D14	13.49	17/32	77	14	124	○
TKS051389D14	13.89	35/64	77	14	124	○
TKS051429D16	14.29	9/16	83	16	133	○
TKS051468D16	14.68	37/64	83	16	133	○
TKS051508D16	15.08	19/32	83	16	133	○
TKS051548D16	15.48	39/64	83	16	133	○
TKS051588D16	15.88	5/8	83	16	133	○
TKS051627D18	16.27	41/64	93	18	143	○
TKS051667D18	16.67	21/32	93	18	143	○
TKS051707D18	17.07	43/64	93	18	143	○
TKS051746D18	17.46	11/16	93	18	143	○

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

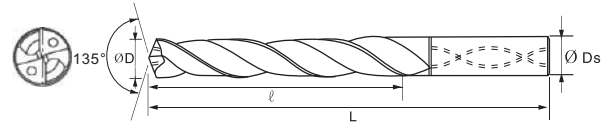
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TKS Drill Series 5D with Internal Coolant (Inch)

Material	Carbide	Helix angle	30°	Point angle	135°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	TiAIN	Suitable for processing	Gray cast iron/Ductile cast iron(Tensile Strength ≤ 500)		



Unit(mm)

Model No.	Cutting Diameter		Cutting Length	Shank Diameter	Total Length	Stock
	D					
	mm	inch	l	Ds	L	
TKS051786D18	17.86	45/64	93	18	143	○
TKS051826D20	18.26	23/32	101	20	153	○
TKS051865D20	18.65	47/64	101	20	153	○
TKS051905D20	19.05	3/4	101	20	153	○
TKS051945D20	19.45	49/64	101	20	153	○
TKS051984D20	19.84	25/32	101	20	153	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

Carbide Drills

TKW Series 3D/5D (External Coolant)

Unit (mm)

ISO	Workpiece Material	Brinell hardness (HB)	Feed: f (mm/rev)										Vc (m/min)
			ø3	ø4	ø6	ø8	ø10	ø12	ø14	ø16	ø18	ø20	ø3 ~ ø20
K	Grey cast irons FC250,etc.	~ 200	0.17	0.20	0.25	0.27	0.30	0.28	0.33	0.40	0.42	0.45	60~140
	Ductile cast irons FCD500,etc.(Tensile Strength≤500Mpa)	~ 300	0.09	0.10	0.13	0.16	0.20	0.26	0.22	0.26	0.28	0.28	50~100

U Drills

Head Exchangable Drills

TKS Series 3D/5D (Internal Coolant)

Unit (mm)

ISO	Workpiece Material	Brinell hardness (HB)	Feed: f (mm/rev)										Vc (m/min)
			ø3	ø4	ø6	ø8	ø10	ø12	ø14	ø16	ø18	ø20	ø3 ~ ø20
K	Grey cast irons FC250,etc.	~ 200	0.17	0.20	0.25	0.27	0.30	0.28	0.33	0.40	0.42	0.45	60~160
	Ductile cast irons FCD500,etc.(Tensile Strength≤500Mpa)	~ 300	0.09	0.10	0.13	0.16	0.20	0.26	0.22	0.26	0.28	0.28	50~100

Deep Hole Drills

CDR 45° Chamfer Cutter

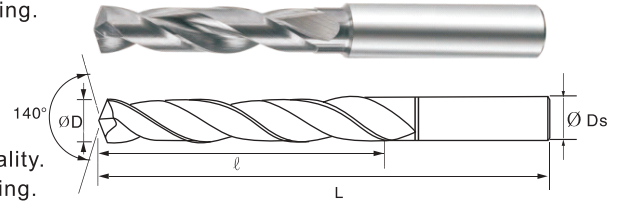
Non-standard Tools

1.CTW 3D/5D series (External coolant)

- ① Carbide Material.
- ② Original corner-radius design, achieve the excellent chip removal and work precision.
- ③ Nanocomposite AlTiN coating makes the high speed and high efficiency drill machining.
- ④ Diameter from 3 mm to 20 mm, suitable for different type of machining.

2.CTS 3D/5D series (Internal coolant)

- ① Carbide Material.
- ② New groove design achieve the excellent chip removal.
- ③ Nanocomposite AlTiN coating coating makes the hard-wearing quality.
- ④ Diameter from 3 mm to 20 mm, suitable for different type of machining.



CTW Drill Series 3D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6535HA
Coating	AlTiN	Suitable for processing	Steel/Cast iron	Work hardness ≤ HRC48	

Unit (mm)
 ● Stock ○ Non-stock

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
CTW030D6	3.0	20	6	62	●
CTW031D6	3.1	20	6	62	●
CTW032D6	3.2	20	6	62	●
CTW033D6	3.3	20	6	62	●
CTW034D6	3.4	20	6	62	●
CTW035D6	3.5	20	6	62	●
CTW036D6	3.6	20	6	62	●
CTW037D6	3.7	20	6	62	●
CTW038D6	3.8	24	6	66	●
CTW039D6	3.9	24	6	66	●
CTW040D6	4.0	24	6	66	●
CTW041D6	4.1	24	6	66	●
CTW042D6	4.2	24	6	66	●
CTW043D6	4.3	24	6	66	●
CTW044D6	4.4	24	6	66	●
CTW045D6	4.5	24	6	66	●
CTW046D6	4.6	24	6	66	●
CTW047D6	4.7	24	6	66	●
CTW048D6	4.8	28	6	66	●
CTW049D6	4.9	28	6	66	●
CTW050D6	5.0	28	6	66	●
CTW051D6	5.1	28	6	66	●
CTW052D6	5.2	28	6	66	●
CTW053D6	5.3	28	6	66	●
CTW054D6	5.4	28	6	66	●
CTW055D6	5.5	28	6	66	●
CTW056D6	5.6	28	6	66	●
CTW057D6	5.7	28	6	66	●
CTW058D6	5.8	28	6	66	●
CTW059D6	5.9	28	6	66	●
CTW060D6	6.0	28	6	66	●
CTW061D8	6.1	34	8	79	●
CTW062D8	6.2	34	8	79	●
CTW063D8	6.3	34	8	79	●
CTW064D8	6.4	34	8	79	●
CTW065D8	6.5	34	8	79	●

Carbide Drills

U Drills

Head Drills

Head Exchangable

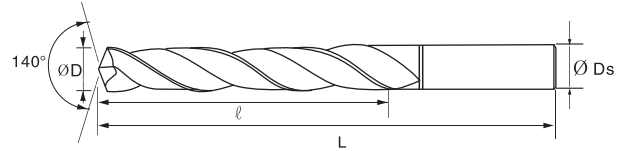
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

CTW Drill Series 3D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6535HA
Coating	AlTiN	Suitable for processing	Steel/Cast iron	Work hardness ≤ HRC48	



Unit (mm)
 ● Stock ○ Non-stock

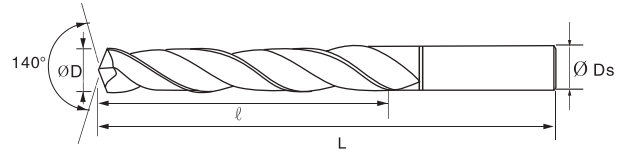
Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
CTW066D8	6.6	34	8	79	●
CTW067D8	6.7	34	8	79	●
CTW068D8	6.8	34	8	79	●
CTW069D8	6.9	34	8	79	●
CTW070D8	7.0	34	8	79	●
CTW071D8	7.1	41	8	79	●
CTW072D8	7.2	41	8	79	●
CTW073D8	7.3	41	8	79	●
CTW074D8	7.4	41	8	79	●
CTW075D8	7.5	41	8	79	●
CTW076D8	7.6	41	8	79	●
CTW077D8	7.7	41	8	79	●
CTW078D8	7.8	41	8	79	●
CTW079D8	7.9	41	8	79	●
CTW080D8	8.0	41	8	79	●
CTW081D10	8.1	47	10	89	●
CTW082D10	8.2	47	10	89	●
CTW083D10	8.3	47	10	89	●
CTW084D10	8.4	47	10	89	●
CTW085D10	8.5	47	10	89	●
CTW086D10	8.6	47	10	89	●
CTW087D10	8.7	47	10	89	●
CTW088D10	8.8	47	10	89	●
CTW089D10	8.9	47	10	89	●
CTW090D10	9.0	47	10	89	●
CTW091D10	9.1	47	10	89	●
CTW092D10	9.2	47	10	89	●
CTW093D10	9.3	47	10	89	●
CTW094D10	9.4	47	10	89	●
CTW095D10	9.5	47	10	89	●
CTW096D10	9.6	47	10	89	●
CTW097D10	9.7	47	10	89	●
CTW098D10	9.8	47	10	89	●
CTW099D10	9.9	47	10	89	●
CTW100D10	10.0	47	10	89	●
CTW101D12	10.1	55	12	102	●
CTW102D12	10.2	55	12	102	●
CTW103D12	10.3	55	12	102	●
CTW104D12	10.4	55	12	102	●
CTW105D12	10.5	55	12	102	●
CTW106D12	10.6	55	12	102	●

High Performance Carbide Drill for Steel Purpose (CTW CTS 3D&5D)



CTW Drill Series 3D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6535HA
Coating	AlTiN	Suitable for processing	Steel/Cast iron	Work hardness	≤HRC48



Notice: The MOQ for Non-stock item is 5pcs.

Unit (mm)
 ● Stock ○ Non-stock

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
CTW107D12	10.7	55	12	102	●
CTW108D12	10.8	55	12	102	●
CTW109D12	10.9	55	12	102	●
CTW110D12	11.0	55	12	102	●
CTW111D12	11.1	55	12	102	●
CTW112D12	11.2	55	12	102	●
CTW113D12	11.3	55	12	102	●
CTW114D12	11.4	55	12	102	●
CTW115D12	11.5	55	12	102	●
CTW116D12	11.6	55	12	102	●
CTW117D12	11.7	55	12	102	●
CTW118D12	11.8	55	12	102	●
CTW119D12	11.9	55	12	102	●
CTW120D12	12.0	55	12	102	●
CTW125D14	12.5	60	14	107	○
CTW128D14	12.8	60	14	107	○
CTW130D14	13.0	60	14	107	○
CTW135D14	13.5	60	14	107	○
CTW138D14	13.8	60	14	107	○
CTW140D14	14.0	60	14	107	○
CTW145D16	14.5	65	16	115	○
CTW148D16	14.8	65	16	115	○
CTW150D16	15.0	65	16	115	○
CTW155D16	15.5	65	16	115	○
CTW158D16	15.8	65	16	115	○
CTW160D16	16.0	65	16	115	○
CTW165D18	16.5	73	18	123	○
CTW168D18	16.8	73	18	123	○
CTW170D18	17.0	73	18	123	○
CTW175D18	17.5	73	18	123	○
CTW178D18	17.8	73	18	123	○
CTW180D18	18.0	73	18	123	○
CTW185D20	18.5	79	20	131	○
CTW188D20	18.8	79	20	131	○
CTW190D20	19.0	79	20	131	○
CTW195D20	19.5	79	20	131	○
CTW198D20	19.8	79	20	131	○
CTW200D20	20.0	79	20	131	○

Carbide Drills

U Drills

Head Exchangable Drills

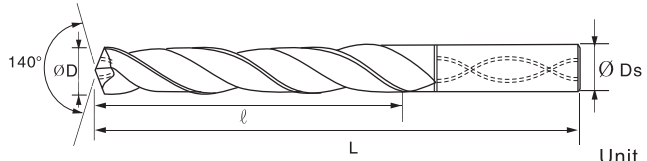
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

CTS Drill Series 3D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6537K
Coating	AlTiN	Suitable for processing	Steel/Cast iron	Work hardness ≤ HRC48	



Unit (mm)
 ● Stock ○ Non-stock

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
CTS030D6	3.0	20	6	62	●
CTS031D6	3.1	20	6	62	●
CTS032D6	3.2	20	6	62	●
CTS033D6	3.3	20	6	62	●
CTS034D6	3.4	20	6	62	●
CTS035D6	3.5	20	6	62	●
CTS036D6	3.6	20	6	62	●
CTS037D6	3.7	20	6	62	●
CTS038D6	3.8	24	6	66	●
CTS039D6	3.9	24	6	66	●
CTS040D6	4.0	24	6	66	●
CTS041D6	4.1	24	6	66	●
CTS042D6	4.2	24	6	66	●
CTS043D6	4.3	24	6	66	●
CTS044D6	4.4	24	6	66	●
CTS045D6	4.5	24	6	66	●
CTS046D6	4.6	24	6	66	●
CTS047D6	4.7	24	6	66	●
CTS048D6	4.8	28	6	66	●
CTS049D6	4.9	28	6	66	●
CTS050D6	5.0	28	6	66	●
CTS051D6	5.1	28	6	66	●
CTS052D6	5.2	28	6	66	●
CTS053D6	5.3	28	6	66	●
CTS054D6	5.4	28	6	66	●
CTS055D6	5.5	28	6	66	●
CTS056D6	5.6	28	6	66	●
CTS057D6	5.7	28	6	66	●
CTS058D6	5.8	28	6	66	●
CTS059D6	5.9	28	6	66	●
CTS060D6	6.0	28	6	66	●
CTS061D8	6.1	34	8	79	●
CTS062D8	6.2	34	8	79	●
CTS063D8	6.3	34	8	79	●
CTS064D8	6.4	34	8	79	●
CTS065D8	6.5	34	8	79	●
CTS066D8	6.6	34	8	79	●
CTS067D8	6.7	34	8	79	●

Carbide Drills

U Drills

Head Exchangable Drills

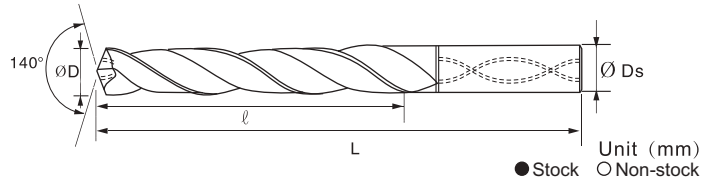
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

CTS Drill Series 3D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6537K
Coating	AlTiN	Suitable for processing	Steel/Cast iron	Work hardness	≤HRC48

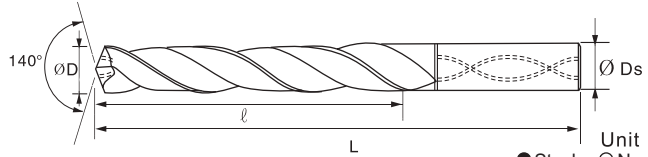


Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
CTS068D8	6.8	34	8	79	●
CTS069D8	6.9	34	8	79	●
CTS070D8	7.0	34	8	79	●
CTS071D8	7.1	41	8	79	●
CTS072D8	7.2	41	8	79	●
CTS073D8	7.3	41	8	79	●
CTS074D8	7.4	41	8	79	●
CTS075D8	7.5	41	8	79	●
CTS076D8	7.6	41	8	79	●
CTS077D8	7.7	41	8	79	●
CTS078D8	7.8	41	8	79	●
CTS079D8	7.9	41	8	79	●
CTS080D8	8.0	41	8	79	●
CTS081D10	8.1	47	10	89	●
CTS082D10	8.2	47	10	89	●
CTS083D10	8.3	47	10	89	●
CTS084D10	8.4	47	10	89	●
CTS085D10	8.5	47	10	89	●
CTS086D10	8.6	47	10	89	●
CTS087D10	8.7	47	10	89	●
CTS088D10	8.8	47	10	89	●
CTS089D10	8.9	47	10	89	●
CTS090D10	9.0	47	10	89	●
CTS091D10	9.1	47	10	89	●
CTS092D10	9.2	47	10	89	●
CTS093D10	9.3	47	10	89	●
CTS094D10	9.4	47	10	89	●
CTS095D10	9.5	47	10	89	●
CTS096D10	9.6	47	10	89	●
CTS097D10	9.7	47	10	89	●
CTS098D10	9.8	47	10	89	●
CTS099D10	9.9	47	10	89	●
CTS100D10	10.0	47	10	89	●
CTS101D12	10.1	55	12	102	●
CTS102D12	10.2	55	12	102	●
CTS103D12	10.3	55	12	102	●
CTS104D12	10.4	55	12	102	●
CTS105D12	10.5	55	12	102	●

Carbide Drills
U Drills
Head Exchangable Drills
Deep Hole Drills
CDR 45° Chamfer Cutter
Non-standard Tools

CTS Drill Series 3D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6537K
Coating	AlTiN	Suitable for processing	Steel/Cast iron	Work hardness ≤ HRC48	



Notice: The MOQ for Non-stock item is 5pcs.

● Stock
○ Non-stock

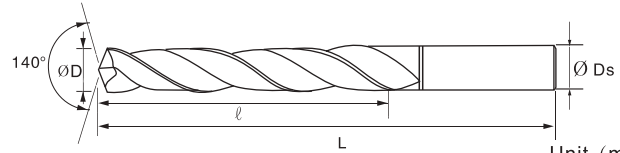
Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
CTS106D12	10.6	55	12	102	●
CTS107D12	10.7	55	12	102	●
CTS108D12	10.8	55	12	102	●
CTS109D12	10.9	55	12	102	●
CTS110D12	11.0	55	12	102	●
CTS111D12	11.1	55	12	102	●
CTS112D12	11.2	55	12	102	●
CTS113D12	11.3	55	12	102	●
CTS114D12	11.4	55	12	102	●
CTS115D12	11.5	55	12	102	●
CTS116D12	11.6	55	12	102	●
CTS117D12	11.7	55	12	102	●
CTS118D12	11.8	55	12	102	●
CTS119D12	11.9	55	12	102	●
CTS120D12	12.0	55	12	102	●
CTS125D14	12.5	60	14	107	○
CTS128D14	12.8	60	14	107	○
CTS130D14	13.0	60	14	107	○
CTS135D14	13.5	60	14	107	○
CTS138D14	13.8	60	14	107	○
CTS140D14	14.0	60	14	107	○
CTS145D16	14.5	65	16	115	○
CTS148D16	14.8	65	16	115	○
CTS150D16	15.0	65	16	115	○
CTS155D16	15.5	65	16	115	○
CTS158D16	15.8	65	16	115	○
CTS160D16	16.0	65	16	115	○
CTS165D18	16.5	73	18	123	○
CTS168D18	16.8	73	18	123	○
CTS170D18	17.0	73	18	123	○
CTS175D18	17.5	73	18	123	○
CTS178D18	17.8	73	18	123	○
CTS180D18	18.0	73	18	123	○
CTS185D20	18.5	79	20	131	○
CTS188D20	18.8	79	20	131	○
CTS190D20	19.0	79	20	131	○
CTS195D20	19.5	79	20	131	○
CTS198D20	19.8	79	20	131	○
CTS200D20	20.0	79	20	131	○

High Performance Carbide Drill for Steel Purpose (CTW CTS 3D&5D)



CTW Drill Series 5D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6535HA
Coating	AlTiN	Suitable for processing	Steel/Cast iron	Work hardness ≤ HRC48	



Unit (mm)
● Stock
○ Non-stock

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
CTW05030D6	3.0	28	6	66	●
CTW05031D6	3.1	28	6	66	●
CTW05032D6	3.2	28	6	66	●
CTW05033D6	3.3	28	6	66	●
CTW05034D6	3.4	28	6	66	●
CTW05035D6	3.5	28	6	66	●
CTW05036D6	3.6	28	6	66	●
CTW05037D6	3.7	28	6	66	●
CTW05038D6	3.8	36	6	74	●
CTW05039D6	3.9	36	6	74	●
CTW05040D6	4.0	36	6	74	●
CTW05041D6	4.1	36	6	74	●
CTW05042D6	4.2	36	6	74	●
CTW05043D6	4.3	36	6	74	●
CTW05044D6	4.4	36	6	74	●
CTW05045D6	4.5	36	6	74	●
CTW05046D6	4.6	36	6	74	●
CTW050465D6	4.65	36	6	74	●
CTW05047D6	4.7	36	6	74	●
CTW05048D6	4.8	44	6	82	●
CTW05049D6	4.9	44	6	82	●
CTW05050D6	5.0	44	6	82	●
CTW05051D6	5.1	44	6	82	●
CTW05052D6	5.2	44	6	82	●
CTW05053D6	5.3	44	6	82	●
CTW05054D6	5.4	44	6	82	●
CTW05055D6	5.5	44	6	82	●
CTW05056D6	5.6	44	6	82	●
CTW05057D6	5.7	44	6	82	●
CTW05058D6	5.8	44	6	82	●
CTW05059D6	5.9	44	6	82	●
CTW05060D6	6.0	44	6	82	●
CTW05061D8	6.1	53	8	91	●
CTW05062D8	6.2	53	8	91	●
CTW05063D8	6.3	53	8	91	●
CTW05064D8	6.4	53	8	91	●
CTW05065D8	6.5	53	8	91	●
CTW05066D8	6.6	53	8	91	●
CTW05067D8	6.7	53	8	91	●
CTW05068D8	6.8	53	8	91	●

Carbide Drills

U Drills

Head Exchangable Drills

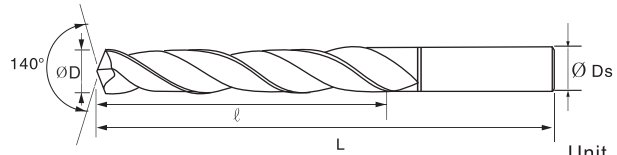
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

CTW Drill Series 5D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6535HA
Coating	AlTiN	Suitable for processing	Steel/Cast iron	Work hardness	≤HRC48

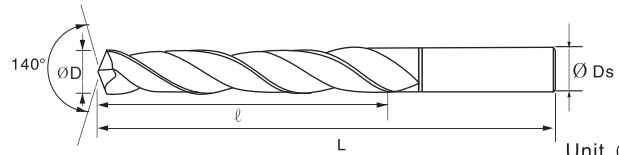


Unit (mm)
 ● Stock
 ○ Non-stock

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
CTW05069D8	6.9	53	8	91	●
CTW05070D8	7.0	53	8	91	●
CTW05071D8	7.1	53	8	91	●
CTW05072D8	7.2	53	8	91	●
CTW05073D8	7.3	53	8	91	●
CTW05074D8	7.4	53	8	91	●
CTW05075D8	7.5	53	8	91	●
CTW05076D8	7.6	53	8	91	●
CTW05077D8	7.7	53	8	91	●
CTW05078D8	7.8	53	8	91	●
CTW05079D8	7.9	53	8	91	●
CTW05080D8	8.0	53	8	91	●
CTW05081D10	8.1	61	10	103	●
CTW05082D10	8.2	61	10	103	●
CTW05083D10	8.3	61	10	103	●
CTW05084D10	8.4	61	10	103	●
CTW05085D10	8.5	61	10	103	●
CTW05086D10	8.6	61	10	103	●
CTW05087D10	8.7	61	10	103	●
CTW05088D10	8.8	61	10	103	●
CTW05089D10	8.9	61	10	103	●
CTW05090D10	9.0	61	10	103	●
CTW05091D10	9.1	61	10	103	●
CTW05092D10	9.2	61	10	103	●
CTW05093D10	9.3	61	10	103	●
CTW05094D10	9.4	61	10	103	●
CTW05095D10	9.5	61	10	103	●
CTW05096D10	9.6	61	10	103	●
CTW05097D10	9.7	61	10	103	●
CTW05098D10	9.8	61	10	103	●
CTW05099D10	9.9	61	10	103	●
CTW05100D10	10.0	61	10	103	●
CTW05101D12	10.1	71	12	118	●
CTW05102D12	10.2	71	12	118	●
CTW05103D12	10.3	71	12	118	●
CTW05104D12	10.4	71	12	118	●
CTW05105D12	10.5	71	12	118	●
CTW05106D12	10.6	71	12	118	●
CTW05107D12	10.7	71	12	118	●
CTW05108D12	10.8	71	12	118	●

CTW Drill Series 5D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6535HA
Coating	AlTiN	Suitable for processing	Steel/Cast iron	Work hardness	≤HRC48



Notice: The MOQ for Non-stock item is 5pcs.

Unit (mm)
● Stock ○ Non-stock

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
CTW05109D12	10.9	71	12	118	●
CTW05110D12	11.0	71	12	118	●
CTW05111D12	11.1	71	12	118	●
CTW05112D12	11.2	71	12	118	●
CTW05113D12	11.3	71	12	118	●
CTW05114D12	11.4	71	12	118	●
CTW05115D12	11.5	71	12	118	●
CTW05116D12	11.6	71	12	118	●
CTW05117D12	11.7	71	12	118	●
CTW05118D12	11.8	71	12	118	●
CTW05119D12	11.9	71	12	118	●
CTW05120D12	12.0	71	12	118	●
CTW05122D14	12.2	77	14	124	○
CTW05123D14	12.3	77	14	124	○
CTW05124D14	12.4	77	14	124	○
CTW05125D14	12.5	77	14	124	○
CTW05128D14	12.8	77	14	124	○
CTW05130D14	13.0	77	14	124	○
CTW05135D14	13.5	77	14	124	○
CTW05138D14	13.8	77	14	124	○
CTW05140D14	14.0	77	14	124	○
CTW05143D16	14.3	83	16	133	○
CTW05145D16	14.5	83	16	133	○
CTW05146D16	14.6	83	16	133	○
CTW05148D16	14.8	83	16	133	○
CTW05150D16	15.0	83	16	133	○
CTW05155D16	15.5	83	16	133	○
CTW05158D16	15.8	83	16	133	○
CTW05160D16	16.0	83	16	133	○
CTW05165D18	16.5	93	18	143	○
CTW05166D18	16.6	93	18	143	○
CTW05168D18	16.8	93	18	143	○
CTW05170D18	17.0	93	18	143	○
CTW05175D18	17.5	93	18	143	○
CTW05178D18	17.8	93	18	143	○
CTW05180D18	18.0	93	18	143	○
CTW05185D20	18.5	101	20	153	○
CTW05190D20	19.0	101	20	153	○
CTW05195D20	19.5	101	20	153	○
CTW05200D20	20.0	101	20	153	○

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

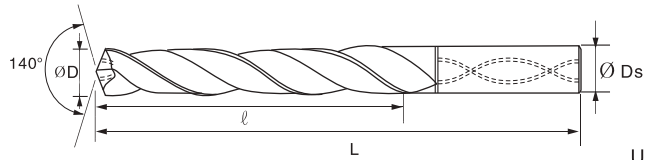
Non-standard Tools

High Performance Carbide Drill for Steel Purpose (CTW CTS 3D&5D)



CTS Drill Series 5D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6537K
Coating	AlTiN	Suitable for processing	Steel/Cast iron	Work hardness ≤ HRC48	

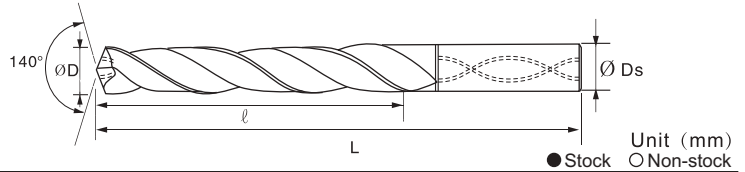


Unit (mm)
● Stock ○ Non-stock

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
CTS05030D6	3.0	28	6	66	●
CTS05031D6	3.1	28	6	66	●
CTS05032D6	3.2	28	6	66	●
CTS05033D6	3.3	28	6	66	●
CTS05034D6	3.4	28	6	66	●
CTS05035D6	3.5	28	6	66	●
CTS05036D6	3.6	28	6	66	●
CTS05037D6	3.7	28	6	66	●
CTS05038D6	3.8	36	6	74	●
CTS05039D6	3.9	36	6	74	●
CTS05040D6	4.0	36	6	74	●
CTS05041D6	4.1	36	6	74	●
CTS05042D6	4.2	36	6	74	●
CTS05043D6	4.3	36	6	74	●
CTS05044D6	4.4	36	6	74	●
CTS05045D6	4.5	36	6	74	●
CTS05046D6	4.6	36	6	74	●
CTS05047D6	4.7	36	6	74	●
CTS05048D6	4.8	44	6	82	●
CTS05049D6	4.9	44	6	82	●
CTS05050D6	5.0	44	6	82	●
CTS05051D6	5.1	44	6	82	●
CTS05052D6	5.2	44	6	82	●
CTS05053D6	5.3	44	6	82	●
CTS05054D6	5.4	44	6	82	●
CTS05055D6	5.5	44	6	82	●
CTS05056D6	5.6	44	6	82	●
CTS05057D6	5.7	44	6	82	●
CTS05058D6	5.8	44	6	82	●
CTS05059D6	5.9	44	6	82	●
CTS05060D6	6.0	44	6	82	●
CTS05061D8	6.1	53	8	91	●
CTS05062D8	6.2	53	8	91	●
CTS05063D8	6.3	53	8	91	●
CTS05064D8	6.4	53	8	91	●
CTS05065D8	6.5	53	8	91	●
CTS05066D8	6.6	53	8	91	●
CTS05067D8	6.7	53	8	91	●
CTS05068D8	6.8	53	8	91	●
CTS05069D8	6.9	53	8	91	●

CTS Drill Series 5D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6537K
Coating	AlTiN	Suitable for processing	Steel/Cast iron	Work hardness ≤ HRC48	



Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
CTS05070D8	7.0	53	8	91	●
CTS05071D8	7.1	53	8	91	●
CTS05072D8	7.2	53	8	91	●
CTS05073D8	7.3	53	8	91	●
CTS05074D8	7.4	53	8	91	●
CTS05075D8	7.5	53	8	91	●
CTS05076D8	7.6	53	8	91	●
CTS05077D8	7.7	53	8	91	●
CTS05078D8	7.8	53	8	91	●
CTS05079D8	7.9	53	8	91	●
CTS05080D8	8.0	53	8	91	●
CTS05081D10	8.1	61	10	103	●
CTS05082D10	8.2	61	10	103	●
CTS05083D10	8.3	61	10	103	●
CTS05084D10	8.4	61	10	103	●
CTS05085D10	8.5	61	10	103	●
CTS05086D10	8.6	61	10	103	●
CTS05087D10	8.7	61	10	103	●
CTS05088D10	8.8	61	10	103	●
CTS05089D10	8.9	61	10	103	●
CTS05090D10	9.0	61	10	103	●
CTS05091D10	9.1	61	10	103	●
CTS05092D10	9.2	61	10	103	●
CTS05093D10	9.3	61	10	103	●
CTS05094D10	9.4	61	10	103	●
CTS05095D10	9.5	61	10	103	●
CTS05096D10	9.6	61	10	103	●
CTS05097D10	9.7	61	10	103	●
CTS05098D10	9.8	61	10	103	●
CTS05099D10	9.9	61	10	103	●
CTS05100D10	10.0	61	10	103	●
CTS05101D12	10.1	71	12	118	●
CTS05102D12	10.2	71	12	118	●
CTS05103D12	10.3	71	12	118	●
CTS05104D12	10.4	71	12	118	●
CTS05105D12	10.5	71	12	118	●
CTS05106D12	10.6	71	12	118	●
CTS05107D12	10.7	71	12	118	●
CTS05108D12	10.8	71	12	118	●
CTS05109D12	10.9	71	12	118	●

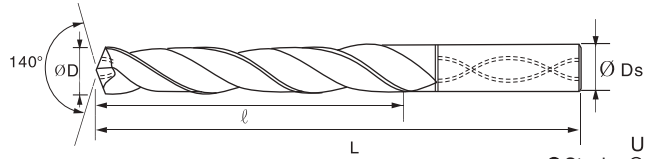
Carbide Drills
 U Drills
 Head Exchangable Drills
 Deep Hole Drills
 CDR 45° Chamfer Cutter
 Non-standard Tools

High Performance Carbide Drill for Steel Purpose (CTW CTS 3D&5D)



CTS Drill Series 5D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6537K
Coating	AlTiN	Suitable for processing	Steel/Cast iron	Work hardness ≤ HRC48	



Notice: The MOQ for Non-stock item is 5pcs.

Unit (mm)
● Stock
○ Non-stock

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
CTS05110D12	11.0	71	12	118	●
CTS05111D12	11.1	71	12	118	●
CTS05112D12	11.2	71	12	118	●
CTS05113D12	11.3	71	12	118	●
CTS05114D12	11.4	71	12	118	●
CTS05115D12	11.5	71	12	118	●
CTS05116D12	11.6	71	12	118	●
CTS05117D12	11.7	71	12	118	●
CTS05118D12	11.8	71	12	118	●
CTS05119D12	11.9	71	12	118	●
CTS05120D12	12.0	71	12	118	●
CTS05122D14	12.2	77	14	124	○
CTS05123D14	12.3	77	14	124	○
CTS05124D14	12.4	77	14	124	○
CTS05125D14	12.5	77	14	124	○
CTS05128D14	12.8	77	14	124	○
CTS05130D14	13.0	77	14	124	○
CTS05135D14	13.5	77	14	124	○
CTS05138D14	13.8	77	14	124	○
CTS05140D14	14.0	77	14	124	○
CTS05143D16	14.3	83	16	133	○
CTS05145D16	14.5	83	16	133	○
CTS05146D16	14.6	83	16	133	○
CTS05148D16	14.8	83	16	133	○
CTS05150D16	15.0	83	16	133	○
CTS05155D16	15.5	83	16	133	○
CTS05158D16	15.8	83	16	133	○
CTS05160D16	16.0	83	16	133	○
CTS05165D18	16.5	93	18	143	○
CTS05166D18	16.6	93	18	143	○
CTS05168D18	16.8	93	18	143	○
CTS05170D18	17.0	93	18	143	○
CTS05175D18	17.5	93	18	143	○
CTS05178D18	17.8	93	18	143	○
CTS05180D18	18.0	93	18	143	○
CTS05185D20	18.5	101	20	153	○
CTS05190D20	19.0	101	20	153	○
CTS05195D20	19.5	101	20	153	○
CTS05200D20	20.0	101	20	153	○

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

STANDARD CUTTING CONDITIONS

CTW Series 3D/5D (External Coolant)

Unit (mm)

ISO	Work Material	Brinell hardness (HB)	Cutting speed: Vc (m/min)	Feed: f (mm/rev)						
				ø3 ~ ø4	ø4 ~ ø6	ø6 ~ ø8	ø8 ~ ø10	ø10 ~ ø12	ø12 ~ ø16	ø16 ~ ø20
P	Low carbon steel (C < 0.3) C15E4, E275A, E355D, etc.	~125	120~80~50	0.10~0.20	0.14~0.25	0.16~0.32	0.16~0.35	0.18~0.40	0.22~0.45	0.25~0.50
	Carbon steel (C > 0.3) C45, C55, etc.	125 ~ 300	120~70~45	0.10~0.20	0.14~0.25	0.16~0.32	0.16~0.35	0.18~0.40	0.22~0.45	0.25~0.50
	High alloy steel 42CrMo4, etc.	250 ~ 350	100~60~35	0.09~0.16	0.12~0.23	0.14~0.28	0.14~0.30	0.18~0.38	0.22~0.45	0.25~0.50
K	Grey cast iron 250, etc.	~ 200	140~100~60	0.13~0.20	0.17~0.30	0.20~0.35	0.23~0.40	0.25~0.45	0.28~0.48	0.32~0.52
	Ductile cast iron 450-10S, etc	~ 300	120~80~60	0.11~0.18	0.13~0.20	0.15~0.25	0.17~0.32	0.20~0.36	0.24~0.45	0.28~0.48

CTS Series 3D/5D (Internal Coolant)

Unit (mm)

ISO	Work Material	Brinell hardness (HB)	Cutting speed: Vc (m/min)	Feed: f (mm/rev)						
				ø3 ~ ø4	ø4 ~ ø6	ø6 ~ ø8	ø8 ~ ø10	ø10 ~ ø12	ø12 ~ ø16	ø16 ~ ø20
P	Low carbon steel (C < 0.3) C15E4, E275A, E355D, etc.	~125	140~100~60	0.10~0.20	0.14~0.25	0.16~0.32	0.16~0.35	0.18~0.40	0.22~0.45	0.25~0.50
	Carbon steel (C > 0.3) C45, C55, etc.	125 ~ 300	120~80~60	0.10~0.20	0.14~0.25	0.16~0.32	0.16~0.35	0.18~0.40	0.22~0.45	0.25~0.50
	High alloy steel 42CrMo4, etc.	250 ~ 350	110~80~60	0.09~0.16	0.12~0.23	0.14~0.28	0.14~0.30	0.18~0.38	0.22~0.45	0.25~0.50
K	Grey cast iron 250, etc.	~ 200	160~120~60	0.13~0.20	0.17~0.30	0.20~0.35	0.23~0.40	0.25~0.45	0.28~0.48	0.32~0.52
	Ductile cast iron 450-10S, etc	~ 300	140~100~60	0.11~0.18	0.13~0.20	0.15~0.25	0.17~0.32	0.20~0.36	0.24~0.45	0.28~0.48

Carbide Drills

U Drills

Head Exchangable Drills

Head Exchangable

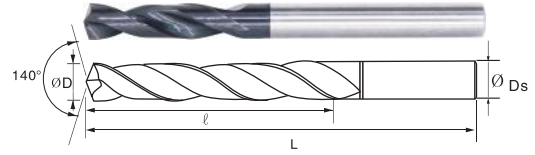
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

1.DTW 3D/5D series (External coolant)

- ① Carbide Material.
- ② Unique bottom cutting edge design, with stronger chip breaking ability and greater chip capacity space.
- ③ Nanocomposite AlTiN coating makes the high speed and high efficiency drill machining.
- ④ Diameter from 1mm to 20mm, suitable for stainless steel processing.



2.DTS 3D/5D series (Internal coolant)

- ① Carbide Material.
- ② Unique bottom cutting edge design, with stronger chip breaking ability and greater chip capacity space.
- ③ New substrate coating with super toughness and wear resistance.
- ④ Diameter from 3mm to 20mm, suitable for stainless steel processing.

DTW Drill Series 3D External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6535HA
Coating	AlTiN	Suitable for processing	Stainless steel		

Unit (mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
DTW010D4	1.0	7	4	45	●
DTW020D4	2.0	13	4	55	●
DTW030D6	3.0	20	6	62	●
DTW033D6	3.3	20	6	62	●
DTW040D6	4.0	24	6	66	●
DTW042D6	4.2	24	6	66	●
DTW050D6	5.0	28	6	66	●
DTW060D6	6.0	28	6	66	●
DTW068D8	6.8	34	8	79	●
DTW070D8	7.0	34	8	79	●
DTW080D8	8.0	41	8	79	●
DTW085D10	8.5	47	10	89	●
DTW090D10	9.0	47	10	89	●
DTW100D10	10.0	47	10	89	●
DTW103D12	10.3	55	12	102	●
DTW105D12	10.5	55	12	102	●
DTW110D12	11.0	55	12	102	●
DTW120D12	12.0	55	12	102	●
DTW125D14	12.5	60	14	107	●
DTW130D14	13.0	60	14	107	●
DTW140D14	14.0	60	14	107	●
DTW145D16	14.5	65	16	115	●
DTW150D16	15.0	65	16	115	●
DTW160D16	16.0	65	16	115	●
DTW170D18	17.0	73	18	123	●
DTW180D18	18.0	73	18	123	●
DTW190D20	19.0	79	20	131	●
DTW200D20	20.0	79	20	131	●

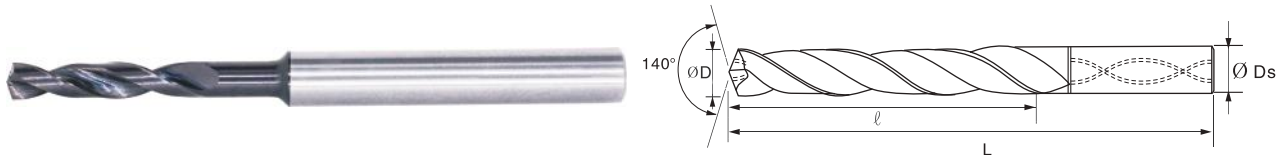
● Stock ○ Non-stock

High Performance Carbide Drill for Stainless Steel Purpose(DTW DTS 3D&5D)



DTS Drill Series 3D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6537K
Coating	AlTiN	Suitable for processing	Stainless steel		



Unit (mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
DTS030D6	3.0	20	6	62	○
DTS033D6	3.3	20	6	62	○
DTS040D6	4.0	24	6	66	○
DTS042D6	4.2	24	6	66	○
DTS050D6	5.0	28	6	66	○
DTS060D6	6.0	28	6	66	○
DTS068D8	6.8	34	8	79	○
DTS070D8	7.0	34	8	79	○
DTS080D8	8.0	41	8	79	○
DTS085D10	8.5	47	10	89	○
DTS090D10	9.0	47	10	89	○
DTS100D10	10.0	47	10	89	○
DTS103D12	10.3	55	12	102	○
DTS105D12	10.5	55	12	102	○
DTS110D12	11.0	55	12	102	○
DTS120D12	12.0	55	12	102	○
DTS125D14	12.5	60	14	107	○
DTS130D14	13.0	60	14	107	○
DTS140D14	14.0	60	14	107	○
DTS145D16	14.5	65	16	115	○
DTS150D16	15.0	65	16	115	○
DTS160D16	16.0	65	16	115	○
DTS170D18	17.0	73	18	123	○
DTS180D18	18.0	73	18	123	○
DTS190D20	19.0	79	20	131	○
DTS200D20	20.0	79	20	131	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

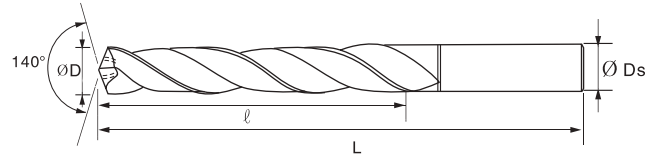
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

DTW Drill Series 5D with External Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6535HA
Coating	AlTiN	Suitable for processing	Stainless steel		



Unit (mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	l	Ds	L	
DTW05030D6	3.0	28	6	66	●
DTW05033D6	3.3	28	6	66	●
DTW05040D6	4.0	36	6	74	●
DTW05042D6	4.2	36	6	74	●
DTW05050D6	5.0	44	6	82	●
DTW05060D6	6.0	44	6	82	●
DTW05068D8	6.8	53	8	91	●
DTW05070D8	7.0	53	8	91	●
DTW05080D8	8.0	53	8	91	●
DTW05085D10	8.5	61	10	103	●
DTW05090D10	9.0	61	10	103	●
DTW05100D10	10.0	61	10	103	●
DTW05103D12	10.3	71	12	118	●
DTW05105D12	10.5	71	12	118	●
DTW05110D12	11.0	71	12	118	●
DTW05120D12	12.0	71	12	118	●
DTW05125D14	12.5	77	14	124	●
DTW05130D14	13.0	77	14	124	●
DTW05140D14	14.0	77	14	124	●
DTW05145D16	14.5	83	16	133	●
DTW05150D16	15.0	83	16	133	●
DTW05160D16	16.0	83	16	133	●
DTW05170D18	17.0	93	18	143	●
DTW05180D18	18.0	93	18	143	●
DTW05190D20	19.0	101	20	153	●
DTW05200D20	20.0	101	20	153	●

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

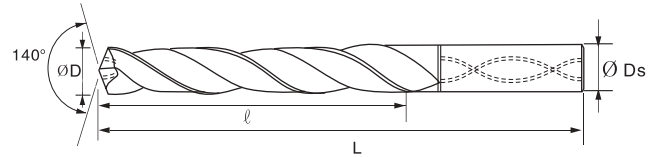
Non-standard Tools

High Performance Carbide Drill for Stainless Steel Purpose(DTW DTS 3D&5D)



DTS Drill Series 5D with Internal Coolant

Material	Carbide	Helix angle	30°	Point angle	140°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6537K
Coating	AlTiN	Suitable for processing	Stainless steel		



Unit (mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
DTS05030D6	3.0	28	6	66	○
DTS05033D6	3.3	28	6	66	○
DTS05040D6	4.0	36	6	74	○
DTS05042D6	4.2	36	6	74	○
DTS05050D6	5.0	44	6	82	○
DTS05060D6	6.0	44	6	82	○
DTS05068D8	6.8	53	8	91	○
DTS05070D8	7.0	53	8	91	○
DTS05080D8	8.0	53	8	91	○
DTS05085D10	8.5	61	10	103	○
DTS05090D10	9.0	61	10	103	○
DTS05100D10	10.0	61	10	103	○
DTS05103D12	10.3	71	12	118	○
DTS05105D12	10.5	71	12	118	○
DTS05110D12	11.0	71	12	118	○
DTS05120D12	12.0	71	12	118	○
DTS05125D14	12.5	77	14	124	○
DTS05130D14	13.0	77	14	124	○
DTS05140D14	14.0	77	14	124	○
DTS05145D16	14.5	83	16	133	○
DTS05150D16	15.0	83	16	133	○
DTS05160D16	16.0	83	16	133	○
DTS05170D18	17.0	93	18	143	○
DTS05180D18	18.0	93	18	143	○
DTS05190D20	19.0	101	20	153	○
DTS05200D20	20.0	101	20	153	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

STANDARD CUTTING CONDITIONS

DTW Series 3D/5D (External Coolant)

Unit (mm)

ISO	Work Material	Brinell hardness (HB)	Cutting speed: Vc (m/min)	Feed: f (mm/rev)				
				ø3	ø4	ø6	ø8	ø10
M	Austenitic stainless steel	130-200HB	40-30-20	0.05-0.10	0.06-0.12	0.07-0.14	0.08-0.18	0.09-0.20
	High strength austenite and cast stainless steel	<25HRC	40-30-20	0.03-0.08	0.04-0.10	0.05-0.10	0.06-0.12	0.07-0.14
	Duplex stainless steel	<30HRC	35-25-20	0.03-0.08	0.04-0.10	0.05-0.10	0.06-0.12	0.07-0.14

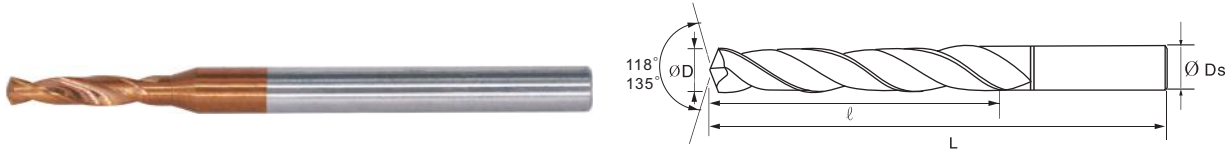
DTS Series 3D/5D (Internal Coolant)

Unit (mm)

ISO	Work Material	Brinell hardness (HB)	Cutting speed: Vc (m/min)	Feed: f (mm/rev)				
				ø3	ø4	ø6	ø8	ø10
M	Austenitic stainless steel	130-200HB	80-60-40	0.05-0.10	0.06-0.12	0.07-0.14	0.08-0.18	0.09-0.20
	High strength austenite and cast stainless steel	<25HRC	80-60-40	0.03-0.08	0.04-0.10	0.05-0.10	0.06-0.12	0.07-0.14
	Duplex stainless steel	<30HRC	60-45-30	0.03-0.08	0.04-0.10	0.05-0.10	0.06-0.12	0.07-0.14

TDMC Micro Drill Series External Coolant

Material	Carbide	Helix angle	25°	Point angle	D1 ≤ 1.0mm	118°
Cutting edge tolerance	m7	Shank tolerance	h6		D1 > 1.0mm	135°
Coating	TiAlN	Standard	6537A	Suitable for processing	Steel/Stainless steel/Cast iron	



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TDMC-0200	0.20	2.0	3	38	●
TDMC-0250	0.25	2.5	3	38	●
TDMC-0300	0.30	3.0	3	38	●
TDMC-0350	0.35	3.0	3	38	●
TDMC-0400	0.40	4.0	3	38	●
TDMC-0450	0.45	4.0	3	38	●
TDMC-0500	0.50	5.0	3	38	●
TDMC-0550	0.55	5.0	3	38	●
TDMC-0600	0.60	6.0	3	38	●
TDMC-0650	0.65	6.0	3	38	●
TDMC-0700	0.70	6.0	3	38	●
TDMC-0750	0.75	6.0	3	38	●
TDMC-0800	0.80	6.0	3	38	●
TDMC-0850	0.85	6.0	3	38	●
TDMC-0900	0.90	6.0	3	38	●
TDMC-0950	0.95	6.0	3	38	●
TDMC-0960	0.96	6.0	3	38	●
TDMC-0970	0.97	6.0	3	38	●
TDMC-0980	0.98	6.0	3	38	●
TDMC-0990	0.99	6.0	3	38	●
TDMC-1000	1.00	7.0	3	38	●
TDMC-1010	1.01	7.0	3	38	●
TDMC-1020	1.02	7.0	3	38	●
TDMC-1030	1.03	7.0	3	38	●
TDMC-1040	1.04	7.0	3	38	●
TDMC-1050	1.05	7.0	3	38	●
TDMC-1100	1.10	7.0	3	38	●
TDMC-1150	1.15	7.0	3	38	●
TDMC-1200	1.20	8.0	3	38	●
TDMC-1250	1.25	8.0	3	38	●
TDMC-1300	1.30	8.0	3	38	●
TDMC-1350	1.35	8.0	3	38	●
TDMC-1400	1.40	8.0	3	38	●
TDMC-1450	1.45	8.0	3	38	●
TDMC-1460	1.46	8.0	3	38	●
TDMC-1470	1.47	8.0	3	38	●

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

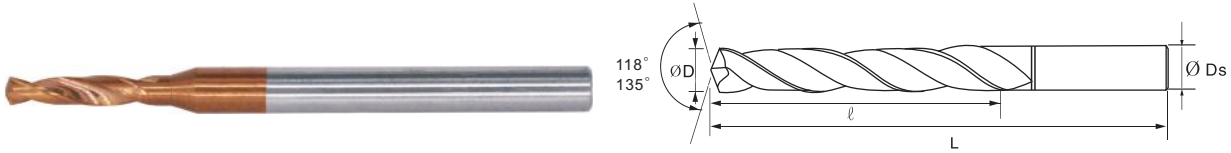
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TDMC Micro Drill Series External Coolant

Material	Carbide	Helix angle	25°	Point angle	D1 ≤ 1.0mm	118°
Cutting edge tolerance	m7	Shank tolerance	h6		D1 > 1.0mm	135°
Coating	TiAlN	Standard	6537A	Suitable for processing	Steel/Stainless steel/Cast iron	



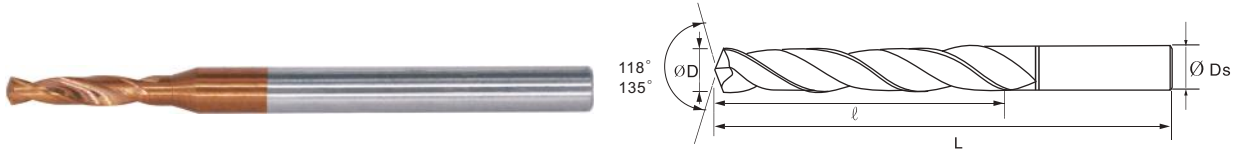
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TDMC-1480	1.48	8.0	3	38	●
TDMC-1490	1.49	8.0	3	38	●
TDMC-1500	1.50	8.0	3	38	●
TDMC-1510	1.51	10.0	3	38	●
TDMC-1520	1.52	10.0	3	38	●
TDMC-1530	1.53	10.0	3	38	●
TDMC-1540	1.54	10.0	3	38	●
TDMC-1550	1.55	10.0	3	38	●
TDMC-1560	1.56	10.0	3	38	●
TDMC-1570	1.57	10.0	3	38	●
TDMC-1580	1.58	10.0	3	38	●
TDMC-1590	1.59	10.0	3	38	●
TDMC-1600	1.60	10.0	3	38	●
TDMC-1610	1.61	10.0	3	38	●
TDMC-1620	1.62	10.0	3	38	●
TDMC-1630	1.63	10.0	3	38	●
TDMC-1640	1.64	10.0	3	38	●
TDMC-1650	1.65	10.0	3	38	●
TDMC-1660	1.66	10.0	3	38	●
TDMC-1670	1.67	10.0	3	38	●
TDMC-1680	1.68	10.0	3	38	●
TDMC-1690	1.69	10.0	3	38	●
TDMC-1700	1.70	10.0	3	38	●
TDMC-1710	1.71	10.0	3	38	●
TDMC-1720	1.72	10.0	3	38	●
TDMC-1730	1.73	10.0	3	38	●
TDMC-1740	1.74	10.0	3	38	●
TDMC-1750	1.75	10.0	3	38	●
TDMC-1760	1.76	10.0	3	38	●
TDMC-1770	1.77	10.0	3	38	●
TDMC-1780	1.78	10.0	3	38	●
TDMC-1790	1.79	10.0	3	38	●
TDMC-1800	1.80	10.0	3	38	●
TDMC-1810	1.81	10.0	3	38	●
TDMC-1820	1.82	10.0	3	38	●
TDMC-1830	1.83	10.0	3	38	●
TDMC-1840	1.84	10.0	3	38	●

● Stock ○ Non-stock

TDMC Micro Drill Series External Coolant

Material	Carbide	Helix angle	25°	Point angle	D1 ≤ 1.0mm	118°
Cutting edge tolerance	m7	Shank tolerance	h6		D1 > 1.0mm	135°
Coating	TiAlN	Standard	6537A	Suitable for processing	Steel/Stainless steel/Cast iron	



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TDMC-1850	1.85	10.0	3	38	●
TDMC-1860	1.86	10.0	3	38	●
TDMC-1870	1.87	10.0	3	38	●
TDMC-1880	1.88	10.0	3	38	●
TDMC-1890	1.89	10.0	3	38	●
TDMC-1900	1.90	10.0	3	38	●
TDMC-1910	1.91	10.0	3	38	●
TDMC-1920	1.92	10.0	3	38	●
TDMC-1930	1.93	10.0	3	38	●
TDMC-1940	1.94	10.0	3	38	●
TDMC-1950	1.95	10.0	3	38	●
TDMC-1960	1.96	10.0	3	38	●
TDMC-1970	1.97	10.0	3	38	●
TDMC-1980	1.98	10.0	3	38	●
TDMC-1990	1.99	10.0	3	38	●
TDMC-2000	2.00	10.0	3	38	●
TDMC-2050	2.05	12.0	3	38	●
TDMC-2100	2.10	12.0	3	38	●
TDMC-2150	2.15	12.0	3	38	●
TDMC-2200	2.20	12.0	3	38	●
TDMC-2250	2.25	12.0	3	38	●
TDMC-2300	2.30	12.0	3	38	●
TDMC-2350	2.35	12.0	3	38	●
TDMC-2400	2.40	12.0	3	38	●
TDMC-2450	2.45	12.0	3	38	●
TDMC-2500	2.50	12.0	3	38	●
TDMC-2550	2.55	12.0	3	38	●
TDMC-2600	2.60	12.0	3	38	●
TDMC-2650	2.65	12.0	3	38	●
TDMC-2700	2.70	12.0	3	38	●
TDMC-2750	2.75	12.0	3	38	●
TDMC-2800	2.80	12.0	3	38	●
TDMC-2850	2.85	12.0	3	38	●
TDMC-2900	2.90	12.0	3	38	●
TDMC-2950	2.95	12.0	3	38	●
TDMC-3000	3.00	12.0	3	38	●

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

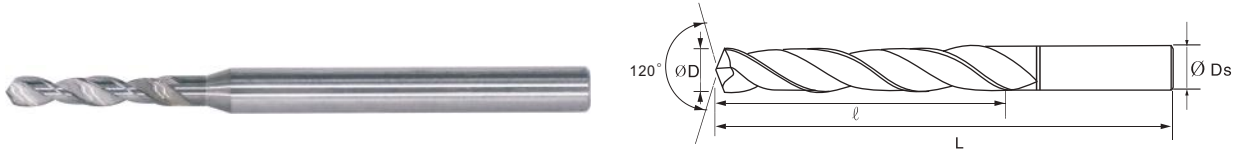
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

TDMAL Micro Drill Series External Coolant

Material	Carbide	Helix angle	35°	Point angle	120°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	No Coating	Suitable for processing	Aluminum alloy/Copper alloy/Resin		



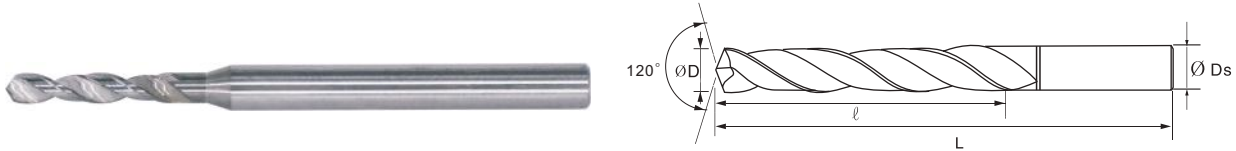
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TDMAL-0200	0.20	3.5	3	38	●
TDMAL-0250	0.25	3.5	3	38	●
TDMAL-0300	0.30	5.0	3	38	●
TDMAL-0350	0.35	5.0	3	38	●
TDMAL-0400	0.40	6.0	3	38	●
TDMAL-0450	0.45	6.0	3	38	●
TDMAL-0500	0.50	6.0	3	38	●
TDMAL-0550	0.55	6.0	3	38	●
TDMAL-0600	0.60	7.0	3	38	●
TDMAL-0650	0.65	7.0	3	38	●
TDMAL-0700	0.70	8.0	3	38	●
TDMAL-0750	0.75	8.0	3	38	●
TDMAL-0800	0.80	8.0	3	38	●
TDMAL-0850	0.85	8.0	3	38	●
TDMAL-0900	0.90	8.0	3	38	●
TDMAL-0950	0.95	8.0	3	38	●
TDMAL-0960	0.96	8.0	3	38	●
TDMAL-0970	0.97	8.0	3	38	●
TDMAL-0980	0.98	8.0	3	38	●
TDMAL-0990	0.99	8.0	3	38	●
TDMAL-1000	1.00	10.0	3	38	●
TDMAL-1010	1.01	10.0	3	38	●
TDMAL-1020	1.02	10.0	3	38	●
TDMAL-1030	1.03	10.0	3	38	●
TDMAL-1040	1.04	10.0	3	38	●
TDMAL-1050	1.05	10.0	3	38	●
TDMAL-1100	1.10	10.0	3	38	●
TDMAL-1150	1.15	10.0	3	38	●
TDMAL-1200	1.20	10.0	3	38	●
TDMAL-1250	1.25	10.0	3	38	●
TDMAL-1300	1.30	10.0	3	38	●
TDMAL-1350	1.35	10.0	3	38	●
TDMAL-1400	1.40	10.0	3	38	●
TDMAL-1450	1.45	10.0	3	38	●
TDMAL-1460	1.46	10.0	3	38	●
TDMAL-1470	1.47	10.0	3	38	●

● Stock ○ Non-stock

TDMAL Micro Drill Series External Coolant

Material	Carbide	Helix angle	35°	Point angle	120°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	No Coating	Suitable for processing	Aluminum alloy/Copper alloy/Resin		



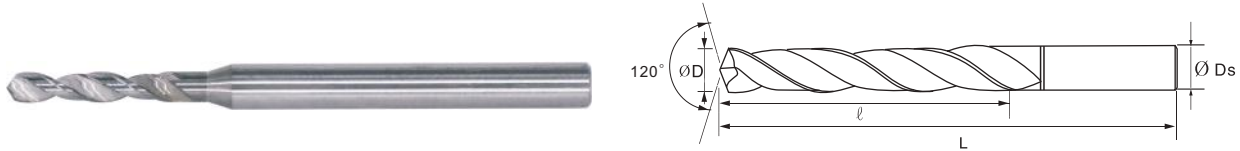
Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TDMAL-1480	1.48	10.0	3	38	●
TDMAL-1490	1.49	10.0	3	38	●
TDMAL-1500	1.50	10.0	3	38	●
TDMAL-1510	1.51	10.0	3	38	●
TDMAL-1520	1.52	10.0	3	38	●
TDMAL-1530	1.53	10.0	3	38	●
TDMAL-1540	1.54	10.0	3	38	●
TDMAL-1550	1.55	10.0	3	38	●
TDMAL-1560	1.56	10.0	3	38	●
TDMAL-1570	1.57	10.0	3	38	●
TDMAL-1580	1.58	10.0	3	38	●
TDMAL-1590	1.59	10.0	3	38	●
TDMAL-1600	1.60	12.0	3	38	●
TDMAL-1610	1.61	12.0	3	38	●
TDMAL-1620	1.62	12.0	3	38	●
TDMAL-1630	1.63	12.0	3	38	●
TDMAL-1640	1.64	12.0	3	38	●
TDMAL-1650	1.65	12.0	3	38	●
TDMAL-1660	1.66	12.0	3	38	●
TDMAL-1670	1.67	12.0	3	38	●
TDMAL-1680	1.68	12.0	3	38	●
TDMAL-1690	1.69	12.0	3	38	●
TDMAL-1700	1.70	12.0	3	38	●
TDMAL-1710	1.71	12.0	3	38	●
TDMAL-1720	1.72	12.0	3	38	●
TDMAL-1730	1.73	12.0	3	38	●
TDMAL-1740	1.74	12.0	3	38	●
TDMAL-1750	1.75	12.0	3	38	●
TDMAL-1760	1.76	12.0	3	38	●
TDMAL-1770	1.77	12.0	3	38	●
TDMAL-1780	1.78	12.0	3	38	●
TDMAL-1790	1.79	12.0	3	38	●
TDMAL-1800	1.80	12.0	3	38	●
TDMAL-1810	1.81	12.0	3	38	●
TDMAL-1820	1.82	12.0	3	38	●
TDMAL-1830	1.83	12.0	3	38	●
TDMAL-1840	1.84	12.0	3	38	●

● Stock ○ Non-stock

TDMAL Micro Drill Series External Coolant

Material	Carbide	Helix angle	35°	Point angle	120°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	6537A
Coating	No Coating	Suitable for processing	Aluminum alloy/Copper alloy/Resin		



Unit(mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
TDMAL-1850	1.85	12.0	3	38	●
TDMAL-1860	1.86	12.0	3	38	●
TDMAL-1870	1.87	12.0	3	38	●
TDMAL-1880	1.88	12.0	3	38	●
TDMAL-1890	1.89	12.0	3	38	●
TDMAL-1900	1.90	12.0	3	38	●
TDMAL-1910	1.91	12.0	3	38	●
TDMAL-1920	1.92	12.0	3	38	●
TDMAL-1930	1.93	12.0	3	38	●
TDMAL-1940	1.94	12.0	3	38	●
TDMAL-1950	1.95	12.0	3	38	●
TDMAL-1960	1.96	12.0	3	38	●
TDMAL-1970	1.97	12.0	3	38	●
TDMAL-1980	1.98	12.0	3	38	●
TDMAL-1990	1.99	12.0	3	38	●
TDMAL-2000	2.00	12.0	3	38	●
TDMAL-2050	2.05	12.0	3	38	●
TDMAL-2100	2.10	12.0	3	38	●
TDMAL-2150	2.15	12.0	3	38	●
TDMAL-2200	2.20	12.0	3	38	●
TDMAL-2250	2.25	12.0	3	38	●
TDMAL-2300	2.30	12.0	3	38	●
TDMAL-2350	2.35	12.0	3	38	●
TDMAL-2400	2.40	12.0	3	38	●
TDMAL-2450	2.45	12.0	3	38	●
TDMAL-2500	2.50	12.0	3	38	●
TDMAL-2550	2.55	12.0	3	38	●
TDMAL-2600	2.60	12.0	3	38	●
TDMAL-2650	2.65	12.0	3	38	●
TDMAL-2700	2.70	12.0	3	38	●
TDMAL-2750	2.75	12.0	3	38	●
TDMAL-2800	2.80	12.0	3	38	●
TDMAL-2850	2.85	12.0	3	38	●
TDMAL-2900	2.90	12.0	3	38	●
TDMAL-2950	2.95	12.0	3	38	●
TDMAL-3000	3.00	12.0	3	38	●

● Stock ○ Non-stock

STANDARD CUTTING CONDITIONS

TDMC Series

Unit (mm)

ISO	Work Material	Brinell hardness(HB)	Rotation speed(rev/min)				
			Ø0.20-Ø0.29	Ø0.30-Ø0.49	Ø0.50-Ø0.99	Ø1.00-Ø1.99	Ø2.00-Ø3.00
P	Carbon steel	180-300	20000-25000	18000-20000	15000-18000	9500-15000	6300-9500
	Alloy steel	180-300	15000-20000	15000-17000	9500-15000	6000-9500	4800-6000
	Modulated steel	180-300	13000-17000	10000-13000	7000-10000	4000-7000	3000-4000
M	Stainless steel	-200	7500-15000	8000-10000	6000-8000	4000-6000	3700-4000

ISO	Work Material	Brinell hardness(HB)	Feed: f (mm/rev)				
			Ø0.20-Ø0.29	Ø0.30-Ø0.49	Ø0.50-Ø0.99	Ø1.00-Ø1.99	Ø2.00-Ø3.00
P	Carbon steel	180-300	0.002-0.01	0.01-0.04	0.02-0.04	0.03-0.06	0.07-0.10
	Alloy steel	180-300	0.0015-0.007	0.007-0.01	0.01-0.02	0.02-0.05	0.05-0.08
	Modulated steel	180-300	0.001-0.004	0.003-0.005	0.005-0.01	0.01-0.03	0.02-0.04
M	Stainless steel	-200	0.0005-0.001	0.002-0.01	0.015-0.02	0.02-0.04	0.03-0.05

TDMAL Series

Unit (mm)

ISO	Work Material	Brinell hardness(HB)	Rotation speed(rev/min)				
			Ø0.20-Ø0.29	Ø0.30-Ø0.49	Ø0.50-Ø0.99	Ø1.00-Ø1.99	Ø2.00-Ø3.00
N	Aluminium alloy	-	16500-22200	13000-16500	12700-13000	6400-12700	5300-6400
	Copper alloy		11000-16000	11000-11500	9600-11500	4800-9600	4200-4800
	Resin		15000-20000	15000-17000	10000-15000	6000-10000	5000-6000

ISO	Work Material	Brinell hardness(HB)	Feed: f (mm/rev)				
			Ø0.20-Ø0.29	Ø0.30-Ø0.49	Ø0.50-Ø0.99	Ø1.00-Ø1.99	Ø2.00-Ø3.00
N	Aluminium alloy	-	0.005-0.02	0.02-0.04	0.04-0.06	0.06-0.12	0.12-0.20
	Copper alloy		0.002-0.008	0.008-0.015	0.015-0.04	0.04-0.08	0.08-0.15
	Resin		0.005-0.01	0.01-0.02	0.02-0.04	0.05-0.07	0.07-0.10

Carbide Drills

U Drills

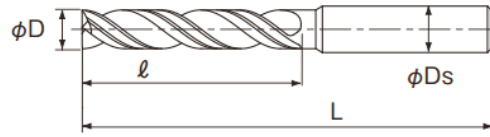
Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

FSD High Efficiency Flat Drill



Features

Point angle 180°.

Better centering ability, chip evacuation smoothly because of point geometry and flute design.

Suitable for machining inclined hole, drilling on ball surface and thin sheet, restraining the burr also.

Solid Carbide Drill with Flat Bottom FSD Series

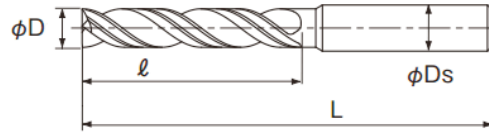
Material	Carbide	Helix angle	25°	Point angle	180°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6535HA
Coating	TiAlN	Suitable for processing	Carbon Steel Alloy Steel Hardened Steel HRC<55 Stainless Steel Cast Iron		

Unit (mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
FSD0300SE	3.0	16	4	49	●
FSD0310SE	3.1	16	4	49	●
FSD0320SE	3.2	16	4	49	●
FSD0330SE	3.3	16	4	49	●
FSD0340SE	3.4	16	4	49	●
FSD0350SE	3.5	16	4	49	●
FSD0360SE	3.6	16	4	49	●
FSD0370SE	3.7	16	4	49	●
FSD0380SE	3.8	16	4	49	●
FSD0390SE	3.9	16	4	49	●
FSD0400SE	4.0	16	4	49	●
FSD0410SE	4.1	20	6	61	●
FSD0420SE	4.2	20	6	61	●
FSD0430SE	4.3	20	6	61	●
FSD0440SE	4.4	20	6	61	●
FSD0450SE	4.5	20	6	61	●
FSD0460SE	4.6	20	6	61	●
FSD0470SE	4.7	20	6	61	●
FSD0480SE	4.8	20	6	61	●
FSD0490SE	4.9	20	6	61	●
FSD0500SE	5.0	20	6	61	●
FSD0510SE	5.1	24	6	65	●
FSD0520SE	5.2	24	6	65	●
FSD0530SE	5.3	24	6	65	●
FSD0540SE	5.4	24	6	65	●
FSD0550SE	5.5	24	6	65	●
FSD0560SE	5.6	24	6	65	●
FSD0570SE	5.7	24	6	65	●
FSD0580SE	5.8	24	6	65	●
FSD0590SE	5.9	24	6	65	●
FSD0600SE	6.0	24	6	65	●
FSD0610SE	6.1	28	8	69	●
FSD0620SE	6.2	28	8	69	●
FSD0630SE	6.3	28	8	69	●
FSD0640SE	6.4	28	8	69	●
FSD0650SE	6.5	28	8	69	●

● Stock ○ Non-stock

FSD High Efficiency Flat Drill



Features

Point angle 180°.

Better centering ability, chip evacuation smoothly because of point geometry and flute design.

Suitable for machining inclined hole, drilling on ball surface and thin sheet, restraining the burr also.

Solid Carbide Drill with Flat Bottom FSD Series

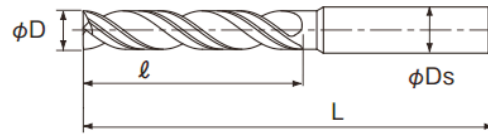
Material	Carbide	Helix angle	25°	Point angle	180°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6535HA
Coating	TiAlN	Suitable for processing	Carbon Steel Alloy Steel Hardened Steel HRC<55 Stainless Steel Cast Iron		

Unit (mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
FSD0660SE	6.6	28	8	69	●
FSD0670SE	6.7	28	8	69	●
FSD0680SE	6.8	28	8	69	●
FSD0690SE	6.9	28	8	69	●
FSD0700SE	7.0	28	8	69	●
FSD0710SE	7.1	32	8	73	●
FSD0720SE	7.2	32	8	73	●
FSD0730SE	7.3	32	8	73	●
FSD0740SE	7.4	32	8	73	●
FSD0750SE	7.5	32	8	73	●
FSD0760SE	7.6	32	8	73	●
FSD0770SE	7.7	32	8	73	●
FSD0780SE	7.8	32	8	73	●
FSD0790SE	7.9	32	8	73	●
FSD0800SE	8.0	32	8	73	●
FSD0810SE	8.1	36	10	81	●
FSD0820SE	8.2	36	10	81	●
FSD0830SE	8.3	36	10	81	●
FSD0840SE	8.4	36	10	81	●
FSD0850SE	8.5	36	10	81	●
FSD0860SE	8.6	36	10	81	●
FSD0870SE	8.7	36	10	81	●
FSD0880SE	8.8	36	10	81	●
FSD0890SE	8.9	36	10	81	●
FSD0900SE	9.0	36	10	81	●
FSD0910SE	9.1	40	10	85	●
FSD0920SE	9.2	40	10	85	●
FSD0930SE	9.3	40	10	85	●
FSD0940SE	9.4	40	10	85	●
FSD0950SE	9.5	40	10	85	●
FSD0960SE	9.6	40	10	85	●
FSD0970SE	9.7	40	10	85	●
FSD0980SE	9.8	40	10	85	●
FSD0990SE	9.9	40	10	85	●
FSD1000SE	10.0	40	10	85	●
FSD1010SE	10.1	44	12	94	●

● Stock ○ Non-stock

FSD High Efficiency Flat Drill



Features

Point angle 180°.

Better centering ability, chip evacuation smoothly because of point geometry and flute design.

Suitable for machining inclined hole, drilling on ball surface and thin sheet, restraining the burr also.

Solid Carbide Drill with Flat Bottom FSD Series

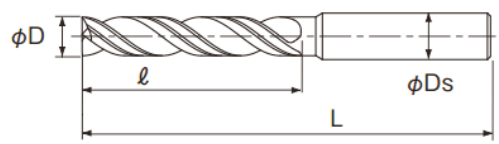
Material	Carbide	Helix angle	25°	Point angle	180°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6535HA
Coating	TiAlN	Suitable for processing	Carbon Steel Alloy Steel Hardened Steel HRC<55 Stainless Steel Cast Iron		

Unit (mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
FSD1020SE	10.2	44	12	94	●
FSD1030SE	10.3	44	12	94	●
FSD1040SE	10.4	44	12	94	●
FSD1050SE	10.5	44	12	94	●
FSD1060SE	10.6	44	12	94	●
FSD1070SE	10.7	44	12	94	●
FSD1080SE	10.8	44	12	94	●
FSD1090SE	10.9	44	12	94	●
FSD1100SE	11.0	48	12	94	●
FSD1110SE	11.1	48	12	98	●
FSD1120SE	11.2	48	12	98	●
FSD1130SE	11.3	48	12	98	●
FSD1140SE	11.4	48	12	98	●
FSD1150SE	11.5	48	12	98	●
FSD1160SE	11.6	48	12	98	●
FSD1170SE	11.7	48	12	98	●
FSD1180SE	11.8	48	12	98	●
FSD1190SE	11.9	48	12	98	●
FSD1200SE	12.0	48	12	98	●
FSD1210SE	12.1	52	14	102	○
FSD1220SE	12.2	52	14	102	○
FSD1230SE	12.3	52	14	102	○
FSD1240SE	12.4	52	14	102	○
FSD1250SE	12.5	52	14	102	○
FSD1260SE	12.6	52	14	102	○
FSD1270SE	12.7	52	14	102	○
FSD1280SE	12.8	52	14	102	○
FSD1290SE	12.9	52	14	102	○
FSD1300SE	13.0	52	14	102	○
FSD1310SE	13.1	56	14	106	○
FSD1320SE	13.2	56	14	106	○
FSD1330SE	13.3	56	14	106	○
FSD1340SE	13.4	56	14	106	○
FSD1350SE	13.5	56	14	106	○
FSD1360SE	13.6	56	14	106	○
FSD1370SE	13.7	56	14	106	○

● Stock ○ Non-stock

FSD High Efficiency Flat Drill



Features

Point angle 180°.

Better centering ability, chip evacuation smoothly because of point geometry and flute design.

Suitable for machining inclined hole, drilling on ball surface and thin sheet, restraining the burr also.

Solid Carbide Drill with Flat Bottom FSD Series

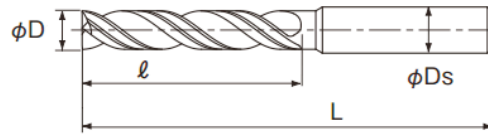
Material	Carbide	Helix angle	25°	Point angle	180°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6535HA
Coating	TiAlN	Suitable for processing	Carbon Steel Alloy Steel Hardened Steel HRC<55 Stainless Steel Cast Iron		

Unit (mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
FSD1380SE	13.8	56	14	106	○
FSD1390SE	13.9	56	14	106	○
FSD1400SE	14.0	56	14	106	○
FSD1410SE	14.1	60	16	113	○
FSD1420SE	14.2	60	16	113	○
FSD1430SE	14.3	60	16	113	○
FSD1440SE	14.4	60	16	113	○
FSD1450SE	14.5	60	16	113	○
FSD1460SE	14.6	60	16	113	○
FSD1470SE	14.7	60	16	113	○
FSD1480SE	14.8	60	16	113	○
FSD1490SE	14.9	60	16	113	○
FSD1500SE	15.0	60	16	113	○
FSD1510SE	15.1	64	16	117	○
FSD1520SE	15.2	64	16	117	○
FSD1530SE	15.3	64	16	117	○
FSD1540SE	15.4	64	16	117	○
FSD1550SE	15.5	64	16	117	○
FSD1560SE	15.6	64	16	117	○
FSD1570SE	15.7	64	16	117	○
FSD1580SE	15.8	64	16	117	○
FSD1590SE	15.9	64	16	117	○
FSD1600SE	16.0	64	16	117	○
FSD1610SE	16.1	68	18	121	○
FSD1620SE	16.2	68	18	121	○
FSD1630SE	16.3	68	18	121	○
FSD1640SE	16.4	68	18	121	○
FSD1650SE	16.5	68	18	121	○
FSD1660SE	16.6	68	18	121	○
FSD1670SE	16.7	68	18	121	○
FSD1680SE	16.8	68	18	121	○
FSD1690SE	16.9	68	18	121	○
FSD1700SE	17.0	68	18	121	○
FSD1710SE	17.1	72	18	125	○
FSD1720SE	17.2	72	18	125	○
FSD1730SE	17.3	72	18	125	○

● Stock ○ Non-stock

FSD High Efficiency Flat Drill



Features

Point angle 180°.

Better centering ability, chip evacuation smoothly because of point geometry and flute design.

Suitable for machining inclined hole, drilling on ball surface and thin sheet, restraining the burr also.

Solid Carbide Drill with Flat Bottom FSD Series

Material	Carbide	Helix angle	25°	Point angle	180°
Cutting edge tolerance	m7	Shank tolerance	h6	Standard	DIN6535HA
Coating	TiAlN	Suitable for processing	Carbon Steel Alloy Steel Hardened Steel HRC<55 Stainless Steel Cast Iron		

Unit (mm)

Model No.	Cutting Diameter	Cutting Length	Shank Diameter	Total Length	Stock
	D	ℓ	Ds	L	
FSD1740SE	17.4	72	18	125	○
FSD1750SE	17.5	72	18	125	○
FSD1760SE	17.6	72	18	125	○
FSD1770SE	17.7	72	18	125	○
FSD1780SE	17.8	72	18	125	○
FSD1790SE	17.9	72	18	125	○
FSD1800SE	18.0	72	18	125	○
FSD1810SE	18.1	76	20	131	○
FSD1820SE	18.2	76	20	131	○
FSD1830SE	18.3	76	20	131	○
FSD1840SE	18.4	76	20	131	○
FSD1850SE	18.5	76	20	131	○
FSD1860SE	18.6	76	20	131	○
FSD1870SE	18.7	76	20	131	○
FSD1880SE	18.8	76	20	131	○
FSD1890SE	18.9	76	20	131	○
FSD1900SE	19.0	76	20	131	○
FSD1910SE	19.1	80	20	135	○
FSD1920SE	19.2	80	20	135	○
FSD1930SE	19.3	80	20	135	○
FSD1940SE	19.4	80	20	135	○
FSD1950SE	19.5	80	20	135	○
FSD1960SE	19.6	80	20	135	○
FSD1970SE	19.7	80	20	135	○
FSD1980SE	19.8	80	20	135	○
FSD1990SE	19.9	80	20	135	○
FSD2000SE	20.0	80	20	135	○

Notice: The MOQ for Non-stock item is 5pcs.

● Stock ○ Non-stock

STANDARD CUTTING CONDITIONS

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

FSD Series

Unit (mm)

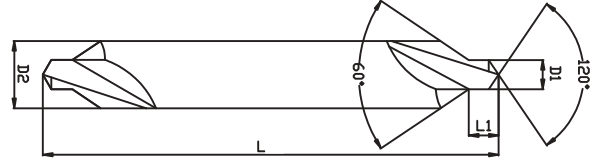
ISO	Work Material	Brinell hardness (HB)	Cutting speed: Vc(m/min)	Feed: f (mm/rev)						
				3~4	4~6	6~8	8~10	10~12	12~16	16~20
P	Low carbon steel (C < 0.3) C15E4, E275A, E355D, etc.	~125	60~90	0.06~0.10	0.06~0.15	0.1~0.2	0.1~0.2	0.12~0.22	0.16~0.25	0.25~0.35
	Carbon steel (C > 0.3) C45, C55, etc.	125~300	50~80	0.06~0.10	0.06~0.15	0.1~0.2	0.1~0.2	0.12~0.22	0.16~0.25	0.25~0.35
	High alloy steel 42CrMo4, etc.	250~350	40~70	0.06~0.10	0.06~0.15	0.1~0.2	0.1~0.2	0.12~0.22	0.16~0.25	0.25~0.35
M	Stainless steel X5CrNi18-9, etc.		20~50	0.01~0.03	0.03~0.05	0.03~0.05	0.04~0.08	0.08~0.12	0.1~0.2	0.15~0.25
K	Grey cast iron 250, etc.	~200	30~50	0.06~0.10	0.06~0.15	0.01~0.2	0.12~0.22	0.15~0.25	0.17~0.27	0.25~0.35
	Ductile cast iron 450-10S, etc.	~300	20~40	0.04~0.8	0.06~0.12	0.1~0.15	0.12~0.18	0.15~0.2	0.15~0.25	0.2~0.3
N	Aluminium alloy AISI11Cu3, etc.			0.06~0.10	0.06~0.15	0.1~0.2	0.1~0.2	0.12~0.22	0.16~0.25	0.25~0.35

Carbide Center Drill with High-performance and Multi-Purpose Series **TOTIME**

CCD Series

Carbide Center Drill

Material	Carbide	Angle	60°	Coating	No
Suitable for processing	Steel, Stainless steel, Cast iron				



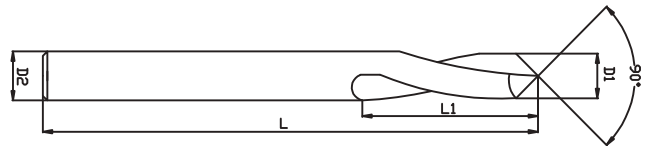
Unit (mm)

Model No.	Cutting Diameter	Cutting Length	Total Length	Shank Diameter
	D1	L1	L	D2
CCD010	1.0	1.0	40	3
CCD015	1.5	1.5	45	4
CCD020	2.0	2.0	45	5
CCD025	2.5	2.5	50	6
CCD030	3.0	3.0	55	8
CCD040	4.0	4.5	60	10
CCD050	5.0	5.5	65	12

CSD Series

Carbide Spotting Drill

Material	Carbide	Point angle	90°	Coating	TiAIN
Suitable for processing	Steel, Stainless steel, Cast iron				



Unit (mm)

Model No.	Cutting Diameter	Cutting Length	Total Length	Shank Diameter
	D1	L1	L	D2
CSD030	3	9	50	3
CSD040	4	10	50	4
CSD050	5	12	50	5
CSD060	6	13	50	6
CSD080	8	23	60	8
CSD100	10	24	75	10
CSD120	12	28	75	12
CSD160	16	32	100	16
CSD200	20	35	100	20

TOTIME U drill, featuring uniquely designed insert, offers highly economical drilling with enhanced stability and long tool life.

Inserts:

Available in the sizes SPMX/GX05,06,07,09,11 and 14
Each has 4 cutting edges

Drill bodies:

ZD: Available in L/D=2, 3,4 and 5 in metric shank sizes
from ø DC 13 to 60mm Tolerance:-0.1~+0.2mm

Grade	Application	ISO
TI620	First choice for Carbon Steel and Alloy Steel(HRC 20-30),Cast Iron	P K
TZ650	New PVD coating suitable for medium and high speed machining of Carbon Steel and Alloy Steel (HRC 30~40)	P
TM450	First choice for Carbon Steel and Alloy Steel (HRC ≤ 20),Stainless Steel	P M
TN200	Suitable for Non-ferrous metal processing	N

Feature

● Twisted Cooling Holes
Twisted coolant hole in the drill body increases coolant flow which improves chip evacuation, resulting in excellent surface finish.

● Drill Body
The use of high rigidity materials in the drill body greatly improves the wear resistance and stability of the drill body.

(Dia.<25mm)

Carbide Drills

U Drills

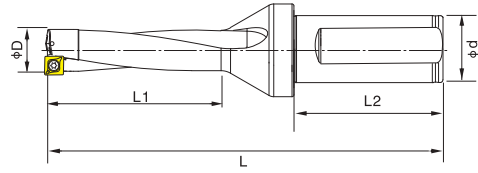
Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

Carbide Drills



U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

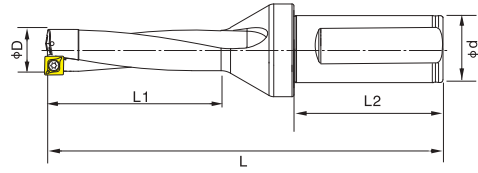
Non-standard Tools

2D-SP U DRILL

Unit (mm)

Model No.	Size					Insert	Screw	Wrench	Stock
	D	L1	L	L2	d				
ZD02-13.0-XP25-SP05-02	13	26	104	56	25	SP□X050204	ST0205	T6	●
ZD02-13.5-XP25-SP05-02	13.5	27	105						●
ZD02-14.0-XP25-SP05-02	14	28	106						●
ZD02-14.5-XP25-SP05-02	14.5	29	107						●
ZD02-15.0-XP25-SP05-02	15	30	108						●
ZD02-15.5-XP25-SP06-02	15.5	31	109						●
ZD02-16.0-XP25-SP06-02	16	32	110			●			
ZD02-16.5-XP25-SP06-02	16.5	33	111			●			
ZD02-17.0-XP25-SP06-02	17	34	112			●			
ZD02-17.5-XP25-SP06-02	17.5	35	113			●			
ZD02-18.0-XP25-SP06-02	18	36	114			●			
ZD02-18.5-XP25-SP06-02	18.5	37	115			●			
ZD02-19.0-XP25-SP06-02	19	38	116			●			
ZD02-19.5-XP25-SP06-02	19.5	39	117			●			
ZD02-20.0-XP25-SP06-02	20	40	119	●					
ZD02-20.5-XP25-SP06-02	20.5	41	120	●					
ZD02-21.0-XP25-SP06-02	21	42	121	●					
ZD02-21.5-XP25-SP06-02	21.5	43	122	●					
ZD02-22.0-XP25-SP07-02	22	44	123	60	32	SP□X07T308	ST2506	T8	●
ZD02-22.5-XP25-SP07-02	22.5	45	124						●
ZD02-23.0-XP25-SP07-02	23	46	125						●
ZD02-23.5-XP25-SP07-02	23.5	47	126						●
ZD02-24.0-XP25-SP07-02	24	48	127						●
ZD02-24.5-XP25-SP07-02	24.5	49	128						●
ZD02-25.0-XP32-SP07-02	25	50	141			●			
ZD02-25.5-XP32-SP07-02	25.5	51	142			●			
ZD02-26.0-XP32-SP07-02	26	52	143			●			
ZD02-26.5-XP32-SP07-02	26.5	53	144			●			
ZD02-27.0-XP32-SP07-02	27	54	145	60	32	SP□X090408	ST3508	T15	●
ZD02-27.5-XP32-SP09-02	27.5	55	146						●
ZD02-28.0-XP32-SP09-02	28	56	147						●
ZD02-28.5-XP32-SP09-02	28.5	57	148						●
ZD02-29.0-XP32-SP09-02	29	58	149						●
ZD02-29.5-XP32-SP09-02	29.5	59	150						●
ZD02-30.0-XP32-SP09-02	30	60	151						●
ZD02-30.5-XP32-SP09-02	30.5	61	152						●
ZD02-31.0-XP32-SP09-02	31	62	153			●			
ZD02-31.5-XP32-SP09-02	31.5	63	154			●			
ZD02-32.0-XP32-SP09-02	32	64	155			●			
ZD02-32.5-XP32-SP09-02	32.5	65	156			●			
ZD02-33.0-XP32-SP09-02	33	66	157			●			
ZD02-33.5-XP32-SP11-02	33.5	67	158			●			
ZD02-34.0-XP32-SP11-02	34	68	159	SP□X110408	ST4010	T15	●		
ZD02-34.5-XP32-SP11-02	34.5	69	160				●		
ZD02-35.0-XP32-SP11-02	35	70	161				●		
ZD02-35.5-XP32-SP11-02	35.5	71	162				●		

● Stock ○ Non-stock



2D-SP U DRILL

Unit (mm)

Model No.	Size					Insert	Screw	Wrench	Stock
	D	L1	L	L2	d				
ZD02-36.0-XP32-SP11-02	36	72	163	60	32	SP□X110408	ST4010	T15	●
ZD02-36.5-XP32-SP11-02	36.5	73	164						●
ZD02-37.0-XP32-SP11-02	37	74	165						●
ZD02-37.5-XP32-SP11-02	37.5	75	166						●
ZD02-38.0-XP32-SP11-02	38	76	167						●
ZD02-38.5-XP32-SP11-02	38.5	77	168						●
ZD02-39.0-XP32-SP11-02	39	78	169						●
ZD02-39.5-XP32-SP11-02	39.5	79	170						●
ZD02-40.0-XP32-SP11-02	40	80	171						●
ZD02-41.0-XP32-SP14-02	41	82	173						65
ZD02-42.0-XP32-SP14-02	42	84	175	●					
ZD02-43.0-XP40-SP14-02	43	86	186	●					
ZD02-44.0-XP40-SP14-02	44	88	188	●					
ZD02-45.0-XP40-SP14-02	45	90	190	●					
ZD02-46.0-XP40-SP14-02	46	92	192	●					
ZD02-47.0-XP40-SP14-02	47	94	194	●					
ZD02-48.0-XP40-SP14-02	48	96	196	●					
ZD02-49.0-XP40-SP14-02	49	98	198	●					
ZD02-50.0-XP40-SP14-02	50	100	200	●					
ZD02-51.0-XP40-SP14-02	51	102	202	65	40	SP□X090408	ST3508	T15	●
ZD02-52.0-XP40-SP09-04	52	104	204						●
ZD02-53.0-XP40-SP09-04	53	106	206						●
ZD02-54.0-XP40-SP09-04	54	108	208						●
ZD02-55.0-XP40-SP09-04	55	110	210						●
ZD02-56.0-XP40-SP09-04	56	112	212						●
ZD02-57.0-XP40-SP09-04	57	114	214						●
ZD02-58.0-XP40-SP09-04	58	116	216						●
ZD02-59.0-XP40-SP09-04	59	118	218						●
ZD02-60.0-XP40-SP09-04	60	120	220						●

● Stock ○ Non-stock

Carbide Drills

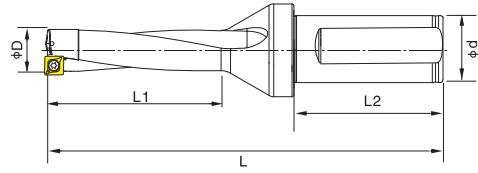
U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

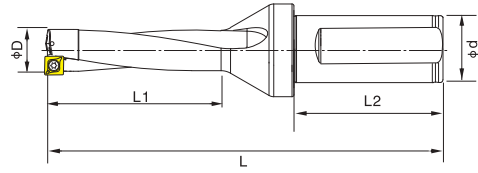


3D-SP U DRILL

Unit (mm)

Model No.	Size					Insert	Screw	Wrench	Stock		
	D	L1	L	L2	d						
ZD03-13.0-XP25-SP05-02	13	39	117	56	25	SP□X050204	ST0205	T6	●		
ZD03-13.5-XP25-SP05-02	13.5	40.5	118						●		
ZD03-14.0-XP25-SP05-02	14	42	120						●		
ZD03-14.5-XP25-SP05-02	14.5	43.5	122						●		
ZD03-15.0-XP25-SP05-02	15	45	123						●		
ZD03-15.5-XP25-SP06-02	15.5	46.5	124						●		
ZD03-16.0-XP25-SP06-02	16	48	126			●					
ZD03-16.5-XP25-SP06-02	16.5	49.5	127			●					
ZD03-17.0-XP25-SP06-02	17	51	129			●					
ZD03-17.5-XP25-SP06-02	17.5	52.5	130			●					
ZD03-18.0-XP25-SP06-02	18	54	132			●					
ZD03-18.5-XP25-SP06-02	18.5	55.5	133			●					
ZD03-19.0-XP25-SP06-02	19	57	135			●					
ZD03-19.5-XP25-SP06-02	19.5	58.5	135			●					
ZD03-20.0-XP25-SP06-02	20	60	139			●					
ZD03-20.5-XP25-SP06-02	20.5	61.5	140			●					
ZD03-21.0-XP25-SP06-02	21	63	142			●					
ZD03-21.5-XP25-SP06-02	21.5	64.5	143			●					
ZD03-22.0-XP25-SP07-02	22	66	145	60	32	SP□X07T308	ST2506	T8	●		
ZD03-22.5-XP25-SP07-02	22.5	67.5	148						●		
ZD03-23.0-XP25-SP07-02	23	69	148						●		
ZD03-23.5-XP25-SP07-02	23.5	70.5	149						●		
ZD03-24.0-XP25-SP07-02	24	72	151						●		
ZD03-24.5-XP25-SP07-02	24.5	73.5	152						●		
ZD03-25.0-XP32-SP07-02	25	75	166			60	32	SP□X090408	ST3508	T15	●
ZD03-25.5-XP32-SP07-02	25.5	76.5	167								●
ZD03-26.0-XP32-SP07-02	26	78	169								●
ZD03-26.5-XP32-SP07-02	26.5	79.5	170								●
ZD03-27.0-XP32-SP07-02	27	81	172								●
ZD03-27.5-XP32-SP09-02	27.5	82.5	173								●
ZD03-28.0-XP32-SP09-02	28	84	175	●							
ZD03-28.5-XP32-SP09-02	28.5	85.5	176	●							
ZD03-29.0-XP32-SP09-02	29	87	178	●							
ZD03-29.5-XP32-SP09-02	29.5	88.5	179	●							
ZD03-30.0-XP32-SP09-02	30	90	181	●							
ZD03-30.5-XP32-SP09-02	30.5	91.5	182	●							
ZD03-31.0-XP32-SP09-02	31	93	184	●							
ZD03-31.5-XP32-SP09-02	31.5	94.5	185	●							
ZD03-32.0-XP32-SP09-02	32	96	187	●							
ZD03-32.5-XP32-SP09-02	32.5	97.5	188	●							
ZD03-33.0-XP32-SP09-02	33	99	190	●							
ZD03-33.5-XP32-SP11-02	33.5	100.5	191	●							
ZD03-34.0-XP32-SP11-02	34	102	193	●							
ZD03-34.5-XP32-SP11-02	34.5	103.5	194	●							
ZD03-35.0-XP32-SP11-02	35	105	196	●							
ZD03-35.5-XP32-SP11-02	35.5	106.5	197	●							

● Stock ○ Non-stock



3D-SP U DRILL

Unit (mm)

Model No.	Size					Insert	Screw	Wrench	Stock
	D	L1	L	L2	d				
ZD03-36.0-XP32-SP11-02	36	108	199	60	32	SP□X110408	ST4010	T15	●
ZD03-36.5-XP32-SP11-02	36.5	109.5	200						●
ZD03-37.0-XP32-SP11-02	37	111	202						●
ZD03-37.5-XP32-SP11-02	37.5	112.5	203						●
ZD03-38.0-XP32-SP11-02	38	114	205						●
ZD03-38.5-XP32-SP11-02	38.5	115.5	206						●
ZD03-39.0-XP32-SP11-02	39	117	206						●
ZD03-39.5-XP32-SP11-02	39.5	118.5	209						●
ZD03-40.0-XP32-SP11-02	40	120	211						●
ZD03-41.0-XP32-SP14-02	41	123	214						65
ZD03-42.0-XP32-SP14-02	42	126	217	●					
ZD03-43.0-XP40-SP14-02	43	129	229	●					
ZD03-44.0-XP40-SP14-02	44	132	232	●					
ZD03-45.0-XP40-SP14-02	45	135	235	●					
ZD03-46.0-XP40-SP14-02	46	138	238	●					
ZD03-47.0-XP40-SP14-02	47	141	241	●					
ZD03-48.0-XP40-SP14-02	48	144	244	●					
ZD03-49.0-XP40-SP14-02	49	147	247	●					
ZD03-50.0-XP40-SP14-02	50	150	250	●					
ZD03-51.0-XP40-SP14-02	51	153	253	65	40	SP□X090408	ST3508	T15	●
ZD03-52.0-XP40-SP09-04	52	156	256						●
ZD03-53.0-XP40-SP09-04	53	159	259						●
ZD03-54.0-XP40-SP09-04	54	162	262						●
ZD03-55.0-XP40-SP09-04	55	165	265						●
ZD03-56.0-XP40-SP09-04	56	168	268						●
ZD03-57.0-XP40-SP09-04	57	171	271						●
ZD03-58.0-XP40-SP09-04	58	175	274						●
ZD03-59.0-XP40-SP09-04	59	177	277						●
ZD03-60.0-XP40-SP09-04	60	180	280						●

● Stock ○ Non-stock

Carbide Drills

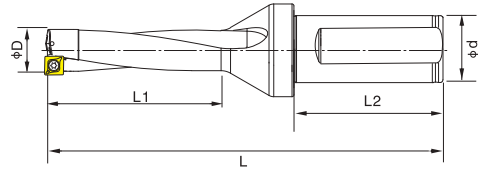
U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

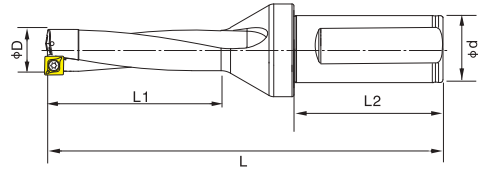


4D-SP U DRILL

Unit (mm)

Model No.	Size					Insert	Screw	Wrench	Stock		
	D	L1	L	L2	d						
ZD04-13.0-XP25-SP05-02	13	52	130	56	25	SP□X050204	ST0205	T6	●		
ZD04-13.5-XP25-SP05-02	13.5	54	132						●		
ZD04-14.0-XP25-SP05-02	14	56	134						●		
ZD04-14.5-XP25-SP05-02	14.5	58	136						●		
ZD04-15.0-XP25-SP05-02	15	60	138						●		
ZD04-15.5-XP25-SP06-02	15.5	62	140						●		
ZD04-16.0-XP25-SP06-02	16	64	142			●					
ZD04-16.5-XP25-SP06-02	16.5	66	144			●					
ZD04-17.0-XP25-SP06-02	17	68	146			●					
ZD04-17.5-XP25-SP06-02	17.5	70	148			●					
ZD04-18.0-XP25-SP06-02	18	72	150			●					
ZD04-18.5-XP25-SP06-02	18.5	74	152			●					
ZD04-19.0-XP25-SP06-02	19	76	154			●					
ZD04-19.5-XP25-SP06-02	19.5	78	155			●					
ZD04-20.0-XP25-SP06-02	20	80	159			●					
ZD04-20.5-XP25-SP06-02	20.5	82	161			●					
ZD04-21.0-XP25-SP06-02	21	84	163			●					
ZD04-21.5-XP25-SP06-02	21.5	86	165			●					
ZD04-22.0-XP25-SP07-02	22	88	167	60	32	SP□X07T308	ST2506	T8	●		
ZD04-22.5-XP25-SP07-02	22.5	90	169						●		
ZD04-23.0-XP25-SP07-02	23	92	171						●		
ZD04-23.5-XP25-SP07-02	23.5	94	173						●		
ZD04-24.0-XP25-SP07-02	24	96	175						●		
ZD04-24.5-XP25-SP07-02	24.5	98	177						●		
ZD04-25.0-XP32-SP07-02	25	100	191			60	32	SP□X090408	ST3508	T15	●
ZD04-25.5-XP32-SP07-02	25.5	102	193								●
ZD04-26.0-XP32-SP07-02	26	104	195								●
ZD04-26.5-XP32-SP07-02	26.5	106	197								●
ZD04-27.0-XP32-SP07-02	27	108	199								●
ZD04-27.5-XP32-SP09-02	27.5	110	201								●
ZD04-28.0-XP32-SP09-02	28	112	203	●							
ZD04-28.5-XP32-SP09-02	28.5	114	205	●							
ZD04-29.0-XP32-SP09-02	29	116	207	●							
ZD04-29.5-XP32-SP09-02	29.5	118	209	●							
ZD04-30.0-XP32-SP09-02	30	120	211	●							
ZD04-30.5-XP32-SP09-02	30.5	122	213	●							
ZD04-31.0-XP32-SP09-02	31	124	215	●							
ZD04-31.5-XP32-SP09-02	31.5	126	217	●							
ZD04-32.0-XP32-SP09-02	32	128	219	●							
ZD04-32.5-XP32-SP09-02	32.5	130	221	●							
ZD04-33.0-XP32-SP09-02	33	132	223	●							
ZD04-33.5-XP32-SP11-02	33.5	134	225	●							
ZD04-34.0-XP32-SP11-02	34	136	227	●							
ZD04-34.5-XP32-SP11-02	34.5	138	229	●							
ZD04-35.0-XP32-SP11-02	35	140	231	●							
ZD04-35.5-XP32-SP11-02	35.5	142	233	●							

● Stock ○ Non-stock



4D-SP U DRILL

Unit (mm)

Model No.	Size					Insert	Screw	Wrench	Stock
	D	L1	L	L2	d				
ZD04-36.0-XP32-SP11-02	36	144	235	60	32	SP□X110408	ST4010	T15	●
ZD04-36.5-XP32-SP11-02	36.5	146	237						●
ZD04-37.0-XP32-SP11-02	37	148	239						●
ZD04-37.5-XP32-SP11-02	37.5	150	241						●
ZD04-38.0-XP32-SP11-02	38	152	243						●
ZD04-38.5-XP32-SP11-02	38.5	154	245						●
ZD04-39.0-XP32-SP11-02	39	156	247						●
ZD04-39.5-XP32-SP11-02	39.5	158	249						●
ZD04-40.0-XP32-SP11-02	40	160	251						●
ZD04-41.0-XP32-SP14-02	41	164	255						65
ZD04-42.0-XP32-SP14-02	42	168	259	●					
ZD04-43.0-XP40-SP14-02	43	172	272	●					
ZD04-44.0-XP40-SP14-02	44	176	276	●					
ZD04-45.0-XP40-SP14-02	45	180	280	●					
ZD04-46.0-XP40-SP14-02	46	184	284	●					
ZD04-47.0-XP40-SP14-02	47	188	288	●					
ZD04-48.0-XP40-SP14-02	48	192	292	●					
ZD04-49.0-XP40-SP14-02	49	196	296	●					
ZD04-50.0-XP40-SP14-02	50	200	300	●					
ZD04-51.0-XP40-SP14-02	51	204	304	SP□X090408	ST3508	T15	●		
ZD04-52.0-XP40-SP09-04	52	208	308				●		
ZD04-53.0-XP40-SP09-04	53	212	312				●		
ZD04-54.0-XP40-SP09-04	54	216	316				●		
ZD04-55.0-XP40-SP09-04	55	220	320				●		
ZD04-56.0-XP40-SP09-04	56	224	324				●		
ZD04-57.0-XP40-SP09-04	57	228	328				●		
ZD04-58.0-XP40-SP09-04	58	232	332				●		
ZD04-59.0-XP40-SP09-04	59	236	336				●		
ZD04-60.0-XP40-SP09-04	60	240	340				●		

● Stock ○ Non-stock

Carbide Drills

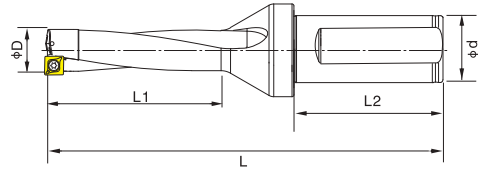
U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

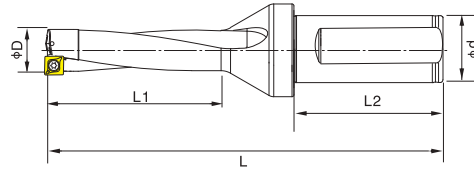


5D-SP U DRILL

Unit (mm)

Model No.	Size					Insert	Screw	Wrench	Stock
	D	L1	L	L2	d				
ZD05-20.0-XP25-SP06-02	20	100	179	56	25	SPOX060204	ST2205	T6	●
ZD05-20.5-XP25-SP06-02	20.5	102.5	181						●
ZD05-21.0-XP25-SP06-02	21	105	184						●
ZD05-21.5-XP25-SP06-02	21.5	107.5	186						●
ZD05-22.0-XP25-SP07-02	22	110	189						●
ZD05-22.5-XP25-SP07-02	22.5	112.5	193			●			
ZD05-23.0-XP25-SP07-02	23	115	194			●			
ZD05-23.5-XP25-SP07-02	23.5	117.5	196			●			
ZD05-24.0-XP25-SP07-02	24	120	199			●			
ZD05-24.5-XP25-SP07-02	24.5	122.5	201			●			
ZD05-25.0-XP32-SP07-02	25	125	216	60	32	SPOX07T308	ST2506	T8	●
ZD05-25.5-XP32-SP07-02	25.5	127.5	218						●
ZD05-26.0-XP32-SP07-02	26	130	221						●
ZD05-26.5-XP32-SP07-02	26.5	132.5	223						●
ZD05-27.0-XP32-SP07-02	27	135	226						●
ZD05-27.5-XP32-SP09-02	27.5	137.5	228			●			
ZD05-28.0-XP32-SP09-02	28	140	231			●			
ZD05-28.5-XP32-SP09-02	28.5	142.5	233			●			
ZD05-29.0-XP32-SP09-02	29	145	236			●			
ZD05-29.5-XP32-SP09-02	29.5	147.5	238			●			
ZD05-30.0-XP32-SP09-02	30	150	241	SPOX090408	ST3508	T15	●		
ZD05-30.5-XP32-SP09-02	30.5	152.5	243				●		
ZD05-31.0-XP32-SP09-02	31	155	246				●		
ZD05-31.5-XP32-SP09-02	31.5	157.5	248				●		
ZD05-32.0-XP32-SP09-02	32	160	251				●		
ZD05-32.5-XP32-SP09-02	32.5	162.5	253				●		
ZD05-33.0-XP32-SP09-02	33	165	256				●		
ZD05-33.5-XP32-SP11-02	33.5	167.5	258				●		
ZD05-34.0-XP32-SP11-02	34	170	261				●		
ZD05-34.5-XP32-SP11-02	34.5	172.5	263				●		
ZD05-35.0-XP32-SP11-02	35	175	266	SPOX110408	ST4010	T15	●		
ZD05-35.5-XP32-SP11-02	35.5	177.5	268				●		
ZD05-36.0-XP32-SP11-02	36	180	271				●		
ZD05-36.5-XP32-SP11-02	36.5	182.5	273				●		
ZD05-37.0-XP32-SP11-02	37	185	276				●		
ZD05-37.5-XP32-SP11-02	37.5	187.5	278				●		
ZD05-38.0-XP32-SP11-02	38	190	281				●		
ZD05-38.5-XP32-SP11-02	38.5	192.5	283				●		
ZD05-39.0-XP32-SP11-02	39	195	284				●		
ZD05-39.5-XP32-SP11-02	39.5	197.5	288				●		
ZD05-40.0-XP32-SP11-02	40	200	291	SPOX140512	ST5010	T20	●		
ZD05-41.0-XP32-SP14-02	41	205	296				●		
ZD05-42.0-XP32-SP14-02	42	210	301				●		
							●		

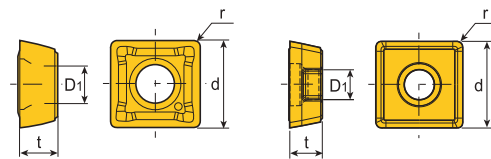
● Stock ○ Non-stock



5D-SP U DRILL

Unit (mm)

Model No.	Size					Insert	Screw	Wrench	Stock	
	D	L1	L	L2	d					
ZD05-43.0-XP40-SP14-02	43	215	315	65	40	SP□X140512	ST5010	T20	●	
ZD05-44.0-XP40-SP14-02	44	220	320						●	
ZD05-45.0-XP40-SP14-02	45	225	325						●	
ZD05-46.0-XP40-SP14-02	46	230	330						●	
ZD05-47.0-XP40-SP14-02	47	235	335						●	
ZD05-48.0-XP40-SP14-02	48	240	340						●	
ZD05-49.0-XP40-SP14-02	49	245	345						●	
ZD05-50.0-XP40-SP14-02	50	250	350						●	
ZD05-51.0-XP40-SP14-02	51	255	355						●	
ZD05-52.0-XP40-SP09-04	52	260	360						●	
ZD05-53.0-XP40-SP09-04	53	265	365			●				
ZD05-54.0-XP40-SP09-04	54	270	370			●				
ZD05-55.0-XP40-SP09-04	55	275	375			●				
ZD05-56.0-XP40-SP09-04	56	280	380			●				
ZD05-57.0-XP40-SP09-04	57	285	385			●				
ZD05-58.0-XP40-SP09-04	58	290	390			●				
ZD05-59.0-XP40-SP09-04	59	295	395			●				
ZD05-60.0-XP40-SP09-04	60	300	400			●				
							SP□X090408	ST3508	T15	●
										●
								●		
								●		
								●		
								●		
								●		
								●		
								●		
								●		
								●		



Size	Dimension (mm)			
	d	t	r	D1
05	5.00	2.38	0.4	2.25
06	6.00	2.38	0.4	2.61
07	7.94	3.97	0.8	2.85
09	9.80	4.30	0.8	4.05
11	11.50	4.80	0.8	4.45
14	14.30	5.20	1.2	5.75

Insert	Designation	Material				Stock	
		TI620		TZ650	TM450		TN200
		P (HRC20-30)	K	P (HRC30-40)	P (HRC≤20)		M
	SPMX050204	●		●	●		●
	SPMX060204	●		●	●		●
	SPMX07T308	●		●	●		●
	SPMX090408	●		●	●		●
	SPMX110408	●		●	●		●
	SPMX140512	●		●	●		●
	SPGX050204					●	●
	SPGX060204					●	●
	SPGX07T308					●	●
	SPGX090408					●	●
	SPGX110408					●	●
	SPGX140512					●	●

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

Chamfer Cutter CDR 45°

Non-standard Tools

Cutting Conditions

Unit (mm)

ISO	Material	Condition	First Choice	Hardness		Cutting speed	Feed (mm/rev) vs. drill diameter Drill length 2,3,4xD					
				HB	Vc(m/min)		SP..05	SP..06	SP..07	SP..09	SP..11	SP..14
P	Non-alloy steel, cast steel,	<0.25%C	Annealed	TM450	125	200-280	0.04-0.06	0.04-0.06	0.04-0.08	0.04-0.08	0.06-0.10	0.06-0.12
		>=0.25%C	Annealed	TI620	190	120-190	0.05-0.08	0.06-0.10	0.06-0.12	0.07-0.13	0.08-0.15	0.08-0.16
	free cutting steel	<0.55%C	Quenched and tempered	TZ650	250	110-180	0.06-0.12	0.08-0.15	0.10-0.18	0.12-0.22	0.12-0.24	0.13-0.25
		>=0.55%C	Annealed		220	110-180	0.06-0.12	0.08-0.15	0.10-0.18	0.12-0.22	0.12-0.24	0.13-0.25
	Low alloy steel and cast steel (Less than 5% of alloying elements)	0.55-0.80%	Quenched and tempered	TZ650	300	110-180	0.06-0.12	0.08-0.15	0.10-0.18	0.12-0.22	0.12-0.24	0.13-0.25
			Annealed		200	120-190	0.06-0.12	0.08-0.14	0.10-0.18	0.12-0.20	0.12-0.20	0.13-0.20
		Quenched and tempered	275		120-160	0.06-0.15	0.06-0.15	0.08-0.18	0.08-0.18	0.08-0.18	0.08-0.18	
			300		120-160	0.06-0.15	0.06-0.15	0.08-0.18	0.08-0.18	0.08-0.18	0.08-0.18	
		"High alloy steel, cast steel and tool steel"	Annealed		200	120-180	0.06-0.10	0.06-0.10	0.08-0.12	0.08-0.14	0.08-0.14	0.08-0.14
			Quenched and tempered		325	120-180	0.06-0.10	0.08-0.12	0.10-0.15	0.12-0.15	0.12-0.18	0.13-0.18
M	"Stainless steel and cast steel"	Ferritic / martensitic	TM450	200	110-230	0.05-0.10	0.06-0.12	0.08-0.15	0.09-0.16	0.10-0.17	0.11-0.18	
		Martensitic		240	110-230	0.05-0.10	0.06-0.12	0.08-0.15	0.09-0.16	0.10-0.17	0.11-0.18	
		Austenitic		180	110-230	0.05-0.10	0.06-0.12	0.08-0.15	0.09-0.16	0.10-0.17	0.11-0.18	
K	Grey cast iron	-	TI620	250	120-200	0.09-0.3	0.09-0.33	0.1-0.36	0.1-0.37	0.01-0.38	0.12-0.48	
N	Aluminium Alloy	-	TN200	-	200-320	0.06-0.17	0.06-0.17	0.06-0.18	0.07-0.20	0.07-0.20	0.08-0.22	
	Copper Alloy	-		-	200-320	0.06-0.17	0.06-0.17	0.06-0.18	0.07-0.20	0.07-0.20	0.08-0.22	

ISO	Material	Condition	First Choice	Hardness		Cutting speed	Feed (mm/rev) vs. drill diameter Drill length 5xD					
				HB	Vc(m/min)		SP..05	SP..06	SP..07	SP..09	SP..11	SP..14
P	Non-alloy steel, cast steel,	<0.25%C	Annealed	TM450	125	200-280	0.04-0.05	0.04-0.05	0.04-0.06	0.04-0.07	0.06-0.08	0.06-0.10
		>=0.25%C	Annealed	TI620	190	120-190	0.06-0.08	0.06-0.08	0.06-0.10	0.07-0.12	0.08-0.13	0.08-0.14
	free cutting steel	<0.55%C	Quenched and tempered	TZ650	250	110-180	0.06-0.10	0.08-0.13	0.10-0.16	0.12-0.20	0.12-0.22	0.13-0.23
		>=0.55%C	Annealed		220	110-180	0.06-0.10	0.08-0.13	0.10-0.16	0.12-0.20	0.12-0.22	0.13-0.23
	Low alloy steel and cast steel (Less than 5% of alloying elements)	0.55-0.80%	Quenched and tempered	TZ650	300	110-180	0.06-0.10	0.08-0.13	0.10-0.16	0.12-0.20	0.12-0.22	0.13-0.23
			Annealed		200	120-190	0.06-0.10	0.08-0.12	0.10-0.16	0.12-0.18	0.12-0.18	0.13-0.18
		Quenched and tempered	275		120-160	0.06-0.12	0.06-0.13	0.08-0.16	0.08-0.16	0.08-0.17	0.08-0.17	
			300		120-160	0.06-0.12	0.06-0.13	0.08-0.16	0.08-0.16	0.08-0.17	0.08-0.17	
		"High alloy steel, cast steel and tool steel"	Annealed		200	120-180	0.06-0.08	0.06-0.08	0.08-0.10	0.08-0.12	0.08-0.12	0.08-0.12
			Quenched and tempered		325	120-180	0.08-0.09	0.08-0.10	0.10-0.13	0.12-0.13	0.12-0.15	0.12-0.16
M	"Stainless steel and cast steel"	Ferritic / martensitic	TM450	200	110-230	0.05-0.09	0.06-0.10	0.08-0.13	0.09-0.15	0.10-0.15	0.10-0.17	
		Martensitic		240	110-230	0.05-0.09	0.06-0.10	0.08-0.13	0.09-0.15	0.10-0.15	0.10-0.17	
		Austenitic		180	110-230	0.05-0.09	0.06-0.10	0.08-0.13	0.09-0.15	0.10-0.15	0.10-0.17	
K	Grey cast iron	-	TI620	250	120-200	0.09-0.3	0.09-0.33	0.1-0.36	0.1-0.37	0.01-0.38	0.12-0.48	
N	Aluminium Alloy	-	TN200	-	200-320	0.05-0.15	0.05-0.15	0.06-0.16	0.06-0.16	0.06-0.20	0.08-0.18	
	Copper Alloy	-		-	180-280	0.05-0.15	0.05-0.15	0.06-0.16	0.06-0.16	0.07-0.20	0.08-0.18	

Cutting Conditions

Workingpiece Type		Pump Body	Sealing Case
Drill		ZD02-20.0-XP25-SP06-02	ZD03-18.0-XP25-SP06-02
Insert		SPMX060204	SPMX060204
Grade		TM450	TI 620
Work Material		SUS304	S45C
Cutting Conditions	Cutting Speed: Vc(m/min)	100	120
	Feed: f(mm/rev)	0.075	0.1
	Feed Rate: Vf(mm/min)	120	212
	Drilling depth: H(mm)	30	40/20
	Cooling Form:	Wet	Wet
	Machine:	Vertical M/C	Vertical M/C
Result			

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

Cutting Conditions

Workingpiece Type		Pipe Joint	Case
Drill		ZD02-15.0-XP25-SP05-02	ZD02-13.0-XP25-SP05-02
Insert		SPMX050204	SPMX050204
Grade		TM450	TZ650
Work Material		SUS316	42CrMo4(HRC30)
Cutting Conditions	Cutting Speed: Vc(m/min)	120	150
	Feed: f(mm/rev)	0.1	0.1
	Feed Rate: Vf(mm/min)	255	368
	Drilling depth: H(mm)	20	15
	Cooling Form	Wet	Wet
	Machine	NC lathe	M/C
Result			

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

THCD SERIES

- ◇ Precise, reliable and durable locking structure
- ◇ Different tips for processing various materials
- ◇ Excellent self-centering and chip breaking ability
- ◇ Customized drill is available

Drill Head

D12.5~D40mm

Tolerance -0.02/-0.03

Drill L/D

1D、3D、5D、7D、8D、10D、12D

Tool diameter	Hole diameter tolerance*
Ø12.5-Ø30	+0.06 / 0
Ø30-Ø40	+0.07 / 0

*Just for reference

★ When the drilling depth $L/D \geq 7$, it is recommended to use 3D THCD drill to process the 1.5D depth pilot hole.

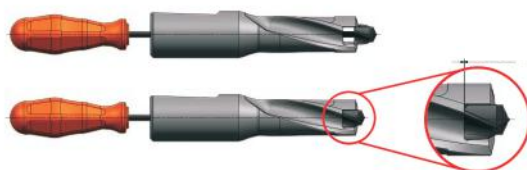
Mounting Instruction

D(mm)	X_F (mm)
12,50-32,00	0
32,01-40,00	2

Start to pull THCD drill head into the pocket seat by turning the wrench clockwise until there is full contact with the bottom of the pocket seat.



Set the screw to distance X_F



NO VISUAL GAP

Application Data • Coolant

Required minimum coolant quantity in l/min. relative to coolant pressure(P)and L x D ratio.

Drill Dia.(D) in mm	8 bar for 1-3xD	12 bar for 5xD	20 bar for 7-8xD	30 bar for 10xD	50 bar for >10xD
16.00	8	10	13	16	21
20.00	12	14	18	23	29
25.00	15	18	23	29	37
30.00	20	25	32	39	51
35.00	27	33	43	52	67
40.00	27	33	43	52	67



Carbide Drills

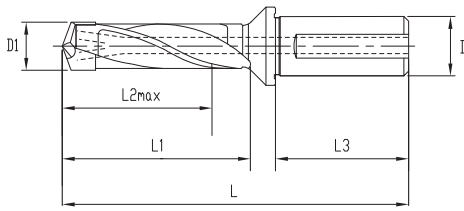
U Drills

Head Exchangable Drills

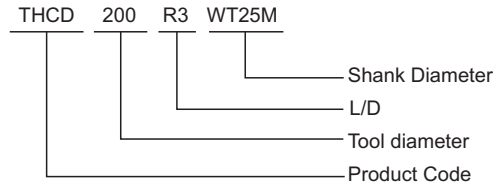
Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

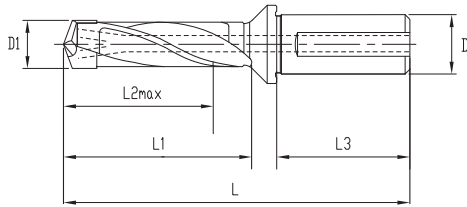


Holder model No. description :



Unit (mm)

Model No.	L	L1	L2max	L3	D	D1	D1max
THCD160R1WT20M	100	36	16	50	20	16.00	16.99
THCD170R1WT20M	102	39	17	50	20	17.00	18.00
THCD180R1WT20M	104	41	18	50	20	18.00	18.00
THCD181R1WT25M	115	41	18	56	25	18.01	18.99
THCD190R1WT25M	116	43	19	56	25	19.00	19.99
THCD200R1WT25M	118	46	20	56	25	20.00	20.99
THCD210R1WT25M	119	48	21	56	25	21.00	22.00
THCD220R1WT25M	121	50	22	56	25	22.00	22.00
THCD221R1WT25M	121	50	22	56	25	22.01	22.99
THCD230R1WT25M	123	52	23	56	25	23.00	24.00
THCD240R1WT25M	124	55	24	56	25	24.00	24.00
THCD241R1WT32M	134	55	24	60	32	24.01	24.99
THCD250R1WT32M	136	57	25	60	32	25.00	26.00
THCD260R1WT32M	137	59	26	60	32	26.00	26.00
THCD261R1WT32M	137	60	26	60	32	26.01	26.99
THCD270R1WT32M	139	62	27	60	32	27.00	28.00
THCD280R1WT32M	140	64	28	60	32	28.00	28.00
THCD281R1WT32M	141	64	28	60	32	28.01	28.99
THCD290R1WT32M	142	66	29	60	32	29.00	30.00
THCD300R1WT32M	144	69	30	60	32	30.00	30.00
THCD301R1WT32M	144	69	30	60	32	30.01	30.99
THCD310R1WT32M	145	71	31	60	32	31.00	32.00
THCD320R1WT32M	147	73	32	60	32	32.00	32.00
THCD321R1WT40M	165	73	32	70	40	32.01	32.99
THCD330R1WT40M	166	75	33	70	40	33.00	33.99
THCD340R1WT40M	168	78	34	70	40	34.00	34.99
THCD350R1WT40M	169	80	35	70	40	35.00	36.00
THCD360R1WT40M	171	82	36	70	40	36.00	36.00
THCD361R1WT40M	171	83	36	70	40	36.01	36.99
THCD370R1WT40M	172	85	37	70	40	37.00	37.99
THCD380R1WT40M	174	87	38	70	40	38.00	38.99
THCD390R1WT40M	176	89	39	70	40	39.00	39.99
THCD400R1WT40M	178	91	40	70	40	40.00	40.00



Unit (mm)

Model No.	L	L1	L2max	L3	D	D1	D1max
THCD125R3WT16M	110	53	38	45	16	12.50	12.99
THCD130R3WT16M	113	56	39	45	16	13.00	13.50
THCD135R3WT16M	115	58	40	45	16	13.50	13.50
THCD136R3WT16M	115	58	41	45	16	13.51	13.99
THCD140R3WT16M	117	60	42	45	16	14.00	14.50
THCD145R3WT16M	119	62	43	45	16	14.50	14.50
THCD146R3WT20M	125	62	44	50	20	14.51	14.99
THCD150R3WT20M	127	64	45	50	20	15.00	15.50
THCD155R3WT20M	129	66	46	50	20	15.50	15.87
THCD160R3WT20M	132	68	48	50	20	15.88	16.99
THCD170R3WT20M	136	73	51	50	20	17.00	18.00
THCD180R3WT20M	140	77	54	50	20	18.00	18.00
THCD181R3WT25M	151	77	54	56	25	18.01	18.99
THCD190R3WT25M	154	81	57	56	25	19.00	19.99
THCD200R3WT25M	158	86	60	56	25	20.00	20.99
THCD210R3WT25M	161	90	63	56	25	21.00	22.00
THCD220R3WT25M	165	94	66	56	25	22.00	22.00
THCD221R3WT25M	165	95	66	56	25	22.01	22.99
THCD230R3WT25M	169	98	69	56	25	23.00	24.00
THCD240R3WT25M	172	103	72	56	25	24.00	24.00
THCD241R3WT32M	182	103	72	60	32	24.01	24.99
THCD250R3WT32M	186	107	75	60	32	25.00	26.00
THCD260R3WT32M	189	111	78	60	32	26.00	26.00
THCD261R3WT32M	190	112	78	60	32	26.01	26.99
THCD270R3WT32M	193	116	81	60	32	27.00	28.00
THCD280R3WT32M	196	120	84	60	32	28.00	28.00
THCD281R3WT32M	197	120	84	60	32	28.01	28.99
THCD290R3WT32M	200	124	87	60	32	29.00	30.00
THCD300R3WT32M	204	129	90	60	32	30.00	30.00
THCD301R3WT32M	204	129	90	60	32	30.01	30.99
THCD310R3WT32M	207	133	93	60	32	31.00	32.00
THCD320R3WT32M	211	137	96	60	32	32.00	32.00
THCD321R3WT40M	229	138	96	70	40	32.01	32.99
THCD330R3WT40M	232	141	99	70	40	33.00	33.99
THCD340R3WT40M	236	146	102	70	40	34.00	34.99
THCD350R3WT40M	239	150	105	70	40	35.00	36.00
THCD360R3WT40M	243	154	108	70	40	36.00	36.00
THCD361R3WT40M	243	155	108	70	40	36.01	36.99
THCD370R3WT40M	246	159	111	70	40	37.00	37.99
THCD380R3WT40M	250	163	114	70	40	38.00	38.99
THCD390R3WT40M	254	167	117	70	40	39.00	39.99
THCD400R3WT40M	258	171	120	70	40	40.00	40.00

Carbide Drills

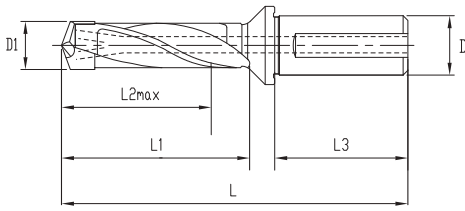
U Drills

Head Exchangable Drills

Deep Hole Drills

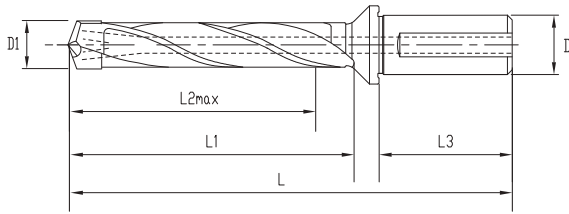
CDR 45° Chamfer Cutter

Non-standard Tools



Unit (mm)

Model No.	L	L1	L2max	L3	D	D1	D1max
THCD125R5WT16M	135	78	62	45	16	12.50	12.99
THCD130R5WT16M	139	82	65	45	16	13.00	13.50
THCD135R5WT16M	142	85	67	45	16	13.50	13.50
THCD136R5WT16M	143	86	68	45	16	13.51	13.99
THCD140R5WT16M	145	88	70	45	16	14.00	14.50
THCD145R5WT16M	148	91	72	45	16	14.50	14.50
THCD146R5WT20M	155	92	73	50	20	14.51	14.99
THCD150R5WT20M	157	94	75	50	20	15.00	15.50
THCD155R5WT20M	160	97	77	50	20	15.50	15.87
THCD160R5WT20M	164	100	80	50	20	15.88	16.99
THCD170R5WT20M	170	107	85	50	20	17.00	18.00
THCD180R5WT20M	176	113	90	50	20	18.00	18.00
THCD181R5WT25M	187	114	90	56	25	18.01	18.99
THCD190R5WT25M	192	119	95	56	25	19.00	19.99
THCD200R5WT25M	198	126	100	56	25	20.00	20.99
THCD210R5WT25M	203	132	105	56	25	21.00	22.00
THCD220R5WT25M	209	138	110	56	25	22.00	22.00
THCD221R5WT25M	209	139	110	56	25	22.01	22.99
THCD230R5WT25M	215	144	115	56	25	23.00	24.00
THCD240R5WT25M	220	151	120	56	25	24.00	24.00
THCD241R5WT32M	231	151	120	60	32	24.01	24.99
THCD250R5WT32M	236	157	125	60	32	25.00	26.00
THCD260R5WT32M	241	163	130	60	32	26.00	26.00
THCD261R5WT32M	242	164	130	60	32	26.01	26.99
THCD270R5WT32M	247	170	135	60	32	27.00	28.00
THCD280R5WT32M	252	176	140	60	32	28.00	28.00
THCD281R5WT32M	253	177	140	60	32	28.01	28.99
THCD290R5WT32M	258	182	145	60	32	29.00	30.00
THCD300R5WT32M	264	189	150	60	32	30.00	30.00
THCD301R5WT32M	264	189	150	60	32	30.01	30.99
THCD310R5WT32M	269	195	155	60	32	31.00	32.00
THCD320R5WT32M	275	201	160	60	32	32.00	32.00
THCD321R5WT40M	293	202	160	70	40	32.01	32.99
THCD330R5WT40M	298	207	165	70	40	33.00	33.99
THCD340R5WT40M	304	214	170	70	40	34.00	34.99
THCD350R5WT40M	309	220	175	70	40	35.00	36.00
THCD360R5WT40M	315	226	180	70	40	36.00	36.00
THCD361R5WT40M	315	227	180	70	40	36.01	36.99
THCD370R5WT40M	320	233	185	70	40	37.00	37.99
THCD380R5WT40M	326	239	190	70	40	38.00	38.99
THCD390R5WT40M	332	245	195	70	40	39.00	39.99
THCD400R5WT40M	338	251	200	70	40	40.00	40.00



Unit (mm)

Model No.	L	L1	L2max	L3	D	D1	D1max
THCD125R7WT16M	160	103	87	45	16	12.50	12.99
THCD130R7WT16M	165	108	91	45	16	13.00	13.50
THCD135R7WT16M	169	112	94	45	16	13.50	13.50
THCD136R7WT16M	170	113	95	45	16	13.51	13.99
THCD140R7WT16M	173	116	98	45	16	14.00	14.50
THCD145R7WT16M	177	120	101	45	16	14.50	14.50
THCD146R7WT20M	184	121	102	50	20	14.51	14.99
THCD150R7WT20M	187	124	105	50	20	15.00	15.50
THCD155R7WT20M	191	128	108	50	20	15.50	15.87
THCD160R7WT20M	196	132	112	50	20	15.88	16.99
THCD170R7WT20M	204	141	119	50	20	17.00	18.00
THCD180R7WT20M	212	149	126	50	20	18.00	18.00
THCD181R7WT25M	223	150	126	56	25	18.01	18.99
THCD190R7WT25M	230	157	133	56	25	19.00	19.99
THCD200R7WT25M	238	166	140	56	25	20.00	20.99
THCD210R7WT25M	245	174	147	56	25	21.00	22.00
THCD220R7WT25M	253	182	154	56	25	22.00	22.00
THCD221R7WT25M	254	183	154	56	25	22.01	22.99
THCD230R7WT25M	261	190	161	56	25	23.00	24.00
THCD240R7WT25M	268	199	168	56	25	24.00	24.00
THCD241R7WT32M	279	200	168	60	32	24.01	24.99
THCD250R7WT32M	286	207	175	60	32	25.00	26.00
THCD260R7WT32M	293	215	182	60	32	26.00	26.00
THCD261R7WT32M	294	216	182	60	32	26.01	26.99
THCD270R7WT32M	301	224	189	60	32	27.00	28.00
THCD280R7WT32M	308	232	196	60	32	28.00	28.00
THCD281R7WT32M	301	224	196	60	32	28.01	28.99
THCD290R7WT32M	307	232	203	60	32	29.00	30.00
THCD300R7WT32M	315	240	210	60	32	30.00	30.00
THCD301R7WT32M	315	240	210	60	32	30.01	30.99
THCD310R7WT32M	322	248	217	60	32	31.00	32.00
THCD320R7WT32M	329	256	224	60	32	32.00	32.00
THCD321R7WT40M	348	256	224	70	40	32.01	32.99
THCD330R7WT40M	354	264	231	70	40	33.00	33.99
THCD340R7WT40M	362	272	238	70	40	34.00	34.99
THCD350R7WT40M	369	280	245	70	40	35.00	36.00
THCD360R7WT40M	376	288	252	70	40	36.00	36.00
THCD361R7WT40M	377	288	252	70	40	36.01	36.99
THCD370R7WT40M	383	296	259	70	40	37.00	37.99
THCD380R7WT40M	391	304	266	70	40	38.00	38.99
THCD390R7WT40M	398	312	273	70	40	39.00	39.99
THCD400R7WT40M	406	320	280	70	40	40.00	40.00

Carbide Drills

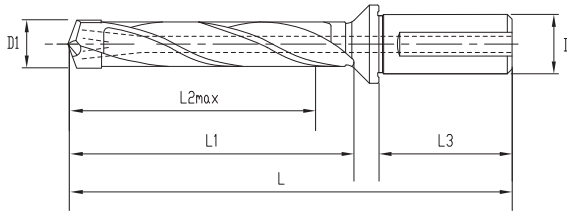
U Drills

Head Exchangable Drills

Deep Hole Drills

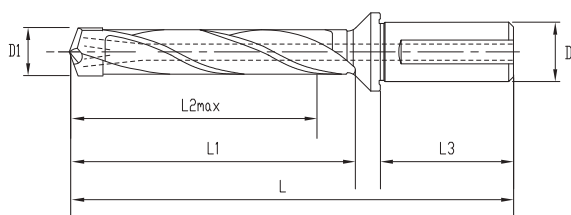
CDR 45° Chamfer Cutter

Non-standard Tools



Unit (mm)

Model No.	L	L1	L2max	L3	D	D1	D1max
THCD125R8WT16M	173	116	100	45	16	12.50	12.99
THCD130R8WT16M	178	121	104	45	16	13.00	13.50
THCD135R8WT16M	182	125	108	45	16	13.50	13.50
THCD136R8WT16M	183	126	108	45	16	13.51	13.99
THCD140R8WT16M	187	130	112	45	16	14.00	14.50
THCD145R8WT16M	192	135	116	45	16	14.50	14.50
THCD146R8WT20M	198	135	116	50	20	14.51	14.99
THCD150R8WT20M	202	139	120	50	20	15.00	15.50
THCD155R8WT20M	207	144	124	50	20	15.50	15.87
THCD160R8WT20M	212	148	128	50	20	15.88	16.99
THCD170R8WT20M	221	158	136	50	20	17.00	18.00
THCD180R8WT20M	230	167	144	50	20	18.00	18.00
THCD181R8WT25M	241	168	144	56	25	18.01	18.99
THCD190R8WT25M	249	176	152	56	25	19.00	19.99
THCD200R8WT25M	258	186	160	56	25	20.00	20.99
THCD210R8WT25M	266	195	168	56	25	21.00	22.00
THCD220R8WT25M	275	204	176	56	25	22.00	22.00
THCD221R8WT25M	276	205	176	56	25	22.01	22.99
THCD230R8WT25M	284	213	184	56	25	23.00	24.00
THCD240R8WT25M	292	223	192	56	25	24.00	24.00
THCD241R8WT32M	303	224	192	60	32	24.01	24.99
THCD250R8WT32M	311	232	200	60	32	25.00	26.00
THCD260R8WT32M	319	241	208	60	32	26.00	26.00
THCD261R8WT32M	320	242	208	60	32	26.01	26.99
THCD270R8WT32M	328	251	216	60	32	27.00	28.00
THCD280R8WT32M	336	260	224	60	32	28.00	28.00
THCD281R8WT32M	329	252	224	60	32	28.01	28.99
THCD290R8WT32M	336	261	232	60	32	29.00	30.00
THCD300R8WT32M	345	270	240	60	32	30.00	30.00
THCD301R8WT32M	345	270	240	60	32	30.01	30.99
THCD310R8WT32M	353	279	248	60	32	31.00	32.00
THCD320R8WT32M	361	288	256	60	32	32.00	32.00
THCD321R8WT40M	380	288	256	70	40	32.01	32.99
THCD330R8WT40M	387	297	264	70	40	33.00	33.99
THCD340R8WT40M	396	306	272	70	40	34.00	34.99
THCD350R8WT40M	404	315	280	70	40	35.00	36.00
THCD360R8WT40M	412	324	288	70	40	36.00	36.00
THCD361R8WT40M	413	324	288	70	40	36.01	36.99
THCD370R8WT40M	420	333	296	70	40	37.00	37.99
THCD380R8WT40M	429	342	304	70	40	38.00	38.99
THCD390R8WT40M	437	351	312	70	40	39.00	39.99
THCD400R8WT40M	445	360	320	70	40	40.00	40.00



Unit (mm)

Model No.	L	L1	L2max	L3	D	D1	D1max
THCD125R10WT16M	197	140	125	45	16	12.50	12.99
THCD130R10WT16M	203	146	130	45	16	13.00	13.50
THCD135R10WT16M	209	152	135	45	16	13.50	13.50
THCD136R10WT16M	210	153	136	45	16	13.51	13.99
THCD140R10WT16M	215	158	140	45	16	14.00	14.50
THCD145R10WT16M	220	163	145	45	16	14.50	14.50
THCD146R10WT20M	227	164	146	50	20	14.51	14.99
THCD150R10WT20M	232	169	150	50	20	15.00	15.50
THCD155R10WT20M	238	175	155	50	20	15.50	15.87
THCD160R10WT20M	244	180	160	50	20	15.88	16.99
THCD170R10WT20M	255	192	170	50	20	17.00	18.00
THCD180R10WT20M	266	203	180	50	20	18.00	18.00
THCD181R10WT25M	278	204	180	56	25	18.01	18.99
THCD190R10WT25M	287	214	190	56	25	19.00	19.99
THCD200R10WT25M	298	226	200	56	25	20.00	20.99
THCD210R10WT25M	308	237	210	56	25	21.00	22.00
THCD220R10WT25M	319	248	220	56	25	22.00	22.00
THCD221R10WT25M	320	249	220	56	25	22.01	22.99
THCD230R10WT25M	330	259	230	56	25	23.00	24.00
THCD240R10WT25M	340	271	240	56	25	24.00	24.00
THCD241R10WT32M	351	272	240	60	32	24.01	24.99
THCD250R10WT32M	361	282	250	60	32	25.00	26.00
THCD260R10WT32M	371	293	260	60	32	26.00	26.00
THCD261R10WT32M	372	294	260	60	32	26.01	26.99
THCD270R10WT32M	382	305	270	60	32	27.00	28.00
THCD280R10WT32M	392	316	280	60	32	28.00	28.00
THCD281R10WT32M	385	309	280	60	32	28.01	28.99
THCD290R10WT32M	394	319	290	60	32	29.00	30.00
THCD300R10WT32M	405	330	300	60	32	30.00	30.00
THCD301R10WT32M	406	331	300	60	32	30.01	30.99
THCD310R10WT32M	415	341	310	60	32	31.00	32.00
THCD320R10WT40M	435	352	320	60	40	32.00	32.00
THCD321R10WT40M	444	353	320	70	40	32.01	32.99
THCD330R10WT40M	453	363	330	70	40	33.00	33.99
THCD340R10WT40M	464	374	340	70	40	34.00	34.99
THCD350R10WT40M	474	385	350	70	40	35.00	36.00
THCD360R10WT40M	484	396	360	70	40	36.00	36.00
THCD361R10WT40M	485	397	360	70	40	36.01	36.99
THCD370R10WT40M	494	407	370	70	40	37.00	37.99
THCD380R10WT40M	505	418	380	70	40	38.00	38.99
THCD390R10WT40M	515	429	390	70	40	39.00	39.99
THCD400R10WT40M	525	440	400	70	40	40.00	40.00

Carbide Drills

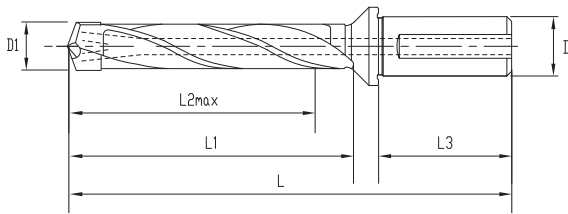
U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools



Unit (mm)

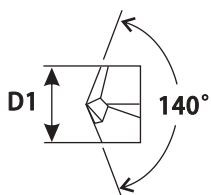
Model No.	L	L1	L2max	L3	D	D1	D1max
THCD125R12WT16M	223	166	150	45	16	12.50	12.99
THCD130R12WT16M	229	172	156	45	16	13.00	13.50
THCD135R12WT16M	236	179	162	45	16	13.50	13.50
THCD136R12WT16M	237	180	163	45	16	13.51	13.99
THCD140R12WT16M	243	186	168	45	16	14.00	14.50
THCD145R12WT16M	249	192	174	45	16	14.50	14.50
THCD146R12WT20M	257	194	175	50	20	14.51	14.99
THCD150R12WT20M	262	199	180	50	20	15.00	15.50
THCD155R12WT20M	269	206	186	50	20	15.50	15.87
THCD160R12WT20M	276	212	192	50	20	15.88	16.99
THCD170R12WT20M	289	226	204	50	20	17.00	18.00
THCD180R12WT20M	302	239	216	50	20	18.00	18.00
THCD181R12WT25M	314	240	216	56	25	18.01	18.99
THCD190R12WT25M	325	252	228	56	25	19.00	19.99
THCD200R12WT25M	338	266	240	56	25	20.00	20.99
THCD210R12WT25M	350	279	252	56	25	21.00	22.00
THCD220R12WT25M	356	286	264	56	25	22.00	22.00
THCD221R12WT25M	364	293	264	56	25	22.01	22.99
THCD230R12WT25M	376	305	276	56	25	23.00	24.00
THCD240R12WT25M	382	319	288	56	25	24.00	24.00
THCD241R12WT32M	399	320	288	60	32	24.01	24.99
THCD250R12WT32M	411	332	300	60	32	25.00	26.00
THCD260R12WT32M	423	345	312	60	32	26.00	26.00
THCD261R12WT32M	424	347	312	60	32	26.01	26.99
THCD270R12WT32M	436	359	324	60	32	27.00	28.00
THCD280R12WT32M	448	372	336	60	32	28.00	28.00
THCD281R12WT32M	441	365	336	60	32	28.01	28.99
THCD290R12WT32M	453	377	348	60	32	29.00	30.00
THCD300R12WT32M	465	390	360	60	32	30.00	30.00



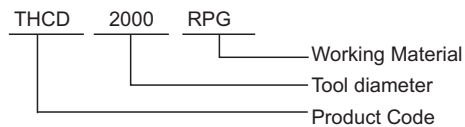
RPG



RSG



Drill Head model No. description:



RPG: Steel / Cast Iron

RSG: Stainless Steel

Unit (mm)

D1	Model No.		D1	Model No.	
12.50	THCD1250RPG	THCD1250RSG	12.60	THCD1260RPG	THCD1260RSG
12.70	THCD1270RPG	THCD1270RSG	12.80	THCD1280RPG	THCD1280RSG
12.90	THCD1290RPG	THCD1290RSG	13.00	THCD1300RPG	THCD1300RSG
13.10	THCD1310RPG	THCD1310RSG	13.20	THCD1320RPG	THCD1320RSG
13.30	THCD1330RPG	THCD1330RSG	13.40	THCD1340RPG	THCD1340RSG
13.50	THCD1350RPG	THCD1350RSG	13.60	THCD1360RPG	THCD1360RSG
13.70	THCD1370RPG	THCD1370RSG	13.80	THCD1380RPG	THCD1380RSG
13.90	THCD1390RPG	THCD1390RSG	14.00	THCD1400RPG	THCD1400RSG
14.10	THCD1410RPG	THCD1410RSG	14.20	THCD1420RPG	THCD1420RSG
14.30	THCD1430RPG	THCD1430RSG	14.40	THCD1440RPG	THCD1440RSG
14.50	THCD1450RPG	THCD1450RSG	14.60	THCD1460RPG	THCD1460RSG
14.70	THCD1470RPG	THCD1470RSG	14.80	THCD1480RPG	THCD1480RSG
14.90	THCD1490RPG	THCD1490RSG	15.00	THCD1500RPG	THCD1500RSG
15.10	THCD1510RPG	THCD1510RSG	15.20	THCD1520RPG	THCD1520RSG
15.30	THCD1530RPG	THCD1530RSG	15.40	THCD1540RPG	THCD1540RSG
15.50	THCD1550RPG	THCD1550RSG	15.60	THCD1560RPG	THCD1560RSG
15.70	THCD1570RPG	THCD1570RSG	15.80	THCD1580RPG	THCD1580RSG
15.90	THCD1590RPG	THCD1590RSG	16.00	THCD1600RPG	THCD1600RSG
16.20	THCD1620RPG	THCD1620RSG	16.25	THCD1625RPG	THCD1625RSG
16.27	THCD1627RPG	THCD1627RSG	16.30	THCD1630RPG	THCD1630RSG
16.33	THCD1633RPG	THCD1633RSG	16.35	THCD1635RPG	THCD1635RSG
16.40	THCD1640RPG	THCD1640RSG	16.50	THCD1650RPG	THCD1650RSG
16.60	THCD1660RPG	THCD1660RSG	16.80	THCD1680RPG	THCD1680RSG
16.90	THCD1690RPG	THCD1690RSG	17.00	THCD1700RPG	THCD1700RSG
17.20	THCD1720RPG	THCD1720RSG	17.30	THCD1730RPG	THCD1730RSG
17.50	THCD1750RPG	THCD1750RSG	17.60	THCD1760RPG	THCD1760RSG
17.70	THCD1770RPG	THCD1770RSG	17.80	THCD1780RPG	THCD1780RSG
17.90	THCD1790RPG	THCD1790RSG	18.00	THCD1800RPG	THCD1800RSG
18.20	THCD1820RPG	THCD1820RSG	18.30	THCD1830RPG	THCD1830RSG
18.50	THCD1850RPG	THCD1850RSG	18.70	THCD1870RPG	THCD1870RSG
18.90	THCD1890RPG	THCD1890RSG	19.00	THCD1900RPG	THCD1900RSG
19.20	THCD1920RPG	THCD1920RSG	19.25	THCD1925RPG	THCD1925RSG
19.27	THCD1927RPG	THCD1927RSG	19.30	THCD1930RPG	THCD1930RSG

Carbide Drills

U Drills

Head Exchangeable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

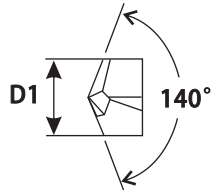
Carbide Drills



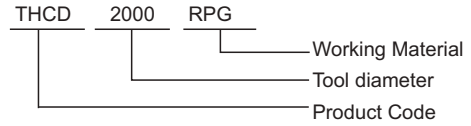
RPG



RSG



Drill Head model No. description:



RPG: Steel / Cast Iron

RSG: Stainless Steel

Unit (mm)

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

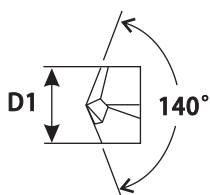
D1	Model No.		D1	Model No.	
19.33	THCD1933RPG	THCD1933RSG	19.35	THCD1935RPG	THCD1935RSG
19.40	THCD1940RPG	THCD1940RSG	19.50	THCD1950RPG	THCD1950RSG
19.60	THCD1960RPG	THCD1960RSG	19.80	THCD1980RPG	THCD1980RSG
19.90	THCD1990RPG	THCD1990RSG	20.00	THCD2000RPG	THCD2000RSG
20.20	THCD2020RPG	THCD2020RSG	20.30	THCD2030RPG	THCD2030RSG
20.50	THCD2050RPG	THCD2050RSG	20.70	THCD2070RPG	THCD2070RSG
20.90	THCD2090RPG	THCD2090RSG	21.00	THCD2100RPG	THCD2100RSG
21.20	THCD2120RPG	THCD2120RSG	21.30	THCD2130RPG	THCD2130RSG
21.50	THCD2150RPG	THCD2150RSG	21.70	THCD2170RPG	THCD2170RSG
21.90	THCD2190RPG	THCD2190RSG	22.00	THCD2200RPG	THCD2200RSG
22.20	THCD2220RPG	THCD2220RSG	22.30	THCD2230RPG	THCD2230RSG
22.50	THCD2250RPG	THCD2250RSG	22.70	THCD2270RPG	THCD2270RSG
22.90	THCD2290RPG	THCD2290RSG	23.00	THCD2300RPG	THCD2300RSG
23.20	THCD2320RPG	THCD2320RSG	23.30	THCD2330RPG	THCD2330RSG
23.50	THCD2350RPG	THCD2350RSG	23.70	THCD2370RPG	THCD2370RSG
23.90	THCD2390RPG	THCD2390RSG	24.00	THCD2400RPG	THCD2400RSG
24.20	THCD2420RPG	THCD2420RSG	24.30	THCD2430RPG	THCD2430RSG
24.50	THCD2450RPG	THCD2450RSG	24.70	THCD2470RPG	THCD2470RSG
24.90	THCD2490RPG	THCD2490RSG	25.00	THCD2500RPG	THCD2500RSG
25.20	THCD2520RPG	THCD2520RSG	25.25	THCD2525RPG	THCD2525RSG
25.27	THCD2527RPG	THCD2527RSG	25.30	THCD2530RPG	THCD2530RSG
25.33	THCD2533RPG	THCD2533RSG	25.35	THCD2535RPG	THCD2535RSG
25.40	THCD2540RPG	THCD2540RSG	25.50	THCD2550RPG	THCD2550RSG
25.60	THCD2560RPG	THCD2560RSG	25.80	THCD2580RPG	THCD2580RSG
25.90	THCD2590RPG	THCD2590RSG	26.00	THCD2600RPG	THCD2600RSG
26.20	THCD2620RPG	THCD2620RSG	26.30	THCD2630RPG	THCD2630RSG
26.50	THCD2650RPG	THCD2650RSG	26.70	THCD2670RPG	THCD2670RSG
26.90	THCD2690RPG	THCD2690RSG	27.00	THCD2700RPG	THCD2700RSG
27.20	THCD2720RPG	THCD2720RSG	27.30	THCD2730RPG	THCD2730RSG
27.50	THCD2750RPG	THCD2750RSG	27.70	THCD2770RPG	THCD2770RSG
27.90	THCD2790RPG	THCD2790RSG	28.00	THCD2800RPG	THCD2800RSG
28.20	THCD2820RPG	THCD2820RSG	28.30	THCD2830RPG	THCD2830RSG
28.50	THCD2850RPG	THCD2850RSG	28.70	THCD2870RPG	THCD2870RSG



RPG



RSG



Unit (mm)

D1	Model No.		D1	Model No.	
28.90	THCD2890RPG	THCD2890RSG	29.00	THCD2900RPG	THCD2900RSG
29.20	THCD2920RPG	THCD2920RSG	29.30	THCD2930RPG	THCD2930RSG
29.50	THCD2950RPG	THCD2950RSG	29.70	THCD2970RPG	THCD2970RSG
29.90	THCD2990RPG	THCD2990RSG	30.00	THCD3000RPG	THCD3000RSG
30.20	THCD3020RPG	THCD3020RSG	30.30	THCD3030RPG	THCD3030RSG
30.50	THCD3050RPG	THCD3050RSG	30.70	THCD3070RPG	THCD3070RSG
30.90	THCD3090RPG	THCD3090RSG	31.00	THCD3100RPG	THCD3100RSG
31.20	THCD3120RPG	THCD3120RSG	31.30	THCD3130RPG	THCD3130RSG
31.50	THCD3150RPG	THCD3150RSG	31.70	THCD3170RPG	THCD3170RSG
31.90	THCD3190RPG	THCD3190RSG	32.00	THCD3200RPG	THCD3200RSG
32.20	THCD3220RPG	THCD3220RSG	32.30	THCD3230RPG	THCD3230RSG
32.50	THCD3250RPG	THCD3250RSG	32.70	THCD3270RPG	THCD3270RSG
32.90	THCD3290RPG	THCD3290RSG	33.00	THCD3300RPG	THCD3300RSG
33.20	THCD3320RPG	THCD3320RSG	33.30	THCD3330RPG	THCD3330RSG
33.50	THCD3350RPG	THCD3350RSG	33.70	THCD3370RPG	THCD3370RSG
33.90	THCD3390RPG	THCD3390RSG	34.00	THCD3400RPG	THCD3400RSG
34.20	THCD3420RPG	THCD3420RSG	34.30	THCD3430RPG	THCD3430RSG
34.50	THCD3450RPG	THCD3450RSG	34.70	THCD3470RPG	THCD3470RSG
34.90	THCD3490RPG	THCD3490RSG	35.00	THCD3500RPG	THCD3500RSG
35.20	THCD3520RPG	THCD3520RSG	35.30	THCD3530RPG	THCD3530RSG
35.50	THCD3550RPG	THCD3550RSG	35.70	THCD3570RPG	THCD3570RSG
35.90	THCD3590RPG	THCD3590RSG	36.00	THCD3600RPG	THCD3600RSG
36.20	THCD3620RPG	THCD3620RSG	36.30	THCD3630RPG	THCD3630RSG
36.50	THCD3650RPG	THCD3650RSG	36.70	THCD3670RPG	THCD3670RSG
36.90	THCD3690RPG	THCD3690RSG	37.00	THCD3700RPG	THCD3700RSG
37.20	THCD3720RPG	THCD3720RSG	37.30	THCD3730RPG	THCD3730RSG
37.50	THCD3750RPG	THCD3750RSG	37.70	THCD3770RPG	THCD3770RSG
37.90	THCD3790RPG	THCD3790RSG	38.00	THCD3800RPG	THCD3800RSG
38.20	THCD3820RPG	THCD3820RSG	38.30	THCD3830RPG	THCD3830RSG
38.50	THCD3850RPG	THCD3850RSG	38.70	THCD3870RPG	THCD3870RSG
38.90	THCD3890RPG	THCD3890RSG	39.00	THCD3900RPG	THCD3900RSG
39.20	THCD3920RPG	THCD3920RSG	39.30	THCD3930RPG	THCD3930RSG
39.50	THCD3950RPG	THCD3950RSG	39.70	THCD3970RPG	THCD3970RSG
39.90	THCD3990RPG	THCD3990RSG	40.00	THCD4000RPG	THCD4000RSG

Carbide Drills

U Drills

Head Exchangeable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

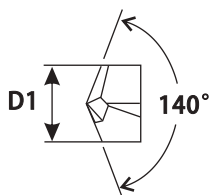
Non-standard Tools



RPG



RSG



Unit (mm)

Wrench								Screw
Diameter Range	L/D=1	L/D=3	L/D=5	L/D=7	L/D=8	L/D=10	L/D=12	Locking screw
12.50-15.87	—	THW1716	THW1716	THW1717	THW1717	THW1718	THW1718	364.016
15.88-18.00	THW1701	THW1701	THW1701	THW1702	THW1702	THW1709	THW1709	364.010
18.01-19.99	THW1701	THW1701	THW1701	THW1702	THW1702	THW1709	THW1709	
20.00-22.00	THW1703	THW1703	THW1703	THW1704	THW1704	THW1710	THW1710	364.011
22.01-24.00	THW1703	THW1703	THW1703	THW1704	THW1704	THW1710	THW1710	
24.01-26.00	THW1705	THW1705	THW1705	THW1706	THW1706	THW1711	THW1714	364.012
26.01-28.00	THW1705	THW1705	THW1705	THW1706	THW1706	THW1711	THW1714	
28.01-30.00	THW1707	THW1707	THW1707	THW1708	THW1708	THW1712	THW1715	364.013
30.01-32.00	THW1707	THW1707	THW1707	THW1708	THW1708	THW1712	THW1715	
32.01-36.00	THW1707	THW1707	THW1708	THW1712	THW1712	THW1715	—	364.015
36.01-40.00	THW1707	THW1707	THW1708	THW1712	THW1712	THW1715	—	

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

RPG (Steel and cast iron series)

Line speed (m/min)		Feed (mm/r)					
Minimum value	Maximum value	mm	16.00	20.00	25.00	32.00	40.00
75	130		0.17-0.36	0.20-0.38	0.23-0.43	0.25-0.45	0.27-0.50

Low carbon steel long chips Hardness(HB):<125

Line speed (m/min)		Feed (mm/r)					
Minimum value	Maximum value	mm	16.00	20.00	25.00	32.00	40.00
80	140		0.17-0.36	0.20-0.38	0.23-0.43	0.25-0.45	0.27-0.50

Low carbon steel short chips Hardness(HB):<220

Line speed (m/min)		Feed (mm/r)					
Minimum value	Maximum value	mm	16.00	20.00	25.00	32.00	40.00
60	90		0.17-0.30	0.20-0.32	0.23-0.37	0.25-0.40	0.27-0.42

Medium and high carbon alloy steel Hardness(HB):<330

Line speed (m/min)		Feed (mm/r)					
Minimum value	Maximum value	mm	16.00	20.00	25.00	32.00	40.00
50	85		0.14-0.30	0.17-0.32	0.20-0.37	0.22-0.40	0.23-0.42

Alloy steel and Tool steel Hardness(HB):350-450

Line speed (m/min)		Feed (mm/r)					
Minimum value	Maximum value	mm	16.00	20.00	25.00	32.00	40.00
90	175		0.21-0.42	0.25-0.48	0.31-0.59	0.37-0.70	0.43-0.81

Gray cast iron and low strength spheroidal graphite cast irons Hardness(HB):120-290

Line speed (m/min)		Feed (mm/r)					
Minimum value	Maximum value	mm	16.00	20.00	25.00	32.00	40.00
90	125		0.21-0.41	0.25-0.48	0.31-0.59	0.37-0.70	0.43-0.81

Low strength spheroidal graphite cast irons Hardness(HB):130-260

Line speed (m/min)		Feed (mm/r)					
Minimum value	Maximum value	mm	16.00	20.00	25.00	32.00	40.00
40	125		0.20-0.41	0.21-0.44	0.23-0.48	0.25-0.53	0.27-0.57

High strength spheroidal graphite cast irons Hardness(HB):180-350

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

RSG (Stainless Steel)

Carbide Drills

Line speed (m/min)		Feed (mm/r)					
Minimum value	Maximum value	mm	16.00	20.00	25.00	32.00	40.00
45	70		0.10-0.20	0.12-0.23	0.12-0.25	0.14-0.27	0.15-0.30

Austenitic stainless steel Hardness(HB):130-200

U Drills

Line speed (m/min)		Feed (mm/r)					
Minimum value	Maximum value	mm	16.00	20.00	25.00	32.00	40.00
40	60		0.08-0.15	0.10-0.20	0.12-0.22	0.14-0.25	0.15-0.26

High strength austenitic stainless steel Hardness(HB):150-230

Head Exchangable Drills

Line speed (m/min)		Feed (mm/r)					
Minimum value	Maximum value	mm	16.00	20.00	25.00	32.00	40.00
45	60		0.10-0.17	0.10-0.20	0.12-0.22	0.14-0.24	0.15-0.27

Dual phase steel Hardness(HB):135-275

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

Workpiece material:Q345R

Part name : Heat exchange plate

	THCD	Competitor
Modular exchangeable-tip drill insert	THCD2530RPG	D25.30 Similar structure
Diameter	25.30mm	25.30mm
Modular exchangeable-tip drill	THCD250R8WT32M	D25x8D
VC(Line speed)	119m/min	91m/min
rpm(Rotating speed)	1500r/min	1150r/min
F(Feed per revolution)	0.27mm/r	0.24mm/r
Vf(Feed)	405mm/min	276mm/min
Hole depth	190mm	190mm
Number of drill holes	255	187

Workpiece material: stainless steel 316L

Part name : Heat exchange plate

	THCD	Competitor
Modular exchangeable-tip drill insert	THCD1930RSG	D19.30 Similar structure
Diameter	19.30mm	19.30mm
Modular exchangeable-tip drill	THCD190R7WT25M	D19x7D
VC(Line speed)	60m/min	50m/min
rpm(Rotating speed)	1000r/min	850r/min
F(Feed per revolution)	0.14mm/r	0.11mm/r
Vf(Feed)	140mm/min	95mm/min
Hole depth	130mm	130mm
Number of drill holes	460	230

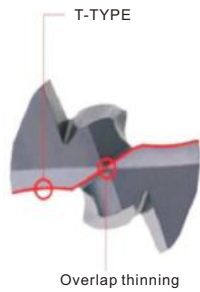
Code system of holder

DDT	C	5D — 150	20 — 75
	Insert type C: Cone type	Aspect ratio(L/D) 3D, 5D, 8D	Drill dia. 150: ϕ 15.0
			Shank dia 20: ϕ 20
			Flute length (mm)

Code system of insert

DTT	1500	C
	Drill dia. 1500: ϕ 15.00	Insert type C: Cone type

Features



Recommended cutting condition

Workpiece			Grade	vc	Depth of cut = 3D,5D		
ISO	Material	HB			Feed rate (mm/rev) per drill dia.(mm)		
				m/min	ϕ 12.00- ϕ 15.99	ϕ 16.00- ϕ 25.99	
P	Carbon steel	Low carbon steel	80-120	TD530	110(80-140)	0.15-0.30	0.20-0.35
		High carbon steel	180-280	TD530	100(70-130)	0.15-0.30	0.20-0.35
	Alloy steel	Low alloy steel	140-260	TD530	110(80-140)	0.18-0.35	0.23-0.38
		Low pre-hardened steel	200-400	TD530	75(50-100)	0.18-0.35	0.23-0.38
		High alloy steel	260-320	TD530	70(50-90)	0.18-0.30	0.20-0.35
		High pre-hardened steel	300-450	TD530	60(40-80)	0.18-0.30	0.20-0.35

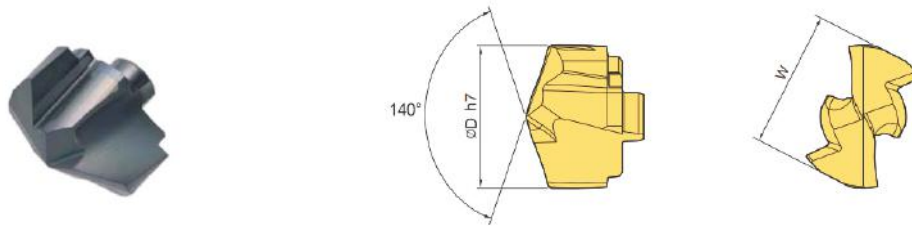
In case of 8D, reduce the cutting condition 40~50% lower than above after machining the beginning of hole(1.5D).
In case of interrupted machining, reduce the feed to 0.1~0.15 around the interrupted part.

How to make good insert clamping



1. Clean the mounting seat with air or cloth.
2. Put an insert on the holder.
3. A part of wrench and B part of insert must be parallel to each other before clamp the insert. Turn the wrench clockwise to finish clamping.
4. Clamped state

DTTC insert



Designation	Drill dia. (φ D)	W	Coated	Holder	Wrench
			TD530		
DTT 1200C	12.0	11.4	●	DTTC(3,5,8)D-12016-(36,60,96)	DTTC-W12
1220C	12.2				
1250C	12.5				
1260C	12.6				
1300C	13.0	12.3	●	DTTC(3,5,8)D-13016-(39,65,104)	DTTC-W13
1350C	13.5				
1400C	14.0	13.4	●	DTTC(3,5,8)D-14016-(42,70,112)	DTTC-W14
1420C	14.2				
1430C	14.3				
1450C	14.5				
1500C	15.0	14.3	●	DTTC(3,5,8)D-15020-(45,75,120)	DTTC-W15
1550C	15.5				
1600C	16.0	15.3	●	DTTC(3,5,8)D-16020-(48,80,128)	DTTC-W16
1630C	16.3				
1650C	16.5				
1670C	16.7				
1700C	17.0	16.3	●	DTTC(3,5,8)D-17020-(51,85,136)	DTTC-W17
1750C	17.5				
1770C	17.7	17.3	●	DTTC(3,5,8)D-18025-(54,90,144)	DTTC-W18
1800C	18.0				
1810C	18.1				
1850C	18.5				
1860C	18.6				
1870C	18.7				
1900C	19.0				
1920C	19.2				
1950C	19.5	18.3	●	DTTC(3,5,8)D-19025-(57,95,152)	DTTC-W19
1970C	19.7				
2000C	20.0				
2050C	20.5				
2100C	21.0	19.2	●	DTTC(3,5,8)D-20025-(60,100,160)	DTTC-W20
2150C	21.5				
2200C	22.0	20.1	●	DTTC(3,5,8)D-21025-(63,105,168)	DTTC-W21
2250C	22.5				
2260C	22.6				
2270C	22.7				
2300C	23.0	21.0	●	DTTC(3,5,8)D-22025(66,110,176)	DTTC-W22
2350C	23.5				
2400C	24.0	21.9	●	DTTC(3,5,8)D-23025-(69,115,184)	DTTC-W23
2450C	24.5				
2500C	25.0				
2530C	25.3				
2550C	25.5	22.9	●	DTTC(3,5,8)D-24032-(72,120,192)	DTTC-W24
2580C	25.8				
2590C	25.9	23.9	●	DTTC(3,5,8)D-25032-(75,125,200)	DTTC-W25
2600C	26.0				
2650C	26.5				
2700C	27.0				
2750C	27.5	24.9	●	DTTC(3,5,8)D-26032-(78,130,208)	DTTC-W26
2800C	28.0				
2850C	28.5	25.9	●	DTTC(3,5,8)D-27032-(81,135,216)	DTTC-W27
2900C	29.0				
2950C	29.5				
3000C	30.0				
3050C	30.5	26.9	●	DTTC(3,5,8)D-28032-(84,140,224)	DTTC-W28
2900C	29.0				
2950C	29.5	27.9	●	DTTC(3,5,8)D-29032-(87,145,232)	DTTC-W29
3000C	30.0				
3050C	30.5	28.9	●	DTTC(3,5,8)D-30032-(90,150,240)	DTTC-W30

Carbide Drills
U Drills
Head Exchangeable Drills
Deep Hole Drills
CDR 45° Chamfer Cutter
Non-standard Tools

DTTC Parts

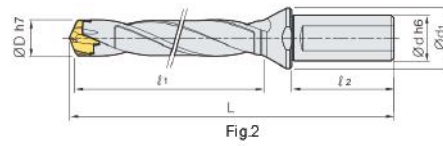
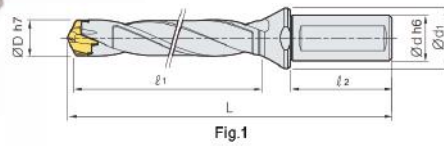
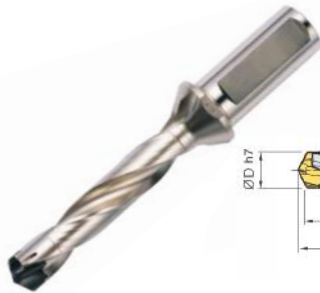
Parts(Recommended torque per wrench)

Designation	Drill dia.(ϕ D)	Torque(Nm)
DTTC-W12	12	2.5
DTTC-W13	13	2.5
DTTC-W14	14	2.5
DTTC-W15	15	2.5
DTTC-W16	16	2.5
DTTC-W17	17	2.5
DTTC-W18	18	2.5
DTTC-W19	19	2.5
DTTC-W20	20	3.5

(mm)

Designation	Drill dia.(ϕ D)	Torque(Nm)
DTTC-W21	21	3.5
DTTC-W22	22	3.5
DTTC-W23	23	3.5
DTTC-W24	24	3.5
DTTC-W25	25	3.5
DTTC-W26	26	5.5
DTTC-W27	27	5.5
DTTC-W28	28	5.5
DTTC-W29	29	5.5
DTTC-W30	30	5.5

DTTC 3D/5D/8D



Designation	ϕ D	ϕ d	ϕ d1	l1	l2	L	Insert	Fig.
DTTC 3D-12016-36	12.00-12.49	16	20	36	48	99	DTT1200C□-1249C□	1
3D-12516-38	12.50-12.99	16	20	38	48	101	DTT1250C□-1299C□	1
3D-13016-39	13.00-13.49	16	20	39	48	103	DTT1300C□-1349C□	1
3D-13516-41	13.50-13.99	16	20	41	48	105	DTT1350C□-1399C□	1
3D-14016-42	14.00-14.49	16	20	42	48	106	DTT1400C□-1449C□	1
3D-14516-44	14.50-14.99	16	20	44	48	107	DTT1450C□-1449C□	1
3D-15020-45	15.00-15.99	20	25	45	50	113	DTT1500C□-1599C□	2
3D-16020-48	16.00-16.99	20	25	48	50	117	DTT1600C□-1699C□	2
3D-17020-51	17.00-17.99	20	25	51	50	120	DTT1700C□-1799C□	2
3D-18025-54	18.00-18.99	25	33	54	56	132	DTT1800C□-1899C□	2
3D-19025-57	19.00-19.99	25	33	57	56	135	DTT1900C□-1999C□	2
3D-20025-60	20.00-20.99	25	33	60	56	138	DTT2000C□-2099C□	2
3D-21025-63	21.00-21.99	25	33	63	56	141	DTT2100C□-2199C□	2
3D-22025-66	22.00-22.99	25	33	66	56	145	DTT2200C□-2299C□	2
3D-23025-69	23.00-23.99	25	33	69	56	149	DTT2300C□-2399C□	2
3D-24032-72	24.00-24.99	32	43	72	60	159	DTT2400C□-2499C□	2
3D-25032-75	25.00-25.99	32	43	75	60	162	DTT2500C□-2599C□	2
3D-26032-78	26.00-26.99	32	43	78	60	173	DTT2600C□-2699C□	2

DTTC 3D/5D/8D

Designation	ϕ D	ϕ d	ϕ d1	I1	I2	L	Insert	Fig.
DTTC 3D-27032-81	27.00-27.99	32	43	81	60	176	DTT2700C□-2799C□	2
3D-28032-84	28.00-28.99	32	43	84	60	180	DTT2800C□-2899C□	2
3D-29032-87	29.00-29.99	32	43	87	60	185	DTT2900C□-2999C□	2
3D-30032-90	30.00-30.99	32	43	90	60	188	DTT3000C□-3099C□	2
5D-12016-60	12.00-12.49	16	20	60	48	123	DTT1200C□-1249C□	1
5D-12516-63	12.50-12.99	16	20	63	48	126	DTT1250C□-1299C□	1
5D-13016-65	13.00-13.49	16	20	65	48	129	DTT1300C□-1349C□	1
5D-13516-68	13.50-13.99	16	20	68	48	132	DTT1350C□-1399C□	1
5D-14016-70	14.00-14.49	16	20	70	48	134	DTT1400C□-1449C□	1
5D-14516-73	14.50-14.99	16	20	73	48	136	DTT1450C□-1499C□	1
5D-15020-75	15.00-15.99	20	25	75	50	143	DTT1500C□-1599C□	2
5D-16020-80	16.00-16.99	20	25	80	50	149	DTT1600C□-1699C□	2
5D-17020-85	17.00-17.99	20	25	85	50	154	DTT1700C□-1799C□	2
5D-18025-90	18.00-18.99	25	33	90	56	168	DTT1800C□-1899C□	2
5D-19025-95	19.00-19.99	25	33	95	56	173	DTT1900C□-1999C□	2
5D-20025-100	20.00-20.99	25	33	100	56	178	DTT2000C□-2099C□	2
5D-21025-105	21.00-21.99	25	33	105	56	183	DTT2100C□-2199C□	2
5D-22025-110	22.00-22.99	25	33	110	56	189	DTT2200C□-2299C□	2
5D-23025-115	23.00-23.99	25	33	115	56	195	DTT2300C□-2399C□	2
5D-24032-120	24.00-24.99	32	43	120	60	207	DTT2400C□-2499C□	2
5D-25032-125	25.00-25.99	32	43	125	60	212	DTT2500C□-2599C□	2
5D-26032-130	26.00-26.99	32	43	130	60	225	DTT2600C□-2699C□	2
5D-27032-135	27.00-27.99	32	43	135	60	230	DTT2700C□-2799C□	2
5D-28032-140	28.00-28.99	32	43	140	60	236	DTT2800C□-2899C□	2
5D-29032-145	29.00-29.99	32	43	145	60	243	DTT2900C□-2999C□	2
5D-30032-150	30.00-30.99	32	43	150	60	248	DTT3000C□-3099C□	2
8D-12016-96	12.00-12.49	16	20	96	48	159	DTT1200C□-1249C□	1
8D-12516-100	12.50-12.99	16	20	100	48	163	DTT1250C□-1299C□	1
8D-13016-104	13.00-13.49	16	20	104	48	168	DTT1300C□-1349C□	1
8D-13516-108	13.50-13.99	16	20	108	48	173	DTT1350C□-1399C□	1
8D-14016-112	14.00-14.49	16	20	112	48	176	DTT1400C□-1449C□	1
8D-14516-116	14.50-14.99	16	20	116	48	180	DTT1450C□-1499C□	1
8D-15020-120	15.00-15.99	20	25	120	50	188	DTT1500C□-1599C□	2
8D-16020-128	16.00-16.99	20	25	128	50	197	DTT1600C□-1699C□	2
8D-17020-136	17.00-17.99	20	25	136	50	205	DTT1700C□-1799C□	2
8D-18025-144	18.00-18.99	25	33	144	56	222	DTT1800C□-1899C□	2
8D-19025-152	19.00-19.99	25	33	152	56	230	DTT1900C□-1999C□	2
8D-20025-160	20.00-20.99	25	33	160	56	238	DTT2000C□-2099C□	2
8D-21025-168	21.00-21.99	25	33	168	56	246	DTT2100C□-2199C□	2
8D-22025-176	22.00-22.99	25	33	176	56	255	DTT2200C□-2299C□	2
8D-23025-184	23.00-23.99	25	33	184	56	264	DTT2300C□-2399C□	2
8D-24032-192	24.00-24.99	32	43	192	60	279	DTT2400C□-2499C□	2
8D-25032-200	25.00-25.99	32	43	200	60	287	DTT2500C□-2599C□	2
8D-26032-208	26.00-26.99	32	43	208	60	303	DTT2600C□-2699C□	2
8D-27032-216	27.00-27.99	32	43	216	60	311	DTT2700C□-2799C□	2
8D-28032-224	28.00-28.99	32	43	224	60	320	DTT2800C□-2899C□	2
8D-29032-232	29.00-29.99	32	43	232	60	330	DTT2900C□-2999C□	2
8D-30032-240	30.00-30.99	32	43	240	60	338	DTT3000C□-3099C□	2

Carbide Drills

U Drills

Head Exchangeable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

Deep Hole Drilling

A deep hole is defined by its depth-to-diameter ratio (D:d), and typically holes greater than 10:1 are considered deep holes. Deep hole drilling into metal has a range of applications across several industries, with its origins tracing back to the need for straighter, more accurate gun barrels, and expanding as other industries integrated deep hole drilling processes to improve their own applications.

Deep hole drilling consists of BTA drilling and gun drilling, with additional processes designed for specific tolerance objectives and generally performed on BTA-style deep hole drilling machines. Deep hole drilling is used in a variety of materials from aluminum to super-alloys, and is capable of achieving tight diameter control, straightness, and superior surface finish into workpieces.

Deep hole drilling processes work by using special tools and setups to deliver high pressure coolant, evacuate chips cleanly, and achieve depth-to-diameter holes into metal beyond what a common CNC machine can reach. This allows manufacturers to achieve their manufacturing tolerances and production requirements reliably, accurately, and efficiently.

BTA Drilling

BTA deep hole drilling is used for larger hole drilling, typically 20 – 200 mm [0.80 – 8.00 in] in diameter. High-pressure coolant is introduced around the outside of the tool through the pressure head assembly. Chips are discharged through the tool center, through the drill tube and machine spindle.

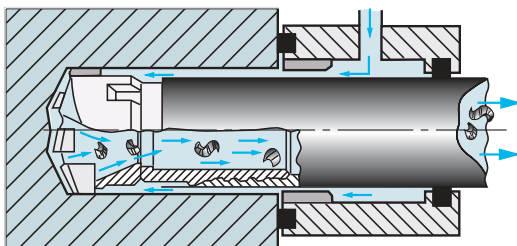
BTA drilling typically performs 5-7 times faster than gundrilling, and requires higher power.

Additional extended diameters can be drilled on BTA machines with secondary deep hole operations, such as counter-boring.

There is 2 types of drilling which are DTS systems and STS systems. We will only focus on STS systems as all our drill heads are for STS system.

The BTA—STS Drill is a single Tube Drilling system used in Deep Hole Drilling applications where fast metal removal is needed. Drill sizes in BTA Drills are from 0.312"-2.559" diameter. New drills are manufactured in a number of grades to fit individual customer requirements. BTA (STS) Drills of brazed construction can be re-tipped in our plant to an "as new" condition at a significant cost reduction and savings to the customer. These drills require high pressure coolant to flush the chips through the tube to the chip box. The STS may also be referred to as the BTA system in the deep hole drilling process.

STS DRILLING SYSTEM

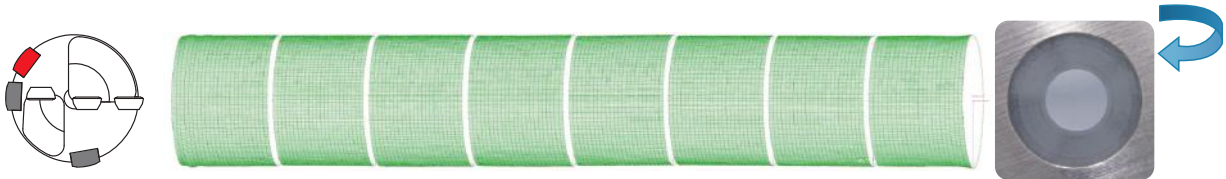


CT Coated Drills: Suitable for Medium and High speed drilling with highly accuracy and longer tool's life. (CT coating is a very special Japanese technology coating)

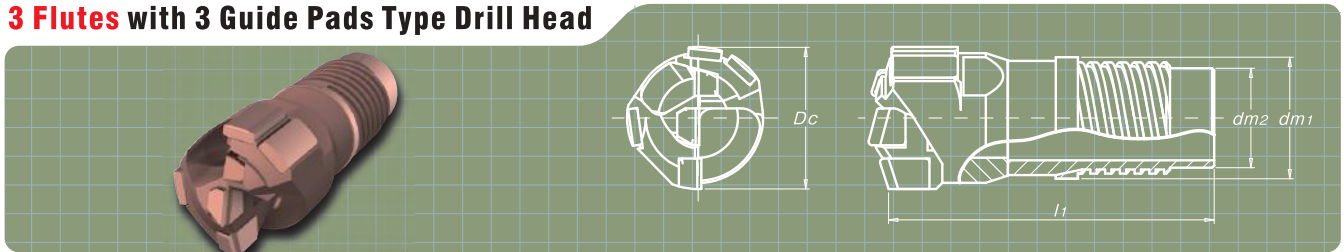
Drill Heads Design with 3 Guide Pads(CT Coating)

A. Unique Design of 3 Flutes with 3 Guide Pads Drill Head(CT Coating)

Feature: Reduced vibration during drilling and highly improved the roundness of the drilling holes
Holes with perfect roundness after drilling



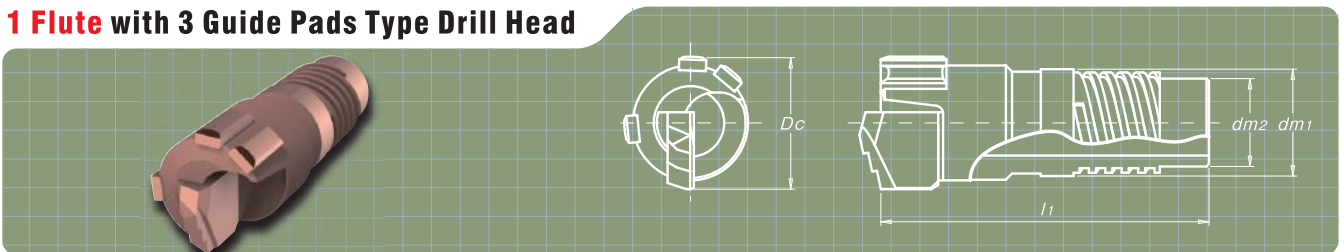
3 Flutes with 3 Guide Pads Type Drill Head



Unit (mm)

Drill Head Model	Drilling Range	Suitable Tube		Dimension			
		Tube Model	Tube Dia(mm)	dm1(mm)	dm2(mm)	L1	Stock
BTA-Dxxxx-CT-3	15.60-16.70	BA4S-0097	14	12.6	10.8	40	●
BTA-Dxxxx-CT-3	17.71-18.90	BA4S-0099	16	14.5	12.5	40	●
BTA-Dxxxx-CT-3	18.91-20.00	BA4S-0000	17	15.5	13.5	44	●
BTA-Dxxxx-CT-3	20.01-21.80	BA4S-00	18	16	14	49	●
BTA-Dxxxx-CT-3	21.81-24.10	BA4S-01	20	18	16	52	●
BTA-Dxxxx-CT-3	24.11-26.00	BA4S-02	22	19.5	17.5	54	●

1 Flute with 3 Guide Pads Type Drill Head



Unit (mm)

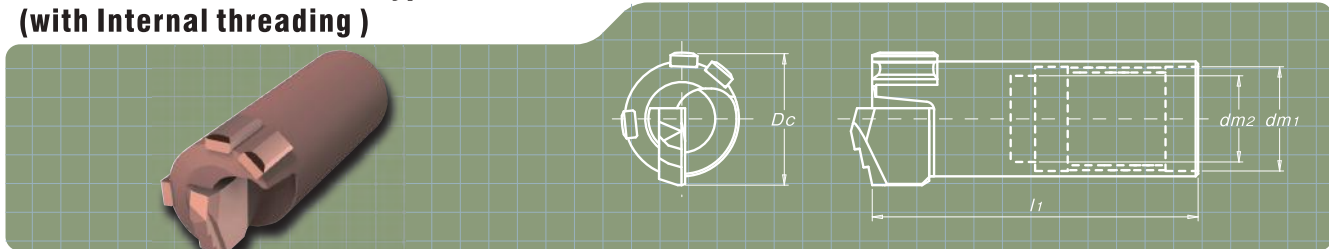
Drill Head Model	Drilling Range	Suitable Tube		Dimension			
		Tube Model	Tube Dia(mm)	dm1(mm)	dm2(mm)	L1	Stock
BTA-Dxxxx-CT-T-3	15.60-16.70	BA4S-0097	14	12.6	10.8	40	●

● Stock ○ Non-stock

CT Coated Drills: Suitable for Medium and High speed drilling with highly accuracy and longer tool's life. (CT coating is a very special Japanese technology coating)

Drill Heads Design with 3 Guide Pads(CT Coating)

1 Flute with 3 Guide Pads Type Drill Head (with Internal threading)



Unit (mm)

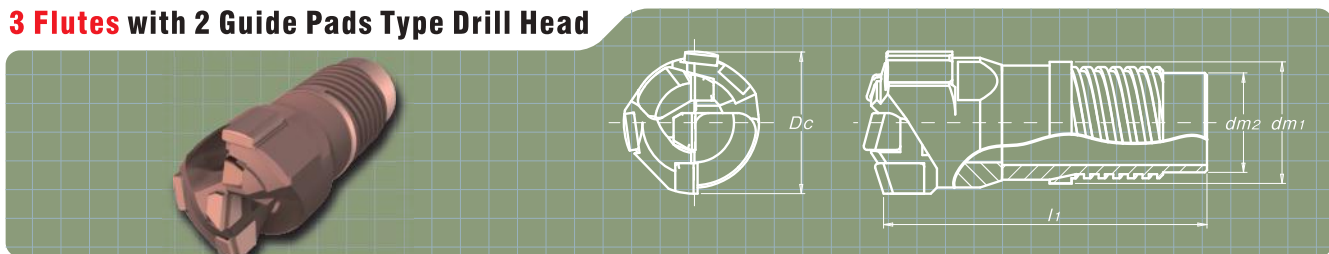
Drill Head Model	Drilling Range	Suitable Tube		Dimention			
		Tube Model	Tube Dia(mm)	dm1(mm)	dm2(mm)	L1	Stock
BTA-Dxxxx-CT-E-3	15.51-16.00	BA1S-1301	13	12.4	10.8	40	●
BTA-Dxxxx-CT-E-3	16.01-16.50	BA1S-1302	13	12.7	11.1	40	●
BTA-Dxxxx-CT-E-3	16.51-17.25	BA1S-1401	14	13.4	11.8	40	●
BTA-Dxxxx-CT-E-3	17.26-18.00	BA1S-1402	14	13.7	12.1	40	●
BTA-Dxxxx-CT-E-3	18.01-19.00	BA1S-1500	15	14.4	12.8	40	●
BTA-Dxxxx-CT-E-3	19.01-19.50	BA1S-1650	16.5	15.4	13.8	40	●

Drill Heads Design with 2 Guide Pads(CT Coating)

B. Drill Heads Design with 2 Guide Pads(CT Coating)

Feature: With 2 guide pads, drill is able to reduce machining resistance, achieving fast and high-precision machining.

3 Flutes with 2 Guide Pads Type Drill Head



Unit (mm)

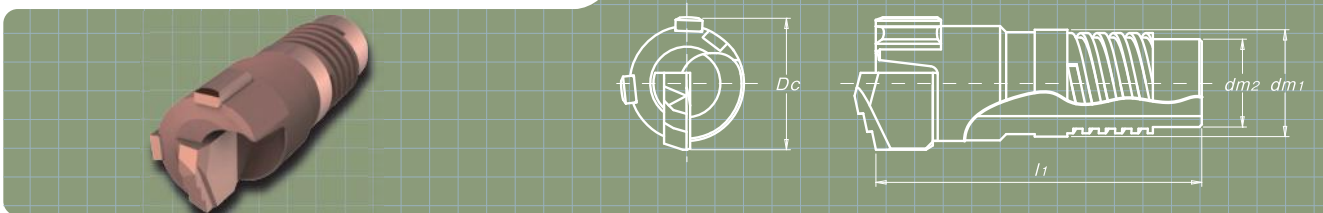
Drill Head Model	Drilling Range	Suitable Tube		Dimention			
		Tube Model	Tube Dia(mm)	dm1(mm)	dm2(mm)	L1	Stock
BTA-Dxxxx-CT	15.60-16.70	BA4S-0097	14	12.6	10.8	40	●
BTA-Dxxxx-CT	17.71-18.90	BA4S-0099	16	14.5	12.5	40	●
BTA-Dxxxx-CT	18.91-20.00	BA4S-0000	17	15.5	13.5	44	●
BTA-Dxxxx-CT	20.01-21.80	BA4S-00	18	16	14	49	●
BTA-Dxxxx-CT	21.81-24.10	BA4S-01	20	18	16	52	●
BTA-Dxxxx-CT	24.11-26.00	BA4S-02	22	19.5	17.5	54	●

● Stock ○ Non-stock

CT Coated Drills: Suitable for Medium and High speed drilling with highly accuracy and longer tool's life. (CT coating is a very special Japanese technology coating)

Drill Heads Design with 2 Guide Pads(CT Coating)

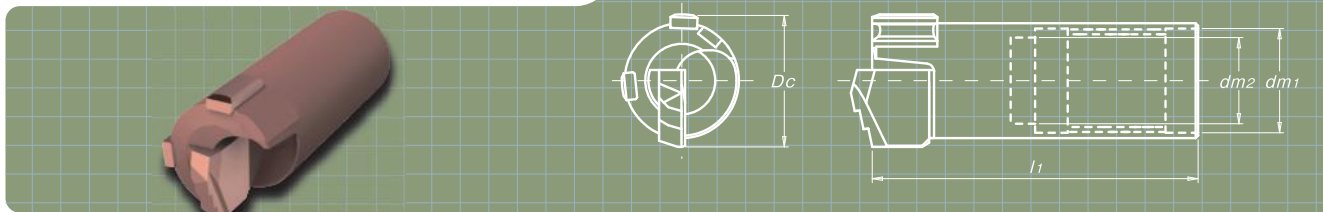
1 Flute with 2 Guide Pads Type Drill Head



Unit (mm)

Drill Head Model	Drilling Range	Suitable Tube		Dimention			
		Tube Model	Tube Dia(mm)	dm1(mm)	dm2(mm)	L1	Stock
BTA-Dxxxx-CT-T	15.60-16.70	BA4S-0097	14	12.6	10.8	40	●

1 Flute with 2 Guide Pads Type Drill Head (with Internal threading)



Unit (mm)

Drill Head Model	Drilling Range	Suitable Tube		Dimention			
		Tube Model	Tube Dia(mm)	dm1(mm)	dm2(mm)	L1	Stock
BTA-Dxxxx-CT-E	15.51-16.00	BA1S-1301	13	12.4	10.8	40	●
BTA-Dxxxx-CT-E	16.01-16.50	BA1S-1302	13	12.7	11.1	40	●
BTA-Dxxxx-CT-E	16.51-17.25	BA1S-1401	14	13.4	11.8	40	●
BTA-Dxxxx-CT-E	17.26-18.00	BA1S-1402	14	13.7	12.1	40	●
BTA-Dxxxx-CT-E	18.01-19.00	BA1S-1500	15	14.4	12.8	40	●
BTA-Dxxxx-CT-E	19.01-19.50	BA1S-1650	16.5	15.4	13.8	40	●

● Stock ○ Non-stock

Carbide Drills

U Drills

Head Exchangeable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

Recommended Cutting Conditions

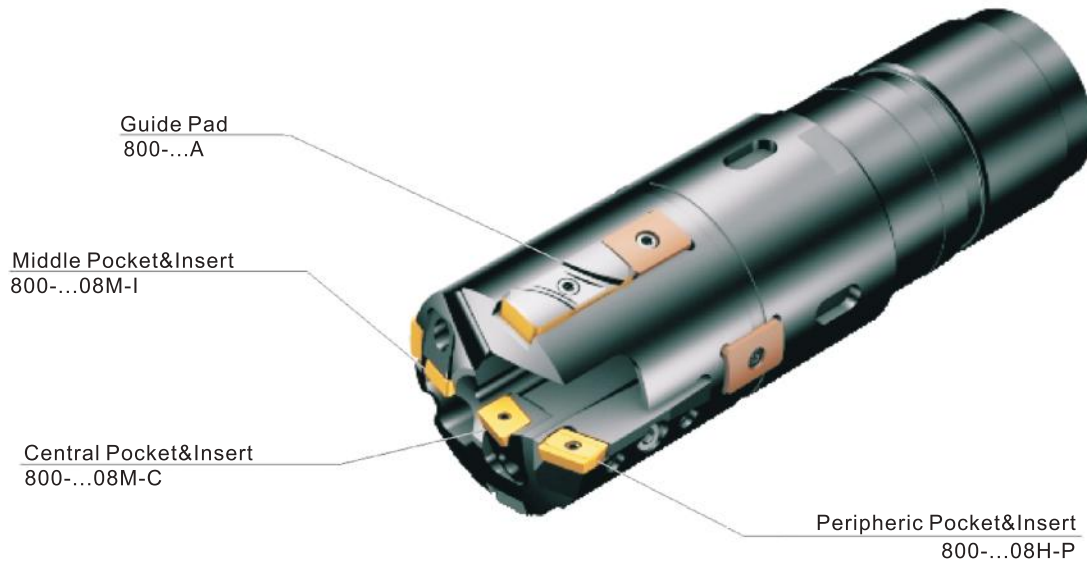
Machining data for BTA

Unit (mm)

ISO	Material	Condition	Tensile strength (N/mm ²)	Hardness HB	Material No.	Cutting speed Vc (m/min)	Ø15.60 - Ø20.00
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C Annealed	420	125	1	70-120	0.08-0.15
		>=0.25%C Annealed	650	190	2	70-120	0.08-0.15
		<0.55%C Quenched and tempered	850	250	3	40-70	0.08-0.15
		>=0.55%C Annealed	750	220	4	70-120	0.08-0.15
	Low alloy steel and cast steel (Less than 5% of alloying elements)	Quenched and tempered	1000	300	5	55-100	0.08-0.12
		Annealed	600	200	6	70-100	0.08-0.15
		Quenched and tempered	930	275	7	55-100	0.08-0.12
			1000	300	8	55-100	0.08-0.12
	High alloy steel, cast steel and tool steel	1200	350	9	55-100	0.08-0.12	
		Annealed	680	200	10	50-85	0.08-0.15
M	Stainless steel and cast steel	Quenched and tempered	1100	325	11	55-100	0.08-0.12
		Ferritic / martensitic	680	200	12	60-100	0.08-0.15
K	Grey cast iron (GG)	Martensitic	820	240	13	60-100	0.08-0.15
		Austenitic	600	180	14	60-100	0.05-0.12
		Ferritic		160	15	60-100	0.06-0.13
	Cast iron nodular (GGG)	Pearlitic		250	16	60-100	0.06-0.13
		Ferritic		180	17	80-100	0.08-0.15
	Malleable cast iron	Pearlitic		260	18	80-100	0.08-0.15
Ferritic			130	19	50-100	0.06-0.13	
N	Aluminum - wrought alloy	Pearlitic		230	20	50-100	0.06-0.13
		Not cureable		60	21	65-130	0.08-0.15
	Aluminum-cast, alloyed	Cured		100	22	65-100	0.08-0.15
		<=12% Si Not cureable		75	23	65-130	0.08-0.15
	>12% Si High temp.	Cured		90	24	65-130	0.08-0.15
		>1% Pb Free cutting		130	25	65-130	0.08-0.15
	Copper alloys	Brass		110	26	65-130	0.08-0.15
		Electrolytic copper		90	27	65-130	0.08-0.15
	S	High temp. alloys	100		28	65-130	0.08-0.15
			Duroplastics, fiber plastics			29	
H	Fe based	Hard rubber			30		
		Annealed		200	31	10-50	0.06-0.12
	Ni or Co based	Cured		280	32	10-50	0.06-0.12
		Annealed		250	33	10-50	0.06-0.12
	Titanium, Ti alloys	Cured		350	34	10-50	0.06-0.12
		Cast		320	35	10-50	0.06-0.12
H	Hardened steel	Rm 400		36	30-50	0.05-0.10	
		Alpha+beta alloys cured	Rm 1050		37	30-50	0.05-0.10
	Chilled cast iron	Hardened		55HRC	38		
		Hardened		60HRC	39		
Cast iron nodular	Cast		400	40			
	Hardened		55HRC	41			

■ Steel
 ■ Stainless steel
 ■ Cast iron
 ■ Nonferrous
 ■ High temp. alloys
 ■ Hardened steel

800 SERIES



424.10 SERIES



P25C: It shows good performance when drilling steel, cast iron.

M25C: Not only has good performance on drilling the common steels. But also has a long tool life on drilling some special stainless steel, special high speed steel, special titanium alloy, special nickel base alloy and other difficult materials, such as superalloys for aerospace and military use.

B25C: It shows very high wear resistance and good edge toughness. To be used when good surface quality is demanded at medium to high cutting speed.

Carbide Drills

U Drills

Head Exchangeable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

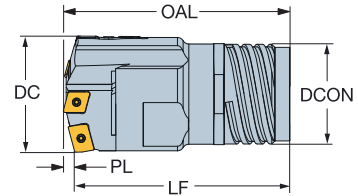
Non-standard Tools

800 Series

STS single tube system
Metric Version



Diameter range: 25.00–65.00mm
Hole depth: 150xDC
Hole tolerance: IT10
Surface finish: Ra 2µm
Cutting fluid: Neat oil or soluble with EP-additives



Standard programme:

Head Exchangable Drills	CZC _{MS}	DC	DC"	Ordering code	DCON	DCON"	OAL	OAL"	LF	LF"	PL	PL"	
Deep Hole Drills	05	03	25.00	.984	800.20-03D25.00	19	.748	75	2.952	71.65	2.820	3.34	
	03	26.00	1.024	800.20-03D26.00	19	.748	75	2.952	71.51	2.815	3.48	.137	
	03	26.30	1.035	800.20-03D26.30	19	.748	75	2.952	71.47	2.814	3.52		
	03	26.40	1.039	800.20-03D26.40	19	.748	75	2.952	71.46	2.813	3.53	.139	
	04	26.41	1.040	800.20-04D26.41	21	.827	78	3.070	74.46	2.931	3.53		
	04	27.90	1.098	800.20-04D27.90	21	.827	78	3.070	74.26	2.923	3.73	.147	
	05	28.80	1.134	800.20-M05D28.80	23	.906	80	3.149	76.14	2.997	3.85		
	05	29.00	1.142	800.20-M05D29.00	23.5	.925	80	3.149	76.12	2.997	3.89	.153	
	05	29.50	1.161	800.20-M05D29.50	23	.906	80	3.149	76.04	2.994	3.95		
	05	29.80	1.173	800.20-M05D29.80	23	.906	80	3.149	76.00	2.992	3.99	.157	
	05	30.10	1.185	800.20-M05D30.10	23	.906	80	3.149	75.83	2.985	4.16		
	07	33.45	1.317	800.20-07D33.45	28	1.102	85	3.346	80.51	3.170	4.48	.176	
	06	03	25.40	1.000	800.20-03D25.40	19	.748	75	2.952	71.59	2.818	3.40	
	CDR 45° Chamfer Cutter	03	25.50	1.004	800.20-03D25.50	19	.748	75	2.952	71.58	2.818	3.41	.134
04		26.50	1.043	800.20-04D26.50	21	.827	78	3.070	74.44	2.931	3.55		
04		27.00	1.063	800.20-04D27.00	21	.827	78	3.070	74.38	2.928	3.61	.142	
05		30.00	1.181	800.20-M05D30.00	23	.906	80	3.149	75.98	2.991	4.01		
06		31.45	1.238	800.20-06D31.45	25	.984	85	3.346	80.78	3.180	4.21	.165	
06		31.70	1.248	800.20-06D31.70	25	.984	85	3.346	80.75	3.179	4.24		
06		32.00	1.260	800.20-06D32.00	25	.984	85	3.346	80.71	3.177	4.28	.168	
06		33.00	1.299	800.20-06D33.00	25.5	1.004	85	3.346	80.57	3.172	4.42		
06		32.43	1.277	800.20-06D32.43	25	.984	85	3.346	80.65	3.175	4.34	.171	
07		33.60	1.323	800.20-07D33.60	28	1.102	85	3.346	80.47	3.168	4.52	.178	
08		06	31.05	1.222	800.20-06D31.05	25	.984	85	3.346	80.84	3.182	4.15	
06		31.75	1.250	800.20-06D31.75	25	.984	85	3.346	80.74	3.178	4.25	.167	
06		31.80	1.252	800.20-06D31.80	25	.984	85	3.346	80.73	3.178	4.26		
06		32.27	1.270	800.20-06D32.27	25	.984	85	3.346	80.67	3.176	4.32	.170	
Non-standard Tools	06	32.50	1.280	800.20-06D32.50	25	.984	85	3.346	80.64	3.175	4.35		
	07	35.00	1.378	800.20-07D35.00	28	1.102	85	3.346	80.31	3.161	4.68	.184	
	07	36.20	1.425	800.20-07D36.20	28	1.102	85	3.346	80.15	3.155	4.84		
	08	37.00	1.457	800.20-08D37.00	30	1.181	95	3.740	90.04	3.545	4.95	.195	
	08	37.50	1.476	800.20-08D37.50	30	1.181	95	3.740	89.97	3.542	5.02		
	08	38.00	1.496	800.20-08D38.00	30	1.181	95	3.740	89.90	3.539	5.09	.200	
	08	38.10	1.500	800.20-08D38.10	30	1.181	95	3.740	89.89	3.539	5.10		
	08	38.50	1.516	800.20-08D38.50	30	1.181	95	3.740	89.84	3.537	5.15	.203	
	08	38.52	1.517	800.20-08D38.52	30	1.181	95	3.740	90.24	3.552	4.75		
	08	38.75	1.526	800.20-08D38.75	30	1.181	95	3.740	89.80	3.535	5.19	.204	
	08	39.00	1.535	800.20-08D39.00	30	1.181	95	3.740	89.77	3.534	5.22		
	09	40.75	1.604	800.20-09D40.75	33	1.299	100	3.937	94.54	3.722	5.45	.214	
	09	43.00	1.693	800.20-09D43.00	33	1.299	100	3.937	94.23	3.710	5.76		
	10	44.45	1.750	800.20-10D44.45	36	1.417	100	3.937	94.04	3.702	5.95	.234	
	11	48.00	1.890	800.20-11D48.00	39	1.535	110	4.330	103.56	4.077	6.43		
	11	48.80	1.921	800.20-11D48.80	39	1.535	110	4.330	103.46	4.073	6.53	.257	
	11	49.00	1.929	800.20-11D49.00	39	1.535	110	4.330	103.43	4.072	6.56		

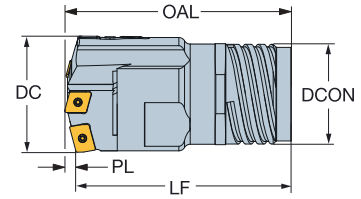
CoroDrill®800

STS single tube system

Metric version



Diameter range: 25.00–65.00mm
Hole depth: 150xDC
Hole tolerance: IT10
Surface finish: Ra 2µm
Cutting fluid: Neat oil or soluble with EP-additives



Standard programme:

CZC _{MS}	DC	DC"	Ordering code	DCON	DCON"	OAL	OAL"	LF	LF"	PL	PL"
08	39.15	1.541	800.20-08D39.15	30	1.181	95	3.740	89.75	3.533	5.24	.
09	40.00	1.575	800.20-09D40.00	33	1.299	100	3.937	94.64	3.726	5.35	.210
09	41.00	1.614	800.20-09D41.00	33	1.299	100	3.937	94.50	3.720	5.49	.
10	46.00	1.811	800.20-10D46.00	36	1.417	100	3.937	93.83	3.694	6.16	.242
10	45.00	1.772	800.20-10D45.00	36	1.417	100	3.937	93.97	3.699	6.02	.
11	50.00	1.969	800.20-11D50.00	39	1.535	110	4.330	103.30	4.066	6.69	.263
11	50.80	2.000	800.20-11D50.80	39	1.535	110	4.330	103.19	4.062	6.80	.
11	51.30	2.020	800.20-11D51.30	39	1.535	110	4.330	103.12	4.060	6.87	.270
12	53.00	2.087	800.20-12D53.00	43	1.693	120	4.724	112.89	4.444	7.10	.
12	52.30	2.059	800.20-12D52.30	43	1.693	120	4.724	112.99	4.448	7.00	.275
12	54.80	2.157	800.20-12D54.80	43	1.693	120	4.724	112.65	4.435	7.34	.
11	52.00	2.047	800.20-12D52.00	43	1.693	120	4.724	113.03	4.450	6.96	.274
12	54.20	2.134	800.20-12D54.20	43	1.693	120	4.724	112.73	4.438	7.26	.
12	55.00	2.165	800.20-12D55.00	43	1.693	120	4.724	112.63	4.434	7.36	.290
13	57.15	2.250	800.20-13D57.15	47	1.850	125	4.921	117.34	4.619	7.65	.
13	60.00	2.362	800.20-13D60.00	47	1.850	120	4.724	111.96	4.407	8.03	.316
13	63.00	2.480	800.20-13D63.00	47	1.850	120	4.724	111.56	4.392	8.44	.
12	47.35	1.864	800.20-11D47.35	39	1.535	110	4.330	103.65	4.080	6.34	.249
11	48.92	1.926	800.20-11D48.92	39	1.535	110	4.330	103.44	4.072	6.55	.
13	56.90	2.240	800.20-13D56.90	47	1.850	125	4.921	117.37	4.621	7.62	.300
13	59.00	2.323	800.20-13D59.00	47	1.850	125	4.921	117.09	4.610	7.90	.
13	59.80	2.354	800.20-13D59.80	47	1.850	125	4.921	116.98	4.605	8.01	.315
13	60.60	2.386	800.20-13D60.60	47	1.850	125	4.921	116.88	4.602	8.11	.
13	63.50	2.500	800.20-13D63.50	47	1.850	120	4.724	111.49	4.389	8.50	.334
13	64.80	2.551	800.20-13D64.80	47	1.850	125	4.921	116.31	4.579	8.68	.
13	65.00	2.559	800.20-13D65.00	47	1.850	125	4.921	116.29	4.578	8.70	.342

Diameter Range , mm	Central	Diameter Range , mm	Intermediate	Diameter Range , mm	Peripheral	Diameter Range , mm	Pad
25.00-28.70	05 800-05 03 08M-C-G	25.00-31.00	05 800-05 03 08M-I-G	25.00-31.00	06 800-06 03 08H-P-G	25.00-31.00	800-06A
28.71-33.99	06 800-06 T3 08M-C-G	31.01-34.99	06 800-06 T3 08M-I-G	31.01-38.99	08 800-08 T3 08H-P-G	31.01-39.60	800-07A
34.00-43.00	08 800-08 T3 08M-C-G	35.00-54.99	08 800-08 T3 08M-I-G	39.00-49.99	09 800-09 T3 08H-P-G	39.61-47.00	800-08A
43.01-47.00	10 800-10 T3 08M-C-G	55.00-65.00	12 800-12 T3 08M-I-G	50.00-65.00	11 800-11 T3 08H-P-G	47.01-54.99	800-10A
47.01-49.99	12 800-12 T3 08M-C-G					55.00-65.00	800-12A
50.00-57.99	10 800-10 T3 08M-C-G						
58.00-65.00	12 800-12 T3 08M-C-G						

Carbide Drills

U Drills

Head Exchangeable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

Carbide Drills

U Drills

Head Exchangable Drills

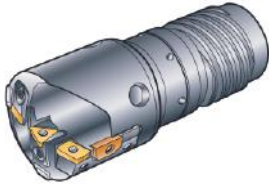
Deep Hole Drills

CDR 45° Chamfer Cutter

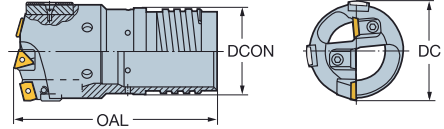
Non-standard Tools

424.10 Series

Indexable insert design



Diameter range: 63. 50-183.90mm
Hole depth: 100xDC
Hole tolerance: IT10
Surface finish: Ra 3µm
Cutting fluid: Neat oil or soluble with EP-additives

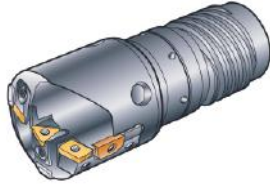


CZC _{MS} DC DC"			Ordering code	Dimensions, mm, inch					Cartridges								
				DCON	DCON"	OAL	OAL"	ADJLX _{RDL}	ADJLX _{RDL} "	Central	No.	Intermediate	No.	Peripheral	No.	Support pad	No.
13	63.50	2.5	A424. 10-2500	51.0	2.008	115	4.528	1.00	.0394	L430. 31-1216-16	1	L430. 30-1216-16	1	R430. 28-1516-16	1	430. 32-12 D65. 0	2
13E	65.00	2.559	424. 10-0650E	51.0	2.008	115	4.528	1.50	.0591	L430. 31-1216-16	1	L430. 30-1216-16	1	R430. 28-1516-16	1	430. 32-12 D65. 0	2
14	65.00	2.5	424. 10-0650	52.0	2.047	150	5.906	1.50	.0394	L430. 31-1216-16	1	L430. 30-1216-16	1	R430. 28-1516-16	1	430. 32-12 D65. 0	2
15	69.85	2.750	A424. 10-2750	58.0	2.283	150	5.906	1.00	.0394	L430. 31-1216-16	1	L430. 30-1216-16	1	R430. 28-1516-16	1	430. 32-12 D65. 0	2
15	70.00	2.7	424. 10-0700	58.0	2.283	150	5.906	1.00	.0394	L430. 31-1216-16	1	L430. 30-1216-16	1	R430. 28-1516-16	1	430. 32-12 D70. 0	2
15	71.45	2.813	A424. 10-2813	58.0	2.283	150	5.906	0.75	.0300	L430. 31-1216-16	1	L430. 30-1216-16	1	R430. 28-1516-16	1	430. 32-12 D70. 0	2
16	75.00	2.9	424. 10-0750	63.0	2.480	160	6.299	2.00	.0787	L430. 31-1216-16	1	L430. 30-1216-16	1	R430. 28-1822-22	1	430. 32-12 D75. 0	2
16	76.20	3.000	A424. 10-3000	63.0	2.480	160	6.299	2.00	.0787	L430. 31-1216-16	1	L430. 30-1216-16	1	R430. 28-1822-22	1	430. 32-12 D75. 0	2
17	80.00	3.1	424. 10-0800	70.0	2.756	190	7.480	1.25	.0492	L430. 31-1216-16	1	L430. 30-1216-16	1	R430. 28-1822-22	1	430. 32-12 D80. 0	2
17	82.55	3.250	A424. 10-3250	70.0	2.756	190	7.480	0.75	.0300	L430. 31-1216-16	1	L430. 30-1216-16	1	R430. 28-1822-22	1	430. 32-12 D80. 0	2
17	85.00	3.3	424. 10-0850	70.0	2.756	190	7.480	1.75	.0689	L420. 31-1522-22	1	L430. 30-1216-16	1	R430. 28-1822-22	1	430. 32-12 D85. 0	2
18	88.90	3.500	A424. 10-3500	77.0	3.031	190	7.480	1.75	.0689	L420. 31-1522-22	1	L430. 30-1216-16	1	R430. 28-1822-22	1	430. 32-12 D85. 0	2
18	90.00	3.5	424. 10-0900	77.0	3.031	190	7.480	1.75	.0689	L420. 31-1522-22	1	L430. 30-1216-16	1	R430. 28-1822-22	1	430. 32-12 D90. 0	2
18	95.00	3.740	424. 10-0950	77.0	3.031	190	7.480	2.00	.0787	L420. 31-1522-22	1	L430. 30-15 22-22	1	R430. 28-1822-22	1	430. 32-12 D95. 0	2
18	95.25	3.7	A424. 10-3750	77.0	3.031	190	7.480	2.00	.0787	L420. 31-1522-22	1	L430. 30-15 22-22	1	R430. 28-1822-22	1	430. 32-12 D95. 0	2
19	100.00	3.937	424. 10-1000	89.0	3.504	195	7.677	1.00	.0394	L420. 31-1522-22	1	L430. 30-15 22-22	1	R430. 28-1822-22	1	430. 32-16 D100. 0	2
19	101.60	4.0	A424. 10-4000	89.0	3.504	195	7.677	1.25	.0490	L420. 31-1522-22	1	L430. 30-15 22-22	1	R430. 28-1822-22	1	430. 32-16 D100. 0	2
19	105.00	4.134	424. 10-1050	89.0	3.504	195	7.677	0.50	.0197	L420. 31-1522-22	1	L430. 30-15 22-22	1	R430. 28-1822-22	1	430. 32-16 D105. 0	2
19	107.95	4.2	A424. 10-4250	89.0	3.504	195	7.677	2.00	.0787	L430. 31-1216-16	1	L430. 30-1216-16	1	R430. 28-1516-16	1	430. 32-16 D105. 0	2
19	110.00	4.331	424. 10-1100	89.0	3.504	195	7.677	1.50	.0591	L430. 31-1216-16	1	L430. 30-1216-16	1	R430. 28-1516-16	1	430. 32-16 D110. 0	2
19	114.30	4.5	A424. 10-4500	101.0	3.976	220	8.661	2.00	.0787	L430. 31-1216-16	3	L430. 30-1216-16	1	R430. 28-1516-16	1	430. 32-16 D110. 0	2
20	115.00	4.528	424. 10-1150	101.0	3.976	220	8.661	1.50	.0591	L430. 31-1216-16	3	L430. 30-1216-16	1	R430. 28-1516-16	1	430. 32-16 D115. 0	2
20	120.00	4.7	424. 10-1200	101.0	3.976	220	8.661	1.50	.0591	L430. 31-1216-16	3	L430. 30-1216-16	1	R430. 28-1516-16	1	430. 32-16 D120. 0	2
20	120.65	4.750	A424. 10-4750	101.0	3.976	220	8.661	1.50	.0591	L430. 31-1216-16	3	L430. 30-1216-16	1	R430. 28-1822-22	1	430. 32-16 D120. 0	2
21	125.00	4.9	424. 10-1250	113.0	4.449	220	8.661	1.75	.0689	L430. 31-1216-16	3	L430. 30-1216-16	1	R430. 28-1822-22	1	430. 32-16 D125. 0	2
21	127.00	5.000	A424. 10-5000	113.0	4.449	220	8.661	1.25	.0490	L430. 31-1216-16	3	L430. 30-1216-16	1	R430. 28-1822-22	1	430. 32-16 D125. 0	2
21	130.00	5.1	424. 10-1300	113.0	4.449	220	8.661	0.50	.0197	L430. 31-1216-16	3	L430. 30-1216-16	1	R430. 28-1822-22	1	430. 32-16 D130. 0	2
22	136.00-147.90	5.354-5.823	customized														
23	148.00-159.90	5.827-	customized														
24	160.00-171.90	6.299-6.768	customized														
25	172.00-183.90	6.772-	customized														

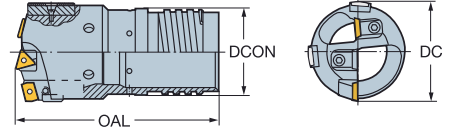
Central cartridge	Insert	Intermediate cartridge	Insert	Peripheral cartridge	Insert
L430.31-1216-16	16 TPMT16T312R-22	R430.30-1216-16	16 TPMT16T312R-22	R430.28-1516-16	13 R424. 9-13T308-22
	16 TPMT16T312TR-23		16 TPMT16T312TR-23		13 R424. 9-13T308-23
	16 TPMT16T312R-24		16 TPMT16T312R-24		13 R424. 9-13T308-24
L430.31-1522-22	22 TPMT22O612R-22	R430.30-1522-22	22 TPMT22O612R-22	R430.28-1822-22	18 R424. 9-180608-22
	22 TPMT22O612TR-23		22 TPMT22O612TR-23		18 R424. 9-180608-23
	22 TPMT22O612R-24		22 TPMT22O612R-24		18 R424. 9-180608-24

424.10 Series

Indexable insert design



Diameter range: 63. 50-183.90mm
Hole depth: 100xDC
Hole tolerance: IT10
Surface finish: Ra 3µm
Cutting fluid: Neat oil or soluble with EP-additives



CZC _{MS}	DC	DC*	Ordering code	Dimensions,mm,inch						Cartridges							
				DCON	DCON*	OAL	OAL*	ADJLX _{RD} L	ADJLX _{RD} L*	Central	No.	Intermediate	No.	Peripheral	No.	Support pad	No.
13	63.50	2.5	A424.10-2500	51.0	2.008	115	4.528	1.00	.0394	L430.31-1216-16	1	L430.30-1216-16	1	R430.28-1516-16	1	430.32-12 D65.0	2
13E	65.00	2.559	424.10-0650E	51.0	2.008	115	4.528	1.50	.0591	L430.31-1216-16	1	L430.30-1216-16	1	R430.28-1516-16	1	430.32-12 D65.0	2
14	65.00	2.5	424.10-0650	52.0	2.047	150	5.906	1.50	.0394	L430.31-1216-16	1	L430.30-1216-16	1	R430.28-1516-16	1	430.32-12 D65.0	2
15	69.85	2.750	A424.10-2750	58.0	2.283	150	5.906	1.00	.0394	L430.31-1216-16	1	L430.30-1216-16	1	R430.28-1516-16	1	430.32-12 D65.0	2
15	70.00	2.7	424.10-0700	58.0	2.283	150	5.906	1.00	.0394	L430.31-1216-16	1	L430.30-1216-16	1	R430.28-1516-16	1	430.32-12 D70.0	2
15	71.45	2.813	A424.10-2813	58.0	2.283	150	5.906	0.75	.0300	L430.31-1216-16	1	L430.30-1216-16	1	R430.28-1516-16	1	430.32-12 D70.0	2
16	75.00	2.9	424.10-0750	63.0	2.480	160	6.299	2.00	.0787	L430.31-1216-16	1	L430.30-1216-16	1	R430.28-1822-22	1	430.32-12 D75.0	2
16	76.20	3.000	A424.10-3000	63.0	2.480	160	6.299	2.00	.0787	L430.31-1216-16	1	L430.30-1216-16	1	R430.28-1822-22	1	430.32-12 D75.0	2
17	80.00	3.1	424.10-0800	70.0	2.756	190	7.480	1.25	.0492	L430.31-1216-16	1	L430.30-1216-16	1	R430.28-1822-22	1	430.32-12 D80.0	2
17	82.55	3.250	A424.10-3250	70.0	2.756	190	7.480	0.75	.0300	L430.31-1216-16	1	L430.30-1216-16	1	R430.28-1822-22	1	430.32-12 D80.0	2
17	85.00	3.3	424.10-0850	70.0	2.756	190	7.480	1.75	.0689	L420.31-1522-22	1	L430.30-1216-16	1	R430.28-1822-22	1	430.32-12 D85.0	2
18	88.90	3.500	A424.10-3500	77.0	3.031	190	7.480	1.75	.0689	L420.31-1522-22	1	L430.30-1216-16	1	R430.28-1822-22	1	430.32-12 D85.0	2
18	90.00	3.5	424.10-0900	77.0	3.031	190	7.480	1.75	.0689	L420.31-1522-22	1	L430.30-1216-16	1	R430.28-1822-22	1	430.32-12 D90.0	2
18	95.00	3.740	424.10-0950	77.0	3.031	190	7.480	2.00	.0787	L420.31-1522-22	1	L430.30-1522-22	1	R430.28-1822-22	1	430.32-12 D95.0	2
18	95.25	3.7	A424.10-3750	77.0	3.031	190	7.480	2.00	.0787	L420.31-1522-22	1	L430.30-1522-22	1	R430.28-1822-22	1	430.32-12 D95.0	2
19	100.00	3.937	424.10-1000	89.0	3.504	195	7.677	1.00	.0394	L420.31-1522-22	1	L430.30-1522-22	1	R430.28-1822-22	1	430.32-16 D100.0	2
19	101.60	4.0	A424.10-4000	89.0	3.504	195	7.677	1.25	.0490	L420.31-1522-22	1	L430.30-1522-22	1	R430.28-1822-22	1	430.32-16 D100.0	2
19	105.00	4.134	424.10-1050	89.0	3.504	195	7.677	0.50	.0197	L420.31-1522-22	1	L430.30-1522-22	1	R430.28-1822-22	1	430.32-16 D105.0	2
19	107.95	4.2	A424.10-4250	89.0	3.504	195	7.677	2.00	.0787	L430.31-1216-16	1	L430.30-1216-16	1	R430.28-1516-16	1	430.32-16 D105.0	2
19	110.00	4.331	424.10-1100	89.0	3.504	195	7.677	1.50	.0591	L430.31-1216-16	1	L430.30-1216-16	1	R430.28-1516-16	1	430.32-16 D110.0	2
19	114.30	4.5	A424.10-4500	101.0	3.976	220	8.661	2.00	.0787	L430.31-1216-16	3	L430.30-1216-16	1	R430.28-1516-16	1	430.32-16 D110.0	2
20	115.00	4.528	424.10-1150	101.0	3.976	220	8.661	1.50	.0591	L430.31-1216-16	3	L430.30-1216-16	1	R430.28-1516-16	1	430.32-16 D115.0	2
20	120.00	4.7	424.10-1200	101.0	3.976	220	8.661	1.50	.0591	L430.31-1216-16	3	L430.30-1216-16	1	R430.28-1516-16	1	430.32-16 D120.0	2
20	120.65	4.750	A424.10-4750	101.0	3.976	220	8.661	1.50	.0591	L430.31-1216-16	3	L430.30-1216-16	1	R430.28-1822-22	1	430.32-16 D120.0	2
21	125.00	4.9	424.10-1250	113.0	4.449	220	8.661	1.75	.0689	L430.31-1216-16	3	L430.30-1216-16	1	R430.28-1822-22	1	430.32-16 D125.0	2
21	127.00	5.000	A424.10-5000	113.0	4.449	220	8.661	1.25	.0490	L430.31-1216-16	3	L430.30-1216-16	1	R430.28-1822-22	1	430.32-16 D125.0	2
21	130.00	5.1	424.10-1300	113.0	4.449	220	8.661	0.50	.0197	L430.31-1216-16	3	L430.30-1216-16	1	R430.28-1822-22	1	430.32-16 D130.0	2
22	136.00-147.90	5.354-5.823	customized														
23	148.00-159.90	5.827-	customized														
24	160.00-171.90	6.299-6.768	customized														
25	172.00-183.90	6.772-	customized														

Central cartridge	Insert	Intermediate cartridge	Insert	Peripheral cartridge	Insert
L430.31-1216-16	16 TPMT16T312R-22	R430.30-1216-16	16 TPMT16T312R-22	R430.28-1516-16	13 R424. 9-13T308-22
	16 TPMT16T312TR-23		16 TPMT16T312TR-23		13 R424. 9-13T308-23
	16 TPMT16T312R-24		16 TPMT16T312R-24		13 R424. 9-13T308-24
L430.31-1522-22	22 TPMT220612R-22	R430.30-1522-22	22 TPMT220612R-22	R430.28-1822-22	18 R424. 9-180608-22
	22 TPMT220612TR-23		22 TPMT220612TR-23		18 R424. 9-180608-23
	22 TPMT220612R-24		22 TPMT220612R-24		18 R424. 9-180608-24

Carbide Drills
 U Drills
 Head Exchangable Drills
 Deep Hole Drills
 CDR 45° Chamfer Cutter
 Non-standard Tools

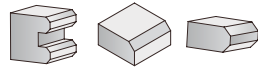
TOTIME 800&424.10 SERIES INSERTS

● :Continuous Cutting

800 & 424.10 INSERTS	P	Steel	●	●	●	●	
	M	Stainless	○	●	●	●	
	K	Cast Iron	●	●	●	●	
	S	Superalloys	○	●	●	●	
	H	Hard Materials	○	●	●	●	

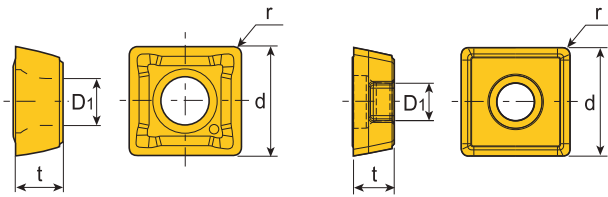
Chipbreaker	Designation	P25C (Coating)	M25C (Coating)	B25C (Coating)	PM10	PM01
	800-050308M-C-G	●	●	●		
	800-06T308M-C-G	●	●	●		
	800-08T308M-C-G	●	●	●		
	800-10T308M-C-G	●	●	●		
	800-12T308M-C-G	●	●	●		
	800-050308M-C-L	●	●	●		
	800-06T308M-C-L	●	●	●		
	800-08T308M-C-L	●	●	●		
	800-10T308M-C-L	●	●	●		
	800-12T308M-C-L	●	●	●		
	800-050308M-I-G	●	●	●		
	800-06T308M-I-G	●	●	●		
	800-08T308M-I-G	●	●	●		
	800-12T308M-I-G	●	●	●		
		800-050308M-I-L	●	●	●	
800-06T308M-I-L		●	●	●		
800-08T308M-I-L		●	●	●		
800-12T308M-I-L		●	●	●		
		800-060308H-P-G	●	●	●	
	800-08T308H-P-G	●	●	●		
	800-09T308H-P-G	●	●	●		
	800-11T308H-P-G	●	●	●		
		800-060308H-P-L	●	●	●	
800-08T308H-P-L		●	●	●		
800-09T308H-P-L		●	●	●		
800-11T308H-P-L		●	●	●		
		R424.9-13T308-22	●	●	●	
	R424.9-13T308-23	●	●	●		
	R424.9-180608-22	●	●	●		
	R424.9-180608-23	●	●	●		
		TPMT16T312R-22	●	●	●	
TPMT16T312TR-23		●	●	●		
TPMT220612R-22		●	●	●		
TPMT220612TR-23		●	●	●		
		800-06A				●
	800-07A				●	
	800-08A				●	
	800-10A				●	
	800-12A				●	
	800-14D065				●	
	800-16D075				●	
	800-18D085				●	
	800-20D100				●	
	800-22D110				●	
	800-24D120				●	
	800-26D130				●	

● Insert coating may vary from the insert image at this catalog. Please refer to our actual insert coating upon inquiry.



Model No.	Size						Blade type	Screw	Wrench
	D	D1	d	L1	L2	L			
CDR1106C10-1T	11	6	10	17	83	100	SP□X050204	TS2003	TK06
CDR1510C12-2T	15	10	12	20	100	120	SP□X050204	TS2003	TK06
CDR1711C16-3T	17	11	16	25	125	150	SP□X050204	TS2003	TK06
CDR1913C16-3T	19	13	16	30	120	150	SP□X050204	TS2003	TK06
CDR2418C20-4T	24	18	20	35	115	150	SP□X050204	TS2003	TK06
CDR2216C16-3T	22	16	16	30	80	120	SP□X060204	TS20205	TK08
CDR2717C20-3T	27	17	20	30	80	120	SP□X07T308	TS2511	TK08
CDR3019C20-2T	30	19	20	40	110	150	SP□X090408	TS3504	TK15
CDR4029C25-3T	40	29	25	40	110	150	SP□X090408	TS3504	TK15
CDR5039C25-4T	50	39	25	40	110	150	SP□X090408	TS3504	TK15
CDR2712C20-1T	27	12	20	40	110	150	SP□X140512	TS5002	TK20
CDR4025C25-2T	40	25	25	40	140	180	SP□X140512	TS5002	TK20
CDR4732C32-3T	47	32	32	40	160	200	SP□X140512	TS5002	TK20

※ CDR2712C20-1T/CDR4025C25-2T/CDR4732C32-3T MOQ 5P.



Unit (mm)

Size	Dimension (mm)			
	d	t	r	D1
05	5.00	2.38	0.4	2.25
06	6.00	2.38	0.4	2.61
07	7.94	3.97	0.8	2.85
09	9.80	4.30	0.8	4.05
14	14.30	5.20	1.2	5.75

Insert	Designation	Material						Stock
		TI620		TZ650	TM450		TN200	
		P (HRC20-30)	K	P (HRC30-40)	P (HRC≤20)	M	N	
	SPMX050204	●		●	●		●	
	SPMX060204	●		●	●		●	
	SPMX07T308	●		●	●		●	
	SPMX090408	●		●	●		●	
	SPMX140512	●		●	●		●	
	SPGX050204						●	
	SPGX060204						●	
	SPGX07T308						●	
	SPGX090408						●	
	SPGX140512						●	

● Stock ○ Non-stock

Recommended Cutting Conditions

	Material	Hardness	Insert Grade	Cutting speed (m/min)	Feed/T(mm/t)
					Face Milling
P	Low alloy steel Cast steel	≤HB180	TI620	150 (100-200)	0.05-0.25
	High carbon steel Alloy steel	HB180-280	TI620	130 (100-180)	0.05-0.25
	Alloy tool steel	HB280-350	TZ650	100 (80-150)	0.05-0.25
M	Stainless steel	≤HB270	TM450	100 (80-150)	0.05-0.20
K	Grey cast iron	HB180-250	TI620	130 (100-180)	0.13-0.30
N	Aluminium alloy	-	TN200	200-320	0.06-0.20
	Copper alloy	-	TN200	200-320	0.06-0.20

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

Non-standard Drill made

Inquiry

Order

Company:

Customer Number:

Contact Person:

Tel:

M.B:

Fax:

Add:

E-mail:

Order Quantity _____

Delivery _____

Order No. _____

Processing conditions and tools information

Hole:

- Through hole Blind hole

Aperture _____mm . Depth _____mm

Material to be processed

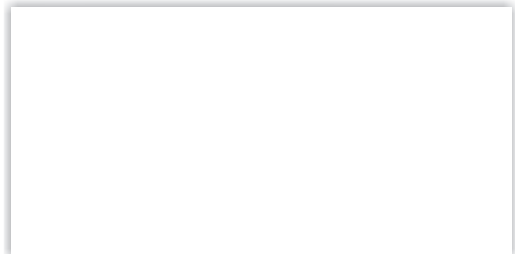
- | | |
|--|---|
| <input type="checkbox"/> Carbon | <input type="checkbox"/> Copper Alloy |
| <input type="checkbox"/> Alloy Steel | <input type="checkbox"/> Hardened Steel |
| <input type="checkbox"/> Stainless steel | <input type="checkbox"/> Nickel Alloy |
| <input type="checkbox"/> Cast Iron | <input type="checkbox"/> Aluminum |
| <input type="checkbox"/> Titanium | <input type="checkbox"/> Other |

Cooling

- External Cooling Internal Cooling

Tensile strength (N/mm²) _____

Non-standard Drill Drawing and Requirement of Design



Processing methods

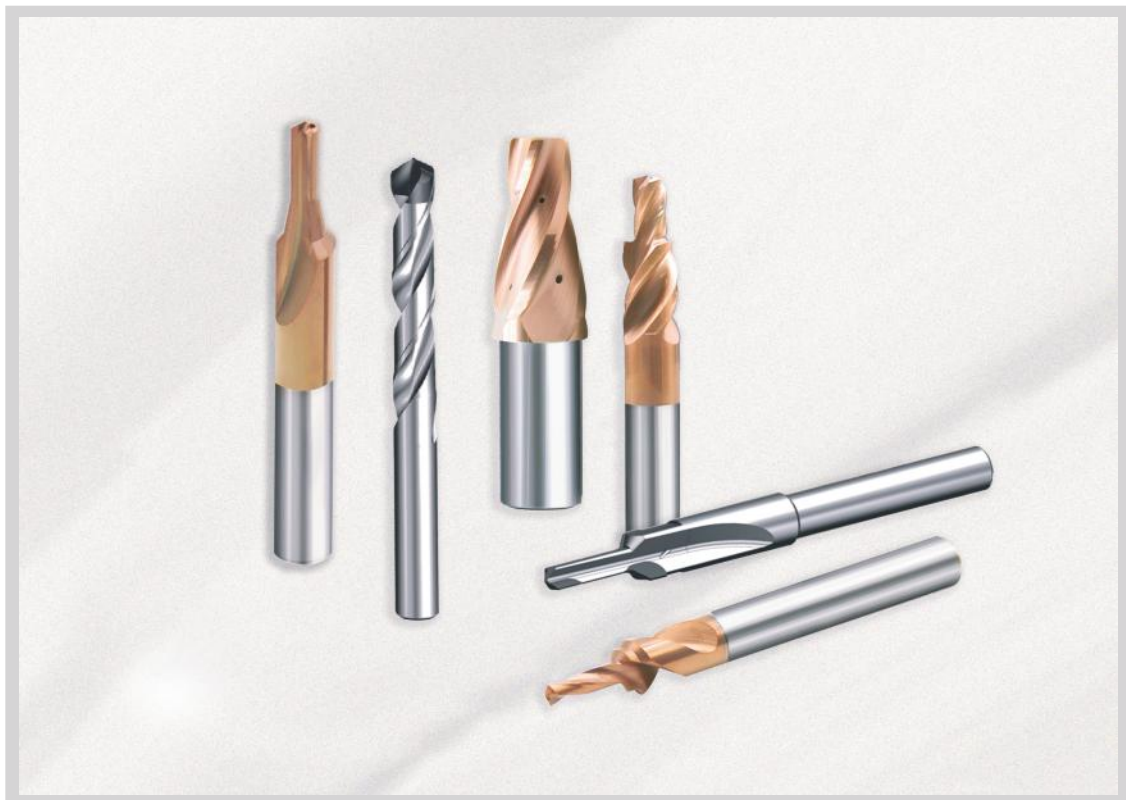
- Wet Dry

Hardness (HRC, HB) _____

Equipment _____

Flute modality: Straight Helical

Customized Non-Standard Drill is Available.



Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

Non-standard Tools

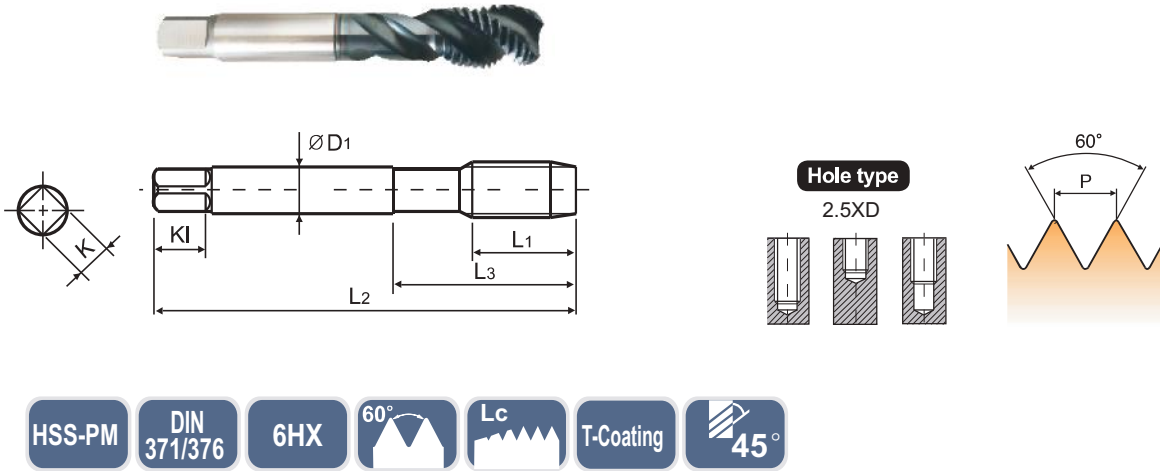
Powder Tap

- HSS-PM (Powder Metallurgy) Premium Taps
 - Premium Spiral Point and Spiral Flute Taps for CNC Machines
 - High and Reliable Performance in Various Ductile Materials
 - DIN/JIS Standard



T Spiral Flute Taps for Multi-Purpose HSS-PM T-Coating Taps DIN

TAD-TAPS



Unit : mm

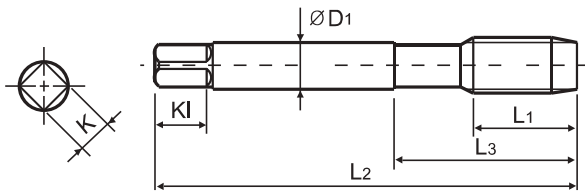
Order No.	Thread Size	Tap Limit	Lc	L2	L1	L3	D1	KI	K
TAD030050-SFT	M3X0.5	6HX	2.5P	56	4.0	18	3.5	6	2.7
TAD040070-SFT	M4X0.7	6HX	2.5P	63	5.6	21	4.5	6	3.4
TAD050080-SFT	M5X0.8	6HX	2.5P	70	6.4	25	6.0	8	4.9
TAD060100-SFT	M6X1.0	6HX	2.5P	80	8.0	30	6.0	8	4.9
TAD080125-SFT	M8X1.25	6HX	2.5P	90	13.0	35	8.0	9	6.2
TAD100150-SFT	M10X1.5	6HX	2.5P	100	15.0	39	10.0	11	8.0
TAD120175-SFT	M12X1.75	6HX	2.5P	110	18.0	44	9.0	10	7.0
TAD140200-SFT	M14X2.0	6HX	2.5P	110	20.0	44	11.0	12	9.0
TAD160200-SFT	M16X2.0	6HX	2.5P	110	20.0	44	12.0	12	9.0

◎ : Excellent ○ : Good

ISO	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron		
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRC	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21		
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
ISO	N								S							H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials	Heat Resistant Super Alloys				Titanium Alloys			Hardened steel	Chilled Cast Iron	Hardened Cast Iron		
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC	60	100	75	90	130	110	90	100			15	30	25	38	34	55	60	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	○	○	○	○	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○

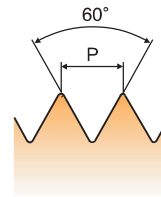
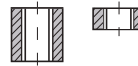
T Spiral Pointed Taps for Multi-Purpose HSS-PM T-Coating Taps DIN

TAD-TAPS



Hole type

3×D



HSS-PM
DIN 371/376
6HX
60°
Lc
T-Coating
0°

Unit : mm

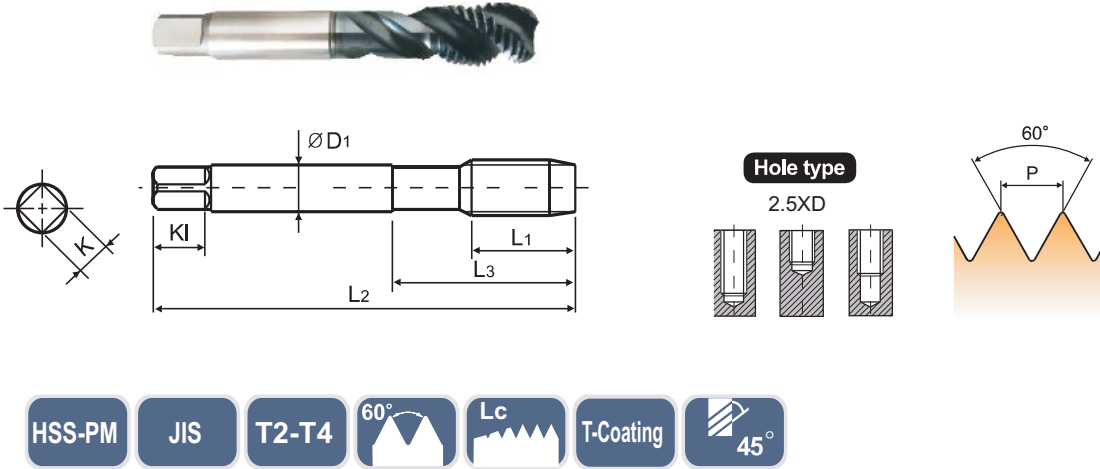
Order No.	Thread Size	Tap Limit	Lc	L2	L1	L3	D1	KI	K
TAD030050-POT	M3X0.5	6HX	4.5P	56	11	18	3.5	6	2.7
TAD040070-POT	M4X0.7	6HX	4.5P	63	13	21	4.5	6	3.4
TAD050080-POT	M5X0.8	6HX	4.5P	70	15	25	6.0	8	4.9
TAD060100-POT	M6X1.0	6HX	4.5P	80	17	30	6.0	8	4.9
TAD080125-POT	M8X1.25	6HX	4.5P	90	20	35	8.0	9	6.2
TAD100150-POT	M10X1.5	6HX	4.5P	100	22	39	10.0	11	8.0
TAD120175-POT	M12X1.75	6HX	4.5P	110	24	44	9.0	10	7.0
TAD140200-POT	M14X2.0	6HX	4.5P	110	26	44	11.0	12	9.0
TAD160200-POT	M16X2.0	6HX	4.5P	110	27	44	12.0	12	9.0

◎ : Excellent ○ : Good

ISO Material Description	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRC	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
ISO Material Description	N								S							H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials	Heat Resistant Super Alloys				Titanium Alloys			Hardened steel	Chilled Cast Iron	Hardened Cast Iron		
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC	21	22	23	24	25	26	27	28	29	30	15	30	25	38	34	36	37	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	○	○	○	○	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○

T Spiral Flute Taps for Multi-Purpose HSS-PM T-Coating Taps JIS

TAJ-TAPS



Unit : mm

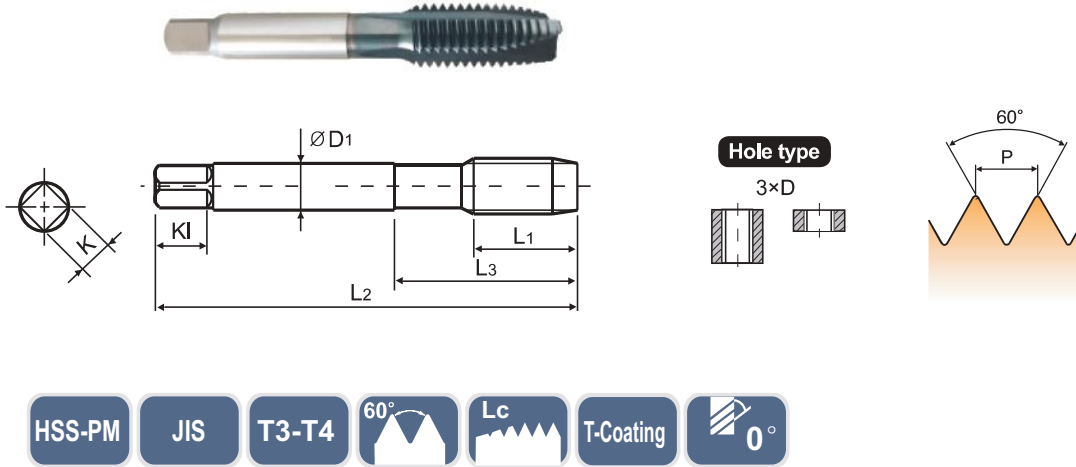
Order No.	Thread Size	Tap Limit	Lc	L2	L1	L3	D1	KI	K
TAJ030050-SFT	M3X0.5	T2	2.5P	46	4.0	18	4.0	6	3.2
TAJ040070-SFT	M4X0.7	T3	2.5P	52	5.6	20	5.0	7	4.0
TAJ050080-SFT	M5X0.8	T3	2.5P	60	6.4	25	5.5	7	4.5
TAJ060100-SFT	M6X1.0	T3	2.5P	62	8.0	28	6.0	7	4.5
TAJ080125-SFT	M8X1.25	T3	2.5P	70	15.0	35	6.2	8	5.0
TAJ100150-SFT	M10X1.5	T3	2.5P	75	18.0	39	7.0	8	5.5
TAJ120175-SFT	M12X1.75	T4	2.5P	82	21.0	42	8.5	9	6.5
TAJ140200-SFT	M14X2.0	T4	2.5P	88	24.0	46	10.5	11	8.0
TAJ160200-SFT	M16X2.0	T4	2.5P	95	24.0	50	12.5	13	10.0

◎ : Excellent ○ : Good

ISO	P										M				K						
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRC	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25				
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	○	◎	◎	◎	◎	◎	◎	◎	○	○	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	
ISO	N										S						H				
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys						Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC	60	100	75	90	130	110	90	100			15	30	25	38	34	55	60	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

T Spiral Pointed Taps for Multi-Purpose HSS-PM T-Coating Taps JIS

TAJ-TAPS



Unit : mm

Order No.	Thread Size	Tap Limit	Lc	L2	L1	L3	D1	KI	K
TAJ030050-POT	M3X0.5	T3	4.5P	46	11	18	4.0	6	3.2
TAJ040070-POT	M4X0.7	T3	4.5P	52	13	20	5.0	7	4.0
TAJ050080-POT	M5X0.8	T3	4.5P	60	16	25	5.5	7	4.5
TAJ060100-POT	M6X1.0	T3	4.5P	62	19	28	6.0	7	4.5
TAJ080125-POT	M8X1.25	T3	4.5P	70	22	35	6.2	8	5.0
TAJ100150-POT	M10X1.5	T4	4.5P	75	24	39	7.0	8	5.5
TAJ120175-POT	M12X1.75	T4	4.5P	82	29	42	8.5	9	6.5
TAJ140200-POT	M14X2.0	T4	4.5P	88	30	46	10.5	11	8.0
TAJ160200-POT	M16X2.0	T4	4.5P	95	32	50	12.5	13	10.0

◎ : Excellent ○ : Good

ISO	P										M				K						
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRC	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21		
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	
ISO	N								S							H					
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC	60	100	75	90	130	110	90	100			15	30	25	38	34	55	60	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

Standard Cutting Conditions

HOLE TYPE		Max. 2.5xD Blind Hole	Max. 3.0xD Through Hole
TOOL MATERIAL		HSS-PM	
FLUTE TYPE		Spiral Flute	Spiral Pointed
SPIRAL FLUTE ANGLE		45°	0°
SERIES	Jis Type	●	●
	DIN 371/376	●	●
SURFACE TREATMENT		T-coating	
MODEL			

● : Excellent ○ : Good

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc	Recommended cutting conditions Vc (m/min.)	
P	1	Non-alloy steel	About 0.15% C Annealed	125		○ 5-20	○ 15-45
	2		About 0.45% C Annealed	190	13	● 10-50	● 10-55
	3		About 0.45% C Quenched & Tempered	250	25	● 10-50	● 10-55
	4		About 0.75% C Annealed	270	28	● 15-40	● 15-50
	5		About 0.75% C Quenched & Tempered	300	32	● 15-40	● 15-50
	6	Low alloy steel	Annealed	180	10	● 8-30	● 8-30
	7		Quenched & Tempered	275	29	● 8-30	● 8-30
	8		Quenched & Tempered	300	32	● 8-30	● 8-30
	9		Quenched & Tempered	350	38	○ 8-30	○ 8-30
	10	High alloyed steel, and tool steel	Annealed	200	15	○ 8-30	○ 8-30
	11		Quenched & Tempered	325	35	○ 8-30	○ 8-30
M	12	Stainless steel	Ferritic / Martensitic Annealed	200	15	● 5-15	● 8-20
	13		Martensitic Quenched & Tempered	240	23	● 5-15	● 8-20
	14		Austenitic	180	10	● 5-15	● 8-20
K	15	Grey cast iron	Pearlitic / ferritic	180	10	○ 15-35	○ 15-35
	16		Pearlitic (Martensitic)	260	26	○ 15-35	○ 15-35
	17	Nodular cast iron	Ferritic	160	3	● 15-35	● 15-35
	18		Pearlitic	250	25	● 15-35	● 15-35
	19		Ferritic	130			
20	Malleable cast iron	Pearlitic	230	21			
N	21	Aluminum-wrought alloy	Not Curable	60		○ 15-35	○ 15-35
	22		Curable Hardened	100		○ 15-35	○ 15-35
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable	75		● 15-35	● 15-35
	24		≤ 12% Si, Curable Hardened	90		● 15-35	● 15-35
	25		> 12% Si, Not Curable	130		○ 15-35	○ 15-35
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%	110		● 15-35	● 15-35
	27		CuZn, CuSnZn (Brass)	90		● 15-35	● 15-35
	28		CuSn, lead-free copper and electrolytic copper	90		● 15-35	● 15-35
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic				
	30		Rubber, Wood, etc.				

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45° Chamfer Cutter

HSS-PM Premium Taps

CUTTING SPEED TABLE - METRIC

Cutting Speeds m/min. into revolutions per minute

Tool Dia.	TOOL RPM (rev./min.)															
	Cutting Speed (m/min.)															
	1	2	3	4	5	6	8	10	12	15	20	25	30	40	50	60
1	318	637	955	1274	1592	1910	2548	3185	3822	4777	6366	7962	9554	12739	15924	19108
2	159	318	478	637	796	955	1274	1592	1911	2388	3185	3981	4777	6369	7962	9554
3	106	212	318	425	531	637	849	1062	1274	1592	2123	2654	3185	4246	5308	6369
4	80	159	239	318	398	478	637	796	955	1194	1592	1990	2389	3185	3981	4777
5	64	127	191	255	318	382	510	637	764	955	1274	1592	1911	2548	3185	3822
6	53	106	159	212	265	318	425	531	637	796	1062	1327	1592	2123	2653	3185
8	40	80	119	159	199	239	318	398	478	597	796	955	1194	1592	1990	2388
10	31	64	96	127	159	191	255	318	382	478	637	796	955	1274	1592	1911
12	26	53	80	106	133	159	212	265	318	398	531	663	796	1062	1327	1592
14	23	45	68	91	114	136	182	227	273	341	455	569	682	910	1137	1365
16	20	40	60	80	100	119	159	199	239	299	398	498	597	796	995	1194
18	18	35	53	71	88	106	142	177	212	265	354	442	531	708	885	1062
20	16	32	48	64	80	96	127	159	191	239	318	398	478	637	796	955
25	13	25	38	51	64	76	102	127	153	191	255	318	382	510	637	764
30	11	21	32	42	53	64	85	106	127	159	212	265	318	425	531	637
35	9	18	27	36	45	55	73	91	109	136	182	227	273	364	455	546
40	8	16	24	32	40	48	64	80	96	119	159	199	239	318	398	478

RPM = rev./min.
 V = m/min.
 D = Dia.(mm)

$$V = \frac{RPM \cdot \pi \cdot D}{1000}$$

$$RPM = \frac{1000 \cdot V}{\pi \cdot D}$$

CUTTING SPEED TABLE - INCH

Cutting Speeds m/min. into revolutions per minute

TOOL RPM (rev./min.)																
Tool Dia.	Cutting Speed (m/min.)															
	1	2	3	4	5	6	8	10	12	15	20	25	30	40	50	60
#0	209	418	627	835	1044	1253	1671	2089	2506	3133	4177	5222	6266	8355	10443	12532
#1	172	343	515	687	858	1030	1373	1717	2060	2575	3433	4292	5150	6867	8583	10300
#2	146	291	437	583	729	874	1166	1457	1749	2186	2914	3643	4372	5829	7286	8743
#3	127	253	380	506	633	760	1013	1266	1519	1899	2532	3165	3798	5063	6329	7595
#4	112	224	336	448	559	671	895	1119	1343	1678	2238	2797	3357	4476	5595	6714
#5	100	201	301	401	501	602	802	1003	1203	1504	2005	2506	3008	4010	5013	6015
#6	91	182	272	363	454	545	726	908	1090	1362	1816	2270	2724	3632	4541	5449
#8	76	153	229	306	382	458	611	764	917	1146	1528	1910	2292	3057	3821	4585
#10	66	132	198	264	330	396	528	660	791	989	1319	1649	1979	2638	3298	3957
#12	58	116	174	232	290	348	464	580	696	870	1160	1450	1741	2321	2901	3481
1/4	50	100	150	201	251	301	401	501	602	752	1003	1253	1504	2005	2506	3008
5/16	40	80	120	160	201	241	321	401	481	602	802	1003	1203	1604	2005	2406
3/8	33	67	100	134	167	201	267	334	401	501	668	835	1003	1337	1671	2005
7/16	29	57	86	115	143	172	229	286	344	430	573	716	859	1146	1432	1719
1/2	25	50	75	100	125	150	201	251	301	376	501	627	752	1003	1253	1504
9/16	22	45	67	89	111	134	178	223	267	334	446	557	668	891	1114	1337
5/8	20	40	60	80	100	120	160	201	241	301	401	501	602	802	1003	1203
3/4	17	33	50	67	84	100	134	167	201	251	334	418	501	668	835	1003
7/8	14	29	43	57	72	86	115	143	172	215	286	358	430	573	716	859
1"	13	25	38	50	63	75	100	125	150	188	251	313	376	501	627	752

Carbide Drills
U Drills
Head Exchangable Drills
Deep Hole Drills
CDR 45° Chamfer Cutter
HSS-PM Premium Taps

RPM = rev./min.
V = m/min.
D = Dia.(mm)

$$V = \frac{RPM \cdot \pi \cdot D}{1000}$$

$$RPM = \frac{1000 \cdot V}{\pi \cdot D}$$

RECOMMENDED TAP DRILL SIZE (M)

Unit : mm

Metric-ISO threads coarse pitch				Metric-ISO threads coarse pitch			
M	Pitch	Maximum Core Dia.	Drill Size	M	Pitch	Maximum Core Dia.	Drill Size
1.0	0.25	0.785	0.75	11	1.50	9.676	9.50
1.1	0.25	0.885	0.85	12	1.75	10.441	10.20
1.2	0.25	0.985	0.95	14	2.00	12.210	12.00
1.4	0.30	1.160	1.10	16	2.00	14.210	14.00
1.6	0.35	1.321	1.25	18	2.50	15.744	15.50
1.7	0.35	1.346	1.30	20	2.50	17.744	17.50
1.8	0.35	1.521	1.45	22	2.50	19.744	19.50
2.0	0.40	1.679	1.60	24	3.00	21.252	21.00
2.2	0.45	1.838	1.75	27	3.00	24.252	24.00
2.3	0.40	1.920	1.90	30	3.50	26.771	26.50
2.5	0.45	2.138	2.05	33	3.50	29.771	29.50
2.6	0.45	2.176	2.10	36	4.00	32.270	32.00
3.0	0.50	2.599	2.50	39	4.00	35.270	35.00
3.5	0.60	3.010	2.90	42	4.50	37.799	37.50
4.0	0.70	3.422	3.30	45	4.50	40.799	40.50
4.5	0.75	3.878	3.70	48	5.00	43.297	43.00
5.0	0.80	4.334	4.20	52	5.00	47.297	47.00
6.0	1.00	5.153	5.00	56	5.50	50.796	50.50
7.0	1.00	6.153	6.00	60	5.50	54.796	54.50
8.0	1.25	6.912	6.80	64	6.00	58.305	58.00
9.0	1.25	7.912	7.80	68	6.00	62.305	62.00
10.0	1.50	8.676	8.50				

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

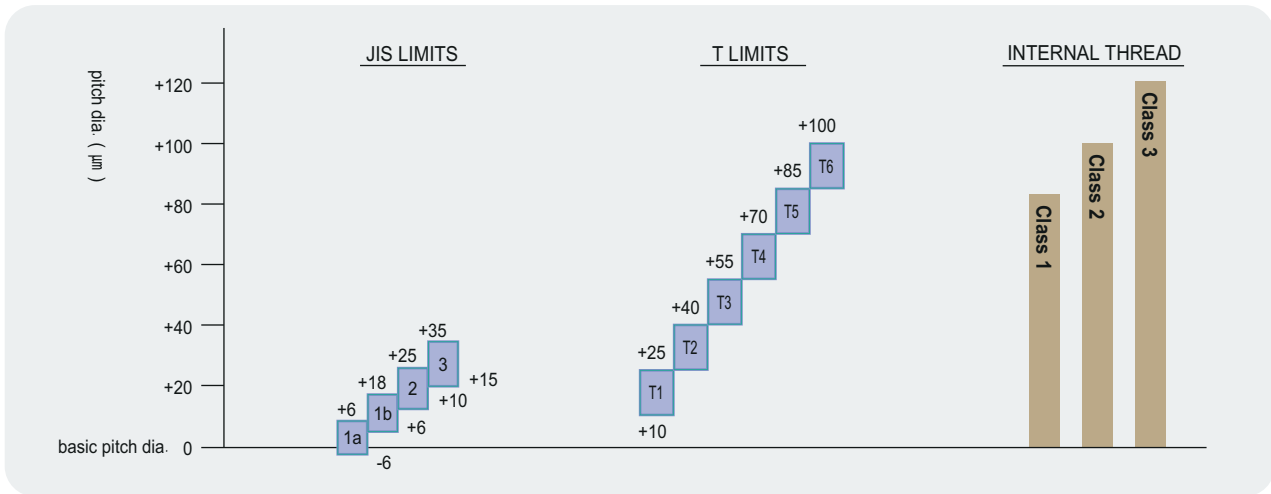
CDR 45° Chamfer Cutter

HSS-PM Premium Taps

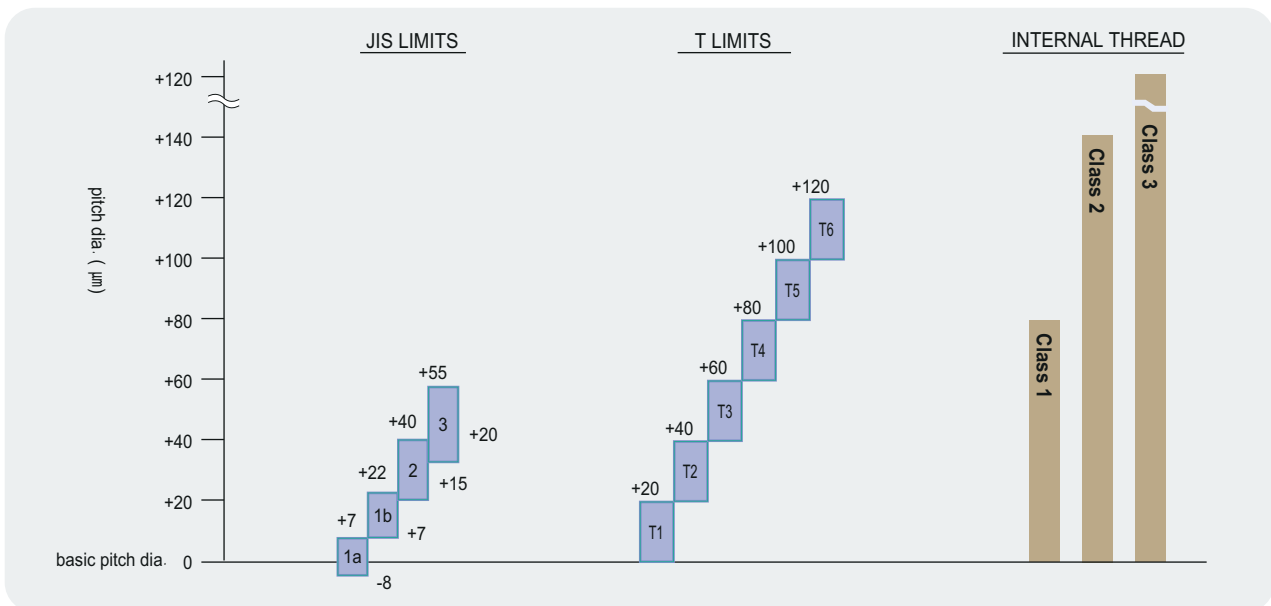
TAP TOLERANCES

- ▶ Tolerance classes of taps and tolerance positions for screw threads as per Metric ISO Standard.

Example M3×0.5



Example M10×1.5



Carbide Drills

U Drills

Head Exchangable Drills

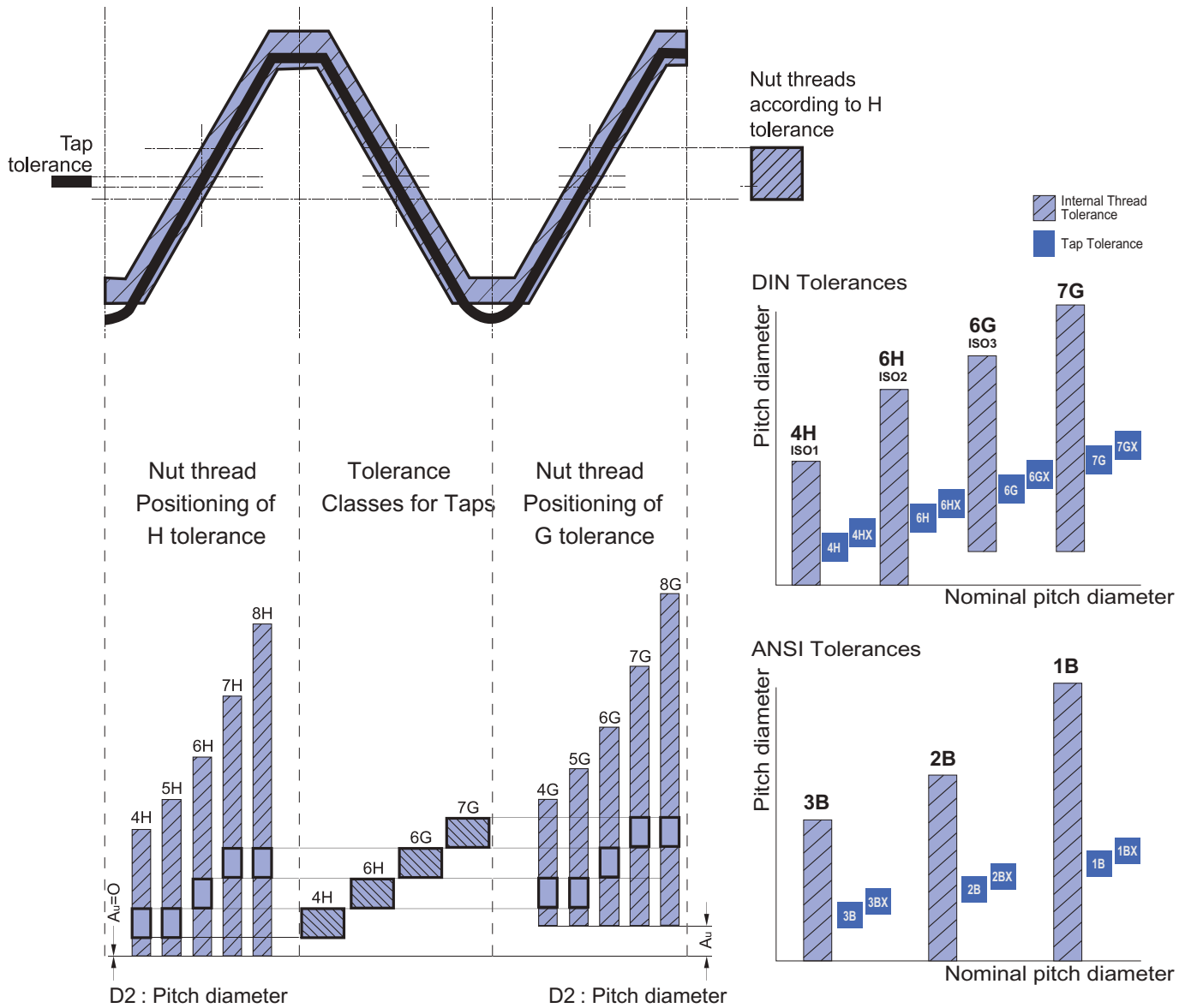
Deep Hole Drills

CDR 45° Chamfer Cutter

HSS-PM Premium Taps

TAP TOLERANCES

► Tolerance classes of taps and tolerance positions for screw threads as per Metric ISO Standard.



► Taps tolerances and recommended classes

Tap tolerance ISO	Tap tolerance DIN	Correct class to obtain Nut thread with tolerance				
ISO 1	4H	4H	5H			
ISO 2	6H	4G	5G	6H		
ISO 3	6G			6G	7H	8H
	7G				7G	8G

TROUBLE SHOOTING GUIDE

Specific Problem	Cause	Solution
Dimensional Accuracy		
Oversize Pitch Diameter	Incorrect Tap	<ol style="list-style-type: none"> 1. Use proper limits of taps 2. Use longer chamfered taps
	Chip Packing	<ol style="list-style-type: none"> 1. Use spiral point or spiral fluted taps 2. Reduce number of flutes to provide extra chip room 3. Use larger hole size 4. If tapping a hole, allow deeper hole where applicable or shorten the thread length of the parts 5. Use proper lubricant
	Galling	<ol style="list-style-type: none"> 1. Apply proper surface treatment such as Hardslick or chrome 2. Use proper cutting lubricant 3. Reduce tapping speed 4. Use proper cutting angle in accordance with material being tapped 5. Use large hole size
	Operating Conditions	<ol style="list-style-type: none"> 1. Apply proper tapping speed 2. Correct alignment of tap and drill hole 3. Free cutting either tap or workpiece 4. Use proper tapping speed to avoid torn or rough threads 5. Use lead screw tapper 6. Use proper tapping machine with suitable power 7. Avoid misalignment of the tap and drill hole from loose spindle or worn holder
	Tool Condition	<ol style="list-style-type: none"> 1. Obtain proper indexing angle for the flutes at the cutting edge 2. Grind proper cutting angle and chamfer angle 3. Avoid too narrow a land width 4. Remove burrs from regrinding
Oversize Internal Diameter	Hole Size	<ol style="list-style-type: none"> 1. Use minimum hole size 2. Avoid tapered hole 3. Use proper chamfered taps
	Galling	<ol style="list-style-type: none"> 1. Galling solutions 1 through 4 above can be applied to this specific problem
Undersize Pitch Diameter	Incorrect Tap	<ol style="list-style-type: none"> 1. Use oversize taps 2. Apply proper chamfer angle 3. Increase cutting angle
	Damaged Thread	<ol style="list-style-type: none"> 1. Use proper reversing speed to avoid damaging tapped thread on the way out of the hole
	Left-over Chips	<ol style="list-style-type: none"> 1. Increase cutting performance to avoid any left over chips in the hole 2. Remove left over chips from the hole for gage checking
Undersize Internal Diameter	Hole Size	<ol style="list-style-type: none"> 1. Use maximum drill size
Breakage	Incorrect Tap Selection	<ol style="list-style-type: none"> 1. Avoid chip packing in the flutes or on the bottom of the hole 2. Use spiral pointed or spiral fluted taps or fluteless taps 3. Apply correct surface treatment such as Hardslick or bright
	Excessive Tapping Torque	<ol style="list-style-type: none"> 1. Use larger drill size 2. Try to shorten thread length 3. Increase cutting angle 4. Apply a tap with more thread relief and reduced land width 5. Apply correct surface treatment such as Hardslick

Carbide Drills

U Drills

Head Exchangable Drills

Deep Hole Drills

CDR 45[®] Chamfer Cutter

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Dimensional Accuracy		
Breakage	Operating Conditions	<ol style="list-style-type: none"> 1. Reduce tapping speed 2. Avoid misalignment between tap and the hole and tapered hole 3. Use floating type of tapping holder 4. Use tapping holder with torque adjustment 5. Avoid hitting bottom of the hole with tap
	Tool Condition	<ol style="list-style-type: none"> 1. Do not grind the bottom of the flute 2. Avoid too narrow a land width 3. Remove all worn sections when regrinding the flutes 4. Regrind tool more frequently
Chipping	Incorrect Tap Selection	<ol style="list-style-type: none"> 1. Reduce cutting angle 2. Use a different kind of high-speed steel tap 3. Reduce hardness of the tap 4. Increase chamfer length 5. Avoid chip packing in the flutes or in the bottom of the hole by using spiral fluted or spiral pointed taps
	Operating Conditions	<ol style="list-style-type: none"> 1. Reduce tapping speed 2. Avoid misalignment between tap and hole 3. Avoid sudden return of reverse in blind hole tapping 4. Avoid galling 5. Use larger hole size
Wear	Incorrect Tap Selection	<ol style="list-style-type: none"> 1. Apply specially designed tap for tapping heat treated material 2. Change to a type of high-speed steel tap that contains vanadium 3. Apply special surface treatment such as TiCN, TiAlN or Hardslick 4. Increase chamfer length
	Operating Conditions	<ol style="list-style-type: none"> 1. Reduce tapping speed 2. Apply proper cutting lubricants 3. Avoid work hardened hole 4. Use larger hole size
	Tool Condition	<ol style="list-style-type: none"> 1. Grind proper cutting angle 2. Avoid hardness reduction from grinding process
Torn or Rough Thread	Chamfer Too Short	<ol style="list-style-type: none"> 1. Increase chamfer length
	Wrong Cutting Angle	<ol style="list-style-type: none"> 1. Apply proper cutting angle
	Galling	<ol style="list-style-type: none"> 1. Use thread relieved taps 2. Reduce land width 3. Apply surface treatment such as Hardslick or chrome 4. Use proper cutting lubricant 5. Reduce tapping speed 6. Use larger hole size 7. Obtain proper alignment between tap and work
	Chip Packing	<ol style="list-style-type: none"> 1. Use spiral pointed or spiral fluted taps 2. Use larger drill size
Chattering on Tapped Thread	Tool Free Cutting	<ol style="list-style-type: none"> 1. Reduce cutting angle 2. Reduce amount of thread relief
	Tool Condition	<ol style="list-style-type: none"> 1. Avoid too narrow land width 2. Do not grind the bottom of the flute

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Make it Simple



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