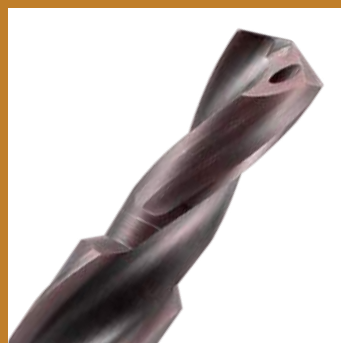
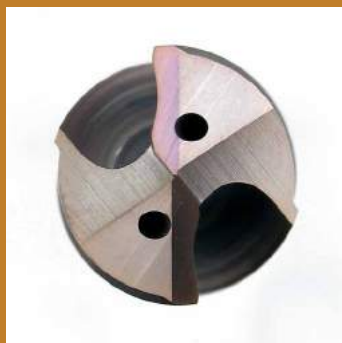




ISO 9001



DRIX *Holemaking Tools* 2017~2018 Catalogue



Winstar Cutting Technologies Corp. Is a Taiwanese company that started operations in the year 2008 by Tim Chen following a dream and personal interest in developing solid tools. We are a professional manufacturer of Cutting Tools and Inserts. Since WINSTAR started it has specialized in the Design and Manufacture of High-Quality Cutting Tools. Having more than 4,400 different kinds of items and huge stocks. We are able to meet customer's needs. 90% of our products provide our own brand tools and 10% to do OEM project for world-class cutting group. WINSTAR has become one of the most successful companies in Taiwan. We base our company's success on our long-standing commitment to satisfy our customers' needs. By Utilizing the Finest Raw Materials and introducing Innovative Cutting Tools.

Why Winstar?

Your order will receive personal attention from our sales staff. We offer full technical support for our products and are always just a phone call away. Your satisfaction is very important to us. We stock our shelves to support our full product line. This means we probably have what you need ready to ship today.

Taiwanese made Quality

Your satisfaction is 100% guaranteed! Our complete line of end mills, drills, holders, and insert will stand-up-to or out-perform any premium cutting tool brand on the market.

Privacy and Security

We aggressively protect your privacy rights. All transactions are conducted via our secure, encrypted online system. Your customer information will never be sold, reproduced, or distributed.

Optimized Carbide Grades

Maximum cutting performance is only achieved when the carbide grade characteristics ideally fit the specific application needs.

Superior Grinding Quality

Research on better surface quality remains an area of continuous technological advancement. Since the cutting edge quality determines the tool life and cutting action, a superior grinding quality is critical. WINSTAR provides the latest Swiss and German grinding Technology to get a superior surface finish.

Highly Innovative Tool Geometries

Highest cutting action cannot be accomplished by using only the standard geometries of universal tools. Efficient chip forming and evacuation is critical for optimal cutting performance. Such geometries are designed to manage a broad range of cutting forces and provide the highest cutting action for aerospace applications. As a recognized provider for "special" tools, WINSTAR possesses the engineering know-how to design highly innovative tool geometries for maximum cutting.

Advanced Tool Coating Technology

We are committed to provide our Customers with Crafted precision and Excellence. Longest tool life and maximum application performance require the utilization of advanced coating technology. As this highly innovative field continues to rapidly change.

Winstar Friends and Family

In WINSTAR CUTTING TECHNOLOGIES Corp. We believe in partnership and understands that the best way to grow is together. That is the reason Winstar works as a team, to provide the customer with a better efficient service. We also have partnerships around the globe. With this special friends we work just the same way we work together in WINSTAR. To make bigger and better alliances so we can grow together as a big family.

Welcome to WINSTAR Family



Drilling

鑽 削

Solid Carbide Drills 全鎢鋼鑽頭

DPC Series for Universal (內冷泛用鎢鋼鑽頭)	C005
DPN Series for Universal (外冷泛用鎢鋼鑽頭)	C011
DDC Series for Deep Hole (內冷深孔鎢鋼鑽頭)	C015
DLC Series for Mini Hole (內冷小徑鎢鋼鑽頭)	C021
DLN Series for Mini Hole (外冷小徑鎢鋼鑽頭)	C023
DMC Series for Stainless Steel (內冷不銹鋼用鎢鋼鑽頭)	C025
DHC Series for Hardened Steel (內冷高硬用鎢鋼鑽頭)	C031
DHN Series for Hardened Steel (外冷高硬用鎢鋼鑽頭)	C036
DAN Series with Straight Flute (外冷直刃鑽鉸刀)	C039
DZC Series for Step Hole (內冷階梯鎢鋼鑽頭)	C043
DZN Series for Step Hole (外冷階梯鎢鋼鑽頭)	C045
DFN Series with Flat Tip (外冷平底鎢鋼鑽頭)	C047
DGN Series for General Purpose (外冷泛用鎢鋼鑽頭)	C051
DTN Series for Spotting (外冷定點鎢鋼鑽頭)	C055
DCN Series for Centering (外冷中心鎢鋼鑽頭)	C061

Indexable Drilling 捨棄式鑽頭

Insert Grade Descriptions (刀片塗層介紹)	C066
SPMG Inserts (SPMG 刀片)	C067
WCMT Inserts (WCMT 刀片)	C068
DSP Series (內冷捨棄式快速鑽頭)	C069
DWC Series (內冷捨棄式快速鑽頭)	C077

Reaming

鉸 削

Solid Carbide Reaming 全鎢鋼機械鉸刀

DRC Series for Machine Reamers (內冷鎢鋼機械鉸刀)	C085
DRN Series for Machine Reamers (外冷鎢鋼機械鉸刀)	C087

Boring

搪 削

Boring system 搪孔系統

CCMT Inserts (CCMT 刀片)	C090
SCMT Inserts (SCMT 刀片)	C091
TCMT Inserts (TCMT 刀片)	C092
DB Series (雙刃粗搪刀)	C093
DBLA Series (大徑雙刃粗搪刀)	C095
DBBT Series (搪刀刀柄)	C097

Technical Data 技術資料

Cutting Data (切削條件數據表)	C098
Geometry Design of Drills (鑽頭幾何設計)	C103
Drill Troubleshooting Guide (鑽削加工異常原因及對策)	C104
Deep Hole Drilling Application Guide (深孔加工應用指南)	C106
Drill Tailor-made Order Form (鑽頭客製表)	C107
Cutting Tools Evaluation Report (刀具切削報告)	C108



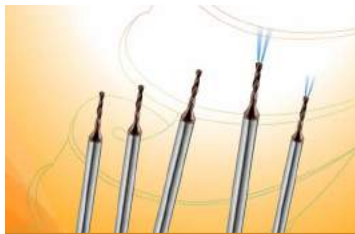
DP Series for Universal

- 3×D, 5×D, 7×D Cutting depth.
- Internal & External Coolant.
- 140° Tip Angle, Reinforced Shank.
- UNIX Coating.
- 3×D, 5×D, 7×D 加工深度。
- 冷卻方式：內冷孔 & 外冷。
- 140° 鑽尖，銑刀柄。
- UNIX 塗層。



DD Series for Deep Hole

- 10×D, 15×D, 20×D Cutting depth.
- Internal Coolant.
- 135° Tip Angle, Reinforced Shank.
- UNIX Coating.
- 10×D, 15×D, 20×D 加工深度。
- 冷卻方式：內冷孔。
- 135° 鑽尖，銑刀柄。
- UNIX 塗層。



DL Series for Mini Hole

- 3×D, 4×D Cutting depth.
- Internal & External Coolant.
- 130°, 140° Tip Angle, Reinforced Shank.
- UNIX Coating.
- 3×D, 4×D 加工深度。
- 冷卻方式：內冷孔 & 外冷。
- 130°, 140° 鑽尖，銑刀柄。
- UNIX 塗層。



DM Series for Stainless Steel

- 3×D, 5×D Cutting depth.
- Internal Coolant.
- 140° Tip Angle, Reinforced Shank.
- UNIX Coating.
- 3×D, 5×D 加工深度。
- 冷卻方式：內冷孔。
- 140° 鑽尖，銑刀柄。
- UNIX 塗層。



DH Series for Hardened Steel

- 3×D, 5×D Cutting depth.
- Internal Coolant.
- 140° Tip Angle, Reinforced Shank.
- SINIX Coating.
- 3×D, 5×D 加工深度。
- 冷卻方式：內冷孔。
- 140° 鑽尖，銑刀柄。
- SINIX 塗層。



DG Series for General Purpose

- 3×D, 5×D Cutting depth.
- External Coolant.
- 130° Tip Angle, Straight Shank.
- UNIX Coating.
- 3×D, 5×D 加工深度。
- 冷卻方式：外冷。
- 130° 鑽尖，直柄。
- UNIX 塗層。



DSP Series Indexable Drills

- 2×D ~ 5×D Cutting depth.
- Diameter 12.5~50mm.
- Internal Coolant.
- Use SPMG insert.
- 2×D ~ 5×D 加工深度。
- 適用 12.5~50mm 孔徑加工。
- 冷卻方式：內冷孔。
- 使用 SPMG 刀片。



DWC Series Indexable Drills

- 2×D ~ 5×D Cutting depth.
- Diameter 14~60mm.
- Internal Coolant.
- Use WCMT insert.
- 2×D ~ 5×D 加工深度。
- 適用 14~60mm 孔徑加工。
- 冷卻方式：內冷孔。
- 使用 WCMT 刀片。



DZ Series for Step Hole

- Internal & External Coolant.
- Reinforced Shank.
- UNIX Coating.
- Customized available.
- 冷卻方式：內冷孔 & 外冷。
- 銑刀柄。
- UNIX 塗層。
- 可客制化。



DR Series Machine Reamers

- Internal & External Coolant.
- Specially for high accurate hole machining.
- UNIX Coating.
- Customized available.
- 冷卻方式：內冷孔 & 外冷。
- 專為高精度的孔加工設計。
- UNIX 塗層。
- 可客制化。



DB Series Boring System

- Easy to adjust.
- High rigidity tool body.
- Various inserts available.
- Diameter 25mm to 610mm.
- 易於調整加工孔徑。
- 高剛性合金鋼本體。
- 可適用多種刀片。
- 適用 25-610mm 孔徑加工。



Solid Carbide Drills

Appearance	Items	Series	Coolant	ØRange	Degree Tip Angle	Page
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DP Series for Universal (Reinforced Shank)

	DPC Solid Carbide Drills - 3×D (for Universal) 內冷泛用鎢鋼鑽頭	DPC	Internal	Ø3.17~Ø20	140	C006
	DPC Solid Carbide Drills - 5×D (for Universal) 內冷泛用鎢鋼鑽頭	DPC	Internal	Ø3.17~Ø20	140	C008
	DPC Solid Carbide Drills - 7×D (for Universal) 內冷泛用鎢鋼鑽頭	DPC	Internal	Ø4~Ø16	140	C010
	DPN Solid Carbide Drills - 3×D (for Universal) 外冷泛用鎢鋼鑽頭	DPN	External	Ø3~Ø20	140	C011
	DPN Solid Carbide Drills - 5×D (for Universal) 外冷泛用鎢鋼鑽頭	DPN	External	Ø3~Ø20	140	C013

DD Series for Deep Hole (Reinforced Shank)

	DDC Solid Carbide Drills - 10×D (for Deep hole) 內冷深孔鎢鋼鑽頭	DDC	Internal	Ø3~Ø12	135	C016
	DDC Solid Carbide Drills - 15×D (for Deep hole) 內冷深孔鎢鋼鑽頭	DDC	Internal	Ø3~Ø12	135	C017
	DDC Solid Carbide Drills - 20×D (for Deep hole) 內冷深孔鎢鋼鑽頭	DDC	Internal	Ø3~Ø10	135	C018
	DDC Solid Carbide Drills - 30×D (for Deep hole) 內冷深孔鎢鋼鑽頭	DDC	Internal	Ø3~Ø6	135	C019
	DDC Solid Carbide Drills - 40×D (for Deep hole) 內冷深孔鎢鋼鑽頭	DDC	Internal	Ø3~Ø5	135	C020

DL Series for Mini Hole (Reinforced Shank)

	DLC Solid Carbide Drills - 3~4×D (for Mini hole) 內冷小徑鎢鋼鑽頭	DLC	Internal	Ø2.0~Ø3.9	130, 140	C022
	DLN Solid Carbide Drills - 3×D (for Mini hole) 外冷小徑鎢鋼鑽頭	DLN	External	Ø0.2~Ø2.9	130	C023

DM Series for Stainless Steel (Reinforced Shank)

	DMC Solid Carbide Drills - 3×D (for Stainless Steel) 內冷不鏽鋼用鎢鋼鑽頭	DMC	Internal	Ø4~Ø20	140	C026
	DMC Solid Carbide Drills - 5×D (for Stainless Steel) 內冷不鏽鋼用鎢鋼鑽頭	DMC	Internal	Ø4~Ø20	140	C028

DH Series for Hardened Steel (Reinforced Shank)

	DHC Solid Carbide Drills - 3×D (for Hardened Steel) 內冷高硬用鎢鋼鑽頭	DHC	Internal	Ø4~Ø20	140	C032
	DHC Solid Carbide Drills - 5×D (for Hardened Steel) 內冷高硬用鎢鋼鑽頭	DHC	Internal	Ø4~Ø20	140	C034
	DHN Solid Carbide Drills - 3×D (for Hardened Steel) 外冷高硬用鎢鋼鑽頭	DHN	External	Ø4~Ø20	140	C036

DA Series for Straight Flute (with Straight Flute)

	DAN Solid Carbide Drills - 3×D (with Straight Flute) 外冷直刃鑽絞刀	DAN	External	Ø4~Ø16	130	C040
	DAN Solid Carbide Drills - 5×D (with Straight Flute) 外冷直刃鑽絞刀	DAN	External	Ø4~Ø16	130	C041

Solid Carbide Drills

Appearance	Items	Series	Coolant	ØRange	Degree Tip Angle	Page
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DZ Series with for Step Hole (Reinforced Shank)

	DZC Solid Carbide Drills (for Step hole) 內冷階梯鎢鋼鑽頭	DZC	Internal	Ø3.3~Ø8.5	140	C044
	DZN Solid Carbide Drills (for Step hole) 外冷階梯鎢鋼鑽頭	DZN	External	Ø3.3~Ø8.5	140	C045

DF Series for General Purpose (with Flat Tip)

	DFN Solid Carbide Drills - 3×D (with Flat Tip) 外冷平底鎢鋼鑽頭	DFN	External	Ø3~Ø20	180	C048
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DG Series for General Purpose (Straight Shank)

	DGN Solid Carbide Drills - 3×D (for General Purpose) 外冷泛用鎢鋼鑽頭	DGN	External	Ø2~Ø16	130	C052
	DGN Solid Carbide Drills - 5×D (for General Purpose) 外冷泛用鎢鋼鑽頭	DGN	External	Ø5~Ø16	130	C054

DT Series for Spotting

	DTN Solid Carbide Drills - Tip angle 90° (for Spotting) 外冷定點鎢鋼鑽頭	DTN	External	Ø1.3~Ø16	90	C056
	DTN Solid Carbide Drills - Tip angle 120° (for Spotting) 外冷定點鎢鋼鑽頭	DTN	External	Ø3~Ø16	120	C057
	DTN Solid Carbide Drills - Tip angle 140° (for Spotting) 外冷定點鎢鋼鑽頭	DTN	External	Ø3~Ø16	140	C060
	DTN Solid Carbide Drills - Tip angle 90°, Long shank (for Spotting) 外冷定點鎢鋼鑽頭	DTN	External	Ø4~Ø16	90	C058
	DTN Solid Carbide Drills - Tip angle 120°, Long shank (for Spotting) 外冷定點鎢鋼鑽頭	DTN	External	Ø4~Ø16	120	C059
	DTN Solid Carbide Drills - Tip angle 140°, Long shank (for Spotting) 外冷定點鎢鋼鑽頭	DTN	External	Ø4~Ø16	140	C060

DC Series for Centering

	DCN Solid Carbide Drills - Countersink Angle 60° (for Centering) 外冷中心鎢鋼鑽頭	DCN	External	Ø1~Ø5	120	C062
	DCN Solid Carbide Drills - Countersink Angle 90° (for Centering) 外冷中心鎢鋼鑽頭	DCN	External	Ø1~Ø5	120	C063

Indexable Drills

Appearance	Item	Page
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SPMG Inserts

	SPMG	050204-MG	C067
		060204-MG	
		07T308-MG	
		090408-MG	
		110408-MG	

Appearance	Item	Code No.	Coolant	ØRange	Page
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DSP Indexable Drills

	DSP Indexable Drills - 2xD 內冷捨棄式快速鑽頭	IDSP	Internal	Ø12.5~Ø50	C070
	DSP Indexable Drills - 3xD 內冷捨棄式快速鑽頭	IDSP	Internal	Ø12.5~Ø50	C072
	DSP Indexable Drills - 4xD 內冷捨棄式快速鑽頭	IDSP	Internal	Ø12.5~Ø50	C074
	DSP Indexable Drills - 5xD 內冷捨棄式快速鑽頭	IDSP	Internal	Ø13~Ø44	C076

Appearance	Item	Page
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WCMT Inserts

	WCMT	030208-MM	C068
		040208-MM	
		050308-MM	
		06T308-MM	
		080412-MM	

Appearance	Item	Code No.	Coolant	ØRange	Page
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DWC Indexable Drills

	DWC Indexable Drills - 2xD 內冷捨棄式快速鑽頭	IDWC	Internal	Ø14~Ø60	C078
	DWC Indexable Drills - 3xD 內冷捨棄式快速鑽頭	IDWC	Internal	Ø14~Ø60	C080
	DWC Indexable Drills - 4xD 內冷捨棄式快速鑽頭	IDWC	Internal	Ø14~Ø60	C082
	DWC Indexable Drills - 5xD 內冷捨棄式快速鑽頭	IDWC	Internal	Ø16~Ø44	C084

Solid Carbide Reamers

Appearance	Items	Series	Coolant	ØRange	Degree Tip Angle	Page
DR Series for Machine Reamers						
	DRC Solid Carbide Machine Reamers 內冷鎢鋼機械鉋刀	DRC	Internal	Ø3~Ø12	-	C086
	DRN Solid Carbide Machine Reamers 外冷鎢鋼機械鉋刀	DRN	External	Ø3~Ø12	-	C087

Boring System

Appearance	Item	Page
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CCMT Inserts

	CCMT	060204-MP	C090
		09T304-MP	
		09T308-MP	
	CCMT	060202-MG	C090
		060204-MG	
		09T304-MG	
		09T308-MG	
		120408-MG	

SCMT Inserts

	SCMT	09T304-MG	C091
		09T308-MG	

TCMT Inserts

	TCMT	110204-MP	C092
	TCMT	110204-MG	C092
		16T304-MG	
		16T308-MG	

Boring System

Appearance	Items	Series	Coolant	ØRange	Page
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DB Series for Boring System

	DB Rough boring head 雙刃粗搪刀	DB	External	Ø25~Ø204	C093
	DB Rough boring tool 雙刃粗搪刀含 BT 刀柄	DB	External	Ø25~Ø204	C094
	DBLA Rough boring head for large hole 大徑雙刃粗搪刀	DBLA	External	Ø200~Ø610	C095
	DBLA Rough boring tool for large hole 大徑雙刃粗搪刀含 BT 刀柄	DBLA	External	Ø200~Ø610	C096
	DBBT series taper shank DBBT 系列搪刀刀柄	DBBT	-	-	C097



FEATURES

- Superior Rigidity
- High Cutting Performance
- Customized Service
- For Steel, Stainless steel, Cast iron
- 刀具剛性優異
- 高效能加工效率
- 提供客製化服務
- 適用於一般鋼料、不鏽鋼、鑄鐵

SPECS

- UNIX Coating
- 140° TIP ANGLE
- Reinforced Shank

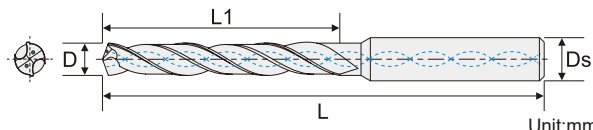
DPC Solid Carbide Drills - 3×D (for Universal)

內冷泛用鎢鋼鑽頭



Product Specs

- 3×D Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- UNIX Coating
- Tolerance h8 standard / m7 possible on request
- Double Margins Design
- SX Design
- For Steel, Alloy Steel, Cast Iron and 400 series Stainless Steel.



Unit:mm

Order No.	D	L1	L	Ds
DPC03170301	3.17(1/8")	20	60	4
DPC04000301	4.00	24	66	6
DPC04100301	4.10	24	66	6
DPC04200301	4.20	24	66	6
DPC04300301	4.30	24	66	6
DPC04400301	4.40	24	66	6
DPC04500301	4.50	24	66	6
DPC04600301	4.60	24	66	6
DPC04650301	4.65(13/71")	24	66	6
DPC04700301	4.70	24	66	6
DPC04760301	4.76(3/16")	28	66	6
DPC04800301	4.80	28	66	6
DPC04900301	4.90	28	66	6
DPC05000301	5.00	28	66	6
DPC05100301	5.10	28	66	6
DPC05200301	5.20	28	66	6
DPC05300301	5.30	28	66	6
DPC05400301	5.40	28	66	6
DPC05500301	5.50	28	66	6
DPC05560301	5.56	28	66	6
DPC05600301	5.60	28	66	6
DPC05700301	5.70	28	66	6
DPC05800301	5.80	28	66	6
DPC05900301	5.90	28	66	6
DPC06000301	6.00	28	66	6
DPC06100301	6.10	34	79	8
DPC06200301	6.20	34	79	8
DPC06300301	6.30	34	79	8
DPC06350301	6.35(1/4")	34	79	8
DPC06400301	6.40	34	79	8
DPC06500301	6.50	34	79	8
DPC06600301	6.60	34	79	8
DPC06700301	6.70	34	79	8
DPC06800301	6.80	34	79	8
DPC06900301	6.90	34	79	8
DPC07000301	7.00	34	79	8
DPC07100301	7.10	41	79	8
DPC07200301	7.20	41	79	8
DPC07300301	7.30	41	79	8
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DPC07700301	7.70	41	79	8
DPC07800301	7.80	41	79	8
DPC07900301	7.90	41	79	8
DPC07940301	7.94(5/16)	41	79	8

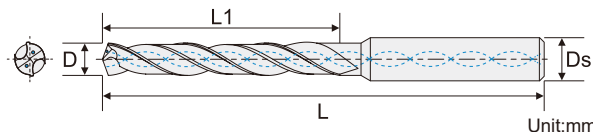
Order No.	D	L1	L	Ds
DPC08000301	8.00	41	79	8
DPC08100301	8.10	47	89	10
DPC08200301	8.20	47	89	10
DPC08300301	8.30	47	89	10
DPC08400301	8.40	47	89	10
DPC08500301	8.50	47	89	10
DPC08600301	8.60	47	89	10
DPC08700301	8.70	47	89	10
DPC08800301	8.80	47	89	10
DPC08900301	8.90	47	89	10
DPC09000301	9.00	47	89	10
DPC09100301	9.10	47	89	10
DPC09200301	9.20	47	89	10
DPC09250301	9.25(23/64")	47	89	10
DPC09300301	9.30	47	89	10
DPC09400301	9.40	47	89	10
DPC09500301	9.50	47	89	10
DPC09520301	9.52(3/8")	47	89	10
DPC09600301	9.60	47	89	10
DPC09700301	9.70	47	89	10
DPC09800301	9.80	47	89	10
DPC09900301	9.90	47	89	10
DPC10000301	10.00	47	89	10
DPC10100301	10.10	55	102	12
DPC10200301	10.20	55	102	12
DPC10300301	10.30	55	102	12
DPC10400301	10.40	55	102	12
DPC10500301	10.50	55	102	12
DPC10600301	10.60	55	102	12
DPC10700301	10.70	55	102	12
DPC10800301	10.80	55	102	12
DPC10900301	10.90	55	102	12
DPC11000301	11.00	55	102	12
DPC11100301	11.10	55	102	12
DPC11110301	11.11(7/16")	55	102	12
DPC11200301	11.20	55	102	12
DPC11300301	11.30	55	102	12
DPC11400301	11.40	55	102	12
DPC11500301	11.50	55	102	12
DPC11600301	11.60	55	102	12
DPC11700301	11.70	55	102	12
DPC11800301	11.80	55	102	12
DPC11900301	11.90	55	102	12

內冷泛用鎢鋼鑽頭



- 3xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Tolerance h8 standard / m7 possible on request
- For Steel, Alloy Steel, Cast Iron and 400 series Stainless Steel.

- Internal Coolant
- Double Margins Design
- UNIX Coating
- SX Design



Unit:mm

Drilling

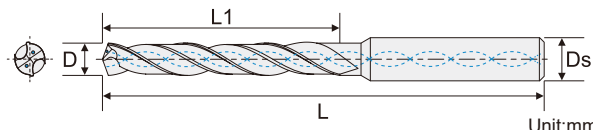
DPC Solid Carbide Drills - 5×D (for Universal)

內冷泛用鎢鋼鑽頭



Product Specs

- 5×D Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- UNIX Coating
- Tolerance h8 standard / m7 possible on request
- Double Margins Design
- SX Design
- For Steel, Alloy Steel, Cast Iron and 400 series Stainless Steel.



Unit:mm

Order No.	D	L1	L	Ds
DPC03170501	3.17(1/8")	28	60	4
DPC04000501	4.00	36	74	6
DPC04100501	4.10	36	74	6
DPC04200501	4.20	36	74	6
DPC04300501	4.30	36	74	6
DPC04400501	4.40	36	74	6
DPC04500501	4.50	36	74	6
DPC04600501	4.60	36	74	6
DPC04650501	4.65(13/71")	36	74	6
DPC04700501	4.70	36	74	6
DPC04760501	4.76(3/16")	44	82	6
DPC04800501	4.80	44	82	6
DPC04900501	4.90	44	82	6
DPC05000501	5.00	44	82	6
DPC05100501	5.10	44	82	6
DPC05200501	5.20	44	82	6
DPC05300501	5.30	44	82	6
DPC05400501	5.40	44	82	6
DPC05500501	5.50	44	82	6
DPC05550501	5.55(7/32")	44	82	6
DPC05600501	5.60	44	82	6
DPC05700501	5.70	44	82	6
DPC05800501	5.80	44	82	6
DPC05900501	5.90	44	82	6
DPC06000501	6.00	44	82	6
DPC06100501	6.10	53	91	8
DPC06200501	6.20	53	91	8
DPC06300501	6.30	53	91	8
DPC06350501	6.35(1/4")	53	91	8
DPC06400501	6.40	53	91	8
DPC06500501	6.50	53	91	8
DPC06600501	6.60	53	91	8
DPC06700501	6.70	53	91	8
DPC06800501	6.80	53	91	8
DPC06900501	6.90	53	91	8
DPC07000501	7.00	53	91	8
DPC07100501	7.10	53	91	8
DPC07200501	7.20	53	91	8
DPC07300501	7.30	53	91	8
DPC07400501	7.40	53	91	8
DPC07500501	7.50	53	91	8
DPC07600501	7.60	53	91	8
DPC07700501	7.70	53	91	8
DPC07800501	7.80	53	91	8
DPC07900501	7.90	53	91	8
DPC07940501	7.94(5/16")	53	91	8

Order No.	D	L1	L	Ds
DPC08000501	8.00	53	91	8
DPC08100501	8.10	61	103	10
DPC08200501	8.20	61	103	10
DPC08300501	8.30	61	103	10
DPC08400501	8.40	61	103	10
DPC08500501	8.50	61	103	10
DPC08600501	8.60	61	103	10
DPC08700501	8.70	61	103	10
DPC08800501	8.80	61	103	10
DPC08900501	8.90	61	103	10
DPC09000501	9.00	61	103	10
DPC09100501	9.10	61	103	10
DPC09200501	9.20	61	103	10
DPC09250501	9.25(23/64")	61	103	10
DPC09300501	9.30	61	103	10
DPC09400501	9.40	61	103	10
DPC09500501	9.50	61	103	10
DPC09520501	9.52(3/8")	61	103	10
DPC09600501	9.60	61	103	10
DPC09700501	9.70	61	103	10
DPC09800501	9.80	61	103	10
DPC09900501	9.90	61	103	10
DPC10000501	10.00	61	103	10
DPC10100501	10.10	71	118	12
DPC10200501	10.20	71	118	12
DPC10300501	10.30	71	118	12
DPC10400501	10.40	71	118	12
DPC10500501	10.50	71	118	12
DPC10600501	10.60	71	118	12
DPC10700501	10.70	71	118	12
DPC10800501	10.80	71	118	12
DPC10900501	10.90	71	118	12
DPC11000501	11.00	71	118	12
DPC11100501	11.10	71	118	12
DPC11110501	11.11(7/16")	71	118	12
DPC11200501	11.20	71	118	12
DPC11300501	11.30	71	118	12
DPC11400501	11.40	71	118	12
DPC11500501	11.50	71	118	12
DPC11600501	11.60	71	118	12
DPC11700501	11.70	71	118	12
DPC11800501	11.80	71	118	12
DPC11900501	11.90	71	118	12

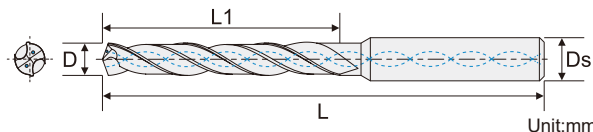
DPC Solid Carbide Drills - 5×D (for Universal)

內冷泛用鎢鋼鑽頭



Product Specs

- 5xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- UNIX Coating
- Tolerance h8 standard / m7 possible on request
- Double Margins Design
- SX Design
- For Steel, Alloy Steel, Cast Iron and 400 series Stainless Steel.



Unit:mm

Order No.	D	L1	L	Ds
DPC12000501	12.00	71	118	12
DPC12100501	12.10	77	124	14
DPC12200501	12.20	77	124	14
DPC12300501	12.30	77	124	14
DPC12400501	12.40	77	124	14
DPC12500501	12.50	77	124	14
DPC12600501	12.60	77	124	14
DPC12700501	12.70(1/2")	77	124	14
DPC12800501	12.80	77	124	14
DPC12900501	12.90	77	124	14
DPC13000501	13.00	77	124	14
DPC13100501	13.10	77	124	14
DPC13300501	13.30	77	124	14
DPC13400501	13.40	77	124	14
DPC13500501	13.50	77	124	14
DPC13600501	13.60	77	124	14
DPC13700501	13.70	77	124	14
DPC13800501	13.80	77	124	14
DPC13900501	13.90	77	124	14
DPC14000501	14.00	77	124	14
DPC14100501	14.10	83	133	16
DPC14200501	14.20	83	133	16
DPC14290501	14.29(9/16")	83	133	16
DPC14300501	14.30	83	133	16
DPC14400501	14.40	83	133	16
DPC14500501	14.50	83	133	16
DPC14600501	14.60	83	133	16
DPC14700501	14.70	83	133	16
DPC14800501	14.80	83	133	16
DPC14900501	14.90	83	133	16
DPC15000501	15.00	83	133	16
DPC15100501	15.10	83	133	16
DPC15200501	15.20	83	133	16
DPC15300501	15.30	83	133	16
DPC15400501	15.40	83	133	16
DPC15500501	15.50	83	133	16
DPC15600501	15.60	83	133	16
DPC15700501	15.70	83	133	16
DPC15800501	15.80	83	133	16
DPC15870501	15.87(5/8")	83	133	16
DPC15900501	15.90	83	133	16
DPC16000501	16.00	83	133	16
DPC16500501	16.50	93	143	18
DPC17000501	17.00	93	143	18
DPC17500501	17.50	93	143	18
DPC18000501	18.00	93	143	18
DPC18500501	18.50	101	153	20

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Drilling

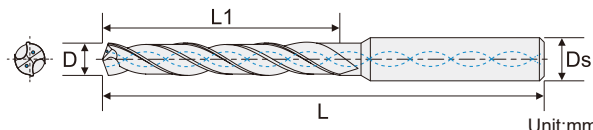
DPC Solid Carbide Drills - 7×D (for Universal)

內冷泛用鎢鋼鑽頭



Product Specs

- 7×D Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- UNIX Coating
- Tolerance h8 standard / m7 possible on request
- Double Margins Design
- SX Design
- For Steel, Alloy Steel, Cast Iron and 400 series Stainless Steel.



Unit:mm

Order No.	D	L1	L	Ds
DPC04000701	4.00	40	75	6
DPC04100701	4.10	40	75	6
DPC04200701	4.20	40	75	6
DPC04300701	4.30	45	85	6
DPC04400701	4.40	45	85	6
DPC04500701	4.50	45	85	6
DPC04600701	4.60	45	85	6
DPC04650701	4.65(13/71")	45	85	6
DPC04700701	4.70	45	85	6
DPC04800701	4.80	50	90	6
DPC04900701	4.90	50	90	6
DPC05000701	5.00	50	90	6
DPC05100701	5.10	50	90	6
DPC05200701	5.20	50	90	6
DPC05300701	5.30	50	90	6
DPC05400701	5.40	57	97	6
DPC05500701	5.50	57	97	6
DPC05700701	5.70	57	97	6
DPC05800701	5.80	57	97	6
DPC05900701	5.90	57	97	6
DPC06000701	6.00	57	97	6
DPC06200701	6.20	66	106	8
DPC06300701	6.30	66	106	8
DPC06350701	6.35(1/4")	66	106	8
DPC06500701	6.50	66	106	8
DPC06600701	6.60	66	106	8
DPC06700701	6.70	66	106	8
DPC06800701	6.80	66	106	8
DPC06900701	6.90	76	116	8
DPC07000701	7.00	76	116	8
DPC07100701	7.10	76	116	8
DPC07200701	7.20	76	116	8
DPC07500701	7.50	76	116	8
DPC07600701	7.60	76	116	8
DPC07700701	7.70	76	116	8
DPC07800701	7.80	76	116	8
DPC08000701	8.00	76	116	8
DPC08100701	8.10	87	131	10
DPC08200701	8.20	87	131	10
DPC08400701	8.40	87	131	10
DPC08500701	8.50	87	131	10
DPC08600701	8.60	87	131	10
DPC08700701	8.70	87	131	10
DPC08800701	8.80	87	131	10
DPC08900701	8.90	87	131	10

Order No.	D	L1	L	Ds
DPC09000701	9.00	95	139	10
DPC09100701	9.10	95	139	10
DPC09200701	9.20	95	139	10
DPC09300701	9.30	95	139	10
DPC09400701	9.40	95	139	10
DPC09500701	9.50	95	139	10
DPC09520701	9.52	95	139	10
DPC09700701	9.70	95	139	10
DPC09800701	9.80	95	139	10
DPC10000701	10.00	95	139	10
DPC10200701	10.20	106	155	12
DPC10300701	10.30	106	155	12
DPC10500701	10.50	106	155	12
DPC10720701	10.72(27/64")	106	155	12
DPC10800701	10.80	106	155	12
DPC11000701	11.00	106	155	12
DPC11200701	11.20	114	155	12
DPC11500701	11.50	114	155	12
DPC11800701	11.80	114	155	12
DPC12000701	12.00	114	155	12
DPC12100701	12.10	133	182	14
DPC12200701	12.20	133	182	14
DPC12300701	12.30	133	182	14
DPC12500701	12.50	133	182	14
DPC12700701	12.70	133	182	14
DPC13000701	13.00	133	182	14
DPC13500701	13.50	133	182	14
DPC14000701	14.00	133	182	14
DPC14100701	14.10	152	200	16
DPC14200701	14.20	152	200	16
DPC14500701	14.50	152	200	16
DPC15000701	15.00	152	200	16
DPC15500701	15.50	152	200	16
DPC15870701	15.87	152	200	16
DPC16000701	16.00	152	200	16

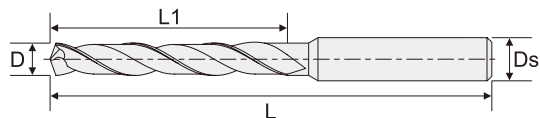
DPN Solid Carbide Drills - 3×D (for Universal)

外冷泛用鎢鋼鑽頭



Product Specs

- 3×D Cutting depth
- Reinforced Shank
- 140° Tip Angle
- External Coolant
- UNIX Coating
- Tolerance h8
- SX Design
- For Steel, Alloy Steel up to 1200 N/mm², Cast Iron and 400 series Stainless Steel.



Order No.	D	L1	L	Ds
DPN03000341	3.00	20	60	4
DPN03100341	3.10	20	60	4
DPN03170341	3.17(1/8")	20	60	4
DPN03200341	3.20	20	60	4
DPN03250341	3.25(5/32")	20	60	4
DPN03300341	3.30	20	60	4
DPN03400341	3.40	20	60	4
DPN03500341	3.50	20	60	4
DPN03600341	3.60	20	60	4
DPN03700341	3.70	20	60	4
DPN03800341	3.80	24	60	4
DPN03900341	3.90	24	60	4
DPN03970341	3.97(5/32")	24	60	4
DPN03000301	3.00	20	62	6
DPN03100301	3.10	20	62	6
DPN03200301	3.20	20	62	6
DPN03250301	3.25(5/32")	20	62	6
DPN03300301	3.30	20	62	6
DPN03400301	3.40	20	62	6
DPN03500301	3.50	20	62	6
DPN03600301	3.60	20	62	6
DPN03700301	3.70	20	62	6
DPN03800301	3.80	24	66	6
DPN03900301	3.90	24	66	6
DPN03970301	3.97(5/32")	24	66	6
DPN04000301	4.00	24	66	6
DPN04100301	4.10	24	66	6
DPN04200301	4.20	24	66	6
DPN04300301	4.30	24	66	6
DPN04400301	4.40	24	66	6
DPN04500301	4.50	24	66	6
DPN04600301	4.60	24	66	6
DPN04650301	4.65(13/71")	24	66	6
DPN04700301	4.70	24	66	6
DPN04760301	4.76(3/16")	28	66	6
DPN04800301	4.80	28	66	6
DPN04900301	4.90	28	66	6
DPN05000301	5.00	28	66	6
DPN05100301	5.10	28	66	6
DPN05200301	5.20	28	66	6
DPN05300301	5.30	28	66	6
DPN05400301	5.40	28	66	6
DPN05500301	5.50	28	66	6
DPN05560301	5.56(7/32")	28	66	6
DPN05600301	5.60	28	66	6
DPN05700301	5.70	28	66	6
DPN05800301	5.80	28	66	6
DPN05900301	5.90	28	66	6

Order No.	D	L1	L	Ds
DPN06000301	6.00	28	66	6
DPN06100301	6.10	34	79	8
DPN06200301	6.20	34	79	8
DPN06300301	6.30	34	79	8
DPN06350301	6.35(1/4")	34	79	8
DPN06400301	6.40	34	79	8
DPN06500301	6.50	34	79	8
DPN06600301	6.60	34	79	8
DPN06700301	6.70	34	79	8
DPN06800301	6.80	34	79	8
DPN06900301	6.90	34	79	8
DPN07000301	7.00	34	79	8
DPN07100301	7.10	41	79	8
DPN07200301	7.20	41	79	8
DPN07300301	7.30	41	79	8
DPN07400301	7.40	41	79	8
DPN07500301	7.50	41	79	8
DPN07600301	7.60	41	79	8
DPN07700301	7.70	41	79	8
DPN07800301	7.80	41	79	8
DPN07900301	7.90	41	79	8
DPN07940301	7.94(5/16")	41	79	8
DPN08000301	8.00	41	79	8
DPN08100301	8.10	47	89	10
DPN08200301	8.20	47	89	10
DPN08300301	8.30	47	89	10
DPN08400301	8.40	47	89	10
DPN08500301	8.50	47	89	10
DPN08600301	8.60	47	89	10
DPN08700301	8.70	47	89	10
DPN08800301	8.80	47	89	10
DPN08900301	8.90	47	89	10
DPN09000301	9.00	47	89	10
DPN09100301	9.10	47	89	10
DPN09200301	9.20	47	89	10
DPN09250301	9.25(23/64")	47	89	10
DPN09300301	9.30	47	89	10
DPN09400301	9.40	47	89	10
DPN09500301	9.50	47	89	10
DPN09520301	9.52(3/8")	47	89	10
DPN09600301	9.60	47	89	10
DPN09700301	9.70	47	89	10
DPN09800301	9.80	47	89	10
DPN09900301	9.90	47	89	10

Drilling

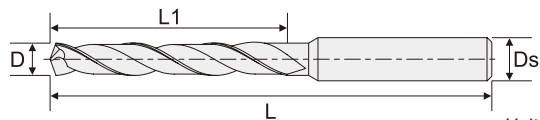
DPN Solid Carbide Drills - 3×D (for Universal)

外冷泛用鎢鋼鑽頭



Product Specs

- 3×D Cutting depth
- Reinforced Shank
- 140° Tip Angle
- External Coolant
- UNIX Coating
- Tolerance h8
- SX Design
- For Steel, Alloy Steel up to 1200 N/mm², Cast Iron and 400 series Stainless Steel.



Unit:mm

Order No.	D	L1	L	Ds
DPN10000301	10.00	47	89	10
DPN10100301	10.10	55	102	12
DPN10200301	10.20	55	102	12
DPN10300301	10.30	55	102	12
DPN10400301	10.40	55	102	12
DPN10500301	10.50	55	102	12
DPN10600301	10.60	55	102	12
DPN10700301	10.70	55	102	12
DPN10800301	10.80	55	102	12
DPN10900301	10.90	55	102	12
DPN11000301	11.00	55	102	12
DPN11100301	11.10	55	102	12
DPN11110301	11.11(7/16")	55	102	12
DPN11200301	11.20	55	102	12
DPN11300301	11.30	55	102	12
DPN11400301	11.40	55	102	12
DPN11500301	11.50	55	102	12
DPN11600301	11.60	55	102	12
DPN11700301	11.70	55	102	12
DPN11800301	11.80	55	102	12
DPN11900301	11.90	55	102	12
DPN12000301	12.00	55	102	12
DPN12100301	12.10	60	107	14
DPN12200301	12.20	60	107	14
DPN12300301	12.30	60	107	14
DPN12400301	12.40	60	107	14
DPN12500301	12.50	60	107	14
DPN12600301	12.60	60	107	14
DPN12700301	12.70(1/2")	60	107	14
DPN12800301	12.80	60	107	14
DPN12900301	12.90	60	107	14
DPN13000301	13.00	60	107	14
DPN13200301	13.20	60	107	14
DPN13300301	13.30	60	107	14
DPN13500301	13.50	60	107	14
DPN13700301	13.70	60	107	14
DPN13800301	13.80	60	107	14
DPN14000301	14.00	60	107	14
DPN14200301	14.20	65	115	16
DPN14290301	14.29(9/16")	65	115	16
DPN14300301	14.30	65	115	16
DPN14400301	14.40	65	115	16
DPN14500301	14.50	65	115	16
DPN14700301	14.70	65	115	16

Order No.	D	L1	L	Ds
DPN15000301	15.00	65	115	16
DPN15200301	15.20	65	115	16
DPN15500301	15.50	65	115	16
DPN15600301	15.60	65	115	16
DPN15700301	15.70	65	115	16
DPN15800301	15.80	65	115	16
DPN15870301	15.87(5/8")	65	115	16
DPN16000301	16.00	65	115	16
DPN16500301	16.50	73	123	18
DPN17000301	17.00	73	123	18
DPN17500301	17.50	73	123	18
DPN18000301	18.00	73	123	18
DPN18500301	18.50	79	131	20
DPN19000301	19.00	79	131	20
DPN19050301	19.05(3/4")	79	131	20
DPN19500301	19.50	79	131	20
DPN20000301	20.00	79	131	20

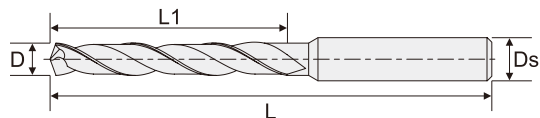
DPN Solid Carbide Drills - 5×D (for Universal)

外冷泛用鎢鋼鑽頭



Product Specs

- 5×D Cutting depth
- Reinforced Shank
- 140° Tip Angle
- External Coolant
- UNIX Coating
- Tolerance h8
- SX Design
- For Steel, Alloy Steel up to 1200 N/mm², Cast Iron and 400 series Stainless Steel.



Unit:mm

Order No.	D	L1	L	Ds
DPN03000501	3.00	28	66	6
DPN03170501	3.17(1/8")	28	66	6
DPN03250501	3.30	28	66	6
DPN03300501	3.30	28	66	6
DPN03400501	3.40	28	66	6
DPN03500501	3.50	28	66	6
DPN03600501	3.60	28	66	6
DPN03700501	3.70	28	66	6
DPN03800501	3.80	36	74	6
DPN03970501	3.97(5/32")	36	74	6
DPN04000501	4.00	36	74	6
DPN04100501	4.10	36	74	6
DPN04200501	4.20	36	74	6
DPN04300501	4.30	36	74	6
DPN04400501	4.40	36	74	6
DPN04500501	4.50	36	74	6
DPN04600501	4.60	36	74	6
DPN04650501	4.65(13/71")	36	74	6
DPN04700501	4.70	36	74	6
DPN04760501	4.76(3/16")	44	82	6
DPN04800501	4.80	44	82	6
DPN04900501	4.90	44	82	6
DPN05000501	5.00	44	82	6
DPN05100501	5.10	44	82	6
DPN05200501	5.20	44	82	6
DPN05300501	5.30	44	82	6
DPN05400501	5.40	44	82	6
DPN05500501	5.50	44	82	6
DPN05560501	5.56(7/32")	44	82	6
DPN05600501	5.60	44	82	6
DPN05700501	5.70	44	82	6
DPN05800501	5.80	44	82	6
DPN05900501	5.90	44	82	6
DPN06000501	6.00	44	82	6
DPN06100501	6.10	53	91	8
DPN06200501	6.20	53	91	8
DPN06300501	6.30	53	91	8
DPN06350501	6.35(1/4")	53	91	8
DPN06400501	6.40	53	91	8
DPN06500501	6.50	53	91	8
DPN06600501	6.60	53	91	8
DPN06700501	6.70	53	91	8
DPN06800501	6.80	53	91	8
DPN06900501	6.90	53	91	8

Order No.	D	L1	L	Ds
DPN07000501	7.00	53	91	8
DPN07100501	7.10	53	91	8
DPN07200501	7.20	53	91	8
DPN07300501	7.30	53	91	8
DPN07400501	7.40	53	91	8
DPN07500501	7.50	53	91	8
DPN07600501	7.60	53	91	8
DPN07700501	7.70	53	91	8
DPN07800501	7.80	53	91	8
DPN07900501	7.90	53	91	8
DPN07940501	7.94(5/16")	53	91	8
DPN08000501	8.00	53	91	8
DPN08100501	8.10	61	103	10
DPN08200501	8.20	61	103	10
DPN08300501	8.30	61	103	10
DPN08400501	8.40	61	103	10
DPN08500501	8.50	61	103	10
DPN08600501	8.60	61	103	10
DPN08700501	8.70	61	103	10
DPN08800501	8.80	61	103	10
DPN08900501	8.90	61	103	10
DPN09000501	9.00	61	103	10
DPN09100501	9.10	61	103	10
DPN09200501	9.20	61	103	10
DPN09250501	9.25(23/64")	61	103	10
DPN09300501	9.30	61	103	10
DPN09400501	9.40	61	103	10
DPN09500501	9.50	61	103	10
DPN09520501	9.52(3/8")	61	103	10
DPN09600501	9.60	61	103	10
DPN09700501	9.70	61	103	10
DPN09800501	9.80	61	103	10
DPN09900501	9.90	61	103	10
DPN10000501	10.00	61	103	10
DPN10100501	10.10	71	118	12
DPN10200501	10.20	71	118	12
DPN10300501	10.30	71	118	12
DPN10400501	10.40	71	118	12
DPN10500501	10.50	71	118	12
DPN10600501	10.60	71	118	12
DPN10700501	10.70	71	118	12
DPN10800501	10.80	71	118	12
DPN10900501	10.90	71	118	12

Drilling

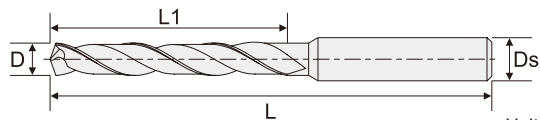
DPN Solid Carbide Drills - 5×D (for Universal)

外冷泛用鎢鋼鑽頭



Product Specs

- 5xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- External Coolant
- UNIX Coating
- Tolerance h8
- SX Design
- For Steel, Alloy Steel up to 1200 N/mm2, Cast Iron and 400 series Stainless Steel.



Unit:mm

[illegible][illegible]

High Performance
High Rigidity



Drilling

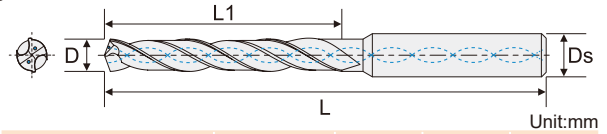
FEATURES

- Excellent hole surface quality
- Unique UNIX coating improves tool life
- Optimized geometry improves working efficiency
- Customized available
- 10xD to 40xD Cutting Depth
- 優異的孔壁品質
- 更長的刀具壽命
- 最佳化的幾何設計
- 提供客製化服務
- 10xD 到 40xD 鑽削深度

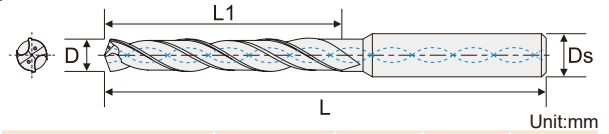
內冷深孔鎢鋼鑽頭



內冷深孔鎢鋼鑽頭



內冷深孔鎢鋼鑽頭



內冷深孔鎢鋼鑽頭



-



內冷深孔鎢鋼鑽頭



High Performance
High Productivity
High Stability



FEATURES

- Internal coolant design
- Unique UNIX coating improves tool life
- Optimized flute improves drilling efficiency
- Customized available
- Diameter 0.2-3.9mm
- 高效內冷孔
- **UNIX** 鍍膜提升刀具壽命
- 優化排屑槽，提升刀具效能與壽命
- 提供客製化服務
- 尺寸範圍 0.2-3.9mm

內冷小徑鎢鋼鑽頭

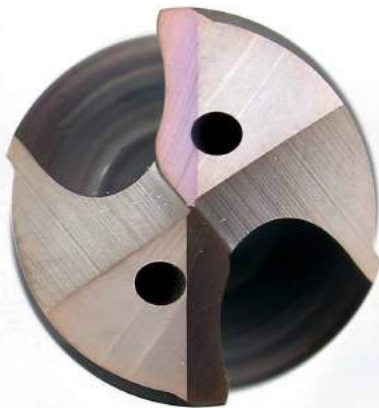
外冷小徑鎢鋼鑽頭

- External Coolant



WINSTAR

Endmills · Inserts · Drills



High Performance Excellent Tool Life



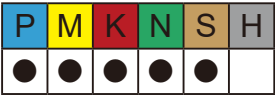
Drilling

FEATURES

- Internal coolant
- High performance geometry design for stainless steel drilling and titanium drilling
- Durable UNIX coating suitable to difficult-to-process material
- Customized available
- 內冷孔設計
- 高效能不鏽鋼、鈦金屬專用幾何
- 高耐久 **UNIX** 鍍膜適用難切削材質加工
- 提供客製化服務

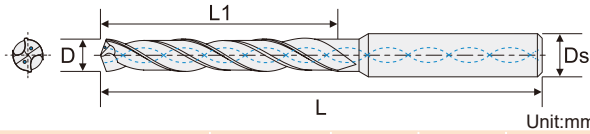
DMC Solid Carbide Drills - 3×D (for Stainless Steel)

內冷不銹鋼用鎢鋼鑽頭



Product Specs

- 3×D Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- UNIX Coating
- Tolerance h8
- Double Margins Design
- SR Design
- For Steel, Alloy Steel, Stainless Steel, Cast Iron, Non-ferrous metal, Aluminum and Titanium.



Unit:mm

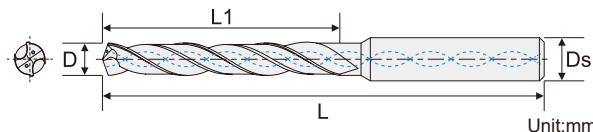
Order No.	D	L1	L	Ds
DMC04000301	4.00	24	66	6
DMC04100301	4.10	24	66	6
DMC04200301	4.20	24	66	6
DMC04300301	4.30	24	66	6
DMC04400301	4.40	24	66	6
DMC04500301	4.50	24	66	6
DMC04600301	4.60	24	66	6
DMC04650301	4.65(13/71")	24	66	6
DMC04700301	4.70	24	66	6
DMC04800301	4.80	28	66	6
DMC04900301	4.90	28	66	6
DMC05000301	5.00	28	66	6
DMC05100301	5.10	28	66	6
DMC05200301	5.20	28	66	6
DMC05300301	5.30	28	66	6
DMC05400301	5.40	28	66	6
DMC05500301	5.50	28	66	6
DMC05560301	5.56	28	66	6
DMC05600301	5.60	28	66	6
DMC05700301	5.70	28	66	6
DMC05800301	5.80	28	66	6
DMC05900301	5.90	28	66	6
DMC06000301	6.00	28	66	6
DMC06100301	6.10	34	79	8
DMC06200301	6.20	34	79	8
DMC06300301	6.30	34	79	8
DMC06350301	6.35(1/4")	34	79	8
DMC06400301	6.40	34	79	8
DMC06500301	6.50	34	79	8
DMC06600301	6.60	34	79	8
DMC06700301	6.70	34	79	8
DMC06800301	6.80	34	79	8
DMC06900301	6.90	34	79	8
DMC07000301	7.00	34	79	8
DMC07100301	7.10	41	79	8
DMC07200301	7.20	41	79	8
DMC07300301	7.30	41	79	8
DMC07400301	7.40	41	79	8
DMC07500301	7.50	41	79	8
DMC07600301	7.60	41	79	8
DMC07700301	7.70	41	79	8
DMC07800301	7.80	41	79	8
DMC07900301	7.90	41	79	8

Order No.	D	L1	L	Ds
DMC08000301	8.00	41	79	8
DMC08100301	8.10	47	89	10
DMC08200301	8.20	47	89	10
DMC08300301	8.30	47	89	10
DMC08400301	8.40	47	89	10
DMC08500301	8.50	47	89	10
DMC08600301	8.60	47	89	10
DMC08700301	8.70	47	89	10
DMC08800301	8.80	47	89	10
DMC08900301	8.90	47	89	10
DMC09000301	9.00	47	89	10
DMC09100301	9.10	47	89	10
DMC09200301	9.20	47	89	10
DMC09250301	9.25(23/64")	47	89	10
DMC09300301	9.30	47	89	10
DMC09400301	9.40	47	89	10
DMC09500301	9.50	47	89	10
DMC09600301	9.60	47	89	10
DMC09700301	9.70	47	89	10
DMC09800301	9.80	47	89	10
DMC09900301	9.90	47	89	10
DMC10000301	10.00	47	89	10
DMC10100301	10.10	55	102	12
DMC10200301	10.20	55	102	12
DMC10300301	10.30	55	102	12
DMC10400301	10.40	55	102	12
DMC10500301	10.50	55	102	12
DMC10600301	10.60	55	102	12
DMC10700301	10.70	55	102	12
DMC10800301	10.80	55	102	12
DMC10900301	10.90	55	102	12
DMC11000301	11.00	55	102	12
DMC11100301	11.10	55	102	12
DMC11200301	11.20	55	102	12
DMC11300301	11.30	55	102	12
DMC11400301	11.40	55	102	12
DMC11500301	11.50	55	102	12
DMC11600301	11.60	55	102	12
DMC11700301	11.70	55	102	12
DMC11800301	11.80	55	102	12
DMC11900301	11.90	55	102	12

內冷不銹鋼用鎢鋼鑽頭



- 3xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- UNIX Coating
- Tolerance h8
- Double Margins Design
- SR Design
- For Steel, Alloy Steel, Stainless Steel, Cast Iron, Non-ferrous metal, Aluminum and Titanium.



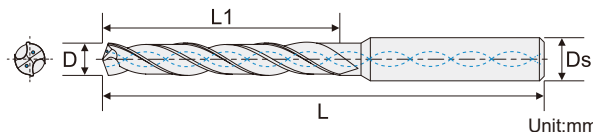
Unit:mm

Drilling

內冷不銹鋼用鎢鋼鑽頭



- 5xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- UNIX Coating
- Tolerance h8
- Double Margins Design
- SR Design
- For Steel, Alloy Steel, Stainless Steel, Cast Iron, Non-ferrous metal, Aluminum and Titanium.



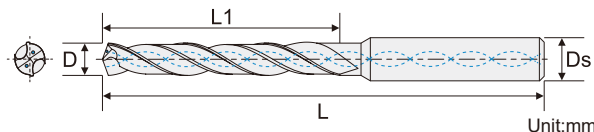
Unit:mm

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內冷不銹鋼用鎢鋼鑽頭



- 5xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- UNIX Coating
- Tolerance h8
- Double Margins Design
- SR Design
- For Steel, Alloy Steel, Stainless Steel, Cast Iron, Non-ferrous metal, Aluminum and Titanium.



Unit:mm



Endmills · Inserts · Drills





FEATURES

- High rigidity cutting design for hardened material
- Unique SINIX coating for wear resistance
- Internal coolant design to increase tool life
- 高剛性刀口幾何，專為高硬度材質加工設計
- 特殊 SINIX 鍍膜，高效抗磨損
- 內冷孔設計，更有效提升刀具壽命

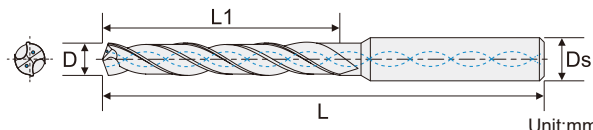
DHC Solid Carbide Drills - 3×D (for Hardened Steel)

內冷高硬用鎢鋼鑽頭



Product Specs

- 3×D Cutting depth
- SINIX Coating
- For Steel, Alloy Steel, Cast Iron and Hardened Steel(HRC 30~50).
- Reinforced Shank
- Tolerance h8
- 140° Tip Angle
- Double Margins Design
- Internal Coolant
- SX Design



Unit:mm

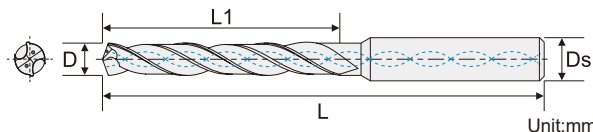
Order No.	D	L1	L	Ds
DHC04000302	4.00	24	66	6
DHC04100302	4.10	24	66	6
DHC04200302	4.20	24	66	6
DHC04300302	4.30	24	66	6
DHC04400302	4.40	24	66	6
DHC04500302	4.50	24	66	6
DHC04600302	4.60	24	66	6
DHC04650302	4.65(13/71")	24	66	6
DHC04700302	4.70	24	66	6
DHC04800302	4.80	28	66	6
DHC04900302	4.90	28	66	6
DHC05000302	5.00	28	66	6
DHC05100302	5.10	28	66	6
DHC05200302	5.20	28	66	6
DHC05300302	5.30	28	66	6
DHC05400302	5.40	28	66	6
DHC05500302	5.50	28	66	6
DHC05600302	5.60	28	66	6
DHC05700302	5.70	28	66	6
DHC05800302	5.80	28	66	6
DHC05900302	5.90	28	66	6
DHC06000302	6.00	28	66	6
DHC06100302	6.10	34	79	8
DHC06200302	6.20	34	79	8
DHC06300302	6.30	34	79	8
DHC06350302	6.35(1/4")	34	79	8
DHC06400302	6.40	34	79	8
DHC06500302	6.50	34	79	8
DHC06600302	6.60	34	79	8
DHC06700302	6.70	34	79	8
DHC06800302	6.80	34	79	8
DHC06900302	6.90	34	79	8
DHC07000302	7.00	34	79	8
DHC07100302	7.10	41	79	8
DHC07200302	7.20	41	79	8
DHC07300302	7.30	41	79	8
DHC07400302	7.40	41	79	8
DHC07500302	7.50	41	79	8
DHC07600302	7.60	41	79	8
DHC07700302	7.70	41	79	8
DHC07800302	7.80	41	79	8
DHC07900302	7.90	41	79	8

Order No.	D	L1	L	Ds
DHC08000302	8.00	41	79	8
DHC08100302	8.10	47	89	10
DHC08200302	8.20	47	89	10
DHC08300302	8.30	47	89	10
DHC08400302	8.40	47	89	10
DHC08500302	8.50	47	89	10
DHC08600302	8.60	47	89	10
DHC08700302	8.70	47	89	10
DHC08800302	8.80	47	89	10
DHC08900302	8.90	47	89	10
DHC09000302	9.00	47	89	10
DHC09100302	9.10	47	89	10
DHC09200302	9.20	47	89	10
DHC09250302	9.25(23/64")	47	89	10
DHC09300302	9.30	47	89	10
DHC09400302	9.40	47	89	10
DHC09500302	9.50	47	89	10
DHC09600302	9.60	47	89	10
DHC09700302	9.70	47	89	10
DHC09800302	9.80	47	89	10
DHC09900302	9.90	47	89	10
DHC10000302	10.00	47	89	10
DHC10100302	10.10	55	102	12
DHC10200302	10.20	55	102	12
DHC10300302	10.30	55	102	12
DHC10400302	10.40	55	102	12
DHC10500302	10.50	55	102	12
DHC10600302	10.60	55	102	12
DHC10700302	10.70	55	102	12
DHC10800302	10.80	55	102	12
DHC10900302	10.90	55	102	12
DHC11000302	11.00	55	102	12
DHC11100302	11.10	55	102	12
DHC11200302	11.20	55	102	12
DHC11300302	11.30	55	102	12
DHC11400302	11.40	55	102	12
DHC11500302	11.50	55	102	12
DHC11600302	11.60	55	102	12
DHC11700302	11.70	55	102	12
DHC11800302	11.80	55	102	12
DHC11900302	11.90	55	102	12

內冷高硬用鎢鋼鑽頭

Product Specs

- 3xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- SINIX Coating
- Tolerance h8
- Double Margins Design
- SX Design
- For Steel, Alloy Steel, Cast Iron and Hardened Steel(HRC 30~50).



Unit:mm

Drilling

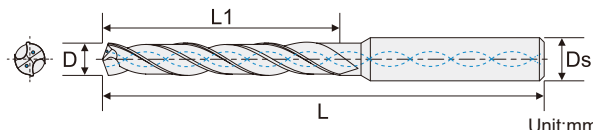
DHC Solid Carbide Drills - 5×D (for Hardened Steel)

內冷高硬用鎢鋼鑽頭



Product Specs

- 5xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- SINIX Coating
- Tolerance h8
- Double Margins Design
- SX Design
- For Steel, Alloy Steel, Cast Iron and Hardened Steel(HRC 30~50).



Unit:mm

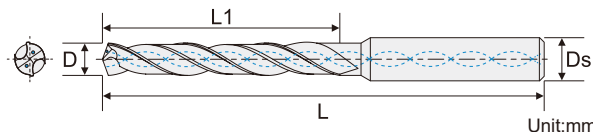
Order No.	D	L1	L	Ds
DHC04000502	4.00	36	74	6
DHC04100502	4.10	36	74	6
DHC04200502	4.20	36	74	6
DHC04300502	4.30	36	74	6
DHC04400502	4.40	36	74	6
DHC04500502	4.50	36	74	6
DHC04600502	4.60	36	74	6
DHC04650502	4.65(13/71")	36	74	6
DHC04700502	4.70	36	74	6
DHC04800502	4.80	44	82	6
DHC04900502	4.90	44	82	6
DHC05000502	5.00	44	82	6
DHC05100502	5.10	44	82	6
DHC05200502	5.20	44	82	6
DHC05300502	5.30	44	82	6
DHC05400502	5.40	44	82	6
DHC05500502	5.50	44	82	6
DHC05550502	5.55(7/32")	44	82	6
DHC05600502	5.60	44	82	6
DHC05700502	5.70	44	82	6
DHC05800502	5.80	44	82	6
DHC05900502	5.90	44	82	6
DHC06000502	6.00	44	82	6
DHC06100502	6.10	53	91	8
DHC06200502	6.20	53	91	8
DHC06300502	6.30	53	91	8
DHC06400502	6.40	53	91	8
DHC06500502	6.50	53	91	8
DHC06600502	6.60	53	91	8
DHC06700502	6.70	53	91	8
DHC06800502	6.80	53	91	8
DHC06900502	6.90	53	91	8
DHC07000502	7.00	53	91	8
DHC07100502	7.10	53	91	8
DHC07200502	7.20	53	91	8
DHC07300502	7.30	53	91	8
DHC07400502	7.40	53	91	8
DHC07500502	7.50	53	91	8
DHC07600502	7.60	53	91	8
DHC07700502	7.70	53	91	8
DHC07800502	7.80	53	91	8
DHC07900502	7.90	53	91	8

	D	L1	L	Ds
DHC08000502	8.00	61	91	8
DHC08100502	8.10	61	103	10
DHC08200502	8.20	61	103	10
DHC08300502	8.30	61	103	10
DHC08400502	8.40	61	103	10
DHC08500502	8.50	61	103	10
DHC08600502	8.60	61	103	10
DHC08700502	8.70	61	103	10
DHC08800502	8.80	61	103	10
DHC08900502	8.90	61	103	10
DHC09000502	9.00	61	103	10
DHC09100502	9.10	61	103	10
DHC09200502	9.20	61	103	10
DHC09250502	9.25(23/64")	61	103	10
DHC09300502	9.30	61	103	10
DHC09400502	9.40	61	103	10
DHC09500502	9.50	61	103	10
DHC09600502	9.60	61	103	10
DHC09700502	9.70	61	103	10
DHC09800502	9.80	61	103	10
DHC09900502	9.90	61	103	10
DHC10000502	10.00	61	103	10
DHC10100502	10.10	71	118	12
DHC10200502	10.20	71	118	12
DHC10300502	10.30	71	118	12
DHC10400502	10.40	71	118	12
DHC10500502	10.50	71	118	12
DHC10600502	10.60	71	118	12
DHC10700502	10.70	71	118	12
DHC10800502	10.80	71	118	12
DHC10900502	10.90	71	118	12
DHC11000502	11.00	71	118	12
DHC11100502	11.10	71	118	12
DHC11200502	11.20	71	118	12
DHC11300502	11.30	71	118	12
DHC11400502	11.40	71	118	12
DHC11500502	11.50	71	118	12
DHC11600502	11.60	71	118	12
DHC11700502	11.70	71	118	12
DHC11800502	11.80	71	118	12
DHC11900502	11.90	71	118	12

內冷高硬用鎢鋼鑽頭



- 5xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- Internal Coolant
- SINIX Coating
- Tolerance h8
- Double Margins Design
- SX Design
- For Steel, Alloy Steel, Cast Iron and Hardened Steel(HRC 30~50).



Unit:mm

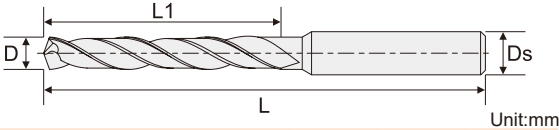
DHN Solid Carbide Drills - 3×D (for Hardened Steel)

外冷高硬用鎢鋼鑽頭



Product Specs

- 3×D Cutting depth
- Reinforced Shank
- 140° Tip Angle
- External Coolant
- SINIX Coating
- Tolerance h8
- Double Margins Design
- SX Design
- For Steel, Alloy Steel, Cast Iron and Hardened Steel(HRC 30~50).
- Customizable



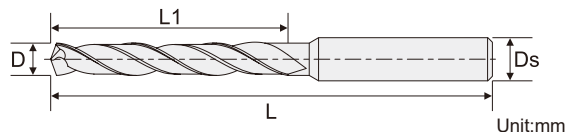
Order No.	D	L1	L	Ds
DHN04000302	4.00	24	66	6
DHN04100302	4.10	24	66	6
DHN04200302	4.20	24	66	6
DHN04300302	4.30	24	66	6
DHN04400302	4.40	24	66	6
DHN04500302	4.50	24	66	6
DHN04600302	4.60	24	66	6
DHN04650302	4.65(13/71")	24	66	6
DHN04700302	4.70	24	66	6
DHN04800302	4.80	28	66	6
DHN04900302	4.90	28	66	6
DHN05000302	5.00	28	66	6
DHN05100302	5.10	28	66	6
DHN05200302	5.20	28	66	6
DHN05300302	5.30	28	66	6
DHN05400302	5.40	28	66	6
DHN05500302	5.50	28	66	6
DHN05600302	5.56	28	66	6
DHN05600302	5.60	28	66	6
DHN05700302	5.70	28	66	6
DHN05800302	5.80	28	66	6
DHN05900302	5.90	28	66	6
DHN06000302	6.00	28	66	6
DHN06100302	6.10	34	79	8
DHN06200302	6.20	34	79	8
DHN06300302	6.30	34	79	8
DHN06350302	6.35(1/4")	34	79	8
DHN06400302	6.40	34	79	8
DHN06500302	6.50	34	79	8
DHN06600302	6.60	34	79	8
DHN06700302	6.70	34	79	8
DHN06800302	6.80	34	79	8
DHN06900302	6.90	34	79	8
DHN07000302	7.00	34	79	8
DHN07100302	7.10	41	79	8
DHN07200302	7.20	41	79	8
DHN07300302	7.30	41	79	8
DHN07400302	7.40	41	79	8
DHN07500302	7.50	41	79	8
DHN07600302	7.60	41	79	8
DHN07700302	7.70	41	79	8
DHN07800302	7.80	41	79	8
DHN07900302	7.90	41	79	8

Order No.	D	L1	L	Ds
DHN08000302	8.00	41	79	8
DHN08100302	8.10	47	89	10
DHN08200302	8.20	47	89	10
DHN08300302	8.30	47	89	10
DHN08400302	8.40	47	89	10
DHN08500302	8.50	47	89	10
DHN08600302	8.60	47	89	10
DHN08700302	8.70	47	89	10
DHN08800302	8.80	47	89	10
DHN08900302	8.90	47	89	10
DHN09000302	9.00	47	89	10
DHN09100302	9.10	47	89	10
DHN09200302	9.20	47	89	10
DHN09250302	9.25(23/64")	47	89	10
DHN09300302	9.30	47	89	10
DHN09400302	9.40	47	89	10
DHN09500302	9.50	47	89	10
DHN09600302	9.60	47	89	10
DHN09700302	9.70	47	89	10
DHN09800302	9.80	47	89	10
DHN09900302	9.90	47	89	10
DHN10000302	10.00	47	89	10
DHN10100302	10.10	55	102	12
DHN10200302	10.20	55	102	12
DHN10300302	10.30	55	102	12
DHN10400302	10.40	55	102	12
DHN10500302	10.50	55	102	12
DHN10600302	10.60	55	102	12
DHN10700302	10.70	55	102	12
DHN10800302	10.80	55	102	12
DHN10900302	10.90	55	102	12
DHN11000302	11.00	55	102	12
DHN11100302	11.10	55	102	12
DHN11200302	11.20	55	102	12
DHN11300302	11.30	55	102	12
DHN11400302	11.40	55	102	12
DHN11500302	11.50	55	102	12
DHN11600302	11.60	55	102	12
DHN11700302	11.70	55	102	12
DHN11800302	11.80	55	102	12
DHN11900302	11.90	55	102	12

外冷高硬用鎢鋼鑽頭

Product Specs

- 3xD Cutting depth
- Reinforced Shank
- 140° Tip Angle
- External Coolant
- SINIX Coating
- Tolerance h8
- Double Margins Design
- SX Design
- For Steel, Alloy Steel, Cast Iron and Hardened Steel(HRC 30~50).
- Customizable



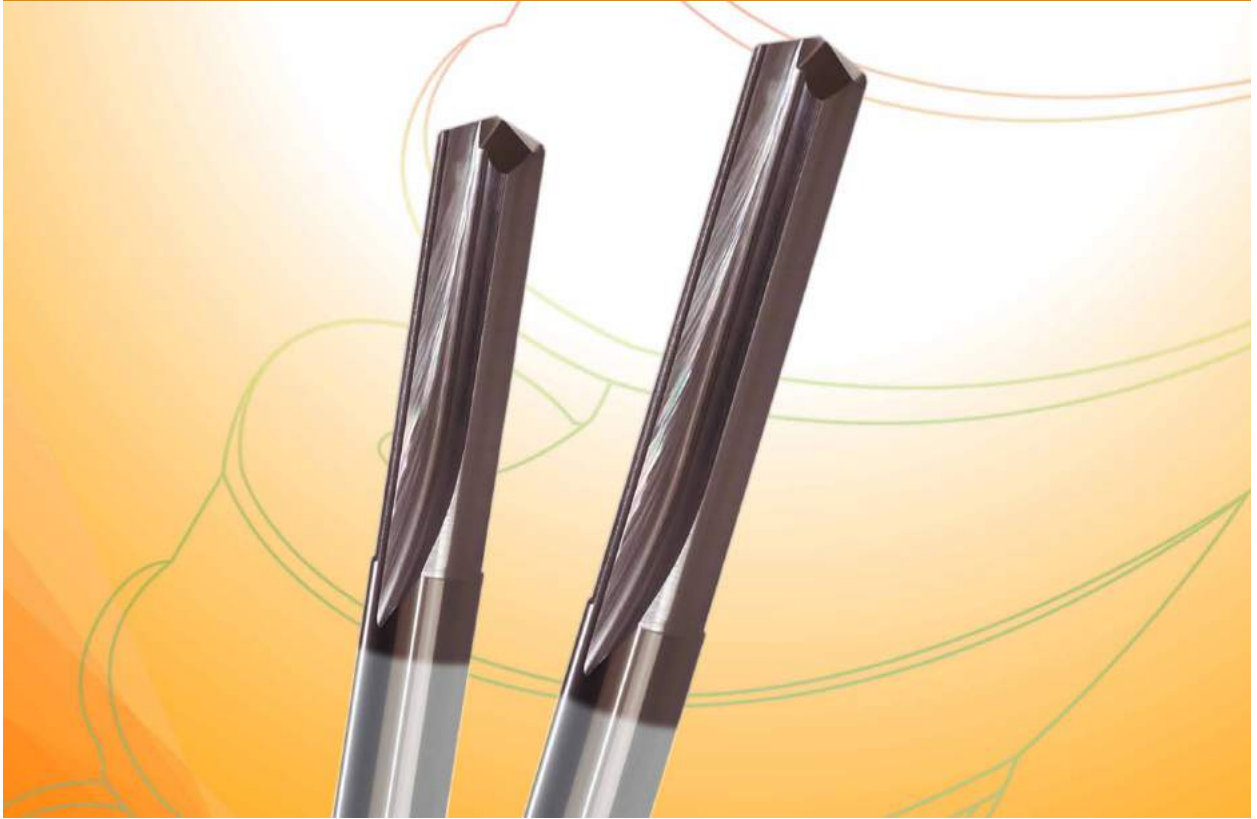
Unit:mm

Drilling

WINSTAR

Endmills · Inserts · Drills



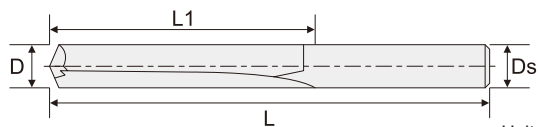


FEATURES

- Tolerance: h7
- Tip angle: 130°
- UNIX Coating
- 3×D ~ 5×D Cutting Depth
- 鑽尖 130°
- 3×D ~ 5×D 加工深度
- UNIX 塗層
- 鑽孔及鉸孔一次完成

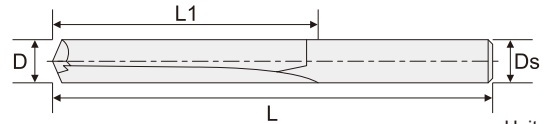
外冷直刃鑽鉸刀

· For Cast Iron, Aluminum and Copper.



外冷直刃鑽鉸刀

- For Cast Iron, Aluminum and Copper.



C041



Endmills · Inserts · Drills



High Performance
High CP Value



Drilling

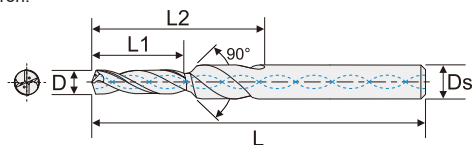
FEATURES

- For drill a hole with counterbore, countersink, or chamfer
- For steel, alloy steel, cast iron
- Customized Service
- 專為沉孔加工、導角加工設計
- 適用鋼、合金鋼、鑄鐵的孔加工
- 提供客製化服務

內冷階梯鎢鋼鑽頭



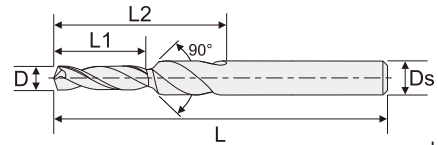
- Reinforced Shank
- Internal Coolant
- UNIX Coating
- Tolerance h8
- For drill with a counterbore, countersink, or chamfer.
- Customizable
- For Steel, Alloy Steel, Stainless Steel and Cast Iron.



Unit:mm

外冷階梯鎢鋼鑽頭

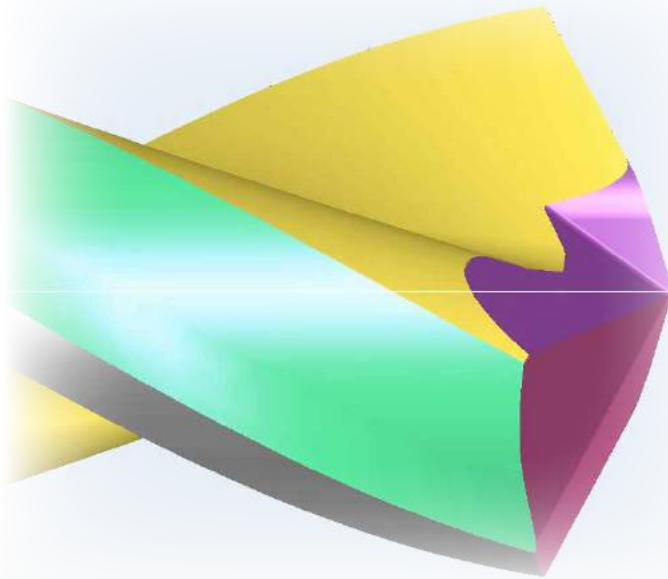
- Tolerance h8

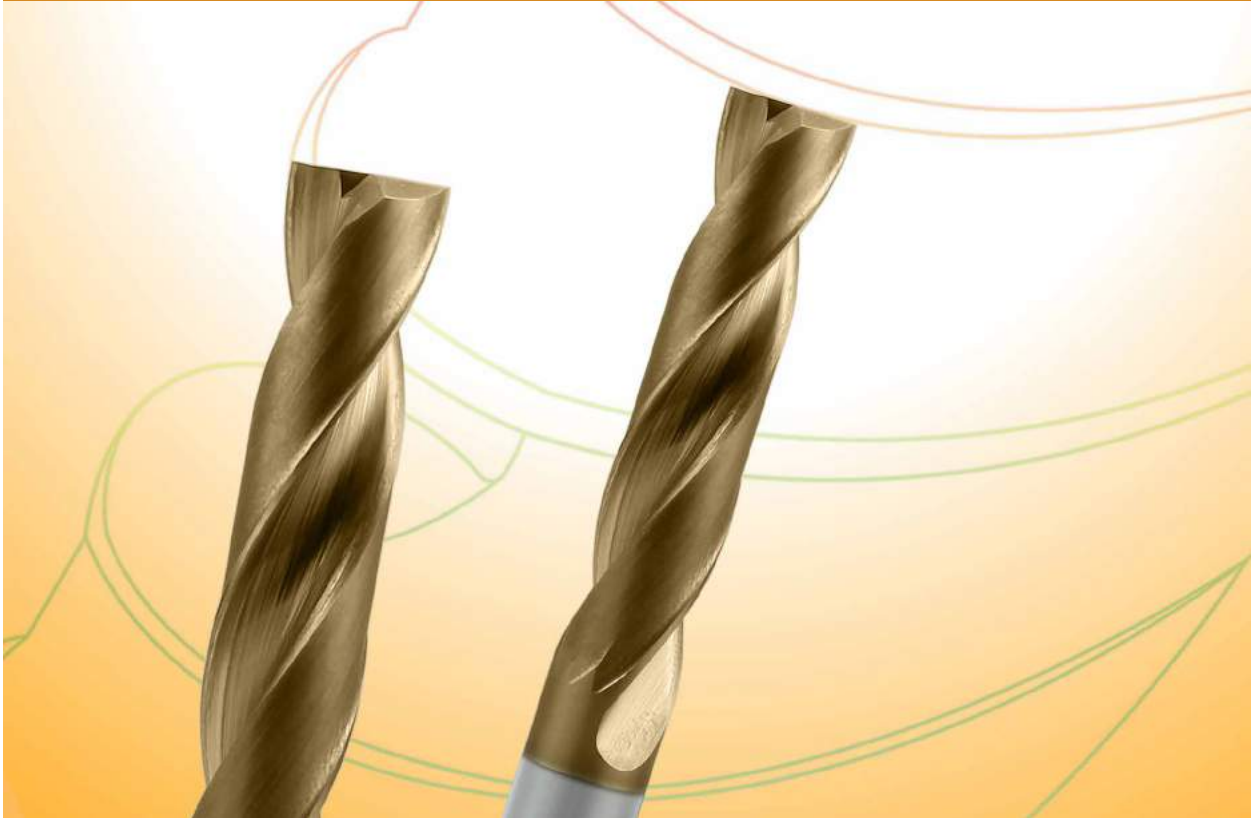




WINSTAR

Endmills · Inserts · Drills





FEATURES

- Multiple application
- Counter boring 、 Slope 、 Curve 、 Cross hole 、 Thin plate
- Pre-hole
- Hole correction
- Reduce manufacturing procedure
- 適用多種加工場景
- 搪孔加工 、 斜面鑽孔 、 曲面鑽孔 、 跨孔鑽孔 、 薄板鑽孔
- 導引孔加工
- 孔位校正
- 有效減少加工程序

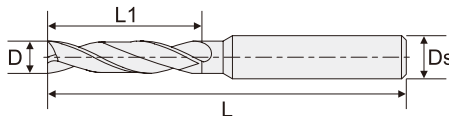
DFN Solid Carbide Drills - 3×D (with Flat tip)

外冷平底鎢鋼鑽頭



Product Specs

- 3×D Cutting depth
- Reinforced Shank
- Flat tip
- External Coolant
- SINIX Coating
- Tolerance h8
- FX Design
- For Steel, Alloy Steel, Stainless Steel (Martensitic), Cast iron, Non-ferrous metal.



Unit:mm

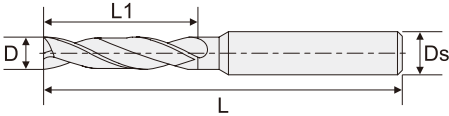
Order No.	D	L1	L	Ds
DFN03000342	3.00	20	60	4
DFN03100342	3.10	20	60	4
DFN03170342	3.17(1/8")	20	60	4
DFN03200342	3.20	20	60	4
DFN03250342	3.25(5/32")	20	60	4
DFN03300342	3.30	20	60	4
DFN03400342	3.40	20	60	4
DFN03500342	3.50	20	60	4
DFN03600342	3.60	20	60	4
DFN03700342	3.70	20	60	4
DFN03800342	3.80	24	60	4
DFN03900342	3.90	24	60	4
DFN03970342	3.97(5/32")	24	60	4
DFN03000302	3.00	20	62	6
DFN03100302	3.10	20	62	6
DFN03200302	3.20	20	62	6
DFN03250302	3.25(5/32")	20	62	6
DFN03300302	3.30	20	62	6
DFN03400302	3.40	20	62	6
DFN03500302	3.50	20	62	6
DFN03600302	3.60	20	62	6
DFN03700302	3.70	20	62	6
DFN03800302	3.80	24	66	6
DFN03900302	3.90	24	66	6
DFN03970302	3.97(5/32")	24	66	6
DFN04000302	4.00	24	66	6
DFN04100302	4.10	24	66	6
DFN04200302	4.20	24	66	6
DFN04300302	4.30	24	66	6
DFN04400302	4.40	24	66	6
DFN04500302	4.50	24	66	6
DFN04600302	4.60	24	66	6
DFN04650302	4.65(13/71")	24	66	6
DFN04700302	4.70	24	66	6
DFN04800302	4.80	28	66	6
DFN04900302	4.90	28	66	6
DFN05000302	5.00	28	66	6
DFN05100302	5.10	28	66	6
DFN05200302	5.20	28	66	6
DFN05300302	5.30	28	66	6
DFN05400302	5.40	28	66	6
DFN05500302	5.50	28	66	6
DFN05560302	5.56(7/32")	28	66	6
DFN05600302	5.60	28	66	6
DFN05700302	5.70	28	66	6
DFN05800302	5.80	28	66	6
DFN05900302	5.90	28	66	6

Order No.	D	L1	L	Ds
DFN06000302	6.00	28	66	6
DFN06100302	6.10	34	79	8
DFN06200302	6.20	34	79	8
DFN06300302	6.30	34	79	8
DFN06350302	6.35	34	79	8
DFN06400302	6.40	34	79	8
DFN06500302	6.50	34	79	8
DFN06600302	6.60	34	79	8
DFN06700302	6.70	34	79	8
DFN06800302	6.80	34	79	8
DFN06900302	6.90	34	79	8
DFN07000302	7.00	34	79	8
DFN07100302	7.10	41	79	8
DFN07200302	7.20	41	79	8
DFN07300302	7.30	41	79	8
DFN07400302	7.40	41	79	8
DFN07500302	7.50	41	79	8
DFN07600302	7.60	41	79	8
DFN07700302	7.70	41	79	8
DFN07800302	7.80	41	79	8
DFN07900302	7.90	41	79	8
DFN08000302	8.00	41	79	8
DFN08100302	8.10	47	89	10
DFN08200302	8.20	47	89	10
DFN08300302	8.30	47	89	10
DFN08400302	8.40	47	89	10
DFN08500302	8.50	47	89	10
DFN08600302	8.60	47	89	10
DFN08700302	8.70	47	89	10
DFN08800302	8.80	47	89	10
DFN08900302	8.90	47	89	10
DFN09000302	9.00	47	89	10
DFN09100302	9.10	47	89	10
DFN09200302	9.20	47	89	10
DFN09250302	9.25(23/64")	47	89	10
DFN09300302	9.30	47	89	10
DFN09400302	9.40	47	89	10
DFN09500302	9.50	47	89	10
DFN09600302	9.60	47	89	10
DFN09700302	9.70	47	89	10
DFN09800302	9.80	47	89	10
DFN09900302	9.90	47	89	10

DFN Solid Carbide Drills - 3×D (with Flat tip) 外冷平底鎢鋼鑽頭



- Product Specs**
- 3×D Cutting depth
 - SINIX Coating
 - For Steel, Alloy Steel, Stainless Steel (Martensitic), Cast iron, Non-ferrous metal.
 - Reinforced Shank
 - Tolerance h8
 - Flat tip
 - FX Design
 - External Coolant



Unit:mm

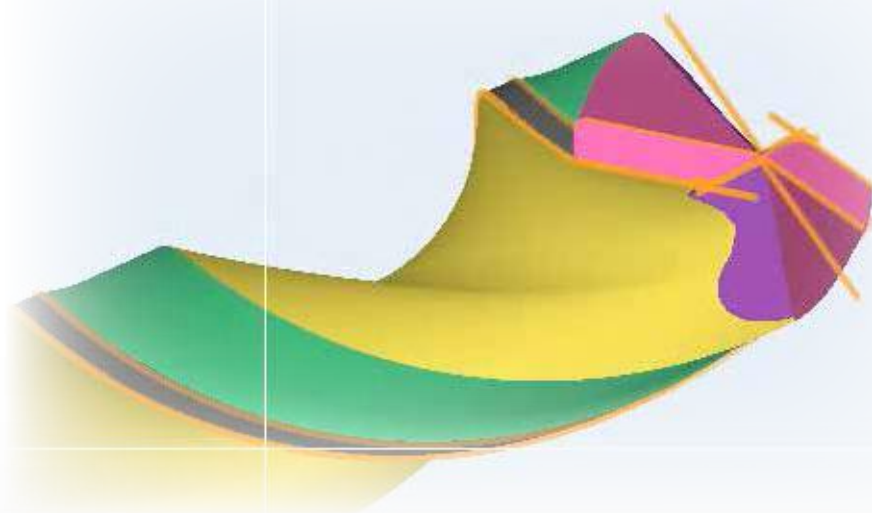
Order No.	D	L1	L	Ds
DFN10000302	10.00	47	89	10
DFN10100302	10.10	55	102	12
DFN10200302	10.20	55	102	12
DFN10300302	10.30	55	102	12
DFN10400302	10.40	55	102	12
DFN10500302	10.50	55	102	12
DFN10600302	10.60	55	102	12
DFN10700302	10.70	55	102	12
DFN10800302	10.80	55	102	12
DFN10900302	10.90	55	102	12
DFN11000302	11.00	55	102	12
DFN11100302	11.10	55	102	12
DFN11200302	11.20	55	102	12
DFN11300302	11.30	55	102	12
DFN11400302	11.40	55	102	12
DFN11500302	11.50	55	102	12
DFN11600302	11.60	55	102	12
DFN11700302	11.70	55	102	12
DFN11800302	11.80	55	102	12
DFN11900302	11.90	55	102	12
DFN12000302	12.00	55	102	12
DFN12100302	12.10	60	107	14
DFN12200302	12.20	60	107	14
DFN12300302	12.30	60	107	14
DFN12400302	12.40	60	107	14
DFN12500302	12.50	60	107	14
DFN12600302	12.60	60	107	14
DFN12700302	12.70(1/2")	60	107	14
DFN12800302	12.80	60	107	14
DFN12900302	12.90	60	107	14
DFN13000302	13.00	60	107	14
DFN13200302	13.20	60	107	14
DFN13300302	13.30	60	107	14
DFN13500302	13.50	60	107	14
DFN13700302	13.70	60	107	14
DFN13800302	13.80	60	107	14
DFN14000302	14.00	60	107	14
DFN14200302	14.20	65	115	16
DFN14300302	14.30	65	115	16
DFN14400302	14.40	65	115	16
DFN14500302	14.50	65	115	16
DFN14700302	14.70	65	115	16

Order No.	D	L1	L	Ds
DFN15000302	15.00	65	115	16
DFN15200302	15.20	65	115	16
DFN15500302	15.50	65	115	16
DFN15600302	15.60	65	115	16
DFN15700302	15.70	65	115	16
DFN15800302	15.80	65	115	16
DFN16000302	16.00	65	115	16
DFN16500302	16.50	73	123	18
DFN17000302	17.00	73	123	18
DFN17500302	17.50	73	123	18
DFN18000302	18.00	73	123	18
DFN18500302	18.50	79	131	20
DFN19000302	19.00	79	131	20
DFN19500302	19.50	79	131	20
DFN20000302	20.00	79	131	20

Drilling



Endmills · Inserts · Drills





Product Features

- General Purpose Drilling
- For Steel and Cast Iron
- Longer Tool Life
- Competitive Price
- 泛用鑽孔
- 適用一般鋼料與鑄鐵
- 刀具壽命佳
- 價格實惠

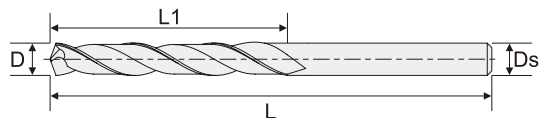
DGN Solid Carbide Drills - 3×D (for General Purpose)

外冷泛用鎢鋼鑽頭



Product Specs

- 3×D Cutting depth
- UNIX Coating
- For Alloy Steel, Steel, Stainless Steel and Cast Iron.
- Straight Shank
- Tolerance h8
- 130° Tip Angle
- NX Design
- External Coolant



Unit:mm

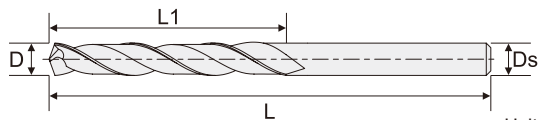
Order No.	D	L1	L	Ds
DGN02000301	2.00	12	38	2.00
DGN02100301	2.10	12	38	2.10
DGN02200301	2.20	13	40	2.20
DGN02300301	2.30	13	40	2.30
DGN02380301	2.38(3/32")	14	43	2.38
DGN02400301	2.40	14	43	2.40
DGN02500301	2.50	14	43	2.50
DGN02600301	2.60	14	43	2.60
DGN02700301	2.70	16	46	2.70
DGN02780301	2.78(7/64")	16	46	2.78
DGN02800301	2.80	16	46	2.80
DGN02900301	2.90	16	46	2.90
DGN03000301	3.00	16	46	3.00
DGN03100301	3.10	18	49	3.10
DGN03170301	3.17(1/8")	18	49	3.17
DGN03200301	3.20	18	49	3.20
DGN03300301	3.30	18	49	3.30
DGN03400301	3.40	20	52	3.40
DGN03500301	3.50	20	52	3.50
DGN03570301	3.57(9/64")	20	52	3.57
DGN03600301	3.60	20	52	3.60
DGN03700301	3.70	20	52	3.70
DGN03800301	3.80	22	55	3.80
DGN03900301	3.90	22	55	3.90
DGN03970301	3.97(5/32")	22	55	3.97
DGN04000301	4.00	22	55	4.00
DGN04100301	4.10	22	55	4.10
DGN04200301	4.20	24	58	4.20
DGN04300301	4.30	24	58	4.30
DGN04370301	4.37(11/64")	24	58	4.37
DGN04400301	4.40	24	58	4.40
DGN04500301	4.50	24	58	4.50
DGN04600301	4.60	24	58	4.60
DGN04700301	4.70	24	58	4.70
DGN04760301	4.76(3/16")	26	62	4.76
DGN04800301	4.80	26	62	4.80
DGN04900301	4.90	26	62	4.90
DGN05000301	5.00	26	62	5.00
DGN05100301	5.10	26	62	5.10
DGN05200301	5.20	26	62	5.20
DGN05300301	5.30	26	62	5.30
DGN05400301	5.40	28	66	5.40
DGN05500301	5.50	28	66	5.50
DGN05600301	5.60	28	66	5.60
DGN05700301	5.70	28	66	5.70
DGN05800301	5.80	28	66	5.80
DGN05900301	5.90	28	66	5.90

Order No.	D	L1	L	Ds
DGN06000301	6.00	28	66	6.00
DGN06100301	6.10	31	70	6.10
DGN06200301	6.20	31	70	6.20
DGN06300301	6.30	31	70	6.30
DGN06350301	6.35(1/4")	31	70	6.35
DGN06400301	6.40	31	70	6.40
DGN06500301	6.50	31	70	6.50
DGN06600301	6.60	31	70	6.60
DGN06700301	6.70	31	70	6.70
DGN06800301	6.80	34	74	6.80
DGN06900301	6.90	34	74	6.90
DGN07000301	7.00	34	74	7.00
DGN07100301	7.10	34	74	7.10
DGN07140301	7.14(9/32")	34	74	7.14
DGN07200301	7.20	34	74	7.20
DGN07300301	7.30	34	74	7.30
DGN07400301	7.40	34	74	7.40
DGN07500301	7.50	34	74	7.50
DGN07600301	7.60	37	79	7.60
DGN07700301	7.70	37	79	7.70
DGN07800301	7.80	37	79	7.80
DGN07900301	7.90	37	79	7.90
DGN07940301	7.94(5/16")	37	79	7.94
DGN08000301	8.00	37	79	8.00
DGN08100301	8.10	37	79	8.10
DGN08200301	8.20	37	79	8.20
DGN08300301	8.30	37	79	8.30
DGN08400301	8.40	37	79	8.40
DGN08500301	8.50	37	79	8.50
DGN08600301	8.60	37	79	8.60
DGN08700301	8.70	37	79	8.70
DGN08730301	8.73(11/32")	40	84	8.73
DGN08800301	8.80	40	84	8.80
DGN08900301	8.90	40	84	8.90
DGN09000301	9.00	40	84	9.00
DGN09100301	9.10	40	84	9.10
DGN09200301	9.20	40	84	9.20
DGN09300301	9.30	40	84	9.30
DGN09400301	9.40	40	84	9.40
DGN09500301	9.50	40	84	9.50
DGN09700301	9.70	43	89	9.70
DGN09800301	9.80	43	89	9.80
DGN09900301	9.90	43	89	9.90

外冷泛用鎢鋼鑽頭

Product Specs

- 3xD Cutting depth
- Straight Shank
- 130° Tip Angle
- External Coolant
- UNIX Coating
- Tolerance h8
- NX Design
- For Alloy Steel, Steel, Stainless Steel and Cast Iron.

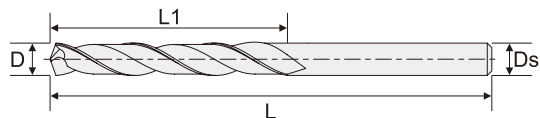


Unit:mm

外冷泛用鎢鋼鑽頭



- 5xD Cutting depth
- Straight Shank
- 130° Tip Angle
- External Coolant
- UNIX Coating
- Tolerance h8
- NX Design
- For Alloy Steel, Steel, Stainless Steel and Cast Iron.



Unit:mm

[illegible]

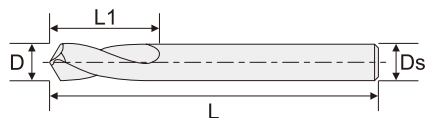


Product Spec.

- Spotting Drills
 - Tip angle 90°
 - Tip angle 120°
- Better Tool Life
- Competitive Price
- Customized Service
- 刀具壽命佳
- 價格實惠
- 客製化服務

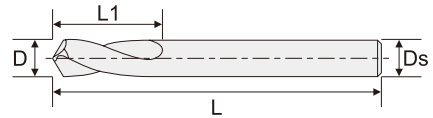
外冷定點鎢鋼鑽頭

· For Alloy Steel, Stainless Steel and Cast Iron.



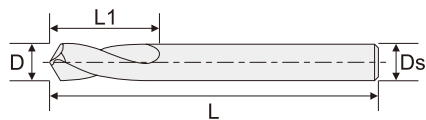
外冷定點鎢鋼鑽頭

· For Alloy Steel, Stainless Steel and Cast Iron.



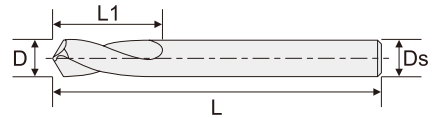
外冷定點鎢鋼鑽頭

· For Alloy Steel, Stainless Steel and Cast Iron.



外冷定點鎢鋼鑽頭

· For Alloy Steel, Stainless Steel and Cast Iron.

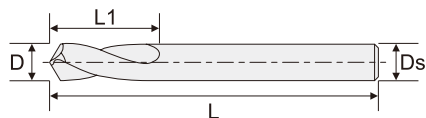


C059

外冷定點鎢鋼鑽頭

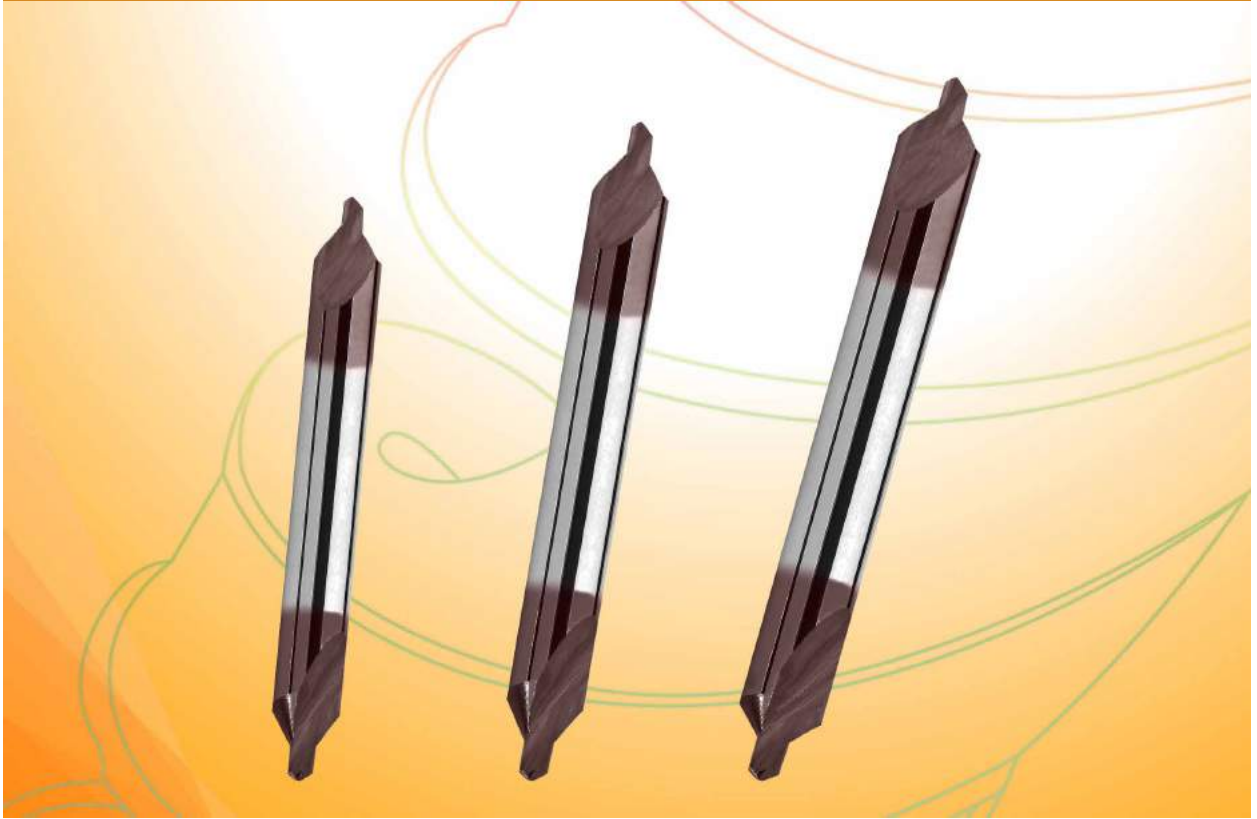


- 140° Tip Angle
- 70° Chamfer Angle
- External Coolant
- UNIX Coating
- Tolerance h8
- For Alloy Steel, Stainless Steel and Cast Iron.



Unit:mm

[illegible]



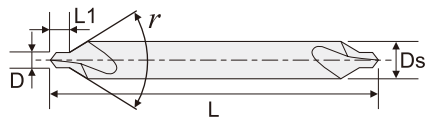
Product Spec.

- Spotting Drills
 - Countersink angle 60°
 - Countersink angle 90°
- Better Tool Life
- Competitive Price
- Customized Service
- 刀具壽命佳
- 價格實惠
- 客製化服務

外冷中心鎢鋼鑽頭

Product Specs

- 120° Tip Angle
- 60° Countersink Angle (γ)
- External Coolant
- UNIX Coating
- Tolerance h8
- For Alloy Steel, Stainless Steel and Cast Iron.

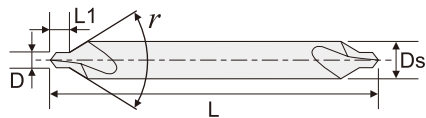


Unit:mm

外冷中心鎢鋼鑽頭

Product Specs

- 120° Tip Angle
- 90° Countersink Angle (γ)
- External Coolant
- UNIX Coating
- Tolerance h8
- For Alloy Steel, Stainless Steel and Cast Iron.



Unit:mm

Drilling



Endmills · Inserts · Drills





Product Features

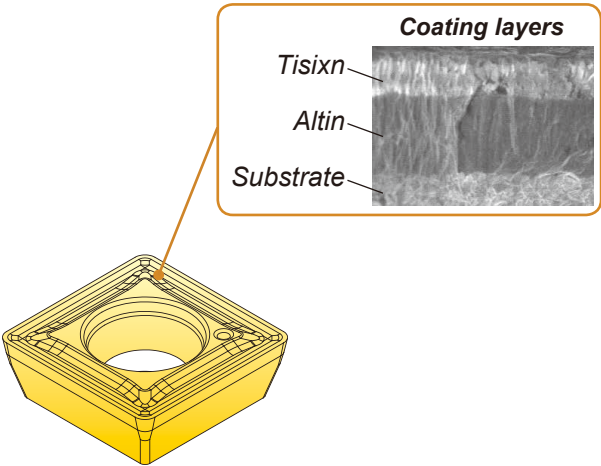
- Economical and Efficient
- Durable full SDK holder body
- Excellent chips flow
- Internal coolant design
- Better tool life
- 經濟與效能
- 高耐久工具鋼刀桿
- 優異的排屑效率
- 內冷孔設計
- 良好的刀具壽命

Grade Descriptions

Grade Code : CX31NS, CX41NS

Ingredient : Ti, Al, Si, N

- Feature :
- Si contained
 - Improve the hardness and heat resistance
 - The Si NANO particles uniformly distributed
 - Effective protection of the substrate
 - Extend inserts life



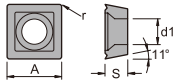
Grade	ISO	Substrate (HRA)	Coating Type	Thickness	Coolant		Cutting Condition
					WET	DRY	
CX31NS	P20~P30 M15~M30 K30	91.6	TiSixN	~ 3	★ ★	★	Medium Continuous
CX41NS	P20~P40 M20~M40 K30	90.0	TiSixN	~ 3	★ ★	★	Rough Interrupted

Chip breaker design



SPMG Inserts

SPMG 刀片

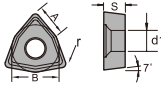
	P	Steel	⊙	⊙	⊙	○	○		⊙ 1st choice ○ 2st choice					
	M	Stainless steel	○	○	○	⊙	⊙							
	K	Cast iron	⊙	○	○	○	○							
Inserts	Designation		Grade					Dimensions (mm)						Drawing
			CX21NS	CX31NA	CX31NS	CX41NS	CX41NA	A	B	S	r	d1	t1	
	SPMG	050204-MG			✓	✓		5.00	-	2.38	0.4	2.30	-	
	SPMG	060204-MG			✓	✓		6.00	-	2.38	0.4	2.65	-	
	SPMG	07T308-MG			✓	✓		7.94	-	3.97	0.8	2.85	-	
	SPMG	090408-MG			✓	✓		9.80	-	4.3	0.8	4.05	-	
	SPMG	110408-MG			✓	✓		11.50	-	4.8	0.8	4.45	-	

Holder Page : C070~C076

Drilling

WCMT Inserts

WCMT 刀片

	P	Steel							 1st choice  2nd choice							
	M	Stainless steel														
	K	Cast iron														
Inserts	Designation		Grade					Dimensions (mm)						Drawing		
			CX21NS	CX31NA	CX31NS	CX41NS	CX41NA		A	B	S	r	d1			
	WCMT	030208-MM				✓	✓		3.8	5.56	2.38	0.8	2.8	-		
	WCMT	040208-MM				✓	✓		4.3	6.35	2.38	0.8	3.0	-		
	WCMT	050308-MM				✓	✓		5.4	7.94	3.18	0.8	3.4	-		
	WCMT	06T308-MM				✓	✓		6.5	9.53	3.97	0.8	4.0	-		
	WCMT	080412-MM				✓	✓		8.7	12.7	4.76	1.2	4.3	-		

Holder Page : C078~C084



Product Features

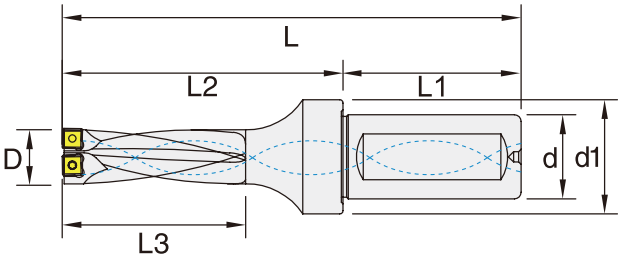
- SPMG series inserts
- Optimized flute design
- Internal coolant
- Better tool life
- Self-Produced inserts
- Diameter 12.5-50 mm
- 使用 SPMG 系列刀片
- 排屑槽設計優化
- 內冷孔設計
- 良好刀具壽命
- 刀片全程自產，提供您最佳性價比
- 孔徑加工範圍：12.5-50mm

DSP Indexable Drills - 2×D

內冷捨棄式快速鑽頭

Product Specs

- 2×D Cutting depth
 - Use with SPMG series inserts
 - For Alloy Steel, Steel, Stainless Steel and Cast Iron.
- High durable SDK holder body
 - Indexable Insert with 4 sides cutting edge
- Internal Coolant



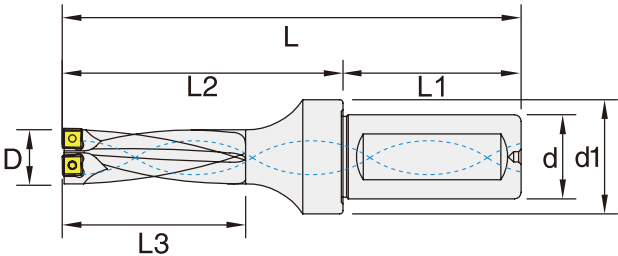
Item Code	Dimensions, mm							Teeth	Insert	Screw	Wrench
	D	d	d1	L	L3	L2	L1				
IDSP1252-20T2-05	12.5	20	27	94	26	44	50	2	SPMG0502...	TS2003	TK06
IDSP1302-20T2-05	13							2			
IDSP1352-20T2-05	13.5							2			
IDSP1402-20T2-05	14			96	28	46		2			
IDSP1452-20T2-05	14.5							2			
IDSP1502-20T2-05	15			99	30	49		2			
IDSP1552-25T2-06	15.5	25	33	108	32	52	56	2	SPMG0602...	TS2202	TK06
IDSP1602-25T2-06	16							2			
IDSP1652-25T2-06	16.5			110	34	54		2			
IDSP1702-25T2-06	17							2			
IDSP1752-25T2-06	17.5			113	36	57		2			
IDSP1802-25T2-06	18							2			
IDSP1852-25T2-06	18.5			115	38	59		2			
IDSP1902-25T2-06	19							2			
IDSP1952-25T2-06	19.5			119	40	63		2			
IDSP2002-25T2-06	20							2			
IDSP2052-25T2-06	20.5			121	42	65		2			
IDSP2102-25T2-06	21							2			
IDSP2152-25T2-06	21.5			123	44	67		2	SPMG07T308	TS2511	TK08
IDSP2202-25T2-07	22	32	43				60	2			
IDSP2252-32T2-07	22.5			131	46	71		2			
IDSP2302-32T2-07	23							2			
IDSP2352-32T2-07	23.5			134	48	74		2			
IDSP2402-32T2-07	24							2			
IDSP2452-32T2-07	24.5			137	50	77		2			
IDSP2502-32T2-07	25							2			
IDSP2552-32T2-07	25.5			139	52	79		2			
IDSP2602-32T2-07	26							2			
IDSP2652-32T2-07	26.5			142	54	81		2			
IDSP2702-32T2-07	27							2			
IDSP2752-32T2-07	27.5			144	56	84		2			

DSP Indexable Drills - 2×D

內冷捨棄式快速鑽頭

Product Specs

- 2×D Cutting depth
 - Use with SPMG series inserts
 - For Alloy Steel, Steel, Stainless Steel and Cast Iron.
- High durable SDK holder body
 - Indexable Insert with 4 sides cutting edge
- Internal Coolant

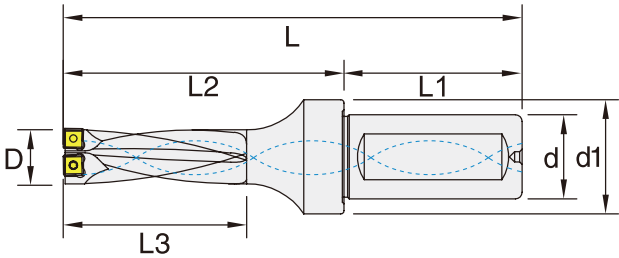


Item Code	Dimensions, mm							Teeth	Insert	Screw	Wrench
	D	d	d1	L	L3	L2	L1				
IDSP2802-32T2-09	28	32	43	144	56	84	60	2	SPMG090408	TS3504	TK15
IDSP2852-32T2-09	28.5			146	58	86		2			
IDSP2902-32T2-09	29			148	60	88		2			
IDSP2952-32T2-09	29.5			150	62	90		2			
IDSP3002-32T2-09	30			152	64	92		2			
IDSP3052-32T2-09	30.5			154	66	94		2			
IDSP3102-32T2-09	31			156	68	96		2			
IDSP3152-32T2-09	31.5			158	70	98		2			
IDSP3202-32T2-09	32			160	72	100		2			
IDSP3252-32T2-09	32.5			162	74	102		2			
IDSP3302-32T2-09	33	40	53	164	76	104	60	2	SPMG110408	TS4006	TK15
IDSP3402-32T2-11	34			166	78	106		2			
IDSP3502-32T2-11	35			168	80	108		2			
IDSP3602-32T2-11	36			170	82	110		2			
IDSP3702-32T2-11	37			172	84	112		2			
IDSP3802-32T2-11	38			174	86	114		2			
IDSP3902-32T2-11	39			176	88	116		2			
IDSP4002-40T2-11	40			178	90	118		2			
IDSP4102-40T2-11	41			180	92	120		2			

Drilling

Product Specs

- 3×D Cutting depth
- High durable SDK holder body
- Internal Coolant
- Use with SPMG series inserts
- Indexable Insert with 4 sides cutting edge
- For Alloy Steel, Steel, Stainless Steel and Cast Iron.



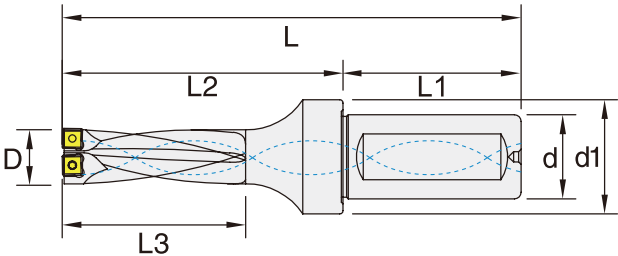
Item Code	Dimensions, mm							Teeth	Insert	Screw	Wrench
	D	d	d1	L	L3	L2	L1				
IDSP1253-20T2-05	12.5	20	25	107	39	57	50	2	SPMG0502...	TS2003	TK06
IDSP1303-20T2-05	13			110	42	60		2			
IDSP1353-20T2-05	13.5			114	45	64		2			
IDSP1403-20T2-05	14			114	45	64		2			
IDSP1453-20T2-05	14.5			114	45	64		2			
IDSP1503-20T2-05	15	25	33	124	48	68	56	2	SPMG0602...	TS2202	TK06
IDSP1553-25T2-06	15.5			127	51	71		2			
IDSP1603-25T2-06	16			131	54	75		2			
IDSP1653-25T2-06	16.5			134	57	78		2			
IDSP1703-25T2-06	17			139	60	83		2			
IDSP1753-25T2-06	17.5			142	63	86		2			
IDSP1803-25T2-06	18			145	66	89		2			
IDSP1853-25T2-06	18.5			154	69	94		2			
IDSP1903-25T2-06	19			158	72	98		2			
IDSP1953-25T2-06	19.5			162	75	102		2			
IDSP2003-25T2-06	20	32	43	165	78	105	60	2	SPMG07T3...	TS2511	TK08
IDSP2053-25T2-06	20.5			169	81	108		2			
IDSP2103-25T2-06	21			172	84	112		2			
IDSP2153-25T2-06	21.5			172	84	112		2			
IDSP2203-25T2-07	22			172	84	112		2			
IDSP2253-32T2-07	22.5			172	84	112		2			
IDSP2303-32T2-07	23			172	84	112		2			
IDSP2353-32T2-07	23.5			172	84	112		2			
IDSP2403-32T2-07	24			172	84	112		2			
IDSP2453-32T2-07	24.5			172	84	112		2			
IDSP2503-32T2-07	25			172	84	112		2			
IDSP2553-32T2-07	25.5			172	84	112		2			
IDSP2603-32T2-07	26			172	84	112		2			
IDSP2653-32T2-07	26.5			172	84	112		2			
IDSP2703-32T2-07	27			172	84	112		2			
IDSP2753-32T2-07	27.5			172	84	112		2			

DSP Indexable Drills - 3×D

內冷捨棄式快速鑽頭

Product Specs

- 3×D Cutting depth
 - Use with SPMG series inserts
 - For Alloy Steel, Steel, Stainless Steel and Cast Iron.
- High durable SDK holder body
 - Indexable Insert with 4 sides cutting edge
- Internal Coolant

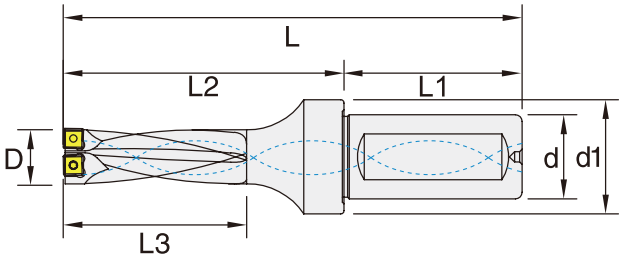


Item Code	Dimensions, mm							Teeth	Insert	Screw	Wrench
	D	d	d1	L	L3	L2	L1				
IDSP2803-32T2-09	28	32	43	172	84	112	60	2	SPMG0904...	TS3504	TK15
IDSP2853-32T2-09	28.5			175	87	115		2			
IDSP2903-32T2-09	29			178	90	118		2			
IDSP2953-32T2-09	29.5			181	93	121		2			
IDSP3003-32T2-09	30			184	96	124		2			
IDSP3053-32T2-09	30.5			187	99	127		2			
IDSP3103-32T2-09	31			190	102	130		2			
IDSP3153-32T2-09	31.5			193	105	133		2			
IDSP3203-32T2-09	32			196	108	136		2			
IDSP3253-32T2-09	32.5			199	111	139		2			
IDSP3303-32T2-09	33			202	114	142		2			
IDSP3403-32T2-11	34			205	117	145		2			
IDSP3503-32T2-11	35	40	53	225	120	155		2	SPMG1104...	TS4006	TK15
IDSP3603-32T2-11	36			228	123	158		2			
IDSP3703-32T2-11	37							2			
IDSP3803-32T2-11	38							2			
IDSP3903-32T2-11	39							2			
IDSP4003-40T2-11	40	40	53					2			
IDSP4103-40T2-11	41							2			

Drilling

Product Specs

- 4×D Cutting depth
- High durable SDK holder body
- Internal Coolant
- Use with SPMG series inserts
- Indexable Insert with 4 sides cutting edge
- For Alloy Steel, Steel, Stainless Steel and Cast Iron.



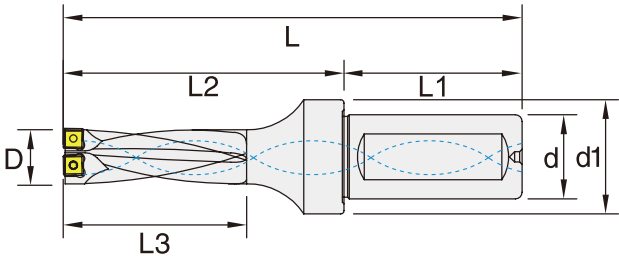
Item Code	Dimensions, mm							Teeth	Insert	Screw	Wrench
	D	d	d1	L	L3	L2	L1				
IDSP1254-20T2-05	12.5	20	27	120	52	70	50	2	SPMG0502...	TS2003	TK06
IDSP1304-20T2-05	13							2			
IDSP1354-20T2-05	13.5							2			
IDSP1404-20T2-05	14			124	56	74		2			
IDSP1454-20T2-05	14.5							2			
IDSP1504-20T2-05	15			129	60	79		2			
IDSP1554-25T2-06	15.5	25	33	140	64	84	56	2	SPMG0602...	TS2205	TK06
IDSP1604-25T2-06	16							2			
IDSP1654-25T2-06	16.5			144	68	88		2			
IDSP1704-25T2-06	17							2			
IDSP1754-25T2-06	17.5			148	72	92		2			
IDSP1804-25T2-06	18							2			
IDSP1854-25T2-06	18.5			152	76	96		2			
IDSP1904-25T2-06	19							2			
IDSP1954-25T2-06	19.5			156	80	100		2			
IDSP2004-25T2-06	20							2			
IDSP2054-25T2-06	20.5	32	43	160	84	104	60	2	SPMG07T3...	TS2511	TK08
IDSP2104-25T2-06	21							2			
IDSP2154-25T2-06	21.5			164	88	108		2			
IDSP2204-25T2-07	22							2			
IDSP2254-32T2-07	22.5			177	92	117		2			
IDSP2304-32T2-07	23							2			
IDSP2354-32T2-07	23.5			181	96	121		2			
IDSP2404-32T2-07	24							2			
IDSP2454-32T2-07	24.5			185	100	125		2			
IDSP2504-32T2-07	25							2			
IDSP2554-32T2-07	25.5			189	104	129		2			
IDSP2604-32T2-07	26							2			
IDSP2654-32T2-07	26.5			196	108	136		2			
IDSP2704-32T2-07	27							2			
IDSP2754-32T2-07	27.5			200	112	140		2			

DSP Indexable Drills - 4×D

內冷捨棄式快速鑽頭

Product Specs

- 4×D Cutting depth
 - Use with SPMG series inserts
 - For Alloy Steel, Steel, Stainless Steel and Cast Iron.
- High durable SDK holder body
 - Indexable Insert with 4 sides cutting edge
- Internal Coolant



Item Code	Dimensions, mm							Teeth	Insert	Screw	Wrench
	D	d	d1	L	L3	L2	L1				
IDSP2804-32T2-09	28	32	43	200	112	140	60	2	SPMG0904...	TS3504	TK15
IDSP2854-32T2-09	28.5			204	116	144		2			
IDSP2904-32T2-09	29							2			
IDSP2954-32T2-09	29.5			208	120	148		2			
IDSP3004-32T2-09	30							2			
IDSP3054-32T2-09	30.5			212	124	152		2			
IDSP3104-32T2-09	31							2			
IDSP3154-32T2-09	31.5			216	128	156		2			
IDSP3204-32T2-09	32							2			
IDSP3254-32T2-09	32.5			220	132	160		2			
IDSP3304-32T2-09	33	2									
IDSP3404-32T2-11	34	40	53	224	136	164	60	2	SPMG1104...	TS4006	TK15
IDSP3504-32T2-11	35			228	140	168		2			
IDSP3604-32T2-11	36			232	144	172		2			
IDSP3704-32T2-11	37			236	148	176		2			
IDSP3804-32T2-11	38			240	152	180		2			
IDSP3904-32T2-11	39			244	156	184		2			
IDSP4004-40T2-11	40			265	160	195		2			
IDSP4104-40T2-11	41			269	164	199		2			

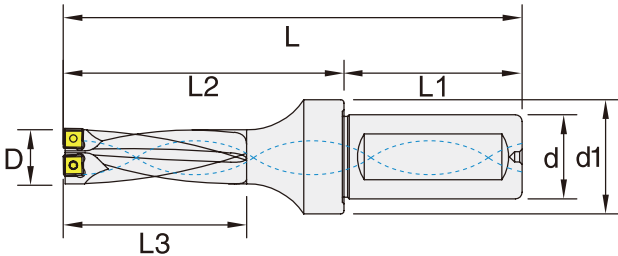
Drilling

DSP Indexable Drills - 5×D

內冷捨棄式快速鑽頭

Product Specs

- 5×D Cutting depth
 - Use with SPMG series inserts
 - For Alloy Steel, Steel, Stainless Steel and Cast Iron.
- High durable SDK holder body
 - Indexable Insert with 4 sides cutting edge
- Internal Coolant



Item Code	Dimensions, mm							Teeth	Insert	Screw	Wrench
	D	d	d1	L	L3	L2	L1				
IDSP1305-20T2-05	13	20	27	133	65	83	50	2	SPMG0502...	TS2003	TK06
IDSP1405-20T2-05	14			138	70	88		2			
IDSP1505-20T2-05	15			144	75	94		2			
IDSP1605-25T2-06	16	25	33	156	80	100	56	2	SPMG0602	TS2205	TK06
IDSP1705-25T2-06	17			161	85	105		2			
IDSP1805-25T2-06	18			166	90	110		2			
IDSP1905-25T2-06	19			171	95	115		2			
IDSP2005-25T2-06	20			176	100	120		2			
IDSP2105-25T2-06	21			181	105	125		2			
IDSP2205-25T2-07	22			186	110	130		2			
IDSP2305-32T2-07	23	32	43	200	115	140	60	2	SPMG07T3	TS2511	TK08
IDSP2405-32T2-07	24			205	120	145		2			
IDSP2505-32T2-07	25			210	125	150		2			
IDSP2605-32T2-07	26			215	130	155		2			
IDSP2705-32T2-07	27			223	135	163		2			
IDSP2805-32T2-09	28			228	140	168		2	SPMG0904	TS3504	TK15
IDSP2905-32T2-09	29			233	145	173		2			
IDSP3005-32T2-09	30			238	150	178		2			
IDSP3105-32T2-09	31			243	155	183		2			
IDSP3205-32T2-09	32			248	160	188		2			
IDSP3305-32T2-09	33			253	165	193		2	SPMG1104	TS4006	TK15
IDSP3405-32T2-11	34			258	170	198		2			
IDSP3505-32T2-11	35			263	175	203		2			
IDSP3605-32T2-11	36			268	180	208		2			

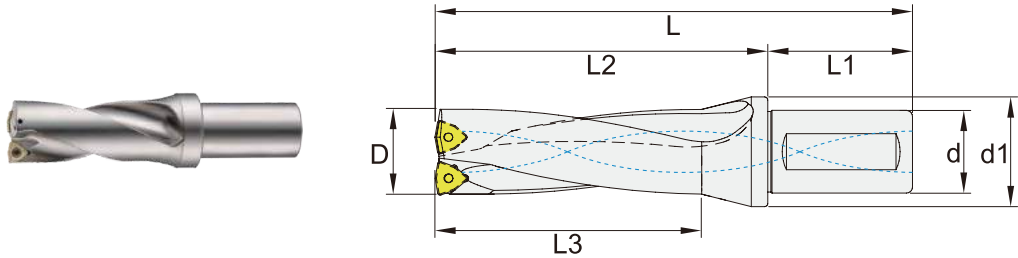


Product Features

- WCMT series inserts
- Optimized flute design
- Internal coolant
- Better tool life
- Self-Produced inserts
- Diameter 14-60 mm
- 使用 WCMT 系列刀片
- 排屑設計優化
- 內冷孔設計
- 良好刀具壽命
- 刀片全程自產，提供您最佳性價比
- 孔徑加工範圍 :14-60mm

Product Specs

- 2×D Cutting depth
- High durable SDK holder body
- Internal Coolant
- Use with WCMT series inserts
- Indexable Insert with 3 sides cutting edge
- For Alloy Steel, Steel, Stainless Steel and Cast Iron.



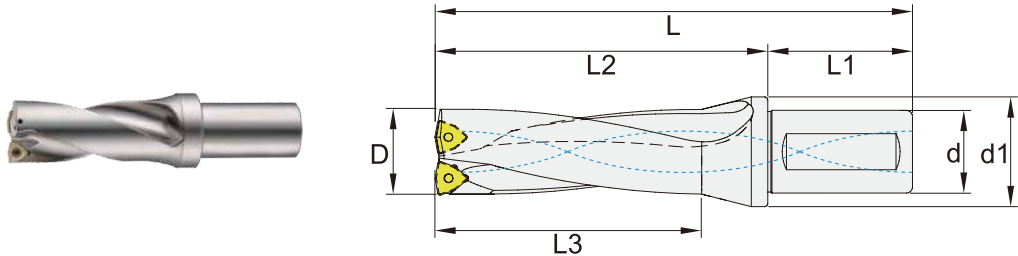
Item Code	Dimensions, mm							Teeth	Insert	Screw	Wrench
	D	d	d1	L	L3	L2	L1				
IDWC1402-25T2-03	14	25	38	114	28	58	56	2	WCMT0302...	TS2502	TK08
IDWC1452-25T2-03	14.5							2			
IDWC1502-25T2-03	15			116	30	60		2			
IDWC1552-25T2-03	15.5							2			
IDWC1602-25T2-03	16			119	32	63		2			
IDWC1652-25T2-03	16.5							2			
IDWC1702-25T2-03	17			120	34	64		2			
IDWC1752-25T2-03	17.5							2			
IDWC1802-25T2-03	18			122	36	66		2			
IDWC1852-25T2-03	18.5							2			
IDWC1902-25T2-03	19			124	38	68		2			
IDWC1952-25T2-03	19.5							2			
IDWC2002-25T2-03	20			126	40	70		2			
IDWC2052-25T2-03	20.5							2			
IDWC2102-25T2-04	21	128	42	72	2	WCMT0402...					
IDWC2152-25T2-04	21.5				2						
IDWC2202-32T2-04	22	32	43	136	44		76	2			
IDWC2252-32T2-04	22.5							2			
IDWC2302-32T2-04	23			138	46		78	2			
IDWC2352-32T2-04	23.5							2			
IDWC2402-32T2-04	24			141	48		81	2			
IDWC2452-32T2-04	24.5							2			
IDWC2502-32T2-04	25			142	50		82	2			
IDWC2552-32T2-04	25.5							2			
IDWC2602-32T2-05	26			144	52		84	2	WCMT0503...		
IDWC2702-32T2-05	27							2			
IDWC2802-32T2-05	28			148	56		88	2			
IDWC2902-32T2-05	29							2			
IDWC3002-32T2-05	30			150	58	90	2				
							2				
		152	60	92	2						

DWC Indexable Drills - 2×D

內冷捨棄式快速鑽頭

Product Specs

- 2×D Cutting depth
 - Use with WCMT series inserts
 - For Alloy Steel, Steel, Stainless Steel and Cast Iron.
- High durable SDK holder body
 - Indexable Insert with 3 sides cutting edge
- Internal Coolant

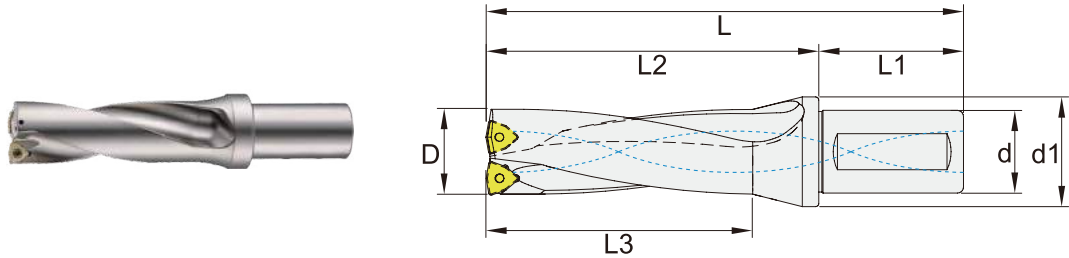


Item Code	Dimensions, mm							Teeth	Insert	Screw	Wrench	
	D	d	d1	L	L3	L2	L1					
IDWC3102-32T2-06	31	32	43	154	62	94	60	2	WCMT06T3...	TS3504	TK15	
IDWC3202-32T2-06	32			156	64	96		2				
IDWC3302-32T2-06	33			159	66	99		2				
IDWC3402-32T2-06	34			160	68	100		2				
IDWC3502-32T2-06	35			162	70	102		2				
IDWC3602-32T2-06	36			164	72	104		2				
IDWC3702-32T2-06	37			166	74	106		2				
IDWC3802-32T2-06	38			168	76	106		2				
IDWC3902-32T2-06	39			170	78	110		2				
IDWC4002-40T2-06	40	40	54	185	80	115	70	2	WCMT0804...	TS4004		
IDWC4102-40T2-06	41			187	82	117		2				
IDWC4202-40T2-08	42			189	84	119		2				
IDWC4302-40T2-08	43			191	86	121		2				
IDWC4402-40T2-08	44			194	88	124		2				
IDWC4502-40T2-08	45			195	90	125		2				
IDWC4602-40T2-08	46			197	92	127		2				
IDWC4702-40T2-08	47			199	94	129		2				
IDWC4802-40T2-08	48			201	96	131		2				
IDWC4902-40T2-08	49			202	98	132		2				
IDWC5002-40T2-08	50			204	100	134		2				
IDWC5102-40T2-08	51			206	102	136		2				
IDWC5202-40T2-08	52			208	104	138		2				
IDWC5302-40T2-08	53			210	106	140		2				
IDWC5402-40T2-08	54			212	108	142		2				
IDWC5502-40T2-08	55			58	215	110		145				2
IDWC5602-40T2-08	56				217	112		147				2
IDWC5702-40T2-08	57				219	114		149				2
IDWC5802-40T2-08	58		59	221	116	151		2				
IDWC5902-40T2-08	59			223	118	153		2				
IDWC6002-40T2-08	60			63	225	120		155				

Drilling

Product Specs

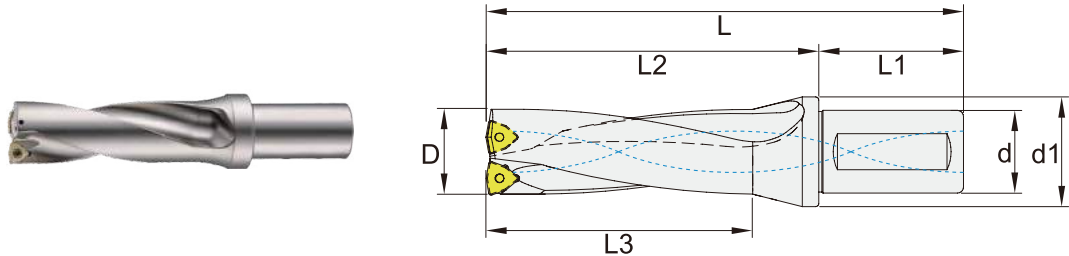
- 3×D Cutting depth
- High durable SDK holder body
- Internal Coolant
- Use with WCMT series inserts
- Indexable Insert with 3 sides cutting edge
- For Alloy Steel, Steel, Stainless Steel and Cast Iron.



Item Code	Dimensions, mm							Teeth	Insert	Screw	Wrench
	D	d	d1	L	L3	L2	L1				
IDWC1403-25T2-03	14	25	38	128	42	72	56	2	WCMT0302...	TS2502	TK08
IDWC1453-25T2-03	14.5							2			
IDWC1503-25T2-03	15			131	45	75		2			
IDWC1553-25T2-03	15.5							2			
IDWC1603-25T2-03	16			134	48	78		2			
IDWC1653-25T2-03	16.5							2			
IDWC1703-25T2-03	17			137	51	81		2			
IDWC1753-25T2-03	17.5							2			
IDWC1803-25T2-03	18			140	54	84		2			
IDWC1853-25T2-03	18.5							2			
IDWC1903-25T2-03	19			143	57	87		2			
IDWC1953-25T2-03	19.5							2			
IDWC2003-25T2-03	20	32	43	146	60	90	60	2	WCMT0402...	TS2507	TK10
IDWC2053-25T2-03	20.5							2			
IDWC2103-25T2-04	21			149	63	93		2			
IDWC2153-25T2-04	21.5			151	64	95		2			
IDWC2203-32T2-04	22			158	66	98		2			
IDWC2253-32T2-04	22.5							2			
IDWC2303-32T2-04	23			161	69	101		2			
IDWC2353-32T2-04	23.5							2			
IDWC2403-32T2-04	24			164	72	104		2			
IDWC2453-32T2-04	24.5							2			
IDWC2503-32T2-04	25			167	75	107		2			
IDWC2553-32T2-04	25.5							2			
IDWC2603-32T2-05	26	30.5	43	170	78	110	60	2	WCMT0503...	TS3007	TK10
IDWC2703-32T2-05	27			173	81	113		2			
IDWC2803-32T2-05	28			176	84	116		2			
IDWC2903-32T2-05	29			179	87	119		2			
IDWC3003-32T2-05	30			182	90	122		2			
IDWC3053-32T2-06	30.5			182	93	125		2	WCMT06T3...	TS3504	TK15
IDWC3103-32T2-06	31			185	93	125		2			

Product Specs

- 3×D Cutting depth
 - Use with WCMT series inserts
 - For Alloy Steel, Steel, Stainless Steel and Cast Iron.
- High durable SDK holder body
 - Indexable Insert with 3 sides cutting edge
- Internal Coolant

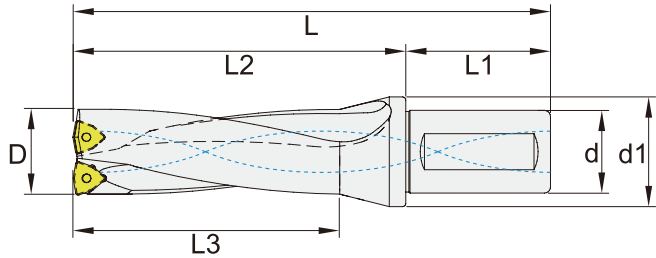


Item Code	Dimensions, mm							Teeth	Insert	Screw	Wrench
	D	d	d1	L	L3	L2	L1				
IDWC3153-32T2-06	31.5	32	43	185	93	125	60	2	WCMT06T3...	TS3504	
IDWC3203-32T2-06	32			188	96	128		2			
IDWC3253-32T2-06	32.5			188	96	128		2			
IDWC3303-32T2-06	33			191	99	131		2			
IDWC3403-32T2-06	34			194	102	134		2			
IDWC3503-32T2-06	35			197	105	137		2			
IDWC3603-32T2-06	36			200	108	140		2			
IDWC3703-32T2-06	37			203	111	143		2			
IDWC3803-32T2-06	38			206	114	146		2			
IDWC3903-32T2-06	39			209	117	149		2			
IDWC4003-40T2-06	40	40	54	225	120	155	70	2	WCMT0804...	TS4004	TK15
IDWC4103-40T2-06	41			228	123	158		2			
IDWC4203-40T2-08	42			231	126	161		2			
IDWC4303-40T2-08	43			234	129	164		2			
IDWC4403-40T2-08	44			238	132	168		2			
IDWC4503-40T2-08	45			240	135	170		2			
IDWC4603-40T2-08	46			243	138	173		2			
IDWC4703-40T2-08	47			246	141	176		2			
IDWC4803-40T2-08	48			249	144	179		2			
IDWC4903-40T2-08	49			253	147	182		2			
IDWC5003-40T2-08	50		58	254	150	184		2			
IDWC5103-40T2-08	51			257	153	187		2			
IDWC5203-40T2-08	52			260	156	190		2			
IDWC5303-40T2-08	53			263	159	193		2			
IDWC5403-40T2-08	54			266	162	196		2			
IDWC5503-40T2-08	55			270	165	200		2			
IDWC5603-40T2-08	56			273	168	203		2			
IDWC5703-40T2-08	57			276	171	205		2			
IDWC5803-40T2-08	58		59	279	174	209		2			
IDWC5903-40T2-08	59			282	177	212		2			
IDWC6003-40T2-08	60			285	180	215		2			
			63								

Drilling

Product Specs

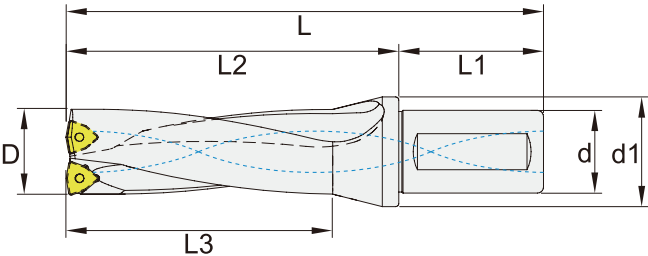
- 4×D Cutting depth
- High durable SDK holder body
- Internal Coolant
- Use with WCMT series inserts
- Indexable Insert with 3 sides cutting edge
- For Alloy Steel, Steel, Stainless Steel and Cast Iron.



Item Code	Dimensions, mm							Teeth	Insert	Screw	Wrench
	D	d	d1	L	L3	L2	L1				
IDWC1404-25T2-03	14	25	38	142	56	86	56	2	WCMT0302...	TS2502	TK08
IDWC1504-25T2-03	15			146	60	90		2			
IDWC1604-25T2-03	16			150	64	94		2			
IDWC1704-25T2-03	17			154	68	98		2			
IDWC1804-25T2-03	18			158	72	102		2			
IDWC1904-25T2-03	19			162	76	106		2			
IDWC2004-25T2-03	20			166	80	110		2			
IDWC2104-25T2-04	21			170	84	114		2			
IDWC2204-32T2-04	22	32	43	180	88	120	60	2	WCMT0402...	TS2507	TK10
IDWC2304-32T2-04	23			184	92	124		2			
IDWC2404-32T2-04	24			188	96	128		2			
IDWC2504-32T2-04	25			192	100	132		2			
IDWC2604-32T2-05	26			196	104	136		2	WCMT0503...	TS3007	
IDWC2704-32T2-05	27			200	108	140		2			
IDWC2804-32T2-05	28			204	112	144		2			
IDWC2904-32T2-05	29			208	116	148		2			
IDWC3004-32T2-05	30			212	120	152		2			
IDWC3104-32T2-06	31			216	124	156		2	WCMT06T3...	TS3504	TK15
IDWC3204-32T2-06	32			220	128	160		2			
IDWC3304-32T2-06	33			224	132	164		2			
IDWC3404-32T2-06	34			228	136	168		2			
IDWC3504-32T2-06	35			232	140	172		2			
IDWC3604-32T2-06	36			236	144	176		2			
IDWC3704-32T2-06	37			240	148	180		2			
IDWC3804-32T2-06	38			244	152	184		2			
IDWC3904-32T2-06	39			248	156	188		2			
IDWC4004-40T2-06	40	40	54	265	160	195	70	2			
IDWC4104-40T2-06	41			269	164	199		2			

Product Specs

- 4×D Cutting depth
 - Use with WCMT series inserts
 - For Alloy Steel, Steel, Stainless Steel and Cast Iron.
- High durable SDK holder body
 - Indexable Insert with 3 sides cutting edge
- Internal Coolant

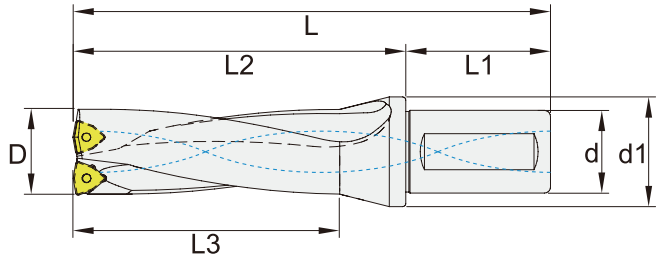


Item Code	Dimensions, mm							Teeth	Insert	Screw	Wrench
	D	d	d1	L	L3	L2	L1				
IDWC4204-40T2-08	42	40	54	273	168	203	70	2	WCMT0804...	TS4004	TK15
IDWC4304-40T2-08	43			277	172	207		2			
IDWC4404-40T2-08	44			282	176	212		2			
IDWC4504-40T2-08	45			285	180	215		2			
IDWC4604-40T2-08	46			289	184	219		2			
IDWC4704-40T2-08	47			293	188	223		2			
IDWC4804-40T2-08	48			297	192	227		2			
IDWC4904-40T2-08	49			301	196	231		2			
IDWC5004-40T2-08	50			305	200	235		2			
IDWC5104-40T2-08	51			309	204	239		2			
IDWC5204-40T2-08	52			313	208	243		2			
IDWC5304-40T2-08	53			317	212	247		2			
IDWC5404-40T2-08	54			320	216	250		2			
IDWC5504-40T2-08	55			325	220	255		2			
IDWC5604-40T2-08	56		58	329	224	259		2			
IDWC5704-40T2-08	57			333	228	263		2			
IDWC5804-40T2-08	58		59	337	232	267		2			
IDWC5904-40T2-08	59			341	236	271		2			
IDWC6004-40T2-08	60		63	345	240	275		2			

Drilling

Product Specs

- 5×D Cutting depth
- High durable SDK holder body
- Internal Coolant
- Use with WCMT series inserts
- Indexable Insert with 3 sides cutting edge
- For Alloy Steel, Steel, Stainless Steel and Cast Iron.



Item Code	Dimensions, mm							Teeth	Insert	Screw	Wrench
	D	d	d1	L	L3	L2	L1				
IDWC1605-25T2-03	16	25	38	166	80	110	56	2	WCMT0302...	TS2507	TK08
IDWC1705-25T2-03	17	25	38	171	85	115	56	2			
IDWC1805-25T2-03	18	25	38	176	90	120	56	2			
IDWC1905-25T2-03	19	25	38	181	95	125	56	2			
IDWC2005-25T2-03	20	25	38	186	100	130	56	2			
IDWC2105-25T2-03	21	25	38	191	105	135	56	2			
IDWC2205-25T2-03	22	25	38	196	110	140	56	2	WCMT0402...	TS2507	TK08
IDWC2305-32T2-04	23	32	43	207	115	147	60	2			
IDWC2405-32T2-04	24	32	43	212	120	152	60	2			
IDWC2505-32T2-04	25	32	43	217	125	157	60	2			
IDWC2605-32T2-05	26	32	43	222	130	162	60	2	WCMT0503...	TS3007	TK10
IDWC2705-32T2-05	27	32	43	227	135	167	60	2			
IDWC2805-32T2-05	28	32	43	232	140	172	60	2			
IDWC2905-32T2-05	29	32	43	237	145	177	60	2			
IDWC3005-32T2-05	30	32	43	242	150	182	60	2			
IDWC3105-32T2-06	31	32	43	247	155	187	60	2	WCMT06T3...	TS3504	TK15
IDWC3205-32T2-06	32	32	43	252	160	192	60	2			
IDWC3305-32T2-06	33	32	43	257	165	197	60	2			
IDWC3405-32T2-06	34	32	43	262	170	202	60	2			
IDWC3505-32T2-06	35	32	43	267	175	207	60	2			
IDWC3605-32T2-06	36	32	43	272	180	212	60	2			
IDWC4405-40T2-08	44	40	54	326	220	256	70	2	WCMT0804...	TS4004	TK15



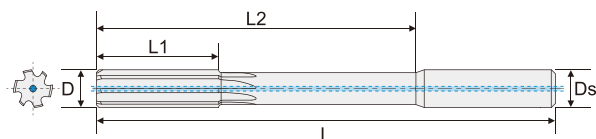
Product Features

- Unique durable UNIX coating
- Specially for high accurate hole machining
- Superior hole surface finish
- Internal & external coolant available
- Customized available
- 高耐久 UNIX 鍍膜技術
- 專為高精度的孔加工設計
- 加工表面品質優異
- 內冷孔與外冷產品可供選擇
- 提供客製化服務

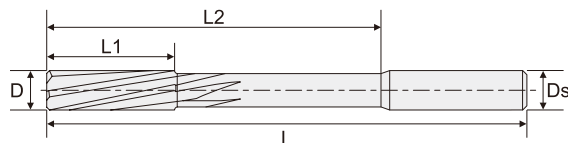
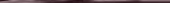
內冷鎢鋼機械鉸刀



- Internal
- Straight flute
- UNIX Coating
- Tolerance h7
- Unequal flute spacing
- Provides high degree of accuracy of leave smooth sides
- For blind hole using
- For steel, 400 series stainless steel, cast iron, aluminum Alloy

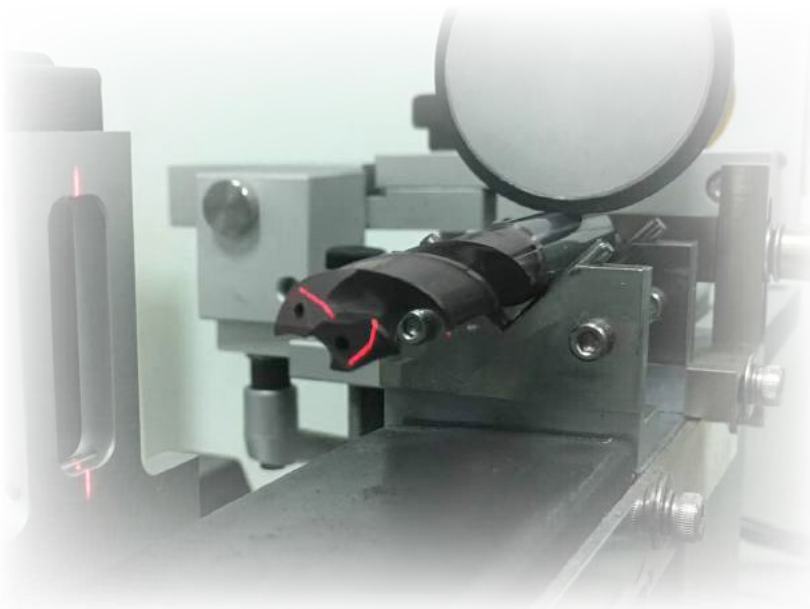


外冷鎢鋼機械鉸刀



WINSTAR

Endmills · Inserts · Drills



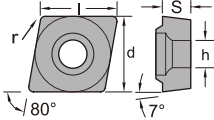


FEATURES

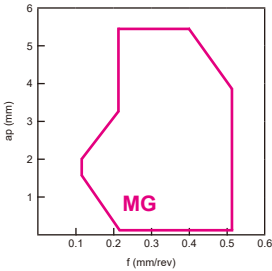
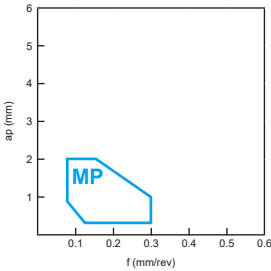
- Easy to adjust
- High rigidity tool body
- Various inserts available
- Diameter 25mm to 610mm
- 易於調整加工孔徑
- 高剛性合金鋼本體
- 可適用多種刀片
- 適用 **25-610mm** 孔徑加工

CCMT - Positive Turning Insert

搪刀刀片

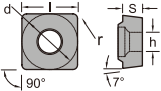
	P	Steel										Cutting Type :  General  Interrupted				
	M	Stainless steel														
	K	Cast iron														
Inserts	Designation		Grade					Dimensions (mm)					Drawing			
			CX2565	CX2555	CX3565	CX3555		d	l	S	r	h				
	CCMT 060204-MP		✓	✓				6.35	6.4	2.38	0.4	2.8				
	09T304-MP		✓	✓				9.53	9.7	3.97	0.4	4.4				
	09T308-MP		✓	✓				9.53	9.7	3.97	0.8	4.4				
	CCMT 060202-MG		✓	✓				6.35	6.4	2.38	0.4	2.8				
	060204-MG		✓	✓				6.35	6.4	2.38	0.4	2.8				
	09T304-MG		✓	✓				9.53	9.7	3.97	0.4	4.4				
	09T308-MG		✓	✓				9.53	9.7	3.97	0.8	4.4				
	120408-MG		✓	✓				12.7	12.9	4.76	0.8	5.5				

Holder Page : C093, C095

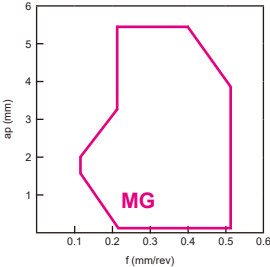


SCMT - Positive Turning Insert

搪刀刀片

	P	Steel										Cutting Type :  General  Interrupted				
	M	Stainless steel														
	K	Cast iron														
Inserts	Designation		Grade					Dimensions (mm)					Drawing			
			CX2565	CX2555	CX3565	CX3555		d	l	S	r	h				
	SCMT 09T304-MG		✓	✓				9.53	9.53	3.97	0.4	4.4				
	09T308-MG		✓	✓				9.53	9.53	3.97	0.8	4.4				

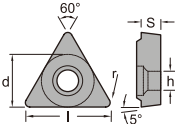
Holder Page : C093, C095



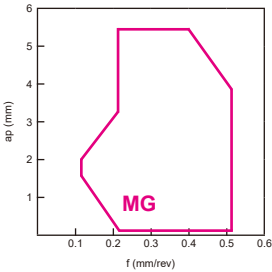
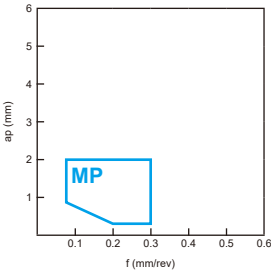
Boring

TCMT - Positive Turning Insert

搪刀刀片

	P	Steel										Cutting Type :  General  Interrupted				
	M	Stainless steel														
	K	Cast iron														
Inserts	Designation		Grade					Dimensions (mm)					Drawing			
			CX2565	CX2555	CX3565	CX3555		d	l	S	r	h				
	TCMT 110204-MP		✓	✓				6.35	11.0	2.38	0.4	2.8				
	TCMT 110204-MG		✓	✓				6.35	11.0	2.38	0.4	2.8				
	16T304-MG		✓	✓				9.53	16.5	3.97	0.4	4.4				
	16T308-MG		✓	✓				9.53	16.5	3.97	0.8	4.4				

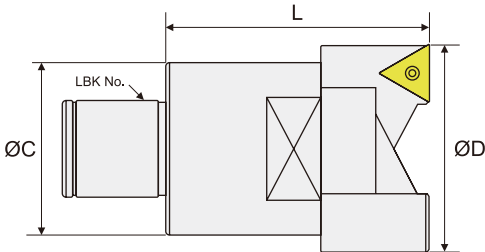
Holder Page : C093, C095



DB Rough boring head

雙刃粗搪刀

- Adjustable twin boring arm system for variety situation of rough boring.
- Reliable cartridge system provides high rigidity and efficiency.
- Step boring arm design, suitable for single bit boring, twin bit boring, and step boring.
- Side division easy to adjust tool extended without pre-setter.
- Boring diameter from 25mm to 204mm.

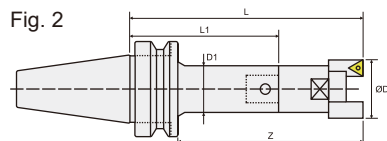
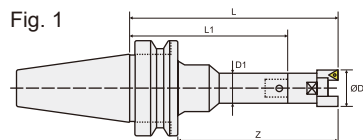


	Order No.	LBK No.	Boring Range ØD (mm)	L (mm)	C (mm)	Insert	Weight (kg)
	IDB25-33-C	IDB2	25 ~ 33	45	24	CCMT060204	0.15
	IDB32-42-C	IDB3	32 ~ 42	55	31	CCMT060204	0.3
	IDB32-42-T					TCMT110204	
	IDB40-55-C	IDB4	40 ~ 55	65	39	CCMT09T304	0.5
	IDB40-55-T					TCMT16T304	
	IDB40-55-S					SCMT09T304	
	IDB52-70-C	IDB5	52 ~ 70	75	50	CCMT09T304	1.0
	IDB52-70-T					TCMT16T304	
	IDB52-70-S					SCMT09T304	
	IDB68-92-C	IDB6	68 ~ 92	85	64	CCMT120408	2.0
	IDB68-92-T					TCMT16T304	
	IDB68-92-S					SCMT09T304	
	IDB90-122-C	IDB20	90 ~ 122	100	80	CCMT120408	2.9
	IDB120-164-C		120 ~ 164	100	100	CCMT120408	3.8
	IDB160-204-C		160 ~ 204	130	130	CCMT120408	4.8

Boring

DB Rough boring tool

雙刃粗搪刀含 BT 刀柄



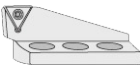
Order No.	Type	ØD (mm)	Z (mm)	Tool Connection		LBK No.	L (mm)	L1 (mm)	D1 (mm)	Weight (kg)		
				IDB Shank Type	Boring Head Type							
IDB-BT30-25-125	Fig. 2	25 ~ 33	95	IDB-BT30-2-80	IDB25-33	IDB2	125	80	24	0.8		
IDB-BT30-32-135		32 ~ 42	105	IDB-BT30-3-80	IDB32-42	IDB3	135		31	1.0		
IDB-BT30-40-135		40 ~ 55		IDB-BT30-4-70	IDB40-55	IDB4		70	39	1.3		
IDB-BT30-52-135		52 ~ 70	IDB-BT30-5-60	IDB52-70	IDB5	150	50	1.8				
IDB-BT30-68-145		68 ~ 92	115	IDB-BT30-6-60	IDB68-92		IDB6	145	60	3.0		
IDB-BT30-90-160		90 ~ 122	130		IDB90-122			160	64	3.9		
IDB-BT40-25-130		25 ~ 33	95	IDB-BT40-2-85	IDB25-33	IDB2	130	85	24	1.3		
IDB-BT40-32-150		32 ~ 42	115	IDB-BT40-3-95	IDB32-42	IDB3	150	95	31	1.5		
IDB-BT40-40-150		40 ~ 55		IDB-BT40-4-85	IDB40-55	IDB4		85	39	1.8		
IDB-BT40-52-150		52 ~ 70		IDB-BT40-5-75	IDB52-70	IDB5		75	50	2.3		
IDB-BT40-68-150		68 ~ 92		IDB-BT40-6-65	IDB68-92	IDB6		65	64	3.3		
IDB-BT40-90-165		90 ~ 122	IDB90-122		4.2							
IDB-BT40-120-165		Fig. 2	120 ~ 164	130	IDB-BT40-120-70	IDB120-164	IDB120	165	70	95	7.0	
IDB-BT40-160-165			160 ~ 204			IDB160-204					8.0	
IDB-BT50-25-155		Fig. 1	25 ~ 33	105	IDB-BT50-2-110	IDB25-33	IDB2	155	110	24	4.1	
IDB-BT50-32-180			32 ~ 42	130	IDB-BT50-3-125	IDB32-42	IDB3	180	125	31	4.4	
IDB-BT50-40-180	40 ~ 55		IDB-BT50-4-115		IDB40-55	IDB4	115		39	4.8		
IDB-BT50-40-240			190	IDB-BT50-4-175			240	175		5.3		
IDB-BT50-52-180	52 ~ 70		130	IDB-BT50-5-105	IDB52-70	IDB5	180	105	50	5.5		
IDB-BT50-52-255			205	IDB-BT50-5-180			255	180		6.5		
IDB-BT50-52-315			265	IDB-BT50-5-240			315	240		7.2		
IDB-BT50-68-180			68 ~ 92	130	IDB-BT50-6-95	IDB68-92	IDB6	180		105	6.5	
IDB-BT50-68-255				205	IDB-BT50-6-170			255		180	8.3	
IDB-BT50-68-315				265	IDB-BT50-6-230			315		240	9.6	
IDB-BT50-68-375				325	IDB-BT50-6-290			375		290	11.0	
IDB-BT50-68-435	Fig. 1		90 ~ 122	385	IDB-BT50-6-350	IDB90-122	IDB6	435	350	64	15.5	
IDB-BT50-90-195				145	IDB-BT50-6-95			195	95		7.4	
IDB-BT50-90-270	Fig. 2			220	IDB-BT50-6-170			270	170		9.2	
IDB-BT50-90-330				280	IDB-BT50-6-230			IDB90-122	330		230	10.5
IDB-BT50-90-390	Fig. 1			340	IDB-BT50-6-290				390		290	11.9
IDB-BT50-90-450		400		IDB-BT50-6-350	450	350	16.4					
IDB-BT50-120-195	Fig. 2	150		IDB-BT50-120-100	IDB120-164	IDB120	195	100	95		8.8	
IDB-BT50-120-295		250		IDB-BT50-200			295	200			11.3	
IDB-BT50-120-395		350		IDB-BT50-300			395	300			13.8	
IDB-BT50-120-495		450		IDB-BT50-400			495	400			16.3	
IDB-BT50-160-195		160 ~ 204		150			IDB-BT50-100	195			100	9.8
IDB-BT50-160-295				250			IDB-BT50-200	295			200	12.3
IDB-BT50-160-395				350			IDB-BT50-300	395			300	14.8
IDB-BT50-160-495				450			IDB-BT50-400	495			400	17.3

DBLA Rough boring head for large hole

大徑雙刃粗搪刀

- Optional accessories for different boring work and working diameter.
- Reliable cartridge system provides high rigidity and efficiency.
- Alloy steel body provides great rigidity to large size rough boring.
- Variable inserts for different material of rough boring.
- Boring diameter from 200mm to 610mm.

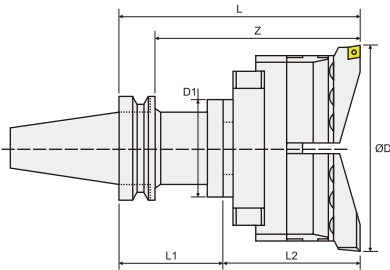


Boring Head	Order No.		IDBLA200	IDBLA300	IDBLA400	IDBLA500
	Length (mm)		130			
	Total Weight (kg)		9.5	11.5	13.5	15.5
	Boring Range (mm)		200 ~ 310	300 ~ 410	400 ~ 510	500 ~ 610
Module	Shank		IDB-BT50-120-165			
	Flange		BR200			
	Weight (kg)		2.7			
	Extension Slide		RST200	RST300	RST400	RST500
	Weight (kg)		3.4	5.4	7.4	9.4
	Clamp Base		RS200			
	Weight (kg)		0.98			
	Height Setting Shim		RS201			
	Weight (kg)		0.05			
	Insert Height		RB200C12, RB200T16			
	Insert		CCMT1204..., TCMT16T3...			
	Weight (kg)		0.68			

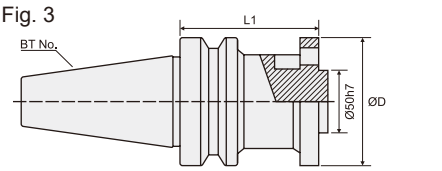
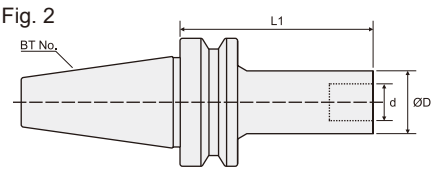
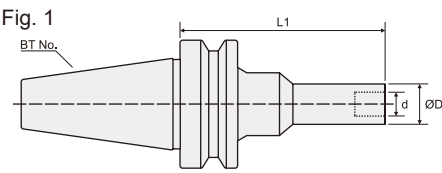
Boring

DBLA Rough boring tool for large hole

大徑雙刃粗搪刀含 BT 刀柄



Order No.	Boring Range ØD(mm)	Z (mm)	Shank Type	Boring Head Type	LNK No.	L (mm)	L1 (mm)	D1 (mm)	Weight
IDBLA-BT50-200-230	200 ~ 310	185	IDB-BT50-120-100	IDBLA200	IDB120	230	100	95	18
IDBLA-BT50-200-330		285	IDB-BT50-120-200			330	200		19
IDBLA-BT50-200-430		385	IDB-BT50-120-300			430	300		23
IDBLA-BT50-200-530		485	IDB-BT50-120-400			530	400		27
IDBLA-BT50-300-230	300 ~ 410	185	IDB-BT50-120-100	IDBLA300		230	100		20
IDBLA-BT50-300-330		285	IDB-BT50-120-200			330	200		21
IDBLA-BT50-300-430		385	IDB-BT50-120-300			430	300		25
IDBLA-BT50-300-530		485	IDB-BT50-120-400			530	400		29
IDBLA-BT50-400-230	400 ~ 510	185	IDB-BT50-120-100	IDBLA400		230	100		22
IDBLA-BT50-400-330		285	IDB-BT50-120-200			330	200		23
IDBLA-BT50-400-430		385	IDB-BT50-120-300			430	300		27
IDBLA-BT50-400-530		485	IDB-BT50-120-400			530	400		31
IDBLA-BT50-500-230	500 ~ 610	185	IDB-BT50-120-100	IDBLA500		230	100		24
IDBLA-BT50-500-330		285	IDB-BT50-120-200			330	200		25
IDBLA-BT50-500-430		385	IDB-BT50-120-300			430	300		29
IDBLA-BT50-500-530		485	IDB-BT50-120-400			530	400		33



Order No.	Type	OAL with boring head (L) (mm)	L1 (mm)	ØD (mm)	Weight
IDB1-BT30-105	Fig. 2	105	70	19	0.70
IDB2-BT30-120		120	80	24	0.80
IDB3-BT30-120		120	80	31	0.90
IDB4-BT30-120		120	70	39	1.00
IDB5-BT30-120		120	60	50	1.10
IDB6-BT30-130		130	60	64	1.20
IDB1-BT40-110	Fig. 2	110	75	19	1.20
IDB2-BT40-125		125	85	24	1.30
IDB3-BT40-135		135	95	31	1.45
IDB4-BT40-135		135	85	39	1.50
IDB5-BT40-135		135	75	50	1.40
IDB6-BT40-135		135	65	64	2.15
IDB1-BT50-150	Fig. 1	150	115	19	3.50
IDB2-BT50-150	Fig. 2	155	110	24	4.20
IDB3-BT50-165		165	125	31	4.40
IDB4-BT50-165		165	115	39	4.80
IDB4-BT50-225		225	175	39	5.20
IDB5-BT50-165		165	105	50	5.90
IDB5-BT50-240	Fig. 2	240	180	50	6.50
IDB5-BT50-300		300	240	50	6.90
IDB6-BT50-165		165	95	64	4.09
IDB6-BT50-240		240	170	64	6.15
IDB6-BT50-300	Fig. 1	300	230	64	7.74
IDB6-BT50-360		290	290	64	9.07
IDB6-BT50-420	Fig. 2	420	350	90	13.51
IDB120-BT40-200	Fig. 3	170	70	95	3.20
IDB120-BT50-230		205	105	95	5.71
IDB120-BT50-330		300	200	95	8.79
IDB120-BT50-430		400	300	95	11.25
IDB120-BT50-530		530	430	95	13.74

DPC, DMC (Internal Coolant)

Work Material		Drill Diameter	Ø3-6mm		Ø6.1~10mm		Ø10.1-16mm	
		Hardness	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)
P	Mild Steel	(<180HB)	70~120	0.1~0.2	90~130	0.15~0.3	110~150	0.25~0.4
	Carbon Steel	(180~280HB)	70~110	0.1~0.2	90~120	0.15~0.3	110~140	0.25~0.4
	Alloy Steel	(280~350HB)	60~100	0.08~0.18	65~110	0.15~0.27	80~120	0.22~0.35
M	Stainless Steel	(<200HB)	35~60	0.06~0.15	45~80	0.1~0.25	55~100	0.2~0.3
K	Cast Iron	(<350Mpa)	70~100	0.1~0.2	80~120	0.15~0.3	90~140	0.25~0.4
	Ductile Cast Iron	(<450Mpa)	50~80	0.1~0.2	60~90	0.15~0.3	70~110	0.25~0.4
N	Aluminum <12% Si	-	80~140	0.1~0.25	100~160	0.15~0.35	110~180	0.3~0.45
	Aluminum >12% Si	-	70~120	0.1~0.25	90~130	0.15~0.35	100~150	0.3~0.45
S	Heat Resistant Alloy	-	15~30	0.02~0.08	20~40	0.04~0.1	25~45	0.06~0.12
H	Hardened Material	40~60HRC	10~25	0.02~0.08	15~35	0.04~0.1	20~40	0.06~0.12

DPN, DFN, DGN (External Coolant)

Work Material		Drill Diameter	Ø3-6mm		Ø6.1~10mm		Ø10.1-16mm	
		Hardness	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)
P	Mild Steel	(<180HB)	40~70	0.1~0.2	55~85	0.15~0.3	60~100	0.25~0.4
	Carbon Steel	(180~280HB)	35~65	0.1~0.2	50~80	0.15~0.3	55~90	0.25~0.4
	Alloy Steel	(280~350HB)	30~60	0.08~0.18	40~75	0.15~0.27	50~85	0.22~0.35
M	Stainless Steel	(<200HB)	20~40	0.06~0.15	25~50	0.1~0.25	30~60	0.2~0.3
K	Cast Iron	(<350Mpa)	40~60	0.1~0.2	50~75	0.15~0.3	55~85	0.25~0.4
	Ductile Cast Iron	(<450Mpa)	35~55	0.1~0.2	45~70	0.15~0.3	50~80	0.25~0.4
N	Aluminum <12% Si	-	60~100	0.1~0.25	65~115	0.15~0.35	70~130	0.3~0.45
	Aluminum >12% Si	-	50~90	0.1~0.25	60~110	0.15~0.35	65~120	0.3~0.45
S	Heat Resistant Alloy	-	15~30	0.02~0.08	20~40	0.04~0.1	25~45	0.06~0.12
H	Hardened Material	40~60HRC	10~25	0.02~0.08	15~35	0.04~0.1	20~40	0.06~0.12

Warning :For slope drilling, please adjust cutting data according to inclined angle

1. For inclined angle under 20 degree, reduce the feed to 50%
2. For inclined angle between 20 to 50 degree, reduce the feed to 40%, and reduce rotation to 70%
3. For inclined angle between 50 to 65 degree, reduce the feed to 30%, and reduce rotation to 70%
4. Not recommend to side milling

DZC, DDC, DHC, DLC (Internal Coolant)

Work Material		Drill Diameter	Ø3-6mm		Ø6.1~10mm		Ø10.1-16mm	
		Hardness	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)
P	Mild Steel	(<180HB)	60~100	0.1~0.2	80~120	0.15~0.3	100~140	0.25~0.4
	Carbon Steel	(180~280HB)	60~90	0.1~0.2	80~110	0.15~0.3	100~130	0.25~0.4
	Alloy Steel	(280~350HB)	50~80	0.08~0.18	60~100	0.15~0.27	70~110	0.22~0.35
M	Stainless Steel	(<200HB)	30~50	0.06~0.15	40~70	0.1~0.25	50~90	0.2~0.3
K	Cast Iron	(<350Mpa)	70~100	0.1~0.2	80~120	0.15~0.3	90~140	0.25~0.4
	Ductile Cast Iron	(<450Mpa)	50~80	0.1~0.2	60~90	0.15~0.3	70~110	0.25~0.4
N	Aluminum <12% Si	-	70~120	0.1~0.25	80~140	0.15~0.35	90~160	0.3~0.45
	Aluminum >12% Si	-	60~100	0.1~0.25	70~120	0.15~0.35	90~140	0.3~0.45
S	Heat Resistant Alloy	-	15~30	0.02~0.08	20~40	0.04~0.1	25~45	0.06~0.12
H	Hardened Material	40~60HRC	10~25	0.02~0.08	15~35	0.04~0.1	20~40	0.06~0.12

Note: DDC drills require an initial pilot hole to help guide the drill.

DZN (External Coolant)

Work Material		Drill Diameter	Ø3-6mm		Ø6.1~10mm		Ø10.1-16mm	
		Hardness	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)
P	Mild Steel	(<180HB)	35~60	0.1~0.2	45~75	0.15~0.3	50~85	0.25~0.4
	Carbon Steel	(180~280HB)	30~55	0.1~0.2	40~70	0.15~0.3	45~80	0.25~0.4
	Alloy Steel	(280~350HB)	25~50	0.08~0.18	35~65	0.15~0.27	40~75	0.22~0.35
M	Stainless Steel	(<200HB)	20~40	0.06~0.15	25~50	0.1~0.25	30~60	0.2~0.3
K	Cast Iron	(<350Mpa)	40~60	0.1~0.2	50~75	0.15~0.3	55~85	0.25~0.4
	Ductile Cast Iron	(<450Mpa)	35~55	0.1~0.2	45~70	0.15~0.3	50~80	0.25~0.4
N	Aluminum <12% Si	-	60~100	0.1~0.25	65~115	0.15~0.35	70~130	0.3~0.45
	Aluminum >12% Si	-	50~90	0.1~0.25	60~110	0.15~0.35	65~120	0.3~0.45
S	Heat Resistant Alloy	-	15~30	0.02~0.08	20~40	0.04~0.1	25~45	0.06~0.12
H	Hardened Material	40~60HRC	10~25	0.02~0.08	15~35	0.04~0.1	20~40	0.06~0.12

Note: for DLN please use 3-6mm table, for smaller size please reduce 20%.

DSP (2×D, 3×D)

Work Material		Hardness	Cutting speed Vc (m/min)	Feed Rate (mm/rev)				
				SPMG05 Ø13-Ø15	SPMG06 Ø16-Ø21	SPMG07 Ø22-Ø27	SPMG09 Ø28-Ø33	SPMG11 Ø34-Ø41
P	Mild Steel	(<180HB)	220~350	0.04~0.08	0.05~0.10	0.06~0.13	0.07~0.15	0.08~0.18
	Carbon Steel	(180~280HB)	100~150	0.04~0.08	0.05~0.09	0.06~0.12	0.07~0.13	0.08~0.15
	Alloy Steel	(280~350HB)	80~140	0.04~0.07	0.05~0.08	0.05~0.09	0.06~0.12	0.07~0.14
M	Stainless Steel	(<200HB)	80~180	0.04~0.08	0.05~0.09	0.05~0.10	0.06~0.12	0.07~0.14
K	Cast Iron	(<350Mpa)	150~250	0.05~0.09	0.07~0.12	0.08~0.15	0.09~0.17	0.12~0.20
	Ductile Cast Iron	(<450Mpa)	100~160	0.05~0.08	0.06~0.11	0.07~0.13	0.08~0.15	0.10~0.18
N	Aluminum <12% Si	-	300~400	0.05~0.11	0.07~0.13	0.08~0.15	0.09~0.20	0.12~0.25
	Aluminum >12% Si	-	200~330	0.04~0.08	0.05~0.10	0.06~0.13	0.07~0.15	0.08~0.18
S	Heat Resistant Alloy	-	30~60	0.02~0.04	0.03~0.05	0.03~0.05	0.04~0.06	0.05~0.08
H	Hardened Material	40~60HRC	30~60	0.02~0.04	0.03~0.05	0.03~0.05	0.04~0.06	0.05~0.08

Apply for 4×D reduce 10%, 5×D reduce 15%.

DWC (2×D, 3×D)

Work Material		Hardness	Cutting speed Vc (m/min)	Feed Rate (mm/rev)				
				WCMT03 Ø14-Ø20.5	WCMT04 Ø22-Ø25.5	WCMT05 Ø26-Ø30	WCMT06 Ø31-Ø39	WCMT08 Ø40-Ø60
P	Mild Steel	(<180HB)	110~220	0.06~0.09	0.06~0.11	0.07~0.13	0.08~0.18	0.10~0.25
	Carbon Steel	(180~280HB)	90~140	0.06~0.09	0.06~0.11	0.07~0.13	0.08~0.18	0.10~0.25
	Alloy Steel	(280~350HB)	70~120	0.05~0.07	0.05~0.09	0.06~0.11	0.07~0.14	0.08~0.17
M	Stainless Steel	(<200HB)	60~140	0.05~0.09	0.05~0.10	0.06~0.13	0.07~0.15	0.08~0.18
K	Cast Iron	(<350Mpa)	110~260	0.07~0.11	0.07~0.13	0.08~0.15	0.09~0.18	0.11~0.22
	Ductile Cast Iron	(<450Mpa)	90~120	0.06~0.10	0.06~0.12	0.07~0.14	0.08~0.16	0.10~0.20
N	Aluminum <12% Si	-	200~360	0.06~0.11	0.08~0.13	0.09~0.15	0.11~0.18	0.12~0.25
	Aluminum >12% Si	-	150~250	0.06~0.11	0.08~0.13	0.09~0.15	0.11~0.18	0.12~0.25
S	Heat Resistant Alloy	-	25~50	0.03~0.05	0.03~0.06	0.04~0.08	0.05~0.10	0.06~0.12
H	Hardened Material	-	-	-	-	-	-	-

Apply for 4×D reduce 10%, 5×D reduce 15%.

DRC (Internal Coolant)

Work Material		Drill Diameter	Ø3-6mm		Ø6.1~10mm		Ø10.1-12mm	
		Hardness	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)
P	Mild Steel	(<180HB)	40~70	0.1~0.2	40~70	0.1~0.24	40~70	0.1~0.3
	Carbon Steel	(180~280HB)	25~50	0.1~0.2	25~50	0.1~0.24	25~50	0.1~0.3
	Alloy Steel	(280~350HB)	15~25	0.08~0.16	15~25	0.08~0.2	15~25	0.08~0.24
M	Stainless Steel	(<200HB)	8~15	0.08~0.16	8~15	0.08~0.18	8~15	0.08~0.2
K	Cast Iron	(<350Mpa)	35~60	0.1~0.32	35~60	0.1~0.36	35~60	0.1~0.4
	Ductile Cast Iron	(<450Mpa)	20~45	0.1~0.24	20~45	0.1~0.28	20~45	0.1~0.32
N	Aluminum <12% Si	-	110~195	0.12~0.32	110~195	0.12~0.36	110~195	0.12~0.4
	Aluminum >12% Si	-	105~180	0.12~0.32	105~180	0.12~0.36	105~180	0.12~0.4
S	Heat Resistant Alloy	-	8~15	0.08~0.16	8~15	0.08~0.18	8~15	0.08~0.2
H	Hardened Material	-	-	-	-	-	-	-

Technical Data

DRN (External Coolant)

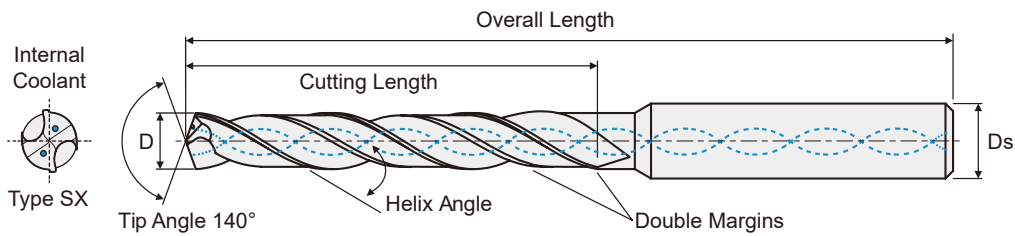
Work Material		Drill Diameter	Ø3-6mm		Ø6.1~10mm		Ø10.1-12mm	
		Hardness	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)
P	Mild Steel	(<180HB)	10~20	0.03~0.12	10~20	0.06~0.2	10~20	0.1~0.22
	Carbon Steel	(180~280HB)	10~16	0.03~0.12	10~16	0.06~0.2	10~16	0.1~0.22
	Alloy Steel	(280~350HB)	8~12	0.03~0.12	8~12	0.06~0.2	8~12	0.1~0.22
M	Stainless Steel	-	-	-	-	-	-	-
K	Cast Iron	(<350Mpa)	8~16	0.03~0.12	8~16	0.06~0.02	8~16	0.1~0.22
	Ductile Cast Iron	(<450Mpa)	8~16	0.03~0.12	8~16	0.06~0.02	8~16	0.1~0.22
N	Aluminum <12% Si	-	20~30	0.03~0.13	20~30	0.07~0.23	20~30	0.1~0.28
	Aluminum >12% Si	-	20~30	0.03~0.13	20~30	0.07~0.23	20~30	0.1~0.28
S	Heat Resistant Alloy	-	-	-	-	-	-	-
H	Hardened Material	-	-	-	-	-	-	-

Boring

Work Material		Hardness	Cutting Speed (m/min)	Feed (mm/rev)
P	Mild Steel	(<180HB)	90~200	0.04~0.14
	Carbon Steel	(180~280HB)	60~180	0.04~0.15
	Alloy Steel	(280~350HB)	50~150	0.04~0.15
M	Stainless Steel	(<200HB)	60~230	0.07~0.12
K	Cast Iron	(<350Mpa)	120~230	0.04~0.13
	Ductile Cast Iron	(<450Mpa)	120~230	0.04~0.13
N	Aluminum <12% Si	-	120~700	0.04~0.25
	Aluminum >12% Si	-	120~700	0.04~0.25
S	Heat Resistant Alloy	-	20~80	0.04~0.05
H	Hardened Material	-	20~70	0.04~0.05

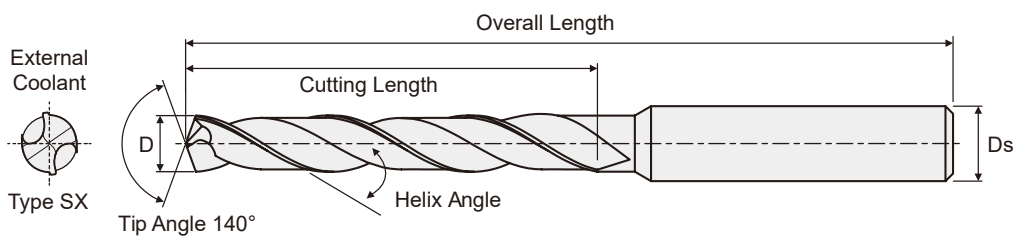
For High Performance Series with Internal Coolant

Reinforced Shank with Double Margins



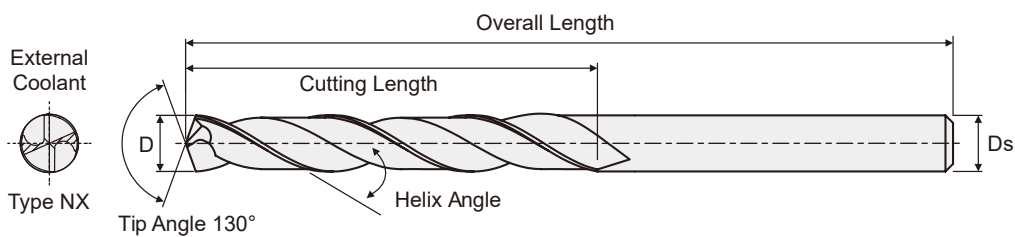
For High Performance Series with External Coolant

Reinforced Shank with Single Margin



For General Purpose Series with External Coolant

Straight Shank



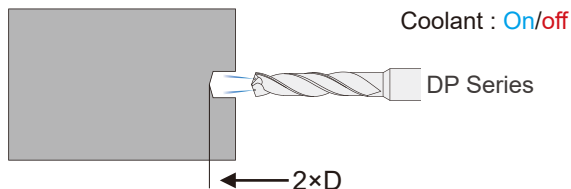
Technical Data

Trouble / 情況	Occurrences / 原因	Countermeasures / 對策
Deformation of hole 鑽孔成橢圓	Becoming thread scratch in the hole 形成螺紋刮痕	1. Check for suitable Guide-bush 使用適合之鑽套 2. Reduce relief angle 減少間隙角度 3. Check for proper point angle & length of lips 檢查鑽頭尖端角度及兩邊長度是否對稱
	Generation of chattering & vibration 產生顫動、振動	1. Reduce relief angle 減少間隙角度 2. Grind web thinning 腹板削薄 3. Shortening length of drill 縮短鑽頭長度，增加剛性 4. Check for proper drill 檢查鑽頭角度研磨是否正確 5. Check for chuck & collet & socket 檢查夾具與鑽頭接觸情形 6. Pre-centering 預先鑽好中心孔 7. Inspect rigidity of the drill machine 提高工作機械的剛性
	Poor chip evacuation 切屑排出不易	1. Increase feed 加大每週進給量 2. Check for proper helix angle 選擇正確螺旋角 3. Check for proper chip space 加大槽寬比 4. Using step feed 採用間歇式進給
Deflection of hole 鑽孔傾斜	Drill won't enter work 剛切入時不良	1. Check for suitable Guide-bush 使用適合之鑽套 2. Reduce feed 減少切入時之每週進給量 3. Pre-centering 預先鑽好中心孔
	Insufficient rigidity of drill 鑽頭剛性不良	Shortening length of drill 縮短鑽頭長度，增加剛性
	Unsuitable angle 鑽頭角度不對	Regrinding 再研磨
Excessive wear of cutting edge 外角磨損	Cutting speed too high 切削速度太快	1. Reduce cutting speed 降低切削速度 2. Check lip relief 加大間隙角 3. Increase coolant flow 充分供給切削液 4. Check for proper material 提高鑽頭之材質

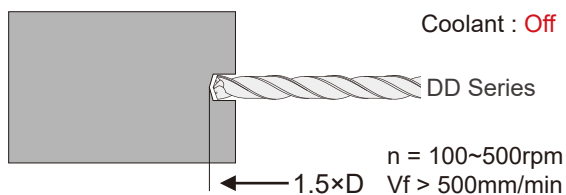
Trouble / 情況	Occurrences / 原因	Countermeasures / 對策
Poor surface conditions of work piece 孔壁粗糙	Excessive wear of cutting edge 刀刃磨損太大	Regrinding 再研磨
	Too much feed 進刀速度太大	Decrease feed 降低進刀速度
	Chips clog in hole 切屑阻塞	Add number of exit 增加退刀次數
	The others 其他	1.Thin web 腹板削薄 2.Check for proper Guide-bush 使用適合導套 3.Use the highly rigid spindle 採用高剛性主軸
Breakage 切削中鑽頭折斷	Feed too heavy 進給量太大	Decrease feed rate 減少每週進給量
	Chips clog in hole 切屑阻塞	1.Check for proper chip space 加大槽寬比 2.Check for proper helix angle 選擇適當之螺旋角度
	Insufficient rigidity of drill 鑽頭剛性不足	1.Reduce feed 減少每週進給量 2.Shortening length of drill 縮短鑽頭長度，增加剛性 3.Increasing web thickness 腹板厚度加大
	Unstable in throughout hole drilling 貫穿時安定性不夠（工件不完全被夾住）	1.Reduce feed while throughout drilling 降低貫穿時的每週進給量 2.Check set up rigidity 工作保持固定 3.Use the highly rigid spindle 採用高剛性主軸
Chipping 切屑崩刃	Feed speed too high 進給速度太快	Decrease feed rate 減少每週進給量
	Tool high lip relief angle 切刃強度不足（過度的間隙角度）	1.Reduce lip relief angle 減少間隙角度 2.Reduce feed in drilling 降低貫空時的每週進給量 3.Check set up rigidity 工作保持固定
	During oversize operation 使用在擴孔作業時	1.Properly grind point angle 加大尖端角度 2.Reduce cutting speed 降低切削速度
Hole oversize 孔徑擴大	Point angle is not properly, large chip of one flute; small chip of other flute 尖端角度未對稱或刃大小不一	1.Regrinding 再研磨 2.Thin web 腹板削薄 3.Properly grind point angle 減少尖端角度 4.Guide-bush 使用鑽套

P	M	K	N	S	H
●	●	●	○	○	○

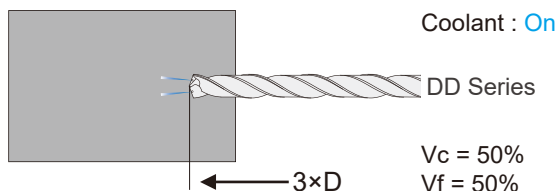
1 Short drill for piloting



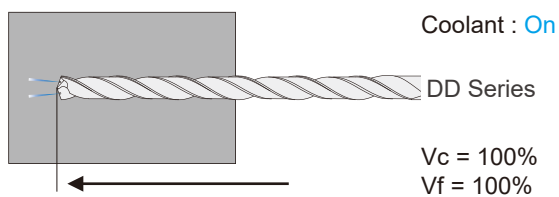
2 Long drill into pilot hole



3 Spotting



4 Deep Hole drilling



5 Retracting

