BELZ

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BELZ

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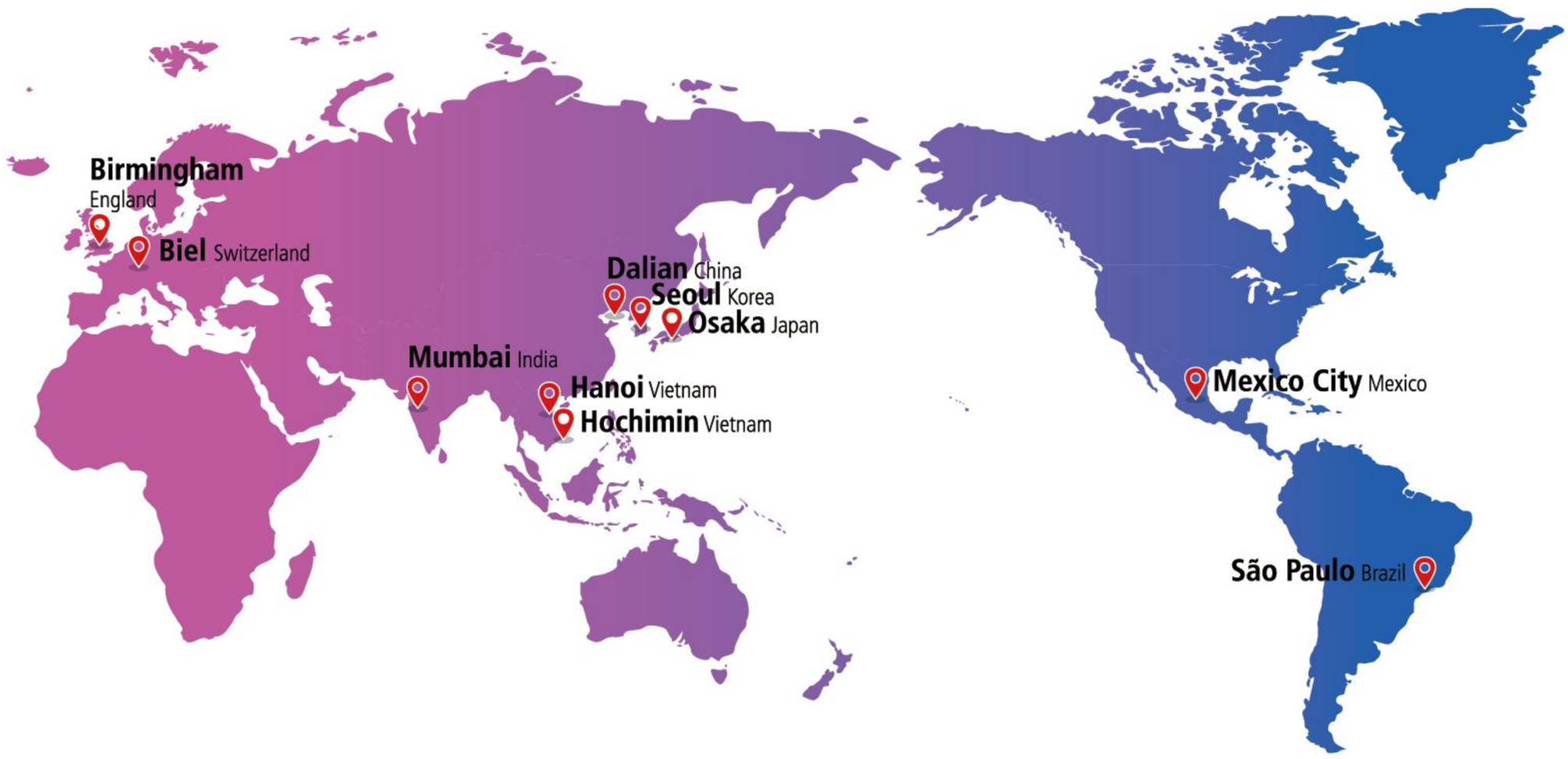
Company profile

Founded in 1918 in Sutz, Switzerland, Belz has evolved nearly a century to become a leading powerhouse in manufacturing first-class taps and drill bits.

In 2014, the company was integrated into YunDa International and relocated to Dalian, China. With YunDa's continuous investment in R&D and equipments, Belz entered a new stage of development. It now offers increasingly optimized round tool solutions with enhanced product and service capabilities for global users.

Global Layout




ANCA


WALTER


HARDCOAT

◆ Drill Bit Coding Rules

1	2	3		4	5	6	7	8	Dia.	shank Dia.	
D	P	C	-	C	0	0	3	Y	0680	-08	A

Tool Type

Code	Description
D	Twist Drill

Processing Material

Code	Description
P	Alloy Steel
K	Cast Iron
M	Stainless Steel
S	Aerospace
H	High Hardness

Drill Blank

Code	Material	Coolant
C0	Carbide	External
C1	Carbide	Internal
HS	HSS	
HE	HSSE	
HP	HSSE-PM	

Coating

Code	
A	AlCrN
C	TiCN
F	TiAlN
H	HELICA
N	None
T	ZrN
Y	CrAlSiN
I	TiN

Shank Type

Code	Description	Illustration
A	DIN6535-HA	
B	DIN6535-HB	
E	DIN6535-HE	

Point Type

Code	Description	Illustration	Remark
F	Facet		General purpoese
C	Conical		High accurracy
H	Helical		High Performance
S	Flat		

Drilling Depth

Code	Depth	Tolerance	Shank
03	3xD	h7	Reinforced Shank
05	5xD	h7	Reinforced Shank
07	7xD	h7	Reinforced Shank
08	8xD	m7	Reinforced Shank
...	...	...	Reinforced Shank
20	20xD	m7	Reinforced Shank

◆ Product application

Aplication summary of solid carbide drills							
Material		Inner cooling		External cooling		Inner cooling	External cooling
		3D	5D	3D	5D	7-40D	7-40D
P	Carbon steel,alloy steel (<35HRC)	DPC				Non standard customization	
	Alloy steel (35-38HRC)						
	PH,ferritic,martensitic steel (<35HRC)						
M	Stainless steel	DPC/DMC					
K	Grey cast iron,Nodular Cast Iron (<32HRC)	DPC					
	High-alloy cast iron (35-45HRC)						

	● suitable	Processing method					Cooling method	
	○ general	Through -hole	Blind hole	Stacked board	Exit slope	Crosshole	External coolant	Internal coolant
Series								
High performance universal series - DPC Line								
Twists drill External coolant	DPC-C003		●	●	●	●	●	●	
	DPC-C005		●	●	●	●	●	●	
Twists drill Internal coolant	DPC-C103		●	●	●	●	●		●
	DPC-C105		●	●	●	●	●		●
Stainless steel special series - DMC Line								
Twists drill Internal coolant	DMC-C103		●	●	●	●	●		●
	DMC-C105		●	●	●	●	●		●

◆ General & High Performance Carbide Drill - DPC Line

◆ Stainless Steel Carbide Drill - DMC Line

◆ Non standard customization

◆ Technical information

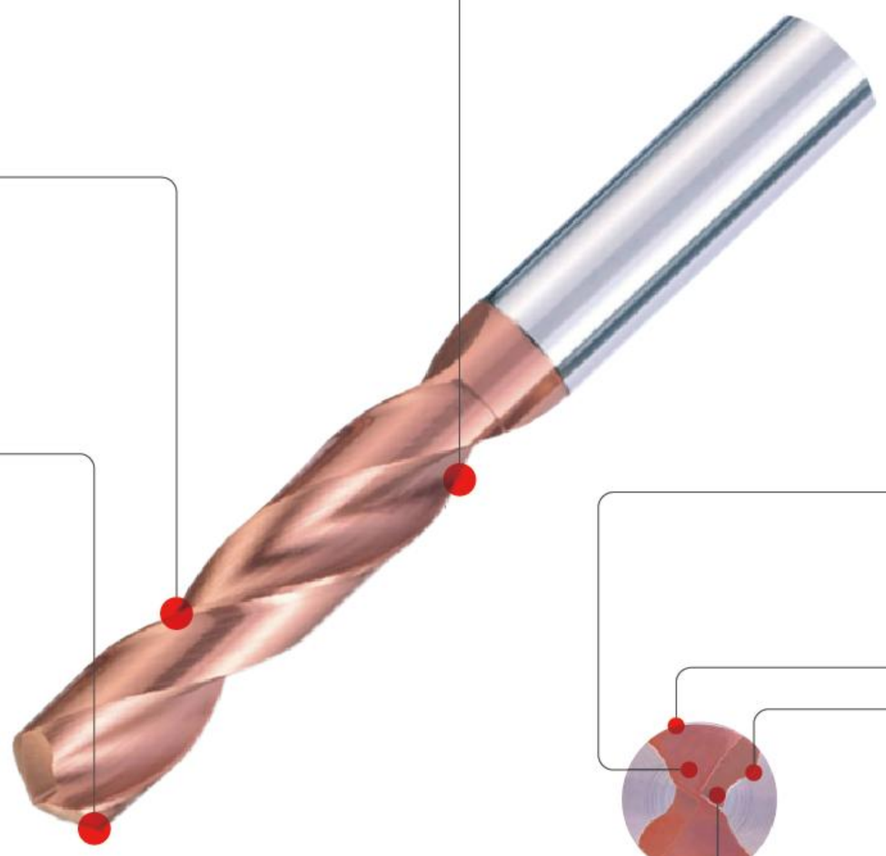
◆ General & High Performance Carbide Drill - DPC Line

DPC Features & Benefits - External Coolant

The chip flute has a large chip storage space and excellent chip removal capability

Single cutting edge design, suitable for general applications

Extra fine grain size substrate together with multi layers PVD coating generates long tool life



Curve cutting edge optimizes chip breaking performance

The cutting edge has a C-angle protection to ensure the strength of the tip

Conical relief angle

Special chisel edge design ensures centering capability

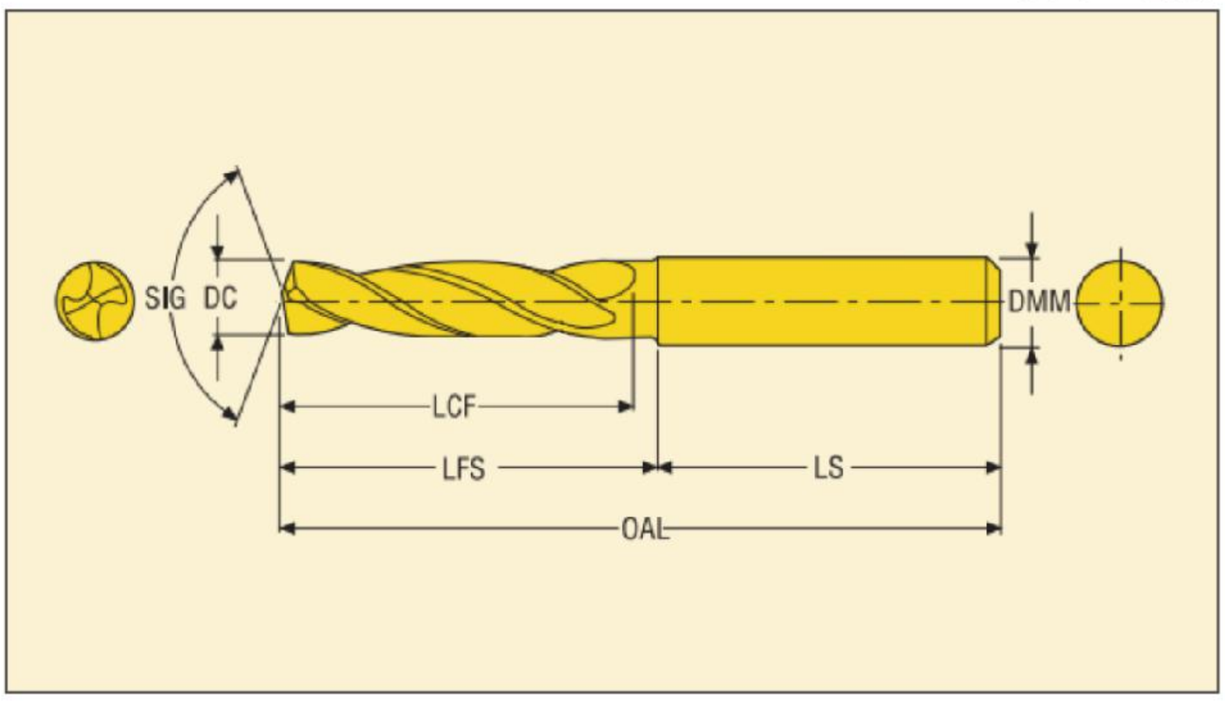
ISO material groups

P K M H

Overview	Application
· Cover ISO-P/K/M/H material	· Widely used in industries such as general machinery, molds, automobiles, refrigeration, etc
· Hole tolerance H8-H9	
· Diameter range: 3.0-20mm	
· High production efficiency and long tool lifetime	· Drilling depth 3xD 5xD
· Accept non-standard customization	

Drilling depth: 3xD

DPC – Line



- External coolant
- Point angle: 140°
- Coating: CrAlSiN
- Shank diameter tolerance: h6
- Max. number of regrinds: 5
- For cutting data see page 24-28

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
3		DPC-C003Y0300-04A	62	20	36	4	●
3.1		DPC-C003Y0310-04A	62	20	36	4	●
3.17	1/8	DPC-C003Y0317-04A	62	20	36	4	○
3.2		DPC-C003Y0320-04A	62	20	36	4	●
3.3		DPC-C003Y0330-04A	62	20	36	4	●
3.4		DPC-C003Y0340-04A	62	20	36	4	●
3.5		DPC-C003Y0350-04A	62	20	36	4	●
3.55		DPC-C003Y0355-04A	62	20	36	4	○
3.57	9/64	DPC-C003Y0357-04A	62	20	36	4	○
3.6		DPC-C003Y0360-04A	62	20	36	4	●
3.7		DPC-C003Y0370-04A	62	20	36	4	●
3.8		DPC-C003Y0380-04A	66	24	36	4	●
3.9		DPC-C003Y0390-04A	66	24	36	4	●
3.97	5/32	DPC-C003Y0397-04A	66	24	36	4	○
4		DPC-C003Y0400-04A	66	24	36	4	●
4.1		DPC-C003Y0410-06A	66	24	36	6	●
4.2		DPC-C003Y0420-06A	66	24	36	6	●
4.3		DPC-C003Y0430-06A	66	24	36	6	●
4.37	11/64	DPC-C003Y0437-06A	66	24	36	6	○
4.4		DPC-C003Y0440-06A	66	24	36	6	●
4.5		DPC-C003Y0450-06A	66	24	36	6	●
4.6		DPC-C003Y0460-06A	66	24	36	6	●
4.7		DPC-C003Y0470-06A	66	24	36	6	●
4.76	3/16	DPC-C003Y0476-06A	66	28	36	6	○
4.8		DPC-C003Y0480-06A	66	28	36	6	●
4.9		DPC-C003Y0490-06A	66	28	36	6	●
5		DPC-C003Y0500-06A	66	28	36	6	●
5.1		DPC-C003Y0510-06A	66	28	36	6	●
5.16	13/64	DPC-C003Y0516-06A	66	28	36	6	○
5.2		DPC-C003Y0520-06A	66	28	36	6	●
5.3		DPC-C003Y0530-06A	66	28	36	6	●
5.4		DPC-C003Y0540-06A	66	28	36	6	●

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
5.5		DPC-C003Y0550-06A	66	28	36	6	●
5.56	7/32	DPC-C003Y0556-06A	66	28	36	6	
5.6		DPC-C003Y0560-06A	66	28	36	6	●
5.7		DPC-C003Y0570-06A	66	28	36	6	●
5.8		DPC-C003Y0580-06A	66	28	36	6	●
5.9		DPC-C003Y0590-06A	66	28	36	6	●
5.95	15/64	DPC-C003Y0595-06A	66	28	36	6	
6		DPC-C003Y0600-06A	66	28	36	6	●
6.1		DPC-C003Y0610-08A	79	34	36	8	●
6.2		DPC-C003Y0620-08A	79	34	36	8	●
6.3		DPC-C003Y0630-08A	79	34	36	8	●
6.35	1/4	DPC-C003Y0635-08A	79	34	36	8	
6.4		DPC-C003Y0640-08A	79	34	36	8	●
6.5		DPC-C003Y0650-08A	79	34	36	8	●
6.6		DPC-C003Y0660-08A	79	34	36	8	●
6.7		DPC-C003Y0670-08A	79	34	36	8	●
6.75	17/64	DPC-C003Y0675-08A	79	34	36	8	
6.8		DPC-C003Y0680-08A	79	34	36	8	●
6.9		DPC-C003Y0690-08A	79	34	36	8	●
7		DPC-C003Y0700-08A	79	34	36	8	●
7.1		DPC-C003Y0710-08A	79	41	36	8	●
7.14	9/32	DPC-C003Y0714-08A	79	41	36	8	
7.2		DPC-C003Y0720-08A	79	41	36	8	●
7.3		DPC-C003Y0730-08A	79	41	36	8	●
7.4		DPC-C003Y0740-08A	79	41	36	8	●
7.5		DPC-C003Y0750-08A	79	41	36	8	●
7.54	19/64	DPC-C003Y0754-08A	79	41	36	8	
7.6		DPC-C003Y0760-08A	79	41	36	8	●
7.7		DPC-C003Y0770-08A	79	41	36	8	●
7.8		DPC-C003Y0780-08A	79	41	36	8	●
7.9		DPC-C003Y0790-08A	79	41	36	8	●
7.94	5/16	DPC-C003Y0794-08A	79	41	36	8	
8		DPC-C003Y0800-08A	79	41	36	8	●
8.1		DPC-C003Y0810-10A	89	47	40	10	●
8.2		DPC-C003Y0820-10A	89	47	40	10	●
8.3		DPC-C003Y0830-10A	89	47	40	10	●
8.33	21/64	DPC-C003Y0833-10A	89	47	40	10	
8.4		DPC-C003Y0840-10A	89	47	40	10	●
8.5		DPC-C003Y0850-10A	89	47	40	10	●
8.6		DPC-C003Y0860-10A	89	47	40	10	●
8.7		DPC-C003Y0870-10A	89	47	40	10	●
8.73	11/32	DPC-C003Y0873-10A	89	47	40	10	
8.8		DPC-C003Y0880-10A	89	47	40	10	●
8.9		DPC-C003Y0890-10A	89	47	40	10	●
9		DPC-C003Y0900-10A	89	47	40	10	●
9.1		DPC-C003Y0910-10A	89	47	40	10	●
9.13	23/64	DPC-C003Y0913-10A	89	47	40	10	

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
9.2		DPC-C003Y0920-10A	89	47	40	10	●
9.3		DPC-C003Y0930-10A	89	47	40	10	●
9.4		DPC-C003Y0940-10A	89	47	40	10	●
9.5		DPC-C003Y0950-10A	89	47	40	10	●
9.52	3/8	DPC-C003Y0952-10A	89	47	40	10	○
9.6		DPC-C003Y0960-10A	89	47	40	10	●
9.7		DPC-C003Y0970-10A	89	47	40	10	●
9.8		DPC-C003Y0980-10A	89	47	40	10	●
9.9		DPC-C003Y0990-10A	89	47	40	10	●
9.92	25/64	DPC-C003Y0992-10A	89	47	40	10	○
10		DPC-C003Y1000-10A	89	47	40	10	●
10.1		DPC-C003Y1010-12A	102	55	45	12	●
10.2		DPC-C003Y1020-12A	102	55	45	12	●
10.3		DPC-C003Y1030-12A	102	55	45	12	●
10.32	13/32	DPC-C003Y1032-12A	102	55	45	12	○
10.4		DPC-C003Y1040-12A	102	55	45	12	●
10.5		DPC-C003Y1050-12A	102	55	45	12	●
10.6		DPC-C003Y1060-12A	102	55	45	12	●
10.7		DPC-C003Y1070-12A	102	55	45	12	●
10.72	27/64	DPC-C003Y1072-12A	102	55	45	12	○
10.8		DPC-C003Y1080-12A	102	55	45	12	●
10.9		DPC-C003Y1090-12A	102	55	45	12	●
11		DPC-C003Y1100-12A	102	55	45	12	●
11.1		DPC-C003Y1110-12A	102	55	45	12	●
11.11	7/16	DPC-C003Y1111-12A	102	55	45	12	○
11.2		DPC-C003Y1120-12A	102	55	45	12	●
11.3		DPC-C003Y1130-12A	102	55	45	12	●
11.4		DPC-C003Y1140-12A	102	55	45	12	●
11.5		DPC-C003Y1150-12A	102	55	45	12	●
11.51	29/64	DPC-C003Y1151-12A	102	55	45	12	○
11.6		DPC-C003Y1160-12A	102	55	45	12	●
11.7		DPC-C003Y1170-12A	102	55	45	12	●
11.8		DPC-C003Y1180-12A	102	55	45	12	●
11.9		DPC-C003Y1190-12A	102	55	45	12	●
11.91	15/32	DPC-C003Y1191-12A	102	55	45	12	○
12		DPC-C003Y1200-12A	102	55	45	12	●
12.1		DPC-C003Y1210-14A	107	60	45	14	●
12.2		DPC-C003Y1220-14A	107	60	45	14	●
12.3	31/64	DPC-C003Y1230-14A	107	60	45	14	●
12.4		DPC-C003Y1240-14A	107	60	45	14	●
12.5		DPC-C003Y1250-14A	107	60	45	14	●
12.6		DPC-C003Y1260-14A	107	60	45	14	●
12.7	1/2	DPC-C003Y1270-14A	107	60	45	14	●
12.8		DPC-C003Y1280-14A	107	60	45	14	●
12.9		DPC-C003Y1290-14A	107	60	45	14	●
13		DPC-C003Y1300-14A	107	60	45	14	●
13.1		DPC-C003Y1310-14A	107	60	45	14	●

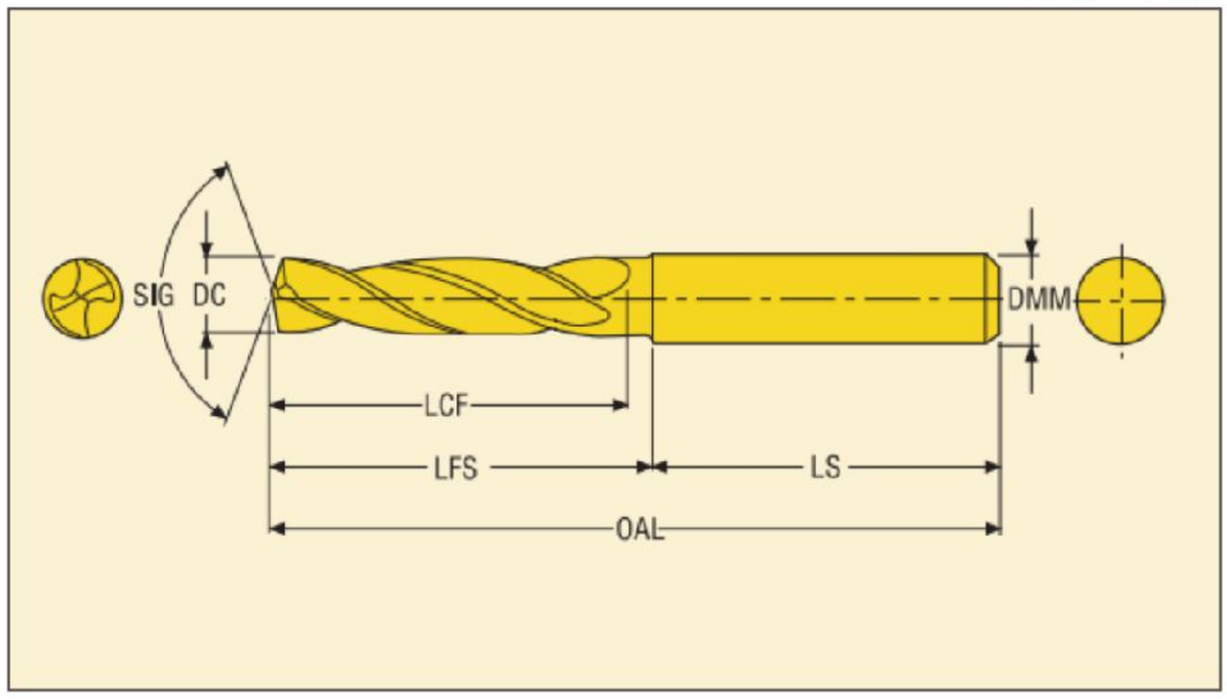
DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
13.2		DPC-C003Y1320-14A	107	60	45	14	●
13.3		DPC-C003Y1330-14A	107	60	45	14	●
13.4		DPC-C003Y1340-14A	107	60	45	14	●
13.49	17/32	DPC-C003Y1349-14A	107	60	45	14	○
13.5		DPC-C003Y1350-14A	107	60	45	14	●
13.6		DPC-C003Y1360-14A	107	60	45	14	●
13.7		DPC-C003Y1370-14A	107	60	45	14	●
13.8		DPC-C003Y1380-14A	107	60	45	14	●
13.89	35/64	DPC-C003Y1389-14A	107	60	45	14	○
13.9		DPC-C003Y1390-14A	107	60	45	14	●
14		DPC-C003Y1400-14A	107	60	45	14	●
14.1		DPC-C003Y1410-16A	115	65	48	16	●
14.2		DPC-C003Y1420-16A	115	65	48	16	●
14.25		DPC-C003Y1425-16A	115	65	48	16	○
14.29	9/16	DPC-C003Y1429-16A	115	65	48	16	○
14.3		DPC-C003Y1430-16A	115	65	48	16	●
14.4		DPC-C003Y1440-16A	115	65	48	16	●
14.5		DPC-C003Y1450-16A	115	65	48	16	●
14.6		DPC-C003Y1460-16A	115	65	48	16	●
14.69	37/64	DPC-C003Y1469-16A	115	65	48	16	○
14.7		DPC-C003Y1470-16A	115	65	48	16	●
14.8		DPC-C003Y1480-16A	115	65	48	16	●
14.9		DPC-C003Y1490-16A	115	65	48	16	●
15		DPC-C003Y1500-16A	115	65	48	16	●
15.1		DPC-C003Y1510-18A	115	65	48	16	●
15.2		DPC-C003Y1520-16A	115	65	48	16	●
15.3		DPC-C003Y1530-16A	115	65	48	16	●
15.4		DPC-C003Y1540-16A	115	65	48	16	●
15.5		DPC-C003Y1550-16A	115	65	48	16	●
15.6		DPC-C003Y1560-16A	115	65	48	16	●
15.7		DPC-C003Y1570-16A	115	65	48	16	●
15.8		DPC-C003Y1580-16A	115	65	48	16	●
15.87	5/8	DPC-C003Y1587-16A	115	65	48	16	○
15.9		DPC-C003Y1590-16A	115	65	48	16	●
16		DPC-C003Y1600-16A	115	65	48	16	●
16.5		DPC-C003Y1650-18A	123	73	48	18	○
16.8		DPC-C003Y1680-18A	123	73	48	18	○
17		DPC-C003Y1700-18A	123	73	48	18	○
17.5		DPC-C003Y1750-18A	123	73	48	18	○
17.8		DPC-C003Y1780-18A	123	73	48	18	○
18		DPC-C003Y1800-18A	123	73	48	18	○
18.5		DPC-C003Y1850-20A	131	79	50	20	○
18.8		DPC-C003Y1880-20A	131	79	50	20	○
19		DPC-C003Y1900-20A	131	79	50	20	○
19.05	3/4	DPC-C003Y1905-20A	131	79	50	20	○
20		DPC-C003Y2000-20A	131	79	50	20	○

Stock ● Available ○ production to order

Drilling depth: 5xD

- External coolant
- Point angle: 140°
- Coating: CrAlSiN
- Shank diameter tolerance: h6
- Max. number of regrinds: 5
- For cutting data see page 24-28

DPC - Line



DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
3		DPC-C005Y0300-04A	66	26	36	4	●
3.1		DPC-C005Y0310-04A	66	26	36	4	●
3.17	1/8	DPC-C005Y0317-04A	66	26	36	4	○
3.2		DPC-C005Y0320-04A	66	26	36	4	●
3.3		DPC-C005Y0330-04A	66	26	36	4	●
3.4		DPC-C005Y0340-04A	66	26	36	4	●
3.5		DPC-C005Y0350-04A	66	26	36	4	●
3.57	9/64	DPC-C005Y0357-04A	66	26	36	4	○
3.6		DPC-C005Y0360-04A	66	26	36	4	●
3.7		DPC-C005Y0370-04A	66	26	36	4	●
3.8		DPC-C005Y0380-04A	74	34	36	4	●
3.9		DPC-C005Y0390-04A	74	34	36	4	●
3.97	5/32	DPC-C005Y0397-04A	74	34	36	4	○
4		DPC-C005Y0400-04A	74	34	36	4	●
4.1		DPC-C005Y0410-06A	74	34	36	6	●
4.2		DPC-C005Y0420-06A	74	34	36	6	●
4.3		DPC-C005Y0430-06A	74	34	36	6	●
4.37	11/64	DPC-C005Y0437-06A	74	34	36	6	○
4.4		DPC-C005Y0440-06A	74	34	36	6	●
4.5		DPC-C005Y0450-06A	74	34	36	6	●
4.55		DPC-C005Y0455-06A	74	34	36	6	○
4.6		DPC-C005Y0460-06A	74	34	36	6	●
4.7		DPC-C005Y0470-06A	74	34	36	6	●
4.76	3/16	DPC-C005Y0476-06A	82	44	36	6	○
4.8		DPC-C005Y0480-06A	82	44	36	6	●
4.9		DPC-C005Y0490-06A	82	44	36	6	●
5		DPC-C005Y0500-06A	82	44	36	6	●
5.1		DPC-C005Y0510-06A	82	44	36	6	●
5.16	13/64	DPC-C005Y0516-06A	82	44	36	6	○
5.2		DPC-C005Y0520-06A	82	44	36	6	●
5.3		DPC-C005Y0530-06A	82	44	36	6	●
5.4		DPC-C005Y0540-06A	82	44	36	6	●
5.5		DPC-C005Y0550-06A	82	44	36	6	●
5.55		DPC-C005Y0555-06A	82	44	36	6	○

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
5.56	7/32	DPC-C005Y0556-06A	82	44	36	6	○
5.6		DPC-C005Y0560-06A	82	44	36	6	●
5.7		DPC-C005Y0570-06A	82	44	36	6	●
5.8		DPC-C005Y0580-06A	82	44	36	6	●
5.9		DPC-C005Y0590-06A	82	44	36	6	●
5.95	15/64	DPC-C005Y0595-06A	82	44	36	6	○
6		DPC-C005Y0600-06A	82	44	36	6	●
6.1		DPC-C005Y0610-08A	91	53	36	8	●
6.2		DPC-C005Y0620-08A	91	53	36	8	●
6.3		DPC-C005Y0630-08A	91	53	36	8	●
6.35	1/4	DPC-C005Y0635-08A	91	53	36	8	○
6.4		DPC-C005Y0640-08A	91	53	36	8	●
6.5		DPC-C005Y0650-08A	91	53	36	8	●
6.6		DPC-C005Y0660-08A	91	53	36	8	●
6.7		DPC-C005Y0670-08A	91	53	36	8	●
6.75	17/64	DPC-C005Y0675-08A	91	53	36	8	○
6.8		DPC-C005Y0680-08A	91	53	36	8	●
6.9		DPC-C005Y0690-08A	91	53	36	8	●
7		DPC-C005Y0700-08A	91	53	36	8	●
7.1		DPC-C005Y0710-08A	91	53	36	8	●
7.14	9/32	DPC-C005Y0714-08A	91	53	36	8	○
7.2		DPC-C005Y0720-08A	91	53	36	8	●
7.3		DPC-C005Y0730-08A	91	53	36	8	●
7.4		DPC-C005Y0740-08A	91	53	36	8	●
7.5		DPC-C005Y0750-08A	91	53	36	8	●
7.54	19/64	DPC-C005Y0754-08A	91	53	36	8	○
7.6		DPC-C005Y0760-08A	91	53	36	8	●
7.7		DPC-C005Y0770-08A	91	53	36	8	●
7.8		DPC-C005Y0780-08A	91	53	36	8	●
7.9		DPC-C005Y0790-08A	91	53	36	8	●
7.94	5/16	DPC-C005Y0794-08A	91	53	36	8	○
8		DPC-C005Y0800-08A	91	53	36	8	●
8.1		DPC-C005Y0810-10A	103	61	40	10	●
8.15		DPC-C005Y0815-10A	103	61	40	10	○
8.2		DPC-C005Y0820-10A	103	61	40	10	●
8.3		DPC-C005Y0830-10A	103	61	40	10	●
8.33	21/64	DPC-C005Y0833-10A	103	61	40	10	○
8.4		DPC-C005Y0840-10A	103	61	40	10	●
8.5		DPC-C005Y0850-10A	103	61	40	10	●
8.6		DPC-C005Y0860-10A	103	61	40	10	●
8.7		DPC-C005Y0870-10A	103	61	40	10	●
8.73	11/32	DPC-C005Y0873-10A	103	61	40	10	○
8.8		DPC-C005Y0880-10A	103	61	40	10	●
8.9		DPC-C005Y0890-10A	103	61	40	10	●
9		DPC-C005Y0900-10A	103	61	40	10	●
9.1		DPC-C005Y0910-10A	103	61	40	10	●
9.13	23/64	DPC-C005Y0913-10A	103	61	40	10	○
9.2		DPC-C005Y0920-10A	103	61	40	10	●
9.3		DPC-C005Y0930-10A	103	61	40	10	●

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
9.4		DPC-C005Y0940-10A	103	61	40	10	●
9.5		DPC-C005Y0950-10A	103	61	40	10	●
9.52	3/8	DPC-C005Y0952-10A	103	61	40	10	○
9.55		DPC-C005Y0955-10A	103	61	40	10	○
9.6		DPC-C005Y0960-10A	103	61	40	10	●
9.7		DPC-C005Y0970-10A	103	61	40	10	●
9.8		DPC-C005Y0980-10A	103	61	40	10	●
9.9		DPC-C005Y0990-10A	103	61	40	10	●
9.92	25/64	DPC-C005Y0992-10A	103	61	40	10	○
10		DPC-C005Y1000-10A	103	61	40	10	●
10.1		DPC-C005Y1010-12A	118	71	45	12	●
10.2		DPC-C005Y1020-12A	118	71	45	12	●
10.3		DPC-C005Y1030-12A	118	71	45	12	●
10.32	13/32	DPC-C005Y1032-12A	118	71	45	12	○
10.4		DPC-C005Y1040-12A	118	71	45	12	●
10.5		DPC-C005Y1050-12A	118	71	45	12	●
10.6		DPC-C005Y1060-12A	118	71	45	12	●
10.7		DPC-C005Y1070-12A	118	71	45	12	●
10.71		DPC-C005Y1071-12A	118	71	45	12	○
10.72	27/64	DPC-C005Y1072-12A	118	71	45	12	○
10.8		DPC-C005Y1080-12A	118	71	45	12	●
10.9		DPC-C005Y1090-12A	118	71	45	12	●
11		DPC-C005Y1100-12A	118	71	45	12	●
11.1		DPC-C005Y1110-12A	118	71	45	12	●
11.11	7/16	DPC-C005Y1111-12A	118	71	45	12	○
11.2		DPC-C005Y1120-12A	118	71	45	12	●
11.3		DPC-C005Y1130-12A	118	71	45	12	●
11.4		DPC-C005Y1140-12A	118	71	45	12	●
11.5		DPC-C005Y1150-12A	118	71	45	12	●
11.51	29/64	DPC-C005Y1151-12A	118	71	45	12	○
11.6		DPC-C005Y1160-12A	118	71	45	12	●
11.7		DPC-C005Y1170-12A	118	71	45	12	●
11.8		DPC-C005Y1180-12A	118	71	45	12	●
11.9		DPC-C005Y1190-12A	118	71	45	12	●
11.91		DPC-C005Y1191-12A	118	71	45	12	○
12		DPC-C005Y1200-12A	118	71	45	12	●
12.1		DPC-C005Y1210-14A	124	77	45	14	●
12.2		DPC-C005Y1220-14A	124	77	45	14	●
12.3	31/64	DPC-C005Y1230-14A	124	77	45	14	●
12.4		DPC-C005Y1240-14A	124	77	45	14	●
12.5		DPC-C005Y1250-14A	124	77	45	14	●
12.6		DPC-C005Y1260-14A	124	77	45	14	●
12.7	1/2	DPC-C005Y1270-14A	124	77	45	14	●
12.8		DPC-C005Y1280-14A	124	77	45	14	●
12.9		DPC-C005Y1290-14A	124	77	45	14	●
13		DPC-C005Y1300-14A	124	77	45	14	●
13.1		DPC-C005Y1310-14A	124	77	45	14	●
13.2		DPC-C005Y1320-14A	124	77	45	14	●
13.25		DPC-C005Y1325-14A	124	77	45	14	○

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
13.3		DPC-C005Y1330-14A	124	77	45	14	●
13.4		DPC-C005Y1340-14A	124	77	45	14	●
13.49	17/32	DPC-C005Y1349-14A	124	77	45	14	○
13.5		DPC-C005Y1350-14A	124	77	45	14	●
13.6		DPC-C005Y1360-14A	124	77	45	14	●
13.7		DPC-C005Y1370-14A	124	77	45	14	●
13.75		DPC-C005Y1375-14A	124	77	45	14	●
13.8		DPC-C005Y1380-14A	124	77	45	14	●
13.89	35/64	DPC-C005Y1389-14A	124	77	45	14	○
13.9		DPC-C005Y1390-14A	124	77	45	14	●
14		DPC-C005Y1400-14A	124	77	45	14	●
14.1		DPC-C005Y1410-14A	133	83	48	16	●
14.2		DPC-C005Y1420-14A	133	83	48	16	●
14.25		DPC-C005Y1425-16A	133	83	48	16	●
14.29	9/16	DPC-C005Y1429-16A	133	83	48	16	○
14.3		DPC-C005Y1430-16A	133	83	48	16	●
14.4		DPC-C005Y1440-16A	133	83	48	16	●
14.5		DPC-C005Y1450-16A	133	83	48	16	●
14.6		DPC-C005Y1460-16A	133	83	48	16	●
14.69	37/64	DPC-C005Y1469-16A	133	83	48	16	○
14.7		DPC-C005Y1470-16A	133	83	48	16	●
14.8		DPC-C005Y1480-16A	133	83	48	16	●
14.9		DPC-C005Y1490-16A	133	83	48	16	●
15		DPC-C005Y1500-16A	133	83	48	16	●
15.1		DPC-C005Y1510-16A	133	83	48	16	●
15.2		DPC-C005Y1520-16A	133	83	48	16	●
15.3		DPC-C005Y1530-16A	133	83	48	16	●
15.4		DPC-C005Y1540-16A	133	83	48	16	●
15.5		DPC-C005Y1550-16A	133	83	48	16	●
15.6		DPC-C005Y1560-16A	133	83	48	16	●
15.7		DPC-C005Y1570-16A	133	83	48	16	●
15.8		DPC-C005Y1580-16A	133	83	48	16	●
15.87	5/8	DPC-C005Y1587-16A	133	83	48	16	○
15.9		DPC-C005Y1590-16A	133	83	48	16	●
16		DPC-C005Y1600-16A	133	83	48	16	●
16.5		DPC-C005Y1650-18A	143	93	48	18	○
16.8		DPC-C005Y1680-18A	143	93	48	18	○
17		DPC-C005Y1700-18A	143	93	48	18	○
17.5		DPC-C005Y1750-18A	143	93	48	18	○
17.8		DPC-C005Y1780-18A	143	93	48	18	○
18		DPC-C005Y1800-18A	143	93	48	18	○
18.5		DPC-C005Y1850-20A	153	101	50	20	○
18.8		DPC-C005Y1880-20A	153	101	50	20	○
19		DPC-C005Y1900-20A	153	101	50	20	○
19.05	3/4	DPC-C005Y1905-20A	153	101	50	20	○
19.5		DPC-C005Y1950-20A	153	101	50	20	○
20		DPC-C005Y2000-20A	153	101	50	20	○

Stock ● Available ○ production to order

DPC Features & Benefits - Internal Cooant

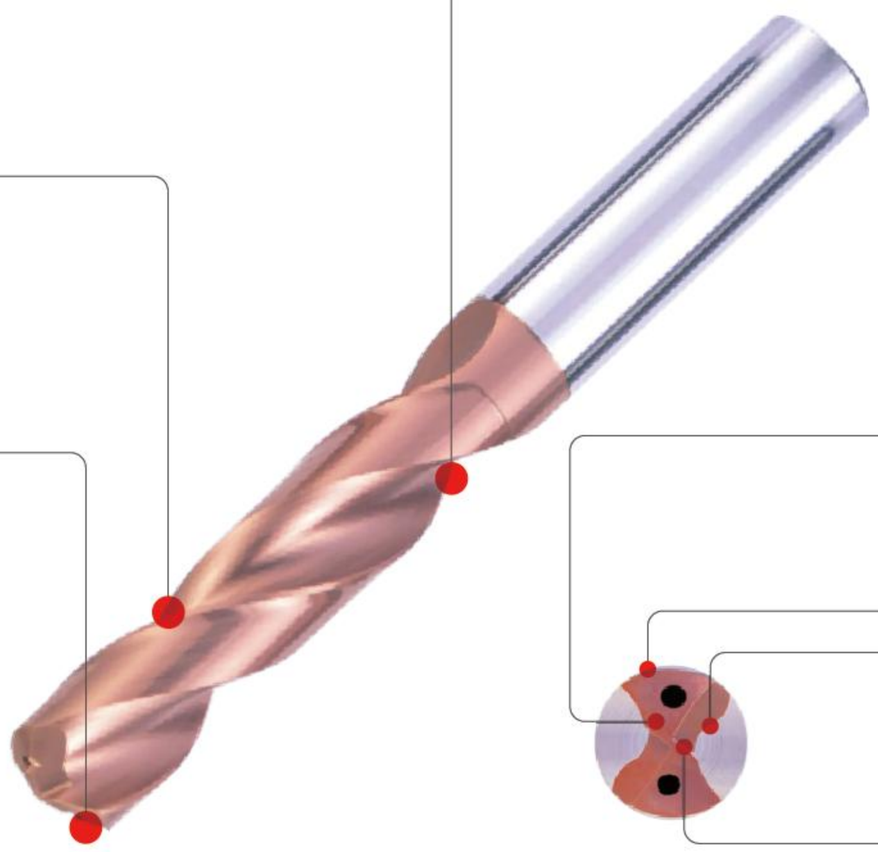
ISO material groups

P K M H

The chip flute has a large chip storage space and excellent chip removal capability

Single cutting edge design, suitable for general applications

Extra fine grain size substrate together with multi layers PVD coating generates long tool life



Curve cutting edge optimizes chip breaking performance

The cutting edge has a C-angle protection to ensure the strength of the tip

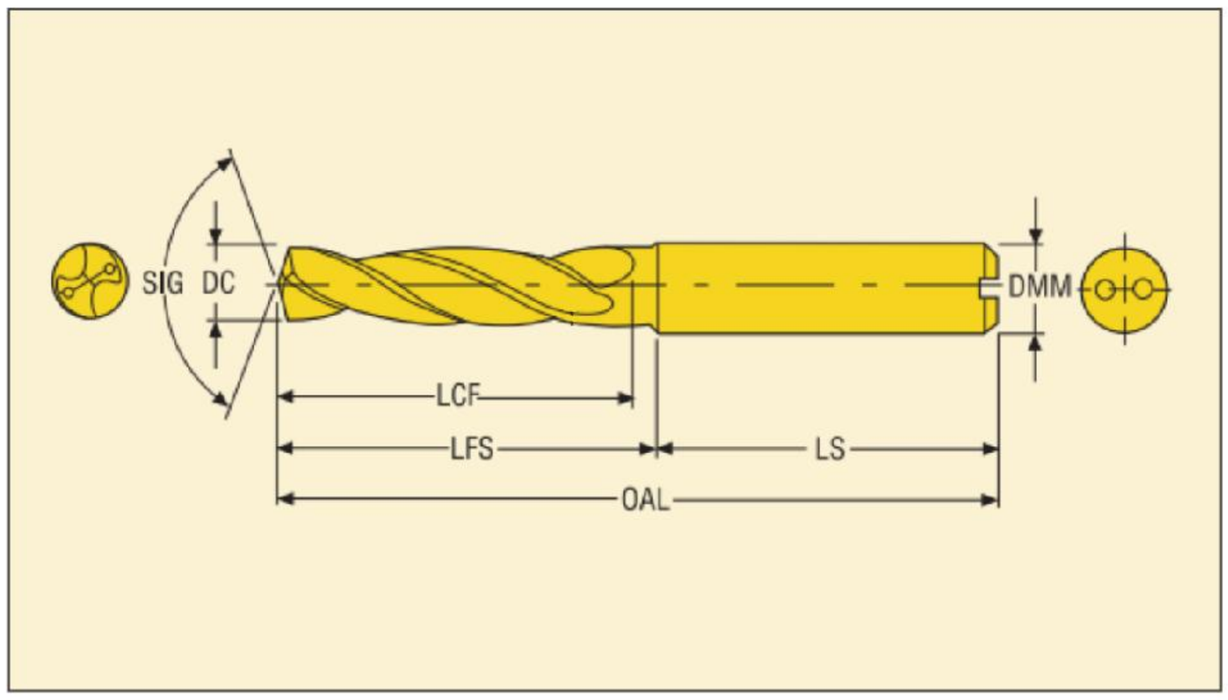
Conical relief angle

Special chisel edge design ensures centering capability

Overview	Application
· Cover ISO-P/K/M/H material	· Widely used in industries such as general machinery, molds, automobiles, refrigeration, etc
· Hole tolerance H8-H9	
· Diameter range: 3.0-20mm	
· High production efficiency and long tool lifetime	· Drilling depth 3xD 5xD
· Accept non-standard customization	

Drilling depth: 3xD

DPC – Line



- Internal coolant
- Point angle: 140°
- Coating: CrAlSiN
- Shank diameter tolerance: h6
- Max. number of regrinds: 5
- For cutting data see page 24-28

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
3		DPC-C103Y0300-04A	62	20	36	4	●
3.1		DPC-C103Y0310-04A	62	20	36	4	●
3.17	1/8	DPC-C103Y0317-04A	62	20	36	4	○
3.2		DPC-C103Y0320-04A	62	20	36	4	●
3.3		DPC-C103Y0330-04A	62	20	36	4	●
3.4		DPC-C103Y0340-04A	62	20	36	4	●
3.5		DPC-C103Y0350-04A	62	20	36	4	●
3.55		DPC-C103Y0355-04A	62	20	36	4	○
3.57	9/64	DPC-C103Y0357-04A	62	20	36	4	○
3.6		DPC-C103Y0360-04A	62	20	36	4	●
3.7		DPC-C103Y0370-04A	62	20	36	4	●
3.8		DPC-C103Y0380-04A	66	24	36	4	●
3.9		DPC-C103Y0390-04A	66	24	36	4	●
3.97	5/32	DPC-C103Y0397-04A	66	24	36	4	○
4		DPC-C103Y0400-04A	66	24	36	4	●
4.1		DPC-C103Y0410-06A	66	24	36	6	●
4.2		DPC-C103Y0420-06A	66	24	36	6	●
4.3		DPC-C103Y0430-06A	66	24	36	6	●
4.37	11/64	DPC-C103Y0437-06A	66	24	36	6	○
4.4		DPC-C103Y0440-06A	66	24	36	6	●
4.5		DPC-C103Y0450-06A	66	24	36	6	●
4.6		DPC-C103Y0460-06A	66	24	36	6	●
4.7		DPC-C103Y0470-06A	66	24	36	6	●
4.76	3/16	DPC-C103Y0476-06A	66	28	36	6	○
4.8		DPC-C103Y0480-06A	66	28	36	6	●
4.9		DPC-C103Y0490-06A	66	28	36	6	●
5		DPC-C103Y0500-06A	66	28	36	6	●
5.1		DPC-C103Y0510-06A	66	28	36	6	●
5.16	13/64	DPC-C103Y0516-06A	66	28	36	6	○
5.2		DPC-C103Y0520-06A	66	28	36	6	●
5.3		DPC-C103Y0530-06A	66	28	36	6	●
5.4		DPC-C103Y0540-06A	66	28	36	6	●
5.5		DPC-C103Y0550-06A	66	28	36	6	●
5.56	7/32	DPC-C103Y0556-06A	66	28	36	6	○

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
5.6		DPC-C103Y0560-06A	66	28	36	6	●
5.7		DPC-C103Y0570-06A	66	28	36	6	●
5.8		DPC-C103Y0580-06A	66	28	36	6	●
5.9		DPC-C103Y0590-06A	66	28	36	6	●
5.95	15/64	DPC-C103Y0595-06A	66	28	36	6	○
6		DPC-C103Y0600-06A	66	28	36	6	●
6.1		DPC-C103Y0610-08A	79	34	36	8	●
6.2		DPC-C103Y0620-08A	79	34	36	8	●
6.3		DPC-C103Y0630-08A	79	34	36	8	●
6.35	1/4	DPC-C103Y0635-08A	79	34	36	8	○
6.4		DPC-C103Y0640-08A	79	34	36	8	●
6.5		DPC-C103Y0650-08A	79	34	36	8	●
6.6		DPC-C103Y0660-08A	79	34	36	8	●
6.7		DPC-C103Y0670-08A	79	34	36	8	●
6.75	17/64	DPC-C103Y0675-08A	79	34	36	8	○
6.8		DPC-C103Y0680-08A	79	34	36	8	●
6.9		DPC-C103Y0690-08A	79	34	36	8	●
7		DPC-C103Y0700-08A	79	34	36	8	●
7.1		DPC-C103Y0710-08A	79	41	36	8	●
7.14	9/32	DPC-C103Y0714-08A	79	41	36	8	○
7.2		DPC-C103Y0720-08A	79	41	36	8	●
7.3		DPC-C103Y0730-08A	79	41	36	8	●
7.4		DPC-C103Y0740-08A	79	41	36	8	●
7.5		DPC-C103Y0750-08A	79	41	36	8	●
7.54	19/64	DPC-C103Y0754-08A	79	41	36	8	○
7.6		DPC-C103Y0760-08A	79	41	36	8	●
7.7		DPC-C103Y0770-08A	79	41	36	8	●
7.8		DPC-C103Y0780-08A	79	41	36	8	●
7.9		DPC-C103Y0790-08A	79	41	36	8	●
7.94	5/16	DPC-C103Y0794-08A	79	41	36	8	○
8		DPC-C103Y0800-08A	79	41	36	8	●
8.1		DPC-C103Y0810-10A	89	47	40	10	●
8.2		DPC-C103Y0820-10A	89	47	40	10	●
8.3		DPC-C103Y0830-10A	89	47	40	10	●
8.33	21/64	DPC-C103Y0833-10A	89	47	40	10	○
8.4		DPC-C103Y0840-10A	89	47	40	10	●
8.5		DPC-C103Y0850-10A	89	47	40	10	●
8.6		DPC-C103Y0860-10A	89	47	40	10	●
8.7		DPC-C103Y0870-10A	89	47	40	10	●
8.73	11/32	DPC-C103Y0873-10A	89	47	40	10	○
8.8		DPC-C103Y0880-10A	89	47	40	10	●
8.9		DPC-C103Y0890-10A	89	47	40	10	●
9		DPC-C103Y0900-10A	89	47	40	10	●
9.1		DPC-C103Y0910-10A	89	47	40	10	●
9.13	23/64	DPC-C103Y0913-10A	89	47	40	10	○
9.2		DPC-C103Y0920-10A	89	47	40	10	●
9.3		DPC-C103Y0930-10A	89	47	40	10	●
9.4		DPC-C103Y0940-10A	89	47	40	10	●
9.5		DPC-C103Y0950-10A	89	47	40	10	●

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
9.52	3/8	DPC-C103Y0952-10A	89	47	40	10	○
9.6		DPC-C103Y0960-10A	89	47	40	10	●
9.7		DPC-C103Y0970-10A	89	47	40	10	●
9.8		DPC-C103Y0980-10A	89	47	40	10	●
9.9		DPC-C103Y0990-10A	89	47	40	10	●
9.92	25/64	DPC-C103Y0992-10A	89	47	40	10	○
10		DPC-C103Y1000-10A	89	47	40	10	●
10.1		DPC-C103Y1010-12A	102	55	45	12	●
10.2		DPC-C103Y1020-12A	102	55	45	12	●
10.3		DPC-C103Y1030-12A	102	55	45	12	●
10.32	13/32	DPC-C103Y1032-12A	102	55	45	12	○
10.4		DPC-C103Y1040-12A	102	55	45	12	●
10.5		DPC-C103Y1050-12A	102	55	45	12	●
10.6		DPC-C103Y1060-12A	102	55	45	12	●
10.7		DPC-C103Y1070-12A	102	55	45	12	●
10.72	27/64	DPC-C103Y1072-12A	102	55	45	12	○
10.8		DPC-C103Y1080-12A	102	55	45	12	●
10.9		DPC-C103Y1090-12A	102	55	45	12	●
11		DPC-C103Y1100-12A	102	55	45	12	●
11.1		DPC-C103Y1110-12A	102	55	45	12	●
11.11	7/16	DPC-C103Y1111-12A	102	55	45	12	○
11.2		DPC-C103Y1120-12A	102	55	45	12	●
11.3		DPC-C103Y1130-12A	102	55	45	12	●
11.4		DPC-C103Y1140-12A	102	55	45	12	●
11.5		DPC-C103Y1150-12A	102	55	45	12	●
11.51	29/64	DPC-C103Y1151-12A	102	55	45	12	○
11.6		DPC-C103Y1160-12A	102	55	45	12	●
11.7		DPC-C103Y1170-12A	102	55	45	12	●
11.8		DPC-C103Y1180-12A	102	55	45	12	●
11.9		DPC-C103Y1190-12A	102	55	45	12	●
11.91	15/32	DPC-C103Y1191-12A	102	55	45	12	○
12		DPC-C103Y1200-12A	102	55	45	12	●
12.1		DPC-C103Y1210-14A	107	60	45	14	●
12.2		DPC-C103Y1220-14A	107	60	45	14	●
12.3	31/64	DPC-C103Y1230-14A	107	60	45	14	●
12.4		DPC-C103Y1240-14A	107	60	45	14	●
12.5		DPC-C103Y1250-14A	107	60	45	14	●
12.6		DPC-C103Y1260-14A	107	60	45	14	●
12.7	1/2	DPC-C103Y1270-14A	107	60	45	14	●
12.8		DPC-C103Y1280-14A	107	60	45	14	●
12.9		DPC-C103Y1290-14A	107	60	45	14	●
13		DPC-C103Y1300-14A	107	60	45	14	●
13.1		DPC-C103Y1310-14A	107	60	45	14	●
13.2		DPC-C103Y1320-14A	107	60	45	14	●
13.3		DPC-C103Y1330-14A	107	60	45	14	●
13.4		DPC-C103Y1340-14A	107	60	45	14	●
13.49	17/32	DPC-C103Y1349-14A	107	60	45	14	○
13.5		DPC-C103Y1350-14A	107	60	45	14	●
13.6		DPC-C103Y1360-14A	107	60	45	14	●

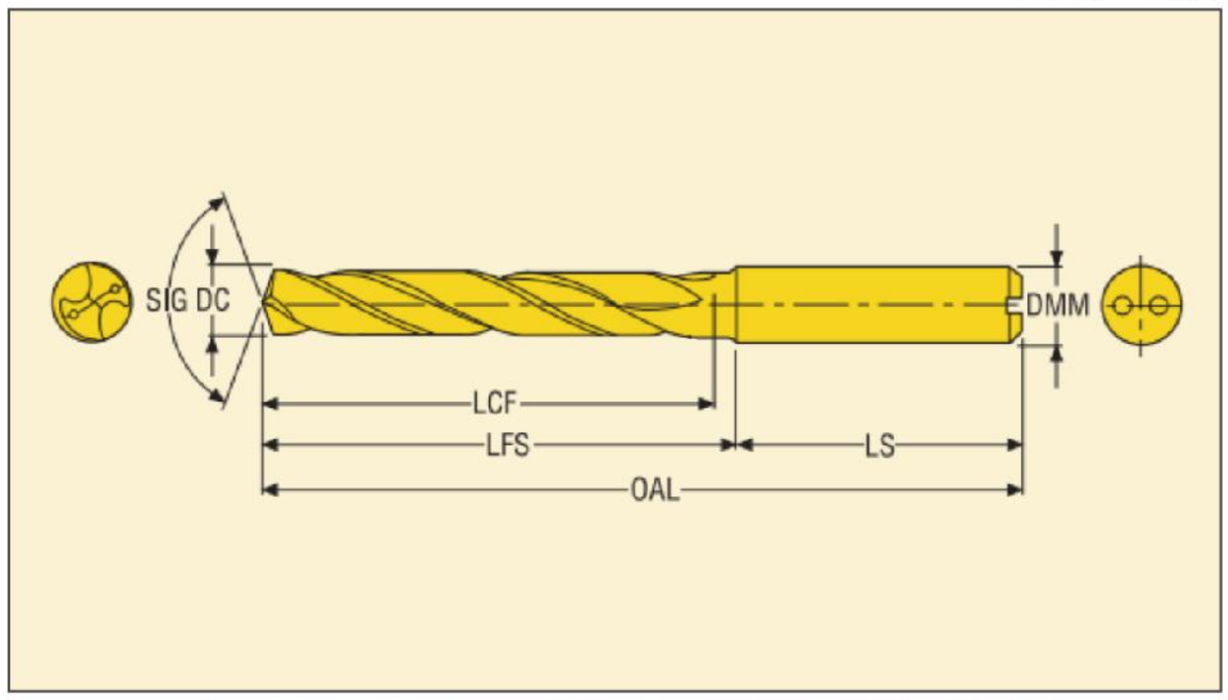
DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
13.7		DPC-C103Y1370-14A	107	60	45	14	●
13.8		DPC-C103Y1380-14A	107	60	45	14	●
13.89	35/64	DPC-C103Y1389-14A	107	60	45	14	○
13.9		DPC-C103Y1390-14A	107	60	45	14	●
14		DPC-C103Y1400-14A	107	60	45	14	●
14.1		DPC-C103Y1410-16A	115	65	48	16	●
14.2		DPC-C103Y1420-16A	115	65	48	16	●
14.25		DPC-C103Y1425-16A	115	65	48	16	○
14.29	9/16	DPC-C103Y1429-16A	115	65	48	16	○
14.3		DPC-C103Y1430-16A	115	65	48	16	●
14.4		DPC-C103Y1440-16A	115	65	48	16	●
14.5		DPC-C103Y1450-16A	115	65	48	16	●
14.6		DPC-C103Y1460-16A	115	65	48	16	●
14.69	37/64	DPC-C103Y1469-16A	115	65	48	16	○
14.7		DPC-C103Y1470-16A	115	65	48	16	●
14.8		DPC-C103Y1480-16A	115	65	48	16	●
14.9		DPC-C103Y1490-16A	115	65	48	16	●
15		DPC-C103Y1500-16A	115	65	48	16	●
15.1		DPC-C103Y1510-18A	115	65	48	16	●
15.2		DPC-C103Y1520-16A	115	65	48	16	●
15.3		DPC-C103Y1530-16A	115	65	48	16	●
15.4		DPC-C103Y1540-16A	115	65	48	16	●
15.5		DPC-C103Y1550-16A	115	65	48	16	●
15.6		DPC-C103Y1560-16A	115	65	48	16	●
15.7		DPC-C103Y1570-16A	115	65	48	16	●
15.8		DPC-C103Y1580-16A	115	65	48	16	●
15.87	5/8	DPC-C103Y1587-16A	115	65	48	16	○
15.9		DPC-C103Y1590-16A	115	65	48	16	●
16		DPC-C103Y1600-16A	115	65	48	16	●
16.5		DPC-C103Y1650-18A	123	73	48	18	○
16.8		DPC-C103Y1680-18A	123	73	48	18	○
17		DPC-C103Y1700-18A	123	73	48	18	○
17.5		DPC-C103Y1750-18A	123	73	48	18	○
17.8		DPC-C103Y1780-18A	123	73	48	18	○
18		DPC-C103Y1800-18A	123	73	48	18	○
18.5		DPC-C103Y1850-20A	131	79	50	20	○
18.8		DPC-C103Y1880-20A	131	79	50	20	○
19		DPC-C103Y1900-20A	131	79	50	20	○
19.05	3/4	DPC-C103Y1905-20A	131	79	50	20	○
19.5		DPC-C103Y1950-20A	131	79	50	20	○
20		DPC-C103Y2000-20A	131	79	50	20	○

Stock ● Available ○ production to order

Drilling depth: 5xD

- Internal coolant
- Point angle: 140°
- Coating: CrAlSiN
- Shank diameter tolerance: h6
- Max. number of regrinds: 5
- For cutting data see page 24-28

DPC - Line



DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
3		DPC-C105Y0300-04A	66	26	36	4	●
3.1		DPC-C105Y0310-04A	66	26	36	4	●
3.17	1/8	DPC-C105Y0317-04A	66	26	36	4	○
3.2		DPC-C105Y0320-04A	66	26	36	4	●
3.3		DPC-C105Y0330-04A	66	26	36	4	●
3.4		DPC-C105Y0340-04A	66	26	36	4	●
3.5		DPC-C105Y0350-04A	66	26	36	4	●
3.57	9/64	DPC-C105Y0357-04A	66	26	36	4	○
3.6		DPC-C105Y0360-04A	66	26	36	4	●
3.7		DPC-C105Y0370-04A	66	26	36	4	●
3.8		DPC-C105Y0380-04A	74	34	36	4	●
3.9		DPC-C105Y0390-04A	74	34	36	4	●
3.97	5/32	DPC-C105Y0397-04A	74	34	36	4	○
4		DPC-C105Y0400-04A	74	34	36	4	●
4.1		DPC-C105Y0410-06A	74	34	36	6	●
4.2		DPC-C105Y0420-06A	74	34	36	6	●
4.3		DPC-C105Y0430-06A	74	34	36	6	●
4.37	11/64	DPC-C105Y0437-06A	74	34	36	6	○
4.4		DPC-C105Y0440-06A	74	34	36	6	●
4.5		DPC-C105Y0450-06A	74	34	36	6	●
4.55		DPC-C105Y0455-06A	74	34	36	6	○
4.6		DPC-C105Y0460-06A	74	34	36	6	●
4.7		DPC-C105Y0470-06A	74	34	36	6	●
4.76	3/16	DPC-C105Y0476-06A	82	44	36	6	○
4.8		DPC-C105Y0480-06A	82	44	36	6	●
4.9		DPC-C105Y0490-06A	82	44	36	6	●
5		DPC-C105Y0500-06A	82	44	36	6	●
5.1		DPC-C105Y0510-06A	82	44	36	6	●
5.16	13/64	DPC-C105Y0516-06A	82	44	36	6	○
5.2		DPC-C105Y0520-06A	82	44	36	6	●
5.3		DPC-C105Y0530-06A	82	44	36	6	●
5.4		DPC-C105Y0540-06A	82	44	36	6	●
5.5		DPC-C105Y0550-06A	82	44	36	6	●
5.55		DPC-C105Y0555-06A	82	44	36	6	○

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
5.56	7/32	DPC-C105Y0556-06A	82	44	36	6	○
5.6		DPC-C105Y0560-06A	82	44	36	6	●
5.7		DPC-C105Y0570-06A	82	44	36	6	●
5.8		DPC-C105Y0580-06A	82	44	36	6	●
5.9		DPC-C105Y0590-06A	82	44	36	6	●
5.95	15/64	DPC-C105Y0595-06A	82	44	36	6	○
6		DPC-C105Y0600-06A	82	44	36	6	●
6.1		DPC-C105Y0610-08A	91	53	36	8	●
6.2		DPC-C105Y0620-08A	91	53	36	8	●
6.3		DPC-C105Y0630-08A	91	53	36	8	●
6.35	1/4	DPC-C105Y0635-08A	91	53	36	8	○
6.4		DPC-C105Y0640-08A	91	53	36	8	●
6.5		DPC-C105Y0650-08A	91	53	36	8	●
6.6		DPC-C105Y0660-08A	91	53	36	8	●
6.7		DPC-C105Y0670-08A	91	53	36	8	●
6.75	17/64	DPC-C105Y0675-08A	91	53	36	8	○
6.8		DPC-C105Y0680-08A	91	53	36	8	●
6.9		DPC-C105Y0690-08A	91	53	36	8	●
7		DPC-C105Y0700-08A	91	53	36	8	●
7.1		DPC-C105Y0710-08A	91	53	36	8	●
7.14	9/32	DPC-C105Y0714-08A	91	53	36	8	○
7.2		DPC-C105Y0720-08A	91	53	36	8	●
7.3		DPC-C105Y0730-08A	91	53	36	8	●
7.4		DPC-C105Y0740-08A	91	53	36	8	●
7.5		DPC-C105Y0750-08A	91	53	36	8	●
7.54	19/64	DPC-C105Y0754-08A	91	53	36	8	○
7.6		DPC-C105Y0760-08A	91	53	36	8	●
7.7		DPC-C105Y0770-08A	91	53	36	8	●
7.8		DPC-C105Y0780-08A	91	53	36	8	●
7.9		DPC-C105Y0790-08A	91	53	36	8	●
7.94	5/16	DPC-C105Y0794-08A	91	53	36	8	○
8		DPC-C105Y0800-08A	91	53	36	8	●
8.1		DPC-C105Y0810-10A	103	61	40	10	●
8.15		DPC-C105Y0815-10A	103	61	40	10	○
8.2		DPC-C105Y0820-10A	103	61	40	10	●
8.3		DPC-C105Y0830-10A	103	61	40	10	●
8.33	21/64	DPC-C105Y0833-10A	103	61	40	10	○
8.4		DPC-C105Y0840-10A	103	61	40	10	●
8.5		DPC-C105Y0850-10A	103	61	40	10	●
8.6		DPC-C105Y0860-10A	103	61	40	10	●
8.7		DPC-C105Y0870-10A	103	61	40	10	●
8.73	11/32	DPC-C105Y0873-10A	103	61	40	10	○
8.8		DPC-C105Y0880-10A	103	61	40	10	●
8.9		DPC-C105Y0890-10A	103	61	40	10	●
9		DPC-C105Y0900-10A	103	61	40	10	●
9.1		DPC-C105Y0910-10A	103	61	40	10	●
9.13	23/64	DPC-C105Y0913-10A	103	61	40	10	○
9.2		DPC-C105Y0920-10A	103	61	40	10	●
9.3		DPC-C105Y0930-10A	103	61	40	10	●

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
9.4		DPC-C105Y0940-10A	103	61	40	10	●
9.5		DPC-C105Y0950-10A	103	61	40	10	●
9.52		DPC-C105Y0952-10A	103	61	40	10	○
9.55	3/8	DPC-C105Y0955-10A	103	61	40	10	○
9.6		DPC-C105Y0960-10A	103	61	40	10	●
9.7		DPC-C105Y0970-10A	103	61	40	10	●
9.8		DPC-C105Y0980-10A	103	61	40	10	●
9.9		DPC-C105Y0990-10A	103	61	40	10	●
9.92		DPC-C105Y0992-10A	103	61	40	10	○
10	25/64	DPC-C105Y1000-10A	103	61	40	10	●
10.1		DPC-C105Y1010-12A	118	71	45	12	●
10.2		DPC-C105Y1020-12A	118	71	45	12	●
10.3		DPC-C105Y1030-12A	118	71	45	12	●
10.32		DPC-C105Y1032-12A	118	71	45	12	○
10.4	13/32	DPC-C105Y1040-12A	118	71	45	12	●
10.5		DPC-C105Y1050-12A	118	71	45	12	●
10.6		DPC-C105Y1060-12A	118	71	45	12	●
10.7		DPC-C105Y1070-12A	118	71	45	12	●
10.71		DPC-C105Y1071-12A	118	71	45	12	○
10.72		DPC-C105Y1072-12A	118	71	45	12	○
10.8	27/64	DPC-C105Y1080-12A	118	71	45	12	●
10.9		DPC-C105Y1090-12A	118	71	45	12	●
11		DPC-C105Y1100-12A	118	71	45	12	●
11.1		DPC-C105Y1110-12A	118	71	45	12	●
11.11		DPC-C105Y1111-12A	118	71	45	12	○
11.2	7/16	DPC-C105Y1120-12A	118	71	45	12	●
11.3		DPC-C105Y1130-12A	118	71	45	12	●
11.4		DPC-C105Y1140-12A	118	71	45	12	●
11.5		DPC-C105Y1150-12A	118	71	45	12	●
11.51		DPC-C105Y1151-12A	118	71	45	12	○
11.6	29/64	DPC-C105Y1160-12A	118	71	45	12	●
11.7		DPC-C105Y1170-12A	118	71	45	12	●
11.8		DPC-C105Y1180-12A	118	71	45	12	●
11.9		DPC-C105Y1190-12A	118	71	45	12	●
11.91		DPC-C105Y1191-12A	118	71	45	12	○
12		DPC-C105Y1200-12A	118	71	45	12	●
12.1		DPC-C105Y1210-14A	124	77	45	14	●
12.2		DPC-C105Y1220-14A	124	77	45	14	●
12.3		DPC-C105Y1230-14A	124	77	45	14	●
12.4	31/64	DPC-C105Y1240-14A	124	77	45	14	●
12.5		DPC-C105Y1250-14A	124	77	45	14	●
12.6		DPC-C105Y1260-14A	124	77	45	14	●
12.7		DPC-C105Y1270-14A	124	77	45	14	●
12.8	1/2	DPC-C105Y1280-14A	124	77	45	14	●
12.9		DPC-C105Y1290-14A	124	77	45	14	●
13		DPC-C105Y1300-14A	124	77	45	14	●
13.1		DPC-C105Y1310-14A	124	77	45	14	●
13.2		DPC-C105Y1320-14A	124	77	45	14	●
13.25		DPC-C105Y1325-14A	124	77	45	14	○

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
13.3		DPC-C105Y1330-14A	124	77	45	14	●
13.4		DPC-C105Y1340-14A	124	77	45	14	●
13.49	17/32	DPC-C105Y1349-14A	124	77	45	14	○
13.5		DPC-C105Y1350-14A	124	77	45	14	●
13.6		DPC-C105Y1360-14A	124	77	45	14	●
13.7		DPC-C105Y1370-14A	124	77	45	14	●
13.75		DPC-C105Y1375-14A	124	77	45	14	○
13.8		DPC-C105Y1380-14A	124	77	45	14	●
13.89	35/64	DPC-C105Y1389-14A	124	77	45	14	○
13.9		DPC-C105Y1390-14A	124	77	45	14	●
14		DPC-C105Y1400-14A	124	77	45	14	●
14.1		DPC-C105Y1410-14A	133	83	48	16	●
14.2		DPC-C105Y1420-14A	133	83	48	16	●
14.25		DPC-C105Y1425-16A	133	83	48	16	○
14.29	9/16	DPC-C105Y1429-16A	133	83	48	16	○
14.3		DPC-C105Y1430-16A	133	83	48	16	●
14.4		DPC-C105Y1440-16A	133	83	48	16	●
14.5		DPC-C105Y1450-16A	133	83	48	16	●
14.6		DPC-C105Y1460-16A	133	83	48	16	●
14.69	37/64	DPC-C105Y1469-16A	133	83	48	16	○
14.7		DPC-C105Y1470-16A	133	83	48	16	●
14.8		DPC-C105Y1480-16A	133	83	48	16	●
14.9		DPC-C105Y1490-16A	133	83	48	16	●
15		DPC-C105Y1500-16A	133	83	48	16	●
15.1		DPC-C105Y1510-16A	133	83	48	16	●
15.2		DPC-C105Y1520-16A	133	83	48	16	●
15.3		DPC-C105Y1530-16A	133	83	48	16	●
15.4		DPC-C105Y1540-16A	133	83	48	16	●
15.5		DPC-C105Y1550-16A	133	83	48	16	●
15.6		DPC-C105Y1560-16A	133	83	48	16	●
15.7		DPC-C105Y1570-16A	133	83	48	16	●
15.8		DPC-C105Y1580-16A	133	83	48	16	●
15.87	5/8	DPC-C105Y1587-16A	133	83	48	16	○
15.9		DPC-C105Y1590-16A	133	83	48	16	●
16		DPC-C105Y1600-16A	133	83	48	16	●
16.5		DPC-C105Y1650-18A	143	93	48	18	○
16.8		DPC-C105Y1680-18A	143	93	48	18	○
17		DPC-C105Y1700-18A	143	93	48	18	○
17.5		DPC-C105Y1750-18A	143	93	48	18	○
17.8		DPC-C105Y1780-18A	143	93	48	18	○
18		DPC-C105Y1800-18A	143	93	48	18	○
18.5		DPC-C105Y1850-20A	153	101	50	20	○
18.8		DPC-C105Y1880-20A	153	101	50	20	○
19		DPC-C105Y1900-20A	153	101	50	20	○
19.05	3/4	DPC-C105Y1905-20A	153	101	50	20	○
19.5		DPC-C105Y1950-20A	153	101	50	20	○
20		DPC-C105Y2000-20A	153	101	50	20	○

Stock ● Available ○ production to order

DPC Line - Cutting Data

internal coolant

ISO	MC No.	Component material	Hardness Brinell	Cutting speed VC(m/min)		
				Min.	Start	Max.
P	**Unalloyed steel**					
	P1.1.Z.AN	C = 0.05 – 0.1%	125	90	130	170
	P1.1.Z.AN	C = 0.1-0.25%	125	90	130	170
	P1.2.Z.AN	C = 0.25-0.55%	150	90	120	170
	P1.3.Z.AN	C = 0.55-0.80%	170	90	120	170
	High carbon steel					
	P1.3.Z.AN	Carbon tool steel	210	100	110	150
	Low alloy steel					
	P2.1.Z.AN	Non-hardened	175	80	110	160
	P2.5.Z.HT	Hardeded and tempered	275	50	70	90
	P2.5.Z.HT	Hardeded and tempered	350	40	50	70
	High alloy steel					
	P3.0.Z.AN	Annealed	200	40	80	90
	P3.0.Z.HT	Hardened tool steel	300	40	50	70
	Steel castings					
	P1.5.C.UT	Unalloyed	150	80	110	140
	P2.6.C.UT	Low-alloy (alloying elements ⩽5%)	200	80	110	120

Drill diameter(mm)	Feed Fn(mm/r)*		
	Min.	Start	Max.
3	0.06	0.1	0.13
4	0.07	0.11	0.14
6	0.11	0.18	0.24
8	0.16	0.21	0.25
10	0.19	0.23	0.27
12	0.22	0.25	0.29
16	0.23	0.28	0.33
20	0.26	0.3	0.34

1.Cutting data is suitable for internal coolant

2.Coolant pressure recommendation min. 20bar

3.In case component material hardness increase, please decrease cutting speed proportionally

4.Under external coolant condition, please adjust cutting speed to secure good chips formation and evacuation

5.Under external coolant condition, please decrease feed per revolution to secure chips evacuation

DPC Line - Cutting Data

internal coolant

ISO	MC No.	Component material	Hardness Brinell	Cutting speed VC(m/min)		
				Min.	Start	Max.
M	**Austenitic stainless steel**					
	M1.0.C.UT	Cast+untreated	165	48	60	72
	M1.0.Z.AQ	Annealed/quenched	200	48	60	72
	M1.0.Z.PH	PH-hardened	350	44	55	66
	M1.1.Z.AQ	Machinability improved	165	48	60	72
	M1.2.Z.AQ	Free cutting	200	48	60	72
	M1.3.C.AQ	Ti-stabilized+cast	200	48	60	72
	M1.3.Z.AQ	Ti-stabilized	200	48	60	72
	M1.4.Z.AQ	High strength	250	64	80	96
	Super austenitic (Ni>20%) stainless steel					
	M2.0.C.AQ	Cast+annealed/quenched	165	30	40	50
	M2.0.Z.AQ	Annealed/quenched	200	30	40	50
	Duplex (austenitic/ferritic) stainless steel					
	M3.1.Z.AQ >60%	(N<0.10%)>60% ferrite (N<0.10%)	250	40	50	70
	M3.2.Z.AQ <60%	(N⩾0.10%)<60% ferrite (N⩾0.10%)	250	40	50	70

Drill diameter(mm)	Feed Fn(mm/r)*		
	Min.	Start	Max.
3	0.05	0.07	0.1
4	0.08	0.1	0.12
6	0.09	0.11	0.13
8	0.1	0.12	0.14
10	0.13	0.14	0.17
12	0.13	0.16	0.19
16	0.14	0.2	0.23
20	0.17	0.22	0.25

1.Cutting data is suitable for internal coolant

2.Coolant pressure recommendation min. 20bar

3.In case component material hardness increase, please decrease cutting speed proportionally

4.Under external coolant condition, please adjust cutting speed to secure good chips formation and evacuation

5.Under external coolant condition, please decrease feed per revolution to secure chips evacuation

DPC Line - Cutting Data

internal coolant

ISO	MC No.	Component material	Hardness Brinell	Cutting speed VC(m/min)		
				Min.	Start	Max.
K	**Austenitic stainless steel**					
	K1.1.C.NS	Ferritic Pearlitic	200	80	100	120
	Duplex (austenitic/ferritic) stainless steel					
	K2.1.C.UT	Low tensile strength	180	100	120	140
	K2.2.C.UT	High tensile strength	245	80	100	120
	K2.3.C.UT	High tensile strength	175	100	120	140
	Super austenitic (Ni>20%) stainless steel					
	K3.1.C.UT	Ferritic Pearlitic	155	100	120	140
	K3.2.C.UT	Perlitic	215	80	100	120
	K3.3.C.UT	Perlitic	265	100	120	140
	K3.5.C.UT	Perlitic	190	100	120	140
	K5.1.C.UT	ADI – Ausferritic Ductile Iron	300	60	80	100

Drill diameter(mm)	Feed Fn(mm/r)*		
	Min.	Start	Max.
3	0.08	0.1	0.12
4	0.1	0.12	0.14
6	0.12	0.16	0.18
8	0.16	0.2	0.24
10	0.2	0.25	0.3
12	0.22	0.28	0.33
16	0.25	0.32	0.38
20	0.26	0.34	0.4

1.Cutting data is suitable for internal coolant

2.Coolant pressure recommendation min. 20bar

3.In case component material hardness increase, please decrease cutting speed proportionally

4.Under external coolant condition, please adjust cutting speed to secure good chips formation and evacuation

5.Under external coolant condition, please decrease feed per revolution to secure chips evacuation

DPC Line - Cutting Data

internal coolant

ISO	MC No.	Component material	Hardness Brinell	Cutting speed VC(m/min)	Drill diameter (mm)			
					3-6	6.01-10	10.01-14	14.01-20
					Feed Fn(mm/r) *			
S	S1.0.U.AN	Hardened HRSA	200	15 - 25	0.06-0.12	0.08-0.14	0.10-0.14	0.12-0.16
	S1.0.U.AG		280	15 - 25	0.06-0.12	0.08-0.14	0.10-0.14	0.12-0.16
	S2.0.Z.AN	Nickel base HRSA	250	15 - 25	0.06-0.12	0.08-0.14	0.10-0.14	0.12-0.16
	S2.0.Z.AG		350	15 - 25	0.06-0.12	0.08-0.14	0.10-0.14	0.12-0.16
	S2.0.Z.UT		275	15 - 25	0.06-0.12	0.08-0.14	0.10-0.14	0.12-0.16
	S2.0.Z.NS		320	15 - 25	0.06-0.12	0.08-0.14	0.10-0.14	0.12-0.16
	S3.0.Z.AN	Cobalt base HRSA	200	15 - 25	0.06-0.12	0.08-0.14	0.10-0.14	0.12-0.16
	S3.0.Z.AG		300	15 - 25	0.06-0.12	0.08-0.14	0.10-0.14	0.12-0.16
	S3.0.C.NS		320	15 - 25	0.06-0.12	0.08-0.14	0.10-0.14	0.12-0.16
	S4.1.Z.UT	Ti alloy	200	40 - 60	0.06-0.12	0.08-0.20	0.14-0.28	0.10-0.16
	S4.2.Z.AN		320	40 - 60	0.06-0.12	0.08-0.20	0.14-0.28	0.16-0.30
	S4.3.Z.AN		330	40 - 60	0.06-0.12	0.08-0.20	0.14-0.28	0.16-0.30
	S4.3.Z.AG		375	40 - 60	0.06-0.12	0.08-0.20	0.14-0.28	0.16-0.30
	S4.4.Z.AN		330	40 - 60	0.06-0.12	0.08-0.20	0.14-0.28	0.16-0.30
	S4.4.Z.AG		410	40 - 60	0.06-0.12	0.08-0.20	0.14-0.28	0.16-0.30

ISO	MC No.	Component material	Hardness Brinell	Cutting speed VC(m/min)	Drill diameter (mm)			
					3-6	6.01-10	10.01-14	14.01-20
					Feed Fn(mm/r) *			
H	H1.1.Z.HA	Hardened HRSA	50	16 - 24	0.05-0.12	0.08-0.14	0.10-0.16	0.12-0.2
	H2.0.C.UT.4	Chilled cast iron	64	14 - 20	0.05-0.12	0.08-0.14	0.10-0.16	0.12-0.2

1.Cutting data is suitable for internal coolant

2.Coolant pressure recommendation min. 20bar

3.In case component material hardness increase, please decrease cutting speed proportionally

4.Under external coolant condition, please adjust cutting speed to secure good chips formation and evacuation

5.Under external coolant condition, please decrease feed per revolution to secure chips evacuation

DPC Line - Cutting Data

internal coolant

ISO	MC No.	Component material	Hardness Brinell	Cutting speed VC(m/min)		
				Min.	Start	Max.
N	Aluminium					
	N1.2.Z.UT	Commercial pure	60	110	150	180
	N1.2.Z.AG	AlSi alloys, Si ⩽ 1%	100	110	150	180
	N1.3.C.UT	Cast, non-aging	75	110	150	180
	N1.3.C.UT	Cast or cast and aged	90	110	130	160
	N1.4.C.NS	AlSi cast alloys, Si ⩾ 13%	130	80	100	120
	Copper based alloys					
	N3.3.U.UT	Free cutting alloys	110	70	90	110
	N3.1.U.UT	Non-leaded copper alloys (incl. electrolytic copper)	100	70	80	100

Drill diameter(mm)	Feed Fn(mm/r)*		
	Min.	Start	Max.
3	0.08	0.18	0.28
4	0.1	0.19	0.28
6	0.16	0.28	0.35
8	0.16	0.2	0.24
10	0.2	0.4	0.8
12	0.22	0.5	0.8
16	0.3	0.6	1
20	0.3	0.6	1

1.Cutting data is suitable for internal coolant

2.Coolant pressure recommendation min. 20bar

3.In case component material hardness increase, please decrease cutting speed proportionally

4.Under external coolant condition, please adjust cutting speed to secure good chips formation and evacuation

5.Under external coolant condition, please decrease feed per revolution to secure chips evacuation

◆ Stainless Steel Carbide Drill - DMC Line

DMC Features & Benefits - Internal Coolant

Chips evacuation improvement thanks to chips flute new design

Advanced ER treatment applied on cutting edge, which reduce risk of cutting edge breakage

AlCrN coating

Curve cutting edge generates low cutting force

C-angle protection of the tool tip ensures its strength

Variant clearance angle which provide cutting edge reliability

Special chisel edge design ensures centering capability

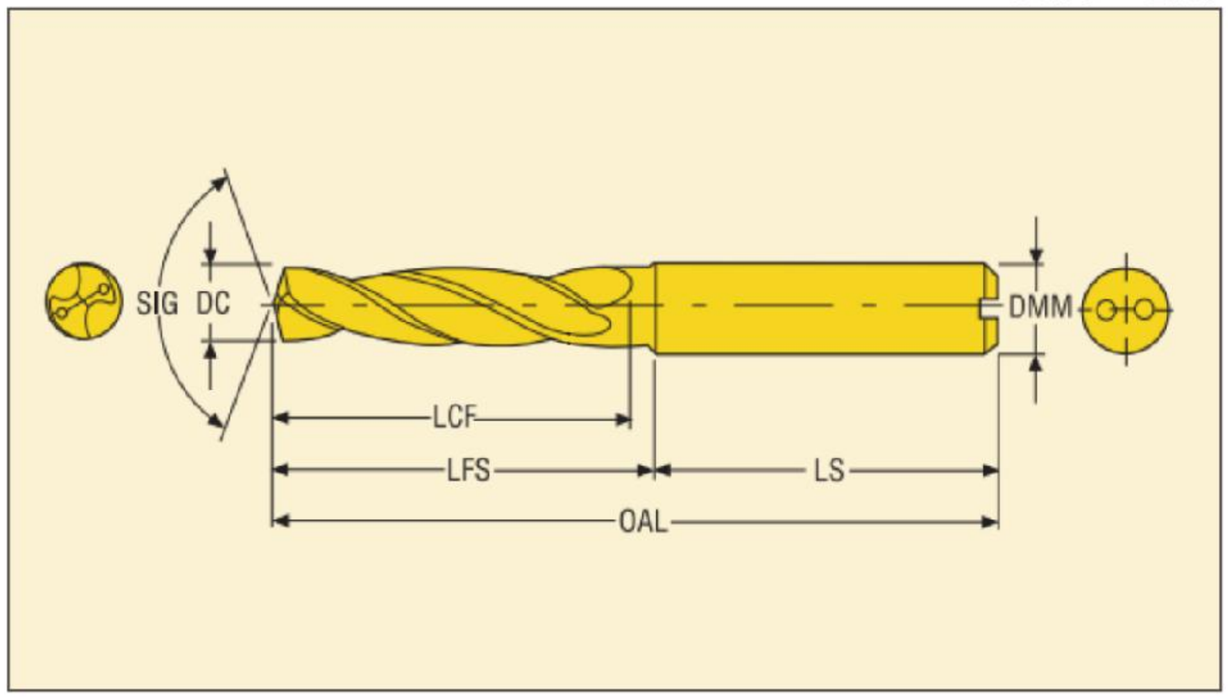
ISO material groups

M

Overview	Application
· General purpose machining for stainless steel	· Cover both stable and unstable cutting conditions
· Including austenitic SS, super austenitic SS, ferritic SS, and duplex stainless steel	
· Hole tolerance H8-H9	
· Diameter range: 3.0-20mm	· Drilling depth 3xD 5xD
· Accept non-standard customization	· Provide internal coolant solutions

Drilling depth: 3xD

DMC – Line



- Internal coolant
- Point angle: 140°
- Coating: AlCrN
- Shank diameter tolerance: h6
- Max. number of regrinds: 5
- For cutting data see page 35

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
3		DMC-C103A0300-04A	62	20	36	4	●
3.1		DMC-C103A0310-04A	62	20	36	4	●
3.17	1/8	DMC-C103A0317-04A	62	20	36	4	●
3.2		DMC-C103A0320-04A	62	20	36	4	●
3.3		DMC-C103A0330-04A	62	20	36	4	●
3.4		DMC-C103A0340-04A	62	20	36	4	●
3.5		DMC-C103A0350-04A	62	20	36	4	●
3.55		DMC-C103A0355-04A	62	20	36	4	●
3.57	9/64	DMC-C103A0357-04A	62	20	36	4	●
3.6		DMC-C103A0360-04A	62	20	36	4	●
3.7		DMC-C103A0370-04A	62	20	36	4	●
3.8		DMC-C103A0380-04A	66	24	36	4	●
3.9		DMC-C103A0390-04A	66	24	36	4	●
3.97	5/32	DMC-C103A0397-04A	66	24	36	4	●
4		DMC-C103A0400-04A	66	24	36	4	●
4.1		DMC-C103A0410-06A	66	24	36	6	●
4.2		DMC-C103A0420-06A	66	24	36	6	●
4.3		DMC-C103A0430-06A	66	24	36	6	●
4.37	11/64	DMC-C103A0437-06A	66	24	36	6	●
4.4		DMC-C103A0440-06A	66	24	36	6	●
4.5		DMC-C103A0450-06A	66	24	36	6	●
4.6		DMC-C103A0460-06A	66	24	36	6	●
4.7		DMC-C103A0470-06A	66	24	36	6	●
4.76	3/16	DMC-C103A0476-06A	66	28	36	6	●
4.8		DMC-C103A0480-06A	66	28	36	6	●
4.9		DMC-C103A0490-06A	66	28	36	6	●
5		DMC-C103A0500-06A	66	28	36	6	●
5.1		DMC-C103A0510-06A	66	28	36	6	●
5.16	13/64	DMC-C103A0516-06A	66	28	36	6	●
5.2		DMC-C103A0520-06A	66	28	36	6	●
5.3		DMC-C103A0530-06A	66	28	36	6	●
5.4		DMC-C103A0540-06A	66	28	36	6	●
5.5		DMC-C103A0550-06A	66	28	36	6	●
5.56	7/32	DMC-C103A0556-06A	66	28	36	6	●

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
5.6		DMC-C103A0560-06A	66	28	36	6	
5.7		DMC-C103A0570-06A	66	28	36	6	
5.8		DMC-C103A0580-06A	66	28	36	6	
5.9		DMC-C103A0590-06A	66	28	36	6	
5.95	15/64	DMC-C103A0595-06A	66	28	36	6	
6		DMC-C103A0600-06A	66	28	36	6	
6.1		DMC-C103A0610-08A	79	34	36	8	
6.2		DMC-C103A0620-08A	79	34	36	8	
6.3		DMC-C103A0630-08A	79	34	36	8	
6.35	1/4	DMC-C103A0635-08A	79	34	36	8	
6.4		DMC-C103A0640-08A	79	34	36	8	
6.5		DMC-C103A0650-08A	79	34	36	8	
6.6		DMC-C103A0660-08A	79	34	36	8	
6.7		DMC-C103A0670-08A	79	34	36	8	
6.75	17/64	DMC-C103A0675-08A	79	34	36	8	
6.8		DMC-C103A0680-08A	79	34	36	8	
6.9		DMC-C103A0690-08A	79	34	36	8	
7		DMC-C103A0700-08A	79	34	36	8	
7.1		DMC-C103A0710-08A	79	41	36	8	
7.14	9/32	DMC-C103A0714-08A	79	41	36	8	
7.2		DMC-C103A0720-08A	79	41	36	8	
7.3		DMC-C103A0730-08A	79	41	36	8	
7.4		DMC-C103A0740-08A	79	41	36	8	
7.5		DMC-C103A0750-08A	79	41	36	8	
7.54	19/64	DMC-C103A0754-08A	79	41	36	8	
7.6		DMC-C103A0760-08A	79	41	36	8	
7.7		DMC-C103A0770-08A	79	41	36	8	
7.8		DMC-C103A0780-08A	79	41	36	8	
7.9		DMC-C103A0790-08A	79	41	36	8	
7.94	5/16	DMC-C103A0794-08A	79	41	36	8	
8		DMC-C103A0800-08A	79	41	36	8	
8.1		DMC-C103A0810-10A	89	47	40	10	
8.2		DMC-C103A0820-10A	89	47	40	10	
8.3		DMC-C103A0830-10A	89	47	40	10	
8.33	21/64	DMC-C103A0833-10A	89	47	40	10	
8.4		DMC-C103A0840-10A	89	47	40	10	
8.5		DMC-C103A0850-10A	89	47	40	10	
8.6		DMC-C103A0860-10A	89	47	40	10	
8.7		DMC-C103A0870-10A	89	47	40	10	
8.73	11/32	DMC-C103A0873-10A	89	47	40	10	
8.8		DMC-C103A0880-10A	89	47	40	10	
8.9		DMC-C103A0890-10A	89	47	40	10	
9		DMC-C103A0900-10A	89	47	40	10	
9.1		DMC-C103A0910-10A	89	47	40	10	
9.13	23/64	DMC-C103A0913-10A	89	47	40	10	
9.2		DMC-C103A0920-10A	89	47	40	10	
9.3		DMC-C103A0930-10A	89	47	40	10	
9.4		DMC-C103A0940-10A	89	47	40	10	
9.5		DMC-C103A0950-10A	89	47	40	10	

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
9.52	3/8	DMC-C103A0952-10A	89	47	40	10	
9.6		DMC-C103A0960-10A	89	47	40	10	
9.7		DMC-C103A0970-10A	89	47	40	10	
9.8		DMC-C103A0980-10A	89	47	40	10	
9.9		DMC-C103A0990-10A	89	47	40	10	
9.92	25/64	DMC-C103A0992-10A	89	47	40	10	
10		DMC-C103A1000-10A	89	47	40	10	
10.1		DMC-C103A1010-12A	102	55	45	12	
10.2		DMC-C103A1020-12A	102	55	45	12	
10.3		DMC-C103A1030-12A	102	55	45	12	
10.32	13/32	DMC-C103A1032-12A	102	55	45	12	
10.4		DMC-C103A1040-12A	102	55	45	12	
10.5		DMC-C103A1050-12A	102	55	45	12	
10.6		DMC-C103A1060-12A	102	55	45	12	
10.7		DMC-C103A1070-12A	102	55	45	12	
10.72	27/64	DMC-C103A1072-12A	102	55	45	12	
10.8		DMC-C103A1080-12A	102	55	45	12	
10.9		DMC-C103A1090-12A	102	55	45	12	
11		DMC-C103A1100-12A	102	55	45	12	
11.1		DMC-C103A1110-12A	102	55	45	12	
11.11	7/16	DMC-C103A1111-12A	102	55	45	12	
11.2		DMC-C103A1120-12A	102	55	45	12	
11.3		DMC-C103A1130-12A	102	55	45	12	
11.4		DMC-C103A1140-12A	102	55	45	12	
11.5		DMC-C103A1150-12A	102	55	45	12	
11.51	29/64	DMC-C103A1151-12A	102	55	45	12	
11.6		DMC-C103A1160-12A	102	55	45	12	
11.7		DMC-C103A1170-12A	102	55	45	12	
11.8		DMC-C103A1180-12A	102	55	45	12	
11.9		DMC-C103A1190-12A	102	55	45	12	
11.91	15/32	DMC-C103A1191-12A	102	55	45	12	
12		DMC-C103A1200-12A	102	55	45	12	
12.1		DMC-C103A1210-14A	107	60	45	14	
12.2		DMC-C103A1220-14A	107	60	45	14	
12.3	31/64	DMC-C103A1230-14A	107	60	45	14	
12.4		DMC-C103A1240-14A	107	60	45	14	
12.5		DMC-C103A1250-14A	107	60	45	14	
12.6		DMC-C103A1260-14A	107	60	45	14	
12.7	1/2	DMC-C103A1270-14A	107	60	45	14	
12.8		DMC-C103A1280-14A	107	60	45	14	
12.9		DMC-C103A1290-14A	107	60	45	14	
13		DMC-C103A1300-14A	107	60	45	14	
13.1		DMC-C103A1310-14A	107	60	45	14	
13.2		DMC-C103A1320-14A	107	60	45	14	
13.3		DMC-C103A1330-14A	107	60	45	14	
13.4		DMC-C103A1340-14A	107	60	45	14	
13.49	17/32	DMC-C103A1349-14A	107	60	45	14	
13.5		DMC-C103A1350-14A	107	60	45	14	
13.6		DMC-C103A1360-14A	107	60	45	14	

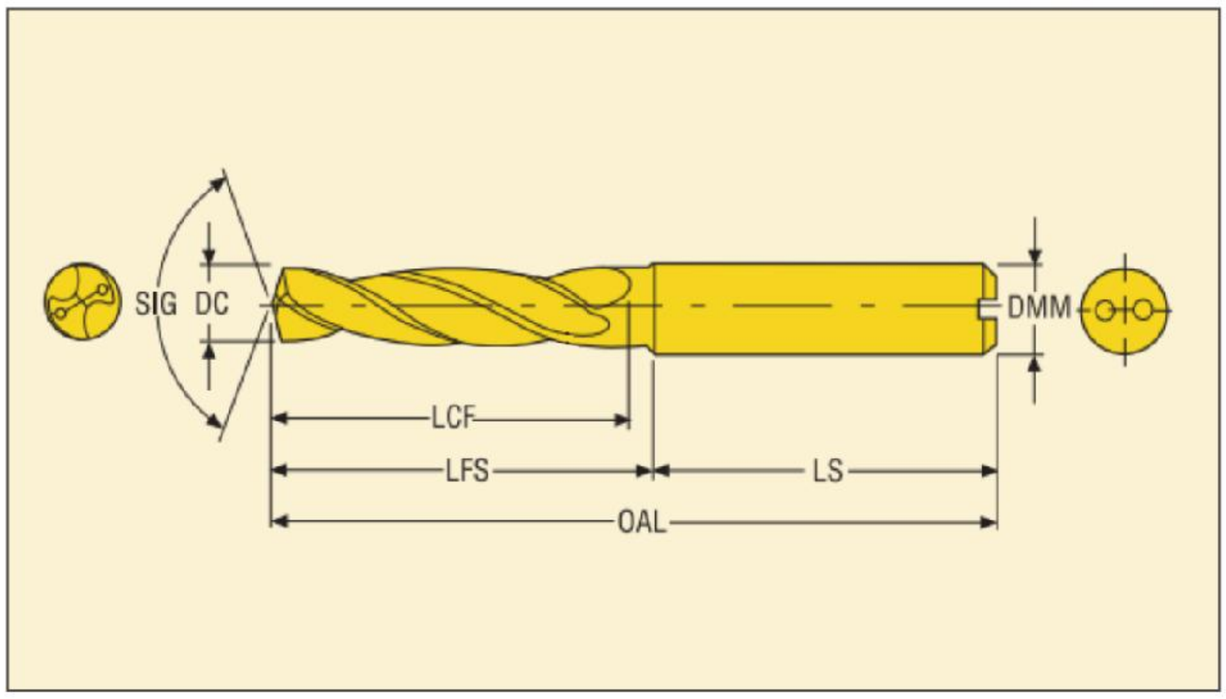
DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
13.7		DMC-C103A1370-14A	107	60	45	14	●
13.8		DMC-C103A1380-14A	107	60	45	14	●
13.89	35/64	DMC-C103A1389-14A	107	60	45	14	●
13.9		DMC-C103A1390-14A	107	60	45	14	●
14		DMC-C103A1400-14A	107	60	45	14	●
14.1		DMC-C103A1410-16A	115	65	48	16	●
14.2		DMC-C103A1420-16A	115	65	48	16	●
14.25		DMC-C103A1425-16A	115	65	48	16	●
14.29	9/16	DMC-C103A1429-16A	115	65	48	16	●
14.3		DMC-C103A1430-16A	115	65	48	16	●
14.4		DMC-C103A1440-16A	115	65	48	16	●
14.5		DMC-C103A1450-16A	115	65	48	16	●
14.6		DMC-C103A1460-16A	115	65	48	16	●
14.69	37/64	DMC-C103A1469-16A	115	65	48	16	●
14.7		DMC-C103A1470-16A	115	65	48	16	●
14.8		DMC-C103A1480-16A	115	65	48	16	●
14.9		DMC-C103A1490-16A	115	65	48	16	●
15		DMC-C103A1500-16A	115	65	48	16	●
15.1		DMC-C103A1510-18A	115	65	48	16	●
15.2		DMC-C103A1520-16A	115	65	48	16	●
15.3		DMC-C103A1530-16A	115	65	48	16	●
15.4		DMC-C103A1540-16A	115	65	48	16	●
15.5		DMC-C103A1550-16A	115	65	48	16	●
15.6		DMC-C103A1560-16A	115	65	48	16	●
15.7		DMC-C103A1570-16A	115	65	48	16	●
15.8		DMC-C103A1580-16A	115	65	48	16	●
15.87	5/8	DMC-C103A1587-16A	115	65	48	16	●
15.9		DMC-C103A1590-16A	115	65	48	16	●
16		DMC-C103A1600-16A	115	65	48	16	●
16.5		DMC-C103A1650-18A	123	73	48	18	●
16.8		DMC-C103A1680-18A	123	73	48	18	●
17		DMC-C103A1700-18A	123	73	48	18	●
17.5		DMC-C103A1750-18A	123	73	48	18	●
17.8		DMC-C103A1780-18A	123	73	48	18	●
18		DMC-C103A1800-18A	123	73	48	18	●
18.5		DMC-C103A1850-20A	131	79	50	20	●
18.8		DMC-C103A1880-20A	131	79	50	20	●
19		DMC-C103A1900-20A	131	79	50	20	●
19.05	3/4	DMC-C103A1905-20A	131	79	50	20	●
19.5		DMC-C103A1950-20A	131	79	50	20	●
20		DMC-C103A2000-20A	131	79	50	20	●

Stock ● Available ● production to order

Drilling depth: 5xD

- Internal coolant
- Point angle: 140°
- Coating: AlCrN
- Shank diameter tolerance: h6
- Max. number of regrinds: 5
- For cutting data see page 35

DMC – Line



DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
3		DMC-C105A0300-04A	66	26	36	4	
3.1		DMC-C105A0310-04A	66	26	36	4	
3.17	1/8	DMC-C105A0317-04A	66	26	36	4	
3.2		DMC-C105A0320-04A	66	26	36	4	
3.3		DMC-C105A0330-04A	66	26	36	4	
3.4		DMC-C105A0340-04A	66	26	36	4	
3.5		DMC-C105A0350-04A	66	26	36	4	
3.57	9/64	DMC-C105A0357-04A	66	26	36	4	
3.6		DMC-C105A0360-04A	66	26	36	4	
3.7		DMC-C105A0370-04A	66	26	36	4	
3.8		DMC-C105A0380-04A	74	34	36	4	
3.9		DMC-C105A0390-04A	74	34	36	4	
3.97	5/32	DMC-C105A0397-04A	74	34	36	4	
4		DMC-C105A0400-04A	74	34	36	4	
4.1		DMC-C105A0410-06A	74	34	36	6	
4.2		DMC-C105A0420-06A	74	34	36	6	
4.3		DMC-C105A0430-06A	74	34	36	6	
4.37	11/64	DMC-C105A0437-06A	74	34	36	6	
4.4		DMC-C105A0440-06A	74	34	36	6	
4.5		DMC-C105A0450-06A	74	34	36	6	
4.55		DMC-C105A0455-06A	74	34	36	6	
4.6		DMC-C105A0460-06A	74	34	36	6	
4.7		DMC-C105A0470-06A	74	34	36	6	
4.76	3/16	DMC-C105A0476-06A	82	44	36	6	
4.8		DMC-C105A0480-06A	82	44	36	6	
4.9		DMC-C105A0490-06A	82	44	36	6	
5		DMC-C105A0500-06A	82	44	36	6	
5.1		DMC-C105A0510-06A	82	44	36	6	
5.16	13/64	DMC-C105A0516-06A	82	44	36	6	
5.2		DMC-C105A0520-06A	82	44	36	6	
5.3		DMC-C105A0530-06A	82	44	36	6	
5.4		DMC-C105A0540-06A	82	44	36	6	
5.5		DMC-C105A0550-06A	82	44	36	6	
5.55		DMC-C105A0555-06A	82	44	36	6	

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
5.56	7/32	DMC-C105A0556-06A	82	44	36	6	●
5.6		DMC-C105A0560-06A	82	44	36	6	●
5.7		DMC-C105A0570-06A	82	44	36	6	●
5.8		DMC-C105A0580-06A	82	44	36	6	●
5.9		DMC-C105A0590-06A	82	44	36	6	●
5.95	15/64	DMC-C105A0595-06A	82	44	36	6	●
6		DMC-C105A0600-06A	82	44	36	6	●
6.1		DMC-C105A0610-08A	91	53	36	8	●
6.2		DMC-C105A0620-08A	91	53	36	8	●
6.3		DMC-C105A0630-08A	91	53	36	8	●
6.35	1/4	DMC-C105A0635-08A	91	53	36	8	●
6.4		DMC-C105A0640-08A	91	53	36	8	●
6.5		DMC-C105A0650-08A	91	53	36	8	●
6.6		DMC-C105A0660-08A	91	53	36	8	●
6.7		DMC-C105A0670-08A	91	53	36	8	●
6.75	17/64	DMC-C105A0675-08A	91	53	36	8	●
6.8		DMC-C105A0680-08A	91	53	36	8	●
6.9		DMC-C105A0690-08A	91	53	36	8	●
7		DMC-C105A0700-08A	91	53	36	8	●
7.1		DMC-C105A0710-08A	91	53	36	8	●
7.14	9/32	DMC-C105A0714-08A	91	53	36	8	●
7.2		DMC-C105A0720-08A	91	53	36	8	●
7.3		DMC-C105A0730-08A	91	53	36	8	●
7.4		DMC-C105A0740-08A	91	53	36	8	●
7.5		DMC-C105A0750-08A	91	53	36	8	●
7.54	19/64	DMC-C105A0754-08A	91	53	36	8	●
7.6		DMC-C105A0760-08A	91	53	36	8	●
7.7		DMC-C105A0770-08A	91	53	36	8	●
7.8		DMC-C105A0780-08A	91	53	36	8	●
7.9		DMC-C105A0790-08A	91	53	36	8	●
7.94	5/16	DMC-C105A0794-08A	91	53	36	8	●
8		DMC-C105A0800-08A	91	53	36	8	●
8.1		DMC-C105A0810-10A	103	61	40	10	●
8.15		DMC-C105A0815-10A	103	61	40	10	●
8.2		DMC-C105A0820-10A	103	61	40	10	●
8.3		DMC-C105A0830-10A	103	61	40	10	●
8.33	21/64	DMC-C105A0833-10A	103	61	40	10	●
8.4		DMC-C105A0840-10A	103	61	40	10	●
8.5		DMC-C105A0850-10A	103	61	40	10	●
8.6		DMC-C105A0860-10A	103	61	40	10	●
8.7		DMC-C105A0870-10A	103	61	40	10	●
8.73	11/32	DMC-C105A0873-10A	103	61	40	10	●
8.8		DMC-C105A0880-10A	103	61	40	10	●
8.9		DMC-C105A0890-10A	103	61	40	10	●
9		DMC-C105A0900-10A	103	61	40	10	●
9.1		DMC-C105A0910-10A	103	61	40	10	●
9.13	23/64	DMC-C105A0913-10A	103	61	40	10	●
9.2		DMC-C105A0920-10A	103	61	40	10	●
9.3		DMC-C105A0930-10A	103	61	40	10	●

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
9.4		DMC-C105A0940-10A	103	61	40	10	
9.5		DMC-C105A0950-10A	103	61	40	10	
9.52	3/8	DMC-C105A0952-10A	103	61	40	10	
9.55		DMC-C105A0955-10A	103	61	40	10	
9.6		DMC-C105A0960-10A	103	61	40	10	
9.7		DMC-C105A0970-10A	103	61	40	10	
9.8		DMC-C105A0980-10A	103	61	40	10	
9.9		DMC-C105A0990-10A	103	61	40	10	
9.92	25/64	DMC-C105A0992-10A	103	61	40	10	
10		DMC-C105A1000-10A	103	61	40	10	
10.1		DMC-C105A1010-12A	118	71	45	12	
10.2		DMC-C105A1020-12A	118	71	45	12	
10.3		DMC-C105A1030-12A	118	71	45	12	
10.32	13/32	DMC-C105A1032-12A	118	71	45	12	
10.4		DMC-C105A1040-12A	118	71	45	12	
10.5		DMC-C105A1050-12A	118	71	45	12	
10.6		DMC-C105A1060-12A	118	71	45	12	
10.7		DMC-C105A1070-12A	118	71	45	12	
10.71		DMC-C105A1071-12A	118	71	45	12	
10.72	27/64	DMC-C105A1072-12A	118	71	45	12	
10.8		DMC-C105A1080-12A	118	71	45	12	
10.9		DMC-C105A1090-12A	118	71	45	12	
11		DMC-C105A1100-12A	118	71	45	12	
11.1		DMC-C105A1110-12A	118	71	45	12	
11.11	7/16	DMC-C105A1111-12A	118	71	45	12	
11.2		DMC-C105A1120-12A	118	71	45	12	
11.3		DMC-C105A1130-12A	118	71	45	12	
11.4		DMC-C105A1140-12A	118	71	45	12	
11.5		DMC-C105A1150-12A	118	71	45	12	
11.51	29/64	DMC-C105A1151-12A	118	71	45	12	
11.6		DMC-C105A1160-12A	118	71	45	12	
11.7		DMC-C105A1170-12A	118	71	45	12	
11.8		DMC-C105A1180-12A	118	71	45	12	
11.9		DMC-C105A1190-12A	118	71	45	12	
11.91		DMC-C105A1191-12A	118	71	45	12	
12		DMC-C105A1200-12A	118	71	45	12	
12.1		DMC-C105A1210-14A	124	77	45	14	
12.2		DMC-C105A1220-14A	124	77	45	14	
12.3	31/64	DMC-C105A1230-14A	124	77	45	14	
12.4		DMC-C105A1240-14A	124	77	45	14	
12.5		DMC-C105A1250-14A	124	77	45	14	
12.6		DMC-C105A1260-14A	124	77	45	14	
12.7	1/2	DMC-C105A1270-14A	124	77	45	14	
12.8		DMC-C105A1280-14A	124	77	45	14	
12.9		DMC-C105A1290-14A	124	77	45	14	
13		DMC-C105A1300-14A	124	77	45	14	
13.1		DMC-C105A1310-14A	124	77	45	14	
13.2		DMC-C105A1320-14A	124	77	45	14	
13.25		DMC-C105A1325-14A	124	77	45	14	

DC (mm)	DC (Inch)	Ordering Code	Dimensions in mm				Stock
			OAL	LCF	LS	DMM	
13.3		DMC-C105A1330-14A	124	77	45	14	●
13.4		DMC-C105A1340-14A	124	77	45	14	●
13.49	17/32	DMC-C105A1349-14A	124	77	45	14	●
13.5		DMC-C105A1350-14A	124	77	45	14	●
13.6		DMC-C105A1360-14A	124	77	45	14	●
13.7		DMC-C105A1370-14A	124	77	45	14	●
13.75		DMC-C105A1375-14A	124	77	45	14	●
13.8		DMC-C105A1380-14A	124	77	45	14	●
13.89	35/64	DMC-C105A1389-14A	124	77	45	14	●
13.9		DMC-C105A1390-14A	124	77	45	14	●
14		DMC-C105A1400-14A	124	77	45	14	●
14.1		DMC-C105A1410-14A	133	83	48	16	●
14.2		DMC-C105A1420-14A	133	83	48	16	●
14.25		DMC-C105A1425-16A	133	83	48	16	●
14.29	9/16	DMC-C105A1429-16A	133	83	48	16	●
14.3		DMC-C105A1430-16A	133	83	48	16	●
14.4		DMC-C105A1440-16A	133	83	48	16	●
14.5		DMC-C105A1450-16A	133	83	48	16	●
14.6		DMC-C105A1460-16A	133	83	48	16	●
14.69	37/64	DMC-C105A1469-16A	133	83	48	16	●
14.7		DMC-C105A1470-16A	133	83	48	16	●
14.8		DMC-C105A1480-16A	133	83	48	16	●
14.9		DMC-C105A1490-16A	133	83	48	16	●
15		DMC-C105A1500-16A	133	83	48	16	●
15.1		DMC-C105A1510-16A	133	83	48	16	●
15.2		DMC-C105A1520-16A	133	83	48	16	●
15.3		DMC-C105A1530-16A	133	83	48	16	●
15.4		DMC-C105A1540-16A	133	83	48	16	●
15.5		DMC-C105A1550-16A	133	83	48	16	●
15.6		DMC-C105A1560-16A	133	83	48	16	●
15.7		DMC-C105A1570-16A	133	83	48	16	●
15.8		DMC-C105A1580-16A	133	83	48	16	●
15.87	5/8	DMC-C105A1587-16A	133	83	48	16	●
15.9		DMC-C105A1590-16A	133	83	48	16	●
16		DMC-C105A1600-16A	133	83	48	16	●
16.5		DMC-C105A1650-18A	143	93	48	18	●
16.8		DMC-C105A1680-18A	143	93	48	18	●
17		DMC-C105A1700-18A	143	93	48	18	●
17.5		DMC-C105A1750-18A	143	93	48	18	●
17.8		DMC-C105A1780-18A	143	93	48	18	●
18		DMC-C105A1800-18A	143	93	48	18	●
18.5		DMC-C105A1850-20A	153	101	50	20	●
18.8		DMC-C105A1880-20A	153	101	50	20	●
19		DMC-C105A1900-20A	153	101	50	20	●
19.05	3/4	DMC-C105A1905-20A	153	101	50	20	●
19.5		DMC-C105A1950-20A	153	101	50	20	●
20		DMC-C105A2000-20A	153	101	50	20	●

Stock ● Available ● production to order

DMC Line - Cutting Data

internal coolant

ISO	MC No.	Component material	Hardness Brinell	Cutting speed VC(m/min)		
				Min.	Start	Max.
M	Austenitic stainless steel					
	M1.0.C.UT	Cast+untreated	165	48	60	72
	M1.0.Z.AQ	Annealed/quenched	200	48	60	72
	M1.0.Z.PH	PH-hardened	350	44	55	66
	M1.1.Z.AQ	Machinability improved	165	48	60	72
	M1.2.Z.AQ	Free cutting	200	48	60	72
	M1.3.C.AQ	Ti-stabilized+cast	200	48	60	72
	M1.3.Z.AQ	Ti-stabilized	200	48	60	72
	M1.4.Z.AQ	High strength	250	48	60	72
	Super austenitic (Ni>20%) stainless steel					
	M2.0.C.AQ	Cast+annealed/quenched	165	44	50	68
	M2.0.Z.AQ	Annealed/quenched	200	44	50	68
	Duplex (austenitic/ferritic) stainless steel					
	M3.1.Z.AQ >60%	(N<0.10%)>60% ferrite (N<0.10%)	250	50	65	80
	M3.2.Z.AQ <60%	(N≥0.10%)<60% ferrite (N≥0.10%)	250	50	65	80

Drill diameter(mm)	Feed Fn(mm/r)*		
	Min.	Start	Max.
3	0.05	0.07	0.1
4	0.08	0.1	0.12
6	0.09	0.11	0.13
8	0.1	0.12	0.14
10	0.13	0.14	0.17
12	0.13	0.16	0.19
16	0.14	0.2	0.23
20	0.17	0.22	0.25

1.Cutting data is suitable for internal coolant

2.Coolant pressure recommendation min. 20bar

3.In case component material hardness increase, please decrease cutting speed proportionally

4.Under external coolant condition, please adjust cutting speed to secure good chips formation and evacuation

5.Under external coolant condition, please decrease feed per revolution to secure chips evacuation

◆ Non standard customization

Non standard design and manufacturing

Carbide Twists drill

Drilling depth	7xD 8xD etc.	
Processing materials	Structural steel, alloy steel, stainless steel, gray iron, ductile iron, non-ferrous metals etc.	
Characteristic	・Cover both stable and unstable cutting conditions. ・Curve cutting edge generates low cutting force ・Good centering performance thanks to unique design on central cutting edge. ・Good chips evacuation thanks to chips flute optimization design.	

Deep hold drill

Drilling depth	10xD 12xD 15xD 20xD 30xD 40xD etc.	
Processing materials	Structural steel, alloy steel, stainless steel, gray iron, ductile iron, non-ferrous metals etc.	
Characteristic	・Optimized drill center design helps to reduce axial cutting force ・Curve cutting edge generates low cutting force ・Good chips evacuation thanks to chips flute optimization design. ・Advanced ER treatment which reduce the risk of cutting edge breakage	

Step Twists drill

Processing materials	Structural steel, alloy steel, stainless steel, gray iron, ductile iron, non-ferrous metals etc.	
Characteristic	Step hole, chamfering completed in one go	

Straight slot drill

Processing materials	*ductile iron*	
Characteristic	Excellent self centering ability, efficient processing efficiency, high processing precision, good surface smoothness, and suitable for processing short chip materials	

Straight slot step drill

Processing materials	Ductile iron, used in the hydraulic industry	
Characteristic	Step hole, chamfering completed in one go	

Three-edged Drill

Processing materials	Structural steel, alloy steel, stainless steel, gray iron, ductile iron, non-ferrous metals etc.
Characteristic	Unique groove design achieves efficient and stable processing.

Flat bottomed drill

Processing materials	Structural steel, alloy steel, stainless steel, gray iron, ductile iron, non-ferrous metals etc.
Characteristic	Can drill and expand holes without the need for fixed points. Can be used for machining curved surfaces, inclined surfaces, countersunk holes, thin plates, and tap bottom holes.

Reamer

Processing materials	Structural steel, alloy steel, stainless steel, gray iron, ductile iron, non-ferrous metals etc.
Characteristic	The left, straight, and right spiral grooves can be designed according to the needs of workpiece processing

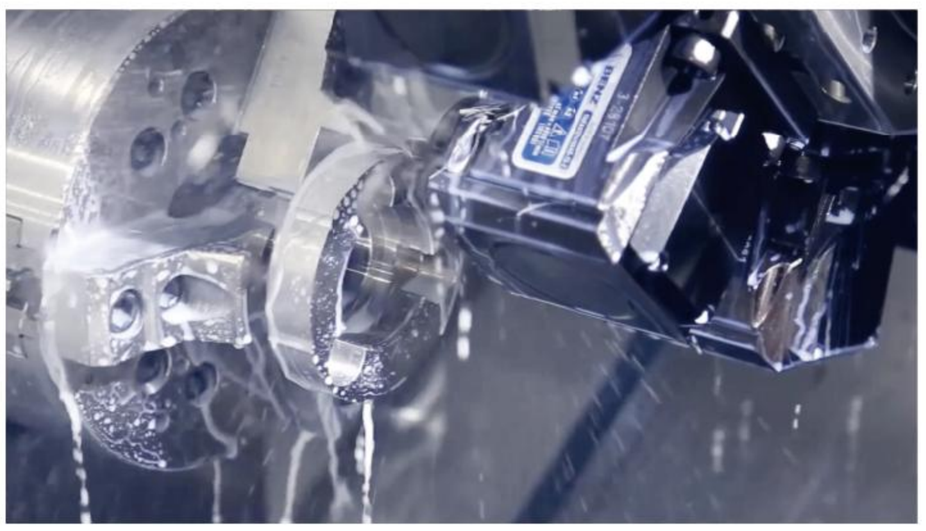
Non standard design

BELZ’s experts provide special tool designing, manufacturing and systematic technical application support strictly according to customer’s machining requirments, which is called BELZ’s customized special tool service.

Non Standard Ordering Process

1 Requirements Communication

2 Solution Confirmation

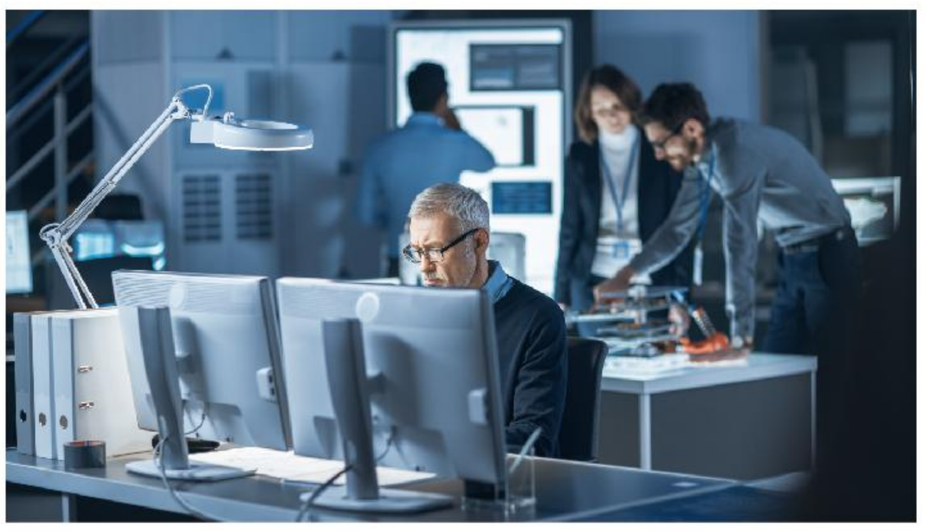


3 Samples Test

4 On-site Technical Service

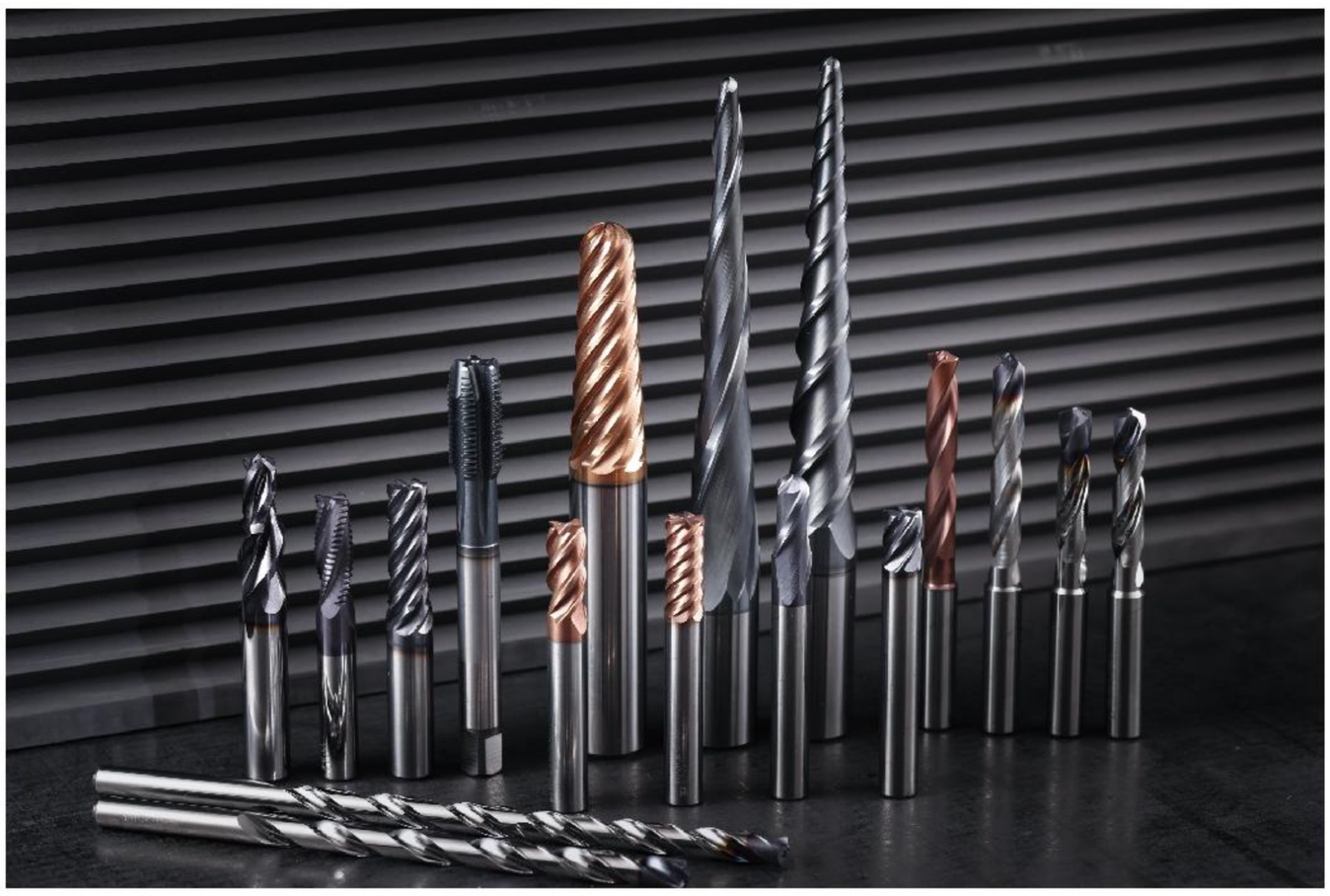
5 Solution Improving

6 Meet Requirements



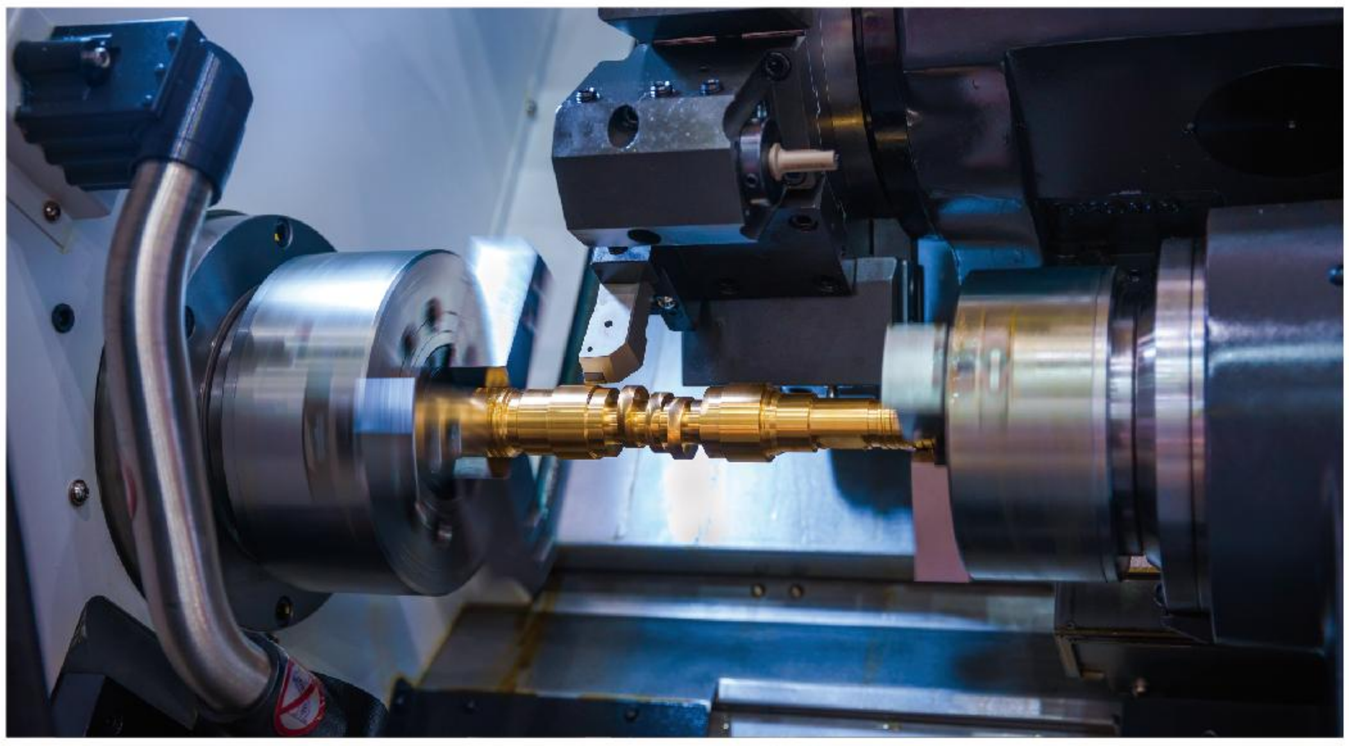
7 Constant Optimization

Advantages of customized Special Tool Service



1.Available for all kinds of metal cutting tools

Our customized special tool service covers all ranges of metal cutting tools such as drilling, milling, turning. Therefore in this service, customers come up with machining requirements and we are responsible for the ideal results.



2.Provide total machining solutions

Based on customer's machining conditions, workpiece materals and specific needs, we solve machining problems by one-stop service from providing total machining solutions made to achieve excellent machining effect to designing and manufacturing whole set of cutting tools.

3.Constant optimization and improvement

We do our best to constantly help customers improving and optimizing machining process,reducing costs, raising productivity and competitiveness.

In order to provide customized solution, we require some more detailed information as follows:

Drawing of the workpiece

Material of the Workpiece

Clamping Situation

Machine Data

Purchasing Requirement

◆ Technical information

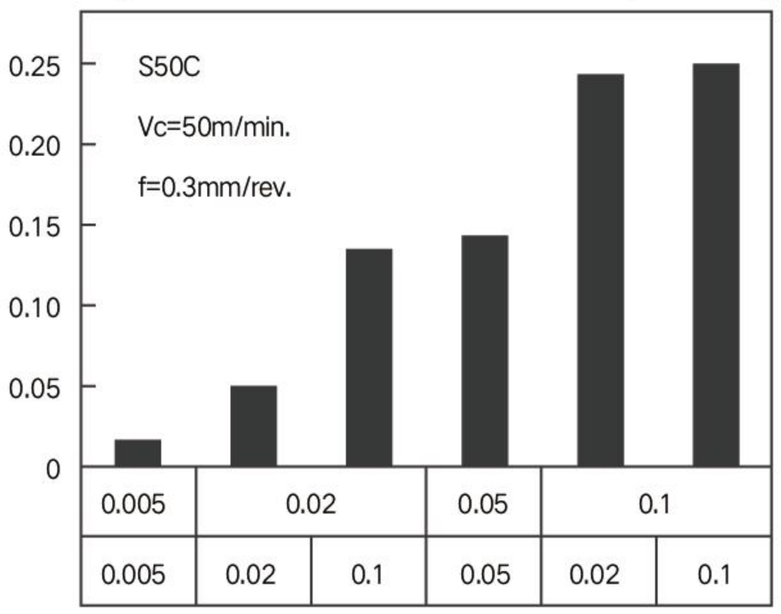
Cutting Definitions and Calculations

Parameter and Unit					
D	Diameter	mm	**Fn**	Feed per revolution	mm/rev
ap	Cutting depth	mm	**Fz**	Feeding per teeth	mm/tooth
ae	Cutting width	mm	**Z**	Number of teeth	
Vf	Feed rate	mm/min	**n**	Spindle speed	rev/min
Vc	Cutting speed	m/min	**L**	Length	mm
Q	Rate of metal removal	cm^3/min	**Tc**	Processing time	min

General formula			
N	Spindle speed	$n = \frac{Vc \cdot 1000}{\pi \cdot D}$	(rev/min)
Vc	Cutting speed	$Vc = \frac{\pi \cdot D \cdot n}{1000}$	(m/min)
Vf	Feed rate	$Vf = fz \cdot z \cdot n$	(mm/min)
fz	Feed per teeth	$fz = \frac{Vf}{z \cdot n}$	(mm)
Q	Rate of metal removal	$Q = \frac{ae \cdot ap \cdot Vf}{1000}$	(cm^3/min)
Tc	Processing time	$Tc = \frac{L}{Vf}$	(mm)

Precautions for Using Hole Machining Tools

<table>
<tr><td rowspan="3">Drill Runout Accuracy</td><td>Drill runout accuracy not only refers to the commonly used indicator of the height difference at the outer cutting edge (B) but also to the runout accuracy at the web thinning area (A) after web thinning. This is equally important.</td><td rowspan="3">Ⓐ Central runout
Ⓑ Peripheral runout

Expand Value (Unit:mm)
 
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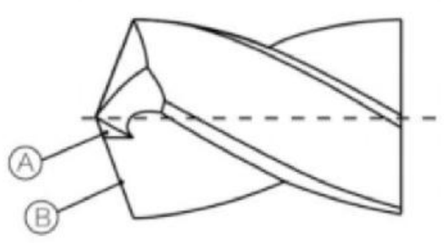
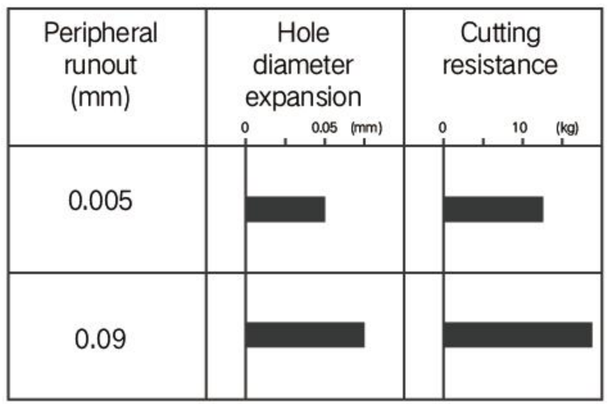
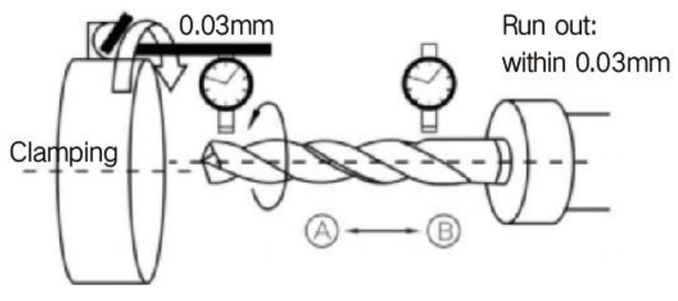
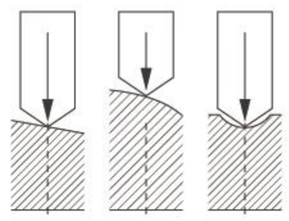
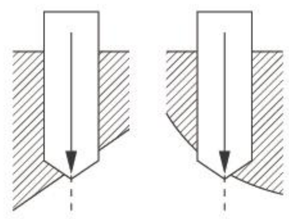
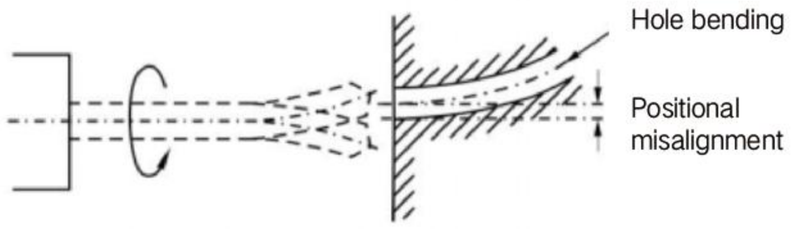
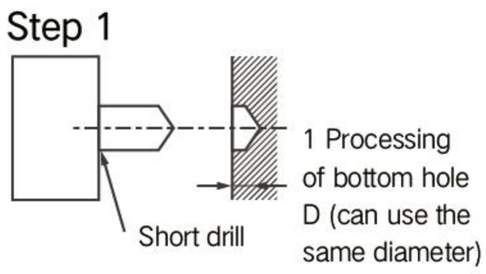
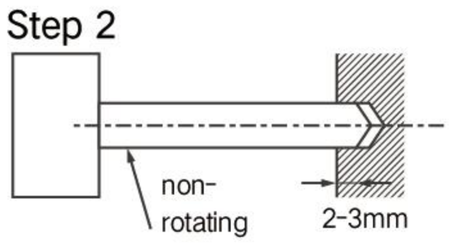
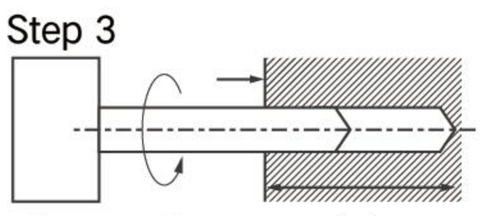
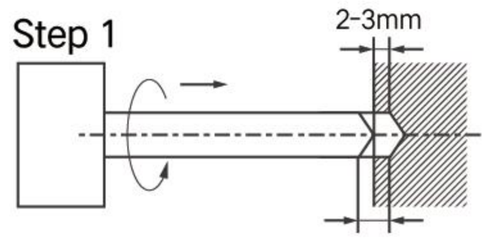
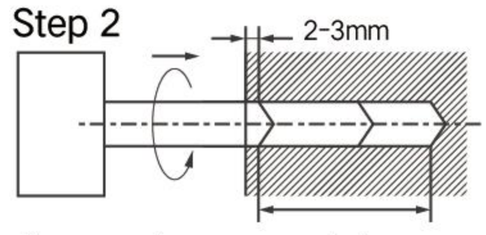
<tr><td> 
</td></tr>
<tr><td>A: Runout after chisel edge thinning
B: Runout after clearance grinding (peripheral cutting edge height difference)</td></tr>
<tr><td>Peripheral runout accuracy of the drill after clamping (when the tool is rotating)</td><td>Please control the peripheral runout accuracy of the drill after clamping (when the tool is rotating) within 0.03mm.

If this value is too large, not only will the hole diameter increase, but the cutting resistance in the horizontal direction will also increase. In cases where the machine tool and workpiece clamping rigidity are low, this could potentially cause the drill to break.</td><td> 
Run out:
within 0.03mm

Cutting resistance refers to the force in the horizontal direction.
Drill:D12.0
Workpiece material:S5OC(HB230)
Cutting condition: Vc=50m/min, f=0.3mm/rev,
Depth=38mm
Water-soluble cutting oil</td></tr>
<tr><td>Radial runout accuracy after drill clamping (when the workpiece material is rotating)</td><td>When using a lathe, please control the radial runout at the cutting edge A of the drill to within 0.03mm, and also adjust the straightness of B to the same degree.</td><td> 
</td></tr>
</table>

The condition of the machined surface and the performance of the drill bit	When there is an inclination or uneven surface: If the shape at the entry or exit of the hole is irregular, please reduce the feed rate to 0.1-0.15 mm/rev.	 Entry  Exit
Usage Method for Deep Hole Drills	When using deep hole drills at high speeds, issues such as shown in the right image can occur. These issues include excessive runout at the drill tip, misalignment at the entry point, hole body bending, and drill breakage.	 Hole bending Positional misalignment
countermeasure	**Method 1**  Step 1 1 Processing of bottom hole D (can use the same diameter) Short drill  Step 2 non-rotating 2-3mm  Step 3 Process under recommended cutting conditions	Method 2 Can reduce bending caused by centrifugal force of the drill bit during low-speed rotation  Step 1 2-3mm (100-300min ')(0.05-0.08mm/rev.)  Step 2 2-3mm Process under recommended cutting conditions

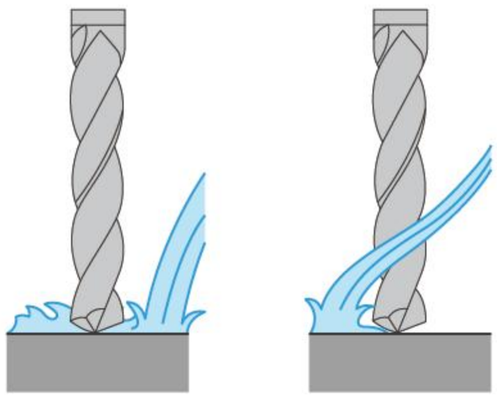
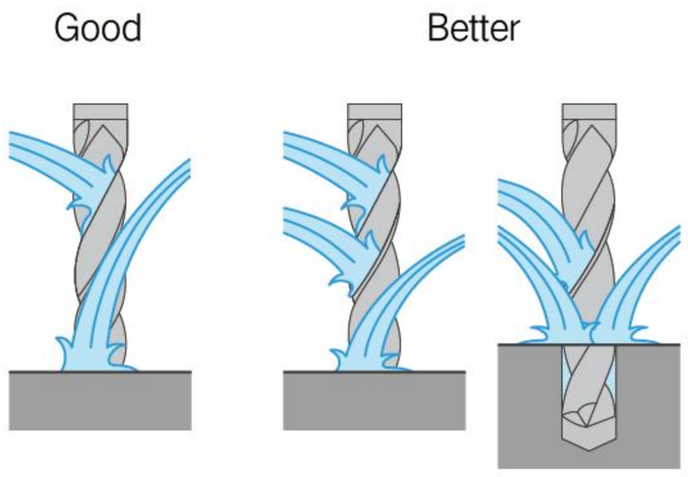
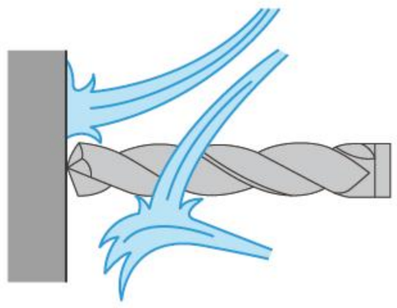
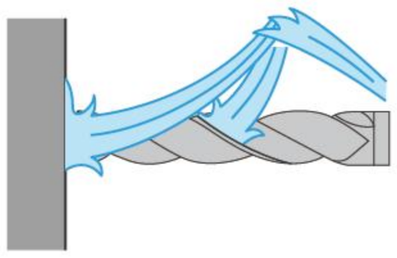
Troubleshooting

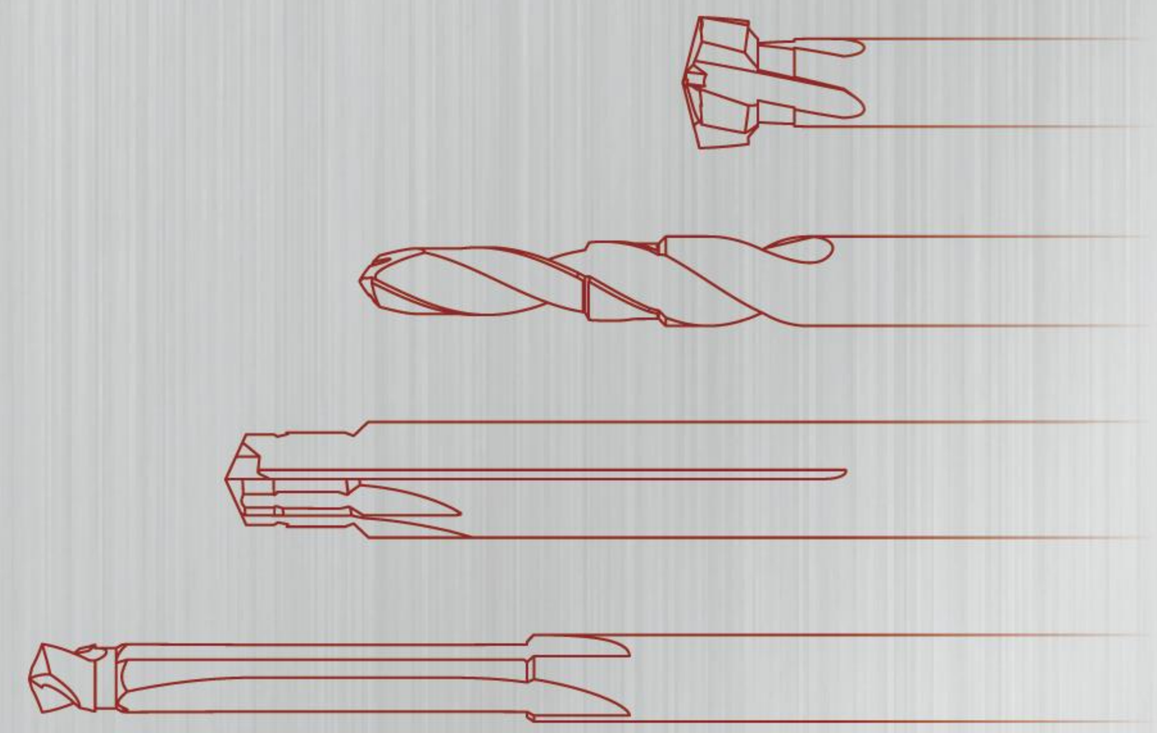
Problem	Source	Soulution
Heavy wear on the cutting corners	Indufficient coolant	Check cooling lubricant,in the case of internal coolant supply,Increase coolant pressure,in the case of external coolant supply,adjust positioning of coolant jet,cool from both sides.
	Workpiece movement	Stabilise workpiece chucking and check stability of machine tool.
	Wrong drill	Check drill type,drilling depth,cooling system,and workpiece material
	Cutting conditions	Reduce cutting speed,increase feed rate
Splintering on the chisel edge	Clamping chuck	Check clamping accuracy. use hydraulic clamping chuck or high-precision chucking system
	Cutting conditions	Decrease feed rate , increase cutting speed.
Built-up egde	Insufficient coolant	Check cooling lubricant,in the case of internal coolant supply,Increase coolant pressure,in the case of external coolant supply,adjust positioning of coolant jet,cool from both sides.
	Cutting conditions	Increase cutting speed by 20-30%
Splintering on the cutting edges	Clamping chuck	Check clamping accuracy and torque transmission. Use Hydraulic clamping chuck or high-precision chucking system.
	Cutting conditions caused by built-up edge	Check cutting values, and possibily increase cutting speeed.
		Examine regularly for built-up edge.
Thermal checking/ comb cracking	Cutting conditions	Adapt coolant and cutting conditions to reduce thermal shock.

Coolant Supply

Internal cooling is always to be recommended when drill depth exceeds 2 X D. Frome a drill depth of 5 X D, it is absolutely necessary. With external cooling, make sure to provide not only sufficient coolant pressure but also the right type of supply.

Wherever possible, three coolant-lubricant jets should hit the twist drill directly

	Bad coolant supply	Good coolant supply
Vertical machining		
Horizontal machining		



SALES

Sales@belz.cc

0086 - 411 - 88530360

TECHNICAL

info@belz.cc

0086 - 411 - 88530360

ADD: NO.16-3, 3rd Shengming Road DD Port, Dalian China

BELZ INC.