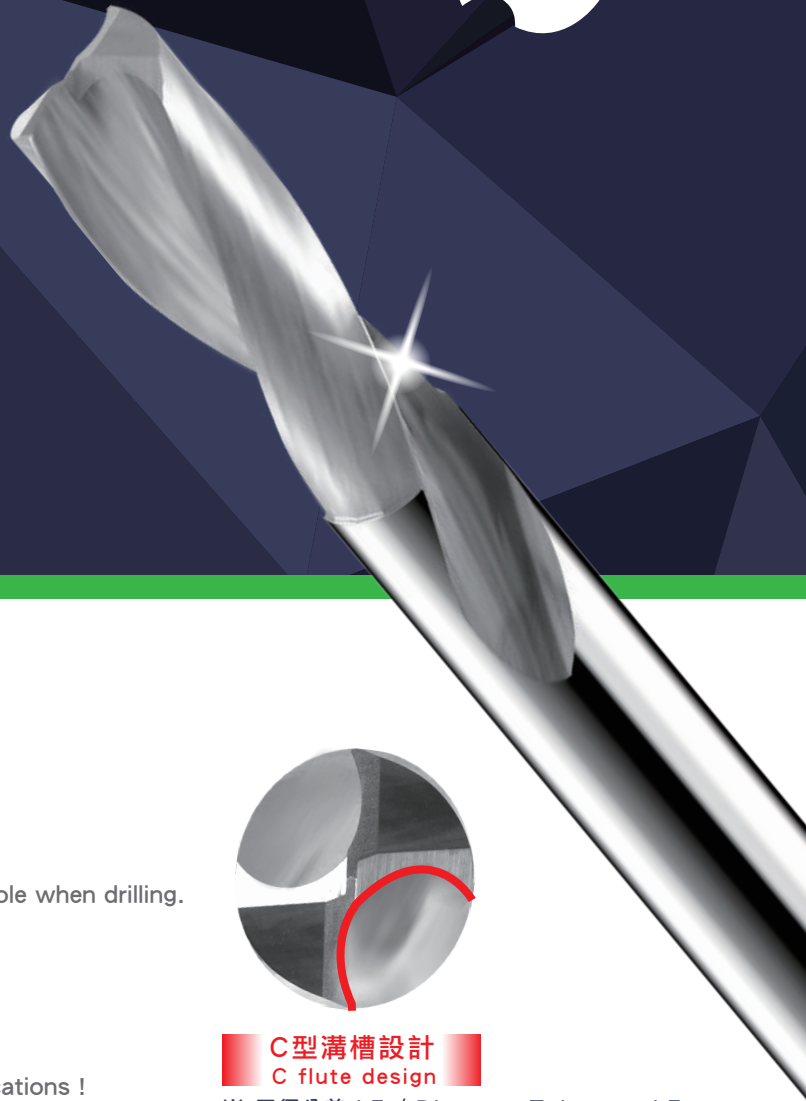


CDFN Series

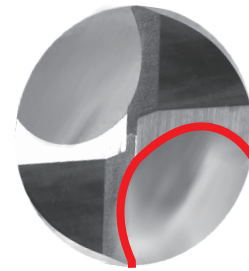
鎢鋼鋁用平底型鑽頭

ALL-NEW Flute Drill For Aluminum



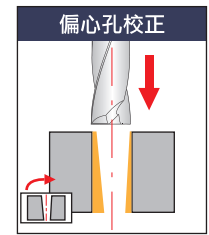
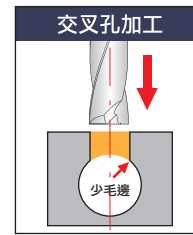
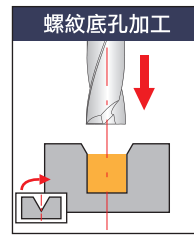
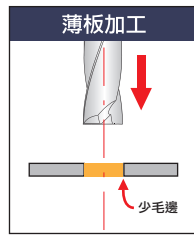
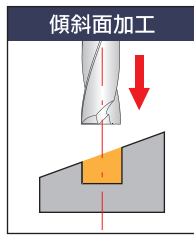
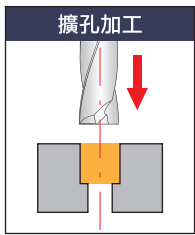
特色 / Features :

- ▶ 鋁合金專用鑽頭 (Al 5052 / 6061 / 7075)。
CDFN Drill For Aluminum Alloys (Al 5052 / 6061 / 7075).
- ▶ 新型幾何設計，使穿孔加工時，減少底孔毛邊。
A whole new geometry desing decrease burr from bottom hole when drilling.
- ▶ 鑽尖角度180° 設計，使加工底孔更佳平整。
Point angle 180 degree makes bottom hole more smoothly.
- ▶ 高效率！高精度！多功能用途！
Precise ! Efficiency ! Performance opens up extensive applications !



C型溝槽設計
C flute design

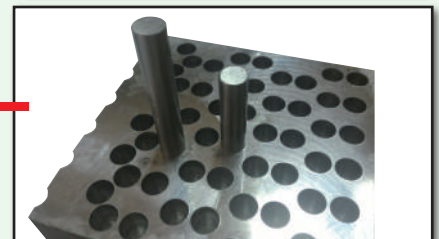
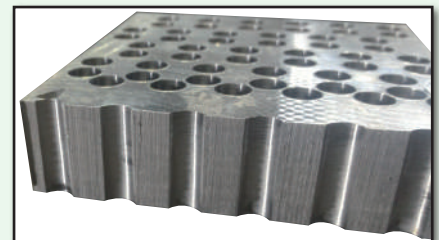
※ 刃徑公差 h7 / Diameter Tolerance h7



切削實例 | Cutting Examples

CMTéc

刀具 Cutter = CDFN20800 $\phi 8$, 2-Flutes
 加工材質 Material = Al 6061
 冷卻方式 Coolant = 水溶性切削油 Wet
 銑削方式 Operation = 盲孔加工 Blind Hole Drilling
 切削速度 Vc = 100m/min
 主軸轉速 S = 4000rpm
 進給速度 F = 500mm/min
 加工深度 Ap = 16mm
 每轉進給量 f = 0.125mm/rev
 機台 Machine = Vertical Machining Center (馬力10HP)
 主軸負載 Spindle Load = 14%

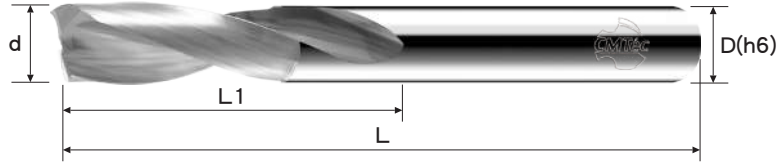


高精度！Efficiency！
 $\phi 7.99$ 圓棒測量OK!
 $\phi 8.00$ 圓棒測量NG!

鎢鋼鋁用平底型鑽頭- 短刃型- 2刃(3倍長)

CARBIDE FLAT DRILLS- For Aluminum- Short Flute- 2F(3xd)

· CDFN20000



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刃徑 d	公差 Tolerance
φ	h7

刃徑 d	溝長 L1	全長 L	柄徑 D	刃數 F	白刀訂購編號 Uncoated Order No.
1.00	3.3	50	3	2	CDFN20100
1.10	3.5	50	3	2	CDFN20110
1.20	3.9	50	3	2	CDFN20120
1.30	4.2	50	3	2	CDFN20130
1.40	4.6	50	3	2	CDFN20140
1.50	4.9	50	3	2	CDFN20150
1.60	5.2	50	3	2	CDFN20160
1.70	5.5	50	3	2	CDFN20170
1.80	5.8	50	3	2	CDFN20180
1.90	6.2	50	3	2	CDFN20190
2.00	9.0	50	4	2	CDFN20200
2.05	11.0	50	4	2	CDFN20205
2.10	11.0	50	4	2	CDFN20210
2.15	11.0	50	4	2	CDFN20215
2.20	11.0	50	4	2	CDFN20220
2.25	11.0	50	4	2	CDFN20225
2.30	11.0	50	4	2	CDFN20230
2.40	11.0	50	4	2	CDFN20240
2.50	11.0	50	4	2	CDFN20250
2.60	11.0	50	4	2	CDFN20260
2.65	11.0	50	4	2	CDFN20265
2.70	14.0	50	4	2	CDFN20270
2.80	14.0	50	4	2	CDFN20280
2.90	14.0	50	4	2	CDFN20290
3.00	14.0	60	6	2	CDFN20300
3.10	15.0	60	6	2	CDFN20310
3.15	15.0	60	6	2	CDFN20315
3.20	15.0	60	6	2	CDFN20320
3.30	15.0	60	6	2	CDFN20330
3.40	16.0	60	6	2	CDFN20340
3.50	16.0	60	6	2	CDFN20350
3.60	16.0	60	6	2	CDFN20360
3.70	18.0	60	6	2	CDFN20370
3.75	18.0	60	6	2	CDFN20375
3.80	18.0	60	6	2	CDFN20380
3.90	18.0	60	6	2	CDFN20390
4.00	18.0	60	6	2	CDFN20400

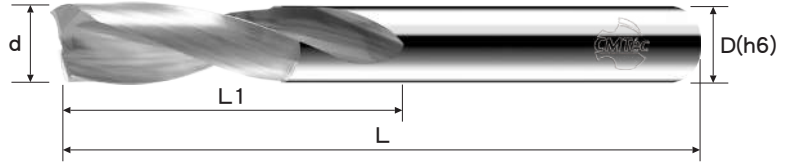
→ 切削條件表 P.577
Cutting Condition

→ 技術資料 P.630
Technical Data

鎢鋼鋁用平底型鑽頭- 短刃型- 2刃(3倍長)

CARBIDE FLAT DRILLS- For Aluminum- Short Flute- 2F(3xd)

· CDFN20000



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刃徑 d	公差 Tolerance
φ	h7

刃徑 d	溝長 L1	全長 L	柄徑 D	刃數 F	白刀訂購編號 Uncoated Order No.
4.10	19	60	6	2	CDFN20410
4.20	19	60	6	2	CDFN20420
4.25	19	60	6	2	CDFN20425
4.30	19	60	6	2	CDFN20430
4.40	21	60	6	2	CDFN20440
4.50	21	60	6	2	CDFN20450
4.60	21	60	6	2	CDFN20460
4.70	22	60	6	2	CDFN20470
4.75	22	60	6	2	CDFN20475
4.80	23	60	6	2	CDFN20480
4.90	23	60	6	2	CDFN20490
5.00	23	60	6	2	CDFN20500
5.10	24	60	6	2	CDFN20510
5.20	24	60	6	2	CDFN20520
5.25	24	60	6	2	CDFN20525
5.30	24	60	6	2	CDFN20530
5.40	25	60	6	2	CDFN20540
5.50	25	60	6	2	CDFN20550
5.60	25	60	6	2	CDFN20560
5.70	27	60	6	2	CDFN20570
5.80	27	60	6	2	CDFN20580
5.90	27	60	6	2	CDFN20590
6.00	27	60	6	2	CDFN20600
6.10	28	75	8	2	CDFN20610
6.20	28	75	8	2	CDFN20620
6.30	28	75	8	2	CDFN20630
6.40	30	75	8	2	CDFN20640
6.50	30	75	8	2	CDFN20650
6.60	30	75	8	2	CDFN20660
6.70	31	75	8	2	CDFN20670
6.80	31	75	8	2	CDFN20680
6.90	31	75	8	2	CDFN20690
7.00	32	75	8	2	CDFN20700
7.10	33	75	8	2	CDFN20710
7.20	33	75	8	2	CDFN20720
7.30	33	75	8	2	CDFN20730
7.40	34	75	8	2	CDFN20740

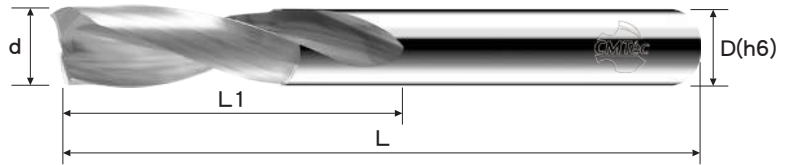
→ 切削條件表 P.577
Cutting Condition

→ 技術資料 P.630
Technical Data

鎢鋼鋁用平底型鑽頭- 短刃型- 2刃(3倍長)

CARBIDE FLAT DRILLS- For Aluminum- Short Flute- 2F(3xd)

· CDFN20000



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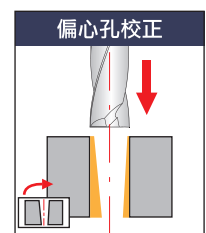
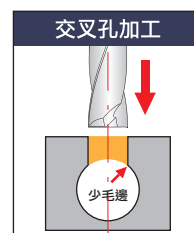
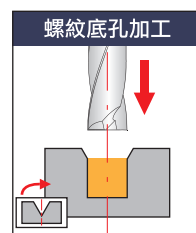
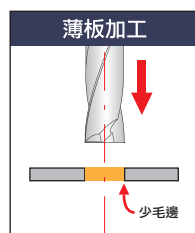
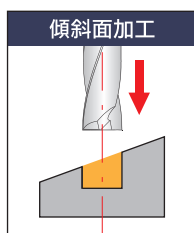
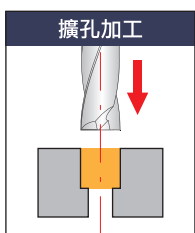
刃徑 d	公差 Tolerance
φ	h7

刃徑 d	溝長 L1	全長 L	柄徑 D	刃數 F	白刀訂購編號 Uncoated Order No.
7.50	34	75	8	2	CDFN20750
7.60	34	75	8	2	CDFN20760
7.70	36	75	8	2	CDFN20770
7.80	36	75	8	2	CDFN20780
7.90	36	75	8	2	CDFN20790
8.00	36	75	8	2	CDFN20800
8.10	37	100	10	2	CDFN20810
8.30	37	100	10	2	CDFN20830
8.50	39	100	10	2	CDFN20850
8.60	39	100	10	2	CDFN20860
8.70	40	100	10	2	CDFN20870
8.80	40	100	10	2	CDFN20880
9.00	41	100	10	2	CDFN20900
9.50	43	100	10	2	CDFN20950
9.90	45	100	10	2	CDFN20990
10.00	45	100	10	2	CDFN21000
10.30	46	100	12	2	CDFN21030
10.50	48	100	12	2	CDFN21050
10.80	49	100	12	2	CDFN21080
11.00	50	100	12	2	CDFN21100
11.50	52	100	12	2	CDFN21150
12.00	54	100	12	2	CDFN21200
13.00	59	100	14	2	CDFN21300
14.00	63	100	16	2	CDFN21400

HOLEMAKING

Drilling Tools

鑽削刀具



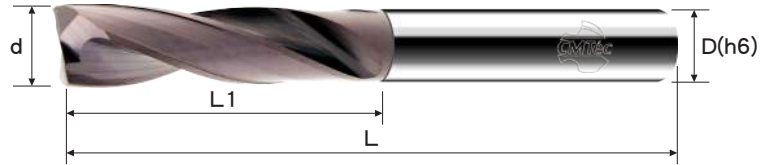
→ 切削條件表 P.577
Cutting Condition

→ 技術資料 P.630
Technical Data

鎢鋼鋼用平底型鑽頭- 短刃型- 2刃(3倍長)

CARBIDE FLAT DRILLS- For Steel- Short Flute- 2F(3xd)

· CDF20000F



刃徑 d	公差 Tolerance
φ	h7



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刃徑 d	溝長 L1	全長 L	柄徑 D	刃數 F	鍍膜訂購編號 Coated Order No.
1.00	3.3	50	3	2	CDF20100F
1.10	3.5	50	3	2	CDF20110F
1.20	3.9	50	3	2	CDF20120F
1.30	4.2	50	3	2	CDF20130F
1.40	4.6	50	3	2	CDF20140F
1.50	4.9	50	3	2	CDF20150F
1.60	5.2	50	3	2	CDF20160F
1.70	5.5	50	3	2	CDF20170F
1.80	5.8	50	3	2	CDF20180F
1.90	6.2	50	3	2	CDF20190F
2.00	9.0	50	4	2	CDF20200F
2.05	11.0	50	4	2	CDF20205F
2.10	11.0	50	4	2	CDF20210F
2.15	11.0	50	4	2	CDF20215F
2.20	11.0	50	4	2	CDF20220F
2.25	11.0	50	4	2	CDF20225F
2.30	11.0	50	4	2	CDF20230F
2.40	11.0	50	4	2	CDF20240F
2.50	11.0	50	4	2	CDF20250F
2.60	11.0	50	4	2	CDF20260F
2.65	11.0	50	4	2	CDF20265F
2.70	14.0	50	4	2	CDF20270F
2.80	14.0	50	4	2	CDF20280F
2.90	14.0	50	4	2	CDF20290F
3.00	14.0	60	6	2	CDF20300F
3.10	15.0	60	6	2	CDF20310F
3.15	15.0	60	6	2	CDF20315F
3.20	15.0	60	6	2	CDF20320F
3.30	15.0	60	6	2	CDF20330F
3.40	16.0	60	6	2	CDF20340F
3.50	16.0	60	6	2	CDF20350F
3.60	16.0	60	6	2	CDF20360F
3.70	18.0	60	6	2	CDF20370F
3.75	18.0	60	6	2	CDF20375F
3.80	18.0	60	6	2	CDF20380F
3.90	18.0	60	6	2	CDF20390F
4.00	18.0	60	6	2	CDF20400F

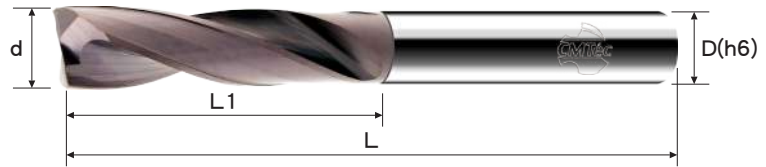
→ 切削條件表 P.577
Cutting Condition

→ 技術資料 P.630
Technical Data

鎢鋼用平底型鑽頭- 短刃型- 2刃(3倍長)

CARBIDE FLAT DRILLS- For Steel- Short Flute- 2F(3xd)

· CDF20000F



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刃徑 d	公差 Tolerance
φ	h7

刃徑 d	溝長 L1	全長 L	柄徑 D	刃數 F	鍍膜訂購編號 Coated Order No.
4.10	19	60	6	2	CDF20410F
4.20	19	60	6	2	CDF20420F
4.25	19	60	6	2	CDF20425F
4.30	19	60	6	2	CDF20430F
4.40	21	60	6	2	CDF20440F
4.50	21	60	6	2	CDF20450F
4.60	21	60	6	2	CDF20460F
4.70	22	60	6	2	CDF20470F
4.75	22	60	6	2	CDF20475F
4.80	23	60	6	2	CDF20480F
4.90	23	60	6	2	CDF20490F
5.00	23	60	6	2	CDF20500F
5.10	24	60	6	2	CDF20510F
5.20	24	60	6	2	CDF20520F
5.25	24	60	6	2	CDF20525F
5.30	24	60	6	2	CDF20530F
5.40	25	60	6	2	CDF20540F
5.50	25	60	6	2	CDF20550F
5.60	25	60	6	2	CDF20560F
5.70	27	60	6	2	CDF20570F
5.80	27	60	6	2	CDF20580F
5.90	27	60	6	2	CDF20590F
6.00	27	60	6	2	CDF20600F
6.10	28	75	8	2	CDF20610F
6.20	28	75	8	2	CDF20620F
6.30	28	75	8	2	CDF20630F
6.40	30	75	8	2	CDF20640F
6.50	30	75	8	2	CDF20650F
6.60	30	75	8	2	CDF20660F
6.70	31	75	8	2	CDF20670F
6.80	31	75	8	2	CDF20680F
6.90	31	75	8	2	CDF20690F
7.00	32	75	8	2	CDF20700F
7.10	33	75	8	2	CDF20710F
7.20	33	75	8	2	CDF20720F
7.30	33	75	8	2	CDF20730F
7.40	34	75	8	2	CDF20740F

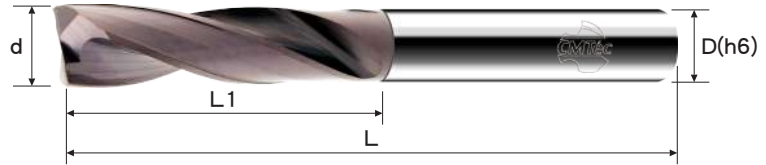
→ 切削條件表 Cutting Condition P.577

→ 技術資料 Technical Data P.630

鎢鋼鋼用平底型鑽頭- 短刃型- 2刃(3倍長)

CARBIDE FLAT DRILLS- For Steel- Short Flute- 2F(3xd)

· CDF20000F

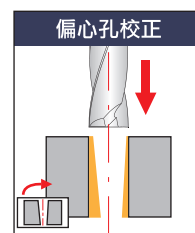
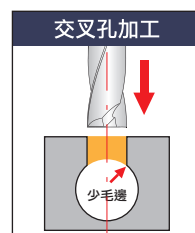
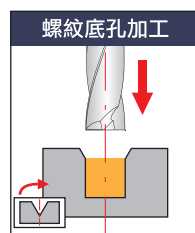
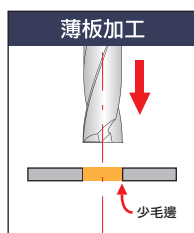
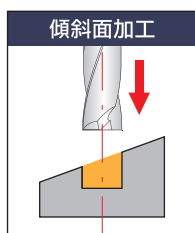
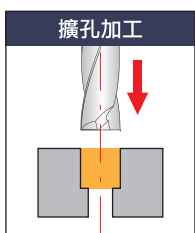


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刃徑 d	公差 Tolerance
φ	h7

刃徑 d	溝長 L1	全長 L	柄徑 D	刃數 F	鍍膜訂購編號 Coated Order No.
7.50	34	75	8	2	CDF20750F
7.60	34	75	8	2	CDF20760F
7.70	36	75	8	2	CDF20770F
7.80	36	75	8	2	CDF20780F
7.90	36	75	8	2	CDF20790F
8.00	36	75	8	2	CDF20800F
8.10	37	100	10	2	CDF20810F
8.30	37	100	10	2	CDF20830F
8.50	39	100	10	2	CDF20850F
8.60	39	100	10	2	CDF20860F
8.70	40	100	10	2	CDF20870F
8.80	40	100	10	2	CDF20880F
9.00	41	100	10	2	CDF20900F
9.50	43	100	10	2	CDF20950F
9.90	45	100	10	2	CDF20990F
10.00	45	100	10	2	CDF21000F
10.30	46	100	12	2	CDF21030F
10.50	48	100	12	2	CDF21050F
10.80	49	100	12	2	CDF21080F
11.00	50	100	12	2	CDF21100F
11.50	52	100	12	2	CDF21150F
12.00	54	100	12	2	CDF21200F
13.00	59	100	14	2	CDF21300F
14.00	63	100	16	2	CDF21400F



→ 切削條件表 P.577
Cutting Condition P.577

→ 技術資料 P.630
Technical Data P.630

Table 79 鎢鋼鋁用平底型鑽頭- 2刃(白刀) 切削條件表

SOLID CARBIDE DRILLS- DRILLING CONDITION TABLE





加工材質 Material	鋁合金 Aluminum Alloys		
工件料號 Material Code	Al 6061		
硬度 Hardness	—		
切削速度 Vc	100m/min		
外徑 Diameter	S (rpm)	F (mm/min)	
2mm	16,700	350	
3mm	10,620	400	
4mm	7,960	400	
5mm	6,370	400	
6mm	5,310	500	
8mm	4,000	500	
10mm	3,180	600	
12mm	2,650	600	
16mm	1,990	550	
20mm	1,590	550	
切削量 Cutting Amount (mm)	$A_p \leq 3D$  		
備註 Remarks	※ 加工工件斜度(θ)在 30° 以下,請調降進給速度(F)至50%。 ※ When drilling incline angle is less than 30° , reduce the feed rate by 50%. ※ 加工工件斜度在(θ) 30° 以上,請調降主軸轉速(S)至70%以下,進給速度(F)至30%以下。 ※ When drilling incline angle is over 30° , reduce the spindle speed by under 70%, the feed rate by under 30%.		

Table 79 鎢鋼鋼用平底型鑽頭- 2刃(鍍膜刀) 切削條件表

SOLID CARBIDE DRILLS- DRILLING CONDITION TABLE

加工材質 Material	碳素鋼 Carbon Steels		合金鋼 Alloy Steels		合金鋼 Alloy Steels		鑄鐵 Cast Iron	
工件料號 Material Code	S35C,S45C,S50C		SCM,SKT,SKD		SCM,SKT,SKD		FC,FCD	
硬度 Hardness	HRC<20		HRC20~30		HRC30~45		HRC<30	
切削速度 Vc	75m/min		65m/min		35m/min		65m/min	
外徑 Diameter	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)	S (rpm)	F (mm/min)
2mm	11,100	350	10,550	300	5,550	150	10,550	250
3mm	7,950	400	6,900	350	3,700	170	6,900	300
4mm	5,950	400	5,150	350	2,800	170	5,150	300
5mm	4,800	420	4,150	350	2,200	170	4,150	300
6mm	4,000	420	3,450	350	1,800	170	3,450	300
8mm	3,000	420	2,600	350	1,400	170	2,600	300
10mm	2,400	420	2,050	350	1,100	170	2,050	300
12mm	2,000	420	1,700	350	950	170	1,700	300
16mm	1,500	350	1,300	300	700	150	1,300	280
20mm	1,200	350	1,050	300	550	150	1,050	280
切削量 Cutting Amount (mm)	$A_p \leq 3D$  							
備註 Remarks	※ 加工工件斜度(θ)在 30° 以下,請調降進給速度(F)至50%。 ※ When drilling incline angle is less than 30° , reduce the feed rate by 50%. ※ 加工工件斜度在(θ) 30° 以上,請調降主軸轉速(S)至70%以下,進給速度(F)至30%以下。 ※ When drilling incline angle is over 30° , reduce the spindle speed by under 70%, the feed rate by under 30%.							

- 當加工聲音尖銳時,請調降主軸轉速(S) (10~40%)。When the sound is piercing, please lower the spindle speed(S) (10~40%).
- 當機台震動太大時,請調降進給速度(F) (10~40%)。When the machine is vibrating, please decrease the feed rate(F) (10~40%).
- 當主軸負載太大時,請調降進給速度(F) (10~40%)。When the spindle load is high, please decrease the feed rate(F) (10~40%).
- 以上數據為建議值,適當的條件仍需視機台狀況,夾治具品質,潤滑冷卻系統...等而改變。

These are recommended values which depend on the condition of the machine, fixture, lubricating & cooling systems... etc. They may have to be adapted.