

D420HX-3 超微粒鎢鋼塗層微小徑鑽頭

Micro Precision Drills

MG
Carbide

AlTiCrN
HX



Work Material

P	H	M	K	N	S
●		●	●	●	

P 鋼鐵
Steel

M 不銹鋼
Stainless Steel

K 鑄鐵
Cast Iron

N 鋁
Aluminium

N 銅
Copper

N 塑膠
Plastics

Feature of product:

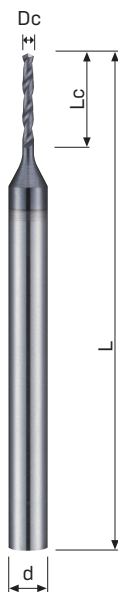
微小徑鑽頭

兼具銳利度和強度的140°X型鑽尖設計。

刃徑從0.1~2.0mm，每0.01mm為一種尺寸。

採用奈米多層膜塗層具有優異的潤滑及耐磨性。

適用切削於HRC30以下鋼材，不銹鋼、鑄鐵、鋁合金、銅合金…等材料鑽孔應用。



Code No. D420HX-3-DC						Code No. D420HX-3-DC											
Dc	Lc	L	d	AlTiCrN	D420HX-3	Dc	Lc	L	d	AlTiCrN	D420HX-3	Dc	Lc	L	d	AlTiCrN	D420HX-3
$0_{-0.005}$	mm	mm	h6			$0_{-0.005}$	mm	mm	h6			$0_{-0.005}$	mm	mm	h6		
0.1	0.6	38	3	●		0.7	4.5	38	3	●		1.3	8	42	3	●	
0.11	0.6	38	3	●		0.71	4.5	38	3	●		1.31	8	42	3	●	
0.12	0.8	38	3	●		0.72	4.5	38	3	●		1.32	8	42	3	●	
0.13	0.8	38	3	●		0.73	4.5	38	3	●		1.33	9	42	3	●	
0.14	0.8	38	3	●		0.74	4.5	38	3	●		1.34	9	42	3	●	
0.15	1	38	3	●		0.75	4.5	38	3	●		1.35	9	42	3	●	
0.16	1	38	3	●		0.76	5	38	3	●		1.36	9	42	3	●	
0.17	1	38	3	●		0.77	5	38	3	●		1.37	9	42	3	●	
0.18	1.2	38	3	●		0.78	5	38	3	●		1.38	9	42	3	●	
0.19	1.2	38	3	●		0.79	5	38	3	●		1.39	9	42	3	●	
0.2	1.5	38	3	●		0.8	5	38	3	●		1.4	9	42	3	●	
0.21	1.5	38	3	●		0.81	5	38	3	●		1.41	9	42	3	●	
0.22	1.5	38	3	●		0.82	5	38	3	●		1.42	9	42	3	●	
0.23	1.5	38	3	●		0.83	5	38	3	●		1.43	9	42	3	●	
0.24	1.5	38	3	●		0.84	5	38	3	●		1.44	9	42	3	●	
0.25	1.5	38	3	●		0.85	5	38	3	●		1.45	9	42	3	●	
0.26	1.5	38	3	●		0.86	5.5	38	3	●		1.46	9	42	3	●	
0.27	1.5	38	3	●		0.87	5.5	38	3	●		1.47	9	42	3	●	
0.28	1.5	38	3	●		0.88	5.5	38	3	●		1.48	9	42	3	●	
0.29	1.5	38	3	●		0.89	5.5	38	3	●		1.49	9	42	3	●	
0.3	1.5	38	3	●		0.9	5.5	38	3	●		1.5	9	42	3	●	
0.31	2	38	3	●		0.91	5.5	38	3	●		1.51	10	42	3	●	
0.32	2	38	3	●		0.92	5.5	38	3	●		1.52	10	42	3	●	
0.33	2	38	3	●		0.93	5.5	38	3	●		1.53	10	42	3	●	
0.34	2	38	3	●		0.94	5.5	38	3	●		1.54	10	42	3	●	
0.35	2	38	3	●		0.95	5.5	38	3	●		1.55	10	42	3	●	
0.36	2	38	3	●		0.96	6	38	3	●		1.56	10	42	3	●	
0.37	2	38	3	●		0.97	6	38	3	●		1.57	10	42	3	●	
0.38	2	38	3	●		0.98	6	38	3	●		1.58	10	42	3	●	
0.39	2.5	38	3	●		0.99	6	38	3	●		1.59	10	42	3	●	
0.4	2.5	38	3	●		1	6	38	3	●		1.6	10	42	3	●	
0.41	2.5	38	3	●		1.01	6	38	3	●		1.61	10	42	3	●	
0.42	2.5	38	3	●		1.02	6	38	3	●		1.62	10	42	3	●	
0.43	2.5	38	3	●		1.03	6	38	3	●		1.63	10	42	3	●	
0.44	2.5	38	3	●		1.04	6	38	3	●		1.64	10	42	3	●	
0.45	2.5	38	3	●		1.05	6	38	3	●		1.65	10	42	3	●	
0.46	2.5	38	3	●		1.06	6	38	3	●		1.66	10	42	3	●	
0.47	2.5	38	3	●		1.07	7	42	3	●		1.67	10	42	3	●	
0.48	2.5	38	3	●		1.08	7	42	3	●		1.68	10	42	3	●	
0.49	3	38	3	●		1.09	7	42	3	●		1.69	10	42	3	●	
0.5	3	38	3	●		1.1	7	42	3	●		1.7	10	42	3	●	
0.51	3	38	3	●		1.11	7	42	3	●		1.71	11	42	3	●	
0.52	3	38	3	●		1.12	7	42	3	●		1.72	11	42	3	●	
0.53	3	38	3	●		1.13	7	42	3	●		1.73	11	42	3	●	
0.54	3.5	38	3	●		1.14	7	42	3	●		1.74	11	42	3	●	
0.55	3.5	38	3	●		1.15	7	42	3	●		1.75	11	42	3	●	
0.56	3.5	38	3	●		1.16	7	42	3	●		1.76	11	42	3	●	
0.57	3.5	38	3	●		1.17	7	42	3	●		1.77	11	42	3	●	
0.58	3.5	38	3	●		1.18	7	42	3	●		1.78	11	42	3	●	
0.59	3.5	38	3	●		1.19	8	42	3	●		1.79	11	42	3	●	
0.6	3.5	38	3	●		1.2	8	42	3	●		1.8	11	42	3	●	
0.61	4	38	3	●		1.21	8	42	3	●		1.81	11	42	3	●	
0.62	4	38	3	●		1.22	8	42	3	●		1.82	11	42	3	●	
0.63	4	38	3	●		1.23	8	42	3	●		1.83	11	42	3	●	
0.64	4	38	3	●		1.24	8	42	3	●		1.84	11	42	3	●	
0.65	4	38	3	●		1.25	8	42	3	●		1.85	11	42	3	●	
0.66	4	38	3	●		1.26	8	42	3	●		1.86	11	42	3	●	
0.67	4	38	3	●		1.27	8	42	3	●		1.87	11	42	3	●	
0.68	4.5	38	3	●		1.28	8	42	3	●		1.88	11	42	3	●	
0.69	4.5	38	3	●		1.29	8	42	3	●		1.89	00	42	3	●	

D420HX-3 切削條件參考表

Recommended Milling Conditions

Borehole parameters 鑽孔參數

被削材 Work Material		GR.1 碳鋼 Carbon Steel		GR.2 低合金鋼 Low-alloyed Steel (~24HRC)		GR.3 高合金鋼 Hi-alloyed Steel (~30HRC)		GR.8 不銹鋼 Stainless Steel		GR.9 鑄鐵 Cast Iron		GR.10 鋁 Aluminium		GR.11 銅 Copper	
切削速度 Vc m/min		37		37		34		31		37		37		20	
型號 Code No.	刃徑 Dc	RPM 迴轉速度 (min-1)	Feed 進給速度 (mm/rev)	RPM 迴轉速度 (min-1)	Feed 進給速度 (mm/rev)	RPM 迴轉速度 (min-1)	Feed 進給速度 (mm/rev)	RPM 迴轉速度 (min-1)	Feed 進給速度 (mm/rev)	RPM 迴轉速度 (min-1)	Feed 進給速度 (mm/rev)	RPM 迴轉速度 (min-1)	Feed 進給速度 (mm/rev)	RPM 迴轉速度 (min-1)	Feed 進給速度 (mm/rev)
D420HX-3-0.2	0.2	25,000	0.002	25,000	0.002	25,000	0.002	25,000	0.002	25,000	0.002	25,000	0.004	25,000	0.002
D420HX-3-0.25	0.25	22,500	0.002	22,500	0.002	22,500	0.002	22,500	0.002	22,500	0.002	22,500	0.005	22,500	0.002
D420HX-3-0.3	0.3	20,000	0.003	20,000	0.003	20,000	0.003	20,000	0.003	20,000	0.003	20,000	0.007	20,000	0.003
D420HX-3-0.35	0.35	18,750	0.004	18,750	0.004	18,500	0.004	18,250	0.004	18,750	0.004	18,750	0.009	18,250	0.004
D420HX-3-0.4	0.4	17,500	0.005	17,500	0.005	17,000	0.005	16,500	0.005	17,500	0.005	17,500	0.011	16,500	0.005
D420HX-3-0.45	0.45	16,250	0.006	16,250	0.006	15,500	0.006	14,750	0.006	16,250	0.006	16,250	0.013	14,750	0.006
D420HX-3-0.5	0.5	15,000	0.007	15,000	0.007	14,000	0.007	13,000	0.007	15,000	0.007	15,000	0.015	13,000	0.007
D420HX-3-0.55	0.55	14,750	0.008	14,750	0.008	13,750	0.008	12,820	0.008	14,750	0.008	14,750	0.016	12,450	0.007
D420HX-3-0.6	0.6	14,500	0.008	14,500	0.008	13,500	0.008	12,660	0.008	14,500	0.008	14,500	0.017	11,900	0.007
D420HX-3-0.65	0.65	14,250	0.009	14,250	0.009	13,250	0.009	12,500	0.009	14,250	0.009	14,250	0.018	11,350	0.008
D420HX-3-0.7	0.7	14,000	0.009	14,000	0.009	13,000	0.009	12,320	0.009	14,000	0.009	14,000	0.018	10,800	0.008
D420HX-3-0.75	0.75	13,750	0.010	13,750	0.010	12,750	0.010	12,160	0.010	13,750	0.010	13,750	0.019	10,250	0.008
D420HX-3-0.8	0.8	13,500	0.010	13,500	0.010	12,500	0.010	12,000	0.010	13,500	0.010	13,500	0.020	9,700	0.009
D420HX-3-0.85	0.85	13,000	0.013	13,000	0.013	12,000	0.013	11,320	0.013	13,000	0.013	13,000	0.024	8,600	0.009
D420HX-3-0.9	0.9	12,500	0.016	12,500	0.016	11,500	0.016	10,660	0.016	12,500	0.016	12,500	0.037	7,500	0.010
D420HX-3-1	1	12,000	0.020	12,000	0.020	11,000	0.020	10,000	0.020	12,000	0.020	12,000	0.030	6,400	0.010
D420HX-3-1.05	1.05	11,200	0.020	11,200	0.020	10,800	0.020	9,400	0.020	11,200	0.020	11,200	0.030	6,350	0.010
D420HX-3-1.1	1.1	10,700	0.020	10,700	0.020	9,850	0.020	9,000	0.020	10,700	0.020	10,700	0.030	6,050	0.010
D420HX-3-1.15	1.15	10,250	0.025	10,250	0.025	9,400	0.025	8,550	0.025	10,250	0.025	10,250	0.030	5,500	0.010
D420HX-3-1.2	1.2	9,800	0.025	9,800	0.025	9,000	0.025	8,200	0.025	9,800	0.025	9,800	0.030	5,300	0.010
D420HX-3-1.25	1.25	9,400	0.025	9,400	0.025	8,650	0.025	7,900	0.025	9,400	0.025	9,400	0.040	5,100	0.015
D420HX-3-1.3	1.3	9,000	0.025	9,000	0.025	8,300	0.025	7,600	0.025	9,000	0.025	9,000	0.040	4,900	0.015
D420HX-3-1.35	1.35	8,700	0.030	8,700	0.030	8,000	0.030	7,300	0.030	8,700	0.030	8,700	0.040	4,700	0.015
D420HX-3-1.4	1.4	8,400	0.030	8,400	0.030	7,700	0.030	7,050	0.030	8,400	0.030	8,400	0.050	4,550	0.015
D420HX-3-1.45	1.45	8,100	0.030	8,100	0.030	7,450	0.030	6,800	0.030	8,100	0.030	8,100	0.050	4,400	0.015
D420HX-3-1.5	1.5	7,800	0.030	7,800	0.030	7,200	0.030	6,550	0.030	7,800	0.030	7,800	0.050	4,250	0.020
D420HX-3-1.55	1.55	7,600	0.035	7,600	0.035	7,000	0.035	6,350	0.035	7,600	0.035	7,600	0.050	4,100	0.020
D420HX-3-1.6	1.6	7,350	0.035	7,350	0.035	6,750	0.035	6,150	0.035	7,350	0.035	7,350	0.060	3,950	0.020
D420HX-3-1.65	1.65	7,150	0.035	7,150	0.035	6,550	0.035	5,950	0.035	7,150	0.035	7,150	0.060	3,850	0.020
D420HX-3-1.7	1.7	6,900	0.035	6,900	0.035	6,350	0.035	5,800	0.035	6,900	0.035	6,900	0.060	3,750	0.020
D420HX-3-1.75	1.75	6,700	0.035	6,700	0.035	6,200	0.035	5,650	0.035	6,700	0.035	6,700	0.060	3,650	0.025
D420HX-3-1.8	1.8	6,550	0.040	6,550	0.040	6,000	0.040	5,450	0.040	6,550	0.040	6,550	0.060	3,500	0.025
D420HX-3-1.85	1.85	6,350	0.040	6,350	0.040	5,850	0.040	5,300	0.040	6,350	0.040	6,350	0.060	3,450	0.025

1. Please work with good rigidity / high precision facilities and collet chuck.
2. Please choose proper cutting fluid.
3. The cutting data is reference value only. Please adjust it according to your real working conditions.
4. If RPM is lower the reference value, the Feed rate (fz) and RPM should be reduced by the same proportion.
5. If vibration occurs during cutting, please reduce cutting parameter.

1. 請使用剛性好、精度高的設備和夾具。
2. 請選擇適用於工件材料的切削液。
3. 此切削條件表中的數值為切削條件的基準值，實際加工時，請考慮加工形狀、目的、使用機台等因素，對切削條件進行調整。
4. 如果機台轉速低於表中所列數值，則進給速度應與轉速按同一比例降低。
5. 切削加工時如果發生振顫，請降低切削條件。

D420HX-3 超微粒鎢鋼塗層微小徑鑽頭

Micro Precision Drills

MG
Carbide

AlTiCrN
HX



Work Material

P	H	M	K	N	S
●		●	●	●	

P 鋼鐵
Steel

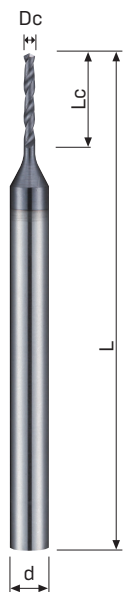
M 不銹鋼
Stainless Steel

K 鑄鐵
Cast Iron

N 鋁
Aluminium

N 銅
Copper

N 塑膠
Plastics



Dc 0 -0.005	Lc mm	L mm	d h6	AlTiCrN D420HX-3
1.9	11	42	3	●
1.91	12	50	3	●
1.92	12	50	3	●
1.93	12	50	3	●
1.94	12	50	3	●
1.95	12	50	3	●
1.96	12	50	3	●
1.97	12	50	3	●
1.98	12	50	3	●
1.99	12	50	3	●
2	12	50	3	●
2.01	12	50	3	○
2.02	12	50	3	○
2.03	12	50	3	○
2.04	12	50	3	○
2.05	12	50	3	●
2.06	12	50	3	○
2.07	12	50	3	○
2.08	12	50	3	○
2.09	12	50	3	○
2.1	12	50	3	●
2.11	12	50	3	○
2.12	12	50	3	○
2.13	13	50	3	○
2.14	13	50	3	○
2.15	13	50	3	●
2.16	13	50	3	○
2.17	13	50	3	○
2.18	13	50	3	○
2.19	13	50	3	○
2.2	13	50	3	●
2.21	13	50	3	○
2.22	13	50	3	○
2.23	13	50	3	○
2.24	13	50	3	○
2.25	13	50	3	●
2.26	13	50	3	○
2.27	13	50	3	○
2.28	13	50	3	○
2.29	13	50	3	○
2.3	13	50	3	●
2.31	13	50	3	○
2.32	13	50	3	○
2.33	13	50	3	○
2.34	13	50	3	○
2.35	13	50	3	●
2.36	13	50	3	○
2.37	14	50	3	○
2.38	14	50	3	○
2.39	14	50	3	○
2.4	14	50	3	●
2.41	14	50	3	○
2.42	14	50	3	○
2.43	14	50	3	○
2.44	14	50	3	○
2.45	14	50	3	●

Code No. D420HX-3-DC

Dc 0 -0.005	Lc mm	L mm	d h6	AlTiCrN D420HX-3
2.46	14	50	3	○
2.47	14	50	3	○
2.48	14	50	3	○
2.49	14	50	3	○
2.5	14	50	3	●
2.51	14	50	3	○
2.52	14	50	3	○
2.53	14	50	3	○
2.54	14	50	3	○
2.55	14	50	3	●
2.56	14	50	3	○
2.57	14	50	3	○
2.58	14	50	3	○
2.59	14	50	3	○
2.6	14	50	3	●
2.61	14	50	3	○
2.62	14	50	3	○
2.63	14	50	3	○
2.64	14	50	3	○
2.65	14	50	3	●
2.66	16	50	3	○
2.67	16	50	3	○
2.68	16	50	3	○
2.69	16	50	3	○
2.7	16	50	3	●
2.71	16	50	3	○
2.72	16	50	3	○
2.73	16	50	3	○
2.74	16	50	3	○
2.75	16	50	3	●
2.76	16	50	3	○
2.77	16	50	3	○
2.78	16	50	3	○
2.79	16	50	3	○
2.8	16	50	3	●
2.81	16	50	3	○
2.82	16	50	3	○
2.83	16	50	3	○
2.84	16	50	3	○
2.85	16	50	3	●
2.86	16	50	3	○
2.87	16	50	3	○
2.88	16	50	3	○
2.89	16	50	3	○
2.9	16	50	3	●
2.91	16	50	3	○
2.92	16	50	3	○
2.93	16	50	3	○
2.94	16	50	3	○
2.95	16	50	3	●
2.96	16	50	3	○
2.97	16	50	3	○
2.98	16	50	3	○
2.99	16	50	3	○
3	16	50	3	●

※ Mark: ○, On request, no stock

※ 記號○, 可訂購規格, 無現貨

D420HX-3 切削條件參考表

Recommended Milling Conditions

Borehole parameters 鑽孔參數

被削材 Work Material		GR.1 碳鋼 Carbon Steel		GR.2 低合金鋼 Low-alloyed Steel (~24HRC)		GR.3 高合金鋼 Hi-alloyed Steel (~30HRC)		GR.8 不銹鋼 Stainless Steel		GR.9 鑄鐵 Cast Iron		GR.10 鋁 Aluminium		GR.11 銅 Copper	
切削速度 Vc m/min		37		37		34		31		37		37		20	
型號 Code No.	刃徑 Dc	RPM 迴轉速度 (min-1)	Feed 進給速度 (mm/rev)	RPM 迴轉速度 (min-1)	Feed 進給速度 (mm/rev)	RPM 迴轉速度 (min-1)	Feed 進給速度 (mm/rev)	RPM 迴轉速度 (min-1)	Feed 進給速度 (mm/rev)	RPM 迴轉速度 (min-1)	Feed 進給速度 (mm/rev)	RPM 迴轉速度 (min-1)	Feed 進給速度 (mm/rev)	RPM 迴轉速度 (min-1)	Feed 進給速度 (mm/rev)
D420HX-3-1.9	1.9	6,200	0.040	6,200	0.040	5,700	0.040	5,200	0.040	6,200	0.040	6,200	0.060	3350	0.020
D420HX-3-1.95	1.95	6,000	0.040	6,000	0.040	5,550	0.040	5,050	0.040	6,000	0.040	6,000	0.060	3250	0.020
D420HX-3-2	2	5,900	0.050	5,900	0.050	5,400	0.050	5,000	0.050	5,900	0.050	5,900	0.060	3150	0.020
D420HX-3-2.05	2.05	5,750	0.050	5,750	0.050	5,300	0.050	4,800	0.050	5,750	0.050	5,750	0.060	3100	0.020
D420HX-3-2.1	2.1	5,600	0.050	5,600	0.050	5,150	0.050	4,700	0.050	5,600	0.050	5,600	0.080	3000	0.020
D420HX-3-2.15	2.15	5,450	0.050	5,450	0.050	5,000	0.050	4,600	0.050	5,450	0.050	5,450	0.080	2950	0.030
D420HX-3-2.2	2.2	5,350	0.050	5,350	0.050	4,900	0.050	4,500	0.050	5,350	0.050	5,350	0.080	2900	0.030
D420HX-3-2.25	2.25	5,200	0.060	5,200	0.060	4,800	0.060	4,400	0.060	5,200	0.060	5,200	0.080	2800	0.030
D420HX-3-2.3	2.3	5,100	0.060	5,100	0.060	4,700	0.060	4,300	0.060	5,100	0.060	5,100	0.080	2750	0.030
D420HX-3-2.35	2.35	5,000	0.060	5,000	0.060	4,600	0.060	4,200	0.060	5,000	0.060	5,000	0.080	2700	0.030
D420HX-3-2.4	2.4	4,900	0.060	4,900	0.060	4,500	0.060	4,100	0.060	4,900	0.060	4,900	0.080	2650	0.030
D420HX-3-2.45	2.45	4,800	0.060	4,800	0.060	4,400	0.060	4,000	0.060	4,800	0.060	4,800	0.080	2600	0.030
D420HX-3-2.5	2.5	4,700	0.080	4,700	0.080	4,300	0.080	4,332	0.080	4,700	0.080	4,700	0.100	2550	0.040
D420HX-3-2.55	2.55	4,600	0.080	4,600	0.080	4,250	0.080	3850	0.080	4,600	0.080	4,600	0.100	2500	0.040
D420HX-3-2.6	2.6	4,500	0.080	4,500	0.080	4,150	0.080	3,800	0.080	4,500	0.080	4,500	0.100	2450	0.040
D420HX-3-2.65	2.65	4,450	0.080	4,450	0.080	4,050	0.080	3,700	0.080	4,450	0.080	4,450	0.100	2400	0.040
D420HX-3-2.7	2.7	4,350	0.080	4,350	0.080	4,000	0.080	3,650	0.080	4,350	0.080	4,350	0.100	2350	0.040
D420HX-3-2.75	2.75	4,300	0.090	4,300	0.090	4,000	0.090	3,600	0.090	4,300	0.090	4,300	0.100	2300	0.050
D420HX-3-2.8	2.8	4,200	0.090	4,200	0.090	3,800	0.090	3,500	0.090	4,200	0.090	4,200	0.120	2250	0.050
D420HX-3-2.85	2.85	4,100	0.090	4,100	0.090	3,800	0.090	3,400	0.090	4,100	0.090	4,100	0.120	2200	0.050
D420HX-3-2.9	2.9	4,050	0.090	4,050	0.090	3,700	0.090	3,400	0.090	4,050	0.090	4,050	0.120	2200	0.050
D420HX-3-2.95	2.95	4,000	0.090	4,000	0.090	3,650	0.090	3,350	0.090	4,000	0.090	4,000	0.120	2150	0.050
D420HX-3-3	3	4,000	0.090	4,000	0.090	3,600	0.090	3,300	0.090	4,000	0.090	4,000	0.120	2100	0.050

1. Please work with good rigidity / high precision facilities and collet chuck.
2. Please choose proper cutting fluid.
3. The cutting data is reference value only. Please adjust it according to your real working conditions.
4. If RPM is lower the reference value, the Feed rate [fz] and RPM should be reduced by the same proportion.
5. If vibration occurs during cutting, please reduce cutting parameter.

1. 請使用剛性好、精度高的設備和夾具。
2. 請選擇適用於工件材料的切削液。
3. 此切削條件表中的數值為切削條件的基準值，實際加工時，請考慮加工形狀、目的、使用機台等因素，對切削條件進行調整。
4. 如果機台轉速低於表中所列數值，則進給速度應與轉速按同一比例降低。
5. 切削加工時如果發生振顫，請降低切削條件。