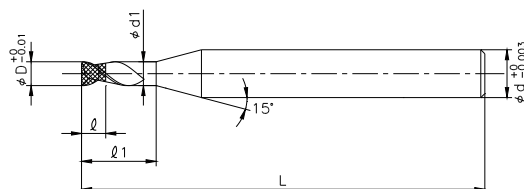


DSE-2

PCD 2枚刃スパイラルスクエアエンドミル PCD 2 Flutes Spiral Square Endmill

- ソリッドPCDの刃先部はスパイラル形状
Spiral Shape at Flute Edge of Solid PCD
- 非鉄金属やセラミック等の難削材まで加工可能
Possible to cut Nonferrous metal and Difficult-to-cut Materials such as Ceramics



被削材 Workpiece					
アルミ合金 Aluminum Alloy	ハイスiliconアルミ High Silicon Aluminum	銅・銅合金 Copper and Copper Alloy	マシンابلセラミックス Machinable Ceramics	カーボン Carbon	グラファイト Graphite

- 切削条件表はP27、28に記載
- Cutting conditions are recommended on page 27、28.

単位 [寸法: mm]
Unit [size: mm]

品番 Code No.	刃径 D Flute Diameter	有効長 l1 Effective Length	刃長 l Flute Length	首下径 d1 Neck Diameter	PCD層 PCD Length	全長 L Total Length	柄径 d Shank Diameter
DSE-2020	0.2	0.6	0.2	0.16	1	50	4
DSE-2030	0.3	0.9	0.3	0.26	1	50	4
DSE-2040	0.4	1.2	0.4	0.36	1	50	4
DSE-2050	0.5	1.5	0.5	0.46	1	50	4
DSE-2060	0.6	1.8	0.6	0.56	1	50	4
DSE-2070	0.7	2.1	0.7	0.66	1	50	4
DSE-2080	0.8	2.4	0.8	0.76	1	50	4
DSE-2090	0.9	2.7	0.9	0.86	1	50	4
DSE-2100	1	3	1	0.95	1	50	4
DSE-2110	1.1	3.3	1	1.05	1	50	4
DSE-2120	1.2	3.6	1	1.15	1	50	4
DSE-2130	1.3	3.9	1	1.25	1	50	4
DSE-2140	1.4	4.2	1	1.35	1	50	4
DSE-2150	1.5	4.5	1.5	1.45	2	50	4
DSE-2160	1.6	4.8	1.5	1.55	2	50	4
DSE-2170	1.7	5.1	1.5	1.65	2	50	4
DSE-2180	1.8	5.4	1.5	1.75	2	50	4
DSE-2190	1.9	5.7	1.5	1.85	2	50	4
DSE-2200	2	6	2	1.95	2	50	4
DSE-2210	2.1	6.3	2	2.05	2	50	4
DSE-2220	2.2	6.6	2	2.15	2	50	4
DSE-2230	2.3	6.9	2	2.25	2	50	4
DSE-2240	2.4	7.2	2	2.35	2	50	4

DSE-2

品番 Code No.	刃径 D Flute Diameter	有効長 ℓ_1 Effective Length	刃長 ℓ Flute Length	首下径 d1 Neck Diameter	PCD層 PCD Length	全長 L Total Length	柄径 d Shank Diameter
DSE-2250	2.5	7.5	2	2.45	2	50	4
DSE-2260	2.6	7.8	2	2.55	2	50	4
DSE-2270	2.7	8.1	2	2.65	3	50	4
DSE-2280	2.8	8.4	2	2.75	3	50	4
DSE-2290	2.9	8.7	2	2.85	3	50	4
DSE-2300	3	9	2.5	2.95	3	50	6
DSE-2350	3.5	10.5	2.5	3.45	3	50	6
DSE-2400	4	12	2.5	3.95	3	50	6
DSE-2450	4.5	13.5	2.5	4.45	3	50	6
DSE-2500	5	15	3	4.95	4	60	6
DSE-2550	5.5	16.5	3	5.45	4	60	6
DSE-2600	6	18	3	5.95	4	60	6

DSE-2

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	アルミ合金 Aluminum Alloy			ハイシリコンアルミ High Silicon Aluminum			銅・銅合金 Copper and Copper Alloy		
切削速度 Cutting Speed	30~360m/min			30~250m/min			30~200m/min		
刃 径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut Ad mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut Ad mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut Ad mm
0.2	50,000	360	0.006~0.01	50,000	220	0.004~0.01	50,000	120	0.004~0.01
0.3	50,000	520	0.009~0.02	50,000	250	0.006~0.01	50,000	150	0.006~0.01
0.4	50,000	600	0.01 ~0.03	50,000	270	0.008~0.02	50,000	170	0.008~0.02
0.5	50,000	640	0.01 ~0.03	50,000	290	0.01 ~0.02	50,000	200	0.01 ~0.02
0.6	50,000	700	0.02 ~0.05	50,000	320	0.01 ~0.03	50,000	240	0.01 ~0.03
0.7	50,000	740	0.02 ~0.05	50,000	330	0.01 ~0.04	50,000	260	0.01 ~0.04
0.8	50,000	800	0.03 ~0.05	50,000	360	0.02 ~0.04	50,000	280	0.02 ~0.04
0.9	50,000	840	0.04 ~0.07	50,000	380	0.03 ~0.05	50,000	280	0.03 ~0.05
1	50,000	900	0.05 ~0.08	50,000	400	0.03 ~0.07	50,000	300	0.03 ~0.07
1.1	50,000	900	0.06 ~0.11	50,000	400	0.04 ~0.08	50,000	300	0.03 ~0.07
1.2	50,000	900	0.06 ~0.12	50,000	400	0.04 ~0.08	50,000	300	0.04 ~0.08
1.3	50,000	960	0.07 ~0.13	50,000	430	0.045~0.09	48,000	300	0.045~0.09
1.4	50,000	960	0.07 ~0.14	50,000	430	0.05 ~0.1	45,000	300	0.05 ~0.1
1.5	50,000	960	0.08 ~0.15	50,000	430	0.05 ~0.1	42,000	350	0.05 ~0.1
1.6	50,000	1,000	0.08 ~0.16	50,000	450	0.055~0.11	40,000	350	0.055~0.11
1.7	50,000	1,000	0.08 ~0.17	47,000	450	0.06 ~0.12	37,000	350	0.06 ~0.12
1.8	50,000	1,080	0.09 ~0.18	44,000	480	0.06 ~0.13	35,000	350	0.06 ~0.13
1.9	50,000	1,080	0.09 ~0.19	42,000	480	0.065~0.13	33,000	350	0.065~0.13
2	50,000	1,160	0.1 ~0.2	40,000	520	0.07 ~0.14	32,000	400	0.07 ~0.14
2.1	50,000	1,160	0.1 ~0.21	38,000	520	0.07 ~0.15	30,000	400	0.07 ~0.15
2.2	50,000	1,160	0.1 ~0.22	36,000	520	0.075~0.15	29,000	400	0.075~0.15
2.3	50,000	1,200	0.12 ~0.23	34,500	540	0.08 ~0.16	28,000	400	0.08 ~0.16
2.4	48,000	1,200	0.12 ~0.24	33,000	540	0.085~0.17	27,000	400	0.085~0.17
2.5	46,000	1,300	0.12 ~0.25	32,000	580	0.09 ~0.18	26,000	450	0.09 ~0.18
2.6	44,000	1,300	0.13 ~0.26	30,000	580	0.09 ~0.18	25,000	450	0.09 ~0.18
2.7	43,000	1,300	0.13 ~0.27	30,000	580	0.095~0.19	24,000	450	0.095~0.19
2.8	41,000	1,300	0.14 ~0.28	28,500	580	0.1 ~0.2	23,000	450	0.1 ~0.2
2.9	40,000	1,400	0.15 ~0.29	27,500	630	0.1 ~0.2	22,000	450	0.1 ~0.2
3	38,000	1,400	0.15 ~0.3	26,500	630	0.1 ~0.21	21,000	500	0.1 ~0.21
3.5	33,000	1,500	0.17 ~0.35	23,000	720	0.12 ~0.25	20,000	520	0.12 ~0.25
4	29,000	1,600	0.2 ~0.4	20,000	900	0.14 ~0.28	16,000	550	0.14 ~0.28
4.5	26,000	1,600	0.25 ~0.45	17,500	900	0.15 ~0.32	15,000	600	0.15 ~0.32
5	23,000	1,600	0.25 ~0.5	16,000	950	0.17 ~0.35	13,000	650	0.17 ~0.35
5.5	21,000	1,600	0.27 ~0.55	14,500	1,000	0.19 ~0.39	11,500	670	0.19 ~0.39
6	19,000	1,600	0.3 ~0.6	14,000	1,050	0.21 ~0.42	10,000	700	0.21 ~0.42

備 考

- (1)機械、ホルダーは剛性のある精度の高いものを使用してください。
- (2)回転数と送り速度は、同じ割合で調整してください。
- (3)この切削条件表は目安を示すものですので、加工形状、機械の剛性等によって都度調整してください。
- (4)工具突き出し量は、必要最低限でご使用ください。
- (5)工具取付時の振れを最小に抑えてください。

DSE-2

切削条件参考

Referential Cutting Conditions

被削材 Workpiece	マシナブルセラミック Machinable Ceramics			カーボン Carbon			グラファイト Graphite		
切削速度 Cutting Speed	9m/min			30~300m/min			30~360m/min		
刃径 Flute Diameter mm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut Admm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut Admm	回転数 Revolution min ⁻¹	送り速度 Feed mm/min	切込量 Depth of Cut Admm
0.2	14,000	5	0.001~0.003	50,000	480	0.004 ~0.01	50,000	220	0.006 ~0.01
0.3	9,000	6	0.002~0.004	50,000	560	0.006 ~0.01	50,000	250	0.009 ~0.02
0.4	7,000	6	0.003~0.007	50,000	600	0.008 ~0.02	50,000	270	0.01 ~0.03
0.5	5,500	7	0.003~0.007	50,000	720	0.01 ~0.02	50,000	290	0.01 ~0.03
0.6	4,600	7	0.005~0.01	50,000	720	0.01 ~0.03	50,000	320	0.02 ~0.05
0.7	4,000	7	0.005~0.01	50,000	720	0.01 ~0.04	50,000	330	0.02 ~0.05
0.8	3,400	7	0.005~0.01	50,000	750	0.02 ~0.04	50,000	360	0.03 ~0.06
0.9	3,000	7	0.005~0.01	50,000	750	0.03 ~0.05	50,000	380	0.04 ~0.07
1	2,800	8	0.007~0.02	50,000	800	0.03 ~0.07	50,000	400	0.05 ~0.08
1.1	2,500	8	0.007~0.02	50,000	800	0.04 ~0.08	50,000	400	0.06 ~0.11
1.2	2,300	8	0.007~0.02	50,000	800	0.04 ~0.08	50,000	400	0.06 ~0.12
1.3	2,100	8	0.01 ~0.03	50,000	800	0.045 ~0.09	50,000	430	0.07 ~0.13
1.4	2,000	8	0.01 ~0.03	50,000	800	0.05 ~0.1	50,000	430	0.07 ~0.14
1.5	1,800	8	0.02 ~0.04	50,000	850	0.05 ~0.1	50,000	430	0.08 ~0.15
1.6	1,700	8	0.02 ~0.04	50,000	850	0.055 ~0.11	50,000	450	0.08 ~0.16
1.7	1,600	8	0.02 ~0.04	50,000	850	0.055 ~0.17	50,000	450	0.08 ~0.17
1.8	1,550	8	0.02 ~0.04	50,000	850	0.06 ~0.13	50,000	480	0.09 ~0.18
1.9	1,450	8	0.02 ~0.04	50,000	850	0.06 ~0.13	50,000	480	0.09 ~0.19
2	1,400	9	0.03 ~0.07	48,000	1,000	0.065 ~0.13	50,000	520	0.1 ~0.2
2.1	1,300	9	0.03 ~0.07	45,000	1,000	0.07 ~0.14	50,000	520	0.1 ~0.21
2.2	1,250	9	0.03 ~0.07	43,000	1,000	0.07 ~0.15	50,000	520	0.1 ~0.22
2.3	1,200	9	0.03 ~0.07	41,000	1,000	0.075 ~0.15	50,000	540	0.12 ~0.23
2.4	1,150	9	0.03 ~0.07	40,000	1,000	0.08 ~0.16	48,000	540	0.12 ~0.24
2.5	1,100	9	0.03 ~0.07	38,000	1,100	0.085 ~0.17	46,000	580	0.12 ~0.25
2.6	1,080	9	0.03 ~0.07	36,000	1,100	0.09 ~0.18	44,000	580	0.13 ~0.26
2.7	1,040	9	0.03 ~0.07	35,000	1,100	0.09 ~0.18	43,000	580	0.13 ~0.27
2.8	1,000	9	0.03 ~0.07	34,000	1,100	0.095 ~0.19	41,000	580	0.14 ~0.28
2.9	950	9	0.03 ~0.07	33,000	1,100	0.1 ~0.2	40,000	630	0.15 ~0.29
3	900	10	0.03 ~0.09	32,000	1,200	0.1 ~0.2	38,000	630	0.15 ~0.3
3.5	800	10	0.03 ~0.09	27,000	1,200	0.1 ~0.21	33,000	720	0.17 ~0.35
4	700	10	0.04 ~0.12	24,000	1,200	0.12 ~0.25	29,000	900	0.2 ~0.4
4.5	600	10	0.04 ~0.12	21,000	1,200	0.14 ~0.28	26,000	900	0.25 ~0.45
5	550	12	0.04 ~0.12	19,000	1,300	0.15 ~0.32	23,000	950	0.25 ~0.5
5.5	500	12	0.04 ~0.12	17,500	1,300	0.17 ~0.35	21,000	1,000	0.27 ~0.55
6	450	12	0.05 ~0.15	16,000	1,300	0.21 ~0.42	19,000	1,050	0.3 ~0.6

Remarks

- (1) Use rigid and accurate Machines and Tool Holders.
- (2) Adjust Revolution and Feed Speed at the same rate.
- (3) Adjust the cutting conditions respectively according to Cutting shape and Machine rigidity since these conditions are shown just as Standard.
- (4) Shorten overhang as much as possible is recommendable.
- (5) Minimize Run out on fixing tool.