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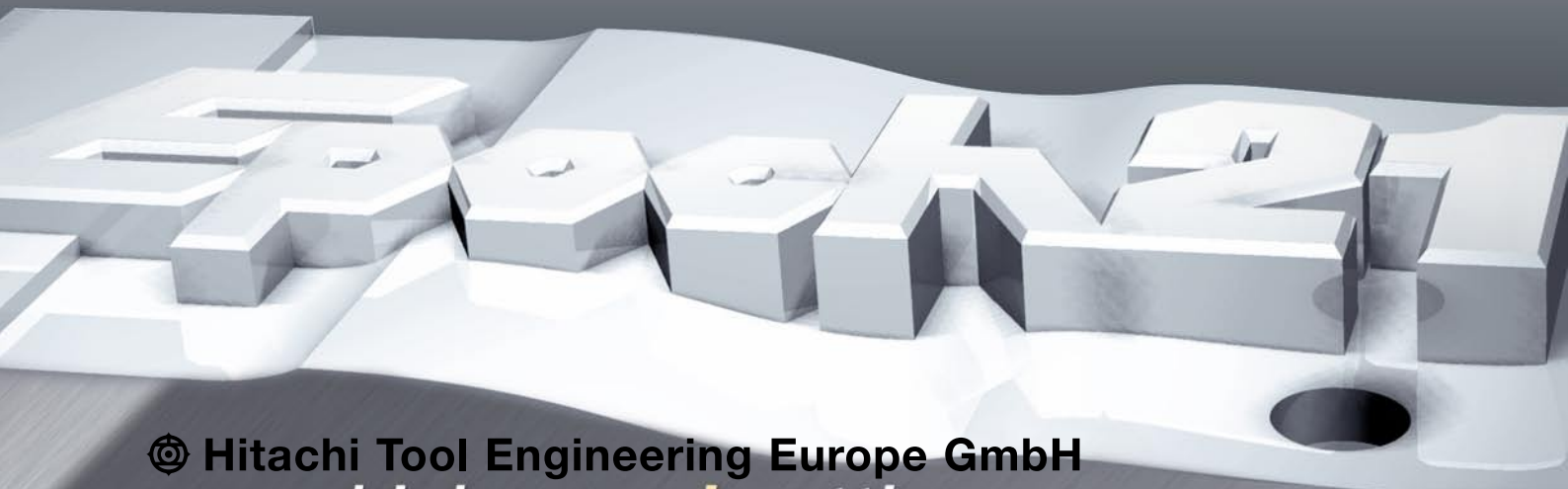
No. 427

**NEW**

# D-EPDB/EPDR

High Adhesion Diamond Coated  
Solid Carbide End Mill  
Epoch Deep HD Series for Graphite

 **HD  
COATING**

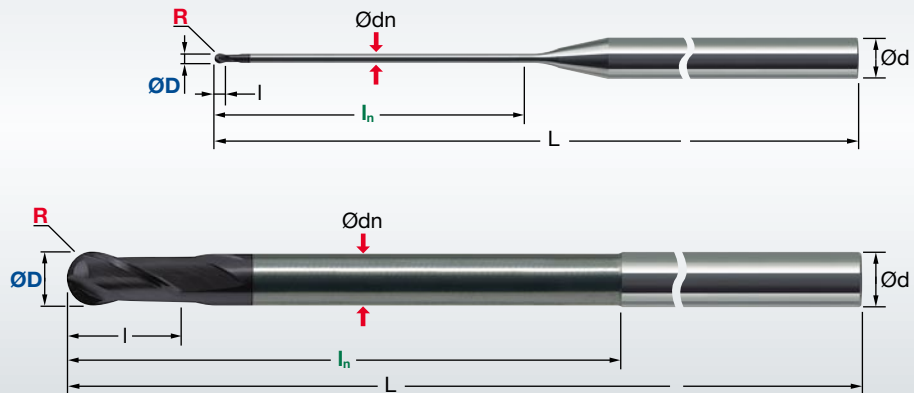
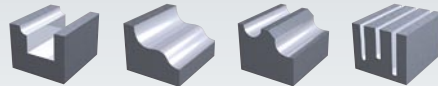


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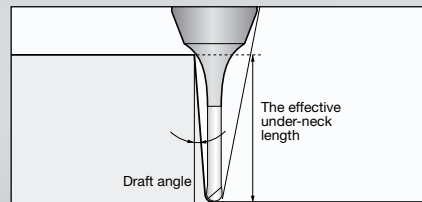
HD – High Adhesion Diamond Coated Solid Carbide End Mill

D-EPDB | Epoch HD Coated Deep Ball End Mill

<b>HD</b> Diamond Coating	<b>V max</b> High Speed	 Roughing	 Finishing	<b>No. of Teeth</b> 2
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Ød	h6
Helix angle	30°



ID Code	Item Code	Z	Size							Ød
			ØD	R	In	l	Ødn	L		
DC001	D-EPDB-2010-5	2	1	0.5	5	1.5	0.95	60	4	
DC002	D-EPDB-2010-10				10					
DC003	D-EPDB-2010-20				20					
DC004	D-EPDB-2010-30				30					
DC005	D-EPDB-2015-15		1.5	0.75	15	2.25	1.4	60		
DC006	D-EPDB-2015-30				30					
DC007	D-EPDB-2020-10		2	1	10	3	1.9	60		
DC008	D-EPDB-2020-20				20					
DC009	D-EPDB-2020-30				30					
DC010	D-EPDB-2020-40				40					
DC011	D-EPDB-2030-30		3	1.5	30	4.5	2.9	80		
DC012	D-EPDB-2030-60				60					
DC013	D-EPDB-2040-40		4	2	40	8	3.8	80		
DC014	D-EPDB-2040-80				80					
DC015	D-EPDB-2060-20		6	3	20	12	5.7	120		
DC016	D-EPDB-2060-60				60					
DC017	D-EPDB-2080-25		8	4	25	16	7.6	140		
DC018	D-EPDB-2080-80				80					
DC019	D-EPDB-2100-30		10	5	30	20	9.5	150		
DC020	D-EPDB-2100-100				100					

Effective Underneck Using Length by Draft Angle

	0.5°	1°	1.5°	2°	3°
5	5.74	5.97	6.16	6.33	6.63
10	10.95	11.28	11.55	12.01	13.26
20	21.56	22.16	22.87	23.97	26.54
30	31.86	32.76	34.27	35.94	x
15	16.20	16.58	17.27	18.08	19.98
30	31.93	32.87	34.37	36.03	x
10	11.04	11.33	11.58	12.05	13.26
20	21.32	21.95	22.93	24.02	x
30	31.93	32.85	34.34	x	x
40	42.17	43.74	x	x	x
30	31.54	32.80	34.27	35.88	x
60	62.75	65.49	x	x	x
40	42.11	43.91	x	x	x
80	83.83	x	x	x	x
20	x	x	x	x	x
60	x	x	x	x	x
25	x	x	x	x	x
80	x	x	x	x	x
30	x	x	x	x	x
100	x	x	x	x	x

x = no contact

HD – High Adhesion Diamond Coated Solid Carbide End Mill

D-EPDR | Epoch HD Coated Deep Radius End Mill

**HD**  
Diamond Coating

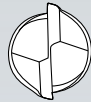
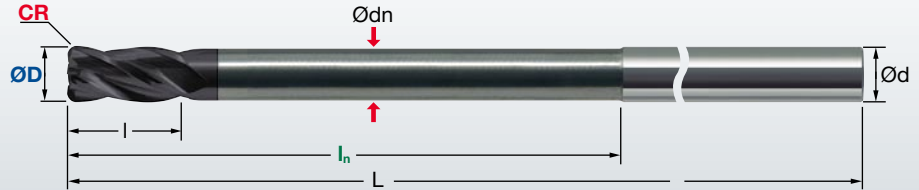
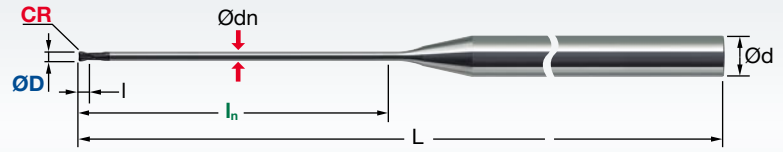
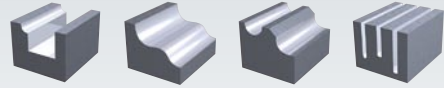
**V max**  
High Speed

**▽**  
Roughing

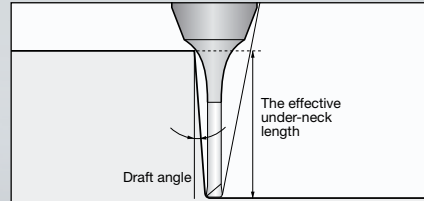
**▽▽**  
Finishing

**No. of Teeth**  
2

**No. of Teeth**  
4



Ød	h6
Helix angle	30°



ID Code	Item Code	Z	Size							Ød								
			ØD	CR	l <sub>n</sub>	l	Ødn	L										
DC024	D-EPDR-2010-5-02	2	1	0.2	5	1.5	0.95	60	4									
DC021	D-EPDR-2010-10-02				10													
DC022	D-EPDR-2010-20-02				20													
DC023	D-EPDR-2010-30-02				30													
DC025	D-EPDR-2015-15-02				1.5					15								
DC026	D-EPDR-2015-30-02									30								
DC027	D-EPDR-2020-10-02		2		2	10	3	1.9		60	6							
DC028	D-EPDR-2020-20-02					20												
DC029	D-EPDR-2020-30-02					30												
DC030	D-EPDR-2020-40-02					40												
DC031	D-EPDR-2030-30-02					3						30	4.5	2.9	100	80		
DC032	D-EPDR-2030-60-02											60						
DC033	D-EPDR-2040-40-05	4	4	40	8	3.8	80											
DC034	D-EPDR-2040-80-05			80														
DC035	D-EPDR-4060-20-10			4				6	20	12		5.7	120					
DC036	D-EPDR-4060-60-10								60									
DC037	D-EPDR-4080-25-10								8					1	25	16	7.6	140
DC038	D-EPDR-4080-80-10														80			
DC040	D-EPDR-4100-30-10	30																
DC039	D-EPDR-4100-100-10	10	100		20	9.5	150		10									

Effective Underneck Using Length by Draft Angle					
	0.5°	1°	1.5°	2°	3°
ØD=1	5.76	5.99	6.19	6.36	6.72
ØD=1.5	10.96	11.30	11.57	12.06	13.36
ØD=2	21.57	22.17	22.91	24.03	26.63
ØD=3	31.87	32.79	34.32	35.99	x
ØD=4	16.21	16.60	17.34	18.19	20.15
ØD=5	31.95	32.92	34.45	x	x
ØD=6	11.06	11.37	11.64	12.20	13.52
ØD=8	21.34	22.02	23.05	24.17	x
ØD=10	31.95	32.92	34.45	x	x
ØD=12	42.19	43.81	x	x	x
ØD=15	31.57	32.92	34.45	36.14	x
ØD=20	62.80	65.60	x	x	x
ØD=25	42.18	44.04	x	x	x
ØD=30	83.89	x	x	x	x
ØD=40	x	x	x	x	x
ØD=50	x	x	x	x	x
ØD=60	x	x	x	x	x
ØD=80	x	x	x	x	x
ØD=100	x	x	x	x	x

x = no contact

### HD – High Adhesion Diamond Coated Solid Carbide End Mill

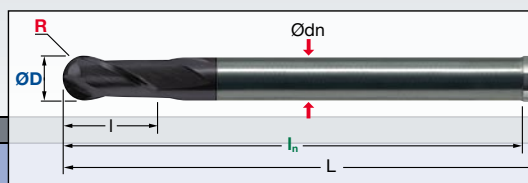
#### D-EPDB | Recommended Cutting Conditions


Up to **20,000 min<sup>-1</sup>** for **strong spindle machine**


**HSK50**

**HSK63**

**SK40**



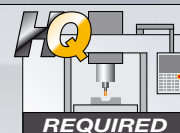
Material				Graphite						
Parameter				 Roughing						
ØD	R	l <sub>n</sub>	Z	V <sub>c</sub> (m/min)	n (min <sup>-1</sup> )	a <sub>p</sub> (mm)	a <sub>e</sub> (mm)	f <sub>z</sub> (mm/t)	V <sub>f</sub> (mm/min)	Q (cm <sup>3</sup> /min)
1	0.5	5	2	50 ~ 63	16,000 ~ 20,000	~ 0.50	~ 0.50	0.020	~ 800	0.20
		10		50 ~ 63	16,000 ~ 20,000	~ 0.50	~ 0.50	0.020	~ 800	0.20
		20		43 ~ 54	13,800 ~ 17,200	~ 0.30	~ 0.30	0.015	~ 520	0.05
		30		38 ~ 47	12,000 ~ 15,000	~ 0.30	~ 0.30	0.015	~ 450	0.04
1.5	0.75	15		75 ~ 94	16,000 ~ 20,000	~ 0.75	~ 0.75	0.030	~ 1,200	0.68
		30		64 ~ 80	13,600 ~ 17,000	~ 0.45	~ 0.45	0.023	~ 770	0.16
2	1	10		100 ~ 126	16,000 ~ 20,000	~ 1.00	~ 1.00	0.040	~ 1,600	1.60
		20		100 ~ 126	16,000 ~ 20,000	~ 1.00	~ 1.00	0.040	~ 1,600	1.60
		30		86 ~ 107	13,600 ~ 17,000	~ 0.60	~ 0.60	0.030	~ 1,020	0.37
		40		76 ~ 95	12,100 ~ 15,100	~ 0.60	~ 0.60	0.030	~ 910	0.33
3	1.5	30		151 ~ 189	16,000 ~ 20,000	~ 1.50	~ 1.50	0.060	~ 2,400	5.40
		60		129 ~ 161	13,700 ~ 17,100	~ 0.90	~ 0.90	0.045	~ 1,540	1.25
4	2	40	152 ~ 190	12,100 ~ 15,100	~ 2.00	~ 2.00	0.080	~ 2,420	9.68	
		80	129 ~ 161	10,200 ~ 12,800	~ 1.20	~ 1.20	0.060	~ 1,540	2.22	
6	3	20	151 ~ 189	8,000 ~ 10,000	~ 3.00	~ 3.00	0.090	~ 1,800	16.20	
		60	129 ~ 161	6,800 ~ 8,500	~ 1.80	~ 1.80	0.063	~ 1,070	3.47	
8	4	25	152 ~ 190	6,000 ~ 7,600	~ 4.00	~ 4.00	0.120	~ 1,820	29.12	
		80	129 ~ 161	5,100 ~ 6,400	~ 2.40	~ 2.40	0.084	~ 1,080	6.22	
10	5	30	152 ~ 190	4,800 ~ 6,000	~ 5.00	~ 5.00	0.150	~ 1,800	45.00	
		100	129 ~ 161	4,100 ~ 5,100	~ 3.00	~ 3.00	0.105	~ 1,070	9.63	

Material				Graphite						
Parameter				 Finishing						
ØD	R	l <sub>n</sub>	Z	V <sub>c</sub> (m/min)	n (min <sup>-1</sup> )	a <sub>p</sub> (mm)	a <sub>e</sub> (mm)	f <sub>z</sub> (mm/t)	V <sub>f</sub> (mm/min)	
1	0.5	5	2	50 ~ 63	16,000 ~ 20,000	~ 0.050	0.050 ~ 0.150	0.015	~ 600	
		10		50 ~ 63	16,000 ~ 20,000	~ 0.050	0.050 ~ 0.150	0.015	~ 600	
		20		43 ~ 54	13,800 ~ 17,200	~ 0.030	0.030 ~ 0.090	0.010	~ 340	
		30		38 ~ 47	12,000 ~ 15,000	~ 0.030	0.030 ~ 0.090	0.010	~ 300	
1.5	0.75	15		75 ~ 94	16,000 ~ 20,000	~ 0.075	0.075 ~ 0.225	0.023	~ 900	
		30		64 ~ 80	13,600 ~ 17,000	~ 0.045	0.045 ~ 0.135	0.015	~ 510	
2	1	10		100 ~ 126	16,000 ~ 20,000	~ 0.100	0.100 ~ 0.300	0.030	~ 1,200	
		20		100 ~ 126	16,000 ~ 20,000	~ 0.100	0.100 ~ 0.300	0.030	~ 1,200	
		30		86 ~ 107	13,600 ~ 17,000	~ 0.060	0.060 ~ 0.180	0.020	~ 680	
		40		76 ~ 95	12,100 ~ 15,100	~ 0.060	0.060 ~ 0.180	0.020	~ 600	
3	1.5	30		151 ~ 189	16,000 ~ 20,000	~ 0.150	0.150 ~ 0.450	0.045	~ 1,800	
		60		129 ~ 161	13,700 ~ 17,100	~ 0.090	0.090 ~ 0.270	0.030	~ 1,030	
4	2	40	152 ~ 190	12,100 ~ 15,100	~ 0.200	0.200 ~ 0.600	0.060	~ 1,810		
		80	129 ~ 161	10,200 ~ 12,800	~ 0.120	0.120 ~ 0.360	0.040	~ 1,020		
6	3	20	151 ~ 189	8,000 ~ 10,000	~ 0.300	0.300 ~ 0.900	0.090	~ 1,800		
		60	129 ~ 161	6,800 ~ 8,500	~ 0.300	0.300 ~ 0.900	0.090	~ 1,530		
8	4	25	152 ~ 190	6,000 ~ 7,600	~ 0.400	0.400 ~ 1.200	0.120	~ 1,820		
		80	129 ~ 161	5,100 ~ 6,400	~ 0.400	0.400 ~ 1.200	0.120	~ 1,540		
10	5	30	152 ~ 190	4,800 ~ 6,000	~ 0.500	0.500 ~ 1.500	0.150	~ 1,800		
		100	129 ~ 161	4,100 ~ 5,100	~ 0.500	0.500 ~ 1.500	0.150	~ 1,530		

**PLEASE NOTE:**

The values in these tables are only recommended under the following conditions:

1. The use of a machining centre and toolholder with highest precision, concentricity and rigidity
2. All components – including machine and controller – are of the latest technology



HD – High Adhesion Diamond Coated Solid Carbide End Mill

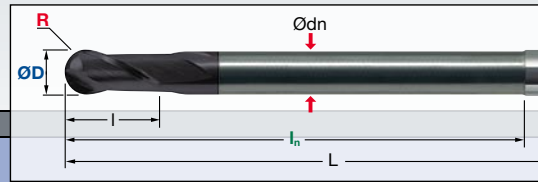
D-EPDB | Recommended Cutting Conditions


Up to 50,000 min<sup>-1</sup> (over 20,000 min<sup>-1</sup>) for weak spindle machine


HSK32

HSK40

SK40



Material				Graphite						
Parameter				 Roughing						
ØD	R	Ln	Z	V <sub>c</sub> (m/min)	n (min <sup>-1</sup> )	a <sub>p</sub> (mm)	a <sub>e</sub> (mm)	f <sub>z</sub> (mm/t)	V <sub>f</sub> (mm/min)	Q (cm <sup>3</sup> /min)
1	0.5	5	2	126 ~ 157	40,000 ~ 50,000	~ 0.15	~ 0.40	0.020	~ 2,000	0.12
		10		126 ~ 157	40,000 ~ 50,000	~ 0.15	~ 0.40	0.020	~ 2,000	0.12
		20		106 ~ 133	33,900 ~ 42,300	~ 0.10	~ 0.20	0.015	~ 1,270	0.03
		30		94 ~ 118	30,000 ~ 37,600	~ 0.10	~ 0.20	0.015	~ 1,130	0.02
1.5	0.75	15		188 ~ 236	40,000 ~ 50,000	~ 0.23	~ 0.60	0.030	~ 3,000	0.41
		30		160 ~ 200	34,000 ~ 42,400	~ 0.15	~ 0.30	0.023	~ 1,910	0.09
2	1	10		251 ~ 314	40,000 ~ 50,000	~ 0.30	~ 0.80	0.040	~ 4,000	0.96
		20		251 ~ 314	40,000 ~ 50,000	~ 0.30	~ 0.80	0.040	~ 4,000	0.96
		30		214 ~ 267	34,000 ~ 42,500	~ 0.20	~ 0.40	0.030	~ 2,550	0.20
		40		214 ~ 267	34,000 ~ 42,500	~ 0.20	~ 0.40	0.030	~ 2,550	0.20
3	1.5	30		377 ~ 471	40,000 ~ 50,000	~ 0.45	~ 1.20	0.060	~ 6,000	3.24
		60		320 ~ 400	34,000 ~ 42,400	~ 0.30	~ 0.60	0.045	~ 3,820	0.69
4	2	40	480 ~ 600	38,200 ~ 47,700	~ 0.60	~ 1.60	0.080	~ 7,630	7.32	
		80	408 ~ 510	32,500 ~ 40,600	~ 0.40	~ 0.80	0.060	~ 4,870	1.56	
6	3	20	480 ~ 600	25,500 ~ 31,800	~ 0.90	~ 2.40	0.090	~ 5,720	12.36	
		60	408 ~ 510	21,600 ~ 27,100	~ 0.90	~ 1.20	0.063	~ 3,410	3.68	
8	4	25	480 ~ 600	19,100 ~ 23,900	~ 1.20	~ 3.20	0.120	~ 5,740	22.04	
		80	408 ~ 510	16,200 ~ 20,300	~ 1.20	~ 1.60	0.084	~ 3,410	6.55	
10	5	30	480 ~ 600	15,300 ~ 19,100	~ 1.50	~ 4.00	0.150	~ 5,730	34.38	
		100	408 ~ 510	13,000 ~ 16,200	~ 1.50	~ 2.00	0.105	~ 3,400	10.20	

Material				Graphite						
Parameter				 Finishing						
ØD	R	Ln	Z	V <sub>c</sub> (m/min)	n (min <sup>-1</sup> )	a <sub>p</sub> (mm)	a <sub>e</sub> (mm)	f <sub>z</sub> (mm/t)	V <sub>f</sub> (mm/min)	
1	0.5	5	2	126 ~ 157	40,000 ~ 50,000	~ 0.050	0.050 ~ 0.150	0.015	~ 1,500	
		10		126 ~ 157	40,000 ~ 50,000	~ 0.050	0.050 ~ 0.150	0.015	~ 1,500	
		20		106 ~ 133	33,900 ~ 42,300	~ 0.030	0.030 ~ 0.090	0.010	~ 850	
		30		94 ~ 118	30,000 ~ 37,600	~ 0.030	0.030 ~ 0.090	0.010	~ 750	
1.5	0.75	15		188 ~ 236	40,000 ~ 50,000	~ 0.075	0.075 ~ 0.225	0.023	~ 2,250	
		30		160 ~ 200	34,000 ~ 42,400	~ 0.045	0.045 ~ 0.135	0.015	~ 1,270	
2	1	10		251 ~ 314	40,000 ~ 50,000	~ 0.100	0.100 ~ 0.300	0.030	~ 3,000	
		20		251 ~ 314	40,000 ~ 50,000	~ 0.100	0.100 ~ 0.300	0.030	~ 3,000	
		30		214 ~ 267	34,000 ~ 42,500	~ 0.060	0.060 ~ 0.180	0.020	~ 1,700	
		40		214 ~ 267	34,000 ~ 42,500	~ 0.060	0.060 ~ 0.180	0.020	~ 1,700	
3	1.5	30		377 ~ 471	40,000 ~ 50,000	~ 0.150	0.150 ~ 0.450	0.045	~ 4,500	
		60		320 ~ 400	34,000 ~ 42,400	~ 0.090	0.090 ~ 0.270	0.030	~ 2,540	
4	2	40	502 ~ 628	40,000 ~ 50,000	~ 0.200	0.200 ~ 0.600	0.060	~ 6,000		
		80	427 ~ 534	34,000 ~ 42,500	~ 0.120	0.120 ~ 0.360	0.040	~ 3,400		
6	3	20	560 ~ 700	29,700 ~ 37,100	~ 0.300	0.300 ~ 0.900	0.090	~ 6,680		
		60	476 ~ 595	25,300 ~ 31,600	~ 0.300	0.300 ~ 0.900	0.090	~ 5,690		
8	4	25	560 ~ 700	22,300 ~ 27,900	~ 0.400	0.400 ~ 1.200	0.120	~ 6,700		
		80	476 ~ 595	18,900 ~ 23,700	~ 0.400	0.400 ~ 1.200	0.120	~ 5,690		
10	5	30	560 ~ 700	17,800 ~ 22,300	~ 0.500	0.500 ~ 1.500	0.150	~ 6,690		
		100	476 ~ 595	15,200 ~ 18,900	~ 0.500	0.500 ~ 1.500	0.150	~ 5,670		

PLEASE NOTE:

The values in these tables are only recommended under the following conditions:

1. The use of a machining centre and toolholder with highest precision, concentricity and rigidity
2. All components – including machine and controller – are of the latest technology



### HD – High Adhesion Diamond Coated Solid Carbide End Mill

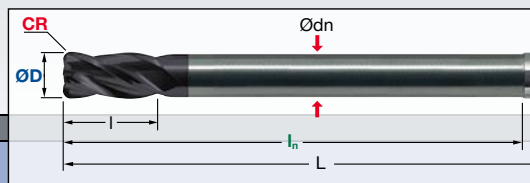
#### D-EPDR | Recommended Cutting Conditions

Up to **20,000 min<sup>-1</sup>** for **strong spindle machine**

**HSK50**

**HSK63**

**SK40**



Material				Graphite						
Parameter				▽ Roughing						
ØD	CR	Ln	Z	V <sub>c</sub> (m/min)	n (min <sup>-1</sup> )	a <sub>p</sub> (mm)	a <sub>e</sub> (mm)	f <sub>z</sub> (mm/t)	V <sub>f</sub> (mm/min)	Q (cm <sup>3</sup> /min)
1	0.2	5	2	50 ~ 63	16,000 ~ 20,000	~ 0.50	~ 0.60	0.020	~ 800	0.24
		10		50 ~ 63	16,000 ~ 20,000	~ 0.50	~ 0.60	0.020	~ 800	0.24
		20		43 ~ 54	13,800 ~ 17,200	~ 0.30	~ 0.35	0.015	~ 520	0.05
		30		38 ~ 47	12,000 ~ 15,000	~ 0.30	~ 0.35	0.015	~ 450	0.05
1.5		15		75 ~ 94	16,000 ~ 20,000	~ 0.75	~ 1.10	0.030	~ 1,200	0.99
		30		64 ~ 80	13,600 ~ 17,000	~ 0.45	~ 0.65	0.023	~ 770	0.23
2		10		100 ~ 126	16,000 ~ 20,000	~ 1.00	~ 1.60	0.040	~ 1,600	2.56
		20		100 ~ 126	16,000 ~ 20,000	~ 1.00	~ 1.60	0.040	~ 1,600	2.56
	30	86 ~ 107	13,600 ~ 17,000	~ 0.60	~ 1.00	0.030	~ 1,020	0.61		
3	40	76 ~ 95	12,100 ~ 15,100	~ 0.60	~ 1.00	0.030	~ 910	0.55		
	30	151 ~ 189	16,000 ~ 20,000	~ 1.50	~ 2.60	0.060	~ 2,400	9.36		
4	0.5	60	129 ~ 161	13,700 ~ 17,100	~ 0.90	~ 1.60	0.045	~ 1,540	2.22	
		40	152 ~ 190	12,100 ~ 15,100	~ 2.00	~ 3.00	0.080	~ 2,420	14.52	
6	1	80	129 ~ 161	10,200 ~ 12,800	~ 1.20	~ 1.80	0.060	~ 1,540	3.33	
		20	152 ~ 190	8,100 ~ 10,100	~ 3.00	~ 4.00	0.090	~ 3,640	43.68	
8	1	60	129 ~ 161	6,800 ~ 8,500	~ 1.80	~ 2.40	0.063	~ 2,140	9.24	
		25	152 ~ 190	6,000 ~ 7,600	~ 4.00	~ 6.00	0.120	~ 3,650	87.60	
10	1	80	129 ~ 161	5,100 ~ 6,400	~ 2.40	~ 3.60	0.084	~ 2,150	18.58	
		30	152 ~ 190	4,800 ~ 6,000	~ 5.00	~ 8.00	0.150	~ 3,600	144.00	
10	1	100	129 ~ 161	4,100 ~ 5,100	~ 3.00	~ 4.80	0.105	~ 2,140	30.82	

Material				Graphite						
Parameter				▽▽▽ Finishing						
ØD	CR	Ln	Z	V <sub>c</sub> (m/min)	n (min <sup>-1</sup> )	a <sub>p</sub> (mm)	a <sub>e</sub> (mm)	f <sub>z</sub> (mm/t)	V <sub>f</sub> (mm/min)	
1	0.2	5	2	50 ~ 63	16,000 ~ 20,000	~ 0.050	0.050 ~ 0.150	0.015	~ 600	
		10		50 ~ 63	16,000 ~ 20,000	~ 0.050	0.050 ~ 0.150	0.015	~ 600	
		20		43 ~ 54	13,800 ~ 17,200	~ 0.030	0.030 ~ 0.090	0.010	~ 340	
		30		38 ~ 47	12,000 ~ 15,000	~ 0.030	0.030 ~ 0.090	0.010	~ 300	
1.5		15		75 ~ 94	16,000 ~ 20,000	~ 0.075	0.075 ~ 0.225	0.023	~ 900	
		30		64 ~ 80	13,600 ~ 17,000	~ 0.045	0.045 ~ 0.135	0.015	~ 510	
2		10		100 ~ 126	16,000 ~ 20,000	~ 0.100	0.100 ~ 0.300	0.030	~ 1,200	
		20		100 ~ 126	16,000 ~ 20,000	~ 0.100	0.100 ~ 0.300	0.030	~ 1,200	
	30	86 ~ 107	13,600 ~ 17,000	~ 0.060	0.060 ~ 0.180	0.020	~ 680			
3	40	76 ~ 95	12,100 ~ 15,100	~ 0.060	0.060 ~ 0.180	0.020	~ 600			
	30	151 ~ 189	16,000 ~ 20,000	~ 0.150	0.150 ~ 0.450	0.045	~ 1,800			
4	0.5	60	129 ~ 161	13,700 ~ 17,100	~ 0.090	0.090 ~ 0.270	0.030	~ 1,030		
		40	152 ~ 190	12,100 ~ 15,100	~ 0.200	0.200 ~ 0.600	0.060	~ 1,810		
6	1	80	129 ~ 161	10,200 ~ 12,800	~ 0.120	0.120 ~ 0.360	0.040	~ 1,020		
		20	152 ~ 190	8,100 ~ 10,100	~ 0.300	0.300 ~ 0.900	0.090	~ 3,640		
8	1	60	129 ~ 161	6,800 ~ 8,500	~ 0.300	0.300 ~ 0.900	0.090	~ 3,060		
		25	152 ~ 190	6,000 ~ 7,600	~ 0.400	0.400 ~ 1.200	0.120	~ 3,650		
10	1	80	129 ~ 161	5,100 ~ 6,400	~ 0.400	0.400 ~ 1.200	0.120	~ 3,070		
		30	152 ~ 190	4,800 ~ 6,000	~ 0.500	0.500 ~ 1.500	0.150	~ 3,600		
10	1	100	129 ~ 161	4,100 ~ 5,100	~ 0.500	0.500 ~ 1.500	0.150	~ 3,060		

**PLEASE NOTE:**  
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1. The use of a machining centre and toolholder with highest precision, concentricity and rigidity
2. All components – including machine and controller – are of the latest technology



HD – High Adhesion Diamond Coated Solid Carbide End Mill

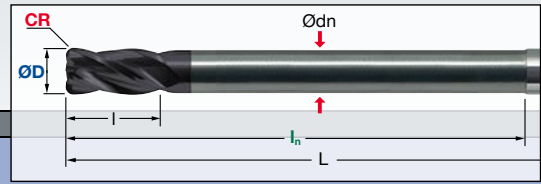
D-EPDR | Recommended Cutting Conditions

Up to 50,000 min<sup>-1</sup> (over 20,000 min<sup>-1</sup>) for weak spindle machine

HSK32

HSK40

SK40



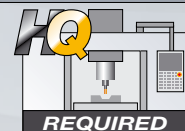
Material				Graphite						
Parameter				▽ Roughing						
ØD	CR	Ln	Z	V <sub>c</sub> (m/min)	n (min <sup>-1</sup> )	a <sub>p</sub> (mm)	a <sub>e</sub> (mm)	f <sub>z</sub> (mm/t)	V <sub>f</sub> (mm/min)	Q (cm <sup>3</sup> /min)
1	0.2	5	2	126 ~ 157	40,000 ~ 50,000	~ 0.10	~ 0.60	0.020	~ 2,000	0.12
		10		126 ~ 157	40,000 ~ 50,000	~ 0.10	~ 0.60	0.020	~ 2,000	0.12
		20		106 ~ 133	33,900 ~ 42,300	~ 0.05	~ 0.35	0.015	~ 1,270	0.02
		30		94 ~ 118	30,000 ~ 37,600	~ 0.05	~ 0.35	0.015	~ 1,130	0.02
1.5		15		188 ~ 236	40,000 ~ 50,000	~ 0.15	~ 1.10	0.030	~ 3,000	0.50
		30		160 ~ 200	34,000 ~ 42,400	~ 0.08	~ 0.65	0.023	~ 1,910	0.09
2		10		251 ~ 314	40,000 ~ 50,000	~ 0.20	~ 1.60	0.040	~ 4,000	1.28
		20		251 ~ 314	40,000 ~ 50,000	~ 0.20	~ 1.60	0.040	~ 4,000	1.28
	30	214 ~ 267	34,000 ~ 42,500	~ 0.10	~ 1.00	0.030	~ 2,550	0.26		
	40	214 ~ 267	34,000 ~ 42,500	~ 0.10	~ 1.00	0.030	~ 2,550	0.26		
3	30	377 ~ 471	40,000 ~ 50,000	~ 0.30	~ 2.60	0.060	~ 6,000	4.68		
	60	320 ~ 400	34,000 ~ 42,400	~ 0.15	~ 1.60	0.045	~ 3,820	0.92		
4	0.5	40	480 ~ 600	38,200 ~ 47,700	~ 0.40	~ 3.00	0.080	~ 7,630	9.16	
		80	408 ~ 510	32,500 ~ 40,600	~ 0.20	~ 1.80	0.060	~ 4,870	1.75	
6	1	20	480 ~ 600	25,500 ~ 31,800	~ 0.60	~ 4.00	0.090	~ 11,450	27.48	
		60	408 ~ 510	21,600 ~ 27,100	~ 0.60	~ 2.40	0.063	~ 6,830	9.84	
25		480 ~ 600	19,100 ~ 23,900	~ 0.80	~ 6.00	0.120	~ 11,470	55.06		
80		408 ~ 510	16,200 ~ 20,300	~ 0.80	~ 3.60	0.084	~ 6,820	19.64		
10	30	480 ~ 600	15,300 ~ 19,100	~ 1.00	~ 8.00	0.150	~ 11,460	91.68		
	100	408 ~ 510	13,000 ~ 16,200	~ 1.00	~ 4.80	0.105	~ 6,800	32.64		

Material				Graphite					
Parameter				▽▽▽ Finishing					
ØD	CR	Ln	Z	V <sub>c</sub> (m/min)	n (min <sup>-1</sup> )	a <sub>p</sub> (mm)	a <sub>e</sub> (mm)	f <sub>z</sub> (mm/t)	V <sub>f</sub> (mm/min)
1	0.2	5	2	126 ~ 157	40,000 ~ 50,000	~ 0.050	0.050 ~ 0.150	0.015	~ 1,500
		10		126 ~ 157	40,000 ~ 50,000	~ 0.050	0.050 ~ 0.150	0.015	~ 1,500
		20		106 ~ 133	33,900 ~ 42,300	~ 0.030	0.030 ~ 0.090	0.010	~ 850
		30		94 ~ 118	30,000 ~ 37,600	~ 0.030	0.030 ~ 0.090	0.010	~ 750
1.5		15		188 ~ 236	40,000 ~ 50,000	~ 0.075	0.075 ~ 0.225	0.023	~ 2,250
		30		160 ~ 200	34,000 ~ 42,400	~ 0.045	0.045 ~ 0.135	0.015	~ 1,270
2		10		251 ~ 314	40,000 ~ 50,000	~ 0.100	0.100 ~ 0.300	0.030	~ 3,000
		20		251 ~ 314	40,000 ~ 50,000	~ 0.100	0.100 ~ 0.300	0.030	~ 3,000
	30	214 ~ 267	34,000 ~ 42,500	~ 0.060	0.060 ~ 0.180	0.020	~ 1,700		
	40	214 ~ 267	34,000 ~ 42,500	~ 0.060	0.060 ~ 0.180	0.020	~ 1,700		
3	30	377 ~ 471	40,000 ~ 50,000	~ 0.150	0.150 ~ 0.450	0.045	~ 4,500		
	60	320 ~ 400	34,000 ~ 42,400	~ 0.090	0.090 ~ 0.270	0.030	~ 2,540		
4	0.5	40	502 ~ 628	40,000 ~ 50,000	~ 0.200	0.200 ~ 0.600	0.060	~ 6,000	
		80	427 ~ 534	34,000 ~ 42,500	~ 0.120	0.120 ~ 0.360	0.040	~ 3,400	
6	1	20	560 ~ 700	29,700 ~ 37,100	~ 0.300	0.300 ~ 0.900	0.090	~ 13,360	
		60	476 ~ 595	25,300 ~ 31,600	~ 0.300	0.300 ~ 0.900	0.090	~ 11,380	
25		560 ~ 700	22,300 ~ 27,900	~ 0.400	0.400 ~ 1.200	0.120	~ 13,390		
80		476 ~ 595	18,900 ~ 23,700	~ 0.400	0.400 ~ 1.200	0.120	~ 11,380		
10	30	560 ~ 700	17,800 ~ 22,300	~ 0.500	0.500 ~ 1.500	0.150	~ 13,380		
	100	476 ~ 595	15,200 ~ 18,900	~ 0.500	0.500 ~ 1.500	0.150	~ 11,340		

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## Product Range

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Solid Carbide End Mills



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**Epoch21**

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**3D-Cut**

**CARBIDE**

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**ESM**  
**SPEED**

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