

# PRODUCT NEWS

PN-E-011

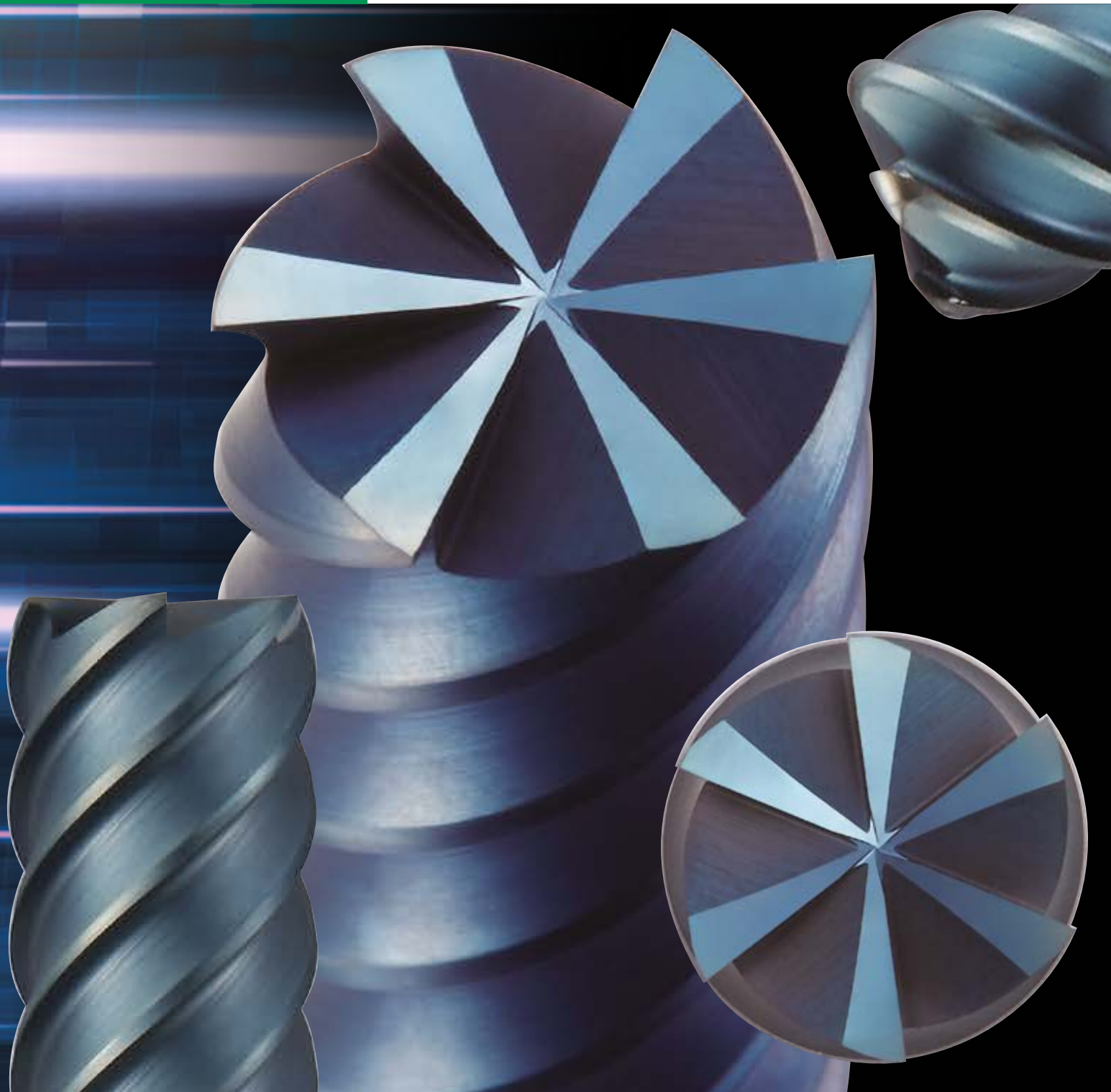


## One-Cut 70 70HRC

"DH COATING" Solid Carbide End Mill for high hardened die steel up to 70HRC.

SERIES EXPANSION

# SEH type



DIJET GmbH

[www.dijet.de](http://www.dijet.de)



### Features 1

Adopting high rigid design achieves high speed and high efficient machining.

### Features 2

Due to unique geometry, possible to reduce cutting force and to perform high precision in semi-finishing and finishing process.

### Features 3

Adopting PVD coated grade "DH102" gives stable and high precision machining on high hardened materials. "DH1 COATING", multi nano-layer PVD coating perform longer tool life on high hardened materials.



## Newly developed "DH1 COATING"

DH1 COATING gives stable and high-performance machining on high hardened materials even with high speed dry condition, due to higher hardness and higher oxidation resistance than the existing PVD coating.

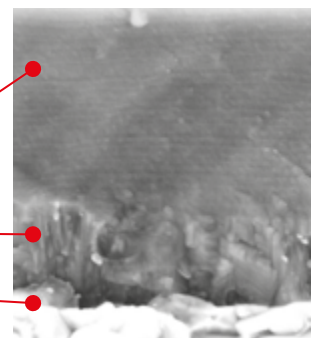
### Characteristic value of various PVD coatings

	DH coating	DV coating	DZ coating
Hardness (Hv)	<b>3,500~3,700</b>	3,300~3,500	2,800~2,900
Oxidization temperature (°C)	<b>1,100~1,200</b>	1,000~1,100	700~800
Coefficient of friction	<b>0.5</b>	0.65	0.6

### Features of DH1 coating

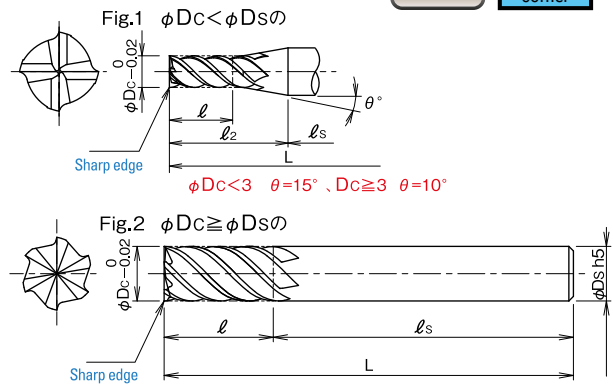
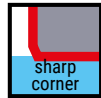
- DH1 is AlCr based hard coating, which significantly improved hardness and oxidation residence.
- Super multi layer coating makes it possible to restrain crack propagation.
- It is suitable for high hardened materials from semi finishing to finishing process.

High hardness • High oxidation residence layer  
 High adhesion • Toughness layer  
 Exclusive base metal



● SEHS/SEHH type (Square type/Short, Regular length of cut)

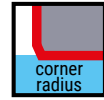
- For high hardened die steel up to 70HRC.
- Short, Regular length of cut
- 4, 6 flutes / Helix angle 50°



Cat. No.	Stock	Grade	No. of flutes	Dimensions (mm)						Fig.	
				$\phi D_c$	$\ell$	$\ell_2$	$\ell_s$	L	$\phi D_s$		
Short	SEHS4010	●	DH102	4	1	2	12	48	60	6	1
	SEHS4020	●		4	2	4	12	48	60	6	1
	SEHS4030	●		4	3	7	17	43	60	6	1
	SEHS4040	●		4	4	9	16	44	60	6	1
	SEHS4050	●		4	5	12	16	44	60	6	1
	SEHS6060	●		6	6	13	—	47	60	6	2
Regular	SEHH4010	●	DH102	4	1	3.5	13	47	60	6	1
	SEHH4015	●		4	1.5	5	14	46	60	6	1
	SEHH4020	●		4	2	7	15	45	60	6	1
	SEHH4025	●		4	2.5	8	15	45	60	6	1
	SEHH4030	●		4	3	10	20	40	60	6	1
	SEHH4035	●		4	3.5	12	20	40	60	6	1
	SEHH4040	●		4	4	12	19	41	60	6	1
	SEHH4045	●		4	4.5	15	20	40	60	6	1
	SEHH4050	●		4	5	15	19	41	60	6	1
	SEHH4055	●		4	5.5	15	18	42	60	6	1
	SEHH6060	●		6	6	15	—	45	60	6	2
	SEHH6065	●		6	6.5	20	25	50	75	8	1
	SEHH6070	●		6	7	20	24	51	75	8	1
	SEHH6075	●		6	7.5	20	22	53	75	8	1
	SEHH6080	●		6	8	20	—	55	75	8	2
	SEHH6085	●		6	8.5	25	30	50	80	10	1
	SEHH6090	●		6	9	25	29	51	80	10	1
	SEHH6095	●		6	9.5	25	27	53	80	10	1
	SEHH6100	●		6	10	25	—	55	80	10	2
	SEHH6105	●		6	10.5	30	35	65	100	12	1
	SEHH6110	●		6	11	30	34	66	100	12	1
	SEHH6120	●		6	12	30	—	70	100	12	2
	SEHH6130	●		6	13	35	45	60	105	16	1
	SEHH6140	●		6	14	35	42	63	105	16	1
SEHH6150	●	6	15	40	44	66	110	16	1		
SEHH6160	●	6	16	40	—	70	110	16	2		
SEHH6180	●	6	18	40	47	73	120	20	1		
SEHH6200	●	6	20	45	—	80	125	20	2		

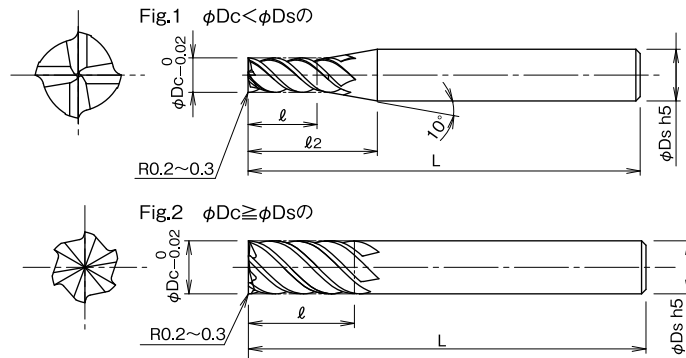
● Standard stock items

## SEHH type (Square type/Regular length of cut with R0.2)



Adapted micro corner radius on the cutting edge solve the chipping problems

- For high hardened die steel up to 70 HRC
- Regular length of cut
- 4, 6 flutes / Helix angle 50°
- R0.2 Corner radius

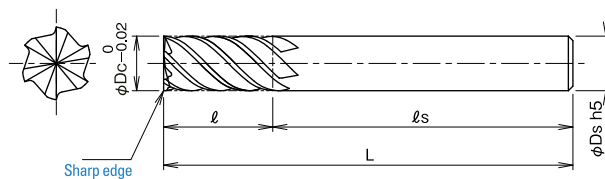
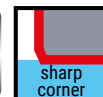


Cat. No.	Stock	Grade	No. of flutes	Dimensions (mm)					Fig.
				$\phi D_c$	$\ell$	$\ell_2$	L	$\phi D_s$	
SEHH4030-R02	●	DH102	4	3	10	20	60	6	1
SEHH4040-R02	●		4	4	12	19	60	6	1
SEHH4050-R02	●		4	5	15	19	60	6	1
SEHH6060-R02	●		6	6	15	—	60	6	2
SEHH6070-R02	●		6	7	20	24	75	8	1
SEHH6080-R02	●		6	8	20	—	75	8	2
SEHH6090-R02	●		6	9	25	29	80	10	1
SEHH6100-R02	●		6	10	25	—	80	10	2
SEHH6120-R02	●		6	12	30	—	100	12	2
SEHH6160-R02	●		6	16	40	—	110	16	2
SEHH6200-R02	●		6	20	45	—	125	20	2

● Standard stock items

## SEHM type (Square type/Middle length of cut)

- For high hardened die steel up to 70HRC.
- Middle length of cut
- 6 flutes / Helix angle 50°

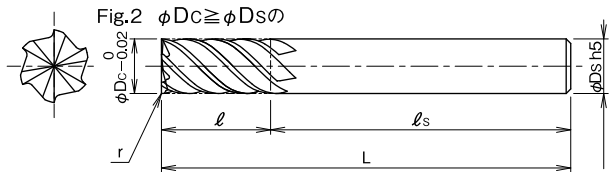
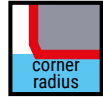
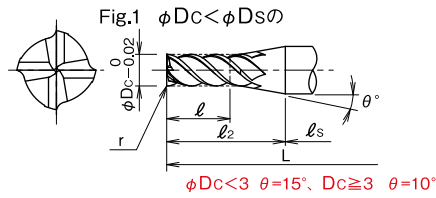


Cat. No.	Stock	Grade	No. of flutes	Dimensions (mm)				
				$\phi D_c$	$\ell$	$\ell_s$	L	$\phi D_s$
SEHM6060	●	DH102	6	6	20	45	65	6
SEHM6080	●		6	8	28	52	80	8
SEHM6100	●		6	10	35	55	90	10
SEHM6120	●		6	12	45	65	110	12
SEHM6160	●		6	16	55	65	120	16
SEHM6200	●		6	20	60	80	140	20

● Standard stock items

### ● SEHH-R type (Radius type/Regular length of cut)

- For high hardened die steel up to 70HRC.
- Regular length of cut
- 4, 6 flutes / Helix angle 50°

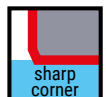
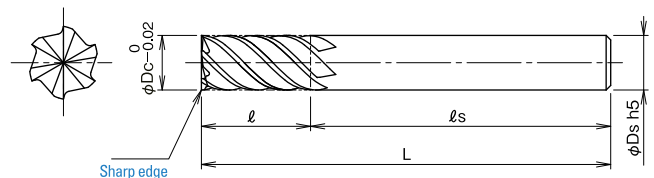


Cat. No.	Stock	Grade	No. of flutes	Dimensions (mm)							Fig.
				$\phi Dc$	$r$	$l$	$l_2$	$l_s$	$L$	$\phi Ds$	
SEHH4030-R03	●	DH102	4	3	0.3	10	20	40	60	6	1
SEHH4030-R05	●		4	3	0.5	10	20	40	60	6	1
SEHH4040-R03	●		4	4	0.3	12	19	41	60	6	1
SEHH4040-R05	●		4	4	0.5	12	19	41	60	6	1
SEHH4050-R03	●		4	5	0.3	15	19	41	60	6	1
SEHH4050-R05	●		4	5	0.5	15	—	41	60	6	1
SEHH6060-R03	●		6	6	0.3	15	—	45	60	6	2
SEHH6060-R05	●		6	6	0.5	15	—	45	60	6	2
SEHH6060-R10	●		6	6	1	15	—	45	60	6	2
SEHH6080-R03	●		6	8	0.3	20	—	55	75	8	2
SEHH6080-R05	●		6	8	0.5	20	—	55	75	8	2
SEHH6080-R10	●		6	8	1	20	—	55	75	8	2
SEHH6100-R03	●		6	10	0.3	25	—	55	80	10	2
SEHH6100-R05	●		6	10	0.5	25	—	55	80	10	2
SEHH6100-R10	●		6	10	1	25	—	55	80	10	2
SEHH6100-R15	●		6	10	1.5	25	—	55	80	10	2
SEHH6120-R03	●		6	12	0.3	30	—	70	100	12	2
SEHH6120-R05	●		6	12	0.5	30	—	70	100	12	2
SEHH6120-R10	●		6	12	1	30	—	70	100	12	2
SEHH6120-R15	●		6	12	1.5	30	—	70	100	12	2
SEHH6160-R03	●	6	16	0.3	40	—	70	110	16	2	
SEHH6160-R05	●	6	16	0.5	40	—	70	110	16	2	
SEHH6160-R10	●	6	16	1	40	—	70	110	16	2	
SEHH6160-R15	●	6	16	1.5	40	—	70	110	16	2	
SEHH6200-R03	●	6	20	0.3	45	—	80	125	20	2	
SEHH6200-R05	●	6	20	0.5	45	—	80	125	20	2	
SEHH6200-R10	●	6	20	1	45	—	80	125	20	2	
SEHH6200-R15	●	6	20	1.5	45	—	80	125	20	2	

● Standard stock items

### ● SEHL type (Square type/Long length of cut)

- For high hardened die steel up to 70HRC.
- Long length of cut
- 6 flutes / Helix angle 50°



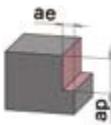
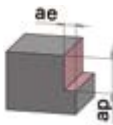
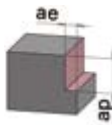
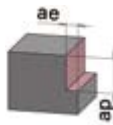
Cat. No.	Stock	Grade	No. of flutes	Dimensions (mm)				
				$\phi Dc$	$l$	$l_s$	$L$	$\phi Ds$
SEHL6060	●	DH102	6	6	26	44	70	6
SEHL6080	●		6	8	36	54	90	8
SEHL6100	●		6	10	46	54	100	10
SEHL6120	●		6	12	56	64	120	12
SEHL6160	●		6	16	66	69	135	16
SEHL6200	●		6	20	76	79	155	20

● Standard stock items



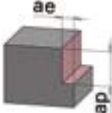
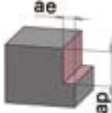
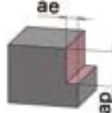
## Recommended cutting conditions

### SEHS/SEHH/SEHH-R02/SEHH-R type

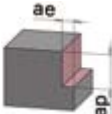
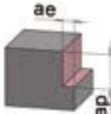
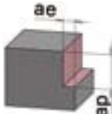
Work materials	(NAK80, HPM1, P21) Mold Steel (1.2311,P21) 38~43HRC		(SKD61, DAC, DHA) Hardened die steel (1.2344,1.2379) 42~52HRC		(SKD11, SLD, DC11) Hardened die steel (1.2344,1.2379) 55~62HRC		(SKH, HAP) High speed tool steel (1.3343) 63~70HRC	
	 $a_p \leq 1.5D_c$ $a_e \leq 0.05D_c$		 $a_p \leq 1.5D_c$ $a_e \leq 0.04D_c$		 $a_p \leq 1.5D_c$ $a_e \leq 0.04D_c$ (MAX.0.6mm)		 $a_p \leq 1.5D_c$ $a_e \leq 0.02D_c$ (MAX.0.4mm)	
Tool dia. $\phi D_c$ (mm)	n (min <sup>-1</sup> )	Vf (mm/min)	n (min <sup>-1</sup> )	Vf (mm/min)	n (min <sup>-1</sup> )	Vf (mm/min)	n (min <sup>-1</sup> )	Vf (mm/min)
1	40,000	700	25,000	410	20,000	320	10,000	130
2	24,000	950	15,000	560	12,000	430	6,400	220
3	24,000	1,300	15,000	800	12,000	600	6,000	250
4	18,000	1,800	12,000	1,100	9,500	800	5,100	300
6	12,000	2,200	8,000	1,400	6,500	1,100	3,500	420
8	10,000	2,200	6,000	1,400	5,000	1,100	2,500	420
10	8,000	2,200	5,000	1,400	4,000	1,100	2,000	420
12	6,500	1,900	4,000	1,200	3,300	900	1,700	350
16	5,000	1,480	3,000	930	2,500	700	1,300	260
20	3,800	1,150	2,300	730	2,000	550	1,000	200

- Attention for use: (1) Above cutting conditions are for general guidance.  
 (2) The figures to be adjusted according to machining shape, purpose and rigidity of machine and work clamping.  
 (3) Recommend to use down cutting with air blow or mist coolant.

## SEHM type

Work materials	(NAK80, HPM1, P21) Mold Steel (1.2311,P21) 38~43HRC		(SKD61, DAC, DHA) Hardened die steel (1.2344,1.2379) 42~52HRC		(SKD11, SLD, DC11) Hardened die steel (1.2344,1.2379) 55~62HRC		(SKH, HAP) High speed tool steel (1.3343) 63~70HRC	
	 $a_p \leq 2.25D_c$ $a_e \leq 0.03D_c$		 $a_p \leq 2.25D_c$ $a_e \leq 0.025D_c$		 $a_p \leq 2.25D_c$ $a_e \leq 0.025D_c$		 $a_p \leq 2.25D_c$ $a_e \leq 0.01D_c$	
Tool dia. $\phi D_c$ (mm)	$n$ (min <sup>-1</sup> )	$V_f$ (mm/min)	$n$ (min <sup>-1</sup> )	$V_f$ (mm/min)	$n$ (min <sup>-1</sup> )	$V_f$ (mm/min)	$n$ (min <sup>-1</sup> )	$V_f$ (mm/min)
6	10,600	1,900	6,400	1,200	5,300	1,000	2,700	320
8	8,000	1,900	4,800	1,200	4,000	1,000	2,000	360
10	6,400	1,900	3,800	1,200	3,200	1,000	1,600	380
12	5,300	1,600	3,200	1,000	2,700	800	1,300	240
16	4,000	1,200	2,400	700	2,000	600	1,000	180
20	3,200	1,000	1,900	600	1,600	500	800	140

## SEHL type

Work materials	(NAK80, HPM1, P21) Mold Steel (1.2311,P21) 38~43HRC		(SKD61, DAC, DHA) Hardened die steel (1.2344,1.2379) 42~52HRC		(SKD11, SLD, DC11) Hardened die steel (1.2344,1.2379) 55~62HRC	
	 $a_p \leq 3D_c$ $a_e \leq 0.01D_c$		 $a_p \leq 3D_c$ $a_e \leq 0.01D_c$		 $a_p \leq 3D_c$ $a_e \leq 0.01D_c$	
Tool dia. $\phi D_c$ (mm)	$n$ (min <sup>-1</sup> )	$V_f$ (mm/min)	$n$ (min <sup>-1</sup> )	$V_f$ (mm/min)	$n$ (min <sup>-1</sup> )	$V_f$ (mm/min)
6	3,180	760	2,650	480	2,100	380
8	2,390	720	1,990	480	1,590	380
10	1,910	690	1,590	480	1,270	380
12	1,590	670	1,330	480	1,060	380
16	1,190	570	1,000	420	800	340
20	950	510	800	380	640	310

- Attention for use: (1) Above cutting conditions are for general guidance.
- (2) The figures to be adjusted according to machining shape, purpose and rigidity of machine and work clamping.
- (3) Recommend to use down cutting with air blow or mist coolant.

## HEADQUARTER

DIJET Industrial Co.Ltd.

2-1-18, Kami-Higashi,

Hirano-ku, Osaka 547-0002, Japan

Phone: +81-6-6791-6781

Fax: +81-6-6793-1221

[www.dijet.co.jp](http://www.dijet.co.jp)



## MAIN OFFICE EUROPE

DIJET GmbH

Immemannstraße 9

40210 Düsseldorf, Germany

Phone: +49-211-50088820

Fax: +49-211-50088823

[www.dijet.de](http://www.dijet.de)



DIJET EUROPE



Web : [www.dijet.de](http://www.dijet.de)

