

ONE CUT BALL 70

DH-OCHB Type

One-Cut Ball 70

UP TO 70HRC

4-flute high-efficiency
carbide ball nose end mill

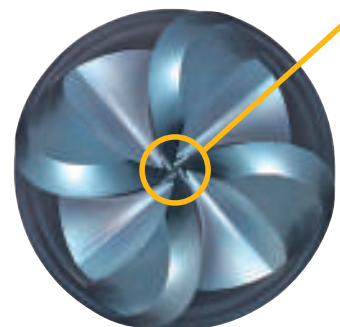
Anti-vibration with High rigidity
& Unequal Spacing Teeth Geometry

Helix angle 45°,
Low cutting force /
High cutting performance

Excellent tool life for
Hardened Materials with
Newly developed "DH coating"



Special edge geometry in
center enables smooth chip
ejection and control
clogging of chips, allows
stable machining.



New PVD coating <DH coating>

● Properties of DIJET PVD coating

	DH coating	DV coating	DZ coating (TiAlN)	DX coating (TiCN)	JC coating (TiN)
Hardness (Hv)	3,500~3,700	3,300~3,500	2,800~2,900	2,500~2,600	2,100~2,200
Oxidation temperature (°C)	1,100~1,200	1,000~1,100	700~800	300~400	400~500
Coefficient of friction	0.5	0.65	0.6	0.45	0.45

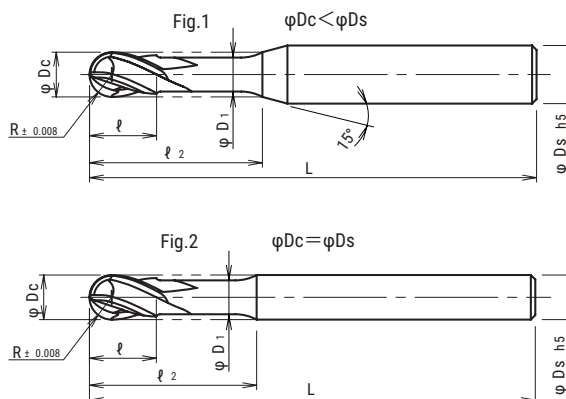
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TYPE

4-Flut Ball Nose Endmill

● Helix angle 45°



Cat.No.	Stock	Dimensions (mm)							Fig.
		R	φDc	ℓ	ℓ2	L	φD1	φDs	
DH-OCHB4010S04	●	0.5	1	1.5	3	50	0.95	4	1
DH-OCHB4010S06	●	0.5	1	1.5	3		0.95	6	
DH-OCHB4020S04	●	1	2	3	6		1.9	4	
DH-OCHB4020S06	●	1	2	3	6		1.9	6	
DH-OCHB4030	●	1.5	3	4.5	9	70	2.9	6	
DH-OCHB4040	●	2	4	6	12	3.8			
DH-OCHB4050	●	2.5	5	7.5	15	80	4.8		
DH-OCHB4060	●	3	6	9	18	90	5.7	2	
DH-OCHB4080	●	4	8	12	24	100	7.6		8
DH-OCHB4100	●	5	10	15	30	9.5	10		
DH-OCHB4120	●	6	12	18	36	110	11.4		12

■ Tolerance (mm)

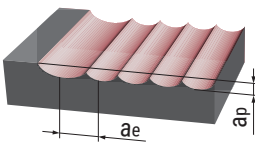
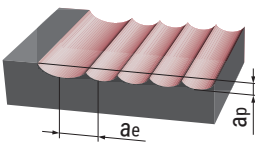
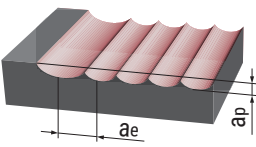
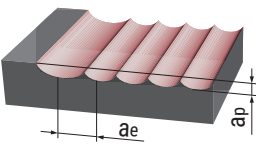
R of ball nose	Tolerance of R	Tolerance of Dc
R0.5~R1	±0.005	0 -0.010
R1.5~R2	±0.008	0 -0.010
R2.5~R6	±0.008	0 -0.015

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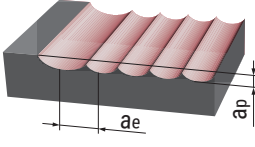
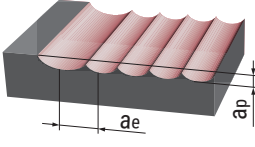
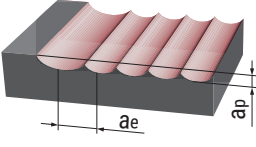
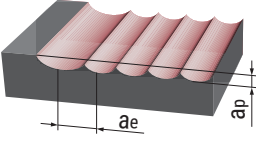
■ DH-OCHB type Recommended cutting conditions

● Finishing

Material		Alloy steel, Tool steel, Mold steel (SKD, SKH, NAK) below 45HRC		Hardened steel (SKD61, DAC, DHA) 42~52HRC		Hardened steel (SKD11, SLD, DC11) 55~62HRC		Hardened steel (SKH, HAP) 63~70HRC	
Type of machining		 $a_p \leq 0.03D_c$ $a_e \leq 0.03D_c$		 $a_p \leq 0.03D_c$ $a_e \leq 0.03D_c$		 $a_p \leq 0.03D_c$ $a_e \leq 0.03D_c$		 $a_p \leq 0.03D_c$ $a_e \leq 0.03D_c$	
R (mm)	ϕD_c (mm)	n (min ⁻¹)	Vf (mm/min)	n (min ⁻¹)	Vf (mm/min)	n (min ⁻¹)	Vf (mm/min)	n (min ⁻¹)	Vf (mm/min)
0.5	1	30,000	1,600	30,000	1,400	30,000	1,200	30,000	800
1	2	30,000	3,200	30,000	2,000	25,500	2,000	19,000	1,000
1.5	3	25,500	4,000	21,200	3,000	17,000	2,000	12,700	1,000
2	4	19,100	4,000	15,900	3,000	12,700	2,000	9,500	1,000
2.5	5	15,300	4,000	12,700	3,000	10,200	2,000	7,600	1,000
3	6	12,700	4,000	10,600	3,000	8,500	2,000	6,400	1,000
4	8	9,500	4,000	8,000	3,000	6,400	2,000	4,800	1,000
5	10	7,600	4,000	6,400	3,000	5,100	2,000	3,800	1,000
6	12	6,400	4,000	5,300	3,000	4,200	2,000	3,200	1,000

■ DH-OCHB type Recommended cutting conditions

● Roughing & Semi-finishing

Material		Alloy steel, Tool steel, Mold steel (SKD, SKH, NAK) below 45HRC		Hardened steel (SKD61, DAC, DHA) 42~52HRC		Hardened steel (SKD11, SLD, DC11) 55~62HRC		Hardened steel (SKH, HAP) 63~70HRC					
Type of machining		 $a_p \leq 1.2D_c$ $a_e \leq 0.2D_c$		 $a_p \leq 1.2D_c$ $a_e \leq 0.2D_c$		 $a_p \leq 1.2D_c$ $a_e \leq 0.2D_c$		 $a_p \leq 1.0D_c$ $a_e \leq 0.1D_c$					
R (mm)	ϕD_c (mm)	n (min ⁻¹)	Vf (mm/min)	$a_p \times a_e$	n (min ⁻¹)	Vf (mm/min)	$a_p \times a_e$	n (min ⁻¹)	Vf (mm/min)	$a_p \times a_e$	n (min ⁻¹)	Vf (mm/min)	$a_p \times a_e$
0.5	1	30,000	1,500	0.024	30,000	1,400	0.024	30,000	1,200	0.02	28,800	750	0.006
1	2	28,600	3,000	0.095	23,800	2,250	0.095	19,100	1,500	0.08	14,400	750	0.025
1.5	3	19,100	3,000	0.22	15,900	2,250	0.22	12,700	1,500	0.18	9,500	750	0.05
2	4	14,300	3,000	0.38	11,900	2,250	0.38	9,500	1,500	0.32	7,200	750	0.10
2.5	5	11,500	3,000	0.60	9,500	2,250	0.60	7,600	1,500	0.50	5,700	750	0.15
3	6	9,500	3,000	0.86	8,000	2,250	0.86	6,400	1,500	0.72	4,800	750	0.22
4	8	7,200	3,000	1.54	6,000	2,250	1.54	4,800	1,500	1.28	3,600	750	0.38
5	10	5,700	3,000	2.40	4,800	2,250	2.40	3,800	1,500	2.00	2,900	750	0.60
6	12	4,800	3,000	3.46	4,000	2,250	3.46	3,200	1,500	2.88	2,400	750	0.86

Note

- These cutting conditions are for general guidance.
- The figures should be adjusted according to machining shape, purpose and rigidity of machine and work clamping.
- Recommended ramping angle is under 1° (Max. 3°). In case of ramping angle under 1°, apply standard conditions above. In case of over 1°, reduce (Vf) according to actual machining conditions.