

Size R0.2~R3



Additional 15 models

# DCLB



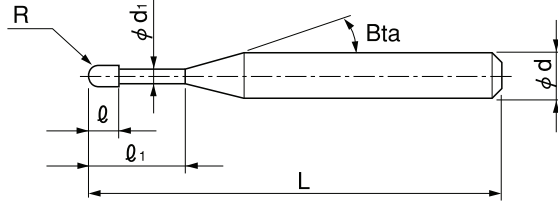
Applicable Work Material (◎Most Suitable ○Suitable)

Work Material												
CARBON STEELS S45C S55C	ALLOY STEELS SK·SCM SUS	PREHARDENED STEELS NAK HPM	HARDENED STEELS			CAST IRON	ALUMINIUM ALLOYS	GRAPHITE	COPPER	PLASTIC	TITANIUM	HEAT RESISTANT STEELS
			(~55HRC)	(~60HRC)	(~70HRC)							
							○	◎	○	○ <sup>1</sup>		

※ 1 ◎ Most suitable for glass fiber resin.

## Features

Diamond coated 2 flutes ball for machine graphite electrodes.  
Excellent adhesion of our diamond coating offers and high efficient milling on graphite, with up to 20 times longer life than the non-coated tool.



The shank taper angle shown is not an exact value and to avoid contact with the workpiece, we recommend the user controls the precise value.

(Total 64 models )

Unit (mm)

Model Number	Radius of Ball Nose R	Effective Length ℓ <sub>1</sub>	Length ℓ	Neck Diameter φ d <sub>1</sub>	Shank Taper Angle Bta	Overall Length L	Shank Diameter φ d	Price	Effective Length by Inclined angles				
									30°	1°	1° 30'	2°	3°
DCLB 2004-0020	R0.2	2	0.32	0.37	16°	45	4	\$118.20	2.22	2.39	2.53	2.64	2.84
DCLB 2004-0030		3							3.31	3.51	3.66	3.79	4.07
DCLB 2004-0040		4							4.38	4.60	4.77	4.93	5.29
DCLB 2004-0050		5							5.43	5.68	5.87	6.07	6.51
DCLB 2005-0020	R0.25	2	0.4	0.47	16°	45	4	\$118.20	2.26	2.46	2.62	2.76	3.00
DCLB 2005-0030		3							3.36	3.60	3.78	3.94	4.23
DCLB 2005-0060		6							6.57	6.88	7.12	7.36	7.90
DCLB 2005-0100		10							10.77	11.15	11.52	11.92	12.79
※ DCLB 2006-0020	R0.3	2	0.48	0.56	16°	45	4	\$118.20	2.36	2.58	2.75	2.90	3.17
DCLB 2006-0030		3		0.57					3.41	3.68	3.89	4.07	4.39
※ DCLB 2006-0040		4		0.56					4.55	4.83	5.06	5.25	5.63
DCLB 2006-0060		6		6.65					7.00	7.27	7.51	8.06	
DCLB 2006-0100		10		10.87					11.30	11.67	12.07	12.95	
DCLB 2006-0120		12		12.96					13.43	13.87	14.35	15.40	

※ mark denotes new model number

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Unit (mm)

Model Number	Radius of Ball Nose R	Effective Length $l_1$	Length $l$	Neck Diameter $\phi d_1$	Shank Taper Angle Bta	Overall Length L	Shank Diameter $\phi d$	Price	Effective Length by Inclined angles					
									30°	1°	1° 30'	2°	3°	
※ DCLB 2010-0030	R0.5	3	0.8	0.94	16°	45	4	\$118.20	3.55	3.76	3.95	4.11	4.41	
DCLB 2010-0050		5			16°	45	4	\$118.20	5.68	5.97	6.20	6.41	6.86	
※ DCLB 2010-0060		6	0.96	16°	45	4	\$118.20	6.67	7.01	7.27	7.51	8.04		
DCLB 2010-0080		8	0.94	16°	45	4	\$118.20	8.85	9.21	9.51	9.82	10.53		
DCLB 2010-0100		10		1.5	16°	60	4	\$118.20	10.94	11.34	11.71	12.10	12.97	
DCLB 2010-0100-08		10		0.8	16°	45	4	\$118.20	10.94	11.34	11.71	12.10	12.97	
DCLB 2010-0120		12			16°	50	4	\$118.20	13.03	13.47	13.91	14.38	15.42	
DCLB 2010-0160		16		16°	50	4	\$118.20	17.18	17.73	18.31	18.93	20.32		
DCLB 2010-0200		20		1.5	16°	60	4	\$118.20	21.31	21.99	22.71	23.49	25.21	
※ DCLB 2015-0060		R0.75		6	1.2	1.44	16°	45	4	\$136.40	6.14	6.32	6.51	6.71
※ DCLB 2015-0100	10			16°			45	4	\$136.40	10.27	10.58	10.91	11.27	12.06
※ DCLB 2015-0160	16			16°			50	4	\$136.40	16.46	16.97	17.51	18.10	19.40
DCLB 2020-0040	R1	4		1.6	1.93	16°	45	4	\$118.20	4.07	4.17	4.28	4.40	4.66
DCLB 2020-0080		8	16°			45	4	\$118.20	8.20	8.43	8.69	8.96	9.56	
DCLB 2020-0100		10	16°			45	4	\$118.20	10.26	10.56	10.89	11.23	12.00	
DCLB 2020-0120		12	16°			45	4	\$118.20	12.32	12.69	13.09	13.51	14.45	
DCLB 2020-0160		16	16°			50	4	\$118.20	16.45	16.95	17.49	18.06	19.35	
DCLB 2020-0200-16		20	16°			60	4	\$118.20	20.57	21.21	21.89	22.62	No Interference	
DCLB 2020-0200		20	3	16°	70	4	\$118.20	20.57	21.21	21.89	22.62	No Interference		
DCLB 2020-0250		25	1.6	16°	65	4	\$118.20	25.73	26.54	27.39	28.31	No Interference		
※ DCLB 2020-0250-30		25	3	1.9	16°	65	4	\$118.20	25.79	26.59	27.45	28.37	No Interference	
DCLB 2020-0300-16		30	1.6	1.93	16°	70	4	\$118.20	30.89	31.86	32.90	No Interference	No Interference	
DCLB 2020-0300	30	3	16°		70	4	\$118.20	30.89	31.86	32.90	No Interference	No Interference		
※ DCLB 2020-0350	35	3	1.9	16°	70	4	\$118.20	36.10	37.24	38.46	No Interference	No Interference		
DCLB 2020-0400	40	1.6	1.93	16°	80	4	\$122.70	41.20	42.51	No Interference	No Interference	No Interference		
※ DCLB 2030-0160	R1.5	16	2.4	2.92	16°	60	6	\$136.40	16.45	16.94	17.46	18.02	19.26	
※ DCLB 2030-0200		20			2.9	16°	60	6	\$136.40	20.61	21.23	21.90	22.61	24.20
DCLB 2030-0250		25	4.5	2.92	16°	70	6	\$154.50	25.73	26.52	27.36	28.26	30.27	
DCLB 2030-0300		30			16°	80	4	\$122.70	30.89	No Interference	No Interference	No Interference	No Interference	
DCLB 2030-0300-S6		30			2.4	16°	80	6	\$154.50	30.89	31.85	32.87	33.96	No Interference
DCLB 2030-0400-S6		40			16°	80	6	\$168.20	41.20	42.49	43.87	No Interference	No Interference	
DCLB 2030-0400		40	4.5	16°	80	4	\$136.40	41.20	No Interference	No Interference	No Interference	No Interference		
DCLB 2040-0160		R2	16	3.2	3.92	16°	70	6	\$150.00	16.44	16.91	17.41	17.95	19.15
DCLB 2040-0200			20			16°	70	6	\$150.00	20.56	21.17	21.81	22.50	No Interference
DCLB 2040-0250			25			16°	70	6	\$150.00	25.72	26.49	27.31	28.20	No Interference
DCLB 2040-0300	30		16°			70	6	\$150.00	30.87	31.81	32.82	No Interference	No Interference	
※ DCLB 2040-0300-60	30		6	3.9	—	100	4	\$168.20	No Interference	No Interference	No Interference	No Interference	No Interference	
DCLB 2040-0400-S6	40		3.2	3.92	16°	90	6	\$168.20	41.19	42.46	No Interference	No Interference	No Interference	
DCLB 2040-0400	40		6		—	100	4	\$168.20	No Interference	No Interference	No Interference	No Interference	No Interference	
DCLB 2040-0500-S6	50		3.2		16°	100	6	\$180.00	51.50	53.11	No Interference	No Interference	No Interference	
DCLB 2040-0500	50		6		—	100	4	\$172.70	No Interference	No Interference	No Interference	No Interference	No Interference	
※ DCLB 2040-0600	60			3.9	—	100	4	\$172.70	No Interference	No Interference	No Interference	No Interference	No Interference	
DCLB 2050-0200	R2.5	20	4	4.92	16°	70	6	\$150.00	20.55	21.13	21.76	No Interference	No Interference	
DCLB 2050-0300		30			16°	80	6	\$154.50	30.86	31.78	No Interference	No Interference	No Interference	
DCLB 2060-0300	R3	30	4.8	5.92	—	80	6	\$154.50	No Interference	No Interference	No Interference	No Interference	No Interference	
※ DCLB 2060-0400		40			5.7	—	100	6	\$180.00	No Interference	No Interference	No Interference	No Interference	No Interference
DCLB 2060-0500		50			5.92	—	120	6	\$180.00	No Interference	No Interference	No Interference	No Interference	No Interference
※ DCLB 2060-0600		60			5.7	—	120	6	\$209.10	No Interference	No Interference	No Interference	No Interference	No Interference
※ DCLB 2060-0700		70				—	120	6	\$209.10	No Interference	No Interference	No Interference	No Interference	No Interference
※ DCLB 2060-0800		80			—	120	6	\$230.00	No Interference	No Interference	No Interference	No Interference	No Interference	

## Milling Conditions for DCLB

WORK MATERIAL		GRAPHITE				
Model Number	Radius of Ball Nose (mm)	Effective Length (mm)	Speed (min <sup>-1</sup> )	Feed (mm/min)	$a_p$ Axial Depth (mm)	$a_e$ Radial Depth (mm)
<b>DCLB 2004-0020</b>	RO.2	2	33,500	1,100	0.10	0.04
<b>DCLB 2004-0030</b>		3			0.09	
<b>DCLB 2004-0040</b>		4			0.08	
<b>DCLB 2004-0050</b>		5			0.06	
<b>DCLB 2005-0020</b>	RO.25	2	33,500	1,200	0.11	0.05
<b>DCLB 2005-0030</b>		3			0.10	
<b>DCLB 2005-0060</b>		6			0.07	
<b>DCLB 2005-0100</b>		10			0.03	
<b>DCLB 2006-0020</b>	RO.3	2	33,500	1,300	0.15	0.06
<b>DCLB 2006-0030</b>		3			0.13	
<b>DCLB 2006-0040</b>		4			0.12	
<b>DCLB 2006-0060</b>		6			0.10	
<b>DCLB 2006-0100</b>		10			0.04	
<b>DCLB 2006-0120</b>		12			0.04	
<b>DCLB 2010-0030</b>	RO.5	3	33,500	1,500	0.20	0.10
<b>DCLB 2010-0050</b>		5			0.19	
<b>DCLB 2010-0060</b>		6			0.19	
<b>DCLB 2010-0080</b>		8			0.18	
<b>DCLB 2010-0100 (-08)</b>		10			0.16	
<b>DCLB 2010-0120</b>		12			0.15	
<b>DCLB 2010-0160</b>		16			0.12	
<b>DCLB 2010-0200</b>		20			0.10	
<b>DCLB 2015-0060</b>	RO.75	6	30,000	1,500	0.35	0.15
<b>DCLB 2015-0100</b>		10			0.30	
<b>DCLB 2015-0160</b>		16			0.25	
<b>DCLB 2020-0040</b>	R1	4	27,000	1,500	0.50	0.20
<b>DCLB 2020-0080</b>		8			0.48	
<b>DCLB 2020-0100</b>		10			0.46	
<b>DCLB 2020-0120</b>		12			0.43	
<b>DCLB 2020-0160</b>		16			0.38	
<b>DCLB 2020-0200 (-16)</b>		20			0.24	
<b>DCLB 2020-0250 (-30)</b>		25			0.19	
<b>DCLB 2020-0300 (-16)</b>		30			0.12	
<b>DCLB 2020-0350</b>		35			0.11	
<b>DCLB 2020-0400</b>		40			0.09	

WORK MATERIAL		GRAPHITE				
Model Number	Radius of Ball Nose (mm)	Effective Length (mm)	Speed (min <sup>-1</sup> )	Feed (mm/min)	$a_p$ Axial Depth (mm)	$a_e$ Radial Depth (mm)
<b>DCLB 2030-0160</b>	R1.5	16	18,000	1,650	0.50	0.45
<b>DCLB 2030-0200</b>		20			0.44	
<b>DCLB 2030-0250</b>		25			0.36	
<b>DCLB 2030-0300(-S6)</b>		30			0.30	
<b>DCLB 2030-0400(-S6)</b>		40			0.20	
<b>DCLB 2040-0160</b>	R2	16	13,500	1,750	0.70	0.60
<b>DCLB 2040-0200</b>		20			0.65	
<b>DCLB 2040-0250</b>		25			0.55	
<b>DCLB 2040-0300</b>		30			0.50	
<b>DCLB 2040-0300(-60)</b>		30			0.50	
<b>DCLB 2040-0400(-S6)</b>		40			0.40	
<b>DCLB 2040-0500(-S6)</b>		50			0.24	
<b>DCLB 2040-0600</b>		60			0.18	
<b>DCLB 2050-0200</b>	R2.5	20	10,800	1,600	0.80	0.75
<b>DCLB 2050-0300</b>		30			0.60	
<b>DCLB 2060-0300</b>	R3	30	9,000	1,400	0.90	0.90
<b>DCLB 2060-0400</b>		40			0.75	
<b>DCLB 2060-0500</b>		50			0.60	
<b>DCLB 2060-0600</b>		60			0.51	
<b>DCLB 2060-0700</b>		70			0.40	
<b>DCLB 2060-0800</b>		80			0.23	

## Note:

- Please decrease the feed rate by more than 50% from the above table when slot milling.
- Remove chips to prevent heat generation and ignition. Use a milling machine dedicated for graphite.
- These parameters are only for reference. In operation, we recommend adjustments to these parameters according to the millings shape, purpose, machine capability and the operating environment.
- When the parameter exceeds the machine's maximum spindle speed, decrease both the spindle speed and feedrate proportionally .

Milling Amount (mm)

 $a_p$  : Axial Depth (mm) $a_e$  : Radial Depth (mm) =  $P_f$ 