Size φ1～φ12

C-CES4000S

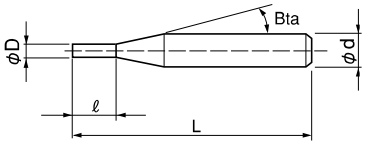
Super MG | UT COAT | 30° | Sharp Corner | Shank Dia 0/-0.005

Material Applications（★ Highly Recommended ● Recommended ○ Suggested）

Work Material																
Carbon Steels S45C S55C	Alloy Steels SK / SCM SUS	Prehardened Steels NAK HPM	Hardened Steels ～50HRC	Hardened Steels ～55HRC	Hardened Steels ～60HRC	Hardened Steels ～65HRC	Hardened Steels ～70HRC	Cast Iron	Aluminum Alloys	Graphite	Copper	Plastics	Glass Filled Plastics	Titanium Alloys	Heat Resistant Alloys	Cemented Carbide	Hard Brittle (Non-Metallic) Materials
●	●	●	●	○				○			●			○	○		

Features

4 flute C-CES with a sharp corner design.
Broad application range from Copper and Carbon Steels up to Hardened Steels (55HRC).
Excellent performance / quality to price ratio.
Refer to page 180 for 2 flute C-CES-S.



The shank taper angle shown is not an exact value and to avoid contact with the work piece, we recommend the user controls the precise value of this angle. Shank taper angle should not make contact with the work piece.

Total 11 models

Unit（mm）

Model Number	Outside Diameter φD	Length of Cut ℓ	Shank Taper Angle Bta	Overall Length L	Shank Diameter φd	Suggested Retail Price ¥
C-CES 4010S	1	2.5	16°	45	4	5,160
C-CES 4015S	1.5	3.75	16°	45	4	5,160
C-CES 4020S	2	6	16°	45	4	3,300
C-CES 4025S	2.5	6.25	16°	45	4	3,300
C-CES 4030S	3	8	16°	45	6	3,420
C-CES 4040S	4	11	16°	45	6	3,860
C-CES 4050S	5	13	16°	50	6	3,970
C-CES 4060S	6	13	—	50	6	4,170
C-CES 4080S	8	19	—	60	8	7,090
C-CES 4100S	10	22	—	70	10	9,460
C-CES 4120S	12	26	—	75	12	11,880

Milling Conditions for C-CES-S（4 Flutes）

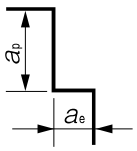
WORK MATERIAL		CARBON STEELS S45C / S50C (~225HB)				ALLOY STEELS SK / SCM / SUS (225~325HB)			
		Side Milling				Side Milling			
Model Number	Outside Diameter (mm)	Spindle Speed (min^{-1})	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)	Spindle Speed (min^{-1})	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)
4010S	**1**	20,000	170	2	0.07	13,700	150	2	0.07
4015S	**1.5**	13,400	190	3	0.105	9,100	160	3	0.105
4020S	**2**	11,600	200	4	0.14	5,600	170	4	0.14
4025S	**2.5**	9,300	300	5	0.175	4,200	190	5	0.175
4030S	**3**	8,800	340	6	0.21	6,700	210	6	0.21
4040S	**4**	6,600	370	8	0.28	5,000	270	8	0.28
4050S	**5**	5,300	450	10	0.35	4,000	320	10	0.35
4060S	**6**	4,400	450	12	0.42	3,300	320	12	0.42
4080S	**8**	3,300	420	16	0.56	2,500	300	16	0.56
4100S	**10**	2,650	410	20	0.7	2,000	300	20	0.7
4120S	**12**	2,200	400	24	0.84	1,700	300	24	0.84

WORK MATERIAL		PREHARDENED STEELS / HARDENED STEELS NAK / SKD (30~45HRC)				HARDENED STEELS SKD / SKT (45~55HRC)			
		Side Milling				Side Milling			
Model Number	Outside Diameter (mm)	Spindle Speed (min^{-1})	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)	Spindle Speed (min^{-1})	Feed Rate (mm/min)	a_p Axial Depth (mm)	a_e Radial Depth (mm)
4010S	**1**	7,300	55	2	0.07	1,600	15	1.5	0.03
4015S	**1.5**	4,900	60	3	0.105	1,100	15	2.25	0.045
4020S	**2**	5,300	65	4	0.14	2,400	30	3	0.06
4025S	**2.5**	4,200	70	5	0.175	1,900	35	3.75	0.075
4030S	**3**	4,600	90	6	0.21	2,700	50	4.5	0.09
4040S	**4**	3,400	100	8	0.28	2,000	55	6	0.12
4050S	**5**	2,700	110	10	0.35	1,600	60	7.5	0.15
4060S	**6**	2,300	110	12	0.42	1,300	60	9	0.18
4080S	**8**	1,700	100	16	0.56	1,000	50	12	0.24
4100S	**10**	1,400	100	20	0.7	800	50	15	0.3
4120S	**12**	1,150	90	24	0.84	700	45	18	0.36

Milling Amount for side milling（mm）

45HRC or below	a_p=2D a_e=0.07D
45HRC or above	a_p=1.5D a_e=0.03D

D：Outside Diameter（mm）



Note:
・Recommend water soluble or oil coolant.
・Recommend oil coolant for Titanium Alloys and Heat Resistant Alloys.