

# MSTAR END MILLS

CARBIDE

**MS45C**  
End mill, Short cut length, 4 flute

**MS4MC**  
End mill, Medium cut length, 4 flute

## RECOMMENDED CUTTING CONDITIONS

Dia. DC (mm)	Carbon steel, Cast iron, Alloy steel, Pre-hardened steel			Hardened steel (45—55HRC)		
	Revolution (min <sup>-1</sup> )	Feed rate (mm/min)	Depth of cut (mm)	Revolution (min <sup>-1</sup> )	Feed rate (mm/min)	Depth of cut (mm)
<b>1</b>	40000	3000	0.06	32000	2400	0.06
<b>1.5</b>	40000	4500	0.12	32000	3600	0.08
<b>2</b>	30000	4500	0.18	24000	3600	0.10
<b>2.5</b>	24000	3900	0.25	19000	3000	0.13
<b>3</b>	20000	3500	0.30	16000	2700	0.15
<b>4</b>	15000	3000	0.40	12000	2400	0.20
<b>5</b>	12000	2400	0.50	9000	1800	0.25
<b>6</b>	10000	2100	0.60	7000	1500	0.30
<b>8</b>	8000	1500	0.80	5600	1100	0.40
<b>10</b>	6400	1400	1.00	4500	950	0.50
<b>12</b>	5400	1200	1.00	3800	860	0.50
<b>16</b>	2400	550	3.00	1200	120	0.80
<b>20</b>	1900	480	4.00	1000	100	1.00

Depth of cut

≤Please refer to the list above for depth of cut.

DC: Dia.

- 1) If the depth of cut is shallow, the revolution and feed rate can be increased.
- 2) When slotting with end mills with  $\phi 3$  or larger, reduce the revolution to 50—70% and the feed rate to 40—60%.
- 3) When drilling, please set the feed rate at 1/3 or below the values above.
- 4) If the rigidity of the machine or the work materials installation is very low, or chattering and noise are generated, reduce the revolution and feed rate proportionately.

SOLID END MILLS