MHDSH445 New

Size φ1～φ4

Plus ≦70 HRC

MUGEN COATING PREMIUM Plus 4-Flute Square End Mill for Hardened Steel

Total 10 sizes

MHDSH445

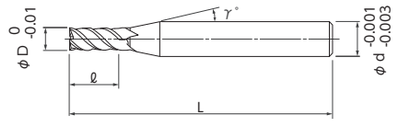
Regular Line
MUGEN PREMIUM Plus

Recommended Milling Conditions

High rigidity tool design suppresses deflection and realizes long tool life on machining 70HRC hardened steel

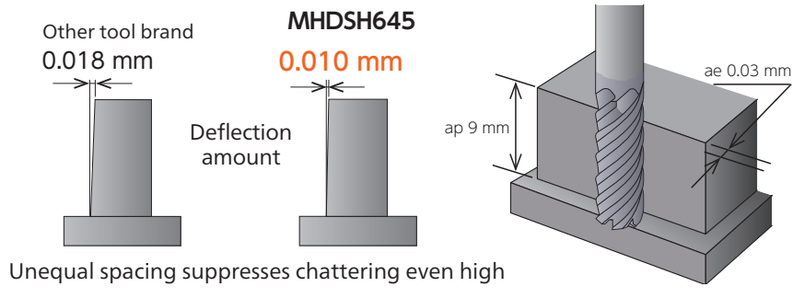
MG | 4 | 45° | φd -0.001 -0.003

Connect | Side | Slot | Face



- 4-flute is lineup of length of cut expands 2D and 3D.
- MUGEN COATING PREMIUM Plus realizes long tool life even for hardened steel up to 70HRC.
- High rigidity tool design improves machining accuracy.

Leaflet



Unequal spacing suppresses chattering even high feed rate machining

Unit : mm

Code No.	Dia. (D)	Length of Cut (ℓ)	Neck Taper Angle (γ)	Shank Dia. (d)	Overall Length (L)
08-00429-00102	1	2	12°	6	60
08-00429-00103		3	12°	6	60
08-00429-00152	1.5	3	12°	6	60
08-00429-00153		4.5	12°	6	60
08-00429-00202	2	4	12°	6	60
08-00429-00203		6	12°	6	60
08-00429-00302	3	6	12°	6	60
08-00429-00303		9	12°	6	60
08-00429-00402	4	8	12°	6	60
08-00429-00403		12	12°	6	60

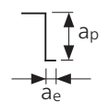
How to Order When you order, indicate MHDSH445(D)x(ℓ). ※(γ) is reference value.

Machining case S-014, S-015

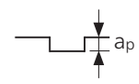
Work Material			High Speed Steels / Hardened Steels SKH51・SKD11 (～62HRC)				High Speed Steels SKH55・HAP40 (～66HRC)				High Speed Steels SKH57・HAP72 (～70HRC)			
	Dia.	Length of Cut	Spindle Speed	Feed	Depth of Cut		Spindle Speed	Feed	Depth of Cut		Spindle Speed	Feed	Depth of Cut	
			min^{-1}	mm/min	a_p mm	a_e mm	min^{-1}	mm/min	a_p mm	a_e mm	min^{-1}	mm/min	a_p mm	a_e mm
Side milling	1	2	25,000	500	1.5	0.02	20,000	240	1.5	0.02	16,000	160	1.5	0.02
		3	22,000	360	1.5	0.02	18,000	200	1.5	0.02	14,000	120	1.5	0.02
	1.5	3	16,000	560	2.25	0.03	14,000	330	2.25	0.03	10,000	240	2.25	0.03
		4.5	14,000	420	2.25	0.03	12,000	240	2.25	0.03	8,000	160	2.25	0.03
	2	4	12,000	630	3	0.04	10,000	480	3	0.04	8,000	320	3	0.04
		6	10,000	500	3	0.04	8,000	330	3	0.04	6,000	240	3	0.04
	3	6	8,000	700	4.5	0.06	7,000	560	4.5	0.06	5,600	400	4.5	0.06
		9	7,600	600	4.5	0.06	6,400	480	4.5	0.06	5,000	320	4.5	0.06
	4	8	7,000	800	6	0.08	6,000	600	6	0.08	5,000	400	6	0.08
		12	6,600	700	6	0.08	5,600	560	6	0.08	4,600	320	6	0.08
Slotting	1	2	20,000	300	0.02	-	16,000	120	0.01	-	14,000	100	0.01	-
		3	18,000	240	0.02	-	14,000	80	0.01	-	12,000	50	0.01	-
	1.5	3	12,000	380	0.03	-	10,000	160	0.015	-	8,000	120	0.015	-
		4.5	10,000	260	0.03	-	9,000	100	0.015	-	7,500	60	0.015	-
	2	4	10,000	420	0.04	-	8,000	240	0.02	-	7,000	160	0.02	-
		6	8,000	300	0.04	-	7,000	120	0.02	-	6,000	80	0.02	-
	3	6	7,500	500	0.06	-	6,000	280	0.03	-	5,000	180	0.03	-
		9	7,000	320	0.06	-	5,600	140	0.03	-	4,500	100	0.03	-
	4	8	6,000	540	0.08	-	5,000	300	0.04	-	4,500	180	0.04	-
		12	5,600	360	0.08	-	4,800	160	0.04	-	4,000	100	0.04	-

Notes

Side Milling



Slotting



※1 Use a rigid and precise machine and chuck holder.
※2 Adjust milling conditions according to the volume of Depth of Cut and rigidity of the machine.
※3 Adjust both spindle speed and feed at the same rate.
※4 Use oil mist coolant.

Square Coating