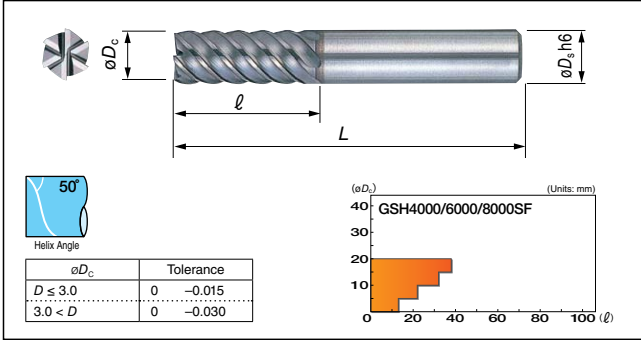


# GS MILL Hard Square Endmills GSH 4000/6000/8000SF Type



Coated Carbide	Carbon Steel	Alloy Steel	Pre-hardened Steel	Tempered Steel	Hardened Steel	Stainless Steel	Ti Alloy	Cast Iron	Al Alloy	Copper Alloy	Graphite	CFRP
◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎



## Body (4 Flutes)

Cat. No.	Stock	Dimensions (mm)			
		$\phi D_c$	$l$	$L$	$\phi D_s$
<b>GSH 4010SF</b>	●	1.0	3	50	6
<b>4015SF</b>	●	1.5	4	50	6
<b>4020SF</b>	●	2.0	6	50	6

Grade: ACF07C

## Body (8 Flutes)

Cat. No.	Stock	Dimensions (mm)			
		$\phi D_c$	$l$	$L$	$\phi D_s$
<b>GSH 8160SF</b>	●	16.0	32	90	16
<b>8200SF</b>	●	20.0	38	100	20

Grade: ACF07C

## Body (6 Flutes)

Cat. No.	Stock	Dimensions (mm)			
		$\phi D_c$	$l$	$L$	$\phi D_s$
<b>GSH 6030SF</b>	●	3.0	8	50	6
<b>6040SF</b>	●	4.0	11	50	6
<b>6050SF</b>	●	5.0	13	50	6
<b>6060SF</b>	●	6.0	13	50	6
<b>6080SF</b>	●	8.0	19	60	8
<b>GSH 6100SF</b>	●	10.0	22	70	10
<b>6120SF</b>	●	12.0	26	75	12

Grade: ACF07C

## General Purpose Machines

1. If the machine cannot achieve the standard spindle speed, please use the max. spindle speed available
2. If cutting noise and vibration are present, please reduce the cutting conditions accordingly.

## Side Milling and Groove Milling

Work Material	Low Carbon Steel Carbon Steel, Alloy Steel (Up to 35HRC)		Middle Hardened Steel Pre-hardened Steel, Die Steel (35 to 45HRC)		Hardened Steel SKD61 (45 to 55HRC)		Hardened Steel SKD11 (55 to 60HRC)		Hardened Steel SKH51 (60 to 65HRC)		Hardened Steel SKH55 (65HRC and above)	
	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)
1.0	20,000	540	20,000	390	15,600	260	12,300	160	11,100	140	7,800	95
2.0	19,000	1,100	17,200	770	13,400	530	10,500	320	9,500	270	6,700	190
3.0	15,000	2,150	13,400	1,540	10,400	1,050	8,200	650	7,400	540	5,200	380
4.0	11,200	2,400	10,000	1,740	7,800	1,180	6,100	730	5,600	600	3,900	420
5.0	9,000	2,700	8,000	1,930	6,200	1,300	4,900	810	4,400	670	3,100	470
6.0	7,500	2,700	6,700	1,930	5,200	1,300	4,100	810	3,700	670	2,600	470
8.0	5,600	2,700	5,000	1,930	3,900	1,300	3,050	810	2,800	670	1,950	470
10.0	4,500	2,700	4,000	1,930	3,100	1,300	2,450	810	2,200	670	1,550	470
12.0	3,750	2,700	3,350	1,930	2,600	1,300	2,050	810	1,850	670	1,300	470
16.0	2,800	2,500	2,500	1,800	1,950	1,220	1,530	760	1,400	630	980	440
20.0	2,250	2,100	2,000	1,540	1,550	1,050	1,230	650	1,100	540	780	380
Side Milling	$a_p$ 1 to $1.5D_c$ $a_e$ $0.1D_c$		$a_p$ 1 to $1.5D_c$ $a_e$ $0.1D_c$		$a_p$ 1 to $1.5D_c$ $a_e$ $0.05D_c$		$a_p$ 1 to $1.5D_c$ $a_e$ $0.05D_c$		$a_p$ 1 to $1.5D_c$ $a_e$ $0.02D_c$		$a_p$ 1 to $1.5D_c$ $a_e$ $0.02D_c$	
Groove Milling	$a_p$ $0.1D_c$		$a_p$ $0.1D_c$		$a_p$ $0.05D_c$		$a_p$ $0.05D_c$		$a_p$ Up to $0.05D_c$ Max. 0.5mm		$a_p$ Up to $0.05D_c$ Max. 0.5mm	

## Side Milling (High Speed Machining Centre)

Work Material	Low Carbon Steel Carbon Steel, Alloy Steel (Up to 35HRC)		Middle Hardened Steel Pre-hardened Steel, Die Steel (35 to 45HRC)		Hardened Steel SKD61 (45 to 55HRC)		Hardened Steel SKD11 (55 to 60HRC)		Hardened Steel SKH51 (60 to 65HRC)	
	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)
1.0	48,000	1,250	48,000	1,250	48,000	1,250	48,000	930	38,000	700
2.0	48,000	2,850	48,000	2,850	48,000	2,850	36,000	1,600	24,000	1,000
3.0	32,000	4,900	32,000	4,900	32,000	4,900	24,000	2,740	16,000	1,700
4.0	24,000	5,200	24,000	5,200	24,000	5,200	18,000	2,900	12,000	1,800
5.0	19,200	5,800	19,200	5,800	19,200	5,800	14,300	3,200	9,600	2,000
6.0	16,000	5,800	16,000	5,800	16,000	5,800	12,000	3,200	8,000	2,000
8.0	12,000	5,800	12,000	5,800	12,000	5,800	9,000	3,200	6,000	2,000
10.0	9,600	5,800	9,600	5,800	9,600	5,800	7,200	3,200	4,800	2,000
12.0	8,000	5,800	8,000	5,800	8,000	5,800	6,000	3,200	4,000	2,000
16.0	6,000	5,400	6,000	5,400	6,000	5,400	4,500	3,000	3,000	1,900
20.0	4,800	4,600	4,800	4,600	4,800	4,600	3,600	2,580	2,400	1,600
Standard Depth-of-cut	$a_p$ 1 to $1.5D_c$ $a_e$ $0.1D_c$		$a_p$ 1 to $1.5D_c$ $a_e$ $0.05D_c$		$a_p$ 1 to $1.5D_c$ $a_e$ $0.05D_c$		$a_p$ 1 to $1.5D_c$ $a_e$ $0.02D_c$		$a_p$ 1 to $1.5D_c$ $a_e$ $0.01D_c$	

