

Milling | Endmills | Cutting conditions

FXS-HS-PKE

High speed side milling

Ø	C≤0,2% S55C • SS400 • FC250 ~750 N/mm²		~30 HRC SCM • SKT • SKS • HPM1		30~38 HRC SKT • SKD • NAK55 • HPM1		38~45 HRC SUS SUS304 • SKD		45~55 HRC Tiall		55~60 HRC SCM	
	S (min⁻¹)	F (mm/min)	S (min⁻¹)	F (mm/min)	S (min⁻¹)	F (mm/min)	S (min⁻¹)	F (mm/min)	S (min⁻¹)	F (mm/min)	S (min⁻¹)	F (mm/min)
6	10.600	2.650	10.600	2.150	10.600	1.600	8.000	1.000	8.000	825	5.300	535
8	8.000	2.400	8.000	1.950	8.000	1.450	6.000	920	6.000	750	4.000	485
10	6.350	2.100	6.350	1.700	6.350	1.300	4.800	805	4.800	655	3.200	420
12	5.300	2.100	5.300	1.700	5.300	1.350	4.000	805	4.000	655	2.650	420
16	4.000	2.150	4.000	1.700	4.000	1.350	3.000	805	3.000	655	2.000	420
20	3.200	2.150	3.200	1.700	3.200	1.350	2.400	805	2.400	655	1.600	420

Max cutting depth

ap	ae
1D	0,1D

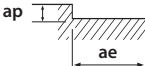
ap	ae
1D	0,05D

1. Use highest possible speed.
2. On lower speed machines, use maximum speed & feed settings.
3. Cutter mis-alignment must not exceed 10µ.
4. Always use coolant.

High speed contouring

Ø	C≤0,2% - GG S55C • S5400 • FC250 ~750 N/mm²		~30 HRC SCM • SKD • SKS • SNCM		30~38 HRC NAK55 • HPMI • SKT • SKD		38~45 HRC SUS SUS304 • SKD		45~55 HRC HRS		55~60 HRC	
	S (min⁻¹)	F (mm/min)	S (min⁻¹)	F (mm/min)	S (min⁻¹)	F (mm/min)	S (min⁻¹)	F (mm/min)	S (min⁻¹)	F (mm/min)	S (min⁻¹)	F (mm/min)
6	10.600	1.650	10.600	1.250	10.600	1.000	8.000	900	8.000	520	5.300	310
8	8.000	1.500	8.000	1.150	8.000	920	6.000	790	6.000	460	4.000	290
10	6.400	1.300	6.400	1.050	6.400	795	4.800	690	4.800	405	3.200	260
12	5.300	1.300	5.300	1.000	5.300	790	4.000	690	4.000	405	2.700	260
16	4.000	1.280	4.000	1.050	4.000	795	3.000	690	3.000	405	2.000	255
20	3.200	1.050	3.200	1.050	3.200	795	2.400	580	2.400	405	1.600	255

Max cutting depth



ap	ae
0,1D	0,3D-0,5D

ap	ae
0,05D	0,2D-0,3D



ap	ae
0,05D	0,2D-0,3D

1. Conditions to be used if slant is = 3 x dia. If length is 5 x dia, than reduce feed and rotation by 30 to 40% and use 1/2 of depth of passes. If length is 6 x dia, than reduce feed and rotation by 40 to 60% and use 1/4 of depth of passes.

2. Reduce speed to avoid distortion from deep passes or low rigidity

3. Use compressed air or a high quality coolant with a low co-efficient of smoke emission.

Slotting

	C≤0,2% - GG S55C・SS400・FC250 ~750 N/mm²		~30 HRC SCM・SKD・SKS・SNCM		30~38 HRC NAK55・HPMI・SKT・SK		38~45 HRC SUS SUS304・SKD		45~55 HRC HRS		55~60 HRC			
	Ø	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	S (min ⁻¹)	F (mm/min)	
	6	4.450	770	3.350	580	2.900	400	1.900	120	1.600	95	1.050	40	
	8	3.350	710	2.500	530	2.200	350	1.450	120	1.200	95	800	40	
	10	2.700	650	2.000	480	1.750	350	1.150	120	950	95	650	40	
	12	2.250	650	1.650	475	1.450	350	950	120	800	95	530	40	
	16	1.650	635	1.250	480	1.100	350	700	120	600	95	400	40	
20	1.350	540	1.000	400	900	300	550	115	500	85	300	40		
Max cutting depth									<table><tr><td>ap</td></tr><tr><td>0,5D</td></tr></table>				ap	0,5D
													ap	
0,5D														
<p>1. These milling conditions are for an end mill where the tool extension length is 3 times the diameter of the end mill.</p> <p>2. Please adjust the speed and feed when the cutting depth is large or when machines with low rigidity are used.</p> <p>3. Please use a suitable fluid with high smoke retardant properties.</p> <p>4. During dry (no fluid) milling, please use an air blow to remove disposable chips from the milling area and to eliminate chip packing.</p>														