HF743

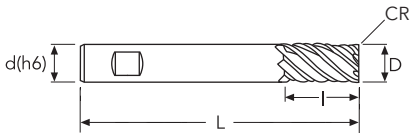
weldon shank, long 5 flutes ideal for trochoidal milling, corner radius

OSAWA NORM | MG PV300 | <40 HRC | 36°/37°/38° | RADIUS | Z5

P	M	K	N	S	H
★	★	★		★	

★ 1st choice ☆ suitable

SIDE MILLING | HELICAL | RAMPING | VERTICAL | TROCHOIDAL



D	D Tol.	CR	CR Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
6	0/-0.025	0.10	+/-0.010	6	25		75	5	HF7430106075	●
8	0/-0.030	0.20	+/-0.010	8	25		75	5	HF7430208075	●
10	0/-0.030	0.20	+/-0.010	10	38		100	5	HF74302100100	●
12	0/-0.030	0.30	+/-0.010	12	45		100	5	HF74303120100	●
16	0/-0.030	0.30	+/-0.010	16	55		125	5	HF74303160125	●
20	0/-0.030	0.30	+/-0.010	20	65		125	5	HF74303200125	●

● stock standard ○ non-standard stock ∇ stock exhaustion

CUTTING PARAMETERS

HF743

SIDE MILLING	Material Group ISO 513	P1 P2 M1 K1			P3 P4 M2 K2 K3			P5 M3 M4 K4 S1 S4			S2 S3 S5		
	Hardness/Rm	≤ 700 N/mm²			700-1000 N/mm²			≤ 35 HRC			≤ 40 HRC		
	ap x ae	1.5D x 03D			1.5D x 0.3D			1.2D x 0.2D			1.2D x 0.2D		
	Vc (m/min)	110-130			70-90			50-70			30-50		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	6	6370	0.023	740	4250	0.021	450	3180	0.019	300	2120	0.026	270
	8	4780	0.028	660	3180	0.025	400	2390	0.022	260	1590	0.030	240
	10	3820	0.033	630	2550	0.030	380	1910	0.026	250	1270	0.036	230
	12	3180	0.037	590	2120	0.033	350	1590	0.030	240	1060	0.041	220
	16	2390	0.042	510	1590	0.038	300	1190	0.034	200	800	0.047	190
	20	1910	0.057	540	1270	0.051	330	960	0.046	220	640	0.063	200

HELICAL	Material Group ISO 513	P1 P2 M1 K1			P3 P4 M2 K2 K3			P5 M3 M4 K4 S1 S4			S2 S3 S5		
	Hardness/Rm	≤ 700 N/mm²			700-1000 N/mm²			≤ 35 HRC			≤ 40 HRC		
	α° x ae	4° x 0.4D			3° x 0.4D			3° x 0.4D			2° x 0.4D		
	Vc (m/min)	90-110			60-80			40-60			20-40		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	6	5310	0.016	435	3720	0.016	290	2650	0.013	172	1590	0.014	109
	8	3980	0.019	385	2790	0.018	255	1990	0.015	153	1190	0.016	96
	10	3180	0.023	365	2230	0.022	245	1590	0.018	145	960	0.019	92
	12	2650	0.026	345	1860	0.025	230	1330	0.021	137	800	0.022	87
	16	1990	0.030	295	1390	0.028	195	1000	0.024	118	600	0.025	74
	20	1590	0.040	315	1110	0.038	210	800	0.032	127	480	0.033	80

RAMPING	Material Group ISO 513	P1 P2 M1 K1			P3 P4 M2 K2 K3			P5 M3 M4 K4 S1 S4			S2 S3 S5		
	Hardness/Rm	≤ 700 N/mm²			700-1000 N/mm²			≤ 35 HRC			≤ 40 HRC		
	α° x ae	5° x D			4° x D			3° x D			3° x D		
	Vc (m/min)	80-100			50-70			35-55			20-30		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	6	4780	0.017	405	3180	0.016	250	2390	0.015	179	1330	0.021	137
	8	3580	0.020	360	2390	0.019	225	1790	0.018	158	1000	0.024	122
	10	2870	0.024	345	1910	0.022	215	1430	0.021	150	800	0.029	116
	12	2390	0.027	325	1590	0.025	200	1190	0.024	142	660	0.033	108
	16	1790	0.031	275	1190	0.029	170	900	0.027	122	500	0.037	93
	20	1430	0.042	295	960	0.039	185	720	0.037	131	400	0.050	100

PARAMETERS SUGGESTED WITH HIGH PRECISION WELDON CHUCK AND STABLE MACHINING CONDITION.
FOR APPLICATION ON HIGH POWER MILLING CHUCK, PLEASE REFER TO HF742 PARAMETERS.

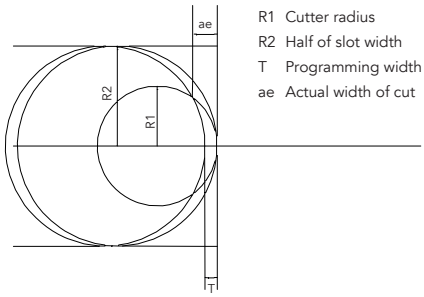
CUTTING PARAMETERS

HF743

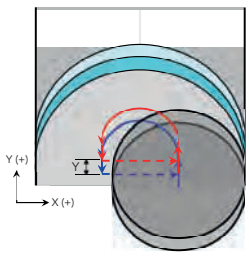
	Material Group ISO 513	P1 P2 M1 K1			P3 P4 M2 K2 K3			P5 M3 M4 K4 S1 S4			S2 S3 S5		
	Hardness/Rm	≤ 700 N/mm²			700-1000 N/mm²			≤ 35 HRC			≤ 40 HRC		
	ap x ae	D x 0.4D			D x 0.4D			D x 0.25D			D x 0.25D		
VERTICAL	Vc (m/min)	80-100			50-70			35-55			20-30		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	6	4780	0.022	520	3180	0.019	310	2390	0.016	190	1330	0.015	100
	8	3580	0.026	460	2390	0.023	280	1790	0.019	170	1000	0.018	90
	10	2870	0.030	440	1910	0.027	260	1430	0.023	160	800	0.021	90
	12	2390	0.034	410	1590	0.031	250	1190	0.026	150	660	0.024	80
	16	1790	0.039	350	1190	0.035	210	900	0.029	130	500	0.027	70
	20	1430	0.053	380	960	0.048	230	720	0.040	140	400	0.037	70

	Material Group ISO 513	P1 P2 M1 K1			P3 P4 M2 K2 K3			P5 M3 M4 K4 S1 S4			S2 S3 S5		
	Hardness/Rm	≤ 700 N/mm²			700-1000 N/mm²			≤ 35 HRC			≤ 40 HRC		
	ap x ae	3D x 0.1D			3D x 0.1D			2D x 0.1D			2D x 0.1D		
TROCHOIDAL	Vc (m/min)	130-170			100-120			70-90			40-60		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	6	7960	0.054	2150	5840	0.049	1420	4250	0.043	920	2650	0.059	790
	8	5970	0.064	1910	4380	0.058	1260	3180	0.051	810	1990	0.070	700
	10	4780	0.076	1820	3500	0.068	1200	2550	0.061	780	1590	0.084	660
	12	3980	0.086	1710	2920	0.077	1130	2120	0.069	730	1330	0.095	630
	16	2990	0.098	1470	2190	0.088	970	1590	0.078	620	1000	0.108	540
	20	2390	0.132	1580	1750	0.119	1040	1270	0.106	670	800	0.145	580

NOTES:
Down milling CNC programming is required.
"ae" value max 0.2xD - "T" value max 0.1xD.
The use of end mill with diameter 30-40% smaller than the width of the slot is recommended.
The cutting conditions are based on CNC programming with medium dynamic speed.
With lower CNC dynamic speed, use the same cutting conditions or reduce the cutting speed Vc.
With higher CNC dynamic speed, reduce the "T" value by approximately -30 -50% and apply the maximum available cutting speed Vc.



R1 Cutter radius
R2 Half of slot width
T Programming width of cut
ae Actual width of cut



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