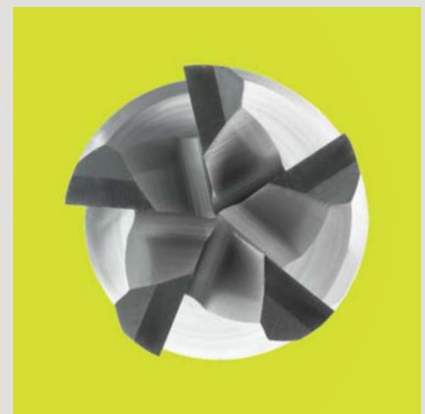


HF535T

EN

5F carbide end mill for trochoidal milling

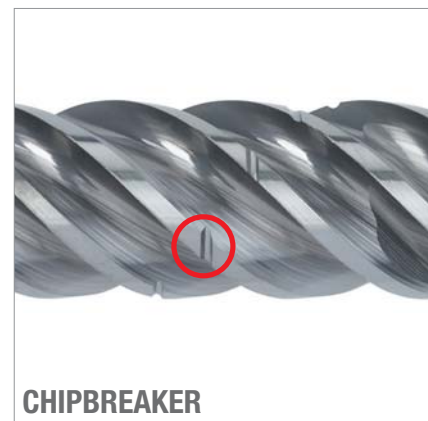
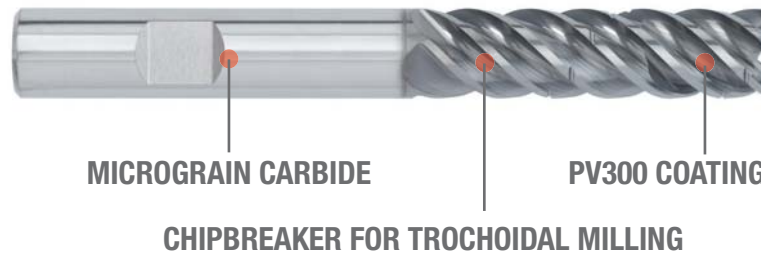


SORMA | ST
SOLID TOOLS - OSAWA

HF

Variable Helix (VH) and Unequal Pitch (UP) - universal application

Features of HF end mills



Features and Benefits

- Variable helix VH and unequal pitch UP design reduces vibrations, allows higher productivity and longer life
- Highly sophisticated cutting edge preparation for an excellent surface finishing
- Microngrain carbide and PV300 coating provide high wear resistance allowing long and stable tool life.
- Chipbreakers for trochoidal milling generate small chips for quick ejection under deep pocket milling.

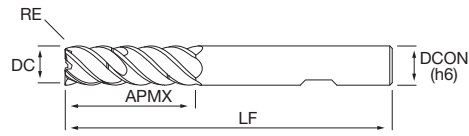
Use case

Tool Type	HF535T
Workpiece	W.-Nr 1.0715 AISI 304
Parameters	Vc 200 m/min, fz 0,141 mm/t, ap 68 mm, ae 1.3 mm
Diameter	20 mm
Machining time:	
OSAWA	<div style="background-color: #808080; width: 100%; height: 10px; display: flex; justify-content: space-between; align-items: center;">+35%</div>
Competitor	<div style="background-color: #808080; width: 80%; height: 10px;"></div>

HF535T

- Weldon shank
- 5 flutes
- Chipbreaker
- Corner radius
- Different core diameter
- Trochoidal milling

P	M	K	N	S	H
★	★	★	★	★	★





OSAWA NORM	MG PV300	<45 HRC	VH 36°/37°/38°	RADIUS	ZEFP 5 UP	CB	CD	SIDE MILLING	TROCHOIDAL
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DC	DC tol.	RE	RE tol.	DCON	TCDCON	APMX	LF	ZEFP	EDP no.	Stock
10	0/-0.040	0.1	0/-0.020	10	h6	35	90	5	HF535T010100	●
12	0/-0.050	0.12	0/-0.020	12	h6	45	100	5	HF535T012120	●
16	0/-0.050	0.15	0/-0.020	16	h6	55	115	5	HF535T015160	●
20	0/-0.050	0.2	0/-0.020	20	h6	70	131	5	HF535T020200	●


★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

HF535T

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 P6 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm ²	600÷1000 N/mm ²	≤35 HRC	≤45 HRC
	ap x ae	3.5D x 0.05D	3.5D x 0.05D	3.5D x 0.05D	3.5D x 0.05D
	Vc (m/min)	170÷190	100÷120	80÷100	60÷80
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	10	0.100	0.100	0.080	0.072
	12	0.120	0.120	0.100	0.090
	16	0.150	0.150	0.130	0.117
20	0.150	0.150	0.150	0.135	

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 P6 M2 M3 K4 S1 S4	S2 S3 S5
	Hardness/Rm	≤700 N/mm ²	600÷1000 N/mm ²	≤35 HRC	≤45 HRC
	ap x ae	3.5D x 0.05D	3.5D x 0.05D	3.5D x 0.05D	3.5D x 0.05D
	Vc (m/min)	170÷190	100÷120	80÷100	60÷80
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	10	0.100	0.100	0.080	0.072
	12	0.120	0.120	0.100	0.090
	16	0.150	0.150	0.130	0.117
20	0.150	0.150	0.150	0.135	

High speed cutting conditions (A highly rigidity CNC machine is required)

	Material Group ISO 513	P1 P2 P7	P3 P4	P5 P6	
	Hardness/Rm	≤700 N/mm ²	600÷1000 N/mm ²	≤35 HRC	
	ap x ae	3.5D x 0.05D	3.5D x 0.05D	3.5D x 0.05D	
	Vc (m/min)	220÷260	120÷160	100÷140	
	DC (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	10	0.100	0.100	0.080	
	12	0.120	0.120	0.100	
	16	0.150	0.150	0.130	
20	0.150	0.150	0.150		

High speed cutting conditions is only suggested for material groups ISO P.

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.

