HF535T

5F carbide endmill for trochoidal milling

P M K S

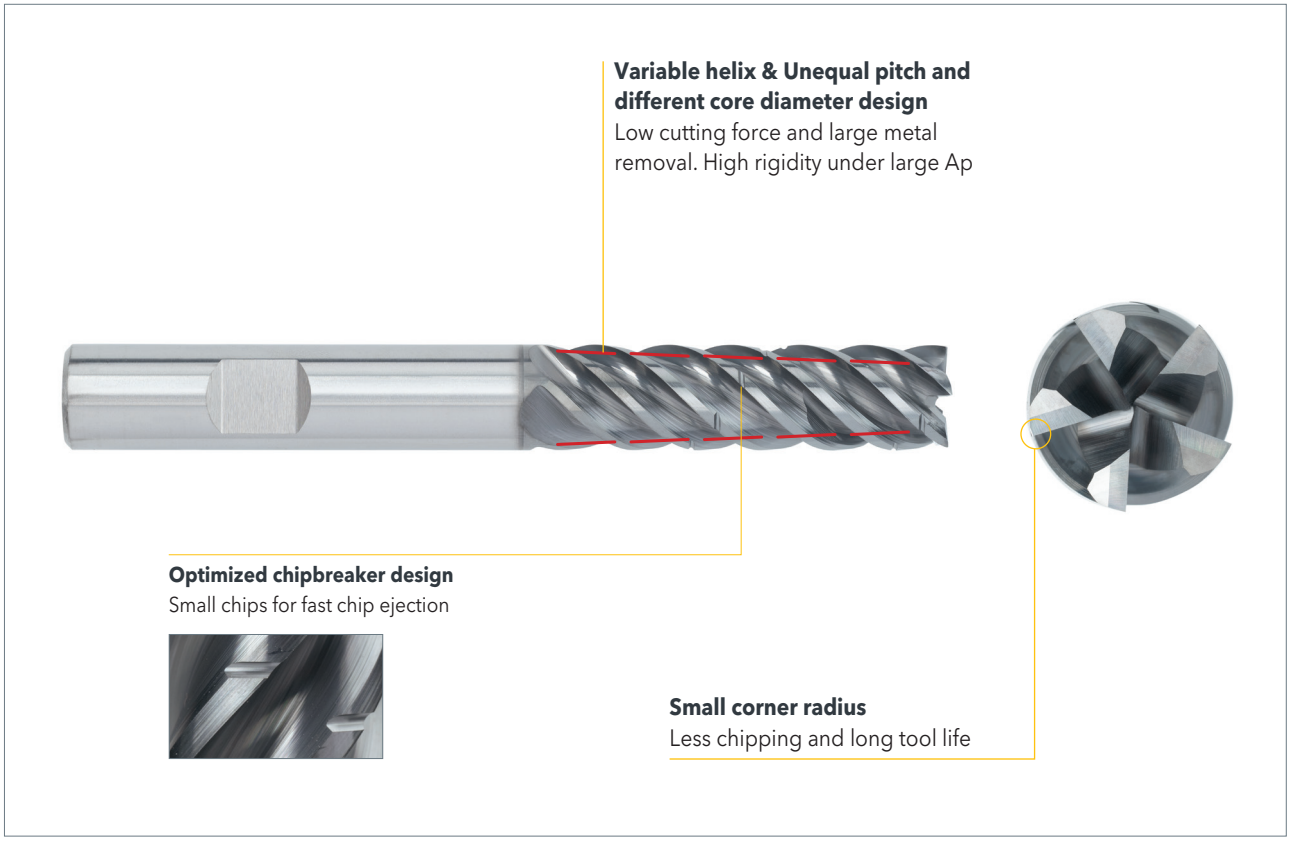
OSAWA

SORMA CUTTING SOLUTIONS

HF535T

- New 5F trochoidal carbide endmill with chipbreaker for high productivity machining on material groups ISO P, ISO M, ISO K, and ISO S.
- Unequal pitch, variable helix, and different core diameter design guarantee minimum vibration and extended tool life under high metal removal rate application.
- Special edge design and optimized chipbreaker allow small chips and high feed.
- Trochoidal milling strategy allows short machining time and low cutting force.
- Cutting length 3.5xD.
- Range: D10 - D20.

FEATURES



HF535T

Weldon shank, 5 flutes, chipbreaker, corner radius, different core diameter, trochoidal milling

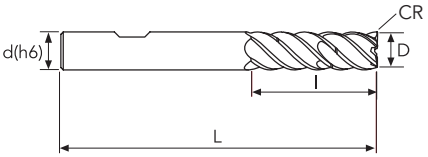
OSAWA NORM | MG PV300 | <45 HRC | 36°/37°/38° | RADIUS | Z5 UP

CD | CB

P	M	K	N	S	H
★	☆	★		☆	

★ 1st choice ☆ suitable

SIDE MILLING | TROCHOIDAL



D	D Tol.	R	R Tol.	d(h6)	l	l1	L	Z	EDP No.	Stock
10	0/-0.040	0.10	+/-0.020	10	35		90	5	HF535T010100	●
12	0/-0.050	0.12	+/-0.020	12	45		100	5	HF535T012120	●
16	0/-0.050	0.15	+/-0.020	16	55		115	5	HF535T015160	●
20	0/-0.050	0.20	+/-0.020	20	70		131	5	HF535T020200	●

● stock standard ○ non-standard stock

CUTTING PARAMETERS

HF535T

	Material Group ISO 513	P1 P2 P7 K1	P3 P4 M1 K2 K3	P5 P6 M2 M3 K4 S1 S4	S2 S3 S5
SIDE MILLING	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤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**
	D (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
TROCHOIDAL	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤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**
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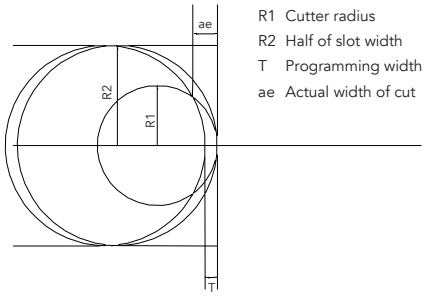
	20	0.150	0.150	0.150	0.135

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

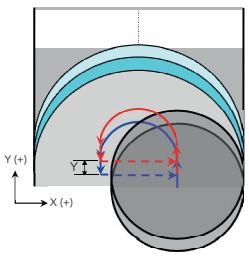
	Material Group ISO 513	P1 P2 P7	P3 P4	P5 P6	
TROCHOIDAL	Hardness/Rm	≤700 N/mm²	600÷1000 N/mm²	≤35 HRC	
	ap x ae	**3.5D x 0.05D**	**3.5D x 0.05D**	**3.5D x 0.05D**	
	Vc (m/min)	**220÷260**	**120÷160**	**100÷140**	
	D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	
	10	0.100	0.100	0.080	
	12	0.120	0.120	0.100	
	16	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.



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



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