

Garant**GARANT Steel solid carbide roughing end mill with chip breakers HPC, TiAlN, Ø f8 DC: 20mm****Order data**

Order number	203049 20
GTIN	4069515028592
Item class	11Z

Description**Version:**

For **roughing and finishing. Chip breakers for controlled chip breaking.** For reliable working in automated production environments thanks to reliable chip evacuation from the component. Up to 1.5xD into solid material **at very high feed rates** with smooth cutting action.

Advantage:

Optimised flute form, eccentric relief ground, wide chip space.

Technical description

Corner chamfer angle	45 degrees
Overhang length L_1 incl. recess	54 mm
Cutting edge Ø D_c	20 mm
Corner chamfer width at 45°	0.4 mm
Tolerance nominal Ø	f8
Overall length L	104 mm
Helix angle	38 degrees
Flute length L_c	41 mm
Recess Ø D_1	19.8 mm
Shank Ø D_s	20 mm
Number of chip separators	1

Data sheet

Feed f_z for slot milling in steel < 900 N/mm ²	0.1 mm
Shank	DIN 6535 HB
Direction of infeed	horizontal, oblique and vertical
Feed f_z for side milling in steel < 900 N/mm ²	0.13 mm
No. of teeth Z	4
Series	Master Steel
Coating	TiAlN
Tool material	Solid carbide
Standard	DIN 6527
Type	N
Helix angle characteristic	unequal spacing
Spacing of the cutters	unequal spacing
Cutting width a_e for milling operation	Full slot cutting depth 1×D
Cutting width a_e for milling operation	0.3×D for side milling
Through-coolant	no
Machining strategy	HPC
Colour ring	green
Type of product	End / face mill

User data

	Suitability	V_c	ISO code
Steel < 500 N/mm ²	suitable	250 m/min	P
Steel < 750 N/mm ²	suitable	200 m/min	P
Steel < 900 N/mm ²	suitable	180 m/min	P
Steel < 1100 N/mm ²	suitable	160 m/min	P
INOX < 900 N/mm ²	suitable	70 m/min	M
INOX > 900 N/mm ²	suitable	50 m/min	M
GG(G)	suitable	120 m/min	K
Uni	suitable		

Data sheet

wet maximum	suitable
wet minimum	suitable only under restricted conditions
dry	suitable
Air	suitable