

**Garant**
**Solid carbide roughing end mill MTC / TPC, TiAlN, Ø f8 DC: 20mm**

**Order data**

Order number	202977 20
GTIN	4045197431424
Item class	11X

**Description**
**Version:**

**Significant cutting force reduction** due to 45° helix.

**Application:**

Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.

**Note:**

For materials > 55 HRC we recommend reducing the depth of cut to  $a_p=0.25 \times D \dots 0.5 \times D$ .

**Technical description**

Cutting edge Ø D <sub>c</sub>	20 mm
No. of teeth Z	4
Corner chamfer width at 45°	0.25 mm
Recess Ø D <sub>1</sub>	19 mm
Feed f <sub>z</sub> for side milling in steel < 60 HRC	0.05 mm
Overhang length L <sub>1</sub> incl. recess	50 mm
Feed f <sub>z</sub> for slot milling in steel < 60 HRC	0.045 mm
Shank Ø D <sub>s</sub>	20 mm
Overall length L	104 mm
Flute length L <sub>c</sub>	41 mm
Direction of infeed	horizontal, oblique and vertical
Shank	DIN 6535 HB to h6

Tolerance nominal $\varnothing$	f8
Helix angle	45 degrees
Corner chamfer angle	45 degrees
Coating	TiAlN
Tool material	Solid carbide
Standard	Manufacturer's standard
Type	H
Helix angle characteristic	unequal spacing
Spacing of the cutters	unequal spacing
Cutting width $a_e$ for milling operation	Full slot cutting depth $1 \times D$
Cutting width $a_e$ for milling operation	$0.15 \times D$ for side milling
Cutting width $a_e$ for milling operation	$0.1 \times D$
Through-coolant	no
Machining strategy	MTC
Machining strategy	TPC
Colour ring	red
Type of product	End / face mill

## User data

	Suitability	$V_c$	ISO code
Steel < 900 N/mm <sup>2</sup>	suitable	160 m/min	P
Steel < 1100 N/mm <sup>2</sup>	suitable	115 m/min	P
Steel < 1400 N/mm <sup>2</sup>	suitable	115 m/min	P
Steel < 55 HRC	suitable	60 m/min	H
Steel < 60 HRC	suitable	30 m/min	H
Steel < 65 HRC	suitable	25 m/min	H
Steel < 67 HRC	suitable only under restricted conditions	20 m/min	H

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