

**Garant**
**Solid carbide roughing end mill ISO H55 HPC/TPC, TiSiN, Ø f8 DC: 20mm**

**Order data**

Order number	202970 20
GTIN	4067263886327
Item class	11Z

**Description**
**Version:**

For machining **steels** in the transition range between the **ISO material groups P and H**. Specially developed for steel materials with **tensile strengths of 1000-1500 N/mm<sup>2</sup>** and for **hardened steel materials up to HRC 55**. **Micro-grain substrate** and coating are coordinated to achieve the **longest service life and process reliability**. **Soft cuts** due to 45° helix angle.

**Technical description**

Overhang length $L_1$ incl. recess	50 mm
Cutting edge $\varnothing D_c$	20 mm
No. of teeth $Z$	4
Helix angle	45 degrees
Overall length $L$	104 mm
Shank	DIN 6535 HA to h6
Flute length $L_c$	41 mm
Tolerance nominal $\varnothing$	f8
Shank $\varnothing D_s$	20 mm
Direction of infeed	horizontal, oblique and vertical
Corner rounding $r_v$	0.3 mm
Recess $\varnothing D_1$	19 mm

Feed $f_z$ for side milling in steel < 55 HRC	0.05 mm
Feed rate $f_z$ for slot milling in steel < 55 HRC	0.04 mm
Coating	TiSiN
Tool material	Solid carbide
Standard	Works 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	$0.1 \times D$
Cutting width $a_e$ for milling operation	$0.15 \times D$ for side milling
Through-coolant	no
Machining strategy	HPC
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	120 m/min	P
Steel < 1400 N/mm <sup>2</sup>	suitable	115 m/min	P
Steel < 50 HRC	suitable	70 m/min	H
Steel < 55 HRC	suitable	60 m/min	H
Steel < 60 HRC	suitable only under restricted conditions	30 m/min	H
dry	suitable		
Air	suitable		

