

**Garant**
**Solid carbide milling cutter with chip separators TPC, TiAlN, Ø f8 DC: 20mm**

**Order data**

Order number	203103 20
GTIN	4045197814623
Item class	11X

**Description**

Version:

High-performance milling cutter with irregular cutter spacing and irregular helical pitch. Optimised bending strength due to the use of ultra-fine grain substrates. Offset chip breaker.

Note:

$a_{e\ max} = 0.07 \times D$  for TPC machining. NEW GENERATION AVAILABLE! Recommended successor product is No. 203117.  $h_{max}$ : The values stated in the table are maximum values. For finishing operations we recommend items No. 204012, 204014 and 204015.

**Technical description**

Overhang length $L_1$ incl. recess	70 mm
Recess $\varnothing D_1$	19.8 mm
Corner chamfer width at 45°	0.4 mm
Cutting edge $\varnothing D_c$	20 mm
Direction of infeed	horizontal and oblique
Overall length L	126 mm
Balance quality with shank	G 2.5 with HB
Flute length $L_c$	60 mm
Shank $\varnothing D_s$	20 mm
Shank	DIN 6535 HB to h6
Tolerance nominal $\varnothing$	f8

No. of teeth Z	7
Helix angle	40 degrees
Average chip thickness $h_{\max}$ for TPC milling in INOX < 900 N/mm <sup>2</sup>	0.097 mm
Corner chamfer angle	45 degrees
Number of chip separators	1
Coating	TiAlN
Tool material	Solid carbide
Standard	Manufacturer's standard
Type	N
Helix angle characteristic	unequal spacing
Spacing of the cutters	unequal spacing
Cutting width $a_e$ for milling operation	0.07×D
Through-coolant	no
Machining strategy	TPC
Colour ring	blue
Type of product	End / face mill

## User data

	Suitability	$V_c$	ISO code
Steel < 500 N/mm <sup>2</sup>	suitable	380 m/min	P
Steel < 750 N/mm <sup>2</sup>	suitable	340 m/min	P
Steel < 900 N/mm <sup>2</sup>	suitable	300 m/min	P
Steel < 1100 N/mm <sup>2</sup>	suitable	230 m/min	P
INOX < 900 N/mm <sup>2</sup>	suitable	240 m/min	M
INOX > 900 N/mm <sup>2</sup>	suitable	170 m/min	M
wet maximum	Suitable		
wet minimum	Suitable only under restricted conditions		

Air

suitable