

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

Order data

Order number	203090 20
GTIN	4045197814395
Item class	11X

Description
Version:

High-performance end mills for general-purpose machining, **specially designed for TPC applications.**

Strengthened core. Offset chip breaker. **Optimised bending strength** due to the use of ultra-fine grain substrates.

Note:

$a_{e\max} = 0.05 \times D$ for TPC machining.

h_{\max} : The values stated in the table are maximum values.

Tolerance nominal Ø: f8

No. of teeth Z: 5

Helix angle: 40 °

Direction of infeed: horizontal and oblique

Shank: DIN 6535 HB to h6

Balance quality with shank: G 2.5 with HB

No. of teeth Z: 5

Flute length L_c : 80 mm

Overall length L: 140 mm

Shank Ø D_s : 20 mm

Corner chamfer width at 45°: 0.4 mm

Average chip thickness h_{\max} for TPC milling in Toolox 44 HRC: 0.088 mm

Technical description

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No. of teeth Z	5
Tolerance nominal \varnothing	f8
Corner chamfer width at 45°	0.4 mm
Balance quality with shank	G 2.5 with HB
Flute length L_c	80 mm
Shank $\varnothing D_s$	20 mm
Shank	DIN 6535 HB to h6
Cutting edge $\varnothing D_c$	20 mm
Helix angle	40°
Corner chamfer angle	45°
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	0.05×D
Through-coolant	no
Machining strategy	TPC
Colour ring	green
Type of product	End / face mill

User data

	Suitability	V_c	ISO code
Steel < 500 N/mm ²	suitable	380 m/min	P
Steel < 750 N/mm ²	suitable	340 m/min	P
Steel < 900 N/mm ²	suitable	300 m/min	P
Steel < 1100 N/mm ²	suitable	230 m/min	P

Steel < 1400 N/mm ²	suitable	150 m/min	P
TOOLOX 33	suitable	60 m/min	H
TOOLOX 44	suitable	40 m/min	H
HARDOX 500 < 1600 N/mm ²	suitable	25 m/min	H
INOX < 900 N/mm ²	suitable	220 m/min	M
INOX > 900 N/mm ²	suitable only under restricted conditions	150 m/min	M
Uni	suitable		
wet maximum	Suitable		
dry	Suitable only under restricted conditions		
Air	suitable		
Services			

Shank clamping flats for shrink-fit chucks, with retainer function Shank Ø tool 20 mm

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