

Garant
Solid carbide milling cutter with chip separators TPC, TiAlN, Ø f8 DC: 12mm

Order data

Order number	203093 12
GTIN	4045197953964
Item class	11X

Description
Version:

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

Strengthened core.

Optimised bending strength due to the use of ultra-fine grain substrates.

Offset chip breakers for controlled chip breaking.

Note:

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

h_{\max} : The values stated in the table are maximum values. For finishing operations we recommend items No. 204016, 204018 and 204019.

Successor product to No. 203090.

Technical description

Cutting edge Ø D_c	12 mm
Shank	DIN 6535 HB to h6
Shank Ø D_s	12 mm
Direction of infeed	horizontal and oblique
Flute length L_c	48 mm
Corner chamfer width at 45°	0.24 mm
Average chip thickness h_{\max} for TPC milling in Toolox 44 HRC	0.054 mm
Overall length L	100 mm

No. of teeth Z	5
Helix angle	40 degrees
Balance quality with shank	G 2.5 with HB
Tolerance nominal \varnothing	f8
Corner chamfer angle	45 degrees
Number of chip separators	2
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		