

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

Order data

Order number	203089 12
GTIN	4045197640956
Item class	11X

Description

Version:

High-performance milling cutter specially designed for general-purpose TPC applications. Strengthened core. Optimised bending strength due to the use of ultra-fine grain substrates.

Note:

$a_{e\ max} = 0.07 \times D$ for TPC machining. h_{max} : The values stated in the table are maximum values. For finishing operations we recommend items No. 204012, 204014 and 204015. NEW GENERATION AVAILABLE! Recommended successor product is No. 203092.

Technical description

Corner chamfer width at 45°	0.24 mm
Overhang length L_1 incl. recess	45 mm
No. of teeth Z	5
Recess Ø D_1	11.8 mm
Cutting edge Ø D_c	12 mm
Average chip thickness h_{max} for TPC milling in Toolox 44 HRC	0.06 mm
Shank Ø D_s	12 mm
Overall length L	93 mm
Flute length L_c	36 mm
Direction of infeed	horizontal and oblique

Shank	DIN 6535 HB to h6
Tolerance nominal \varnothing	f8
Balance quality with shank	G 2.5 with HB
Helix angle	40 degrees
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	$0.07 \times D$
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		