

Garant
**GARANT Diabolo solid carbide torus cutter R1 0.1, TiAlN, Ø DC × L1:
1,5X12mm**

Order data

Order number	206156 1,5X12
GTIN	4045197934239
Item class	11X

Description
Version:
GARANT Diabolo:

Special geometry, coating and carbide **for hard machining in the high-performance field.**
Suitable even for machining **electrolytic copper.**

Double-relief ground with 2 chamfers hollow ground for high-precision hard machining.

Recess angle $\alpha = 16^\circ$.

Tolerances:

- **Corner radius: $R_1 = \pm 0.0025$ mm.**
- **Neck Ø: $D_1 = 0 / -0.01$ mm.**

Note:

At greater tool overhang lengths, use a reduced value for a_p !

Values for:

side milling: $a_p = 0.1 \times D \times a_{p,corr}$

copying: $a_p = 0.05 \times D \times a_{p,corr}$

To calculate the feed rate vf please use the actual speed of the machine (the maximum possible speed)! e.g: $vf = 18000$ [rpm] × fz [mm/Z] × z

Technical description

Overall length L	55 mm
No. of teeth Z	2
Cutting edge Ø D_c	1.5 mm
Recess Ø D_1	1.44 mm
Shank Ø D_s	4 mm

Overhang length L_1 incl. recess	12 mm
Feed f_z for copy milling in steel < 65 HRC	0.02 mm
Flute length L_c	1.5 mm
Correction factor $a_{p\ corr}$	0.8
Shank	DIN 6535 HA to h5
Corner radius R_1	0.1 mm
Feed f_z for side milling in steel < 65 HRC	0.02 mm
Helix angle	30 degrees
Series	Diabolo
Coating	TiAlN
Tool material	Solid carbide
Standard	Manufacturer's standard
Type	H
Tolerance nominal \varnothing	0 / -0.005
Direction of infeed	horizontal, oblique and vertical
Cutting width a_e for milling operation	0.05×D for copy milling
Cutting width a_e for milling operation	0.05×D for copy milling
Through-coolant	no
Colour ring	red
Type of product	Torus cutter

User data

	Suitability	V_c	ISO code
Steel < 750 N/mm ²	suitable only under restricted conditions	200 m/min	P
Steel < 900 N/mm ²	suitable only under restricted conditions	200 m/min	P
Steel < 1100 N/mm ²	suitable	190 m/min	P
Steel < 1400 N/mm ²	suitable	170 m/min	P

Steel < 50 HRC	suitable	120 m/min	H
Steel < 55 HRC	suitable	100 m/min	H
Steel < 60 HRC	suitable	72 m/min	H
Steel < 65 HRC	suitable	55 m/min	H
Steel < 67 HRC	suitable	50 m/min	H
Steel < 70 HRC	suitable	45 m/min	H
INOX < 900 N/mm ²	suitable	90 m/min	M
INOX > 900 N/mm ²	suitable	80 m/min	M
CuZn	suitable	140 m/min	N
wet maximum	suitable only under restricted conditions		
wet minimum	suitable only under restricted conditions		
dry	suitable		
Air	suitable		