

**Garant**
**GARANT Diabolo solid carbide torus cutter R1 0.1, TiAlN, Ø DC × L1:  
1,5X14mm**

**Order data**

Order number	206156 1,5X14
GTIN	4045197934246
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**

Feed $f_z$ for copy milling in steel < 65 HRC	0.02 mm
Corner radius $R_1$	0.1 mm
Recess Ø $D_1$	1.44 mm
No. of teeth $Z$	2
Shank Ø $D_s$	4 mm

Overall length L	55 mm
Helix angle	30 degrees
Overhang length L <sub>1</sub> incl. recess	14 mm
Shank	DIN 6535 HA to h5
Correction factor a <sub>p,corr</sub>	0.8
Cutting edge Ø D <sub>c</sub>	1.5 mm
Feed f <sub>z</sub> for side milling in steel < 65 HRC	0.02 mm
Flute length L <sub>c</sub>	1.5 mm
Series	Diabolo
Coating	TiAlN
Tool material	Solid carbide
Standard	Manufacturer's standard
Type	H
Tolerance nominal Ø	0 / -0.005
Direction of infeed	horizontal, oblique and vertical
Cutting width a <sub>e</sub> for milling operation	0.05×D for copy milling
Cutting width a <sub>e</sub> for milling operation	0.05×D for copy milling
Through-coolant	no
Colour ring	red
Type of product	Torus cutter

## User data

	Suitability	V <sub>c</sub>	ISO code
Steel < 750 N/mm <sup>2</sup>	suitable only under restricted conditions	200 m/min	P
Steel < 900 N/mm <sup>2</sup>	suitable only under restricted conditions	200 m/min	P
Steel < 1100 N/mm <sup>2</sup>	suitable	190 m/min	P
Steel < 1400 N/mm <sup>2</sup>	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 <sup>2</sup>	suitable	90 m/min	M
INOX > 900 N/mm <sup>2</sup>	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		