

**Garant****GARANT Master Steel HT high-precision countersink with unequal spacing and 3 drive flats 90°, TiAlN, External Ø Dc: 11,5mm****Order data**

|              |               |
|--------------|---------------|
| Order number | 150352 11,5   |
| GTIN         | 4067263125471 |
| Item class   | 15B           |

**Description****Version:**

Countersinks with 3 convex unequally spaced cutting edges for chatter-free countersinking and deburring. Robust design and special geometry with variable pitch of the spiral cutting edges for the highest demands – even in difficult-to-machine materials such as Toolox 44 and Hardox 500. Significantly reduced radial and axial forces. Manufactured with narrower production tolerances than specified by DIN335-C.

**Advantage:**

High self-guidance and stability due to the convex cutting edge geometry. Chatter-free running for excellent results with long tool life at the same time.

**Application:**

High-precision countersinks for production of exactly round 90° countersunk surfaces in steel, cast iron and materials that are challenging to machine. Exceptionally well suited for use on hand-held power drills and single-pillar drilling machines.

**Technical description**

|   |        |
|---|--------|
| Number of cutting edges Z                         | 3      |
| Shank Ø D <sub>s</sub>                            | 8 mm   |
| Overall length L                                  | 56 mm  |
| smallest countersink Ø for holes from             | 3.3 mm |
| for countersunk screws ISO 2009, 2010, 7046, 7047 | M6     |

## Data sheet

|  |                                     |
|--|-------------------------------------|
| External Ø                               | 11.5 mm                             |
| Feed f in steel < 1400 N/mm <sup>2</sup> | 0.09 mm/rev.                        |
| Coating                                  | TiAlN                               |
| Countersink tip angle                    | 90 degrees                          |
| Tool material                            | HSS E                               |
| Spacing of the countersink cutting edges | unequal spacing                     |
| Standard                                 | DIN 335 C                           |
| Shank                                    | Shank with h9 and three drive flats |
| Through-coolant                          | no                                  |
| Colour ring                              | red                                 |
| Series                                   | Master Steel                        |
| Type of product                          | Stepped drill and countersink       |

### User data

|                                     | Suitability                               | V <sub>c</sub> | ISO code |
|-------------------------------------|---|----------------|----------|
| Aluminium (short chipping)          | suitable only under restricted conditions | 72 m/min       | N        |
| Alu > 10% Si                        | suitable only under restricted conditions | 58 m/min       | N        |
| Steel < 500 N/mm <sup>2</sup>       | suitable                                  | 42 m/min       | P        |
| Steel < 750 N/mm <sup>2</sup>       | suitable                                  | 35 m/min       | P        |
| Steel < 900 N/mm <sup>2</sup>       | suitable                                  | 31 m/min       | P        |
| Steel < 1100 N/mm <sup>2</sup>      | suitable                                  | 19 m/min       | P        |
| Steel < 1400 N/mm <sup>2</sup>      | suitable                                  | 15 m/min       | P        |
| TOOLOX 33                           | suitable                                  | 14 m/min       | H        |
| TOOLOX 44                           | suitable                                  | 13 m/min       | H        |
| HARDOX 500 < 1600 N/mm <sup>2</sup> | suitable                                  | 10 m/min       | H        |
| INOX < 900 N/mm <sup>2</sup>        | suitable only under restricted conditions | 17 m/min       | M        |

## Data sheet

|                              |   |          |   |
|------------------------------|---|----------|---|
| INOX > 900 N/mm <sup>2</sup> | suitable only under restricted conditions | 13 m/min | M |
| Ti > 850 N/mm <sup>2</sup>   | suitable only under restricted conditions | 10 m/min | S |
| GG(G)                        | suitable                                  | 29 m/min | K |
| Oil                          | suitable only under restricted conditions |          |   |
| wet maximum                  | suitable                                  |          |   |
| dry                          | suitable only under restricted conditions |          |   |