

**Garant****GARANT Master TM plain shank thread mill with countersink 2.5×D, AlTiN, M: M4****Order data**

|              |               |
|--------------|---------------|
| Order number | 139664 M4     |
| GTIN         | 4067263126751 |
| Item class   | 11D           |

**Description****Version:**

Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges**. Due to the **irregular cutting edge spacing** they achieve very **smooth running** and **long tool life**.

**Newly developed universal geometry** and **high-performance coating** for use across a wide spectrum of materials.

- **Significantly reduced vibration due to irregular cutting edge spacing.**
- **Increased number of cutting edges.**
- **Latest-generation AlTiN-based HiPIMS coating.**
- **Corrected thread profile for avoidance of profile distortions.**

**Advantage:**

Incorporating a countersink profile for a 90° countersink and thread milling in a single operation.

**Note:**

HB and HE shanks are available at the same price as HA.

Order **HB** shank: with **No. 139664 + 129100 HB**.

Order **HE** shank: with **No. 139664 + 129100 HE**.

**Technical description**

|                             |          |
|-----------------------------|----------|
| No. of teeth Z              | 4        |
| Flute length L <sub>c</sub> | 10.15 mm |
| Through-coolant             | yes      |
| Neck Ø D <sub>1</sub>       | 5 mm     |

|  |  |
|--|--|
| Shank length $L_s$                         | 36.1 mm                                |
| Overall length $L$                         | 58 mm                                  |
| Nominal $\varnothing D_c$                  | 3.1 mm                                 |
| Feed $f_z$ in steel $< 750 \text{ N/mm}^2$ | 0.02 mm                                |
| Thread pitch                               | 0.7 mm                                 |
| Thread depth                               | 10.15 mm                               |
| Programming value for countersink $L_1$    | 10.85 mm                               |
| Number of clamping slots                   | 4                                      |
| Thread size                                | M4                                     |
| Shank $\varnothing D_s$                    | 6 mm                                   |
| Coating                                    | AlTiN                                  |
| Thread type                                | M-LH                                   |
| Thread type                                | M                                      |
| Flank angle                                | 60 degrees                             |
| Tool material                              | Solid carbide                          |
| Thread standard                            | DIN 13                                 |
| Shank                                      | DIN 6535 HA to h6                      |
| Application for type of drilling           | up to $2 \times D$ for blind holes     |
| Application for type of drilling           | up to $2.5 \times D$ for through holes |
| Spacing of the cutters                     | unequal spacing                        |
| Countersink angle                          | 90 degrees                             |
| Shank tolerance                            | h6                                     |
| Colour ring                                | green                                  |
| Internal/external application              | Internal                               |
| Series                                     | Master TM                              |
| Type of product                            | thread milling cutter                  |

## User data

|  | Suitability | $V_c$ | ISO code |
|--|-------------|-------|----------|
|--|-------------|-------|----------|

|                                |          |           |   |
|--------------------------------|----------|-----------|---|
| Alu plastics                   | suitable | 200 m/min | N |
| Aluminium (short chipping)     | suitable | 190 m/min | N |
| Alu > 10% Si                   | suitable | 160 m/min | N |
| Steel < 500 N/mm <sup>2</sup>  | suitable | 125 m/min | P |
| Steel < 750 N/mm <sup>2</sup>  | suitable | 115 m/min | P |
| Steel < 900 N/mm <sup>2</sup>  | suitable | 110 m/min | P |
| Steel < 1100 N/mm <sup>2</sup> | suitable | 80 m/min  | P |
| Steel < 1400 N/mm <sup>2</sup> | suitable | 70 m/min  | P |
| INOX < 900 N/mm <sup>2</sup>   | suitable | 75 m/min  | M |
| INOX > 900 N/mm <sup>2</sup>   | suitable | 70 m/min  | M |
| Ti > 850 N/mm <sup>2</sup>     | suitable | 45 m/min  | S |
| GG(G)                          | suitable | 105 m/min | K |
| CuZn                           | suitable | 175 m/min | N |
| Uni                            | suitable |           |   |
| wet maximum                    | suitable |           |   |
| wet minimum                    | suitable |           |   |
| Air                            | suitable |           |   |

## Services

|                        |           |
|------------------------|-----------|
| Shank grinding Type HB | 129100 HB |
| Shank grinding Type HE | 129100 HE |