

**Garant**
**GARANT Master TM plain shank thread mill with countersink 2×D, AlTiN, M: M16**

**Order data**

Order number	139663 M16
GTIN	4067263128458
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. 139663 + 129100 HB**.

Order **HE** shank: with **No. 139663 + 129100 HE**.

**Technical description**

Thread pitch	2 mm
Programming value for countersink L <sub>1</sub>	34.55 mm
Thread size	M16
No. of teeth Z	6

Thread depth	33 mm
Neck $\varnothing D_1$	17 mm
Feed $f_z$ in steel $< 750 \text{ N/mm}^2$	0.11 mm
Overall length L	108 mm
Flute length $L_c$	33 mm
Nominal $\varnothing D_c$	13.4 mm
Number of clamping slots	6
Through-coolant	yes
Shank length $L_s$	55.7 mm
Shank $\varnothing D_s$	18 mm
Coating	AlTiN
Thread type	M
Thread type	M-LH
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 $2 \times D$ 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
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Alu plastics	suitable	220 m/min	N
Aluminium (short chipping)	suitable	220 m/min	N
Alu > 10% Si	suitable	180 m/min	N
Steel < 500 N/mm <sup>2</sup>	suitable	140 m/min	P
Steel < 750 N/mm <sup>2</sup>	suitable	130 m/min	P
Steel < 900 N/mm <sup>2</sup>	suitable	120 m/min	P
Steel < 1100 N/mm <sup>2</sup>	suitable	90 m/min	P
Steel < 1400 N/mm <sup>2</sup>	suitable	80 m/min	P
Steel < 55 HRC	suitable only under restricted conditions	45 m/min	H
TOOLOX 33	suitable	85 m/min	H
TOOLOX 44	suitable	50 m/min	H
INOX < 900 N/mm <sup>2</sup>	suitable	82 m/min	M
INOX > 900 N/mm <sup>2</sup>	suitable	75 m/min	M
Ti > 850 N/mm <sup>2</sup>	suitable	50 m/min	S
GG(G)	suitable	120 m/min	K
CuZn	suitable	200 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