

**Garant**
**GARANT Master Steel FEED solid carbide drill, plain shank DIN 6535 HA, TiAlN, Ø DC h7: 16,5mm**

**Order data**

Order number	123235 16,5
GTIN	4045197841193
Item class	11E

**Description**
**Version:**

**3-flute drill**, specially developed for **use at very high feed rates**. Outstandingly suitable for **machines with high installed power** and stable operating conditions.

- **Special cutter geometry with stable cutting edges and large clearance at the centre enables very high feed rates.**
- **The patented tip is optimised for chip flow and generates low cutting pressure with good chip breakage.**

The **sector-leading technology of the drill point** guarantees **optimum self-centring behaviour**. 3 guide chamfers guarantee a stable exit from the hole and an exact roundness of the hole.

**Note:**

Flute length  $L_c = L_2 + 1.5 \times D_c$ .

For process reliability when using the 12xD drill, an initial centre drilling with an NC spotting drill No. 121130 with **155° point angle** is necessary.

**Technical description**

Flute length $L_c$	234 mm
Number of cutting edges Z	3
Shank $\varnothing D_s$	18 mm
Nominal $\varnothing D_c$	16.5 mm
Tolerance nominal $\varnothing$	h7
Overall length L	285 mm

Standard	Manufacturer's standard
recommended maximum drilling depth $L_2$	209.3 mm
Feed $f$ in steel $< 1100 \text{ N/mm}^2$	0.66 mm/rev.
Series	Master Steel
Coating	TiAlN
Tool material	Solid carbide
Version	12xD
Point angle	140 degrees
Shank	DIN 6535 HA to h6
Through-coolant	yes, to 25 bar
Machining strategy	HPC
Semi-Standard	yes
Colour ring	green
Type of product	Jobber drill

## User data

	Suitability	$V_c$	ISO code
Steel $< 500 \text{ N/mm}^2$	suitable	120 m/min	P
Steel $< 750 \text{ N/mm}^2$	suitable	110 m/min	P
Steel $< 900 \text{ N/mm}^2$	suitable	100 m/min	P
Steel $< 1100 \text{ N/mm}^2$	suitable	90 m/min	P
Steel $< 1400 \text{ N/mm}^2$	suitable	70 m/min	P
Steel $< 55 \text{ HRC}$	suitable	60 m/min	H
INOX $< 900 \text{ N/mm}^2$	suitable	55 m/min	M
INOX $> 900 \text{ N/mm}^2$	suitable	50 m/min	M
Ti $> 850 \text{ N/mm}^2$	suitable only under restricted conditions	40 m/min	S
GG	suitable	120 m/min	K
GGG	suitable	80 m/min	K

Uni	suitable
wet maximum	suitable
wet minimum	suitable
<b>Services</b>	
Shank grinding Type HE	129100 HE