Garant

GARANT Master Steel MICRO solid carbide pilot drill, plain shank DIN 6535 HA 5×D, AlCrN, ∅ DC: 1,3mm

Order data

Order number	121223 1,3
GTIN	4062406579906
Item class	10F

Description

Version:
High-performance micro-drill for general-purpose use on material, focussing on steel processing. Maximum process reliability due to **exactly matched tools within the overall system** and **expanded guide chamfer.** Drilling of very small diameters down to the maximum depth after creating a pilot hole. **Optimum compromise between core diameter and flute size for optimum chip evacuation** – even with long-chipping materials. The **increased metal removal rates and longer tool life** ensure an economical drilling process, even with very small hole diameters combined with a large L/D ratio.
Note:
For reliable use of the micro-drills from 8×D, a **pilot hole** of **at least 4×D** is required using the micro-pilot drill 121223. For vertical machining and flat workpiece surfaces, a pilot hole can be dispensed with from D_C = ∅ 1 mm up to a length of 12×D. Please always ensure that the **pilot hole is free from chips** before using the subsequent drilling tool. We recommend setting a 90° counterbore with a suitable NC spotting drill after the pilot hole has been completed. For critical applications (e.g. highest possible production accuracy, minimal burr formation, reduced coolant pressure), reduce the feed rate of the tool by 50% before entering and exiting the material. Long-chipping materials may require **chips to be evacuated** in steps of 3×D each by moving the drill back slightly at pilot hole depth. Please make sure that you use a suitable **tool clamping device** (shrink-fit chuck, hydraulic clamping chuck) with a radial run-out of less than 0.003 mm, a sufficiently high **coolant pressure** (at least 30 bar), as well as sufficiently fine **filtration** of the cooling medium (D_C <∅ 2 mm with filter ≤ 0.010 mm; D_C <∅ 3 mm filter ≤ 0.020 mm). The specified L/D ratio gives the **minimum achievable depth of hole** with the respective micro-drill. Flute length $L_C = L_2 + 1.5 \times D_C$.

Technical description

Overall length L	42 mm
Tolerance nominal ∅	m6
Shank ∅ D_s	3 mm
Feed f in steel < 1100 N/mm²	0.045 mm/rev.
Flute length L_c	9.1 mm
recommended maximum drilling depth L_2	7.1 mm
Feed f in stainless steel < 900 N/mm²	0.024 mm/rev.
Standard	Manufacturer's standard
Nominal ∅ D_C	1.3 mm
Number of cutting edges Z	2
Series	Master Steel
Coating	AlCrN
Tool material	Solid carbide
Version	5×D
Point angle	135 degrees
Shank	DIN 6535 HA to h6
Through-coolant	yes, with 40 bar
Machining strategy	HPC
Semi-Standard	yes
Colour ring	green
Type of product	Jobber drill

User data

	Suitability	V_c	ISO code
Aluminium (short chipping)	suitable only under restricted conditions	50 m/min	N
Alu > 10% Si	suitable only under restricted conditions	50 m/min	N
Steel < 750 N/mm²	suitable	80 m/min	P

Steel < 900 N/mm²	suitable	70 m/min	P
Steel < 1100 N/mm²	suitable	60 m/min	P
Steel < 1400 N/mm²	Suitable	50 m/min	P
INOX < 900 N/mm²	suitable	50 m/min	M
INOX > 900 N/mm²	suitable	35 m/min	M
Ti > 850 N/mm²	Suitable	25 m/min	S
GG(G)	suitable	70 m/min	K
CuZn	suitable only under restricted conditions	50 m/min	N
Uni	suitable		
wet maximum	suitable		
wet minimum	suitable only under restricted conditions		