10F



GARANT Master Steel MICRO solid carbide drill, plain shank DIN 6535 HA 30×D, AlCrN, Ø DC h6: 1,3mm

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Order data	
Order number	121231 1,3
GTIN	4062406748975

Description

Version:

Item class

High-performance micro-drill for universal material use, 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 $D_c = \emptyset$ 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 ($D_c < \emptyset$ 2 mm with filter \le 0.010 mm; $D_c < \emptyset$ 3 mm filter \le 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

Standard Manufacturer's standard Flute length L _c 41.6 mm Feed f in steel < 1100 N/mm ² 0.045 mm/rev. recommended maximum drilling depth L ₂ 39.7 mm Series Master Steel Coating AlCrN Tool material Solid carbide Version 30×D Point angle 128 degrees Shank DIN 6535 HA with h6 Through-coolant Machining strategy HPC Pilot drill required yes, pilot drill	Nominal Ø D _c	1.3 mm	
Number of cutting edges Z 2 Feed f in stainless steel < 900 N/mm²	Tolerance nominal Ø	h6	
Feed f in stainless steel < 900 N/mm² 0.024 mm/rev . Shank \oslash D _s 3 mm Standard Manufacturer's standard Flute length L _c 41.6 mm Feed f in steel < 1100 N/mm² 0.045 mm/rev . recommended maximum drilling depth L ₂ 39.7 mm Series Master Steel Coating AlCrN Tool material Solid carbide Version $30 \times D$ Point angle 128 degrees Shank DIN 6535 HA with h6 Through-coolant yes, with 40 bar Machining strategy HPC Pilot drill required yes, pilot drill Semi-Standard yes Colour ring green	Overall length L	74 mm	
Shank Ø D₅ 3 mm Standard Manufacturer's standard Flute length L₅ 41.6 mm Feed f in steel < 1100 N/mm²	Number of cutting edges Z	2	
Standard Manufacturer's standard Flute length L _c 41.6 mm Feed f in steel < 1100 N/mm² 0.045 mm/rev. recommended maximum drilling depth L ₂ 39.7 mm Series Master Steel Coating AlCrN Tool material Solid carbide Version 30×D Point angle 128 degrees Shank DIN 6535 HA with h6 Through-coolant yes, with 40 bar Machining strategy HPC Pilot drill required yes, pilot drill Semi-Standard yes Colour ring green	Feed f in stainless steel < 900 N/mm ²	0.024 mm/rev.	
Flute length L _c Feed f in steel < 1100 N/mm ² 0.045 mm/rev. recommended maximum drilling depth L ₂ 39.7 mm Series Master Steel Coating AlCrN Tool material Solid carbide Version 30×D Point angle 128 degrees Shank DIN 6535 HA with h6 Through-coolant yes, with 40 bar Machining strategy HPC Pilot drill required Semi-Standard yes Colour ring green	Shank Ø D _s	3 mm	
Feed f in steel < 1100 N/mm² recommended maximum drilling depth L₂ 39.7 mm Master Steel Coating AlCrN Tool material Version Point angle Shank DIN 6535 HA with h6 Through-coolant Machining strategy HPC Pilot drill required Semi-Standard yes Colour ring 0.045 mm/rev. 39.7 mm Master Steel AlCrN Solid carbide 128 degrees DIN 6535 HA with h6 yes, with 40 bar HPC yes, pilot drill yes Colour ring green	Standard	Manufacturer's standard	
recommended maximum drilling depth L2 39.7 mm Series Master Steel Coating AlCrN Tool material Solid carbide Version 30×D Point angle 128 degrees Shank DIN 6535 HA with h6 Through-coolant yes, with 40 bar Machining strategy HPC Pilot drill required yes, pilot drill Semi-Standard yes Colour ring green	Flute length L _c	41.6 mm	
Series Master Steel Coating AlCrN Tool material Solid carbide Version 30×D Point angle 128 degrees Shank DIN 6535 HA with h6 Through-coolant yes, with 40 bar Machining strategy HPC Pilot drill required yes, pilot drill Semi-Standard yes Colour ring green	Feed f in steel < 1100 N/mm ²	0.045 mm/rev.	
Coating AlCrN Tool material Solid carbide Version 30×D Point angle 128 degrees Shank DIN 6535 HA with h6 Through-coolant yes, with 40 bar Machining strategy HPC Pilot drill required yes, pilot drill Semi-Standard yes Colour ring green	recommended maximum drilling depth L ₂	39.7 mm	
Tool material Version 30×D Point angle 128 degrees Shank DIN 6535 HA with h6 Through-coolant Machining strategy HPC Pilot drill required Semi-Standard yes Colour ring Solid carbide 30×D 128 degrees H28 degrees 128 degrees	Series	Master Steel	
Version30×DPoint angle128 degreesShankDIN 6535 HA with h6Through-coolantyes, with 40 barMachining strategyHPCPilot drill requiredyes, pilot drillSemi-StandardyesColour ringgreen	Coating	AlCrN	
Point angle 128 degrees Shank DIN 6535 HA with h6 Through-coolant yes, with 40 bar Machining strategy HPC Pilot drill required yes, pilot drill Semi-Standard yes Colour ring green	Tool material	Solid carbide	
Shank DIN 6535 HA with h6 Through-coolant Machining strategy HPC Pilot drill required Semi-Standard Colour ring DIN 6535 HA with h6 yes, with 40 bar HPC yes, pilot drill yes green	Version	30×D	
Through-coolant yes, with 40 bar Machining strategy HPC Pilot drill required yes, pilot drill Semi-Standard yes Colour ring green	Point angle	128 degrees	
Machining strategy HPC Pilot drill required Semi-Standard Colour ring HPC yes, pilot drill yes green	Shank	DIN 6535 HA with h6	
Pilot drill required yes, pilot drill Semi-Standard yes Colour ring green	Through-coolant	yes, with 40 bar	
Semi-Standard yes Colour ring green	Machining strategy	HPC	
Colour ring green	Pilot drill required	yes, pilot drill	
	Semi-Standard	yes	
Type of product Jobber drill	Colour ring	green	
	Type of product	Jobber drill	

User data

	Suitability	\mathbf{V}_{c}	ISO code
Steel < 750 N/mm ²	suitable	60 m/min	Р
Steel < 900 N/mm ²	suitable	50 m/min	Р
Steel < 1100 N/mm ²	suitable	45 m/min	Р
Steel < 1400 N/mm ²	suitable	40 m/min	Р

INOX < 900 N/mm ²	suitable	35 m/min	М
INOX > 900 N/mm ²	suitable	30 m/min	М
GG(G)	suitable	50 m/min	K
CuZn	suitable only under restricted conditions	40 m/min	N
wet maximum	suitable		