Garant

GARANT Master Steel MICRO solid carbide drill, plain shank DIN 6535 HA 30×D, AlCrN, Ø DC h6: 1,25mm

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Order data

| Order number | 121231 1,25 |
|--------------|---------------|
| GTIN | 4062406748968 |
| Item class | 10F |

Description

Version:

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 ≤ 0.010 mm; $D_c < \emptyset 3$ 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

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Data sheet

| Overall length L74 mmFlute length Lc41.6 mmNominal Ø Dc1.25 mmFeed f in stainless steel < 900 N/mm²0.018 mm/rev.recommended maximum drilling depth L239.7 mmFeed f in steel < 1100 N/mm²0.034 mm/rev.StandardManufacturer's standardStandard Ds3 mmSeriesMaster SteelCoatingAlCrNTool materialSolid carbideVersion30×DPoint angle128 degreesShankDIN 6535 HA with h6Through-coolantyes, with 40 barMachining strategyHPCPilot drill requiredyesSemi-StandardyesSemi-Standardyes | Tolerance nominal Ø | h6 | | |
|--|---|-------------------------|--|--|
| Flute length L,41.6 mmNominal Ø D,1.25 mmFeed f in stainless steel < 900 N/mm² | Number of cutting edges Z | 2 | | |
| Nominal Ø Dc1.25 mmFeed f in stainless steel < 900 N/mm² | Overall length L | 74 mm | | |
| Feed f in stainless steel < 900 N/mm²0.018 mm/rev.recommended maximum drilling depth L₂39.7 mmFeed f in steel < 1100 N/mm² | Flute length L _c | 41.6 mm | | |
| recommended maximum drilling depth L ₂ 39.7 mm Feed f in steel < 1100 N/mm ² 0.034 mm/rev. Standard 0.034 mm/rev. Standard 3 mm Standard 3 mm Series 0.034 mm/rev. Series 0.034 mm/rev. Standard 3 mm Master Steel Master Steel Master Steel Master Steel Master Steel Stand Solid carbide Solid carbide 128 degrees 128 degrees DIN 6535 HA with h6 DIN 6535 HA with h6 Machining strategy HPC HPC Semi-Standard Semi-Standard Semi-Standard Machining strategy Machining strategy Machinin | Nominal Ø D _c | 1.25 mm | | |
| Feed f in steel < 1100 N/mm²0.034 mm/rev.StandardManufacturer's standardShank Ø Ds3 mmSeriesMaster SteelCoatingAlCrNTool materialSolid carbideVersion30×DPoint angle128 degreesShankDIN 6535 HA with h6Through-coolantyes, with 40 barMachining strategyHPCPilot drill requiredyesSemi-StandardyesCoour ringgreen | Feed f in stainless steel < 900 N/mm ² | 0.018 mm/rev. | | |
| StandardManufacturer's standardShank Ø D,3 mmSeriesMaster SteelCoatingAlCrNTool materialSolid carbideVersion30×DPoint angle128 degreesShankDIN 6535 HA with h6Through-coolantyes, with 40 barMachining strategyHPCPilot drill requiredyesSemi-StandardyesColour ringGreen | recommended maximum drilling depth L_2 | 39.7 mm | | |
| Shank Ø D,3 mmSeriesMaster SteelCoatingAlCrNTool materialSolid carbideVersion30×DPoint angle128 degreesShankDIN 6535 HA with h6Through-coolantyes, with 40 barMachining strategyHPCPilot drill requiredyesSemi-StandardyesColour ringgreen | Feed f in steel < 1100 N/mm ² | 0.034 mm/rev. | | |
| SeriesMaster SteelCoatingAlCrNTool materialSolid carbideVersion30×DPoint angle128 degreesShankDIN 6535 HA with h6Through-coolantyes, with 40 barMachining strategyHPCPilot drill requiredyes, pilot drillSemi-StandardyesColour ringgreen | Standard | Manufacturer's standard | | |
| CoatingAICrNTool materialSolid carbideVersion30×DPoint angle128 degreesShankDIN 6535 HA with h6Through-coolantYes, with 40 barMachining strategyHPCPilot drill requiredyes, pilot drillSemi-StandardyesColour ringgreen | Shank Ø D _s | 3 mm | | |
| Tool materialSolid carbideVersion30×DPoint angle128 degreesShankDIN 6535 HA with h6Through-coolantyes, with 40 barMachining strategyHPCPilot drill requiredyes, pilot drillSemi-StandardyesColour ringgreen | 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 angle128 degreesShankDIN 6535 HA with h6Through-coolantyes, with 40 barMachining strategyHPCPilot drill requiredyes, pilot drillSemi-StandardyesColour ringgreen | Tool material | Solid carbide | | |
| ShankDIN 6535 HA with h6Through-coolantyes, with 40 barMachining strategyHPCPilot drill requiredyes, pilot drillSemi-StandardyesColour ringgreen | Version | 30×D | | |
| Through-coolantyes, with 40 barMachining strategyHPCPilot drill requiredyes, pilot drillSemi-StandardyesColour ringgreen | Point angle | 128 degrees | | |
| Machining strategyHPCPilot drill requiredyes, pilot drillSemi-StandardyesColour ringgreen | Shank | DIN 6535 HA with h6 | | |
| Pilot drill requiredyes, pilot drillSemi-StandardyesColour ringgreen | Through-coolant | yes, with 40 bar | | |
| Semi-Standard yes 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 | 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 |

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| 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 | К |
| CuZn | suitable only under restricted conditions | 40 m/min | Ν |
| wet maximum | suitable | | |