GÜHRING


DIANOZ
MADE FOR ETERNITY
WORLD'S ONLY DIAMOND TIP · PATENT PENDING ·

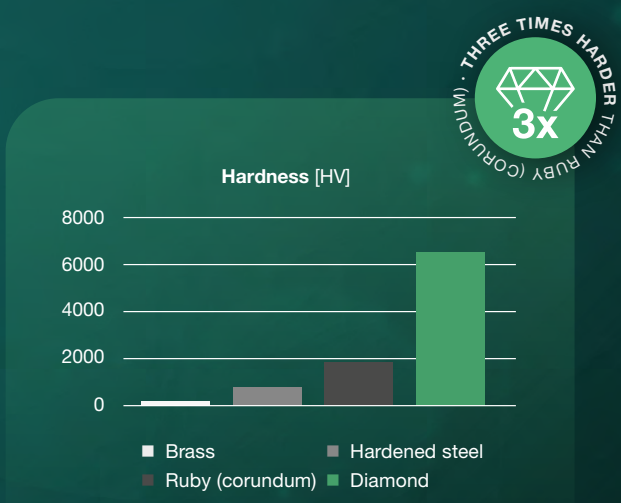
# HASSLE-FREE 3D PRINTING.

**Even the best 3D printer can’t help if you are using the wrong nozzle**

Poor surface finishes, the wrong printing temperature, re-levelling – all common problems with printer nozzles that wear quickly or do not conduct heat well. Choosing the right nozzle is therefore crucial if you want a smooth printing process and high print quality.

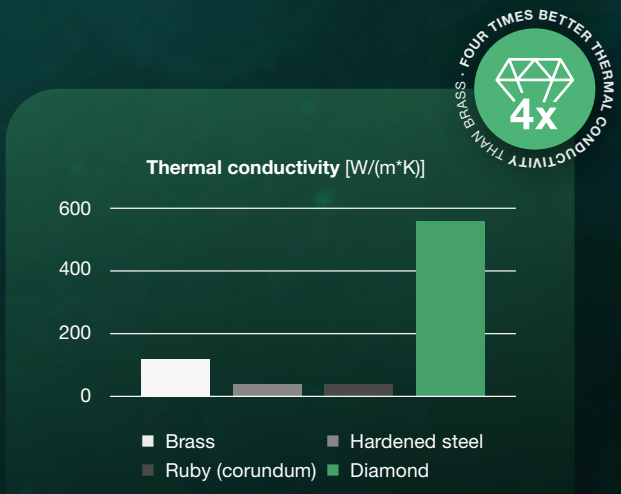
**Nozzles susceptible to wear interfere with the printing process**

- worn nozzle tips lead to poor print results and poor surfaces with droplet-like excess material
- time-consuming adjustment of the nozzle clearance to the print bed to compensate for wear
- termination of the printing process as it is not possible to continue printing without a loss of quality due to changed parameters after a nozzle has been replaced




**Heat-insulating nozzles reduce process reliability**

- poor, rough surfaces due to uneven filament flow
- the set value deviates from the actual temperature on the tip and makes accurate, process-reliable printing difficult
- the insulating effect is compensated by increasing the printing temperature by up to 15°C and constantly increases energy consumption



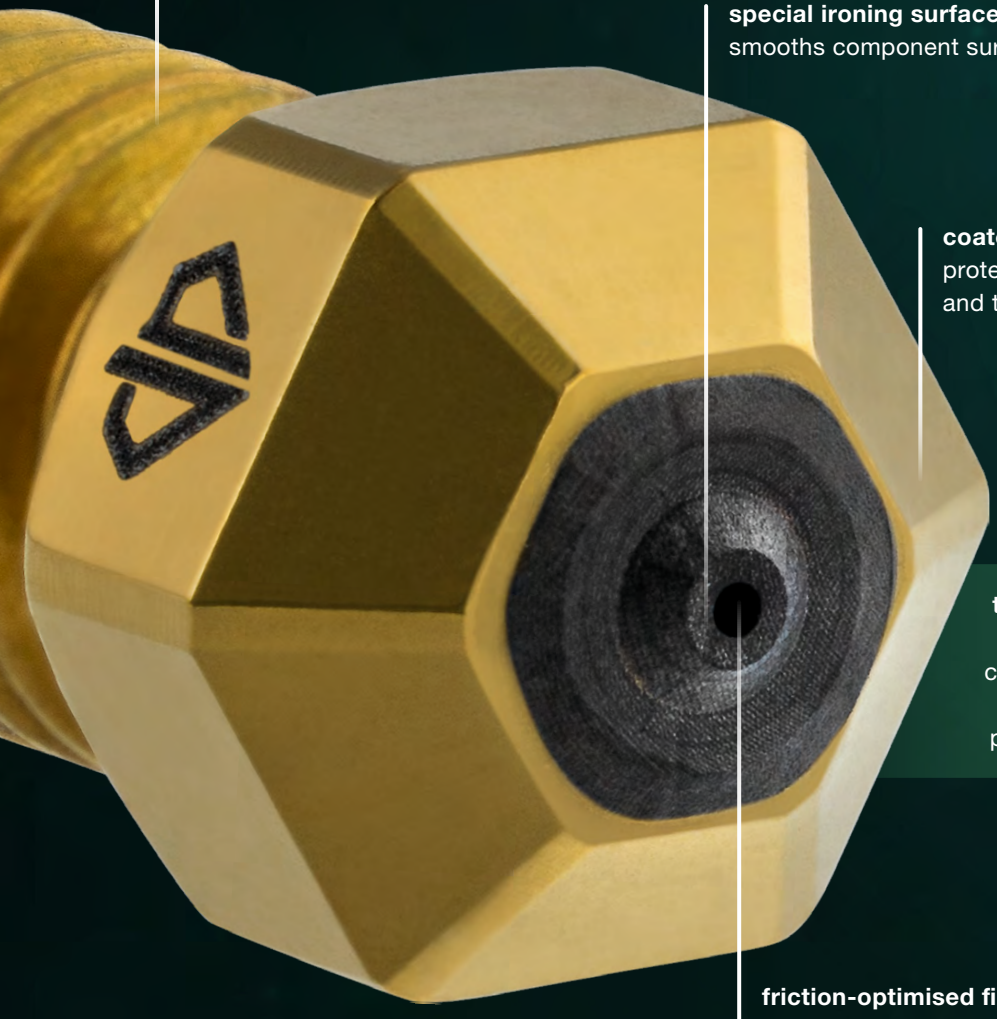
# THE START OF A NEW ERA.

**The DIANOZ 3D printer nozzle ensures uniform material extrusion, smooths the component surface during printing and offers maximum wear protection, even with very abrasive filaments. This is thanks to the sophisticated geometry combined with the unique tip made from synthetic black diamond. This polycrystalline diamond (PCD) is equal to the natural stone in every regard and makes DIANOZ a game changer in FFF technology.**

**flexible nozzle design**
all standard variants available;
special shapes on request

**special ironing surface**
smooths component surface during printing

**coated base body**
protects against wear
and tear when printing



**the heart of the design:**
**a black diamond**
conducts heat optimally
and provides optimum
protection against wear

**friction-optimised filament channel**
in the standard diameter sizes
0.2 / 0.4 / 0.6 / 0.8 / 1.0 mm

# 4 REASONS TO CHOOSE DIANOZ.

## ULTRA WEAR RESISTANT

- easy printing of challenging materials such as glass or carbon fibre reinforced plastics as well as ceramic or metal filled materials and high temperature filaments
- large components and high quantities possible without changing nozzles in 24/7 printing operation
- one nozzle for all materials – “nozzle always on”

## PRECISE

- high thermal conductivity ensures uniform filament flow and smooth surfaces
- friction-optimised filament channel supports uniform material extrusion
- ironing surface on the nozzle tip smooths the print surface

## RELIABLE

- no printing interruptions due to nozzle changes
- uniform layer thickness without wear-related readjustment
- reliable temperature setting

## COST-EFFICIENT

- fewer nozzle purchases
- reduced personnel costs for maintenance and nozzle replacement
- lower temperature printing to reduce energy costs

## FRAUNHOFER APPROVED OUTSTANDING PRINT PERFORMANCE

“Our tests have shown that the diamond insert means that DIANOZ nozzles exhibit almost the same stable extrusion behaviour as a brass nozzles and has the added advantage of abrasion resistance. Compared to other wear-resistant nozzles, such as ruby ones, more uniform extrusion performance was exhibited over larger temperature extrusion speed ranges.”

Fraunhofer IPA

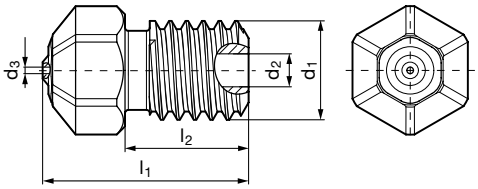
## DIANOZ 3D printer nozzle

DIANOZ
MADE FOR ETERNITY

**Printer nozzle with PCD insert for material extrusion printers**

wear-resistant, even with very abrasive materials • excellent thermal conductivity • temperature resistant up to 550°C • ironing surface for smoothing the printed component surface • enhanced filament channel for low-friction material extrusion • other dimensions available on request

Suitable for: ceramic-filled filaments • filaments filled with glass fibre • filaments filled with carbon fibre • metal-filled filaments • high-temperature filaments e.g. PEEK, PEI, PEKK • standard plastics e.g. ABS, PETG, PLA, TPE

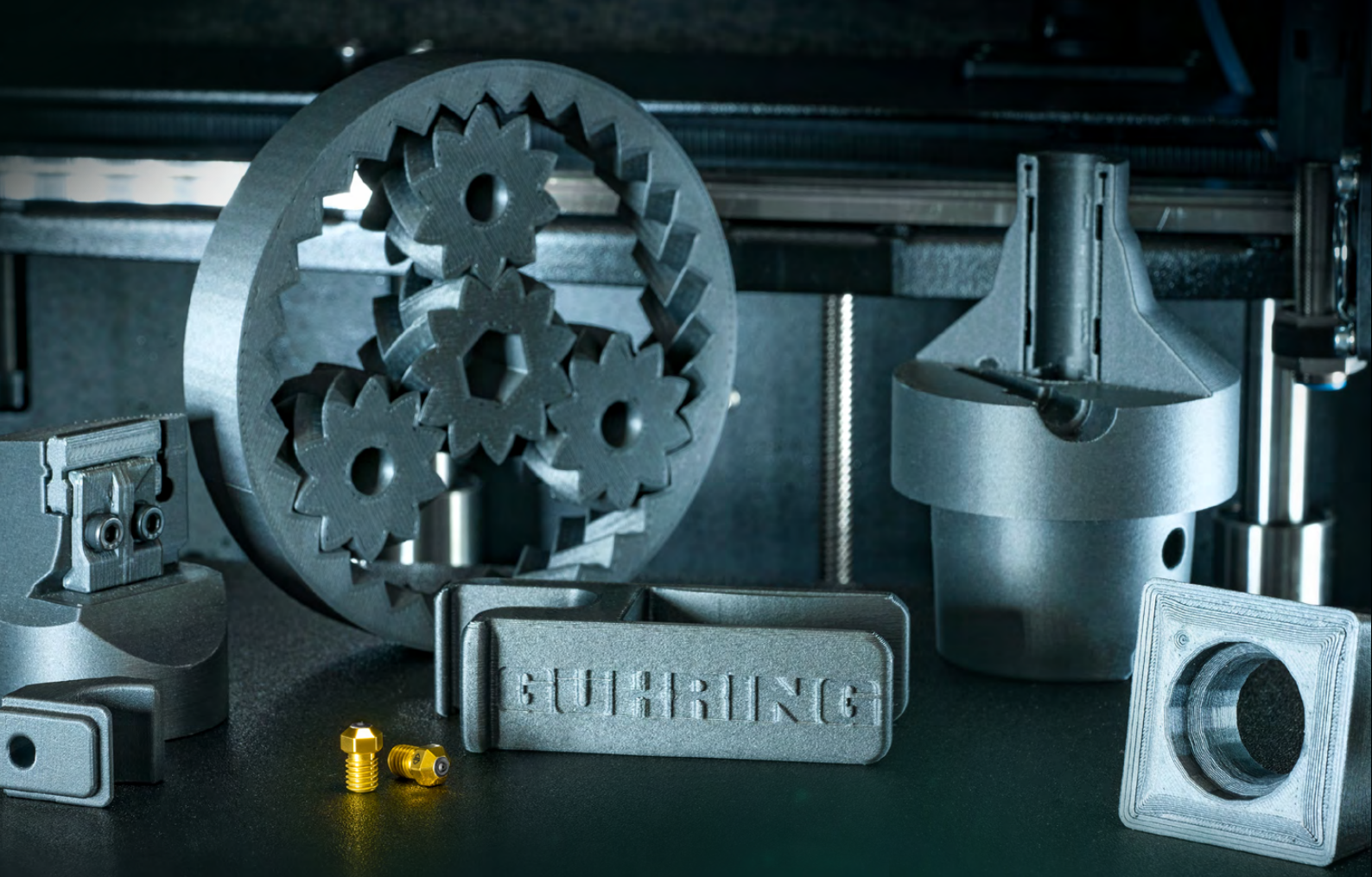



**For filament-Ø 1.75 mm** Catalog-No. **9600**

| Printer interface | d2 mm | d1 | l2 mm | l1 mm | d3 mm | Order number |
|---|---|---|---|---|---|---|
| MK8 | 2 | M6 | 5 | 12.6 | 0.2 | 9600 50.020 |
| MK8 | 2 | M6 | 5 | 12.6 | 0.4 | 9600 50.040 |
| MK8 | 2 | M6 | 5 | 12.6 | 0.6 | 9600 50.060 |
| MK8 | 2 | M6 | 5 | 12.6 | 0.8 | 9600 50.080 |
| MK8 | 2 | M6 | 5 | 12.6 | 1 | 9600 50.100 |
| V6 | 2 | M6 | 7.5 | 12.5 | 0.2 | 9600 75.020 |
| V6 | 2 | M6 | 7.5 | 12.5 | 0.4 | 9600 75.040 |
| V6 | 2 | M6 | 7.5 | 12.5 | 0.6 | 9600 75.060 |
| V6 | 2 | M6 | 7.5 | 12.5 | 0.8 | 9600 75.080 |
| V6 | 2 | M6 | 7.5 | 12.5 | 1 | 9600 75.100 |
| Raise 3D | 2 | M6 | 5.3 | 13.8 | 0.2 | 9600 53.020 |
| Raise 3D | 2 | M6 | 5.3 | 13.8 | 0.4 | 9600 53.040 |
| Raise 3D | 2 | M6 | 5.3 | 13.8 | 0.6 | 9600 53.060 |
| Raise 3D | 2 | M6 | 5.3 | 13.8 | 0.8 | 9600 53.080 |
| Raise 3D | 2 | M6 | 5.3 | 13.8 | 1 | 9600 53.100 |
| Volcano | 2 | M6 | 16 | 21.6 | 0.2 | 9600 160.020 |
| Volcano | 2 | M6 | 16 | 21.6 | 0.4 | 9600 160.040 |
| Volcano | 2 | M6 | 16 | 21.6 | 0.6 | 9600 160.060 |
| Volcano | 2 | M6 | 16 | 21.6 | 0.8 | 9600 160.080 |
| Volcano | 2 | M6 | 16 | 21.6 | 1 | 9600 160.100 |

**For filament-Ø 2.85 mm** Catalog-No. **9601**

| Printer interface | d2 mm | d1 | l2 mm | l1 mm | d3 mm | Order number |
|---|---|---|---|---|---|---|
| MK8 | 3 | M6 | 5 | 13.4 | 0.2 | 9601 50.020 |
| MK8 | 3 | M6 | 5 | 13.4 | 0.4 | 9601 50.040 |
| MK8 | 3 | M6 | 5 | 13.4 | 0.6 | 9601 50.060 |
| MK8 | 3 | M6 | 5 | 13.4 | 0.8 | 9601 50.080 |
| MK8 | 3 | M6 | 5 | 13.4 | 1 | 9601 50.100 |
| V6 | 3 | M6 | 7.5 | 12.5 | 0.2 | 9601 75.020 |
| V6 | 3 | M6 | 7.5 | 12.5 | 0.4 | 9601 75.040 |
| V6 | 3 | M6 | 7.5 | 12.5 | 0.6 | 9601 75.060 |
| V6 | 3 | M6 | 7.5 | 12.5 | 0.8 | 9601 75.080 |
| V6 | 3 | M6 | 7.5 | 12.5 | 1 | 9601 75.100 |
| Ultimaker | 3 | M6 x 0.75 | 9.5 | 17 | 0.2 | 9601 95.020 |
| Ultimaker | 3 | M6 x 0.75 | 9.5 | 17 | 0.4 | 9601 95.040 |
| Ultimaker | 3 | M6 x 0.75 | 9.5 | 17 | 0.6 | 9601 95.060 |
| Ultimaker | 3 | M6 x 0.75 | 9.5 | 17 | 0.8 | 9601 95.080 |
| Ultimaker | 3 | M6 x 0.75 | 9.5 | 17 | 1 | 9601 95.100 |
| Volcano | 3 | M6 | 16 | 22.6 | 0.2 | 9601 160.020 |
| Volcano | 3 | M6 | 16 | 22.6 | 0.4 | 9601 160.040 |
| Volcano | 3 | M6 | 16 | 22.6 | 0.6 | 9601 160.060 |
| Volcano | 3 | M6 | 16 | 22.6 | 0.8 | 9601 160.080 |
| Volcano | 3 | M6 | 16 | 22.6 | 1 | 9601 160.100 |




# GÜHRING GOES ADDITIVE.

## From diamond tool to diamond nozzle

Gühring's industry-changing pioneering work has been undisputed since the invention of modern tool coating: In 1981, Gühring developed the first TiN-coated twist drill – a milestone in machining technology. The finished tools drastically reduce manufacturing costs and became the benchmark for the entire industry.

The design and production of customer-specific diamond-tipped tools has also been one of the Swabian company's core skills for over 40 years. PCD tools – short for polycrystalline diamond – are indispensable in many industries such as the automotive sector: high-precision machining, reproducible processes and durable tools are essential here. With DIANOZ, the diamond is now also entering the world of additive manufacturing, marking a new milestone in FFF technology.

2024

GÜHRING

**DIANOZ by Gühring KG**
Herderstraße 50-54 | 72458 Albstadt
Germany

T +49 74 31 17-21 477

shop@dianoz.com
www.dianoz.com

**Contact person for matters related to DIANOZ:**
Udo Lerach | Head of Sales for Trade & Special Parts, Private Label | udo.lerach@guehring.de