

Our Focus: Burr-free Bores Front & Back

Tools for Front and Back Deburring, Chamfering or Counterboring
of Bores and Combined Drilling in one Single Pass.





Optimised Deburring since 1961

HEULE Precision Tools sets the standards in the development and production of tools for the front and back side machining of bores in one single pass. We build upon decades of experience and the passion for developing new solutions.

Passion for Deburring Solutions

Since its founding days as a contract manufacturer in 1961, HEULE has focused on optimising process times in machining. Today, still a Swiss independent family business, HEULE is synonymous with deburring machining solutions for back edges of bores.

As a solution development partner, we optimise the production processes of our customers. By machining the bore edges on both sides in one single operation without manipulating the workpiece, you can significantly reduce your process times and eliminate deburring operations

outside the machine. In addition, the reliable operation of the tools guarantees stable results that do not require any additional operations.

Our many years of experience and our passion for new approaches are the basis for our innovative solutions. Our development department with its own testing facilities offers the necessary flexibility for addressing your individual deburring challenges.

With HEULE, you not only receive a tool solution of the highest quality, but also a reliable partner who also protects our future with a sustainable mindset and careful use of all resources.

More than just a Tool Supplier

With the tool comes an extensive service package. From the initial contact to commissioning and production on the customer's machine, consultation and support are readily available.



Tailored to your Application

If no standard tool fits the application situation, HEULE can offer a customised solution. This can be achieved by modifying an existing tool or developing a fully customised solution.

The earlier we are involved in the process, the better the workpiece and production sequence can be optimised. This simplifies the deburring process and reduces cost per workpiece.

1:1 Test Results

For new developments or demanding application situations, free trials are carried out in the HEULE test centre. You as a customer are very welcome to participate.

If you would like to carry out a test on your own equipment, we will provide the appropriate test tools. If required, HEULE specialists will be present on site.



Long-term Support and Partnership

Thanks to our worldwide network of branch offices and approximately 50 sales partners in 35 countries, HEULE competence and know-how is always within quick and easy reach.

As your partner, we accompany projects and tools in series production on a long-term basis – be it through visits to the factory, repairs or modifications.



Maximum Performance for your Competitive Edge

Large quantity series production demands minimum cycle times as well as consistent quality of the result. It is therefore essential to optimise processes and fully exploit any cost reduction potential.

HEULE solutions – whether standard tools or application-specific developments – deliver maximum performance ensuring full technological and commercial benefit.



DEBURRING

The HEULE deburring tools deburr flat and uneven bore edges forwards and backwards in one operation without having to turn the workpiece or stop the spindle. The automated process is highly reliable and cost-efficient.



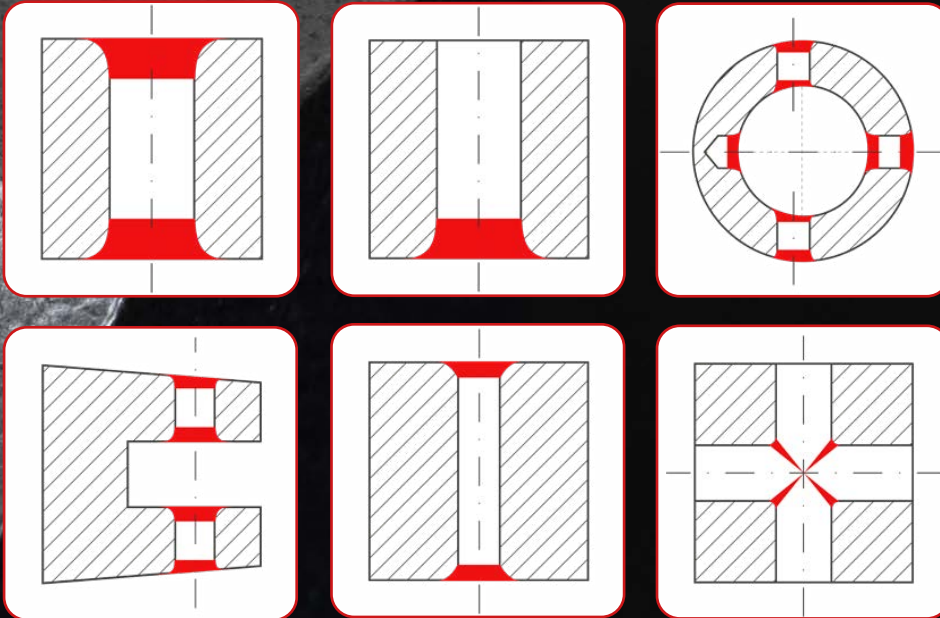
Why Mechanical Deburring

HEULE develops and produces tool solutions exclusively for mechanical deburring with a defined cutting edge. This technology offers numerous advantages over alternative processes such as interpolation, electro-chemical deburring or manual deburring.

The focus is on achieving consistent, clean deburring results and thus process reliability. In addition, there are considerable cost savings and an increase in throughput when the workpiece is fully machined in-house in one machining cycle.

Applications

A radius-form deburr is produced on even as well as uneven bore edges. These can be deburred on angled surfaces of up to 30°. Typical applications are tubes or workpieces with internal bore edges such as forked pieces or camshafts. The edges produced by crossbores up to a bore-Ø-ratio of 1:1 can also be deburred.



Your Advantages when Deburring with HEULE Tools

Wide range of applications

- For bores from $\text{Ø}1.0$ mm
- Cassette solutions for large bore- Ø
- Suitable for challenging materials
- For CNC as well as manual use
- Dry machining as well as external coolant lubrication possible
- Meets the highest requirements for the bore edge, even in high-pressure application

Optimised process times

- Deburring the front and back of the bore in a single pass
- Machining of the back edge of the bore without turning the workpiece or stopping the spindle
- Deburring of bore edges that are difficult to access (e.g. inside of a pipe)
- Blade geometry can be individually adapted to the material with customised blades
- Long service life of coated carbide blades

- Maximum optimisation of process times with customised tools

Process-reliable machining

- Consistent deburring result thanks to defined cutting edge
- Blade compensates for unevenness
- Tool compensates for variations in workpiece height and thickness (e.g. castings)
- No damage to the bore inner surface when passing through the workpiece
- Highly reliable operating principle

User friendly

- Tools are ready for use without any presetting
- Simple operation and programming
- Simple handling during blade change and maintenance



COFA

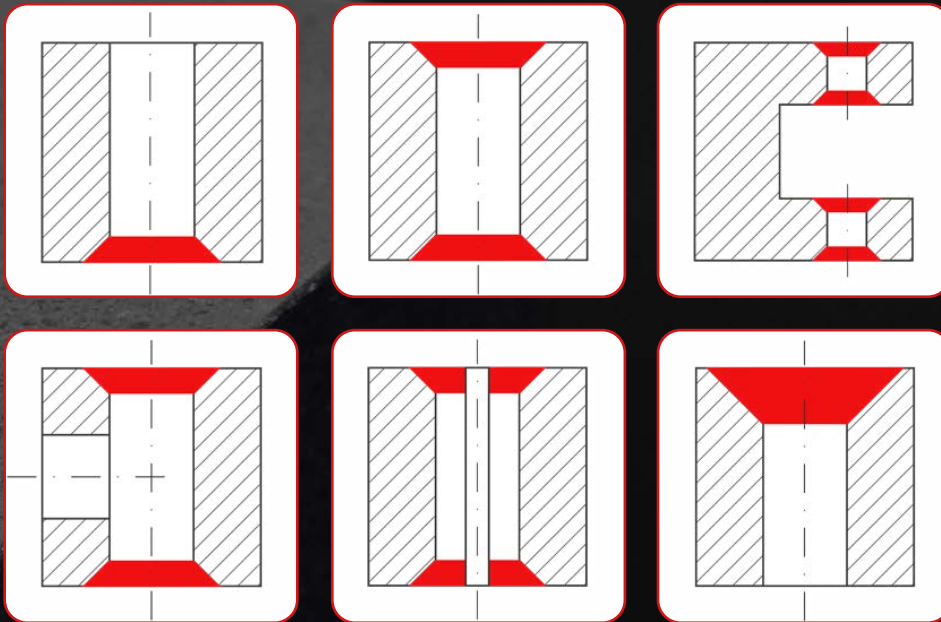


CHAMFERING

The HEULE chamfering tools remove burrs from the bore edges and produce a defined chamfer. They can machine the front and the back of the bore in one operation. They are particularly suitable for CNC operation in series production and convince with high cost efficiency.

Applications

Flat bore edges are the focus for HEULE chamfering tools. It does not matter if the bore is already reamed.



Your Advantages when Chamfering with HEULE Tools

Wide range of applications

- For bores from Ø2.0 mm
- Cassette solutions for large bore diameters
- Suitable for challenging materials
- Various chamfer angles possible (e.g. 60°)
- Different front and back chamfer sizes possible
- Interrupted cut possible (DEFA)

Optimised process times

- Chamfering of the bore on both sides in a single operation
- Machining of the back edge of the bore without turning the workpiece or stopping the spindle
- Deburring of bore edges that are difficult to access (e.g. hinge)
- Chamfering operation with cassette can be integrated directly into the customer's tool
- Long service life of coated carbide blades

- Blade geometry can be individually adapted to the material with special blades
- Maximum optimisation of process times with customised tools

Process-reliable machining

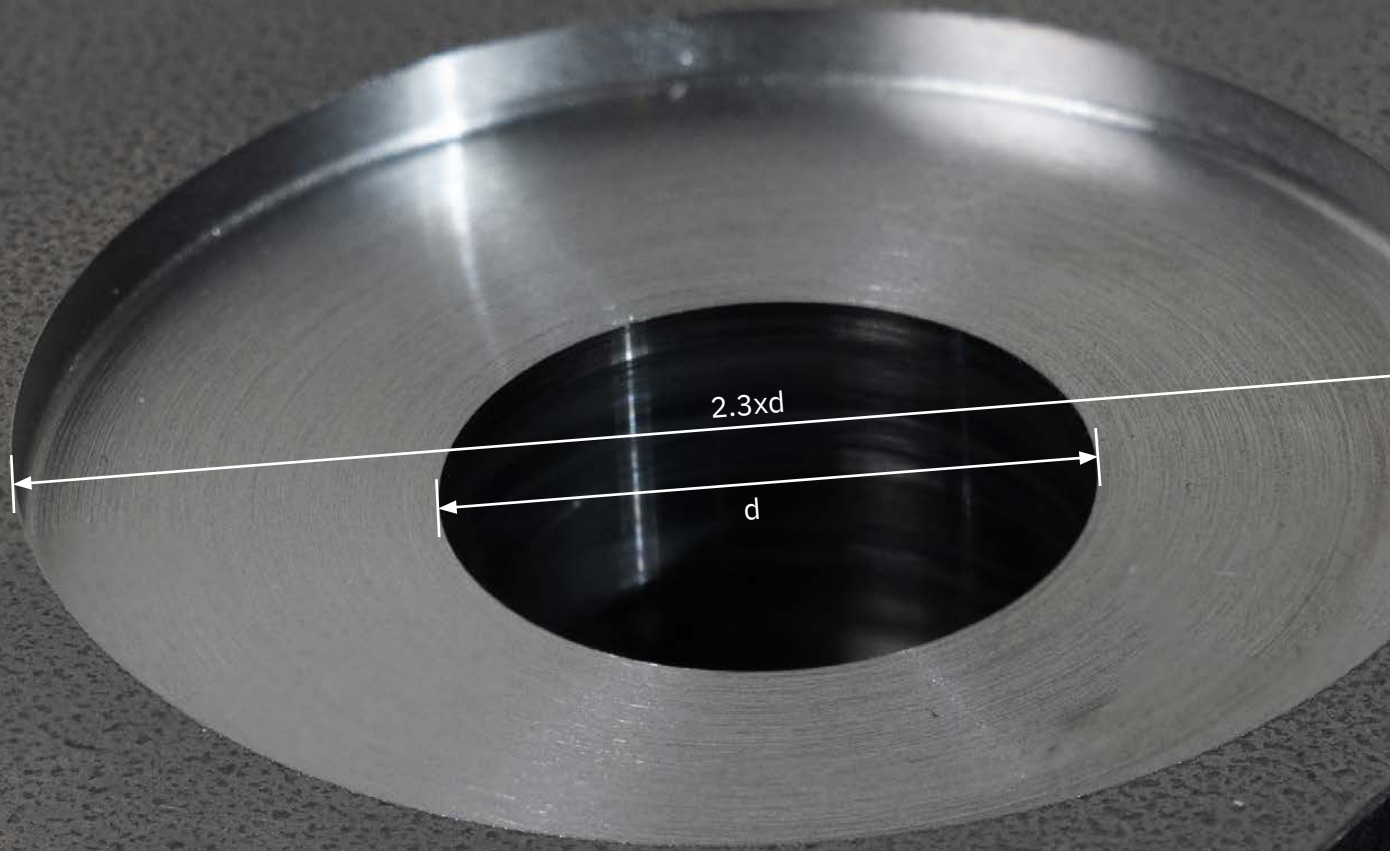
- High reliability of the tool
- Consistent chamfer size
- Tool compensates for variations in workpiece height and thickness (e.g. castings)
- Cutting force can be adjusted to the material by setting the spring tension
- No damage to the bore surface when passing through the workpiece

User friendly

- Minimal pre-setting necessary
- Simple operation and programming
- Blades can be changed on the machine without tools
- Safe handling during blade change and maintenance



SNAP

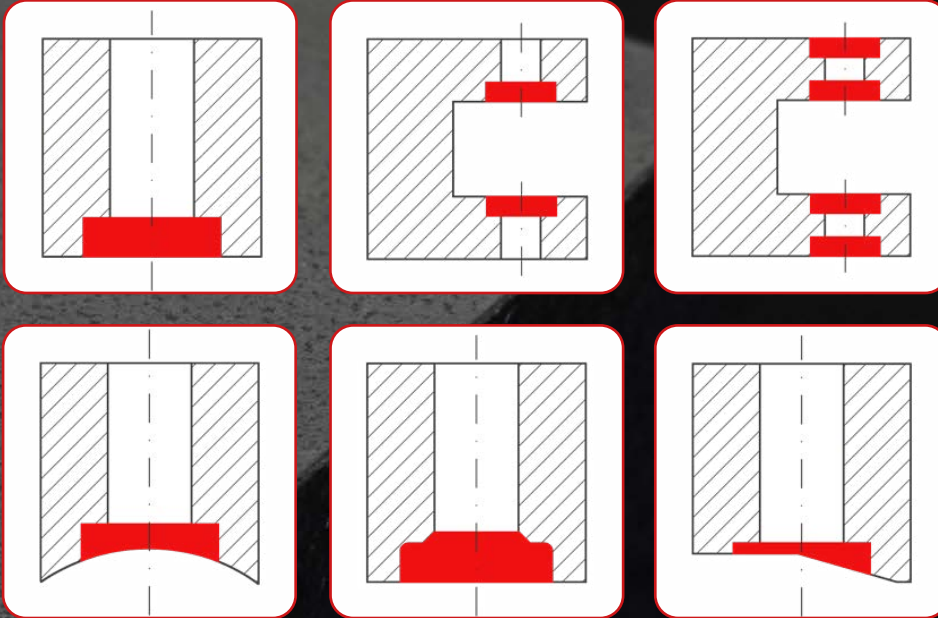


COUNTERBORING

The HEULE counterboring tools machine on the back side of the bore without turning the workpiece. The counterbores are thus produced reliably on the machine without reclamping or manual intervention. The solutions are specially designed for fully automated production.

Applications

Cylindrical counterboring, spotfacing up to 2.3xd and form counterboring are possible applications. Even counterboring with interrupted cut is possible.



Your Advantages when Counterboring with HEULE Tools

Wide range of applications

- Many application possibilities thanks to wide and deep range of tools
- Interrupted cut possible
- Large working length for thick workpieces
- Inside chamfer and large corner radius possible with formsinking blade
- Can be used on a wide range of machining centres
- Different activation modes of the tool possible, e.g. air, emulsion, rotational speed
- Dry machining possible

Optimised process times

- Fast cutting speeds for large series

- Forward and backward counterboring in one operation
- Counterboring on the back side of the bore without turning the workpiece
- Long service life of the coated blades
- Maximum optimisation of process times with customised tools

Process-reliable machining

- Most reliable tool operation
- Robust design

Safe in use

- No pre-setting necessary
- Tool design with few components



BSF

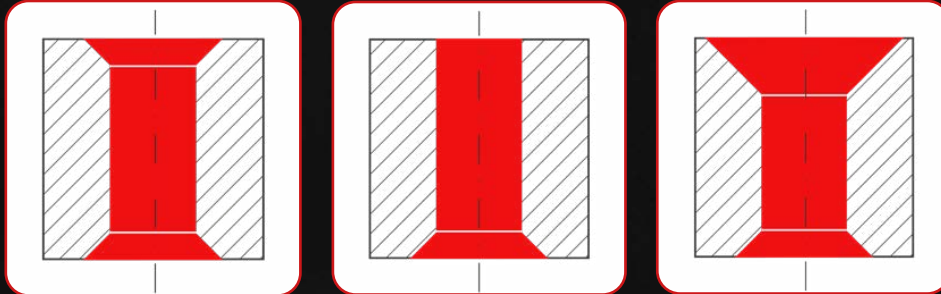
DRILLING COMBINED

The combination drilling tools from HEULE simplify production processes by combining drilling with deburring, chamfering, counterboring or countersinking. Through customised developments, the customer achieves maximum optimisation of process times.



Applications

Workpieces with bores that have to be chamfered or deburred in the same operation. Can be used for drilling depths up to 2x drill diameter. In individual combination drilling tools, up to 3 work steps are integrated into a single tool.



Your Advantages with Combined Drilling with HEULE Tools

Wide range of applications

- For workpieces with large variations in workpiece height and thickness
- Customised development possible for special requirements

Optimised process times

- Combination of several operations in one tool
- Reduction of occupied tool positions in the machine
- Reduction of cycle time
- Reduction of machine occupation
- Machining the back side of the bore without turning the workpiece

Process-reliable machining

- Consistent deburring/chamfering results

User friendly

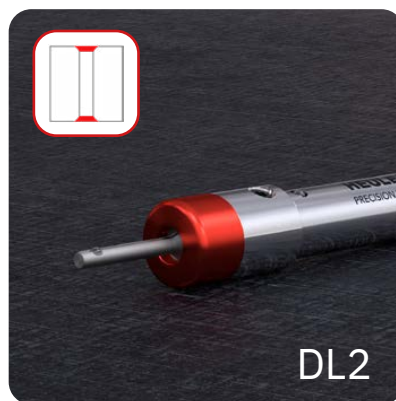
- Drill bit and chamfering blade easily and individually replaceable

The HEULE Solutions at a Glance

Deburring



From bore-Ø 2.0 mm: Deburring front and back of even and uneven bores in one single pass



Bore-Ø 1.0 mm up to Ø2.1 mm: Deburring front and back of even and slightly uneven bores in one single pass



Customised solutions for the deburring of intersecting bores, so-called **cross bores from bore-Ø 5.0 mm onwards**

Chamfering



Chamfering front and back in one single pass from **bore-Ø 2.0 mm**



Chamfering front and back of **interrupted** bores in one single pass from **bore-Ø 4.0 mm up to Ø23.9 mm** – also for large burrs



Countersinking from bore-Ø 3.0 mm up to Ø45.0 mm



Custom development

Does the standard not cover your needs? We will be happy to advise you on application-specific solutions. Either we modify an existing tool or develop a fully customised solution.

Counterboring



Backspotfacing up to 2.3 x bore-Ø from bore-Ø 6.5 mm onwards



Counterboring and spotfacing, front and back up to 2.0 x bore-Ø minus 1.0 mm from bore-Ø 6.0 mm onwards in one single pass – interrupted cut possible

Drilling combined



Drilling combined with chamfering front and back in one single pass in the bore-Ø-range 5.0 mm up to Ø17.0 mm



Your drill body combined with our chamfering module for simultaneous machining from bore-Ø 18.0 mm



Drilling combined with chamfering, deburring front and back and/or countersinking in one single pass

On-site worldwide



+ Head Office

HEULE Werkzeug AG
Balgach / Switzerland
Phone +41 71 726 38 38
info@heule.com
www.heule.com

+ Subsidiaries

HEULE Tool Corporation
Loveland OH / USA
Phone +1 513 860 9900
info@heuletool.com
www.heuletool.com

● Global Sales Network

50 exclusive partners in
35 countries worldwide
www.heule.com

HEULE Precision Tools
(Wuxi) Co. Ltd.
Wuxi / China
Phone +86 510 8202 2404
china@heule.cn
www.heule.cn

HEULE Korea Co. Ltd.
Gyeonggi-do / South Korea
Phone +82 31 8005-8392
info@heule.co.kr
www.heule.co.kr

HEULE Germany GmbH
Wangen im Allgäu / Germany
Phone +49 7522 99990-60
info@heule.de
www.heule.de



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ONE OPERATION