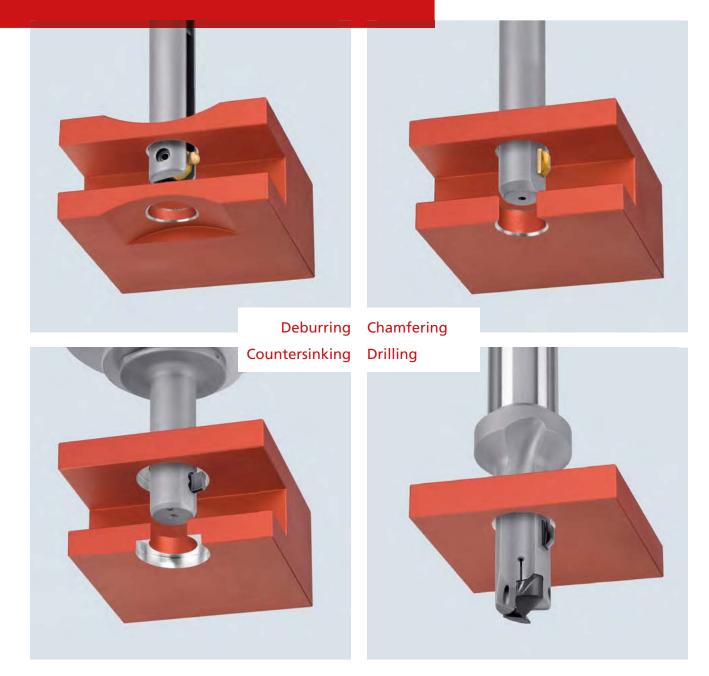
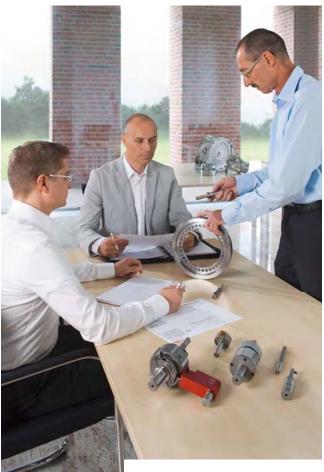
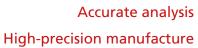


### One Operation.

HEULE tools for front and back machining of bore edges in one single pass.















One Operation. Reducing your unit costs by machining bores in One Operation.

Since 1961, when HEULE Werkzeug AG was initially set up as a contract manufacturing business, its goal has been in reducing production times. In order to cover our own needs, we developed tools that can front and back deburr, chamfer and countersink in one operation.

HEULE is committed to the values of quality, precision and service. Competent service, fast delivery times, and customized solutions are the highest priorities. From all ranks, HEULE's committed and motivated expert staff carry out their work with reliability and professionalism. HEULE provides and continually improves through innovative ideas and sophisticated technology. This is achieved with our state-of-the-art manufacturing equipment which gives us the flexibility to take unconventional approaches to our customers manufacturing needs.

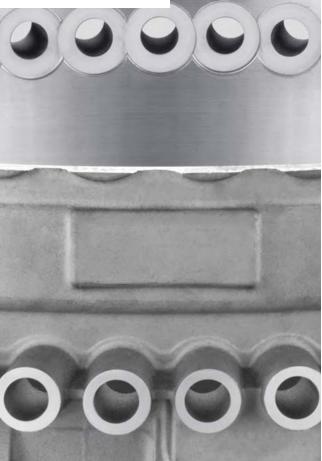
HEULE continues its global presence and excellent customer service with its subsidiary office in the United States, its representative office in China, and experienced distribution partners that offer excellent advice and support to you locally.

Not only are we committed to our loyal employees and partnership-based customer relationships, we are also committed to the environment. Our state-of-the-art factory is eco friendly and the air-condition emits zero carbon emissions. In the summer, we cool the interior and production equipment with groundwater. In the winter, we use heat pumps to utilize the ground water and the exhaust heat released by our production machinery for heating. We firmly believe that a philosophy dedicated to sustainability and the wise use of resources will secure your future.



Large production runs Complex materials Inaccessible work areas Oversize work pieces







One Operation. Our tools will reduce your production times.

What ultimately counts is the reduction of your unit costs. Front and back machining of bore edges in One Operation without having to turn the work piece will enable you to reduce your production times and eliminate the entire deburring operation outside of the machine.

All our tools are made of hardened tool steel and fitted with exchangeable carbide blades. The coatings and the geometries of the blades are matched to the material that is to be machined. This ensures a long service life of the blades and a long life cycle of the tools. All our tools have been specifically designed for use on automatic machine tools.

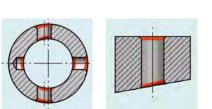
Through constant development of solutions for various customer applications, HEULE created a series of innovative precision tools for front and back deburring, chamfering and countersinking. Most of HEULE's products are sold as standard stocked items, but with state-of-the-art engineering, they also provide custom solutions for customer's specific needs. In the early seventies, HEULE struggled for recognition in the cutting tool industry until their acquisition of their first large account, Daimler in Stuttgart. Today, all major automobile manufactures in Europe, America and Asia take advantage of HEULE's front and back deburring, chamfering and countersinking tools in One Operation.

HEULE's tools have also been tested and approved in the aerospace industry by Airbus, Boeing, GE and other manufacturers alike. HEULE's tools are used for machining all materials, ranging from aluminum and steel to titanium, Inconel, and other nickel-based alloys. Our innovations revolve exclusively around back bore machining.



### COFA – The universal deburring tool.

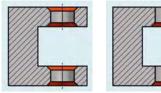
The COFA tool removes burrs on the front and back of a drilled through-hole on even and uneven surfaces in a single cycle. It radially removes the burrs off the bore edges, without requiring the work piece to be turned or the spindle to be stopped. It can be applied universally in manual or automatic operations – for high volume production.





### SNAP – The economic chamfering tool.

The SNAP tool is an efficient front and back chamfering tool that is easy to use and offers quick blade change, which makes it practical for any manufacturing environment. Without any need to turn the work piece or to stop the spindle, it removes the burrs and chamfers the edges. The SNAP tool has been designed for automatic operation involving large production lots.





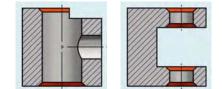






# GH-S – The adjustable chamfering tool.

The double bladed GH-S tool allows for front and back chamfering of discontinuous bore edges without requiring the work piece to be turned or the spindle to be stopped. GH-S deburrs the bore edges and provides them with a chamfer featuring a high-precision angle. The cutting force can be adjusted on the tool. The GH-S tool is especially characterized by the secondary-burr-free machining of bore edges.

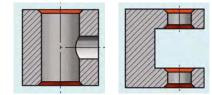






## DEFA – The chamfering tool for high dimensional accuracy.

The double bladed DEFA chamfering tools create predefined front and back chamfers in a single operation without stopping or reversing the spindle. The chamfer diameter can be adjusted on the tool. The DEFA tool is essentially used for the production of hard-to-machine materials especially when a large burr is involved.





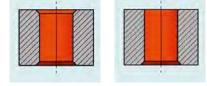
Boosting your efficiency: front and back deburring, chamfering, countersinking, and drilling combined in One Operation.



### VEX – The combined drilling and chamfering tool.

The VEX-S tool combines a replaceable solid carbide high performance twist drill with HEULE's patented SNAP chamfering system to make drilling and front and back chamfering in a single process possible.

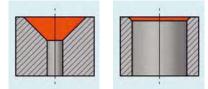




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### GH-K – The chatter-free countersinking tool.

The GH-K has three exchangeable countersink blades which are precision ground as a match set to achieve unmatched countersink finishes. The tool feeds the coolant through an inner supply duct directly to the blade. GH-K is unique because of its large countersinking range from diam.  $\emptyset$  3 to diam.  $\emptyset$  25 or from diam.  $\emptyset$  5 to diam.  $\emptyset$  45 mm.







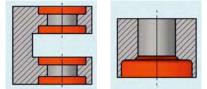






### SOLO – The automatic front and back counterboring tool.

The SOLO tool allows for production of front and back countersinks and back spotfacing of through holes with positive control in One Operation without requiring the work piece to be turned. The blade is extended and retracted radially through the action of centrifugal force. The SOLO tool is distinguished by its ease of use and its high production reliability.

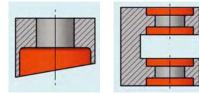






### GH-Z/E – The stable countersinking and back spotfacing tool.

The GH-Z/E tool is a twin bladed front and back counterboring tool that produces accurate back spotfaces, large countersinks and precision forms. The two blades of the tool are radially extended and retracted by forced action when the direction of rotation of the spindle is reversed. GH-Z is especially distinguished by its high stability and rigidity.







Cam shafts Gear Carriers

Aluminum wheels Railway tracks







One Operation. Tools tailored to your specific application needs combine several operations in one single pass.

Work piece geometry, material, fixturing, machining process and the requirements that cutting tools are expected to fulfill vary from industry to industry. Since no application is like any other, HEULE's unique cutting tool line offers standard and specialty tools for all your technical needs.

As solution finders, we take up this challenge. We offer you specific tools that are tailored to your individual application and will therefore offer you the best possible performance. On the basis of our standard technologies, we combine multiple operations in a single tool or adapt tool dimensions and blades to suit your machining concept. Thanks to our in-house development and manufacture of all components, we are flexible, dependable, and fast.

A success story exemplified by an aluminum wheel rim manufacturer: Our customer used to machine the lug bolt holes in two operations – first drilling using a step drill, then back deburring using an interpolation tool. With the HEULE Drilling Countersinking Combi Tool, they can now produce the bores in One Operation. The customer's voice:

"The process time reduction is enormous. We have boosted output by 157 rims per day and per machine."

Today, this customer applies our solution on all production units requiring back bore machining. The reduction of the cycle time, the long service life of the tools, and the easy blade changes that do not require any presetting have given a tremendous boost to their productivity.



Over 50 years of precision manufacturing of deburring tools.

Since 1961, Swiss-based HEULE Werkzeug AG has set the standard in the development of front and back deburring, chamfering, drilling, countersinking and back spotfacing tools in One Operation. We are committed to finding innovative solutions for customers.

Our global distribution network, including our subsidiary in the United States and our representative office in China, ensure HEULE's worldwide presence. Our specialists are experienced in machining processes and offer excellent on-site support.

Customer's worldwide attest to the high quality standard HEULE provides and continually improves through innovative ideas and sophisticated technology.







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