



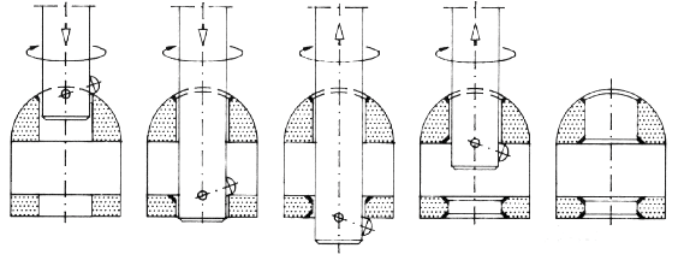
BEFORE

AFTER

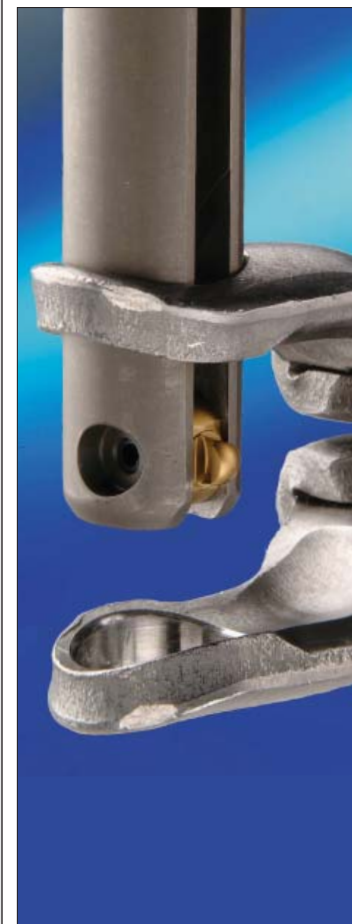
COFA

Consistent deburring through holes on Even & Uneven surfaces in any material

Sequence of operation:



Study Details



TOOL

COFA Tool

PRODUCTION

1,400 parts / day (2 holes per part)

MACHINE

CNC Machining Center

MATERIAL

Low Carbon Steel

HOLE SIZE

Ø.630mm hole requiring even edge break of .005-.015" on all 4 surfaces

DETAILS

Tool COFA12-599-Z
Speed 1180 RPM
Feed 0.3mm/rev
Life 4000-5000 parts

CYCLE TIME

12 seconds per part

REPLACING

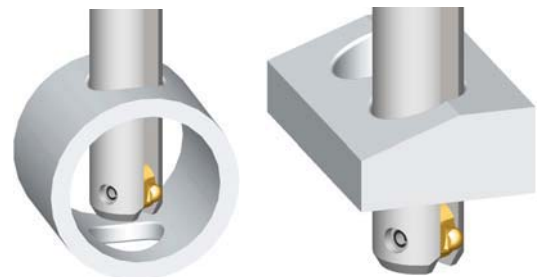
Hand benching

PRODUCT SECTION PG. 15

Tired of inconsistent hole chamfer? Our COFA tools produce consistent edge breaks EVERY time, front and back, in one pass. No adjusting screws or setting requirements are necessary. Each tool is sized for your application and material. Operators might be skeptical... until they see it run.

"After seeing parts made by the HEULE tool, our customer will no longer accept hand benching of their parts."

The COFA tool removes the burrs from elliptical bores created when drilling into round parts, contoured surfaces, or angled faces. Cuts a tapered radius rather than an angled chamfer.



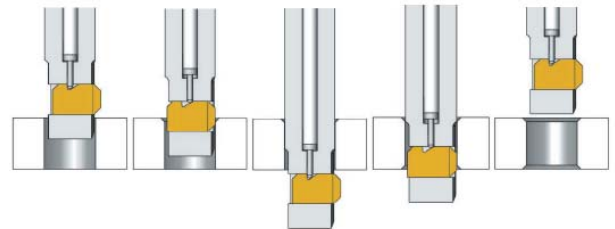


BEFORE

AFTER

SNAP

Fast and Accurate SNAP Tooling is able to produce large chamfers for taps with no secondary burr issues



Study Details



TOOL
SNAP front & back chamfer tool

PRODUCTION
8,000 parts / week

MACHINE
CNC Vert. machining centers

MATERIAL
Low carbon steel

HOLE SIZE
Ø13.0mm hole requires 0.5mm max chamfer 2x places with no secondary burr

DETAILS
Tool SNAP12-512
Speed 280 SFM
Feed 0.2mm/rev
Life 10,500+

REPLACING
Secondary operation

OUTCOME
Consistent chamfer to specification

PRODUCT SECTION PG. 41

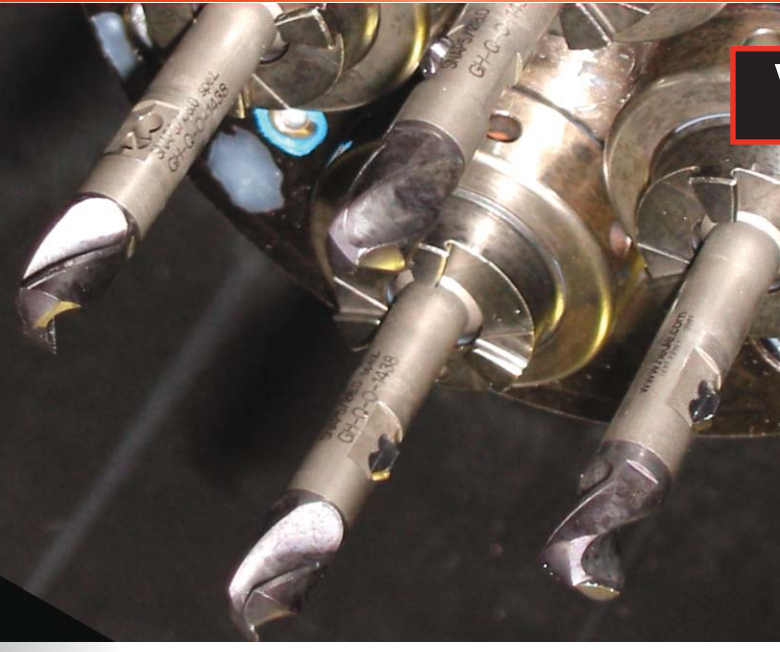
Our standard chamfering system takes the guess work out of producing front and back chamfers. The insert geometry is ground to the exact chamfer sizes and capable of running 2-3x faster than competitive tooling. This low carbon steel automotive component was drilled and reamed leaving behind heavy burrs causing problems with automated assembly machines and eventually transmission quality.

“We got the consistency we needed to keep our production going, AND saw a \$45,000/yr saving in time and labor.”

The heavy burr causing the problem was removed using a SNAP tool with front and back cutting blade. With clean and chamfered edge breaks, assembly problems were eliminated.

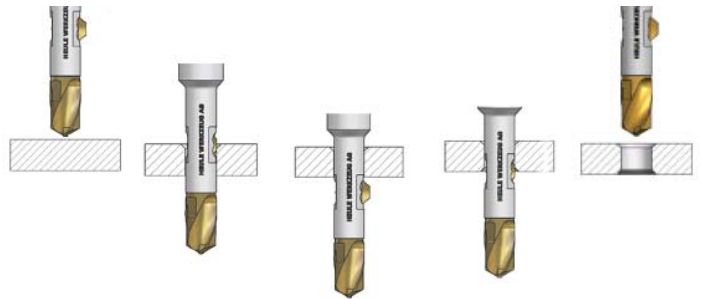
Each Standard SNAP tool comes with the choice of 4 chamfer sizes: 0.25, 0.5, 0.75 and 1.0mm





VEX-S

Drill & Front/Back Chamfer in ONE STEP. Rotors, Hubs, Axle Flanges...



Study Details



TOOL
VEX-S

PRODUCTION
1,000,000 / yr

MACHINE
Emag multi spindle machine

MATERIAL
Steel 52, 7mm thickness

HOLE SIZE
Ø8.0mm; hole requires chamfer size
9.5mm x 90° front & back

DETAILS

Tool	Multiple
Speed	3700 RPM
Feed	0.14mm/rev (0.006 IPR)
Life	30,000+ holes

REPLACING

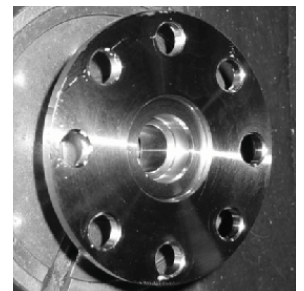
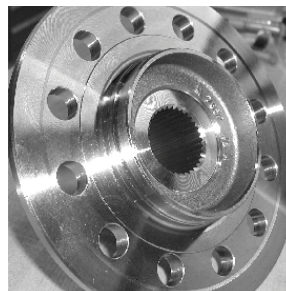
Tool	Drill & 2 countersink oper.
Life	Drill life 4-5,000 holes

PRODUCT SECTION **PG. 67**

Cycle time is always a premium and so is quality. Each time tooling can be combined into one operation, while at the same time producing a better product, everyone wins. The VEX tool combines drilling and front/back chamfering into a single tool. Save setup time, cycle time and tool space.

"We saved over \$60,000 just by eliminating a second machine operation."

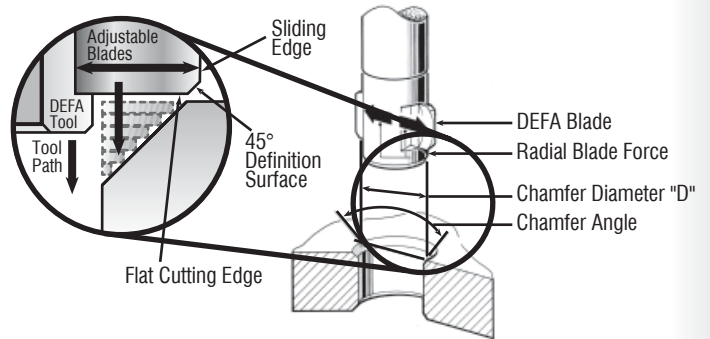
From 5mm to 20mm to limit chip wrapping issues or interference with any mechanical operations of the deburr operations. The single bladed front/back SNAP chamfer blade is easy to use and offers quick change features so the tools never leave the machine. Most common application is deburring bolt holes in flanges.



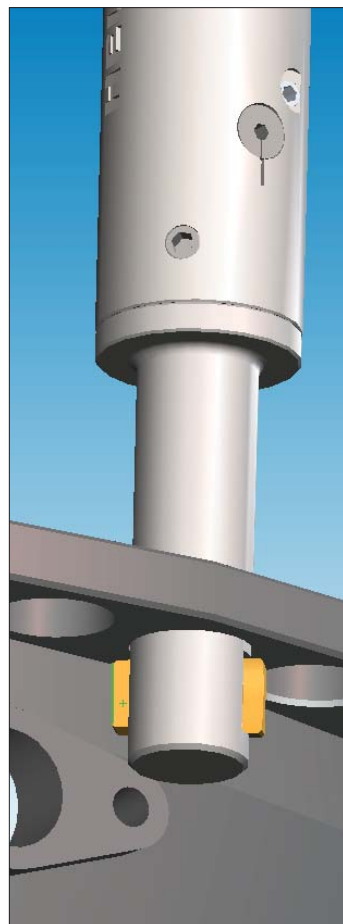


DEFA

Aerospace tooling for front/back chamfers in difficult materials



Study Details



TOOL

Twin bladed DEFA tools with coated carbide blades

PRODUCTION

2 parts / wk (360 holes / part)

MACHINE

NC Horizontal

MATERIAL

Inconel 718

HOLE SIZE

Ø.345 and Ø.401 requiring front/back break edge 0.005-0.015".

DETAILS

Tool DEFA11-34-339 &
DEFA13-30-390

Speed 60 SFM

Feed 0.002 IPR

Life Blade life: 800-2000 holes

Chamfer 0.010"x90°

REPLACING

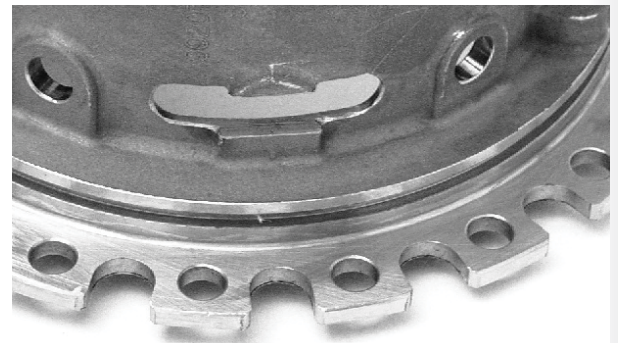
Manual bench operation, minimizing a potential ergonomic risk.

PRODUCT SECTION PG. 93

Tested and approved by the major jet engine and aircraft component suppliers, the DEFA tooling will not leave any witness mark inside your finish holes, and produces accurate front & back chamfer break edges in Titanium, Inconel and other Nickel alloys.

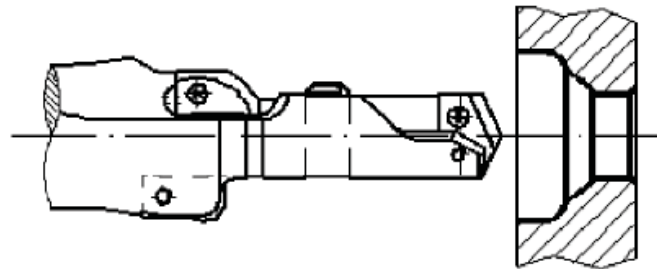
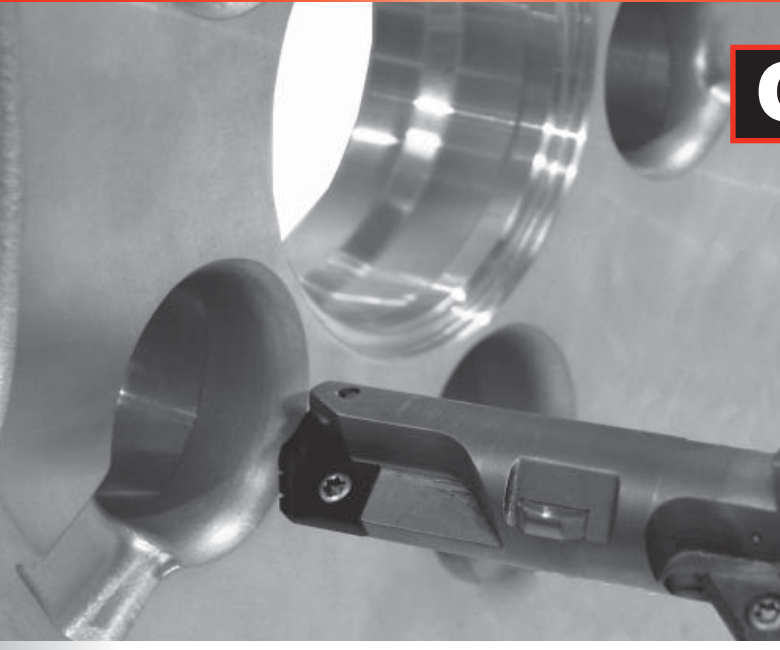
"...the Heule tooling took a 2 1/2 hour manual operation and reduced it to only 10 minutes."

The form blade set can be adjusted radially to exact required chamfer size; in most cases within +/- 0.003. The cutting blades are held inside the tool with HEULE's patented pin drive system. One blade cannot collapse without the other.

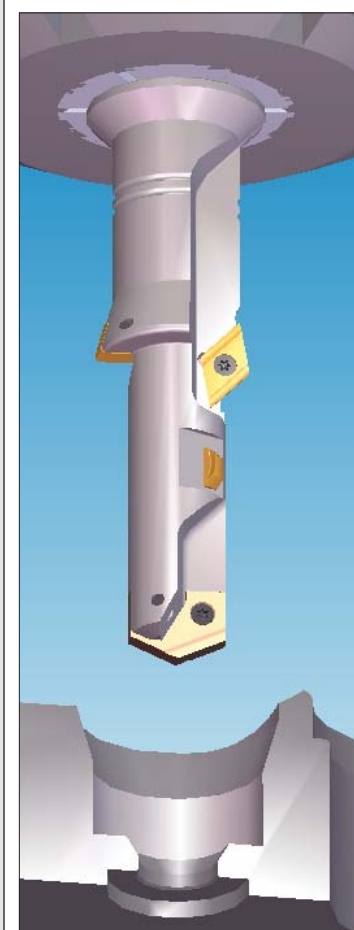


COMBI

The Fastest Multi-Task Wheel Rim Tool on The Market



Study Details



TOOL

COMBI multi-task drill back chamfer tool with coolant through.

PRODUCTION

250,000 wheels / month

MACHINE

Horizontal Machining Centers

MATERIAL

Cast Aluminum 7%

HOLE SIZE

Ø, 15.7, 19.0 & 21.6mm; hole requires front countersink and counter bore Ø32.0mm & back chamfer.

DETAILS

Tool	Multiple
Speed	6500-10,500 (2,336 SFM)
Feed	0.3-0.4mm/rev (0.015 IPR)
Life	All drills, countersinks and deburr blades are changed every 8 days.

REPLACING

Circle Interpolation and wheel flip operations tool.

PRODUCT SECTION **PG. 79**

Our aluminum and steel wheel Multi-Tasking tools for the lug nut drill chamfer operations lead the industry in performance and efficiency. Capable of increasing part production with high performance, accurate drills, combined with HEULE's patented back chamfer SNAP system.

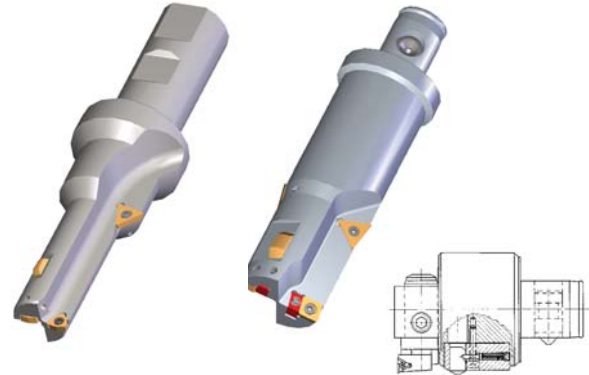
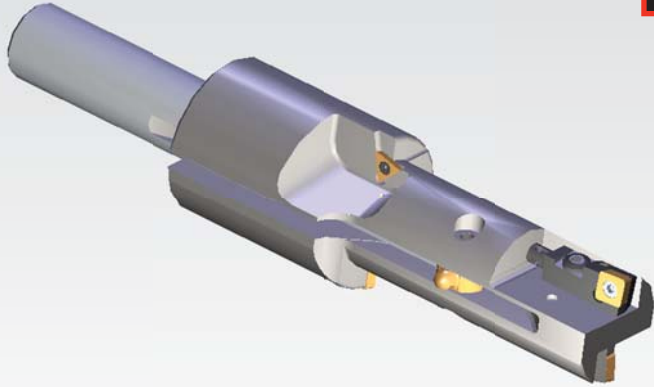
"The cycle time savings are huge... in one day alone we get 157 more wheels out of the cell."

All robot wheel cells that require back chamfers now use HEULE tools. Some tool holders have run over ONE MILLION holes. Also using COFA tooling for deburring uneven stem holes



SPECIALS

*Custom Multi-Tasking
Easy and cost effective*



Study Details



TOOL
Precision Mico Adjusting Boring Unit with SNAP chamfer cassette

PRODUCTION
300,000 / yr

MACHINE
Horizontal Machining Centers

MATERIAL
Cast Aluminum

HOLE SIZE
Ø76.2mm and Ø73.0mm; requires front chamfer of 74.1mm x 60°

DETAILS
Tool COMBI multi-task bore and front/back chamfer with std. deburr cassette chamfer blade 60 deg. front and back carbide cutting blade with diamond film.

Speed 1070 SFM (1,400 RPM)
Feed 6 IPM
Life 3,000+

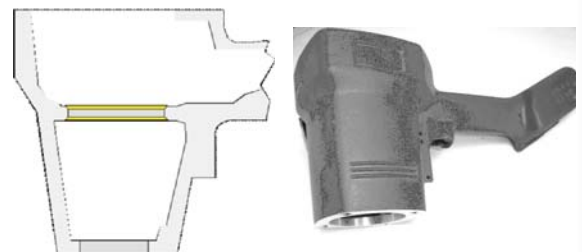
REPLACING
Cycle time reduced 20% (1.5 min)

PRODUCT SECTION **PG. CALL**

Our SNAP & COFA cassettes make ordinary boring operations into money making operations by saving space and time. Any large bore operation above 1" can utilize a HEULE front & back chamfer cassette.

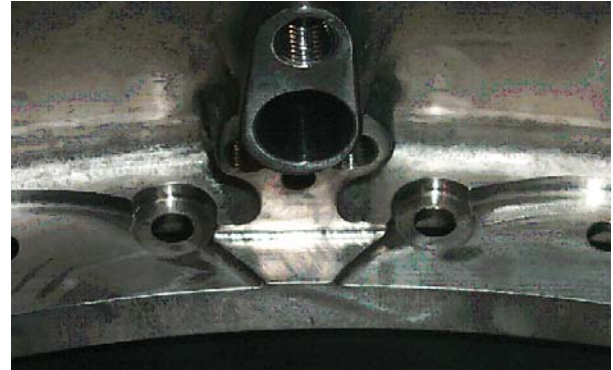
"We saved approximately \$150,000 a year by cutting 1 min/part out of production of 300,000 parts a year."

Challenge: The cast surface where the 76mm bore was produced could move in location as much as 6mm. The added spring loaded HEULE chamfer cartridge with special 60 degree cutting blades produced the same size chamfers front and back regardless of surface location.



GH-Z

Automatic back counter bore tooling for interrupted cuts



Study Details



TOOL
Automated Back Counter Bore

PRODUCTION
1-2 frame Titanium Ti6-4L (18 counter bores per part)

MACHINE
Excelo Vertical 50 taper

MATERIAL
Titanium

HOLE SIZE
Ø.3215-Ø.3200" hole requires a Ø.630-Ø.700" back counter bore. (Interrupted cut due .200-.250")

DETAILS
Tool GH-E 8.1-16.1/40
Speed 800 RPM
Feed 0.0008 IPR
Life n/a

REPLACING
Manual bench operation

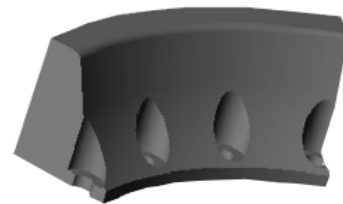
PRODUCT SECTION PG. 141

Mistake proof solutions helped reduce part cost by 44 percent while generating tangible profit and loss savings of \$100,000 and cost avoidance of \$43,000.

Higher productivity enabled the cell to bring work in-house, eliminating \$115,000 of vendor assistance each month.

"Scrap and rework has been eliminated by using the new automated [Heule] tool from Switzerland."

Back counterboring aerospace materials such as Waspoly and Rene presents many unique challenges and has taken many years of development and testing to achieve the success that our tools have today.



RENE-81 Cross Section View

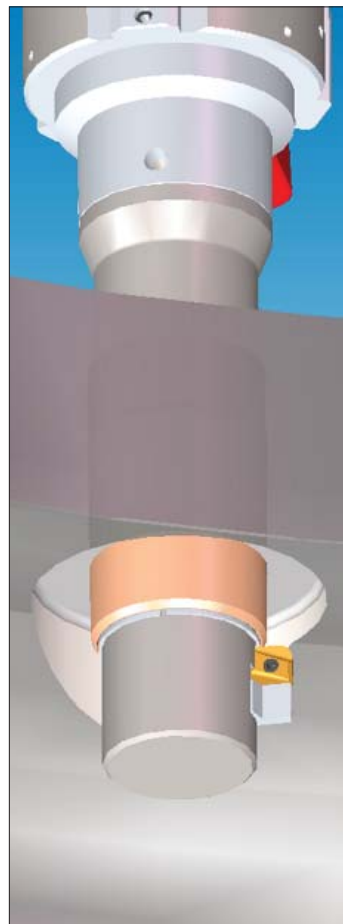


GH-Z

Large automated back counter bore solutions for the power generation industry & large part manufacturers



Study Details



TOOL

Single Blade Automated Back Counter bore with indexible cutting inserts

PRODUCTION

1-2 hubs / week (198 counter bores/ part)

MACHINE

Large vertical boring mill

MATERIAL

Cast Iron

HOLE SIZE

Ø39.0mm hole requires an Ø75.0mm back counter bore up to 15.0mm deep. (interrupted cut from casting variance)

DETAILS

Tool GH-E 50
Speed 390 RPM
Feed 0.1mm/rev (0.004 IPR) Full diameter counter bore depth... up to 15mm deep
Life (indexable) 1 part

REPLACING

Competitors tooling

PRODUCT SECTION PG. 141

HEULE has been manufacturing the strongest and most reliable automated back counter bore tool for over 30 years. Some tools reach over several feet and can weigh over 50 lbs.

Large interrupted cuts created tool breakage problems for this customer slowing machine time. By purchasing a HEULE automatic back counter bore system the problem was solved.

"...increased production and shortened a 15 hour operation to only 2.5 hours."

This customer is currently running on two large boring mills with coolant through the center capability. Other common applications include; landing gear, crane and hoist components as well as hydro and other turbine manufacturers.

