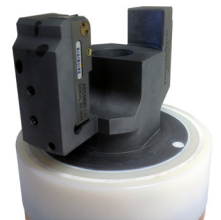
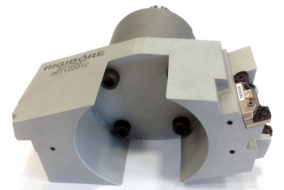


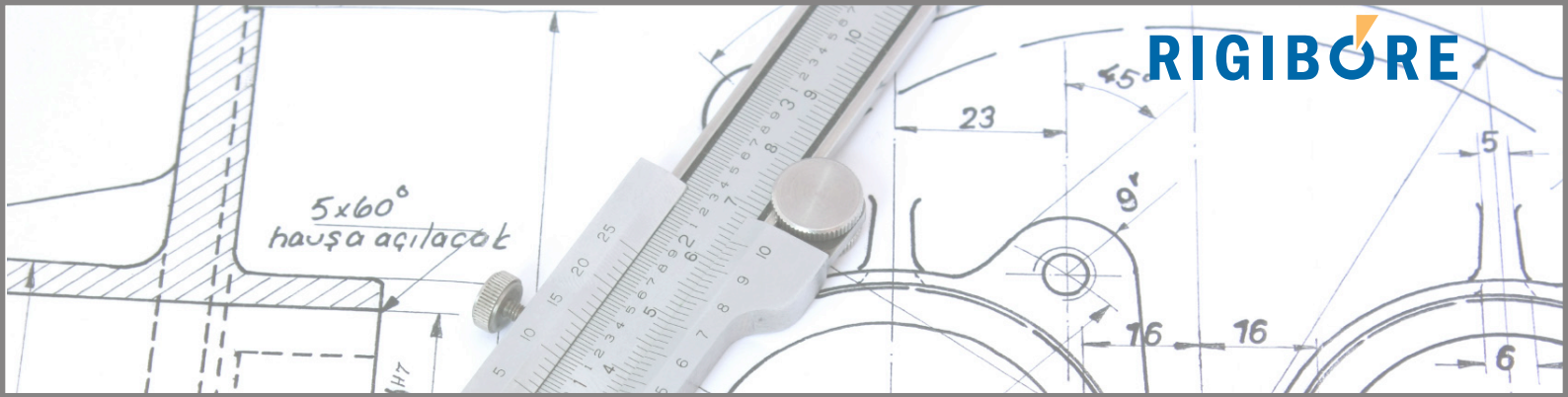
Special Tooling Capabilities

Includes :

- Multi-Feature Tooling
- Back Boring Tools
- Eccentric Tools
- Overturning Tools
- In-House Specialist Design Software

Rigibore® The Most Accurately Adjustable Boring Tools in the World





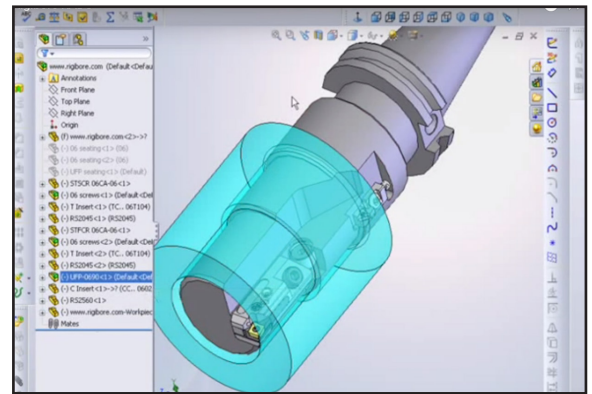
Special Tool Design

Rigibore prides itself on being a world leader in the manufacture of special or multi-feature boring solutions.

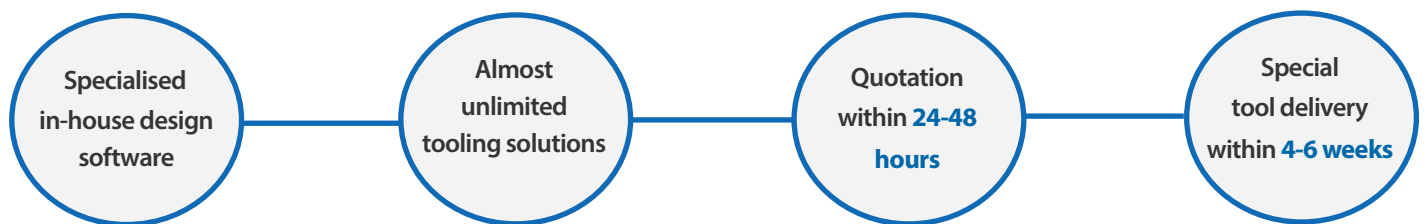
The Specialist In Special Tools

Using decades of industry knowledge and experience, Rigibore designs and manufactures special boring tools for individual machining requirements.

- **Improved Part Quality** - The perfect solution is custom designed for individual applications, meeting critical tolerance requirements.
- **RADS** - Rigibore's automated, specialised in-house design software.
- **Optimised Productivity** - Reducing cycle time and increasing output through multi-feature tooling capabilities.
- **Enhanced Process Reliability** - Ensuring accurate and repeatable performance.



Rigibore's Automated Design System (RADS)



- Allows the design of backboring, overturning, eccentric and multi-feature tools for particular operations.
- All special tools are manufactured to accept ISO standard insert or special form inserts.
- Special tools can be manufactured on any shank, including BT, CAT, HSK, ABS, straight shank and weldon.
- Rigibore provides the perfect tool for roughing, semi-finishing and finishing operations.

Aerospace Industry

In an industry known for its extreme precision requirements, Rigibore's special tooling solution meets **critical tolerances on high-value Aerospace components**

Rigibore's Zenith - Two Cut Finish Process

Solution Benefits

- Eliminated risk of scrap.
- Complete confidence machining high-value components.
- **Industry 4.0** ready solution, provides continuous feedback.
- Speedy and continuous Return On Investment (ROI)

The Zenith automated solution takes a **pre-finish bore**, allowing verification of a precision final bore.



Fail Safe Manufacturing

Rigibore macros calculate the required nominal diameter and back off by half the remaining stock.



More information: www.rigibore.com/products/zenith

Digital Precision With Smartbore Technology

Solution Benefits

- Smartbore cartridge enables simplistic digital adjustment.
- Scrap reduction from 7.38% to 1.12% after 3 months.
- Hydrostatic capabilities minimises deflections.
- Increased speed rate.

Tight tolerance requirements, the difference between a good part and a scrapped part is **just a few microns**.



Digital Adjustment

Machining titanium jet engine component.

HSK100 Smartbore special finish boring tool.



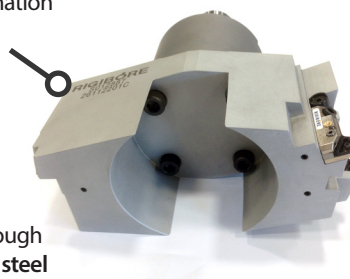
Precision Finish Combination Tool

Solution Benefits

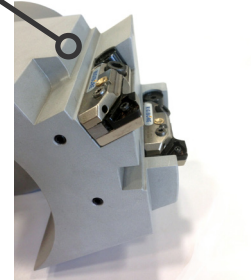
- Reduced machine downtime.
- UFP cartridges provide precision machining capabilities.
- Reduced tooling cost.
- Durable machining solution, on tough component material.

HSK63A Special combination finish tool.

This tool was used to rough bore **nitronic stainless steel** components.



4 Rigibore **Ultra-Fine Precision (UFP)** cartridges multiple diameters simultaneously.



Automotive Industry

Rigibore uses decades of industry knowledge and experience, creating special tools to accelerate productivity and ensure part quality for the automotive industry.

The Perfect Line Boring Solution - ActiveEdge Technology

Solution Benefits

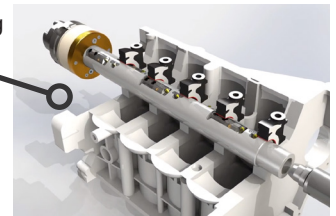
- Micron accurate, wireless adjustment.
- Maximised insert Life.
- Reduced cycle time in operations.
- Improved process speeds and bore quality.



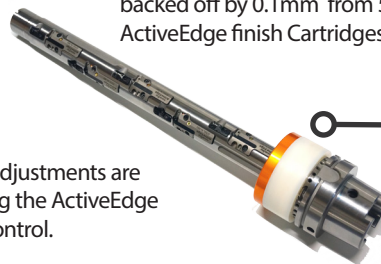
Precision adjustments are made using the ActiveEdge Remote Control.

Precision performance machining crankshaft bearing journals.

5 semi-finish cartridges are backed off by 0.1mm from 5 ActiveEdge finish Cartridges.



ActiveEdge cartridges are independently adjustable.



Durability In Performance - PCD Tooling

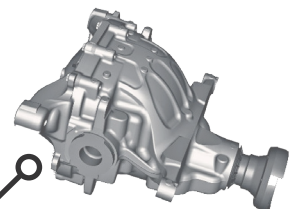
Solution Benefits

- Increased feed/speed rate.
- Decreased machine downtime.
- Cost effective solution.
- Durable machining.
- Maximised tool life.



HSK63 PCD tipped round tools.

Fixed PCD inserts removed the need for insert replacement - minimising downtime.



PCD tooling machined 3 grooves in an aluminium differential housing component.

Optimising Operations - Overturning Capabilities

Solution Benefits

- Micron accurate, remote adjustment.
- Precision guaranteed regardless of operator skill.
- Adjustment anywhere in the machine.
- Health and safety improvements.



BT30 ActiveEdge overturning tool.

Remote Adjustment

Transmission housing component.



Allowed precision manufacturing of a transmission housing component, overturning the spigot on the machining centre.

Wind Power Industry

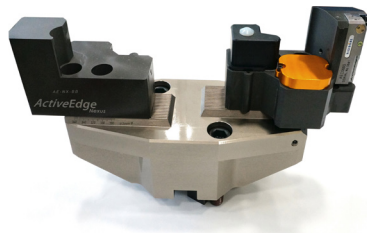
Rigibore offers paramount productivity in production of components for the wind power industry, ensuring precision performance on large diameter boring.

Connecting Innovation with ActiveEdge Nexus

Solution Benefits

- Compatible with any standard flanges.
- Automatic or Remote adjustment capabilities.
- Wireless adjustment.
- Enables both coarse adjustment and fine setting capabilities.

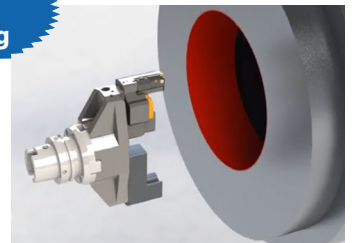
Nexus is a self contained module that can be added to standard flanges.



Precision, Wireless Large Diameter Boring

Offers the same micron accurate performance on **overturning operations**.

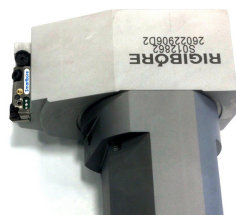
Precision performance on large diameter boring (**275mm - 1020 mm**).



Back Boring Operation

Solution Benefits

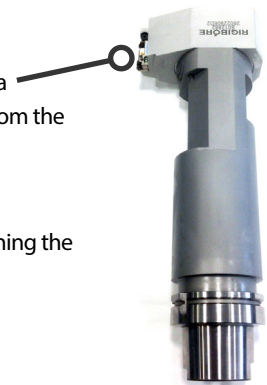
- Machining a bore that cannot be reached with a traditional operation.
- Smartbore solution allows simplistic, digital adjustment.
- Adjustment in the spindle-reduced machine downtime



HSK100A aluminium finish back boring tool.

Precision machining of the hole with a shoulder, which cannot be reached from the opposite direction.

Optimising concentricity from machining the bore from a single position.



Rough and Finish Chamfer

Solution Benefits

- Performing the rough, finish and chamfer operation simultaneously reduces cycle time.
- Superior design ensures precision performance on difficult components.
- Durable design for large diameter boring operations.

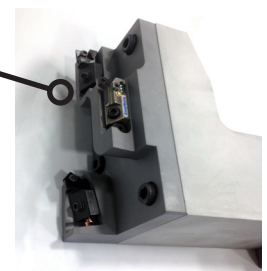
CAT50 combination rough and finish chamfer tool.



Innovation In Design and Manufacture

Tool was designed with two different material types (**steel and aluminium**).

This reduced tool weight and improved performance.



Heavy Plant Industry

Rigibore's high performance special tooling applications are manufactured to cope with the tough requirements of heavy equipment manufacturing.

Rough Boring Capabilities

Solution Benefits

- Reduced machine downtime.
- Durable manufacturing solution when rough boring.
- Reduced tooling cost.
- Tools can be created for a dedicated size or using adjustable cartridges.

ISO, multi-insert fixed pocket roughing tool.



This tool was used to rough machine a suspension arm.

Combination Roughing Tool

This tool used Rigibore ISO lay-in cartridges.



Machining a PTO housing component for the heavy plant industry.

Hydrostatic Tooling Solution On Front Axle Component

Solution Benefits

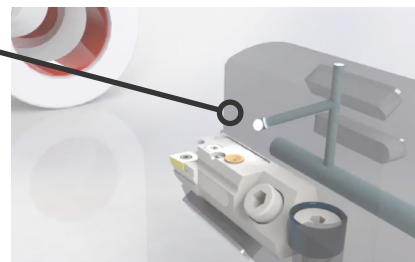
- Smartbore cartridge allowed simplistic digital adjustment.
- Scrap reduction from 7.38% to 1.12% after 3 months.
- Hydrostatic capabilities minimises deflections
- Increased feed rate.

Hydrostatic tooling allows through-coolant to effectively evacuate chips between the bar and the component.

Running at a higher feed rate improved finish quality.

- **Previous Tooling** - S1800 @ 600mm/min.
- **Rigibore Tooling** - S6000 @ 100mm/min.

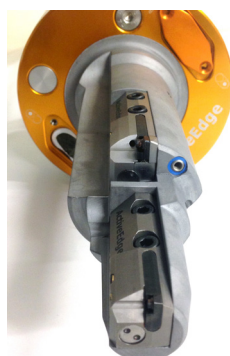
HSK63A Smartbore Finishing tool harnessing hydrostatic technology.



Track Links Manufacturing

Solution Benefits

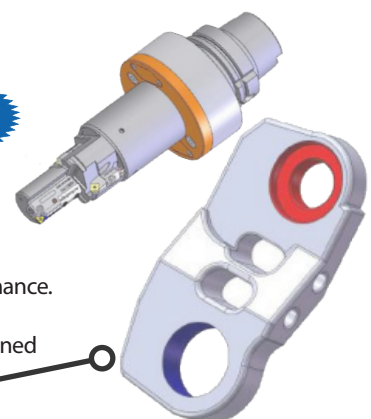
- Automated cutting edge compensation (Zenith solution).
- Increased productivity, 90% Overall Equipment Efficiency (OEE).
- Upper and Lower Warning Limits improve Cpk performance.



Continuous Process Improvements

Rigibore macros set warning limits to monitor bore sizes are adjusted automatically, improving Cpk performance.

HSK100 ActiveEdge finish tools machined bush and pin bores on a **Track Link** component.





Tools For Building In

Rigibore offers standard 'off-the-shelf' product which can be built into our special boring tools

Keep It Running - This extensive range of bush units and cartridges are replaceable from stock, offering a fast and simple solution in case of tool damage.

For details on feature standard tooling - visit the download page on the Rigibore website :-

<https://rigibore.com/media/catalogues/standard-boring-bars-units-inserts.pdf>

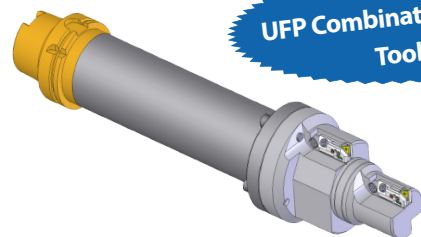
UFP Cartridges



For operations requiring precision cutting edge adjustments· **Ultra-Fine Precision (UFP) Cartridges** are available.

Smartbore cartridges are interchangeable with UFP cartridges.

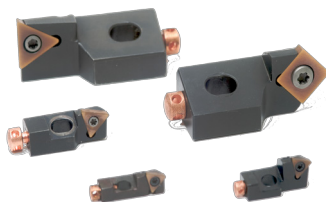
UFP cartridges reduce downtime, improve process quality and increase performance through a zero backlash design.



UFP Combination Finish Tool

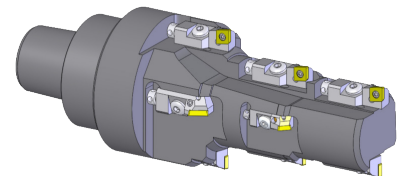
Designed with aluminium front end to reduce tool weight.

ISO Cartridges



ISO Cartridges are ideal for rough or semi-finish boring applications, available in a wide variety of sizes.

- Minimum bore **15.6mm/0.614"**.
- The complete range of ISO Cartridges are held in stock for fast delivery.
- ISO cartridges are built to accept all standard ISO indexable inserts.



ISO Combination Roughing Tool

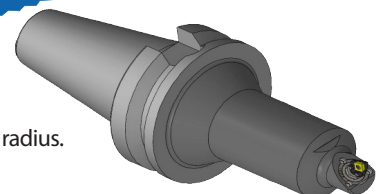
MBX Boring Units



Rigibore's **MBX Boring Units** can be mounted into special tools. These units are pre-tensioned to eliminate backlash and are adjusted from the front of the unit.

- MBX units use a self-clamping/self-locking mechanism.
- Each graduation on the adjustment dial is **0.005mm/.0002"** on radius.
- Each vernier graduation on the bush is one micron on radius.

BT50 MBX Finish Boring Bar



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