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## **CINCINNATI R125**

Centerless Grinder

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Date: 2/2023

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# CINCINNATI R125

## Centerless grinder

For the grinding process of all kinds of bars, tubes, cam shafts, gear shafts and rollers up to 650mm in length for in-feed process

- High precision and maximized productivity
- Capability to use through-feed or plunge infeed working method
- High precision roundness, runout and dimensional accuracy
- High stock removal rate
- Very short cycle time to meet high industrial production standards



# CINCINNATI R125

## High precision centerless grinding

The Cincinnati R125 is engineered for high durability and a solid operation. Built with a cast iron base, the machine provides high thermal and mechanical stability, as well as vibration dampening and tight tolerancing. High machine stiffness ensures optimum accuracy, in addition to fast production rates and high stock removal.



# CINCINNATI R125

## Large component grinding

Like the other Cincinnati machines, the R125 can be adapted to both the plunge-feed and in-feed grinding processes. However, as a larger machine than the Viking and RK models, it can accommodate much larger components.

The Cincinnati R125 is the ideal solution for grinding any type of bar, tube, camshaft, gear shaft and roller up to 300mm in length.

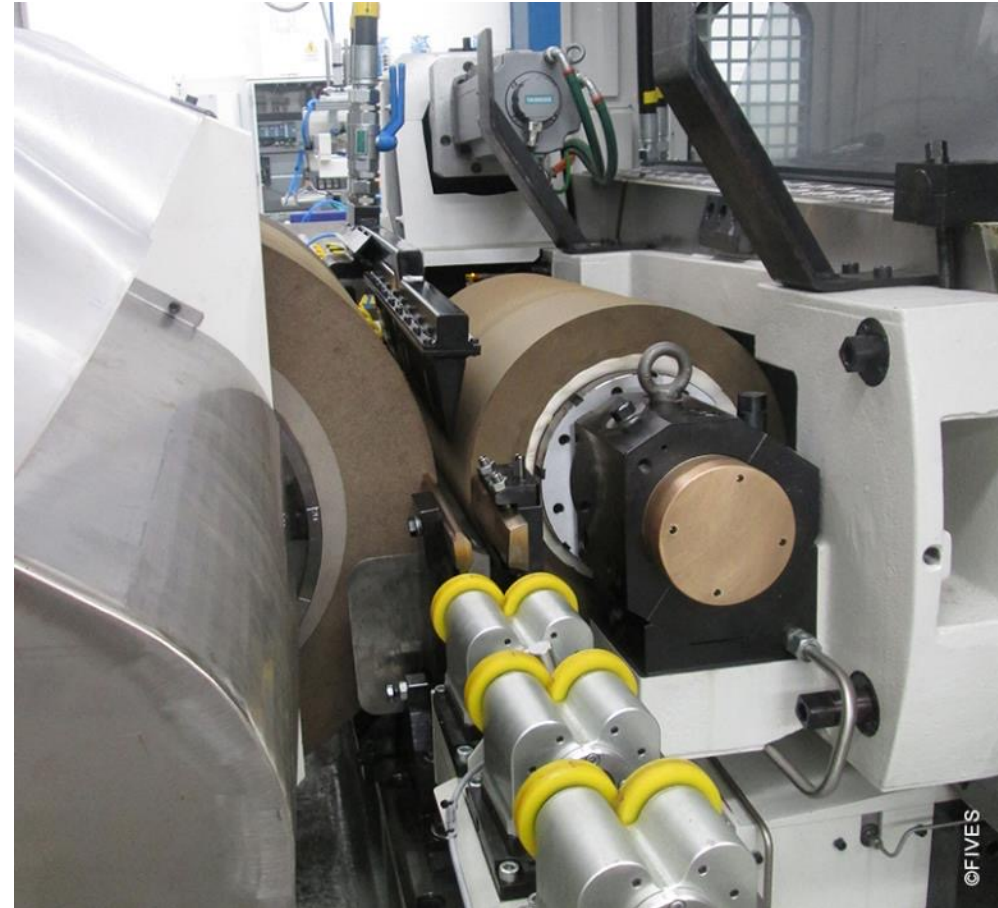


# CINCINNATI R125

## High accuracy and productivity in a bespoke, automated solution

We can provide the expertise and the automation to make your process and operation as easy as possible. We offer turnkey solutions that include all of the components you will need for your grinding operation, including infeed / outfeed system and gauging system.

Easily integrate your Cincinnati R125 into new and existing product lines. Its open architecture is compatible with a number of different control systems, including Landis 6400, Allen Bradley, Siemens and Fanuc.



# CINCINNATI R125

## Grind a wide variety of materials

The Cincinnati R125 uses conventional wheels. This enables the machine to grind a wide variety of materials, including stainless steel, inconel and titanium. With the hydrodynamic oil bearings installed for maximum precision and stiffness, the machine is ideal for grinding large or long parts that require very high accuracy.

This machine is used to grind components for the medical and aerospace industries, as well as the automotive, agricultural, appliance, power tools and fluid power sectors.



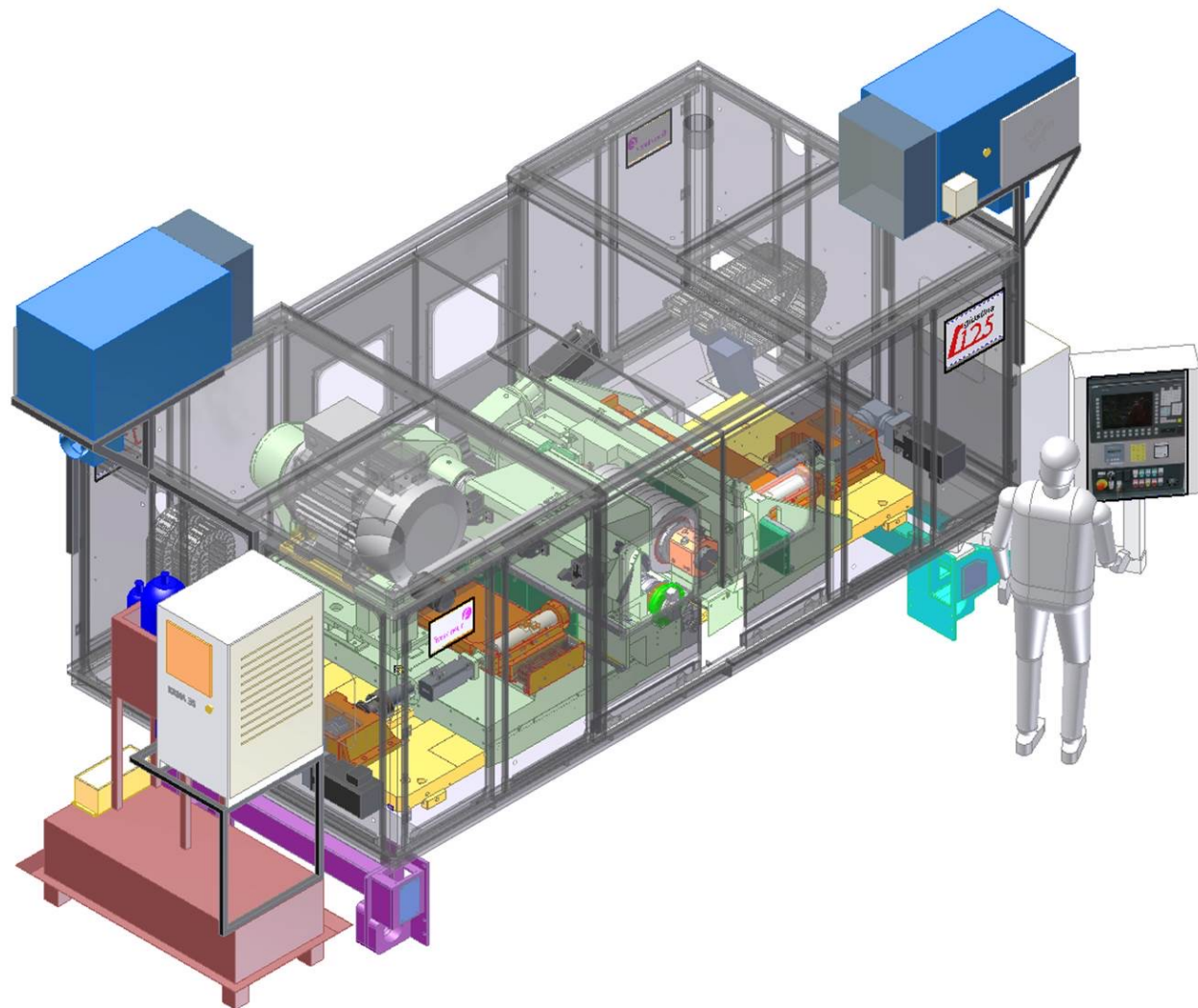
# CINCINNATI R125

## Additional key machine features include:

- Spindles with hydrodynamic lubrication mounted on double support
- Automatic taper compensation
- Grinding wheel with dynamic balancing device, max. width 660mm
- Control wheel. max. width 660mm, tilt angle up to 8°



# CINCINNATI R125

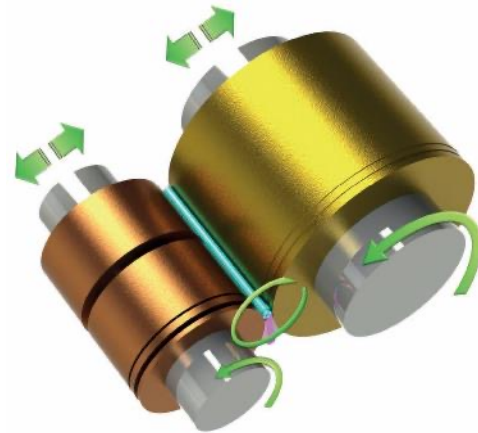




# CINCINNATI R125

## In-feed

- For grinding of all kind of bars, tubes, cam shafts, gear shafts and rollers up to 650mm length in In-feed-process



# CINCINNATI R125

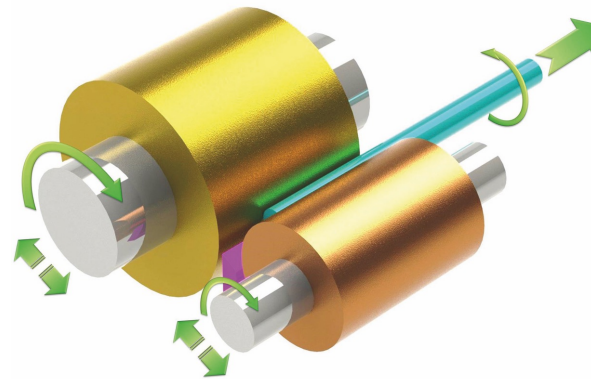
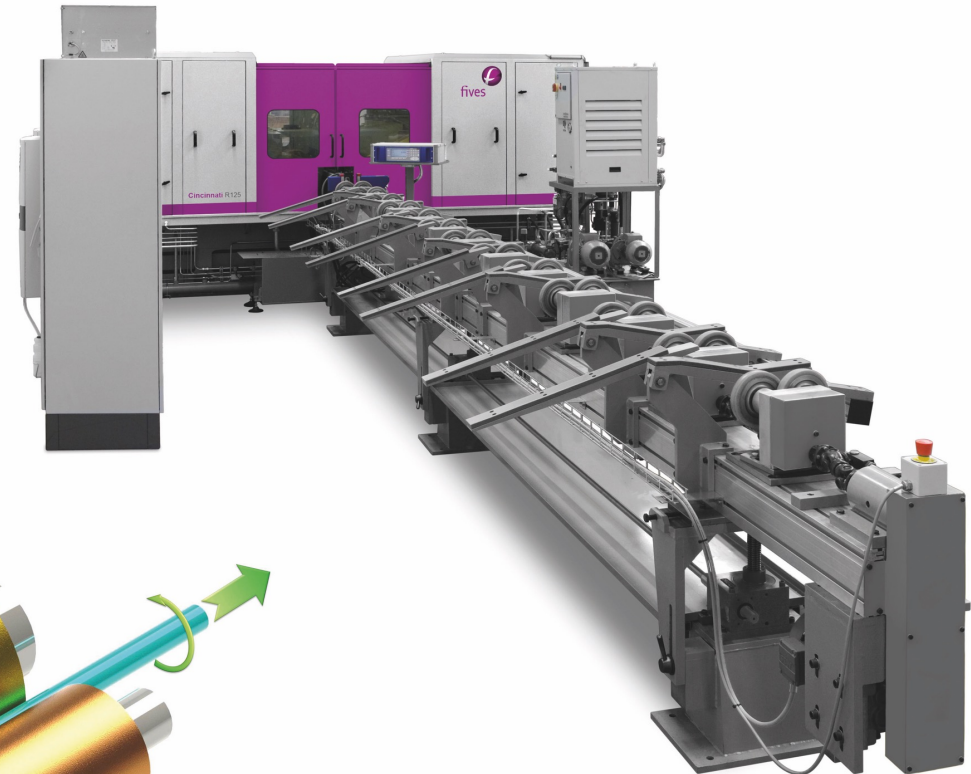
## Application Samples – In-feed



# CINCINNATI R125

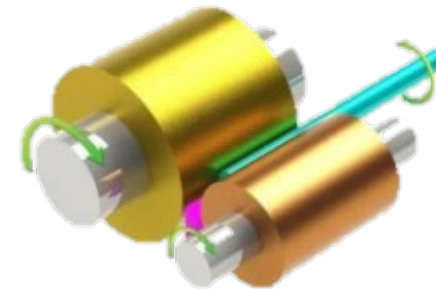
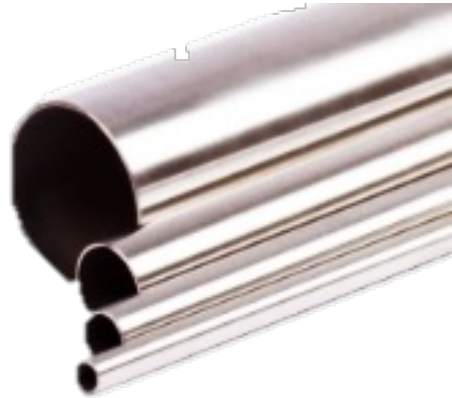
## Through-feed

- Up to 14 m length
- 2 to 300 mm workpiece diameter
- All materials



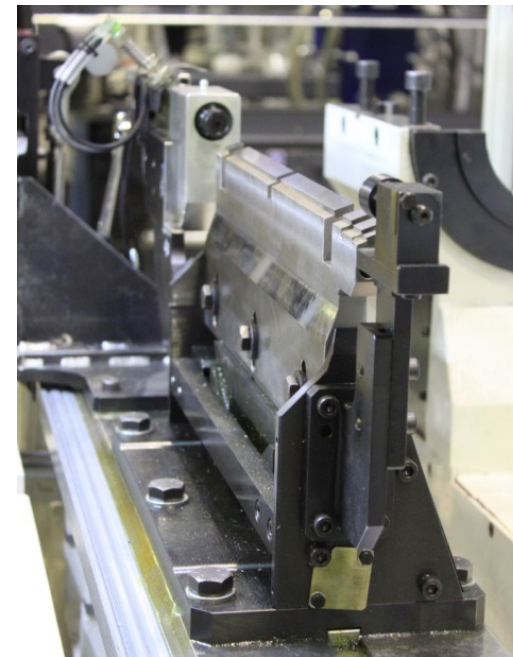
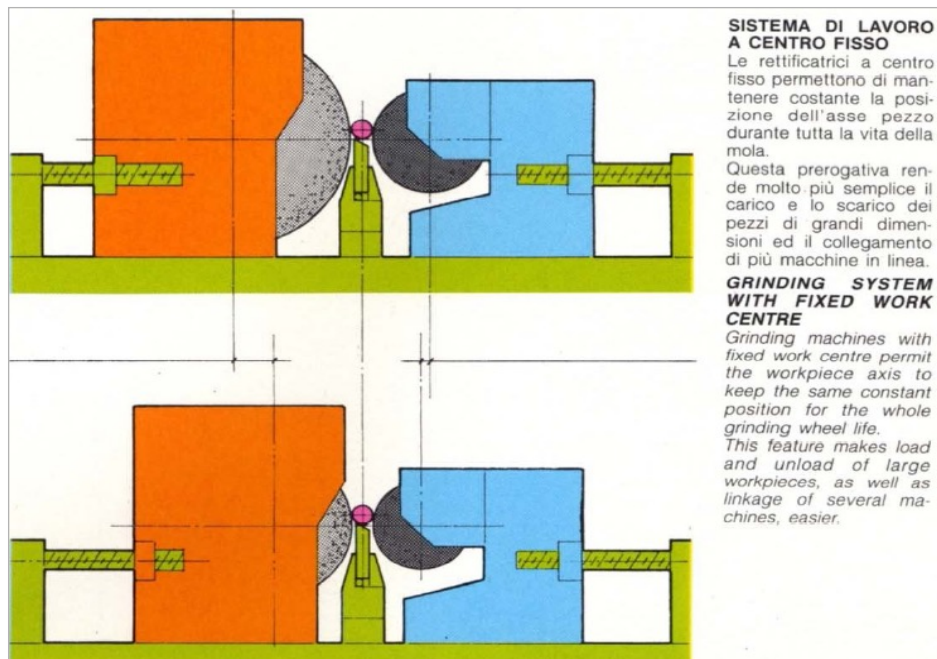
# CINCINNATI R125

## Application Samples –Through-feed



## Fixed work center

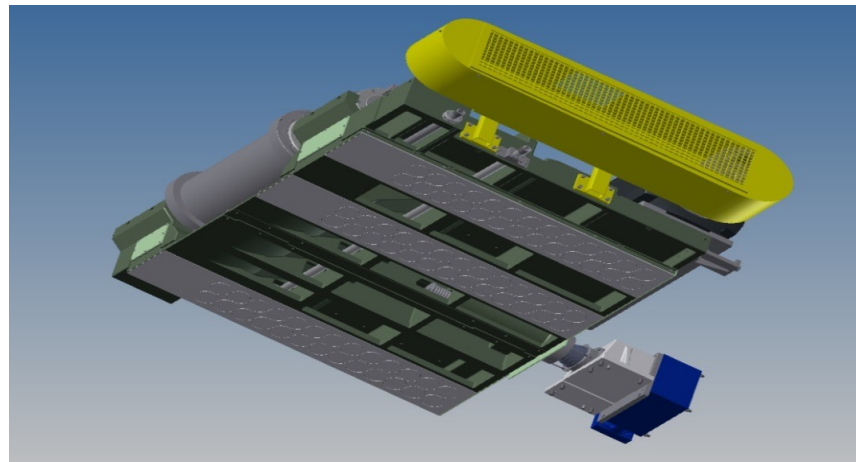
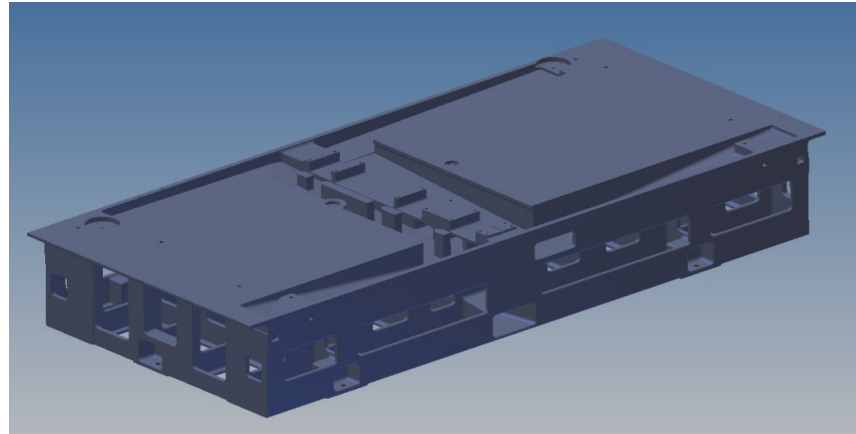
- Fixed work center permits the workpiece axis to remain in the same constant position during the whole grinding wheel life
- This allows for an easier load and unload process



# CINCINNATI R125

## Machine characteristics

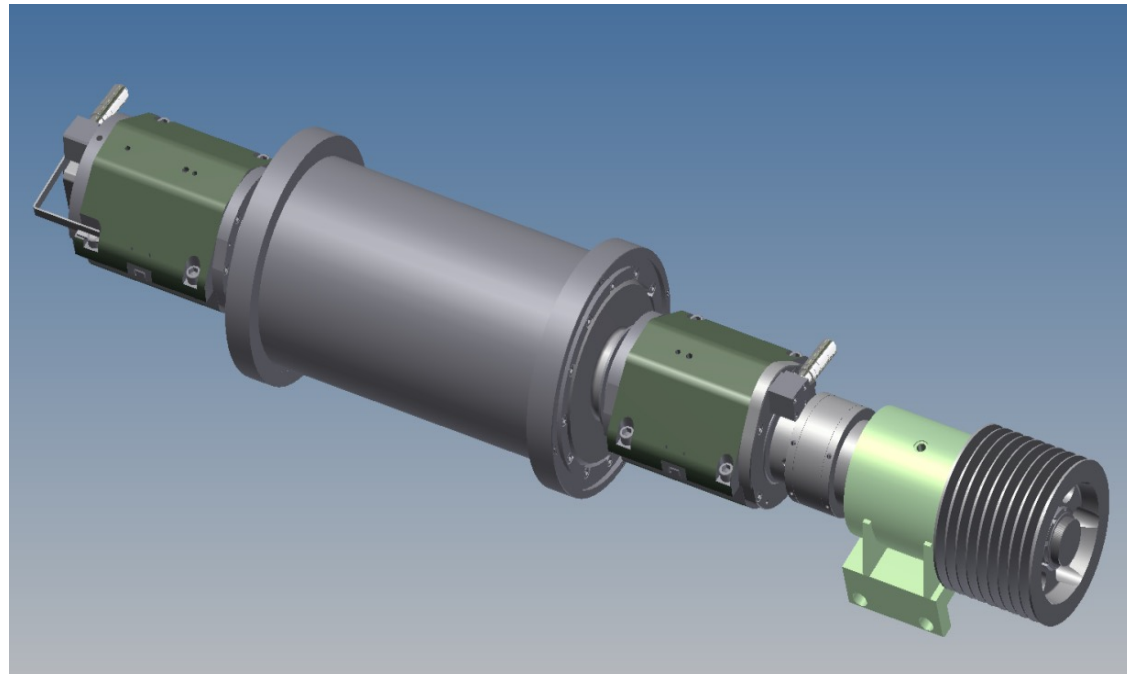
- Machine bed in meehanite cast iron guarantees high thermal and mechanical stability
- Sturdy design for long time durability
- CNC-controlled, rapid movements
- 0.5 micron positioning accuracy of the grinding and regulating wheel carriage on Zetec
- Low friction guides for maximum precision



# CINCINNATI R125

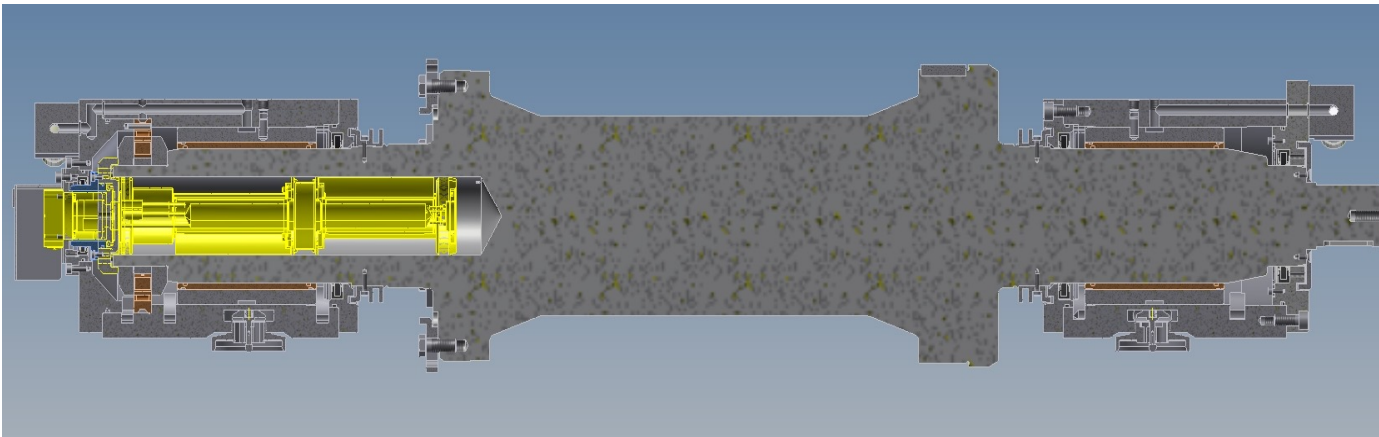
## Grinding spindles

- Indirect wheel drive - for fast and easy disc change - reduces down times
- Peripheral speed of grinding wheel up to 63 m/s



## Grinding spindles

- Grinding wheel spindle and regulating wheel with hydrodynamic bearing and central lubrication for minimal wear
- Grinding and regulating wheel on twin support for high radial and axial stiffness
- Bronze bearings with oil film lubrication.
- No ball bearings = less maintenance and replacement vulnerability

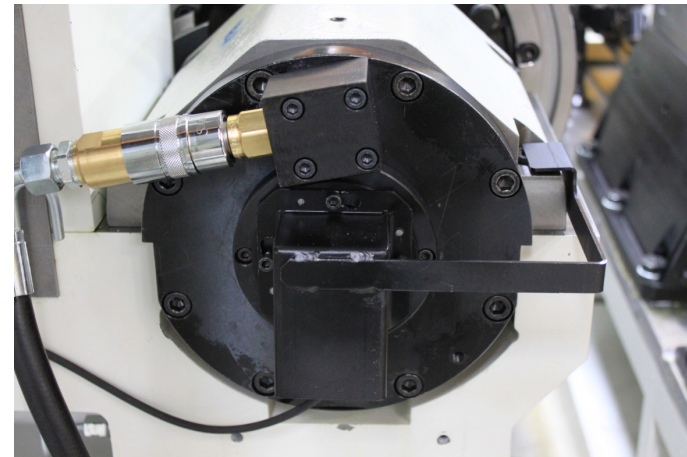
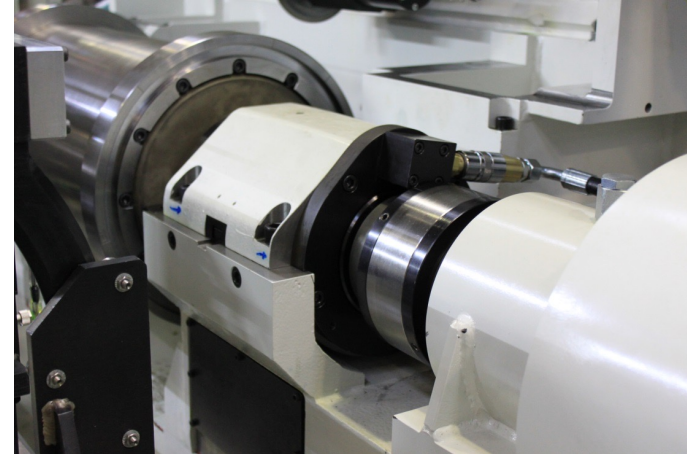




# CINCINNATI R125

## Grinding spindles

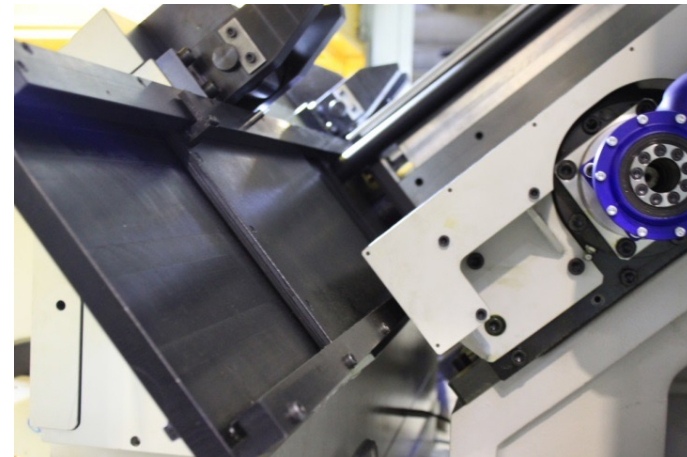
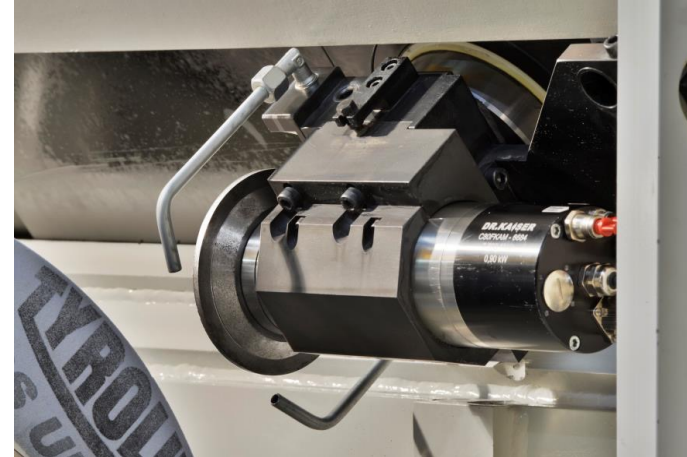
- Oscillating joint to minimize the load on the driving belt during starting and stopping of the grinding spindle
- This allows a fast and easy wheel change - reduces down times
- Grinding wheel with dynamic balancing device
  - Dittel or Marposs (optional)



# CINCINNATI R125

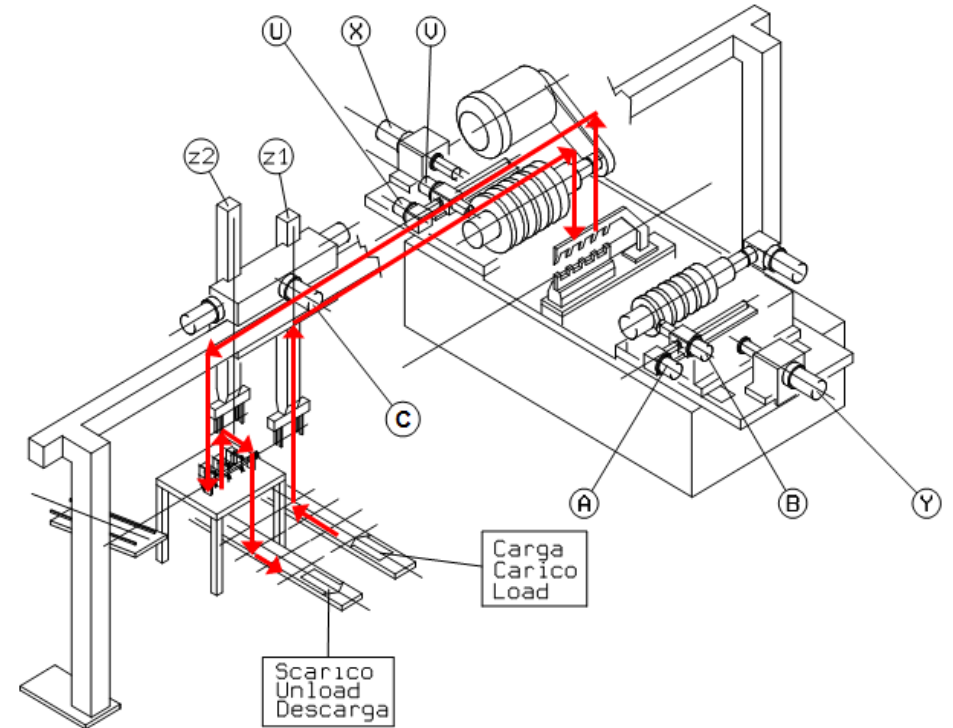
## Dressing system

- CNC - controlled - interpolated dressing for different workpiece profiles through optional, motorized diamond roll
- Fully automatic zero-point search + dressing after wheel change
- Diamond dressers mounted on high precision, rigid and low friction guides



## Gantry system

- X AXIS
- GRINDING WHEEL FEED
- Y AXIS
- CONTROL WHEEL FEED
- A AXIS
- LONGITUDINAL MOVEMENT CONTROL WHEEL DIAMOND
- B AXIS
- RADIAL MOVEMENT CONTROL WHEEL DIAMOND
- U AXIS
- LONGITUDINAL MOVEMENT GRINDING WHEEL DIAMOND
- V AXIS
- RADIAL MOVEMENT GRINDING
- WHEEL DIAMOND
- C AXIS
- LONGITUDINAL MOVEMENT GANTRY
- Z1-Z2 AXIS
- VERTICAL MOVEMENTS GRIPPERS



# CINCINNATI R125

## Control

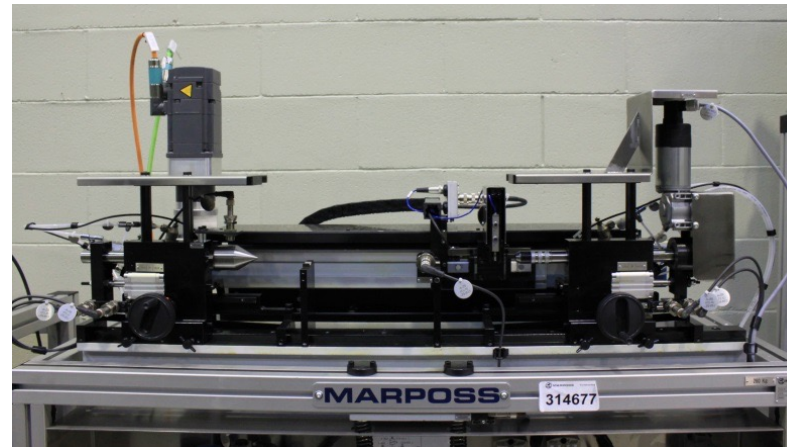
- Speed control for a constant grinding wheel peripheral speed
- Automatic monitoring of contact wheel - workpiece
- Automatic monitoring of contact wheel - diamond dresser
- Display of power consumption during grinding process



# CINCINNATI R125

## Precision / accuracy

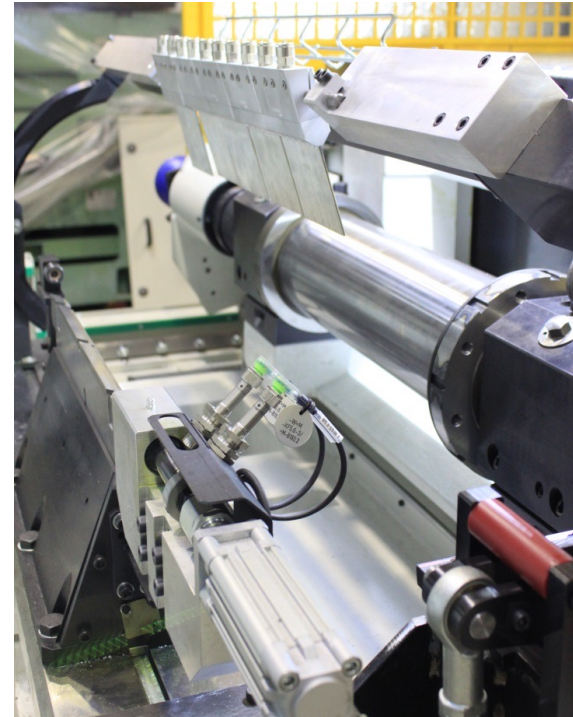
- 100% parts measuring
- Warm up cycle during machine, start to avoid scrap parts
- Automatic display of controlled axis and rotational speed



# CINCINNATI R125

## Maintenance

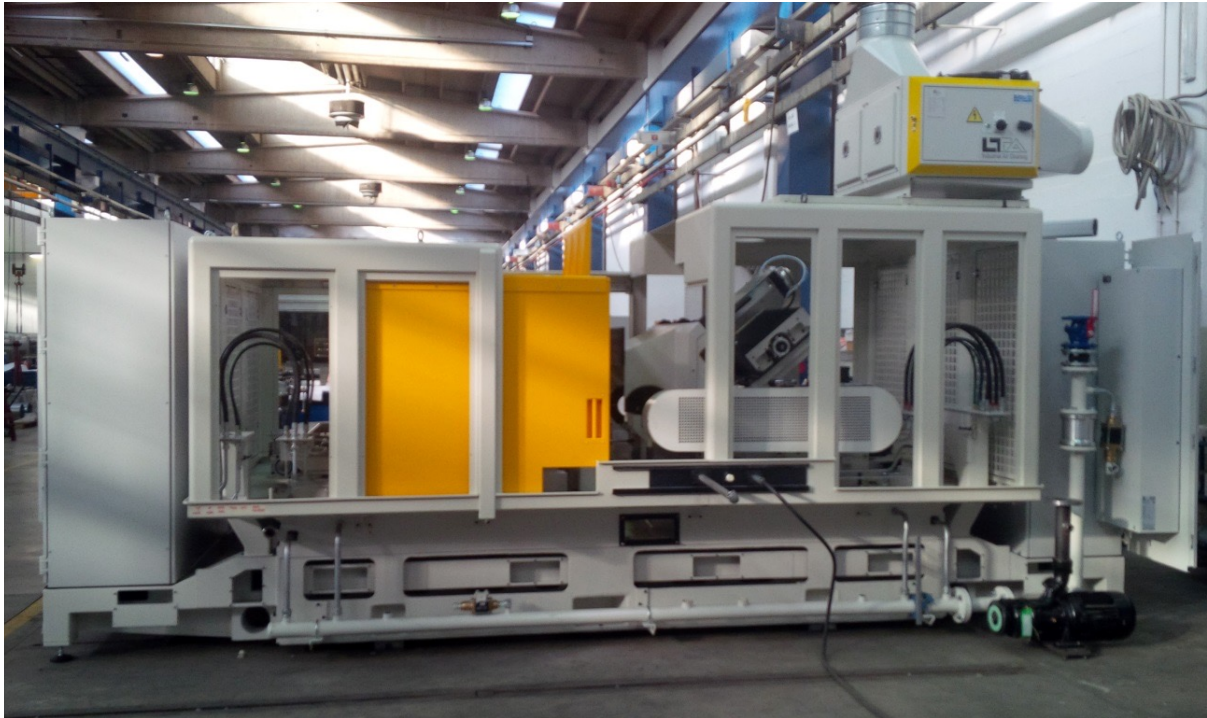
- Quick grinding wheel change (60 min)
- Pivoting water sword for better accessibility



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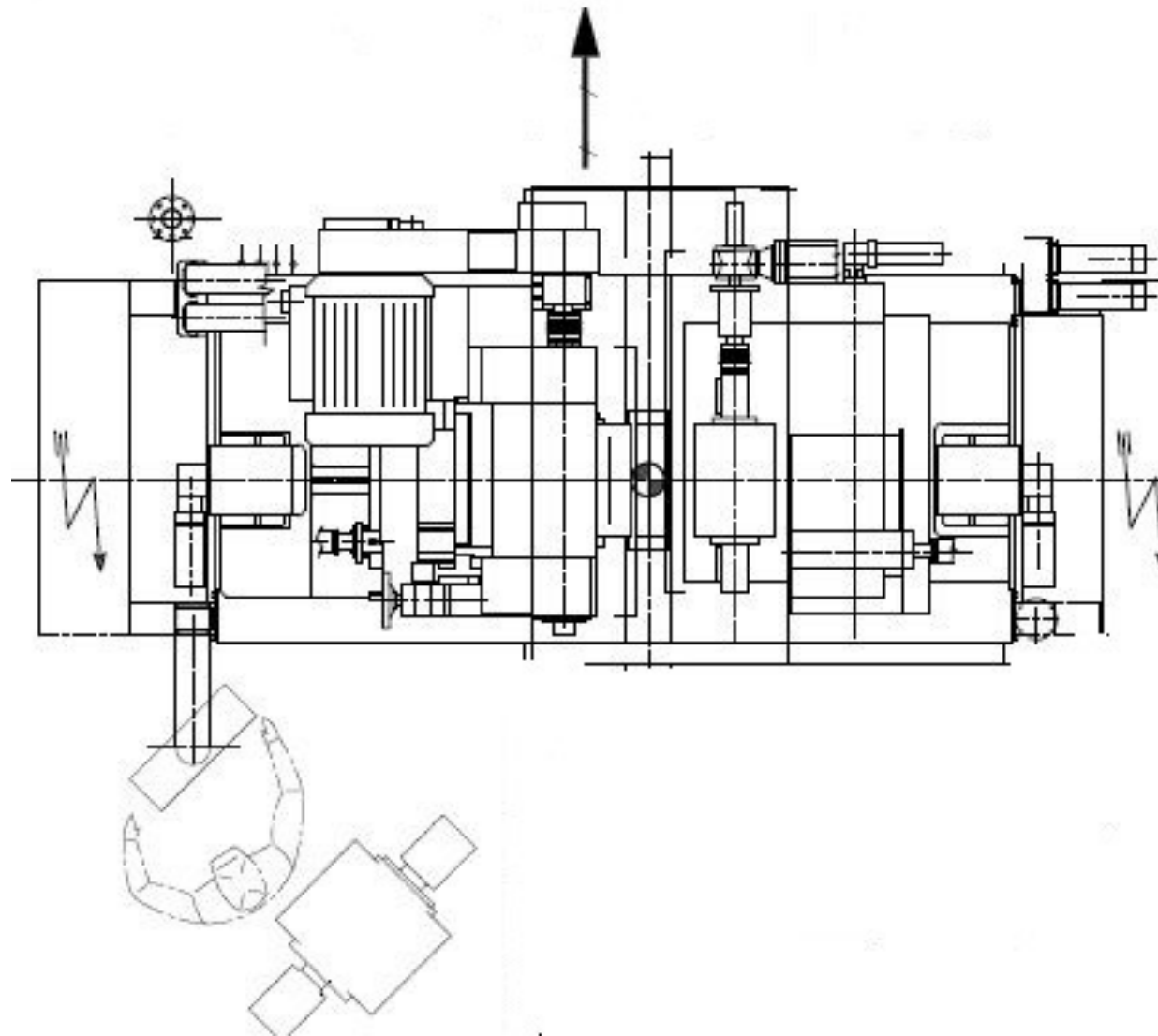
## Maintenance

- Easy access trough fast removable service panels
- Automatic hood lift for fast and secure operation



# CINCINNATI R125

Machine layout





# CINCINNATI R125



	Cincinnati R125 500	Cincinnati R125 6600
<b>Working capacity</b>		
Min. / Max. outer diameter	2 - 250 mm (0.08" - 9.5")	2 - 300 mm (0.08" - 11.8")
Type	Type Twin grip fixed-blade	Twin grip fixed-blade
<b>Grinding wheel</b>		
Sizes / width	508 mm (20")	650 mm (26.6")
Max. / Min. OD	610 / 410 mm (24 " / 16")	610 / 410 mm (24 " / 16")
Motor power	110 kW	110 kW
Peripheral speed	45 (60) m/sec (148 ft/sec)	45 (60) m/sec (148 ft/sec)
<b>Regulating wheel</b>		
Sizes / width	508 mm (20")	508 mm (20")
Max. / Min. OD	355 / 250 mm (14" / 9.8")	355 / 250 mm (14" / 9.8")
Motor power	3.3 kW	3.3 kW
Operating speed	10 - 300 rpm	10 - 300 rpm
<b>Infeeds</b>		
Max. plunge infeed	1,500 mm/min (4.9 ft/min)	1,500 mm/min (4.9 ft/min)
Min. plunge infeed	0.1 mm/min (0.004 in/min)	0.1 mm/min (0.004 in/min)
<b>Dimensions</b>		
Dimensions (W x D x H)	3,400 x 1,800 x 1,900 mm (11.2' x 5.9' x 6.2')	3,400 x 2,000 x 1,900 mm (11.2' x 5.9' x 6.2')
Machine weight	18,000 kg (39,683 lb)	20,000 kg (44,092 lb)