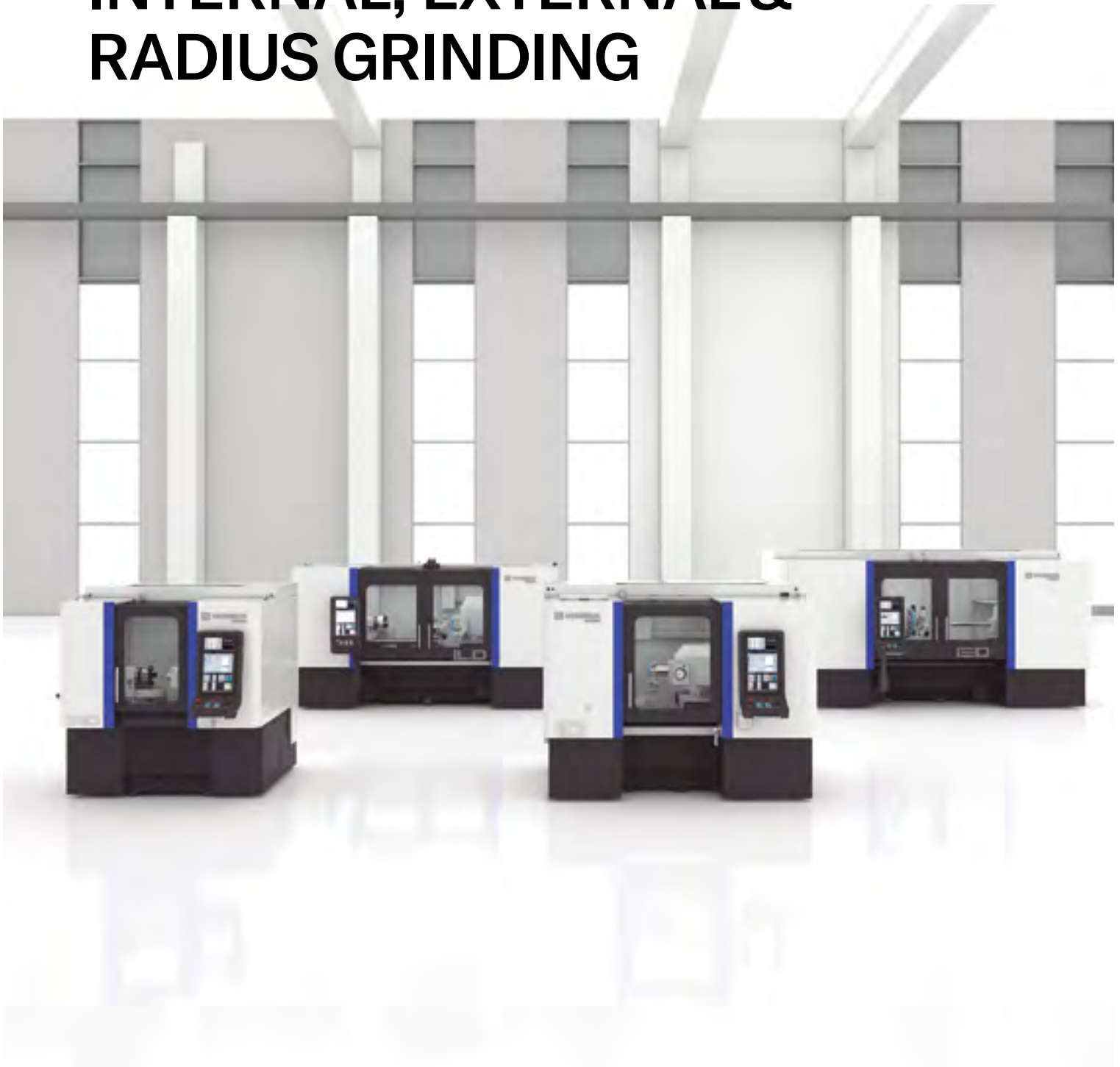


# HIGH PRECISION INTERNAL, EXTERNAL & RADIUS GRINDING



# New generation. Highest precision. Ready to automate.

This new portfolio represents a complete redesign of the Overbeck range, developed in close collaboration with our customers and shaped by market insights.

From compact models to heavy-duty platforms, every machine has been re-engineered to deliver greater flexibility, enhanced automation, and uncompromising precision. The new portfolio also responds to key industry demands such as energy efficiency, sustainability, and seamless integration into modern production environments.

Innovative solutions

# Machine range



## Flexibility & ready to automate

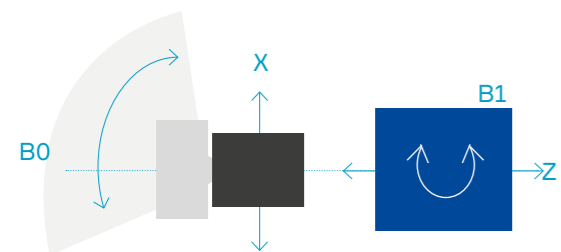
Internal, external & radius

The IRD series combines high precision grinding with maximum flexibility for a wide range of part sizes and processes.

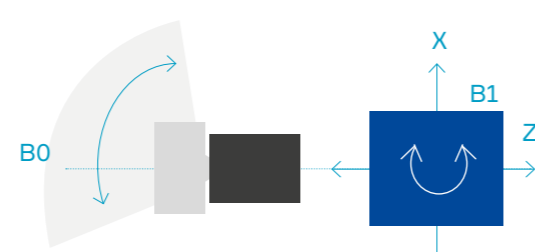
From the ultra-compact IRD-300 to the heavy-duty IRD-700, every platform is designed for complete process grinding, including ID, OD, radius, thread, taper, jig and non-round geometries — all in a single machine.

With configurable spindle turrets, direct-drive kinematics and full automation readiness, the IRD family delivers reliable accuracy and productivity in applications where performance is defined by geometry.

### IRD-300/ IRD-700 CONFIGURATION



### IRD-500 CONFIGURATION



TECHNICAL CHARACTERISTICS	IRD-300	IRD-500	IRD-700
Max. internal grinding diameter	200 mm	300mm	500mm
Max. internal grinding length	100 mm	200 mm	400 mm
Max. external grinding length	100 mm	150 mm	400 mm
Max. workpiece swing diameter	215 mm	360/410 mm	700 mm
Max. workpiece length incl. clamping system	250 mm	400 mm	700 mm
Max. workpiece weight incl. clamping system	80/100 kg/Nm	80/100//180/300 kg/Nm	500/500 kg/Nm
B0 axis swivelling angle	+91°/-15°	+91°/-15°	+91°/-15°
X and Z axis stroke	400/300 mm	450/485 mm	700/700 mm
Machine dimensions (height x width x depth)	215x210x220 cm	215x275x225 cm	235x400x280 cm

## IRD-300

Compact. Flexible. Ready to automate.

The IRD-300 is Overbeck's most compact high-precision grinding machine, designed for small and complex parts. It requires up to 40% less floor space than comparable machines on the market.

With full integration of ID, OD, radius, taper, jig, thread and non-round grinding in a space-efficient design, the IRD-300 combines precision with versatility. Flexible automation options make it ideal for high productivity environments demanding autonomy, repeatability, and accuracy.

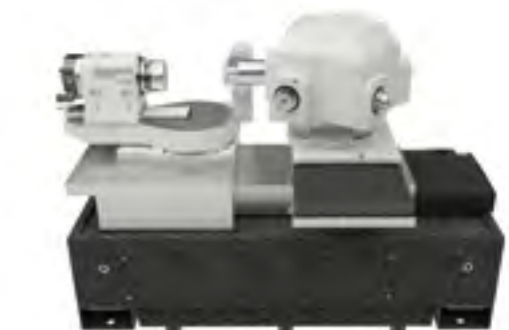


## IRD-500

Built for the most demanding applications.

The IRD-500 offers greater capacity and process flexibility for demanding applications. With swing diameters up to 410 mm and up to five spindles plus a measuring probe — this model enables complete grinding operations in a single setup.

It is engineered for production environments that require consistent precision, flexible configurations, and seamless automation integration.

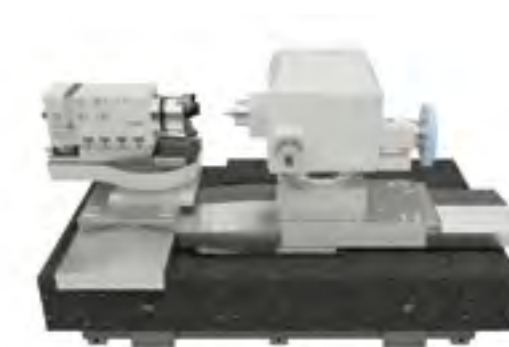


## IRD-700

Now on a bigger scale.

The IRD-700 is designed for the most complex and large-scale workpieces, enabling complete process grinding of challenging geometries with outstanding repeatability.

Its advanced axis configuration, heavy-part handling, and customisable spindle setups make it the ideal choice for applications with large diameters, complex transitions, and tight tolerances — while maintaining thermal stability over long grinding cycles.



Innovative solutions

# Machine range



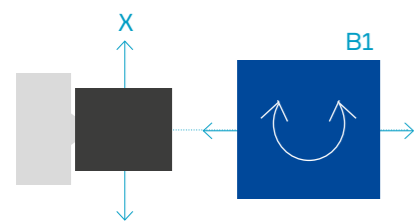
## High production

### Internal & external

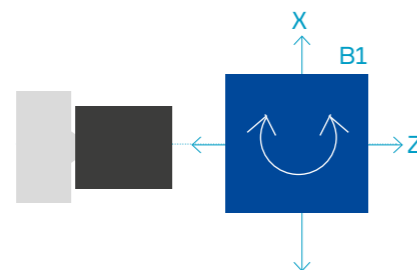
The ID and IED series have been completely redesigned to meet today's production challenges. These platforms combine maximum output with high precision, enabling efficient grinding of internal and external geometries — either in sequence or simultaneously.

With modular configurations, full automation readiness, and stable accuracy, this new generation supports both high volume manufacturing and complex part production with unmatched consistency and speed.

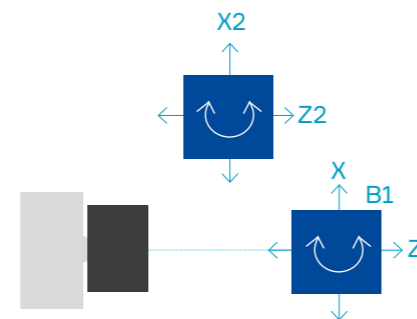
#### ID-300 CONFIGURATION



#### ID-500 CONFIGURATION



#### IED-500 CONFIGURATION



#### TECHNICAL CHARACTERISTICS

	ID-300	ID-500	IED-500
Max. internal grinding diameter	200 mm	300 mm	300 mm
Max. internal grinding length	100 mm	200 mm	150 mm
Max. external grinding diameter	215 mm	500 mm	300 mm
Max. external grinding length	100 mm	150 mm	250 mm
Max. workpiece swing diameter	215 mm	560 mm	300 mm
Max. workpiece length incl. clamping system	250 mm	500 mm	250 mm
Max. workpiece weight incl. clamping system	80/100 kg/Nm	80/100//180/300 kg/Nm	80/100//180/300 kg/Nm
X and Z axis stroke	400/300 mm	450/485 mm	220/550 mm
X2 and Z2 axis stroke	-	-	320/450 mm
Machine dimensions (height x width x depth)	215x210x220 cm	215x275x225 cm	220x250x255 cm

## ID-300

### Compact power for high production needs.

Compact and fast, the ID-300 is designed for serial production of small and mid-sized parts.

With up to three spindles and optional robot integration, it delivers high output with minimal operator involvement. Its compact layout is optimised for both space and efficiency.



## ID-500

### Built for production. Powered by precision.

The ID-500 is built for large scale performance, handling demanding production requirements with outstanding precision and repeatability.

Its flexible configuration supports multiple grinding operations in a single setup, while full automation readiness enables both batch and continuous manufacturing.

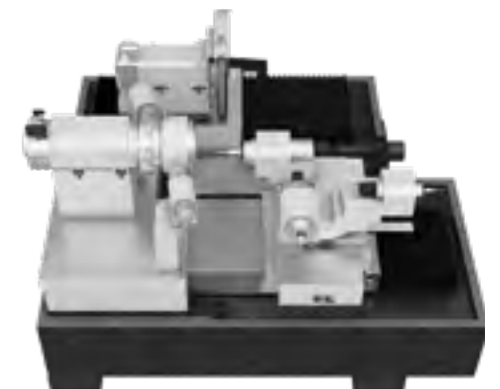


## IED-500

### Simultaneous precision. Upgraded.

The IED-500 features a dual turret architecture for simultaneous ID and OD grinding.

With independent cross slides and advanced automation interfaces, it is a powerful solution for complex parts requiring short cycle times. Cycle times can be reduced by up to 50%, with excellent stability and long term accuracy.



Innovative solutions

# Machine range



## Universal for large workpieces

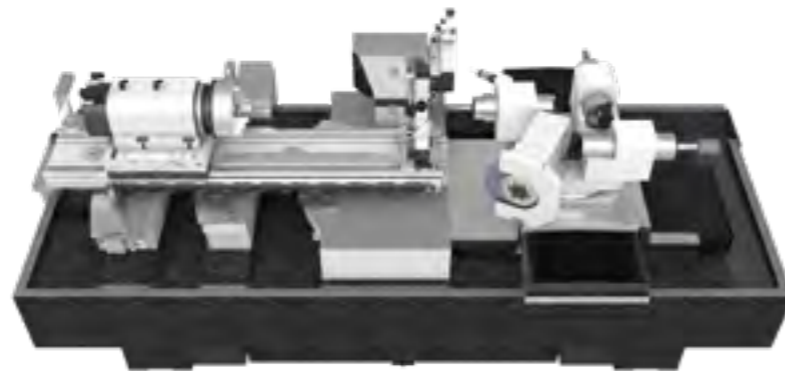
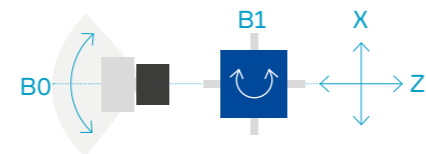
The ILD series is recognised for its ability to handle long, heavy, and complex components with exceptional precision. In the new portfolio, the ILD-600 continues this legacy as a universal solution for applications requiring large grinding capacity without compromising accuracy.

### ILD-600

Big on size. Precise by nature.

The ILD-600 is engineered for precision grinding of large parts such as spindle shafts, tool holders, and hydraulic components.

It combines structural rigidity, process flexibility, and high accuracy across multi-process operations – making it ideal for demanding applications with long cycles and tight tolerances.



TECHNICAL CHARACTERISTICS	ILD-600
Max. internal grinding diameter	420 mm
Max. internal grinding length	400 mm
Max. external grinding length	150 mm
Max. workpiece swing diameter	600 mm
Max. workpiece length incl. clamping system	1300 mm
Max. workpiece weight incl. clamping system	500/500 kg/Nm
B0 axis swivelling angle	+20°/-10°
X and Z axis stroke	450/550 mm
Machine dimensions (height x width x depth)	225x400x260 cm

## High precision, custom-engineered systems

Overbeck goes beyond standard platforms. Its engineered systems are tailored to meet specific customer requirements, combining precision, flexibility, and deep application expertise.

These machines are the result of close collaboration with manufacturers in highly demanding sectors, where part complexity, tight tolerances, and process integration call for custom-designed solutions. For applications that exceed the limits of standard machines, Overbeck provides fully engineered developments adapted to each case.

### Large bearings. Extreme precision.

A high precision solution for large bearing components, the IED-700 features a cross slide architecture and a U-axis for precise contouring and positioning of complex ID and OD geometries.

Its robust design, heavy part capacity and flexible spindle setups ensure reliable performance on large diameters, complex transitions and tight tolerances. The machine can also be equipped with different dressing units such as fixed, radius or turret systems, making it adaptable to a wide range of applications.



### All-in-one machine for spindles and housings.

A high capacity solution for internal and external grinding of spindle shafts and housings.

The IED-1200 features independent ID and OD cross slides for sequential operations in a single clamping, ensuring excellent alignment and surface accuracy. Its rigidity, stroke and measuring capabilities make it ideal for large, high precision components in demanding production environments.



# Software



## DoGrind+

The software that makes your machine truly universal

DoGrind+ is more than a grinding software. It transforms your machine into a flexible, high performance solution that is easy to use and ready for any challenge, from standard parts to the most complex geometries.

Developed by engineers with hands-on production experience and shaped by over 30 years of real customer feedback, every update is designed to meet practical needs and deliver consistent performance.

- All-in-one application: Simple and complex cycles in one software.
- Maximum flexibility: Program profiles directly on the control, no external software required.
- Wizard support: Assistants for thread, non-round, jig and taper grinding. Select, confirm, grind.
- Fast customisation: Customer specific features are implemented quickly, without long lead times.



### Non-round grinding operations

- Fully integrated in DoGrind+, with assistant support.
- Program polygons, eccentrics or punches using just a few parameters.
- Save custom shapes in the graphical catalog.



### Thread grinding operations

- ISO and UN threads, guided by the DoGrind+ assistant.
- Automatic profile correction and dressing path generation.
- Input thread code — the wizard builds the cycle.



### Jig grinding operations

- For bores, grooves and features off spindle center.
- High precision interpolation of complex contours.
- HSK-T ready for grinding and milling.



### Process monitoring and control

- Grinding monitoring: AE sensor detects tool-part contact in real time.
- Dressing monitoring: AE sensor detects contact during the dressing process, ensuring accurate and consistent dressing cycles.

# Automation

Automation was one of the key drivers in redesigning the Overbeck portfolio. Every machine has been developed for seamless integration, as flexibility, autonomy and process stability are essential in modern production.

Overbeck offers a complete range of integrated automation systems, grouped into three categories: Robot, Gantry and Hybrid.

Each solution adapts to different layouts, part types and productivity levels, making it easy to choose the right fit for any factory.

## Robot



**S Flexmotion**  
Robot inside the machine

**M Flexmotion**  
Robot integrated in a cell coupled to the machine

**L Flexmotion**  
Robot outside the machine



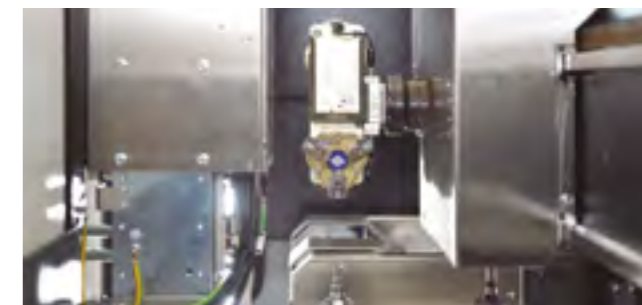
## Gantry



**M Motion**  
Gantry integrated in the machine



**L Motion**  
Gantry outside the machine



## Hybrid



**M Hybrid**  
Combination of an integrated gantry and an external robot cell



**L Hybrid**  
Combination of an external gantry and an external robot cell



# Versatility



## Workhead

- Precision construction with minimal wear, ensuring long term stability
- Direct driven via torque motor.
- Designed for high precision workpiece geometries and superior surface quality.
- Including B0 transformation of workpiece coordinates.
- Available with high resolution measuring system for non-round grinding.

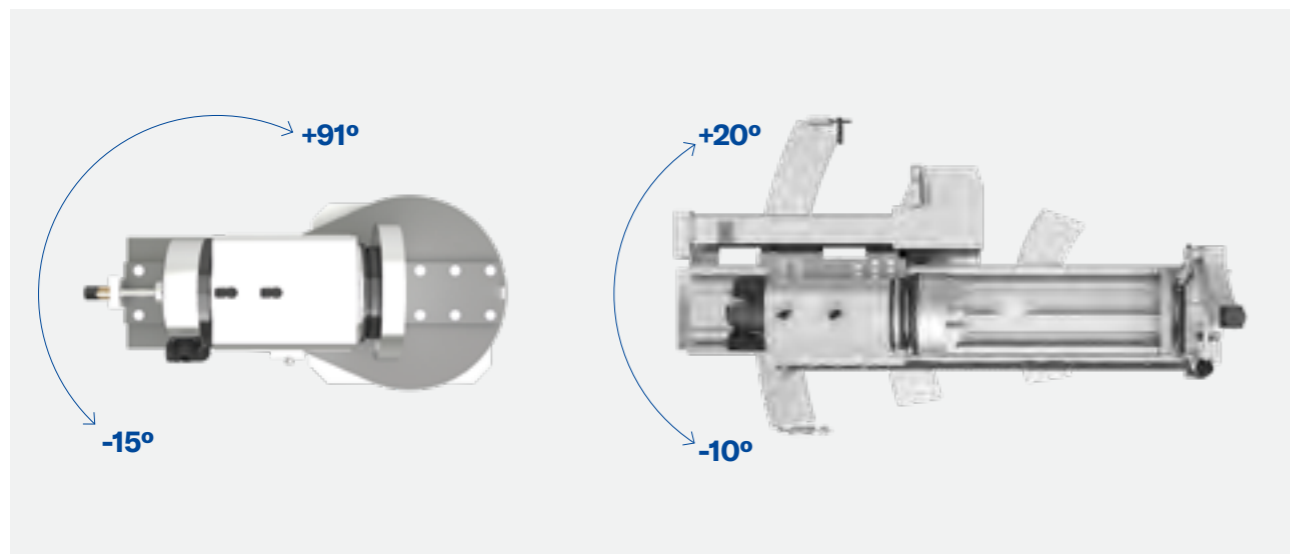


## Direct driven spindle turret

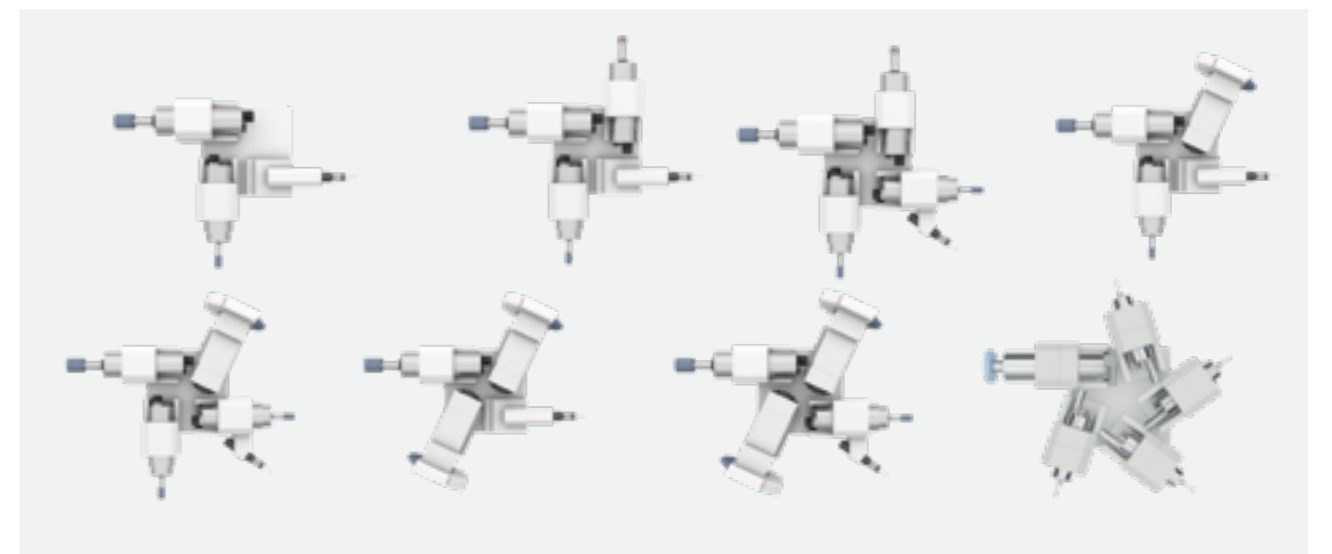
- Precision construction with minimal wear, delivering stable performance over time.
- Capacity for up to five spindles and one measuring probe.
- Direct driven via torque motor.
- Swivelling range of 300°.
- Freely programmable angular position.
- Including B1 transformation of workpiece coordinates.



## Configurations



## Configurations (\*)



(\*) Based on customer requirements, other configurations may be considered.

# Customisation

Every solution is analysed for the necessary process adaptations to ensure turnkey integration when required.

Overbeck offers a wide range of technological systems that complement the grinding process. Each solution is tailored to specific applications, enhancing precision, flexibility and productivity.

**Clamping systems.** 1. Three jaw chuck (automatic & manual). / 2. Magnetic chuck. / 3. Shoe system. / 4. Customised chucks. / 5. Steady rest. / 6. Tailstock.



**Dressing systems.** 1. Fixed dresser. / 2. Dressing spindle. / 3. Radius dresser. / 4. Dressing revolver. / 5. Workhead-mounted dresser. / 6. Roller dresser.



**Measuring systems.** 1. Touch probe. / 2. In-process measuring. / 3. Post-process measuring. / 4. Tool measuring device.



# Powered by Overbeck's renowned technology

## Precision assembly unit

Overbeck machines are built on a foundation of precision assembly, thermal stability and in-house developed components. Every structural element and key unit is designed to ensure accuracy, long term repeatability and full readiness for automation.

All critical components are assembled in-house under clean-room conditions with strict quality control, ensuring traceability, consistency and lasting precision in every machine.

## Workheads

Custom-built, direct-drive workheads deliver high rigidity, modularity and stable performance over long cycles. They are designed for easy integration with different clamping systems.

## Natural granite machine bed

The machine base is made of natural granite, providing thermal stability and vibration damping. This is essential to achieve excellent surface quality and consistent grinding results.

## Automation integration

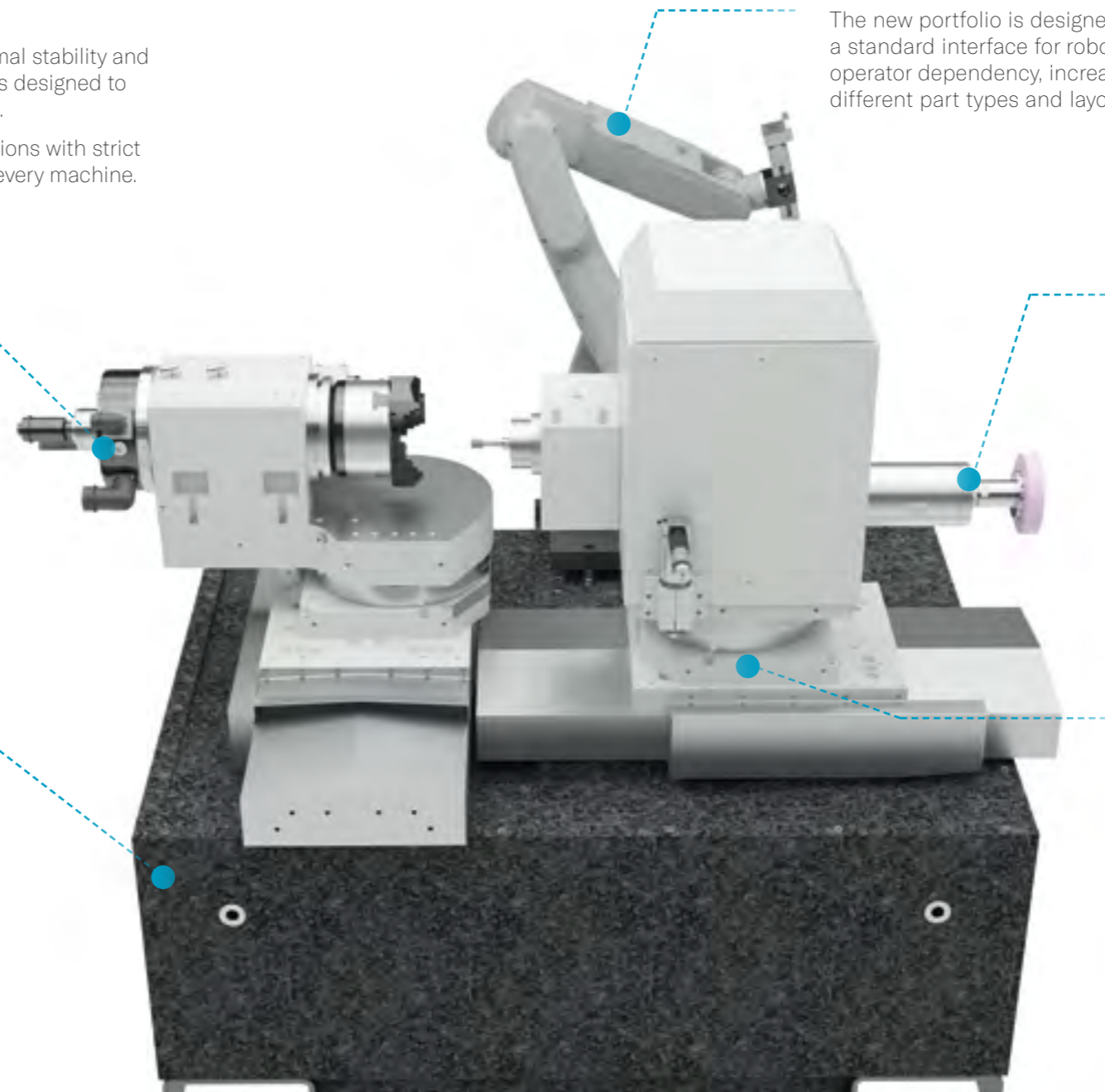
The new portfolio is designed with smarter automation in mind. All platforms include a standard interface for robots, gantries and hybrid solutions. These systems reduce operator dependency, increase autonomy in serial production and adapt easily to different part types and layouts.

## Grinding spindles

High precision spindles with integrated motors, high performance bearings and optimised lubrication systems. Designed for thermal stability, low maintenance and consistent surface quality.

## Linear motors

Linear motors ensure fast and precise axis movements, ideal for high accuracy applications such as non-round grinding. With no wear parts and active cooling, they provide maximum reliability, zero backlash and minimal maintenance.





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