PERFECT X Series
High Precision PLC Surface Grinder

Easy to use, intuitive control complete with today’s most demanding grinding cycles utilising the established PERFECT ADP control with a 10” TFT touchscreen and axes controlled by joystick. Programmable to 0.001mm in the cross and vertical axis.

The latest in Grinding machine technology
Surface - Universal - Internal - Centreless - Fine Grinding
Supporting manufacturing since 1951... with the latest New & Used Quality Machine Tools

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Quality New & Used Machine Tools

Since being established in 1951 RK International Machine Tools Ltd, a privately owned company, spanning three generations, have been involved in the supply of quality machine tools. Clients requiring individual machine tools or major industrial turn key packages are serviced in exactly the same professional manner.

When dealing with the supply of quality new and used machine tools RK International Machine Tools Ltd are simply in a class of their own. We have provided machine tools of all types, including CNC machine tools, to a wide range of business and establishments.

Committed to offering a quality product complete with a quality service, RK International was awarded BS EN ISO 9001 Quality Assurance in 1995. This program continues to be in operation now, further enhancing client confidence.

Your local RK International Contacts:
John Schwarz Managing Director
Dick Aldrich Sales Director
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Kelly Gordon Service Co-ordinator
Linda Phillimore Operations Manager
Debbie Farthing Spares Co-ordinator

Follow RK International Machine Tools Ltd on Twitter for all the latest machining advice, product launches, promotions and stock news. Follow @rkimachinetools

RK International Machine Tools Limited provide one of the largest ranges of machine tools available from a single source supplier in the UK...

In this latest Grinding edition...

GRINDING! The grinding process has moved on considerably over the last few years. The days have passed when it was known as a 'black art,' and was carried out by only a few, older skilled engineers.

Today, along with conventional machines, you will find a growing number of PLC and CNC machines that take the difficulty out of the process.

In RK106 Grinding edition: We have highlighted the most demanded grinding machines we offer and supply in a special edition GRINDING feature.

DELTA Celebrate 60 years Since the 1950's, DELTA has been producing Vertical and Horizontal Spindle surface grinders with reciproc and rotary tables. To celebrate 60 years of machine tool manufacturing, a new colour scheme has been introduced.

PERFECT X Series continues to expand with the addition of the NEW PERFECT X36 PLC Surface Grinder. With a 300 x 600mm grinding capacity and utilising the ADP control from PERFECT with a 10" TFT touchscreen, more and more workshops are seeing the benefits of moving forward from a traditional machine.

PLC control delivers performance: The latest generation T6 plc control is now being equipped to the semi-auto series of ROBBI universal and internal cylindrical grinding machines. Linking upto 12 diameters through pre-sets, complete with simplified wheel dressing cycles.

Wheel balancing, anti-crash, probing and side flagging devices, the T6 is available for machines to accommodate parts upto 1000mm dia by 6000mm long as an off the shelf solution.

ROTAX goes LARGE NEW for ROTAX 12 Rotary Table, Horizontal Spindle surface grinder. As with other ROTAX models, the machines travelling column and axes movements are all hydrodynamic with a hydrodynamic spindle to ensure the flattest of surface finishes.

CURVE APPEAL Launched at EMO 2015, the new look ROBBI Universal & Internal Grinding Machines now feature the latest in Italian flair with a new look to the external machine guarding. The enclosed, guarding is now standard equipment on the range of T6 PLC controlled machines and CNC models.

This product guide is just an overview of our more common grinding machine tool solutions. If you are looking for a machine, or have an application that is demanding, speak to RK International Machine Tools Limited for an answer.

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Dick Aldrich
Sales Director

RK International Machine Tools Ltd, Europa Trading Estate, Fraser Road, Erith, Kent, DA8 1PW, United Kingdom

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RK International are committed to protecting the environment. Submit unwanted or surplus machine tools at www.rk-int.com/machines-to-sell/
The LYOR series of horizontal honing machines, distinguished by their rigidity and power are available with single or dual spindle models for increased material removal, part roundness and straightness and reduced cycle times.

The easy to use, self prompted Siemens display panel, guides the operator through several screens to link the models for increased material removal, part roundness and straightness and reduced cycle times.

There are many features that encourage workshops to opt for the LYOR series, with high standards of precision, flexibility and fast set-up times are required.

Some of the features of the LYOR series includes:

- The machine bed in normalised cast iron and the grinding wheel spindle is mounted on solid bronze bushes to ensure that our machines offer durability and stability.
- The grinding wheel spindle axis and automatic dressing modes.
- The work cycle can be optimised in-process through geometrical and work parameters.
- The semi-automatic T6 version combines excellent versatility and high quality standards to allow processing of small batch production workpieces, and even one off workpieces - in manual or semi automatic modes.
- The use of the linear encoder on the grinding wheelhead axis and automatic dressing compensation means that workpiece presetting is done only once, on machine set-up.
- The T6 machine version can be equipped with measurement devices or contact probes so that it is extremely fast and precise even when processing complex components.
- Equipped with the latest-generation SIEMENS 840 sl control system.
- The work cycle can be optimised in-process through geometrical and work parameters.

The LYOR series can be equipped with automatic measurement devices to process complex components.

The CNC version allows the operator to profile the grinding wheel in relation to geometries specifically created for the type of production required.

High precision crowning operations can be performed by equipping the machines with a third interpolated axis and along with bespoke software for this process.
ROBBI Internal Grinding Solutions

ROBBI IGR250 T6 SEMI AUTO & CNC INTERNAL GRINDING MACHINE

The OMICRON IGR-250 internal grinding machine is specifically designed for processing internal diameters and is particularly suited to workshops producing prototypes and small batch production workpieces.

ROBBI IGU400 CNC INTERNAL GRINDING MACHINE

The latest in High Precision, CNC Internal Grinders with up to 4 spindles.
- Up to 4 grinding spindles on the rotating turret
- Motor controlled by CNC & software. 2 axis interpolation & easily customised software to meet the application.
- Roller linear guides
- Axis movement by means of high precision recirculating ball screw
- Granite base
- 4 spindles for internal grinding
- One dedicated face-grinding spindle
- Tailstock to facilitate the grinding bore centering
- The rotation of the turret is automatic and the positioning is accurate and precise

ROBBI ‘SLIDING GAP’ MACHINES FOR IRREGULAR COMPONENTS

If you sometimes need to swing a large diameter component but find that the large diameter often comes with a long bed machine...

You should speak to RK International Machine Tools about the ROBBI sliding gap solution for the accurate grinding of irregular components.

Speak to RK International to discuss those shorter in length parts with large diameters for an effective ROBBI bespoke grinding solution.

Tel: +44 (0) 1322 447611
Email: sales@rk-int.com
Web: www.rk-int.com

ROBBI | LYOR Horizontal Tube Honing Machines

The LYOR series of ROBBI honing machines feature high rigidity and power.
- Hydraulically controlled honing head
- Gearbox transmission producing high torque.
- Three phase electric motor controlled by a vector inverter, servo-ventilated controlling the spindle rotation.
- Touch screen with easy programming.
- The drive transmission is through a gear-box in which the gears are hardened and ground, projecting high torque and stock removal.

ROBBI Lyor | Horizontal Tube Honing Machines

From 20mm to 400mm diameter bores and up to 8,000mm honing head stroke

ROBBI | LYOR Horizontal Honing Machines available as M or S Models

Max / Max bore diameter

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<thead>
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<th>Model</th>
<th>Min</th>
<th>Max</th>
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Max tube length

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Max honing head stroke

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<tr>
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Number of steady rests for honing head extensions

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Machine length

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Machine width

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<tr>
<td>M</td>
<td>3400mm</td>
<td>3400mm</td>
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The precision and reliability of the entire production range, together with an experience of more than 60 years in the field, have allowed DELTA S.r.l. to be successful in both Italian and export markets.

The use of the most sophisticated technologies, the everlasting research and the constant innovation and products optimization, enable the realization of a wide range of machines in order to comply with the most demanding customers.

DELTA S.r.l. has been one of the first Italian machine tool manufacturers to have its quality system certified according with the new standard UNI EN ISO 9001 : 2008.

Many and important references in a lot of industrial fields testify the quality of the grinding machines produced, which consists of 4 product ranges:

**DELTA ELLE Series:**
- Vertical axis grinding machines with fixed, rotary and swinging table available in 5 models; over 20,000 units sold all over the world.
- Exceptional material removal rates
- Quick, vertical feed via handwheel
- Fine feed with micrometre feed

**DELTA MAXI Series**
- Travelling column grinding machines, available in 9 models with grindable surfaces from 1200 x 750mm to 3000 x 1100mm with 2 different levels of automation - NC & CNC.

**DELTA MINI Series**
- Travelling column grinding machines, available in 3 models with grindable surfaces up to 1600 x 650 mm and 3 different levels of automation - Diastep, NC and CNC.

**DELTA MINI & MAXI Series**
- Travelling column grinding machines with stabilised Meehanite cast-iron structure:
  - Maximum rigidity
  - Removes a large amount of material
  - Flatness guaranteed

**MACSENSE HYDRODYNAMIC SPINDLE.**
- The spindle line has a Mackensen hydrodynamic bearing on the front and a pair of pre-loaded precision ball bearings on the rear.
- Zero wear (geometry guaranteed for a long period of time)
- Zero friction (super accurate surface finishes)
- High geometric and machining precision

**DELTA CNC models utilize the SIEMENS 840Di Control and digital drive package.**

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**AD5 Auto Down Feed**

Control Option - (except for the M & H series). All models are available to equip with an auto down feed control system (AD5) for greatly increasing operational convenience. Auto down feed system is to become 3 axes fully automated; thereby making operation even more convenient.

**PERFECT | Saddle type construction**

- **Construction:** Saddle Column Cantilever
- **Table Size / Max grinding surface:**
  - 800 x 1500mm
  - 1000 x 1500mm
- **Power cross feed approx.:** 1500mm/min
- **Auto cross feed increment:** 0.1mm to 15mm
- **Table speed:** 3 ~ 25mm/min

**PERFECT | Column type construction**

- **Construction:** Saddle Column Cantilever
- **Table Size / Max grinding surface:**
  - 800 x 1500mm
  - 1000 x 1500mm
- **Max distance: centre spindle to table:**
  - 700mm
  - 900mm
- **Power cross feed approx.:**
  - (option 500mm)
  - (option 900mm)
- **Auto cross feed increment:** 0.1mm to 15mm
- **Table speed:** 3 ~ 25mm/min

**PERFECT | Double column type construction**

- **Construction:** Cantilever
- **Table Size / Max grinding surface:**
  - 800 x 400mm
  - 600 x 1000mm
  - 500 x 1000mm
  - 700 x 1500mm
  - 500 x 1500mm
  - 600 x 2000mm
  - 500 x 2000mm
- **Max distance: centre spindle to table:**
  - 1500mm
- **Power cross feed approx.:** 3000mm/min
- **Auto cross feed increment:** 0.1mm to 35mm
- **Table speed:** 3 ~ 25mm/min
MELCHIORRE ELC Series can cover all the main applications present in the high precision components industry.

Fine Grinding and Super Finishing solutions

Fine grinding is a superfinishing process performed by removing a well defined amount of stock from two parallel flat surfaces of components requiring extremely precise geometric accuracies and exceptional surface finishes.

The high level of technology involved allows such machines to achieve the same quality as the conventional lapping process. Main advantages from the latter are the much higher production (5-10 times than the lapping) and the cleanliness of the process: in fact, considering that any free abrasive slurry is not used, parts coming off the machine don’t need any deep washing or special solvent fluids. Fine grinding technology is performed by Melchiorre with the double side machines series ELC.

MELCHIORRE ELC Series is designed for double sided fine grinding.

Designed specifically for the fine grinding process, the Melchiorre ELC machine series combines extreme structural strength, ball screw and load cell precise down pressure control, advanced electronic controls for process flexibility and ease of operation to produce the ultimate in part sizing accuracy.

Call RK International (+44 (0)1322 447611) for details on the range of single sided fine grinding machines.

Ideal for:
- Pump components
- Automotive injection, piston rings
- Bearings
- Technical ceramics
- Hard metal inserts
- Watch making
- Compressors
- Plus many more
Europa Jainnher conventional centreless grinders

<table>
<thead>
<tr>
<th>Machine</th>
<th>EUROPA JAINNHER</th>
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<tr>
<td>Workpiece</td>
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<tr>
<td>Hardness</td>
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<tr>
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<td>Traversing length</td>
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<tr>
<td>Ra</td>
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<tr>
<td>Rz</td>
<td>0.24μm</td>
</tr>
<tr>
<td>Rt</td>
<td>0.22μm</td>
</tr>
<tr>
<td>Rtm</td>
<td>0.20μm</td>
</tr>
</tbody>
</table>

Europa Jainnher JHC-18 CNC

Material: SCM415H
Hardness: HRC 59 - 64
Stock Removal: 0.2mm - 0.3mm
Cycle time: 40 seconds per piece

The advantages of centreless grinding, are not just for high volume production...

Centreless grinding provides a fast turnaround for rounding of stock material and quite often, suits lower production runs.

More efficient grinding solutions

- Huge time savings compared to traditional grinding.
- Fast loading of parts with easy automation options available.
- Parts fed automatically greatly reduced labour costs.
- Tight tolerances easily achievable.
- All spindles fitted with precision ground Hydrostatic Bearings with a high pressure oil film for added precision under heavy loads.
- All servo models equipped with a Japanese servo motor to control the ideal linear speed for optimum grinding results.

More efficient PRODUCTION centreless grinding from 2 axes to 9 axes grinding solutions:

- Offered with FANUC controls with automation options including: Gantry, Robot, Bowl, Hopper handling systems.
TURNING:
Manual, Electronic and CNC. Upto 3500mm dia swing x 12000mm between centres

MILLING:
Manual, CNC & Machining Centres including Vertical & Horizontal spindles

GRINDING:
Conventional, PLC and CNC. Surface, Universal, Internal, Centreless and Fine Grinding

THREAD ROLLING:
From 5 ton to 120 ton: Twin and Triple rolling die models.

SHEETMETAL & FABRICATION
Punching, Pressbrakes, Shearing, Folding and more...

PLUS MANY MORE...
Sawing, Drilling, Work and Tool storage, SPECIAL PROJECTS...

ONE OF THE WIDEST MACHINE TOOLS FROM A SINGLE SUPPLIER...
Speak to RK International to learn more on the wide range of machine tools supplied and supported.