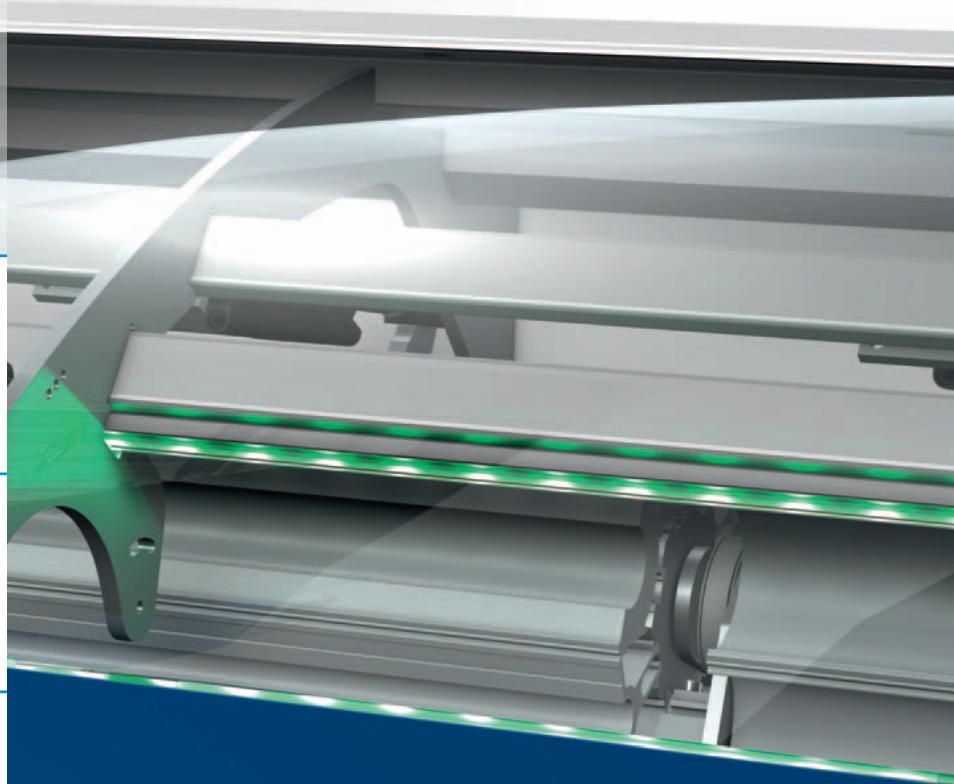
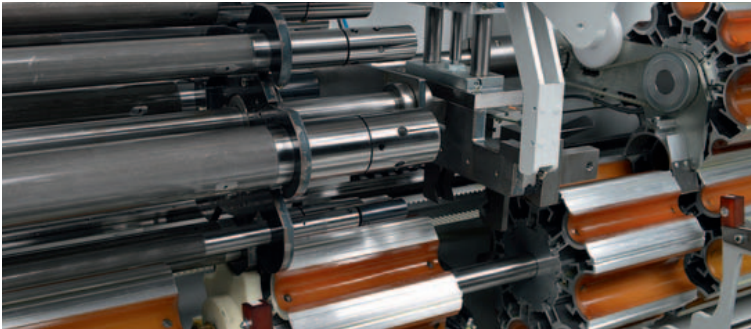


**Loading and unloading magazines  
for precision turning**

**PROFImat | SiMag | ILS TBL-RBL | ILS-REX/TEX**

## POWERTURNING





## IRCO high-performance multi-channel loading magazine PROFImat

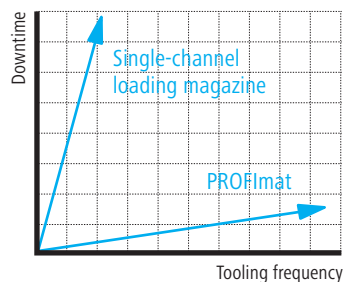
### The ideal partner for high performance lathes

The PROFImat is the ideal loading magazine for flexible, order-related turning operations. It is equipped with 8 (6) guide channels for optimum feeding of bars. The guide channels can be used in combination if required.

The PROFImat loading magazine turns powerful lathes into highly efficient production centres with low manning requirements. Other fields of application are machining centres and rotary transfer machines.

### Maximum flexibility for shortest delivery periods

Since the guide channels can be changed quickly and easily, production planners are able to realise fast delivery periods. Turning from the bar with the PROFImat makes sense and is economical for even the smallest of production runs.



### Options:

- Remnant retraction to the rear
- Electromechanical swivel device
- Positioning without stop
- Expansion of loading capacity with bundle loader
- For special requirements for positioning accuracy, appropriate systems are available on positioning accuracy
- Swivel device



The cover made of special glass enables a view onto the process in the loading magazine. For service operations the cover can be opened



The level of operation is shown via colored LED lights

### Low-vibration operation through robust machine construction

The sturdy construction, wear-resistant synthetic lining of the guide channels and oil circulation (hydrodynamic padding effect) enable smooth bar rotation – even at high speeds.

### Technical profile

- 8 (6) different guide channels with fast automatic change
- Guide channels with synthetic lining (wear-resistant and vibration-damping)
- Oil circulation for high speeds and low-vibration bar feeding (hydrodynamic padding effect)
- Quick guide channel changes at the press of a button
- Highly rigid, self-supporting housing
- Device for automatic feeding of rotationally symmetrical materials
- Positioning device for programmable bar starting position
- Operating terminal with touch screen
- Linear movement of the housing for changing of the spindle filler tube

### Economic facts

Optimum feeding of bars by 8 (6) integrated guide channels

Top speeds with optimum concentricity (reduces the load on the machine)

Minimises machine downtimes through super-fast channel switching (at the press of a button)

Designed for three-shift operation at maximum load

The perfect loading magazine for small to medium batches

### Economical production of the smallest batches



Material Ø: 5 to 130 mm  
Material lengths: 3 000 / 4 000 / 6 000 (10 000) mm  
Other lengths on request





# IRCO single-channel loading and unloading magazine

## SiMag

### Universal

The single-channel loading magazine is suitable for loading of all lathes. Standard as well as swiss type.

Other fields of application are machining centres and rotary transfer machines.

### Options:

- Remnant retraction to the rear
- Long turning version (L version)
- Spindle synchronizing (electronically)
- Coolant operation in lieu of oil

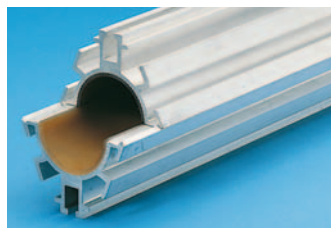
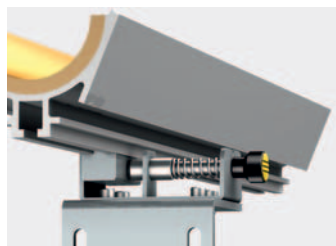
Note:

Also available as material feed system for machining centres

### Quick change technique

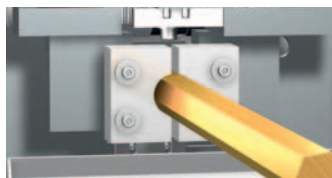
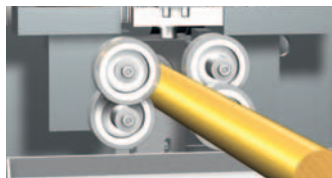
Thanks to the clip technique used, the guide channel segments can be changed quickly and easily.

This reduces tooling times considerably.



Two-part guiding segment of aluminium with highly wear-resistant synthetic lining. Also enables the machining of black bar stock

### Steady rest



Top picture:  
Settings for round material  $\varnothing > 22$  mm

Bottom picture:  
With jaws for profiled material and round material  $\varnothing < 22$  mm

### Technical profile

- Manually changeable guide channel with synthetic lining (wear-resistant and vibration-damping)
- Quick channel changes through clip fasteners
- Oil circulation for high speeds and low-vibration bar feeding (hydrodynamic padding effect)
- Highly rigid, self-supporting housing
- Device for automatic feeding of rotationally symmetrical materials
- Positioning device for programmable bar starting position
- Operating terminal with touch screen
- Linear movement of the housing for changing of the spindle filler tube
- Centering steady rest
- Loader is barely longer than bars
- Precise positioning without limit stop

### Economic facts

High-quality single-channel loading magazine with high-tech guide channel for maximum production loads

The robust design enables vibration-free processing of bars up to 160 mm in diameter and 6 000 mm in length. The use of longer bars reduces the amount of remnant

Top profitability for medium and especially for large production batches

Other guide channels can be ordered when needed

## Optimised for medium to large lot production



Material  $\varnothing$ : 5 to 130 mm  
Material lengths: 3 000 / 4 000 / 6 000 mm  
Other lengths on request



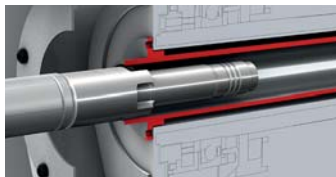
## IRCO workpiece automatic loader ILS-RBL + ILS-TBL

### The ultra-fast loading technology for highest productivity

The perfect solution for loading short or long workpieces, saw-cut or semi-finished parts through the spindle.

The ILS servo drive technology makes it possible to guide and position workpieces or semi-finished parts into the machine spindle in a fully automatic, position-oriented and process-integrated way. Due to this optimization of auxiliary process time, the productivity of any lathe can be significantly increased. The IRCO workpiece loading systems ILS-RBL and ILS-TBL are also suitable for counter-spindle lathes.

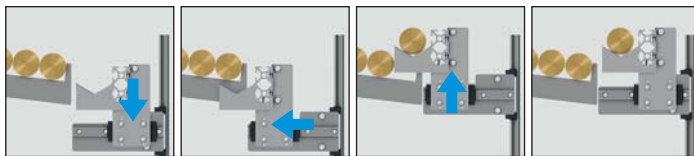
To accurately guide the workpieces or semi-finished parts, the spindle of the lathe must be equipped with a suitable spindle filler tube. For workpieces with complex contours, a customised alignment device is available.



For precise guidance of the workpiece, the machine spindle is equipped with a matching spindle filler tube

### Accessories / Options:

- Spindle filler tubes in any required design or size
- Spindle extension
- Pusher pads
- Bus interface



Quick reloading of the workpieces precisely positioned on the centre of the spindle

### Type versions ILS-RBL 80 / 100 or ILS-TBL 80 / 100

The ILS-RBL version is equipped with a chute for storing the parts. For storing complex or sensitive parts, the ILS-TBL version with a horizontal indexed conveyor instead of a slide is suitable.

The size of the loading magazines is based on the maximum length of a workpiece and the maximum bar capacity of the lathe concerned (80 mm or 100 mm).

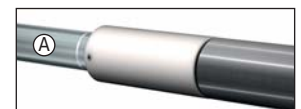
### Loading technology

The feeding of the workpiece is carried out in one step. The workpiece is inserted with the pusher rod, positioned or moved against a limit stop in a controlled manner.

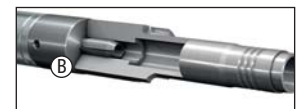
It is also possible to approach different positions successively or alternately.

### Brief technical profile

- The ILS-RBL and ILS-TBL loading systems are also suitable for use with single and counter-spindle lathes
- Rapid conversion to other workpiece diameter ranges
- Graphic display with touch screen
- Controlled workpiece feeding and positioning against the limit stop or without a fixed stop
- Single-stage workpiece feed; different positions can be approached successively or alternately
- The size is based on the maximum length of the individual workpiece and the maximum bar capacity of the lathe
- Interface to the machine



(A) Pusher pads for bar insertion



(B) Clamping sleeve for precise workpiece guidance

### Economic facts

Even long workpieces can be reloaded directly without opening the machine door

Suitable for short and long workpieces (wide range of workpieces)

Already profitable with very small lots

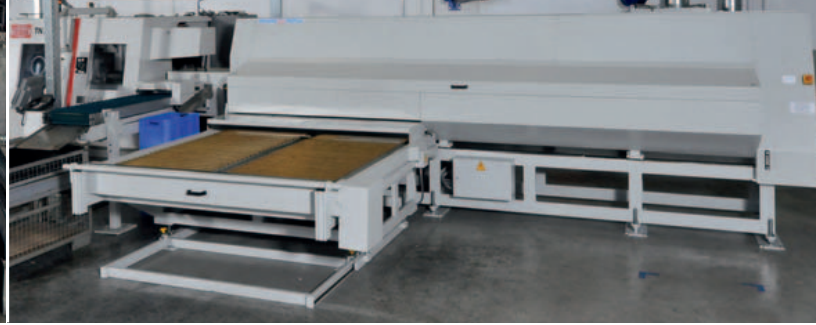
Also suitable for profiled workpieces, saw-cut or semi-finished parts

Designed for maximum utilization

ILS-RBL 80 / 100  
ILS-TBL 80 / 100  
Workpiece Ø: max. 80 / 100 mm  
Workpiece lengths: 800 / 1200 / 1600 mm  
Other lengths on request







## IRCO automatic lathe unloading magazine

### ILS-REX + ILS-TEX

#### Unloading workpieces quickly in a fully automatic and gentle manner

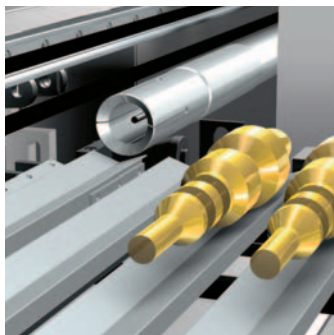
The rapid unloading technology brings about a continuous flow of material and enables the lathe to develop its full power. The extraction happens without opening the machine door.

The ILS-REX can be used with a single as well as with a counter-spindle lathe. A more automated parts concatenation with handling machines and magazines can also be delivered.

#### Reliable workpiece removal directly from the clamping device

The automatic, process-integrated removal of workpieces directly from the clamping device allows the systematic optimization of cycle times.

With three different types of standard elements taking up the workpieces (unloading tube, clamping sleeve and internal clamping device) it is possible to gently, safely and quickly to unload almost any workpiece.

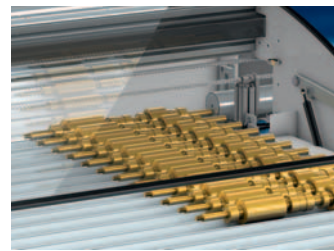


Unloading pusher with clamping sleeve for removing workpieces from the clamping device and positioning them onto the indexed conveyor

#### Workpiece positioning

For simple workpieces, a chute is used (ILS-REX).

For complex shapes, sensitive or non-linear rolling workpieces, a horizontal indexed conveyor is used (ILS-TEX).



ILS-TEX unloading system with indexed conveyor



ILS-REX unloading system with chute

#### Brief technical profile

- Fully automatic unloading of short and long workpieces
- Various unloading devices are available:
  - > Unloading tube
  - > Clamping sleeve
  - > Internal clamping device
- Optimal adaptation to the respective unloading tasks thanks to a servo drive with independent control of feed force and speed
- Graphic display with touch screen
- Interface to the machine
- Radial displacement of the housing for the change of spindle filler tubes
- Particularly suitable for counter-spindle lathes
- Gentle, axial access to the workpiece
- No machine stop due to opening the machine door

#### Accessories / Options:

- Spindle filler tubes
- Clamping sleeves, clamping device
- Bus interface

#### Economic facts

The automatic workpiece removal is an important criterion for an optimized turning process

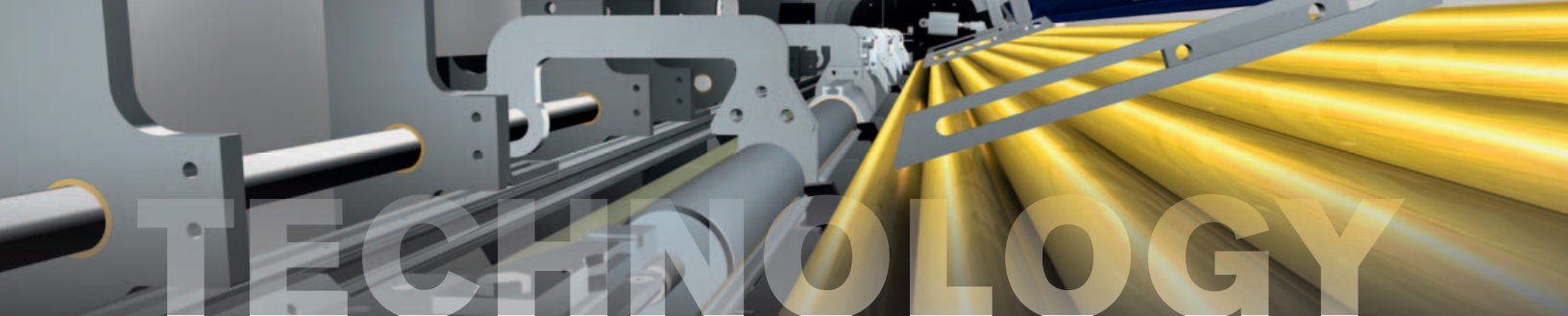
In counter-spindle lathes, the counter spindle can be unloaded while the machining process is carried out on the main spindle

With the combination of Breuning IRCO loading and unloading systems, the workpiece output can be increased significantly

The tried and tested unloading technology ensures gentle handling of the workpiece

ILS-REX 80 / 100  
 ILS-TEX 80 / 100  
 Material Ø: max. 80 / 100 mm  
 Workpiece lengths: 800 / 1 200 mm  
 Other material lengths on request





## Maximum machining output through process-optimised loading and unloading, ...

*High-performance turning cell for automated precision turning of long bars*



IRCO multi-channel loading magazine ecoPROFI

IRCO automatic lathe unloading system ILS-REX

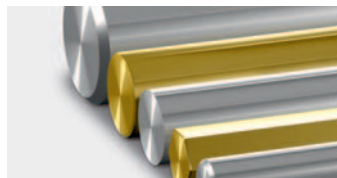
### Get 100 % performance from your lathes through non-stop loading

Breuning IRCO offers three types of loading magazines for different requirements: PROFImat, ecoPROFI and SiMag.

These loading magazines come in standard versions for bars in lengths of 3 000 mm, 4 000 mm and 6 000 mm. Special versions are also available for bars up to 10 000 mm long.

#### Automatic loading

The storage rack is kept "stocked" with bars. The bars get loaded into the guide channel automatically. The separator is activated when the upper guide channel segments get opened. It feeds the new bar into the guide



All Breuning IRCO loading and unloading systems are also suitable for profiled bars. An automatic insertion device ensures reliable feeding of profiled materials

channel, which is then closed again completely.

In loading magazines without remnant retraction the guide channel is loaded with a new bar while the previous workpiece is still being machined to save time.

#### Perfection through automatic workpiece removal

The IRCO unloading system ILS-REX and ILS-TEX are used for quick, fully automatic unloading of the workpieces "directly from the chuck".

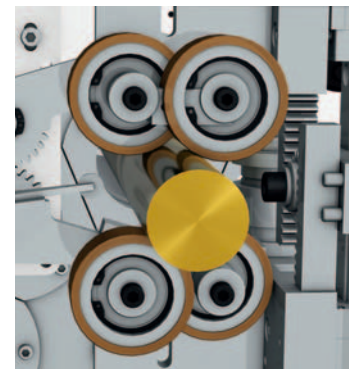
Every lathe can be turned into a highly productive turning centre with the loading and unloading systems from Breuning IRCO.

The interfaces are prepared for the machines of all well-known lathe manufacturers or can be adapted to them.

#### Positioning

The bar can be positioned in the chuck against a limit stop or with the pusher (option).

The servo drive technology guarantees immediate and controlled feeding of the bar through the spindle.



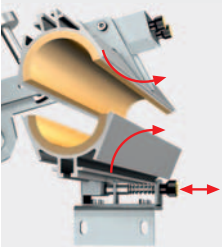
Centering steady rest between guide channel and spindle filler tube



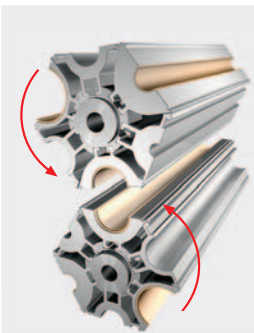


## ... minimum tooling times, turning processes without machine stop

### Time saving through super-fast changeover of guide channels



The single-channel loading magazine SiMag uses clip fasteners to allow quick manual changing of the guide channel without the need for tools



In the multi-channel loading magazines PROFImat and ecoPROFI channel changes are carried out in a matter of seconds at the press of a button

### Closed guide channel

A guide channel consists of several segments, which open step-by-step for the pusher.

The guide channels come in fine graduations for optimum guiding of different bars.

### Optimum utilisation of bars

There are two possibilities available for positioning of the bars in the lathe:

1. Positioning without limit stop
2. Positioning with limit stop  
> quick and very accurate

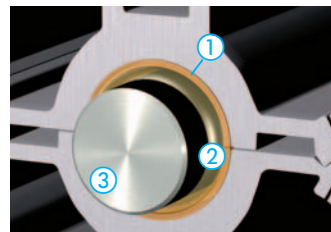
The control system of the loading magazine ensures a minimum remnant length.

### Process control

The control system monitors all sequences in the loading systems to ensure a reliable process.

### Hydrodynamic bar guiding

Oil is circulated through the guide channel continuously.



- ① Anti-vibration plastic coating
- ② Oil cushion ③ Bar stock

This and the rotating bar produce a hydrodynamic padding effect, which stabilises the bar in the channel. This results in optimum concentricity in bar rotation, which reduces the load on the machine spindle.

The oil padding bridges diameter increments and ensures low friction and almost vibration-free guiding of the bars in the channel.

Breuning IRCO recommends use of a tight-fitting guide channel for precision jobs.

### Spindle filler tube as extended guide channel

Spindle filler tubes matched to the guide channel guarantee optimum guiding of the bar in the machine spindle.

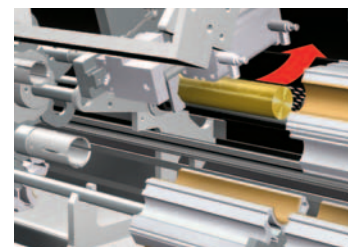
The spindle filler tubes can easily be changed by swinging the magazine housing in linear direction.



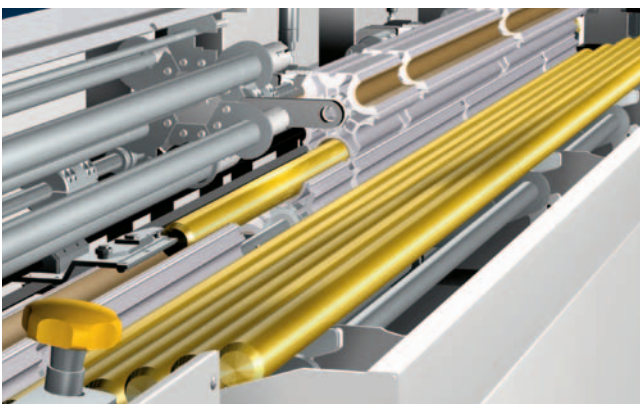
Spindle filler tubes can be delivered for every lathe

### Remnant removal

The remnant of a bar is either pushed into the lathe or removed by the magazine.

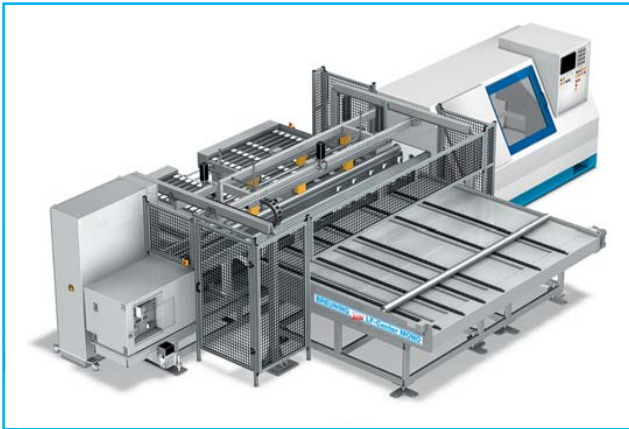


Automatic disposal of the bar remnant by optional remnant retraction

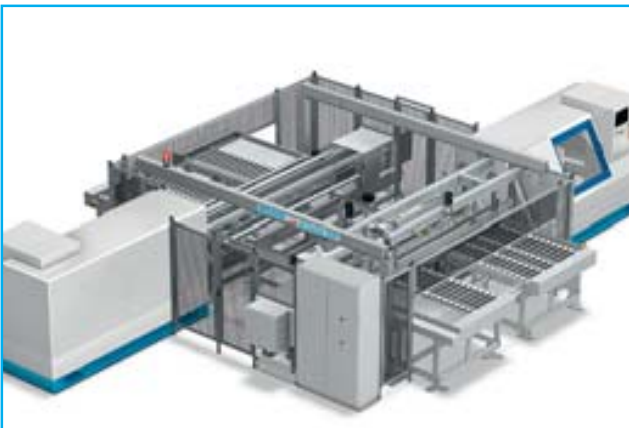


ecoPROFI loading magazine with open cover to show the storage rack and the guide channel with synthetic lining

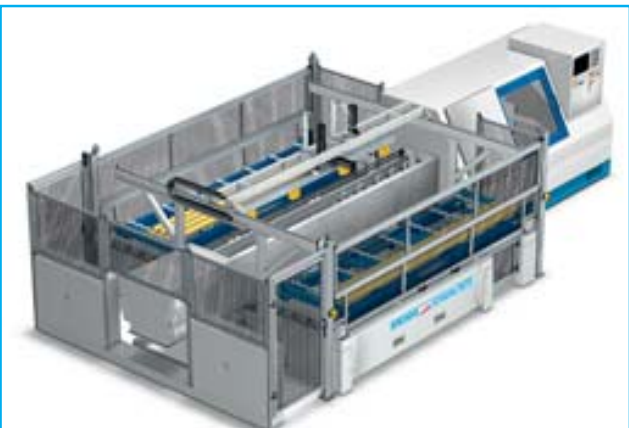
## Further products from the IRCO range



Steady rest centre MONO



Steady rest centre DUO



Steady rest centre ROTO

### Technological advice from the manufacturer

Breuning IRCO offers expert knowhow and competence – acquired in over four decades of work in the industry – for rational precision machining processes with a range of perfectly matched loading and unloading equipment.

If you are thinking about automating your turning operations, we recommend you contact us early on in your project for orientation talks with our technology consultants so that you can fully exploit the often hidden resources of modern lathes and machining centres for automation. On request we will gladly also compile a concrete profitability calculation for you.

The application reports in our magazine THE REPORT ON EXPERIENCE provide insights into specific solutions for different aspects of process automation. Contact us for further information or visit us on the Internet at **breuning-irco.com**

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