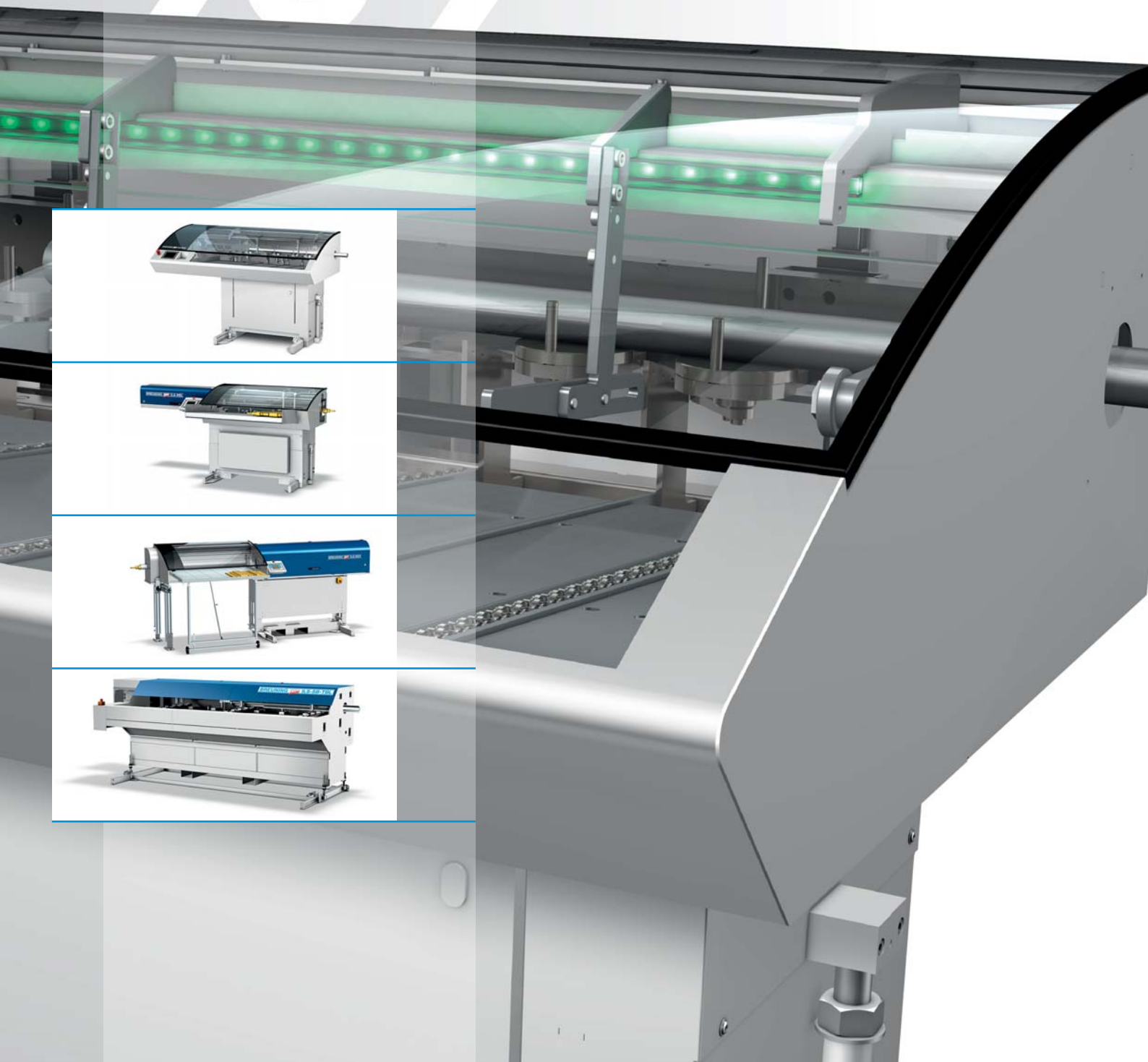


Loading magazines

for precision turning of short bar stock

ILS-MUK | ILS-RBL/TBL | ILS-SB-TBL | ILS-REX/TEX

POWERTURNING



TECHNOLOGY

Turning instead of standing still – process-optimized loading and unloading of lathes

High-performance automation peripherals for single and counter-spindle lathes



Example: IRCO multi universal short-bar automatic loader ILS-MUK 70

IRCO automatic lathe unloading system ILS-TEX

The lathe is loaded reliably and fast through the spindle

The "loading through the spindle" technology is suitable for short bar stock as well as for workpieces, sawn or semi-finished parts.

With its ILS-MUK 70 and ILS-MUK 100, Breuning IRCO offers two bar automatic loaders for loading short bar stock into the machine spindle.

The workpiece loading systems ILS-RBL and ILS-TBL are suited for the fully automatic loading of saw cuts or semi-finished parts into the machine spindle.

Spindle filler tubes for vibration-free turning

The close material guidance in the spindle filler tubes allows vibration-free turning, especially in rectangular and hexagonal profiled materials. Breuning IRCO provides individually manufactured spindle filler tubes for each type of lathe.

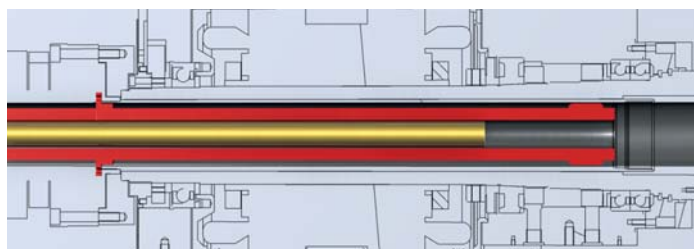
These spindle filler tubes are made of seamless precision steel tubes.

All spindle filler tubes are statically balanced before shipment for best turning results and to protect the machine spindle.

For maximum smoothness, the spindle filler tubes can also be supplied dynamically balanced (optional).



Spindle filler tubes



For turning from the bar, spindle filler tubes are used for guiding the material in order to relieve the clamping device



Sliding device for changing the spindle filler tubes on the lathe



IRCO multi universal short-bar automatic loader ILS-MUK

Precision loading of rotationally symmetric bar stock

Position-oriented, fast feeding of short bar stock. The completely new separator and guidance technology in combination with the sturdy design allows reliably precise positioning even of heavy bar stock.

Award-winning design and perfect visual inspection

The contemporary casing design with a full-vision glass dome has been combined with the signalling of the operating status by an LED band. This concept gives the operator the opportunity for complete visual inspection of what is happening in the ILS-MUK short-bar automatic loader.

Innovative, continuously adjustable bar feed

The fast automatic centring of the bar stock is combined with the adjustment of the feed device and the bar separator.

Due to this optimization of set-up times, the ILS-MUK loading system is worth using even for turning of the smallest series.

Loading technology

The feeding of the bar stock is carried out in two stages, which saves space. The load is controlled by a short pusher while being inserted into the spindle filler tube of the lathe. A pusher rod assumes the step-by-step positioning of the bar stock in the clamping device.

The active damping system ADS ensures gentle handling of the bar stock in automatic loaders.



Positioning of the bar stock in the clamping device

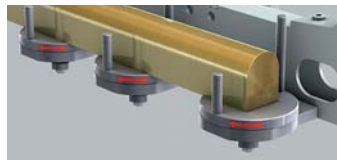
Brief technical profile

- New type of separation and guidance technology for the bar feeder
- Quick adjustment to material diameters (up to 70 or 100 mm)
- For the processing of rotationally symmetrical bar stock
- Rapid feed rate of up to 90 m/min
- Fully electric, no air pressure connector required
- Display of the operating status by an LED light band under the glass dome
- Simple change of the spindle filler tube by means of smooth pushing technology
- Virtually maintenance free
- Interface to the machine

LED light band



Automatic mode Reloading cycle Faults



ILS-MUK 70



ILS-MUK 100 for the feeding of large-volume, heavy bar stock

Accessories / Options:

- Spindle filler tubes in any required design
- Bar rest with chain guide for profiled materials
- Spindle extension
- Bus interface

Special features of size 100

- Possible special front end for adapting to the machine geometry ①
- Longitudinal shift (optional) ②
- Also available in a mirror image design

Economic facts

Optimal guidance of the bar stock by continuously self-centering guide units

The new type of separation and guidance technology for bar feeding ensures trouble-free operation

The perfect automatic loader for turning short bars in small to medium batch sizes

Designed for maximum utilization



ILS-MUK 70
Material Ø: 6 to 76 mm
Material lengths: 1 200 / 1 600 mm

ILS-MUK 100
Material Ø: 6 to 105 mm
Material lengths: 1 200 / 1 600 mm
Other lengths on request



IRCO workpiece automatic loader ILS-RBL + ILS-TBL

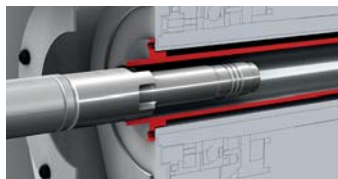
The ultra-fast loading technology for highest productivity

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.

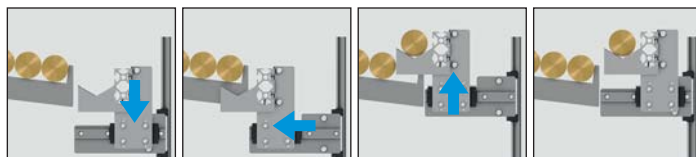
To accurately guide the workpieces or semi-finished parts, the spindle of the lathe must be equipped with a suitable spindle filler tube. For workpieces with complex contours, a customised alignment device is available.



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).

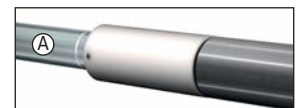
Loading technology

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 / 1 200 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.

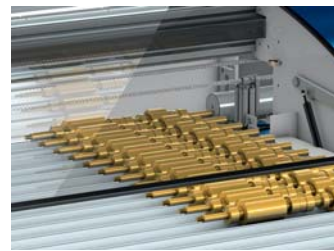


Unloading pusher with clamping sleeve for removing workpieces from the clamping device and positioning them onto the indexed conveyor

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

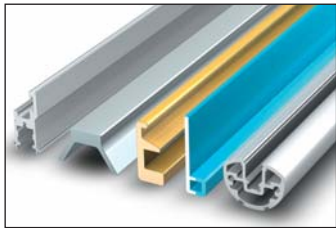


IRCO bar automatic loader for machining centres ILS-SB-TBL

Opens up the possibility to increase the productivity of machining centres, rotary transfer machines and special purpose machines

The possibility to use bar materials on machining centres, vertical or horizontal rotary transfer machines and special machines opens up new opportunities to considerably reduce machine downtimes.

The transfer to the clamping device is carried out automatically. The innovative guidance technology allows optimum support of bar stock even with difficult profiles when processing. The proven drive technology ensures controlled feeding and positioning.



Bar materials with different profile geometries can be guided safely

Optimal material utilization

Due to working from the bar, there is no need for sawing individual workpieces. Particularly with short parts, the elimination of sawing allowances makes a significant difference.

Accessories / Options:

- Guide channel segments
- Spindle filler tubes
- Bus interface

Provision of materials

The bar profiles are magazined on a indexed conveyor. A centring station ensures the exact positioning of the bar stock.



Indexed conveyor for magazing the material bar profiles in a defined position

Loading technology

The bar feed is individually adjusted to each profile. The bar profile is aligned automatically and pushed into the clamping device by the pusher rod. When doing this, various positions can also be approached.

The single-stage feed is done by a servo drive.

Brief technical profile

- Allows automatic feeding and processing of profiled bar stock
- Suitable for machining centres, horizontal or vertical rotary transfer machines and special machines
- Smooth feeding ensuring correct positioning
- Individual adjustment options for every machine type
- Interface to the machine

Economic facts

This enables a highly efficient production of complex workpieces from the bar stock

Flexibility in terms of manufacturing technology since there is no need for individual pieces to be provided by sawing

This ensures a very high product quality thanks to gentle material handling in the process



ILS-SB-TBL 120

Enveloping circle of profiled materials: max. 120 mm

Material lengths: 3 000 / 4 000 / 6 000 mm

Other sizes and lengths on request

PROCESSES

Minimizing downtimes – even universal machining centres can become more efficient by working from bar stock

Automatic bar stock feeders to increase productivity



SiMag single-channel loading magazine

Automatic loading of bar stock into the clamping device through the spindle

Many modern machining centres allow universal machining processes in order to be able to produce complex parts in a single clamping.

Universal machining centres in a travelling-column design with a vertical rotary indexing table or a rotary

spindle are ideally suited for efficient machining of bar materials.

The design of Breuning IRCO bar loaders is based on the conditions of the machine concerned and the bar stock to be processed.

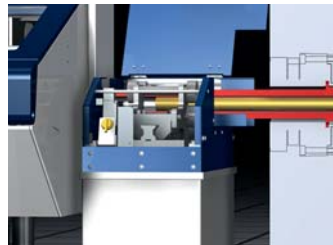
This applies in equal measure to rotary transfer machines and special machines which can also be set up for machining from the bar.

The following machines are suitable for bar feed: ILS-MUK, SiMag and ILS-SB-TBL.

Optional spindle extension for lathes and machining centres

If the bar stocks are longer than the machine spindle, then the latter can almost always be adapted by means of a spindle extension.

Spindle extensions are customized by Breuning IRCO.

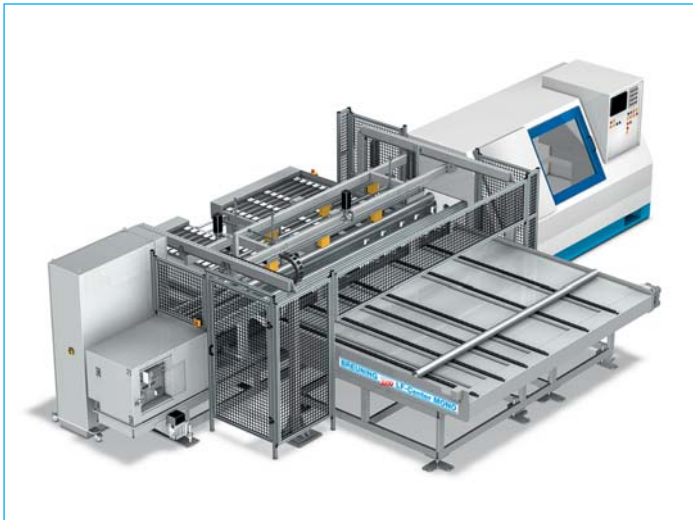


With the lid open ...

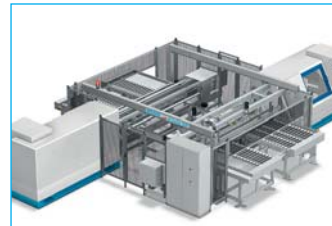




Further products from the IRCO range



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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IRCO high-performance multi-channel loading magazine PROFImat
Material Ø: 5 to 130 mm
Material lengths: 3 000 / 4 000 / 6 000 (10 000) mm
Other lengths on request



IRCO multi-channel loading magazine ecoPROFI
Material Ø: 5 to 50 mm
Material lengths: 3 000 / 4 000 / 6 000 mm
Other lengths on request



IRCO single-channel loading magazine SiMag
Material Ø: 5 to 130 mm
Material lengths: 3 000 / 4 000 / 6 000 mm
Other lengths on request



Unloading system SiMag ERV / PROFImat ERV
for unloading long workpieces (up to 10 m)
from counter-spindle lathes