



Pietro Cucchi S.p.A.



Located in ...



Automatic bar loaders for multi-spindle lathes. A specialized production representing the very heart of Pietro Cucchi.
A leading company for many years on the market.

The Pietro Cucchi automatic bar loader is a unit linked to the lathe and designed to feed the latter automatically without requiring continuous operator attendance.

A simple operating system for a product requiring high quality and technology.

Company **Pietro Cucchi** has its seat in Bussero, in the outskirts of Milan.

The Company was established in 1979 and has grown steadily over the years.

It currently has 50 employees. **Pietro Cucchi** manufactures more than 300 loaders a year.

Engineering and production are managed in-house, in an 8000 square meter facility. Quality and flexibility are guaranteed by a young and dynamic Research & Development team working in close collaboration with the operational departments.
Dynamic teamwork for a company in continual evolution.

And more recently ...



TECHNICAL SERVICE



After-sales service of Pietro Cucchi products is offered by in-house department of the company.

The after-sales service represents the most important resource for the customer and its promptness allows maximum reduction of machine downtimes.

Personnel carrying out a technical service, receive their training at the headquarters of Pietro Cucchi.

A guarantee of efficiency and top quality.

PRODUCT RANGE



Standard Multispindle Loader
Compact Multispindle Loader
Basic Multispindle Loader
ONE Single Spindle Loader



Standard Multi Spindle Loader



The multi-spindle loader of the "STANDARD" series by Pietro Cucchi are by now recognized and highly regarded all over the world. They were the first to introduce a series of advantages, combining accuracy, reliability, high production rates, and noiselessness. They experienced a continuous progress thanks to research and the introduction of a series of pioneering features which have confirmed their success year after year.

The stock reel and the lathe feeding system have been completely removed to turn the machine into a wholly automatic loader.

Removal of the feed fingers and consequent increase in the machining capacity of the lathe.

Bar feeding is performed by using a hydraulic motor for each spindle. A hydraulic distributor controls the flow of each motor, allowing feeding in multiple positions simultaneously.

Reduction of loading times down to 18", thanks to complete automation with an increase in lathe productivity up to 45%, without the need of limiting the spindle rotation speed or setting the drum indexing speed.

The use of die-cast components made of a particularly resistant and soundproofing synthetic resin in the bar guide drum allowed for a remarkable reduction in vibrations and the noise generated by the rotating bars.

The choice (upon request) of the latest Pietro Cucchi innovations - rotating centering devices, automatic spring bushing and fork centering devices - further adds to this benefit.

Operating devices



Rear Recovery of ejected bar remnants

The gripper unit is used to extract the unusable bar remnant and eliminates it at the back, from the bar pusher collet. Then it introduces the new bar into the bar pusher collet.

The rear bar remnant ejection has many advantages compared to front ejection because it avoids the risk of damaging the lathe tools and equipment as well as stoppage of the swarf conveyor and denting of pieces already contained in the basket.

An inside collet suitable for machining tubes is also available.



Work material loading rack

The bar magazine consists of a sloping rack and is designed to store the bars in preloading position. From there the bars are fed into the bar guide drum through a hydro-pneumatic mechanism.

A last bar selection device signals to the operator that the bars in the magazine are used up before the loader is stopped.

The bar magazine is located, depending on the models, on top or under the loader guide drum.

The revolving automatic loading assists the operator by relieving him of certain functions, with drastic saving on actual loading times.

Operating Devices



Bar end facing operation

The encoder is an electronic device for checking and end facing the bar. If the front end of the bar is damaged, the loader stops the feed of a new bar at an adjustable point, a few millimeters beyond the end facing tool.

Thus the first work cycle on the lathe serves for removing the damaged end of the bar.

Correct positioning of polygonal profiles

The encoder also checks for correct positioning of the polygonal bar in the lathe collets; it repeats the feeding operation if necessary until bar introduction is confirmed.



Independent feed system: bar pusher and bar guide

The bar pusher has three functions: it feeds the bar pushing against the lathe bar stop, it positions the bar in the lathe collet and guides rear end during the production cycle, also checking when there are no further bars.

A rotary collet is mounted at the end of the pusher. This collet grips the rear part of the bar allowing recovery of the unusable end remnant at the end of the cycle. The internal section of the collet is round, even in the case of polygonal bars.

Operating Devices



Independent feed system: Hydraulic distributor

The distributor is a device which directs the flow of hydraulic oil towards the motor installed in the bar feed station, thereby actuating the bar pusher.

In actual fact, the hydraulic feed arrangement of the bar pusher consists of 5, 6 or 8 motors connected to the distributor, the number of motors depend on the number of lathe spindles. The bar feed, after opening the collect, is performed as a result of the constant thrust pressure of the bar pusher, thus eliminating jerks and feed errors.

A simple and safe system, besides eliminate the lathe feed fingers, also allows long bar feeds at high speed.

The double feed option can be fitted when requested.



Connection with the lathe

The automatic bar loaders for multi spindle lathes fully replaces the stock reel and feed system of the lathe.

Interfacing with the lathe is through a drive coupling which transmits the indexing movement of the lathe to the loader according to the specification of the lathe model to which it is connected to.

Customizing is a guarantee for the customer who can be sure of the quality of the interface in both mechanical and electrical terms.

Centering Devices



As the name itself says, the **CENTERING DEVICE** serves to center but also to support and guide the bar. It is the outcome of Pietro Cucchi long years' experience in the field of automatic loading and it is generally used together. With the **AUTOMATIC SPRING BUSHES** directly fitted to the lathe spindles. These bushes are designed to guide the bar pusher and the bar along the entire spindle length up to the lathe collet. This remarkably improves the centering of the bar by the rotating centering device.

NEW FORKS CENTERING DEVICE into the guide channels reduce the swinging of the bars into the channels.

In this way it is possible to work the complete range of diameters for the specific bar capacity: from minimum to maximum in a single channel.

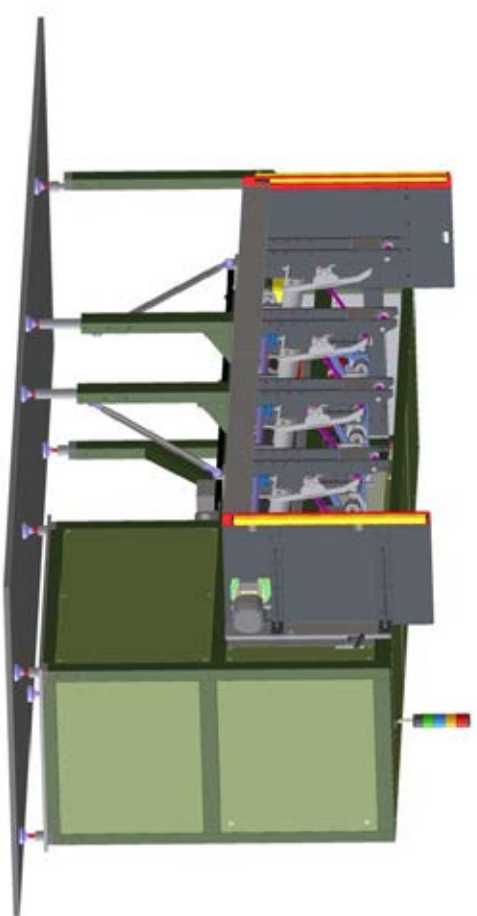
A small (big) masterpiece of technology which has introduced to the world new quality parameters in lathe machining - a quality you surely do not want to do without!

Compact Multi Spindle Loader



The revolution brought about in the bar loading phase by a series of mechanical innovations led to the creation of the "COMPACT" loader, which compared to the "STANDARD" models boasts the considerable advantage of carrying out the same machining operations in less space. Now our clients can freely choose the solution best suited for their working needs, without forgoing quality and flexibility, with all the innovations and inventions developed by Pietro Cucchi within this system: centering devices, spring bushing and also bar bundle loading that guarantee the highest level of automation in the loader feeding phase, where high production rates are required.

Basic Multi Spindle Loader



Increasing production by reducing labor: this is the key to the success of BASIC, the new automatic bar loader by Pietro Cucchi for multi-spindle lathes, available for 5, 6 or 8 spindles. A solution for lathe automation with no changes to the original feeding mechanism.

By removing the stock reel, it can be connected to any multi-spindle lathe model.

It is available both with channel capacity equal to the lathe maximum capacity and in the version with interchangeable channel sectors.

It provides a compact assembly with very limited dimensions, especially the length.

Practical, simple and reliable: the bar is loaded into the guides by a series of pneumatic devices. Then the electrically operated bar pusher pushes the bar through the feed finger until inside the collet of the lathe. During the machining stage, the bar is fed by the lathe feeding system (feed fingers).

The palm-top-type portable control panel features complete diagnostics functions and allows the operator to set all operating parameters.

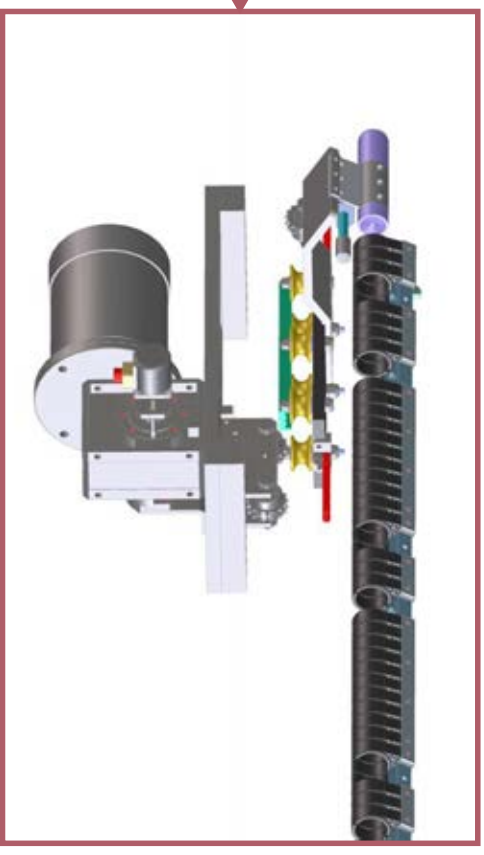
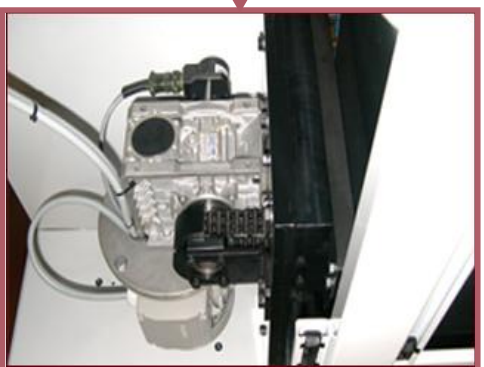
Basic Multi Spindle Loader



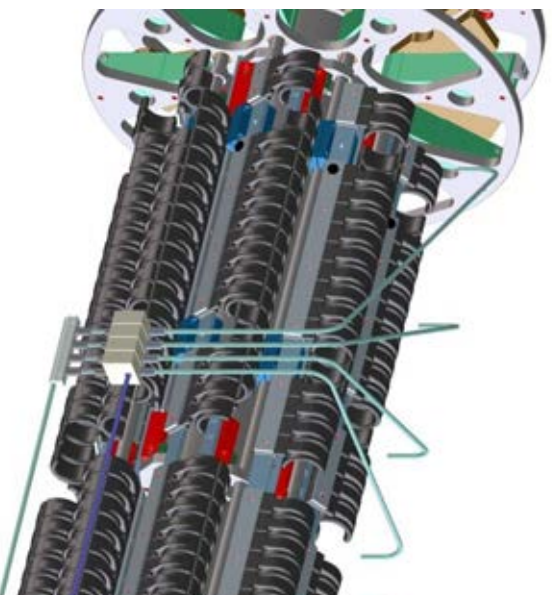
A Programmable Logic Controller (PLC) ensures the system reliability and flexibility and provides for automation of all functions.

The control panel allows to set speed and torque of the bar pusher.

The drive with electric motor allows controlling the force applied to the bar in a specific manner for each phase of the loading, by changing the introduction strenght in order to adapt to the resistance of the feed collets.

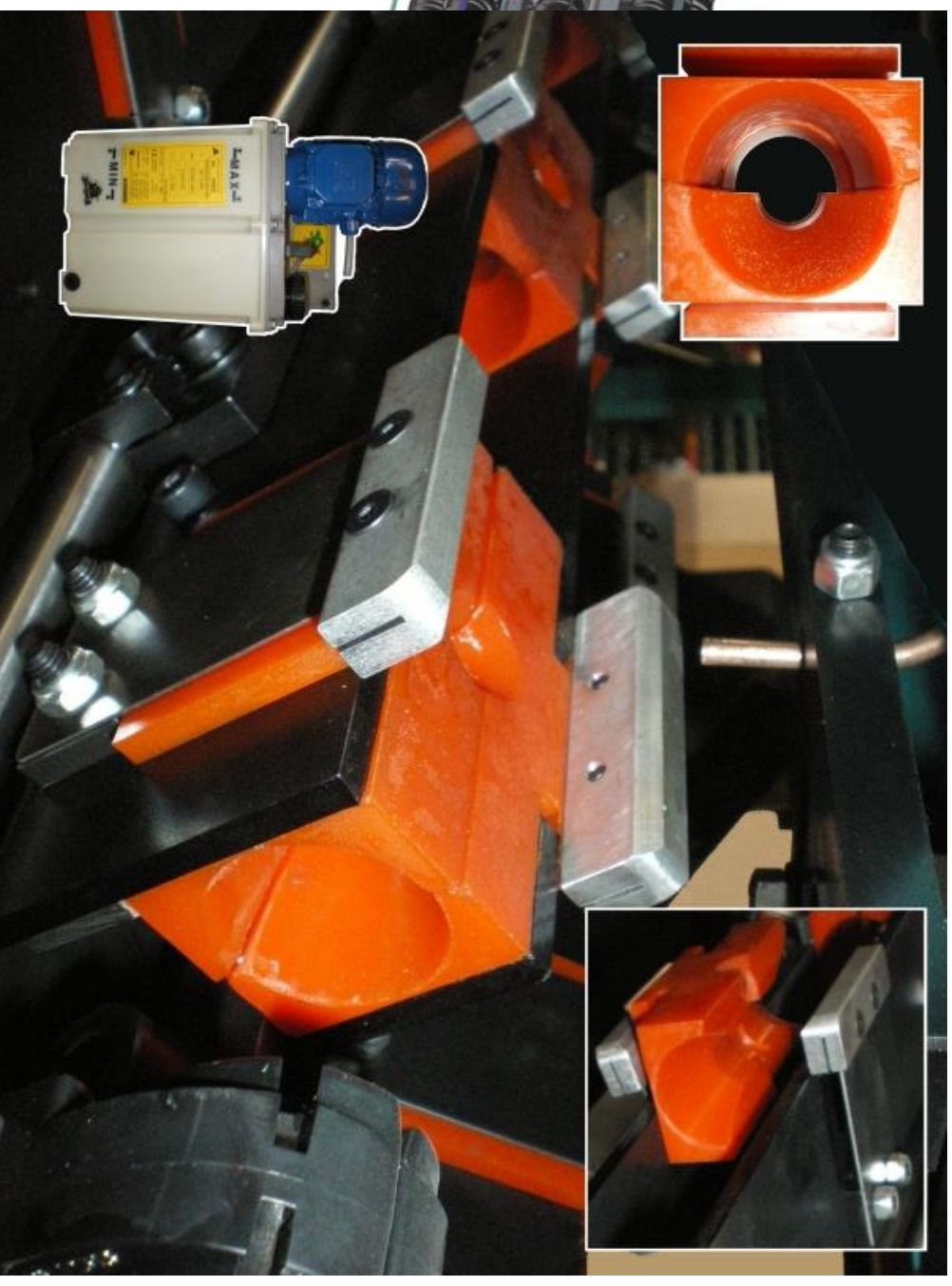


Basic Multi Spindle loader



Rapid interchangeable guide system with sectors, that are adaptable to the bar diameter for a perfect control of the bar during rotation.

The drop feed lubrication ensures the rolling of the bar without any wear of the guides.



ONE Single Spindle Loader

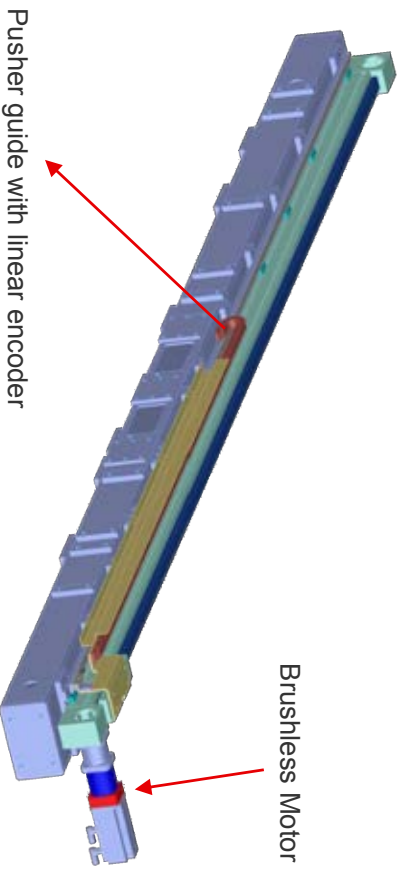


ONE,

The future is born thanks to yesterday's experience
and today's technology.

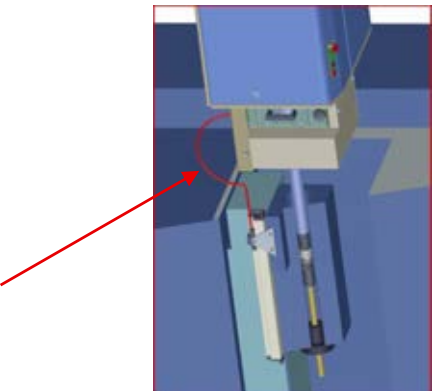


ONE Single Spindle Loader

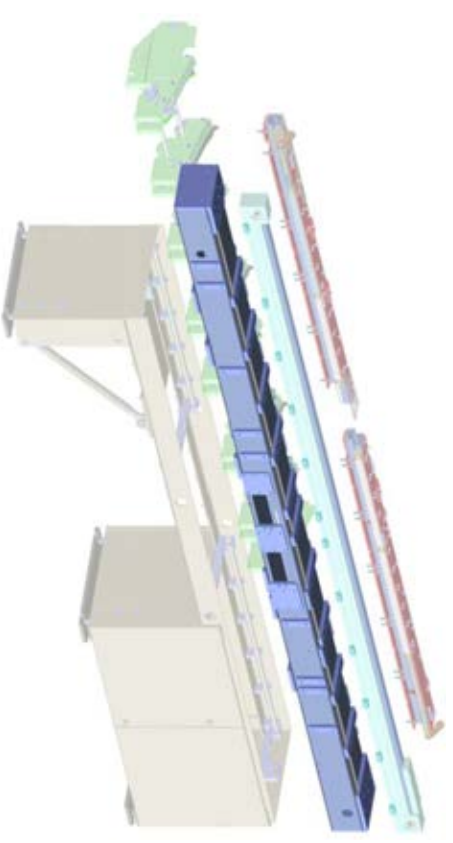


MAIN BODY STRUCTURE
Steel structure of the weight of 1500/2300 Kg
(depending on model) anchored to
the floor

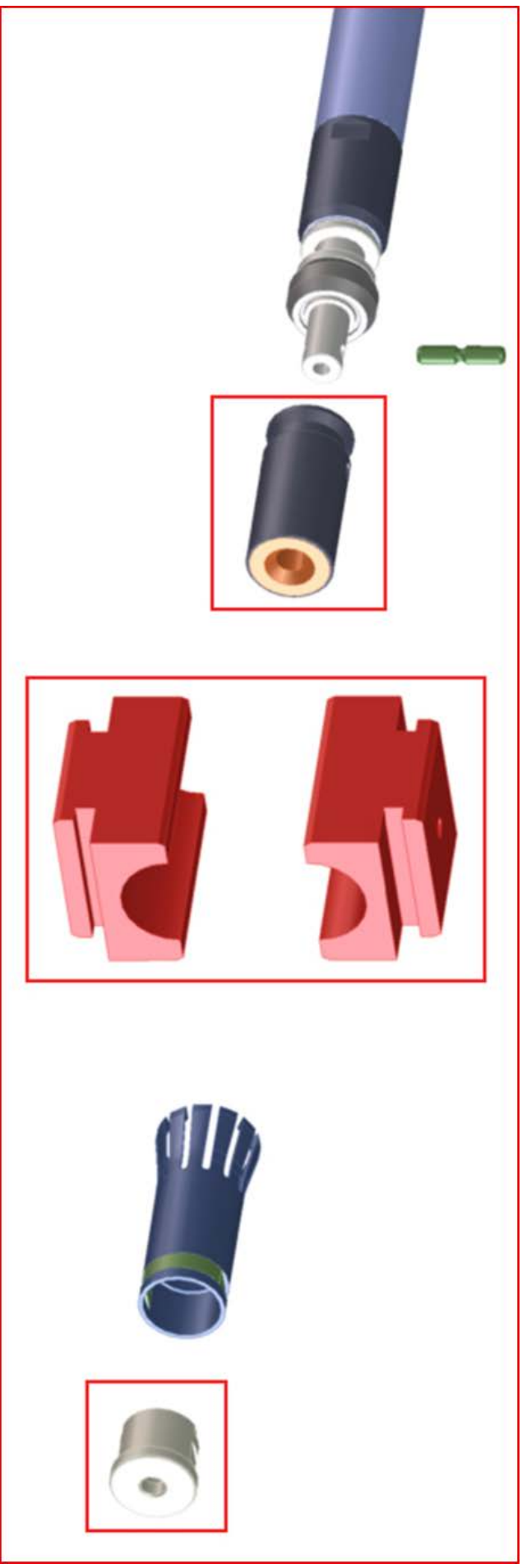
FEEDING SYSTEM
Feeding linear system aimed to
a precise bar feeding.
Maximum bar positioning
accuracy (less than 0.2 mm)
thanks to the axis motor.
Sliding headstock lathe
synchronization based on an
electric axis system.



By-Wire synchronization with swiss-type lathes

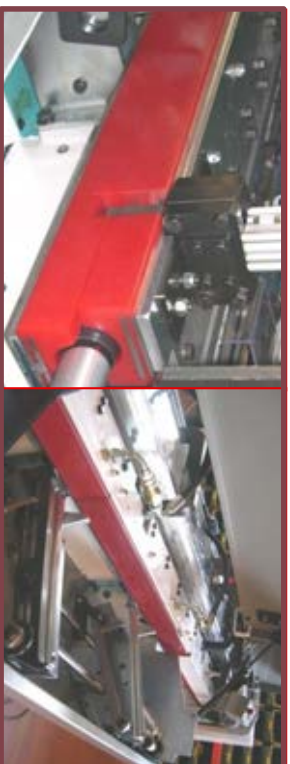


ONE Single Spindle Loader

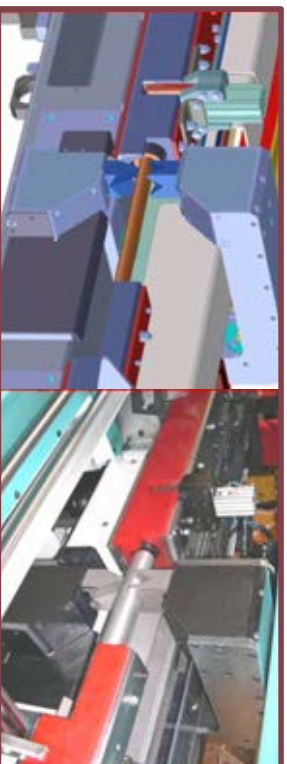


FAST CHANGE OF THE MACHINING
(less than 10 minutes) through the replacement of the highlighted elements

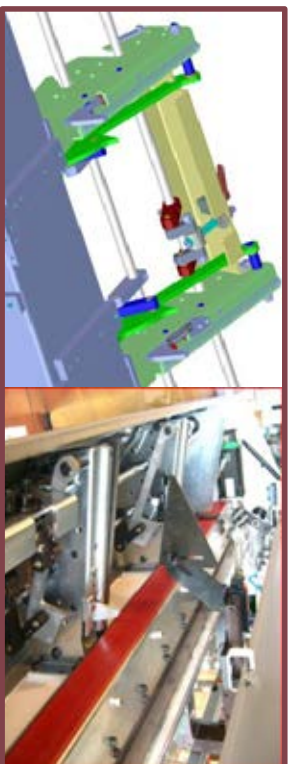
ONE Single Spindle Loader



Just one oil bath lubricated bar guide channel



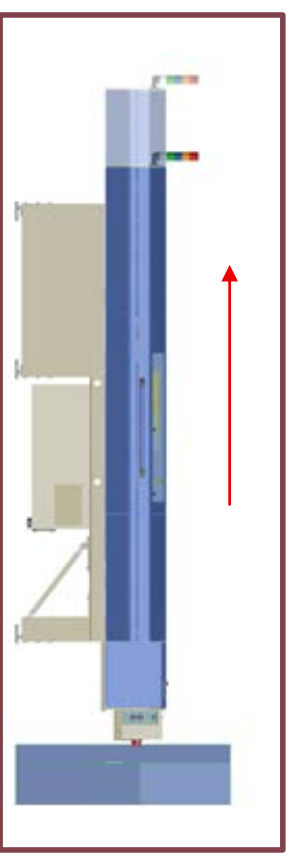
Withdrawing and unloading of bar crop-ends with new self-centering pneumatic ejector



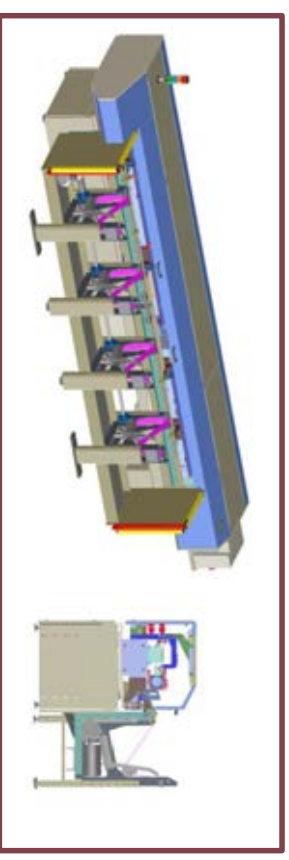
Centralized adjustment of bar rack



Oil bath lubricated pneumatic bar centering device between loader and lathe and automatic spring bushing inside the lathe spindle



Retractable independent top unit by 800mm



Also available with integrated bundle magazine

Thank You

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