Rover 20

CNC Machining Centre

Rev.00 dtd 25.01.2002

Rover 20

- Numerically Controlled Machining Centre For handicraft production it grants a wide product range with high-quality finish.
- For furniture industries it performs the machining of special parts, not suited for automatic lines.

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Workings

Furniture manufacturing

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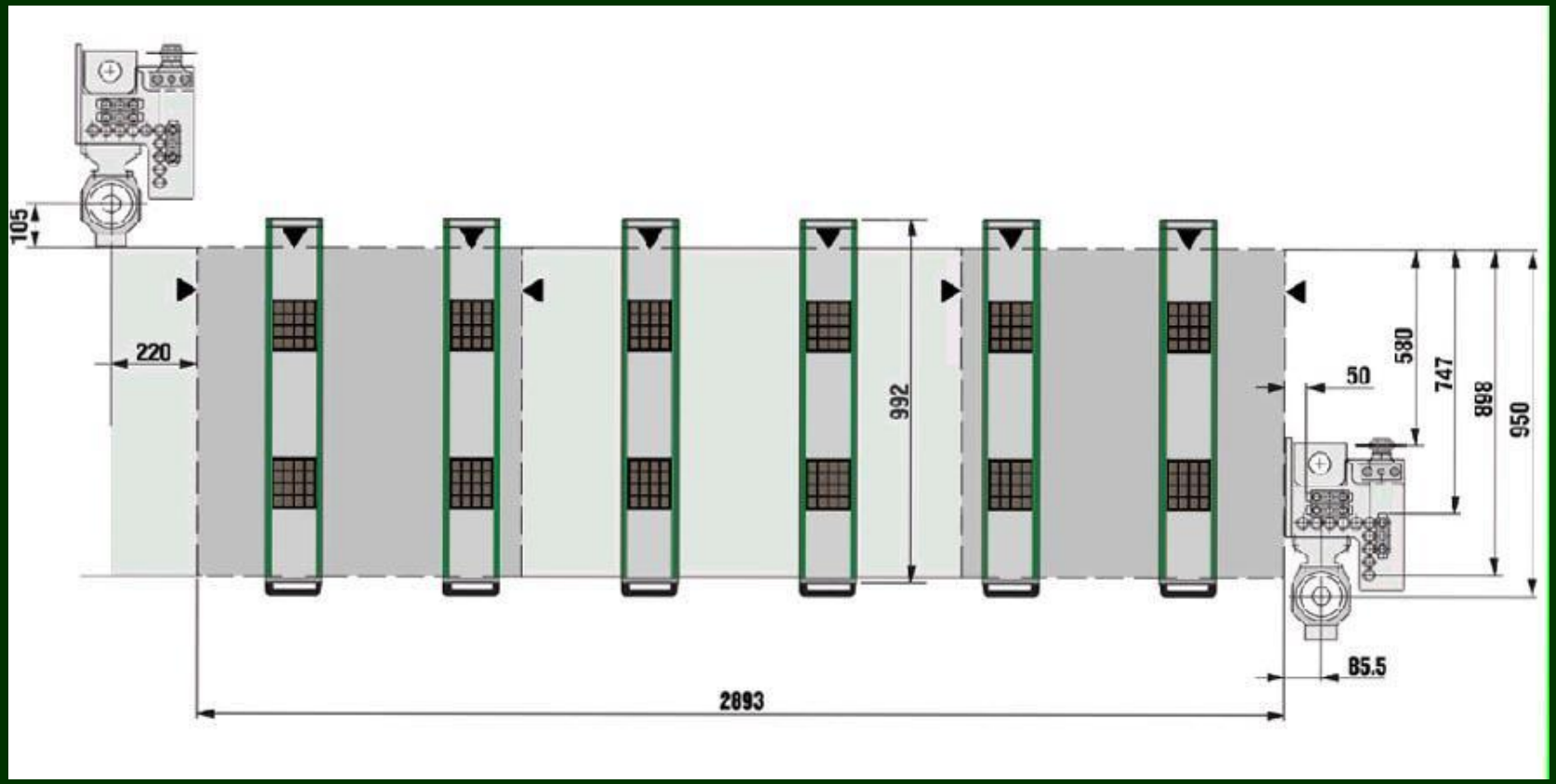
Working field



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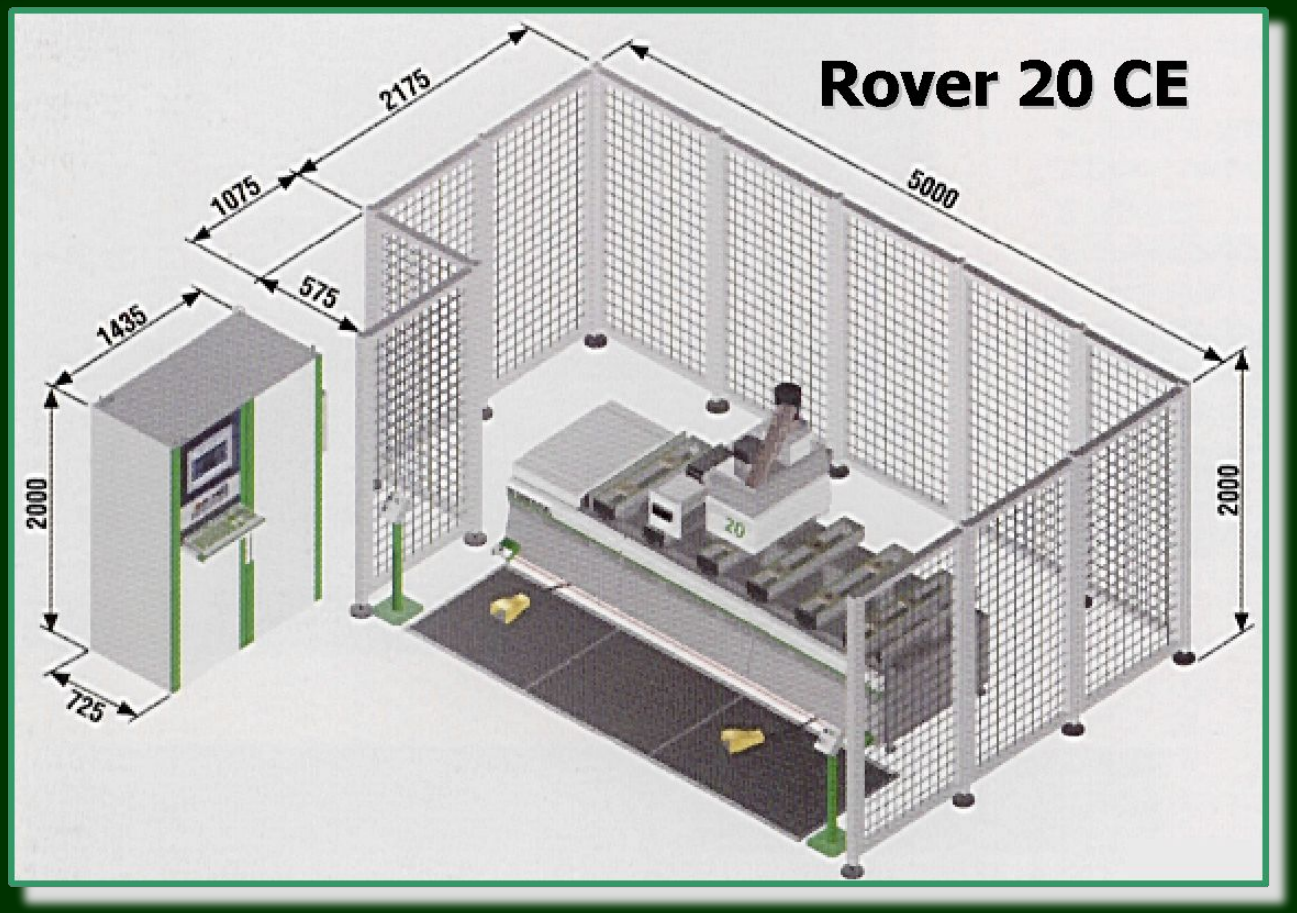
Wide working field within reduced dimensions

Working fields

X= 2.983 mm
Y= 950 mm
Z=65 mm



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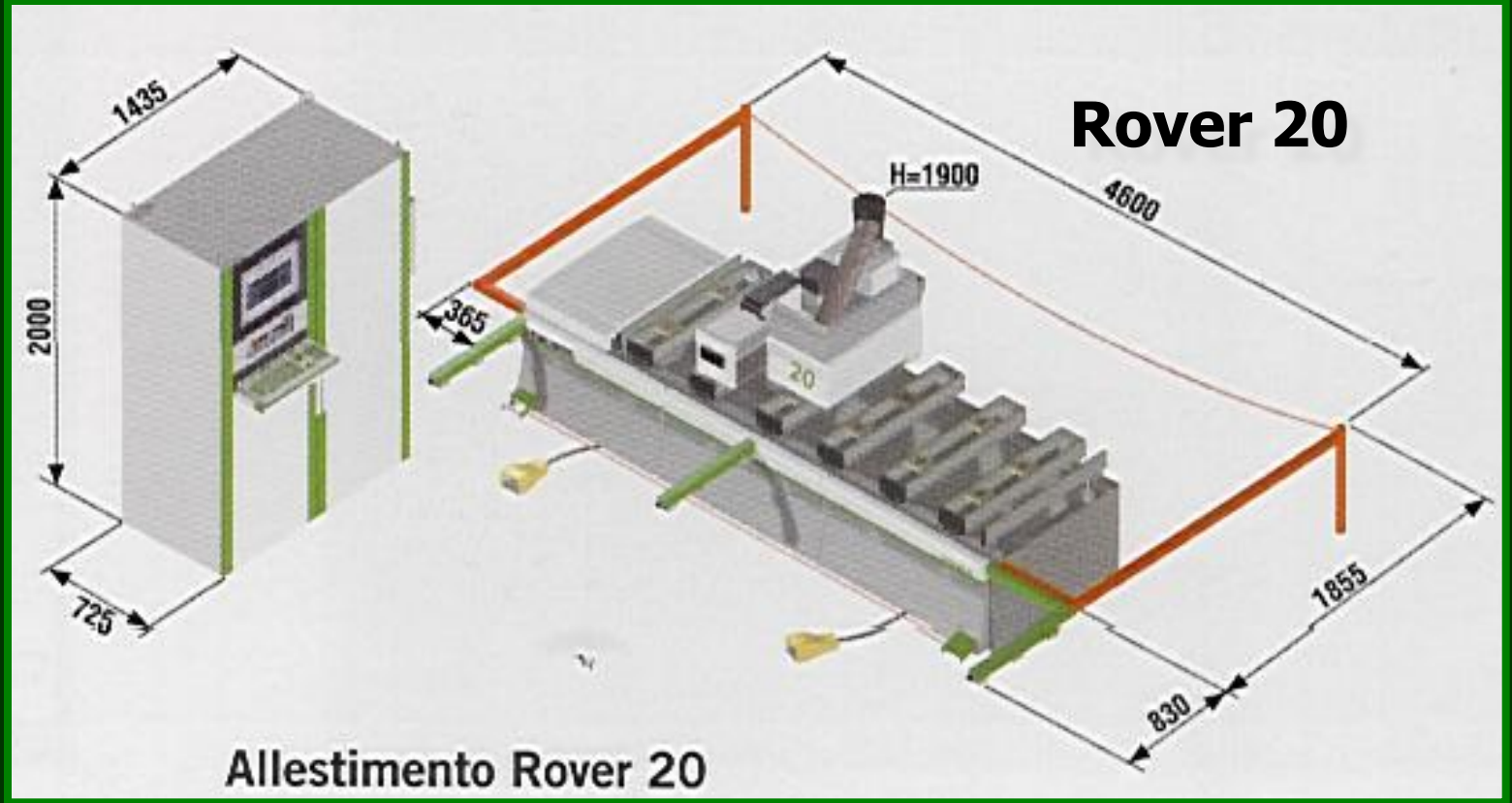

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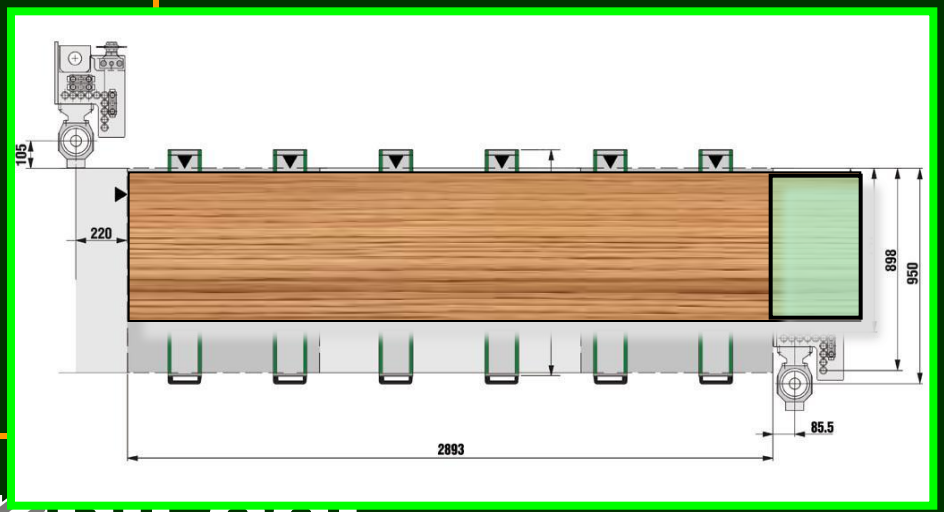
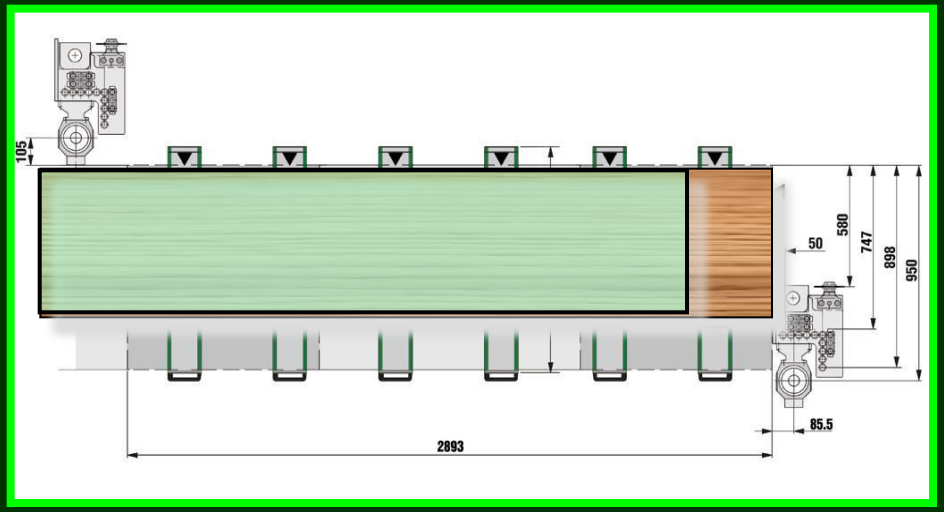
Max. X dimension of workable panel with double positioning Rover 20 CE

- Piece on the RH stop (Y = 845 mm max) : 1080 mm
- Piece on the RH stop (Y > 845 mm) : 750 mm
- Piece on the LH stop : 530 mm





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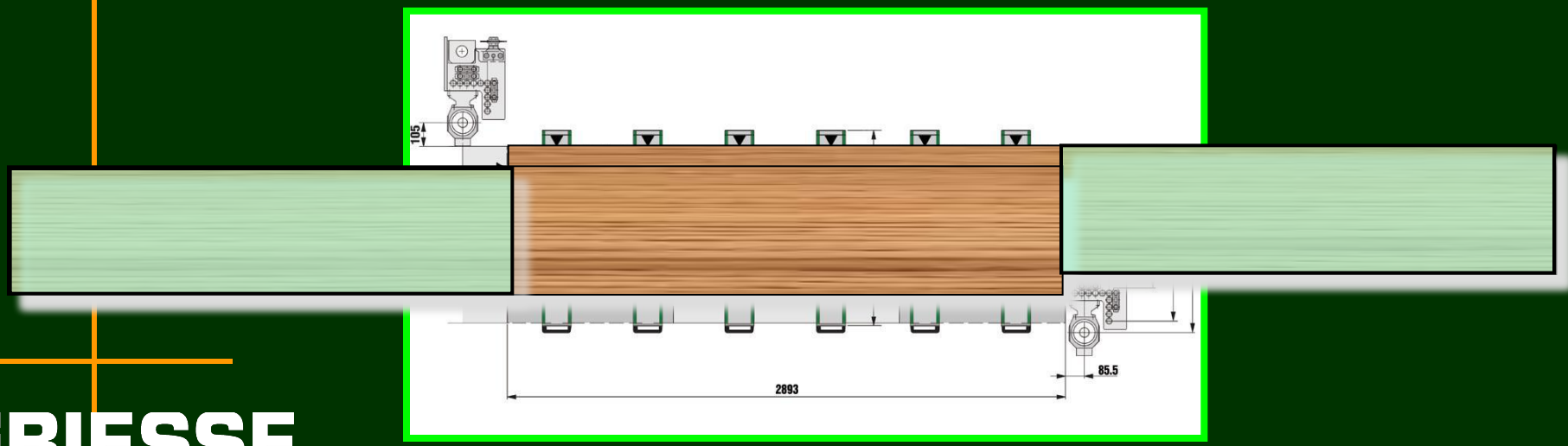
Max. X dimension of workable panel with double positioning Rover 20

- The perimeter mesh guards are lower than the work table, therefore the max. workable panel is:
  2.893 x 2 = 5786 mm



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Advantages of double positioning

The main advantage of positioning 2 panels on the work table (even small ones) consists in the fact that furniture assembly holes are machined with extreme precision

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High productivity

- Pendulum machining covering the loading/unloading downtime
- High speed for all machine axes

Example :

	machining time (sec)	loading / unloading time (sec)	work area set-up (sec)	X axis movement - pendulum (sec)	tool change (sec)	total time - 1 piece (sec)
Times	15	15	30			
BHC 250 single area	15	15	30	2,1		62,1
BHC 250 2 areas - laser	15		30	2,7		48,6
Rover 20 2 areas - displays	15		15	2,3		32,3

Yearly productivity:	seconds/year	time/piece	pieces/year	differences
BHC 250 single area	5544000	62,1	89275	0
BHC 250 2 areas	5544000	48,6	114074	24799
Rover 20 BHC 250 single area	5544000	32,3	171641	82366
Rover 20 BHC 250 2 areas	5544000	32,3	171641	57567

2,1 seconds to return to working origin n. 1	60 m/1'
2,3 seconds to cover 2893 mm (Rover 20)	75 m/1'
2,7 seconds to cover 2750 mm (BHC 250)	60 m/1'



Machining head

- **Boring unit**

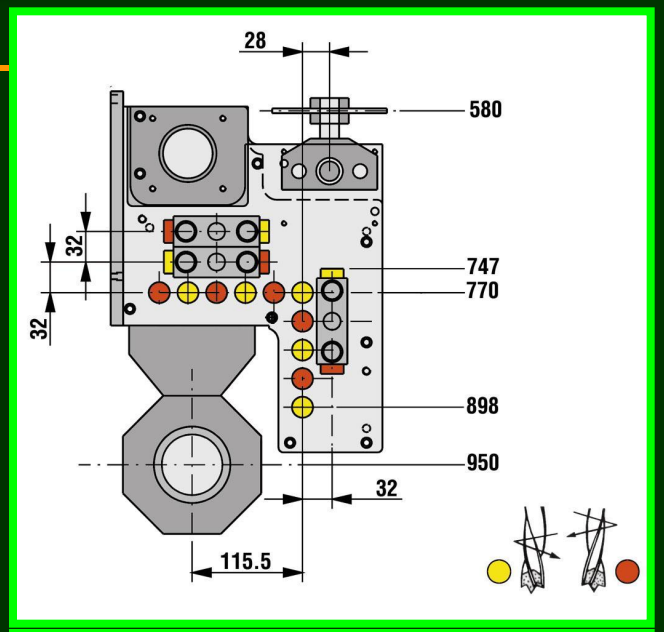
  10 vertical spindles (5 +5)

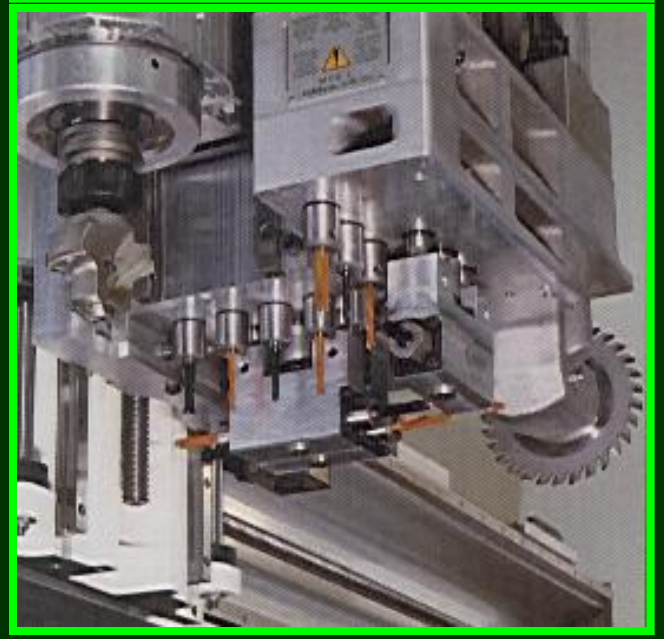
  6 horizontal spindles (4x+2y)

  120 mm sawblade in X

- **Routing unit**

  ISO 30 electrospindle





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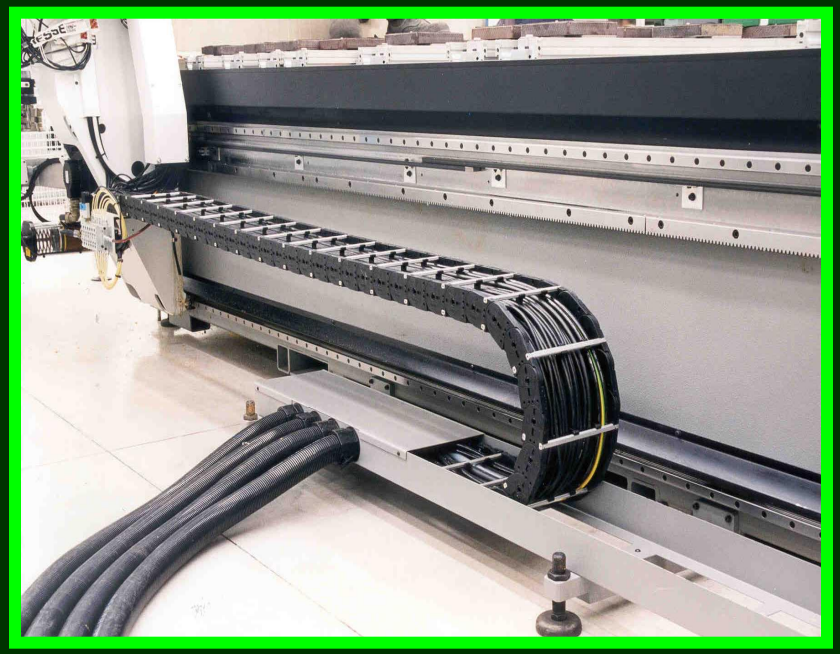
"X" Axis

Movement by a rectified helical rack and preloaded double pinion to eliminate backlashes and grant high vibration-free speed

Sliding on high precision prismatic linear guides with ball runners

Axis speed = 75 m/min

Travel = 3.194 mm



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“Y” Axis

Movement on ball screw equidistant from the sliding guides (balanced solution = components longer life). The ball screw is rolled.

Sliding on prismatic linear guides and ball runners.

Axis speed = 45 m/min

Travel = 1.055 mm

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“Z” Axis

Movement on ball screw

Sliding on linear guides and ball runners. The optimal weight balance of the operating unit is granted by two pneumatic cylinders

Axis speed = 15 m/min

Stroke = 110 mm

Loadable piece = 65 mm

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7 places in tool changers

- Revolving ATC with 3 places, on-board of "X" axis

  It allows:

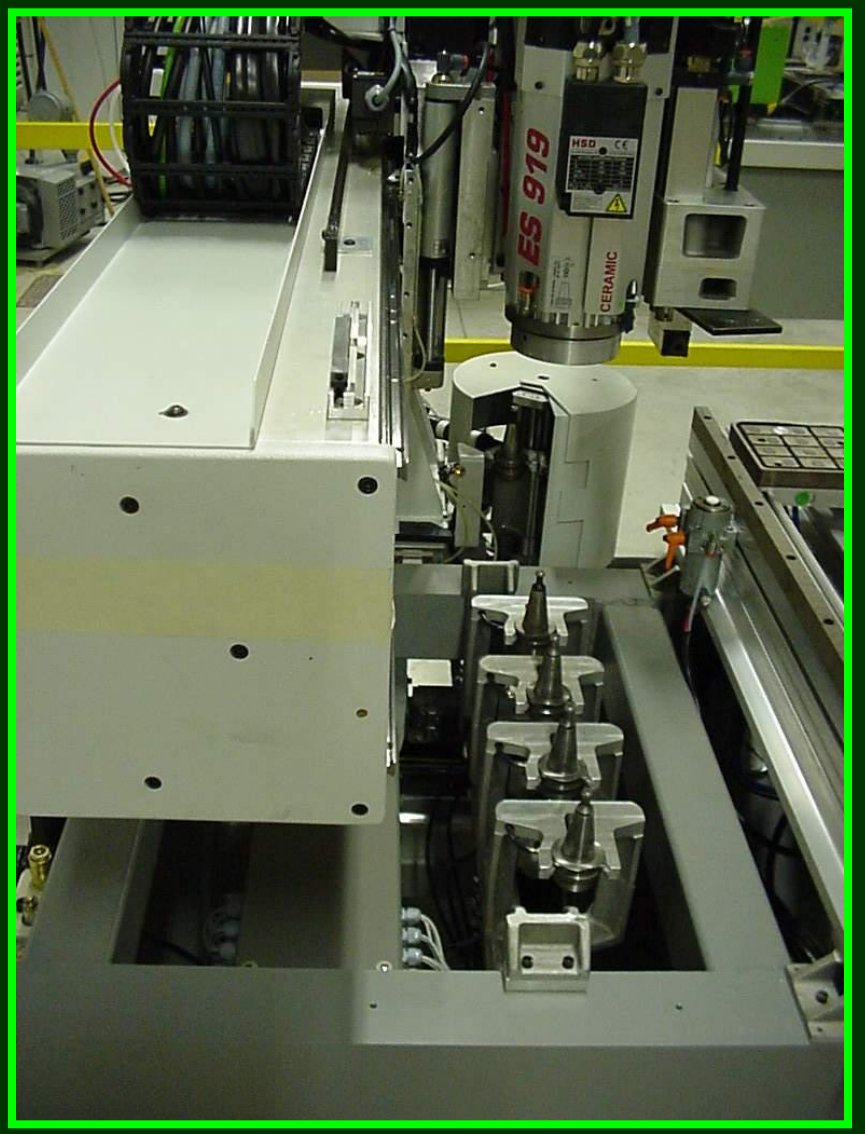
  - the storage of 3 tools with dia. 60 mm

  - fast tool change

  - tool change during pendulum machining

- ATC with 4 places at machine side

  It allows the storage of 3 tools with dia. 100 mm + 1 tool with dia. 120 mm or available aggregates



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Fast and safe tool change

The machine is equipped with sensors to avoid collisions, constantly checking:

Revolving ATC with 3 places

- if the tools are in the tool-holders
- if the tool changer cover is open or closed
- if the pneumatic rotation has taken place

ATC with 4 places

- if the tools are in the tool-holders
- if the tool changer cover is open or closed
- if the tool grippers are high or low

The NC checks if the tool changer cover is closed before starting any machining, to protect the tools from chips.

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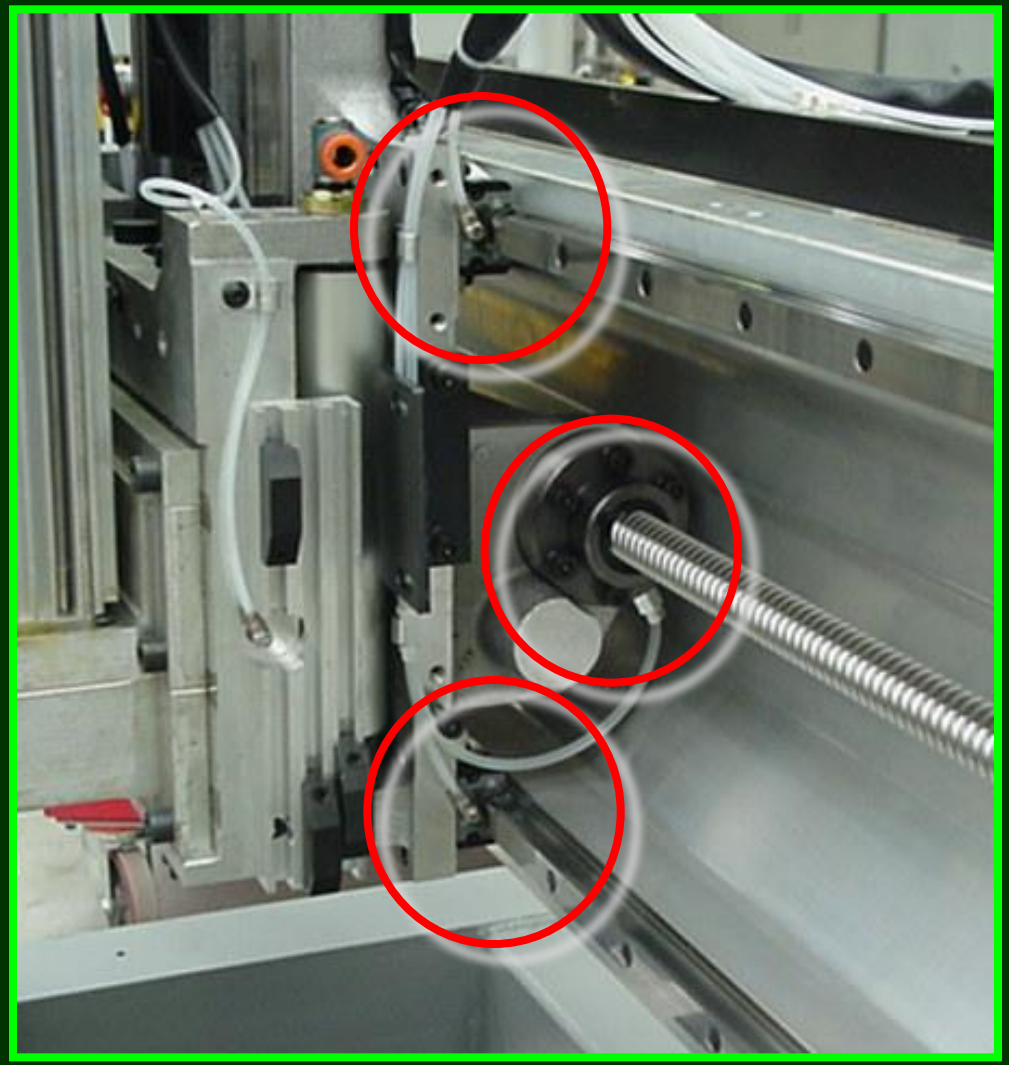
Centralized lubrication system

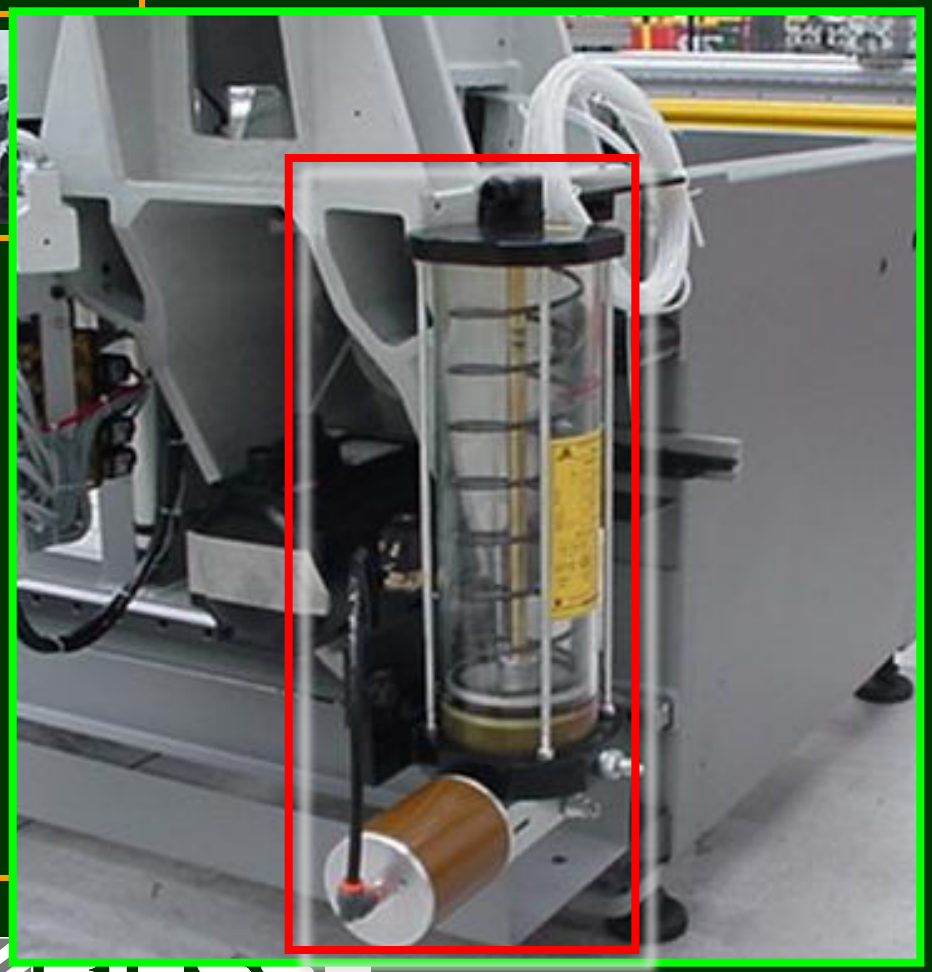
of X - Y - Z axes linear guides

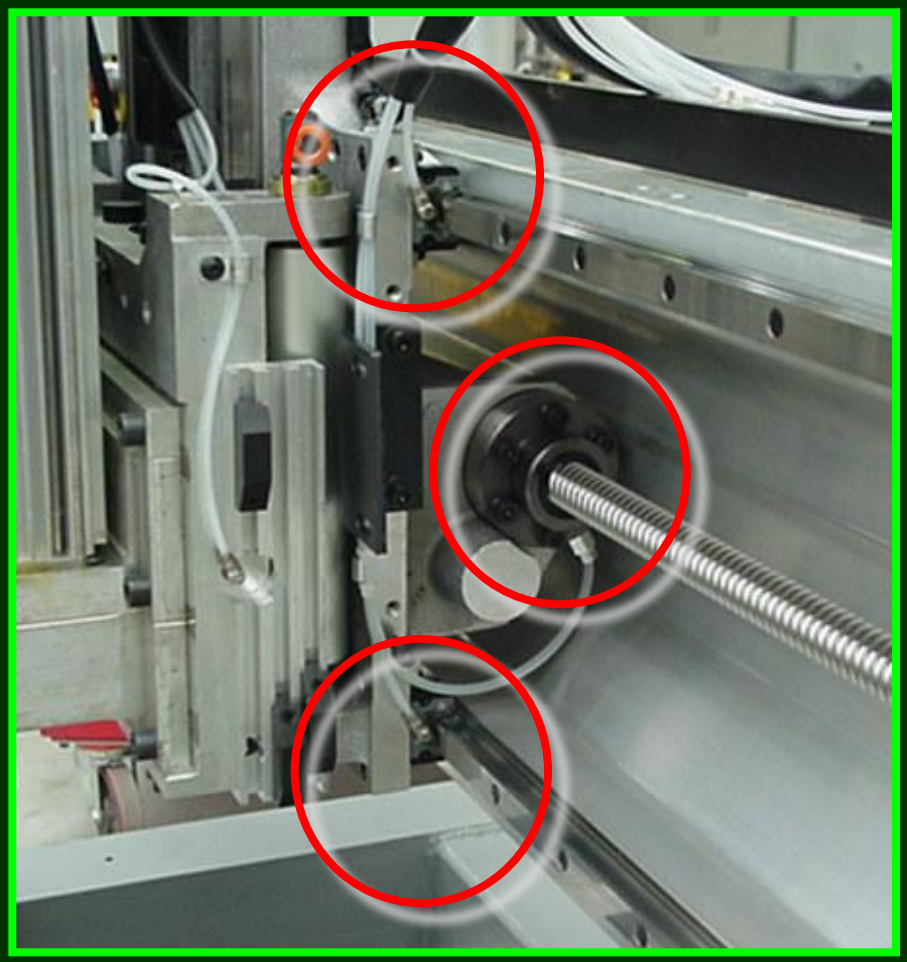
and of Y - Z axes ball screws



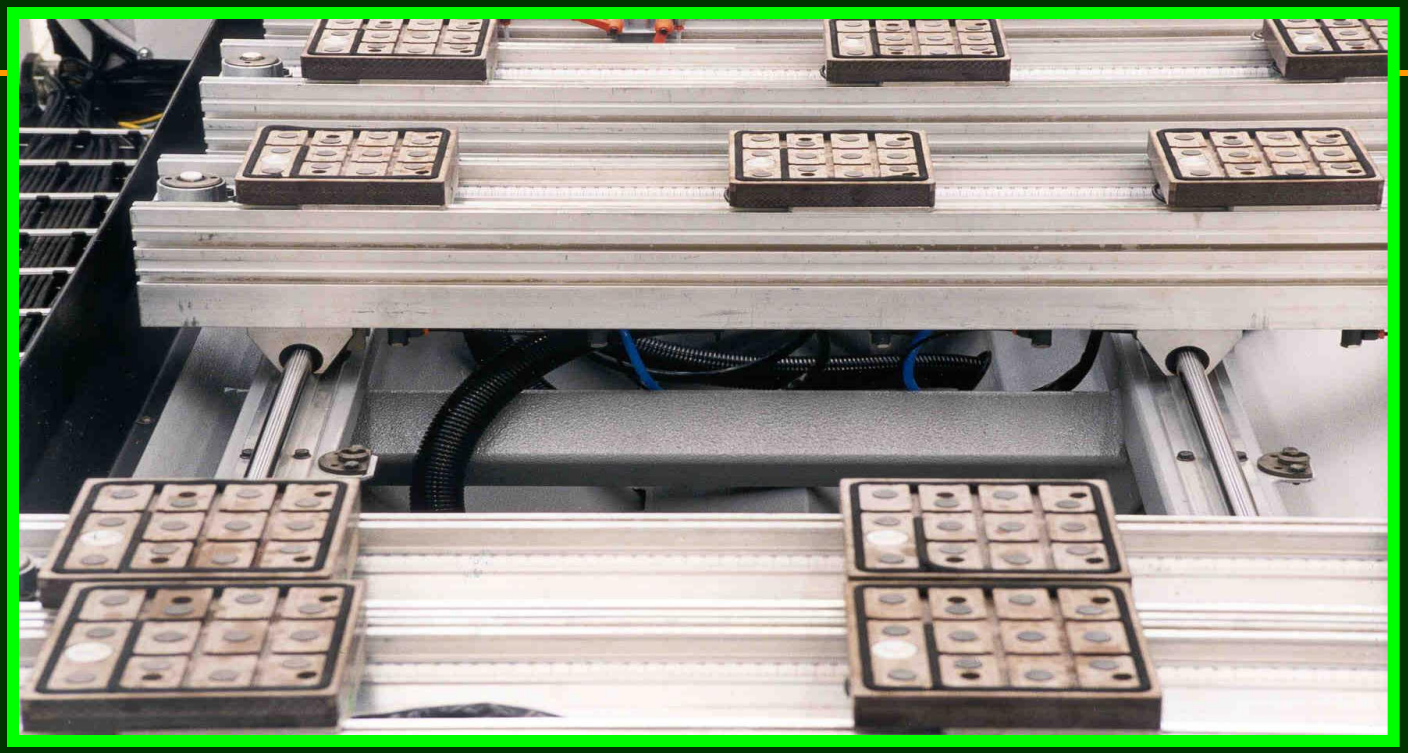
NC automatic lubrication

of X - Y - Z axes linear guides and of Y - Z axes ball screws





Work table



- **PANEL SUPPORT SLIDING** on 2 round bars by means of 4 ball sleeves
- **PANEL SUPPORT LOCKING** by means of 2 pneumatic cylinders for the locking on both bars
- **JIG PNEUMATIC LOCKING**. Each jig is independently locked/unlocked by a push-button and an electrovalve, to avoid any unnecessary movement during panel loading operations.

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Read-outs on the panel supports

The quick set-up of the work area is granted by:

- the storage of the positions of panel supports and jigs within each single program

- The NC transmission of the positions of panel supports and jigs to the single read-outs installed on the panel supports through serial connection

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Fully equipped standard machine

- 6 panel supports with a supporting surface of 915 mm
- 12 pneumatic independent jigs
- 6 back stops
- 2 side stop-holding bars
- 2 side stops (1 RH + 1 LH)
- 2 central stops (1 RH + 1 LH)
- 6 metric rules in Y - one on each support - for the correct positioning of jigs
- 1 metric rule in X for the correct positioning of the panel supports
- 12 clamping units for narrow pieces
- Auxiliary vacuum system for panel locking by custom-made jigs
- 1 100 m^3/h vacuum pump
- Safety photocells (Non CE solution)
- Safety mats and mesh guards (CE solution)

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Fully equipped standard machine

- 7 kW electrospindle (9 Hp) ISO 30
- 7,5 kW inverter
- Boring unit with 10 vertical spindles, 6 horizontal spindles and 120 mm sawblade in X
- Air conditioner for the electric cabinet:

  - it grants low temperatures inside the cabinet

  - it makes the electric cabinet dustproof, and therefore makes electronic components last longer
- Editor for programming on office PC
- Numerical Control NC 500 with remote axes override and emergency push-button
- Front-end PC

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“Reasons for purchasing a Rover 20”

- Speed (75-45-15 m/1’)
- Wide working field
- Pendulum machining
- Possibility of working on 4 different origins
- Flexibility granted by 7 tools available in tool-changers
- Use of the same components assembled on higher range machines
- Powerful electrospindle with ISO 30 adaptor and rotation from 1000 to 24.000 rpm. It allows the machining of panels and solid wood.
- Digital read-outs for a quick set-up of the work area (they help performing the set-up while the machine is working, therefore cutting downtimes)
- Prearrangements and possibility of assembling any optional included in the price list
- Fully equipped standard machine and high ratio quality + performances / price

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