MACHINING CENTER M1015

Meccaniche Arrigo Pecchioli
Via di Scandicci 221 - 50143 Firenze (Italy) - Tel. (+39) 055 70 07 1 - Fax (+39) 055 700 623
e-mail: pear@pear.it - www.pear.it

Other files available for additional information regarding this machine

Spindle Hsk40
Spindle Hsk50
Control Desk
Z32 NC
Software Peace
Measuring Probe
Probe Software by HEXAGON Metrology

Fields of Application

It is a machining Center with three axes with a very big working area and produced in three different versions. Each version is used in fairly specific applications than the others but in any case that requires the need to have a degree of finish, accuracy and thermal stability (absence of drifts due to heating of the spindle) particularly high.

T version

Is the most powerful version and the one that allows the passage of a major piece thickness. Noteworthy, given the considerable power of the spindle, the fact that the spindle has a number of revolutions important (20,000 RPM). The scope of its most common use is in the manufacture of molds and models and of course the realization of mechanical parts.

S version

In addition to being less powerful than the version T, also allows a minor piece passage under the bridge, but allows to have a number of revolutions on the spindle slightly higher (24,000 RPM). The field of use is in the realization of classic aluminum molds (for example molds for footwear) or steel but which do not require a very high power on the spindles. Obviously, the general mechanical engineering remains an important sector for this type of machine. The difference in cost compared to the model T is quite limited.

H version

Compared to version S, this version shares all the machine structure, but instead mounts an electro spindle in place of a motor-spindle. The installed power is therefore considerably lower but has the advantage of having a number of revolutions particularly important (32,000 RPM'). Typical applications are all classic workmanship of high quality engraving where the technical characteristics of our integrated software on the machine Peace are celebrated in a special way. May also find advantageous use in a whole series of machining of micro machining (Ø tool used widely less than 1 mm) but on pieces having dimensions important. The difference in cost compared to the model S is important.

Fields of Application

Front view of the machine of our model M1015T. The chip conveyor is an optional accessory

Structure

Follows the scheme now become classic, we introduced in 1983 in the construction of machining centers, of a portal structure in which the movement of the axes X and Z are on the spindle while the Y axis is on the working plane. This form of construction allows to have a great dynamic stability combined with a considerable simplicity of construction.

Compared to the type of construction used by us for our model EC43 does not allow to create special versions such as five-axis or with automatic feeders piece, while with respect to the type of construction used in our model EC1220, to equal footprint, has a field of work of ~ 35% lower.

Ball bearing screw characteristics and translation axes guides T model

- X and Z axis diameter: 40 mm
- Y axis diameter: 50 mm
- Screw pitch X Y Z: 20 mm per revolution
- Material: hardened and ground steel with ceramic material nut balls
- Dimensions ball block size X Y Z axis: 35 mm

Ball bearing screw characteristics and translation axes guides S/H model

- X and Z axis diameter: 32 mm
- Y axis diameter: 50 mm
- Screw pitch X Y Z: 20 mm per revolution
- Material: hardened and ground steel with ceramic material nut balls
- Dimensions ball block size X Z axis: 25 mm
- Dimensions ball block size Y axis: 35 mm

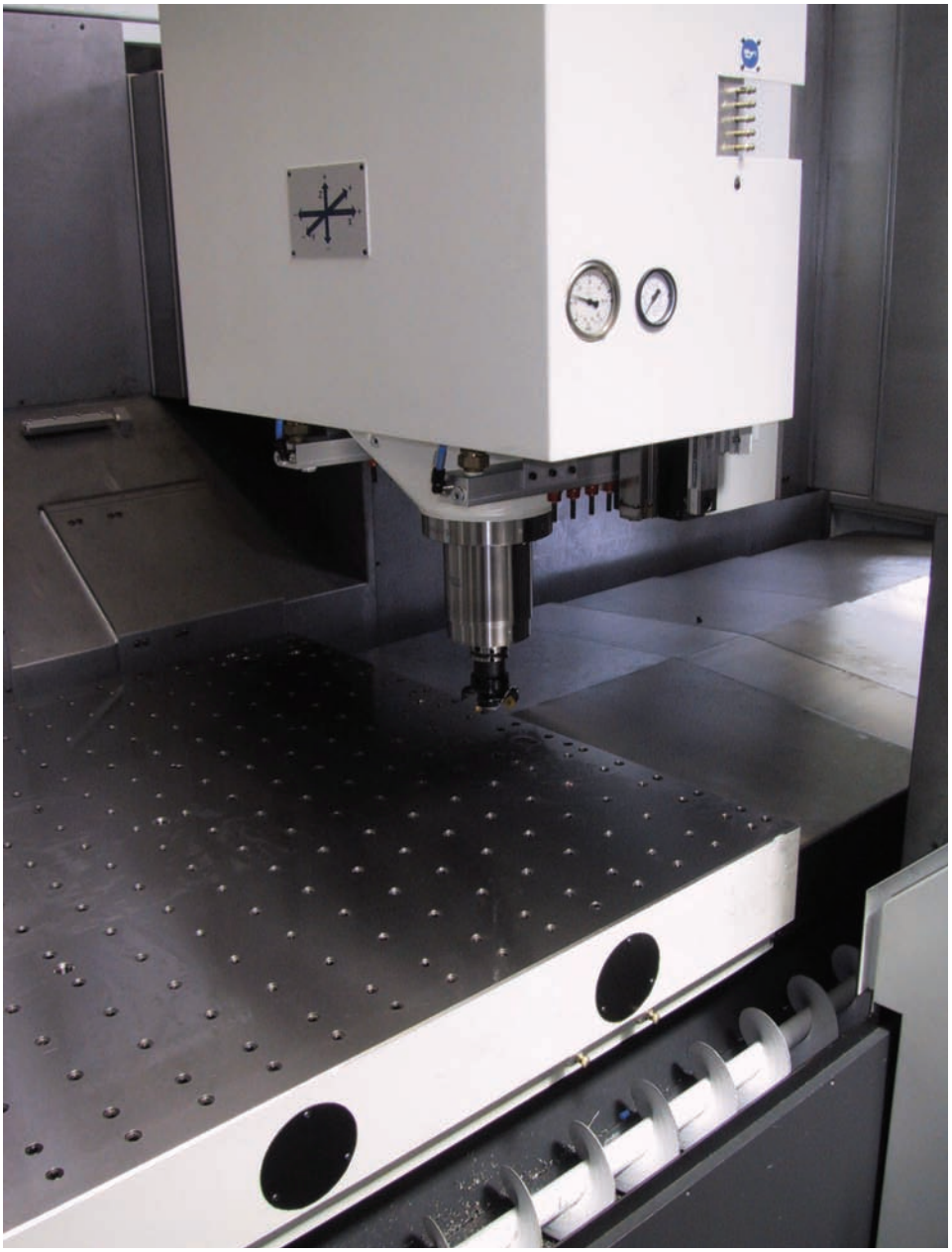
Position transducer axes

Standard: absolute optical scales

Structure

Machine Access View from the Operator's Side with the Door Open

You see one cloacae (the other is on the opposite side) used to convey chips in front of the machine



Structure

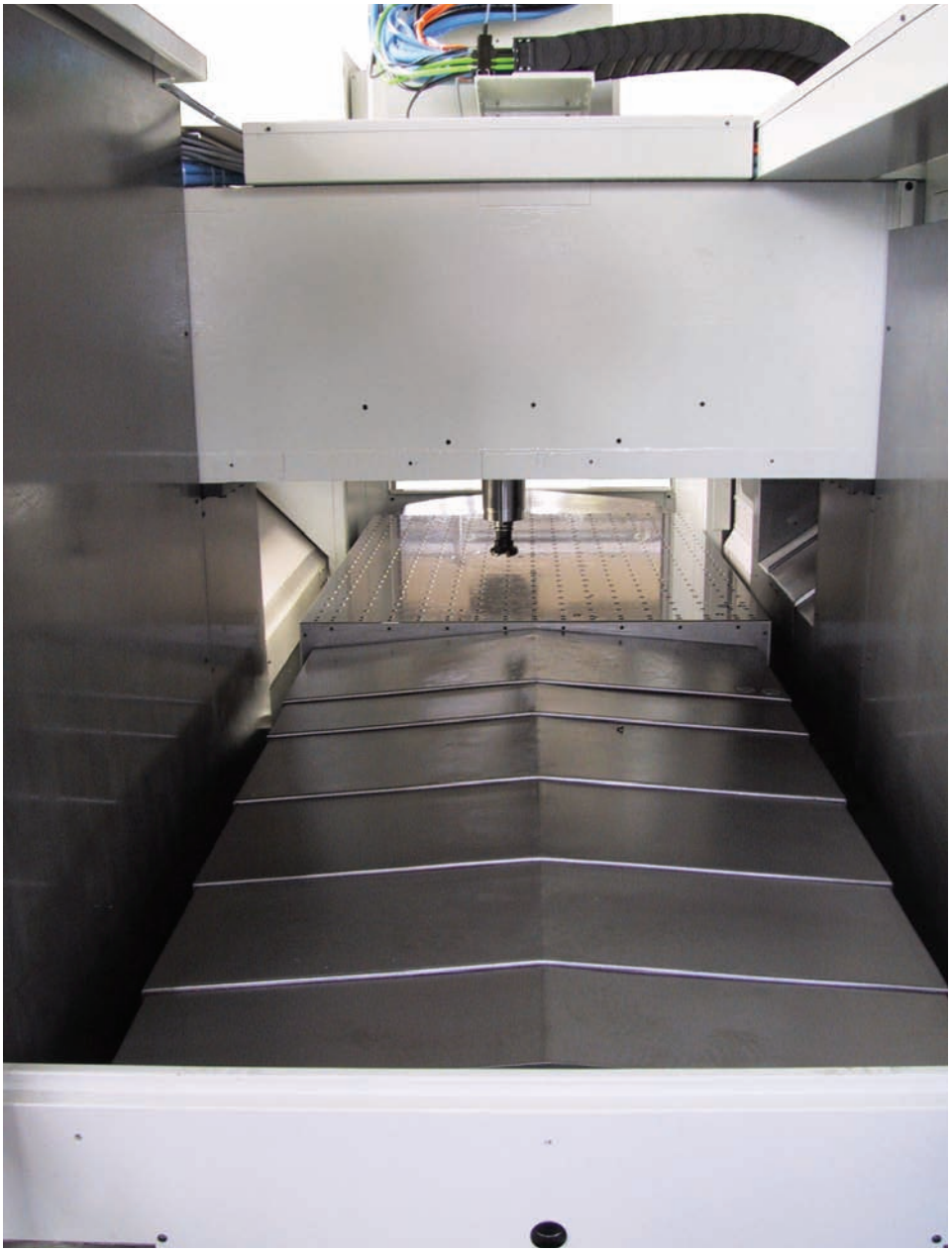
Front View of the Machine with the Door Open

To load large pieces/weight, you can use a crane because the upper door area is free

Structure

Rear View of the Machine after Removing the Safety Guard

Only during the execution of extraordinary maintenance is allowed to remove the rear panel safety protection



Structure

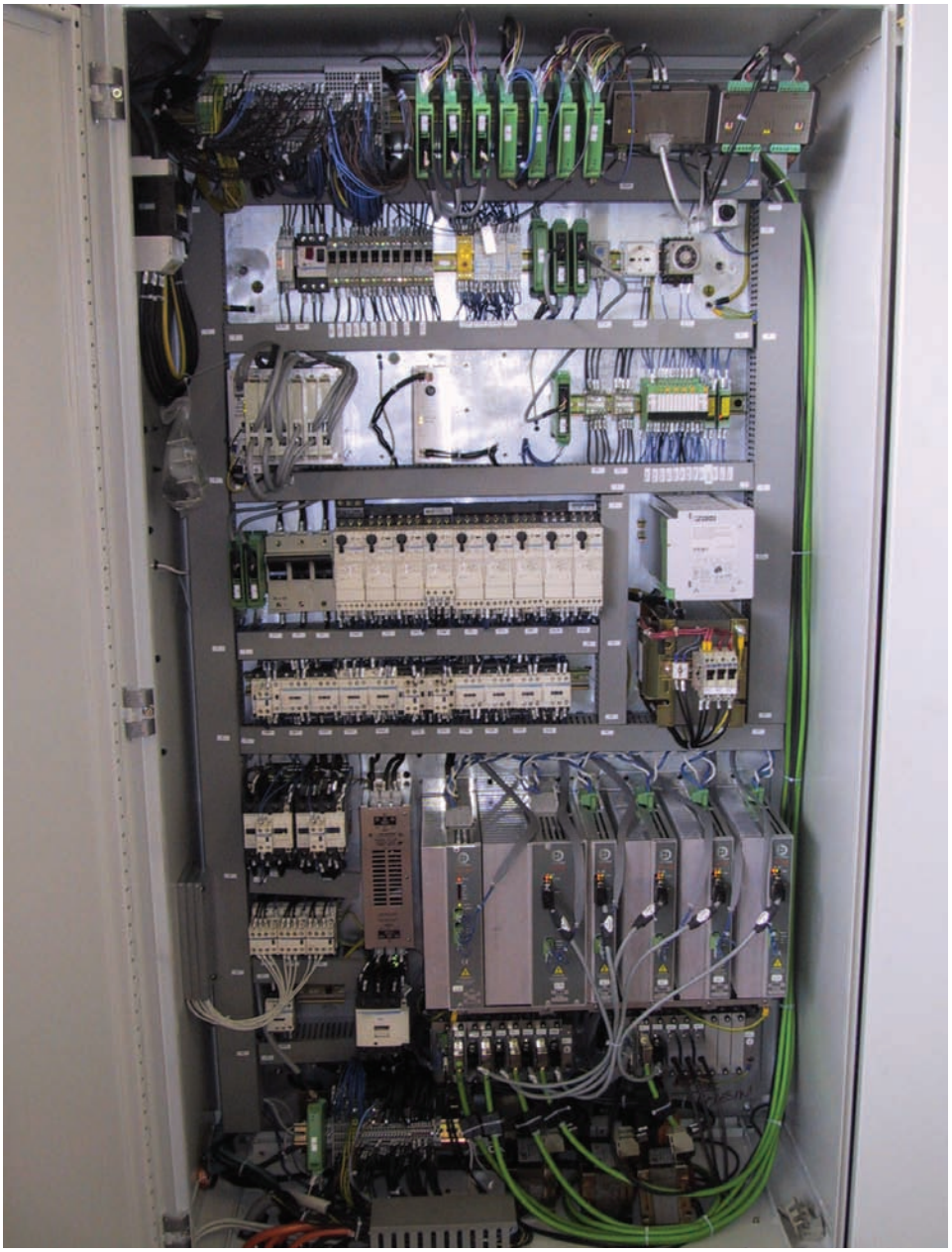
Three-Quarter Rear View of the Machine

Note the presence of the air conditioner Cabinet

Structure

View of the Cabinet on the Machine

Contains all the electronics of the machine and its accessories, if any



Tool Changer

Model T and S

It is a drum of considerable diameter in which the head of the machine picks/deposited directly, using the movements of the axes X and Z, the tool. This operation occurs at insertion and is then possible to withdraw/deposit a tool having a diameter (in this case up to Ø 80 mm) greater than the diameter of the flange of the toolholder.

The tools are freely accessible from outside the machine and in this case to search for the tool to visually check will be possible to perform the rotation of the drum tool manually as it is a very agile movement.

Model H

Also in this case the tools are deposited/withdrawn from a drum but with a diameter significantly smaller and not tear but directly from above. It is not therefore possible to mount tools having a diameter greater than Ø 34 and are not accessible from the outside for any visual control.

Tool Changer

The tool changer is freely accessible from the outside for control and inspection and refers to the T and S models

Specifications

Overall dimensions	4,000×5,800×3,200 mm
Net working travels	X=1,030 mm Y=1,500 mm
Base in welded construction	
Rigid tapping standard	
Preset tool length standard accessory	
Total weight	5,700 Kg

AXES

Working speed	from 0 to 30,000 mm per min
Rapid traverse rate	30 meters per min
Maximum thrust on each axis	2,000 N
Acceleration on three axes	4 m/s^2
Absolute encoder position made with optical scales	
Positioning precision (VDI 3441)	±0.015 mm
Repeatability accuracy (VDI 3441)	±0.005 mm

WORKING TABLE

Dimensions	1,140×1,640 mm
Threaded holes clamping pieces	M12x24
Total number of holes	425
Distance between holes	70×70 mm

TOOL CHANGER

Tool change time chip to chip average	10 sec
Time to swap tools	3 sec

MAIN OPTIONS

- Tracing head DIGIT2
- Software Peace integrated on the machine to simplify programming to the maximum
- Chip conveyor complete with rotating filter

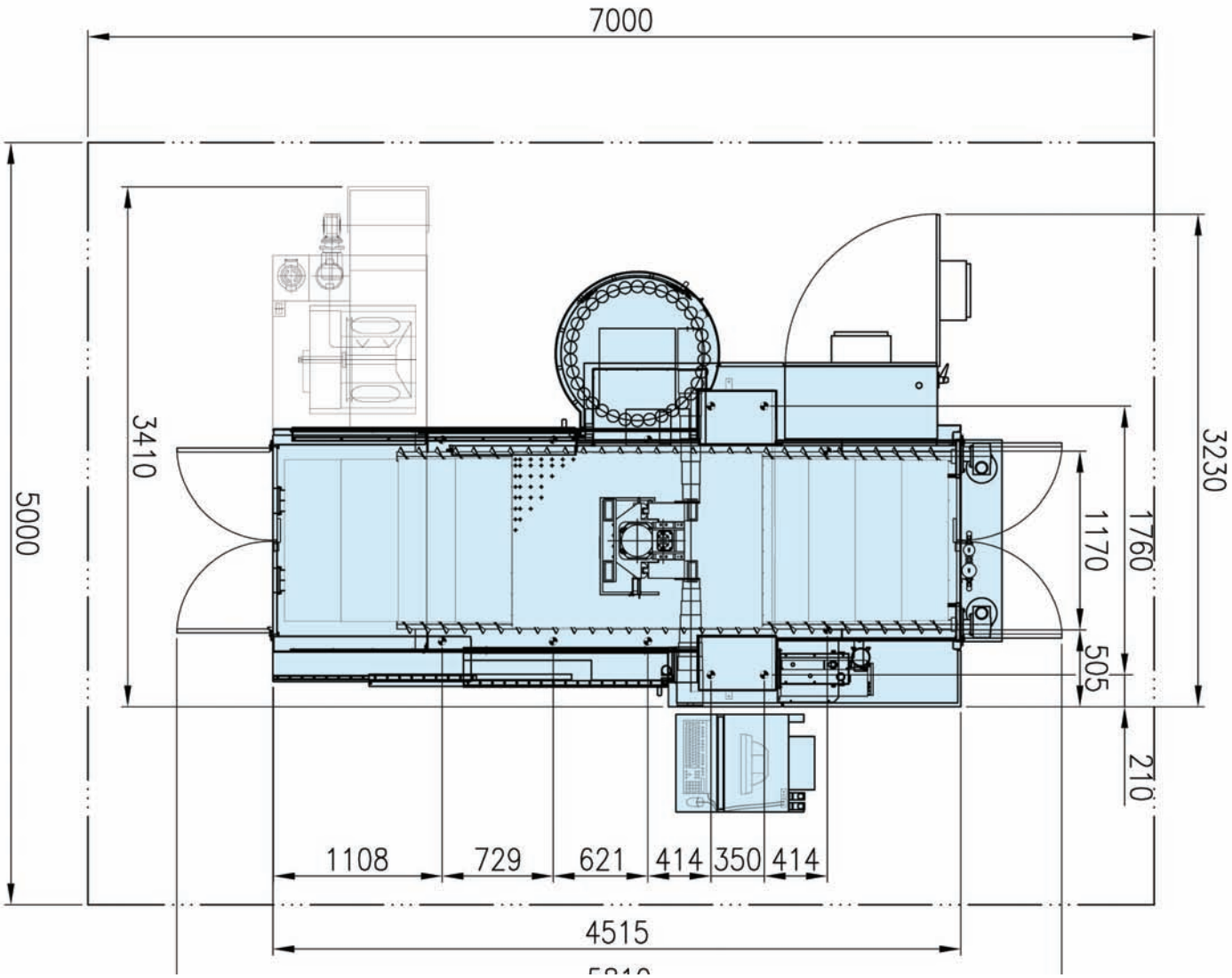
Specifications

SPECIFIC TECHNICAL CHARACTERISTICS	T	S	H
Net working travels	Z=600 mm	Z=375 mm	Z=375 mm
Maximum workpiece thickness under the bridge	450 mm	300 mm	300 mm
Maximum distance from maximum thickness piece to attack tool holder	320 mm	185 mm	175 mm
Minimum distance between the work plan and attack tool holder	170 mm	110 mm	100 mm
Minimum distance between the work plan and the standard tool nut	70 mm	10 mm	20 mm
Tool holder	HSK50/A	HSK50/A	HSK40/E
Maximum RPM	20,000	24,000	32,000
TOOL CHANGER			
Number of tools available	34	34	24
Maximum tool Ø	80 mm	80 mm	34 mm

Specifications

M1015T - M1015S - M1015H

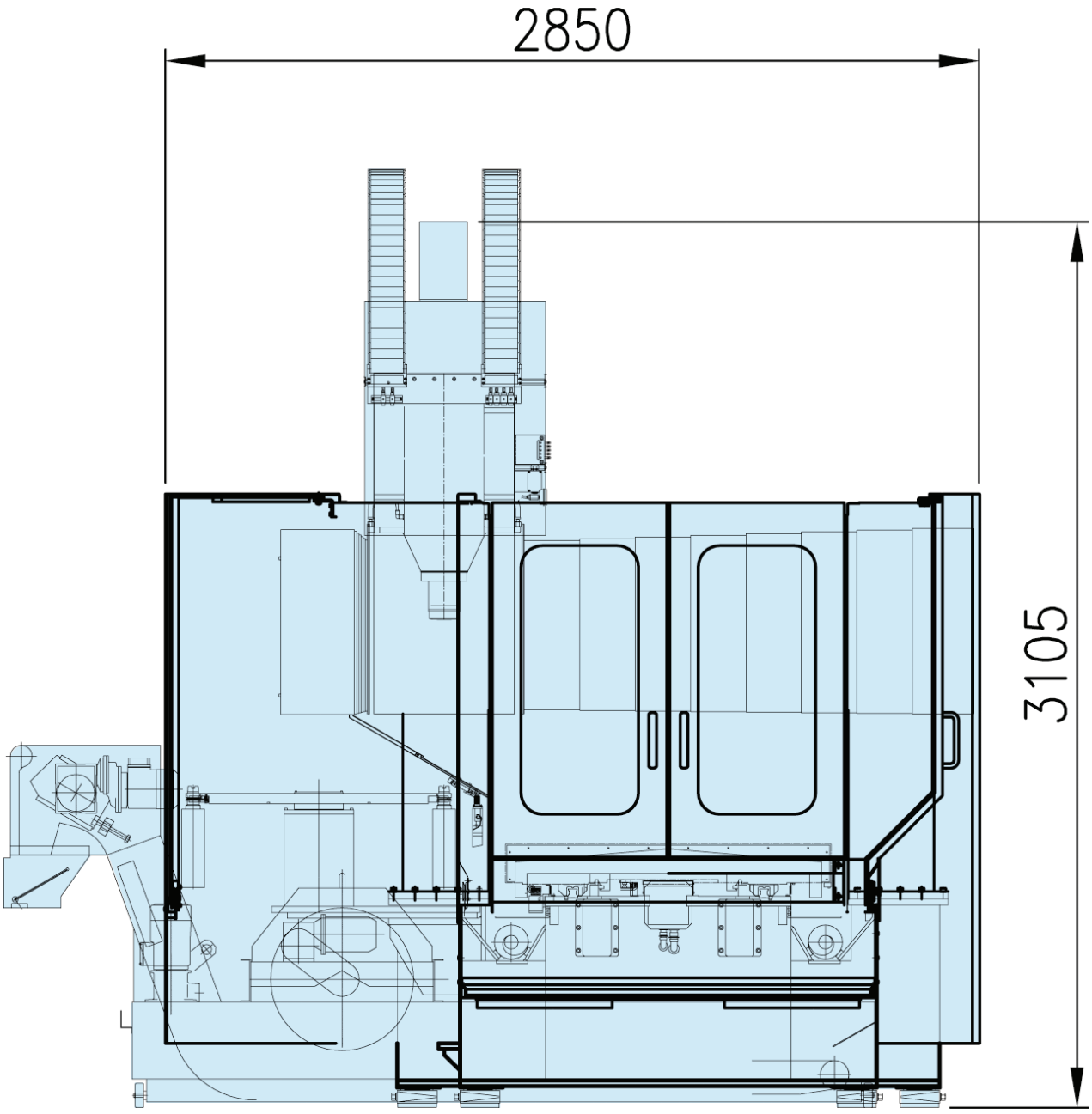
Plan view



Specifications

Front View of the Model M1015T

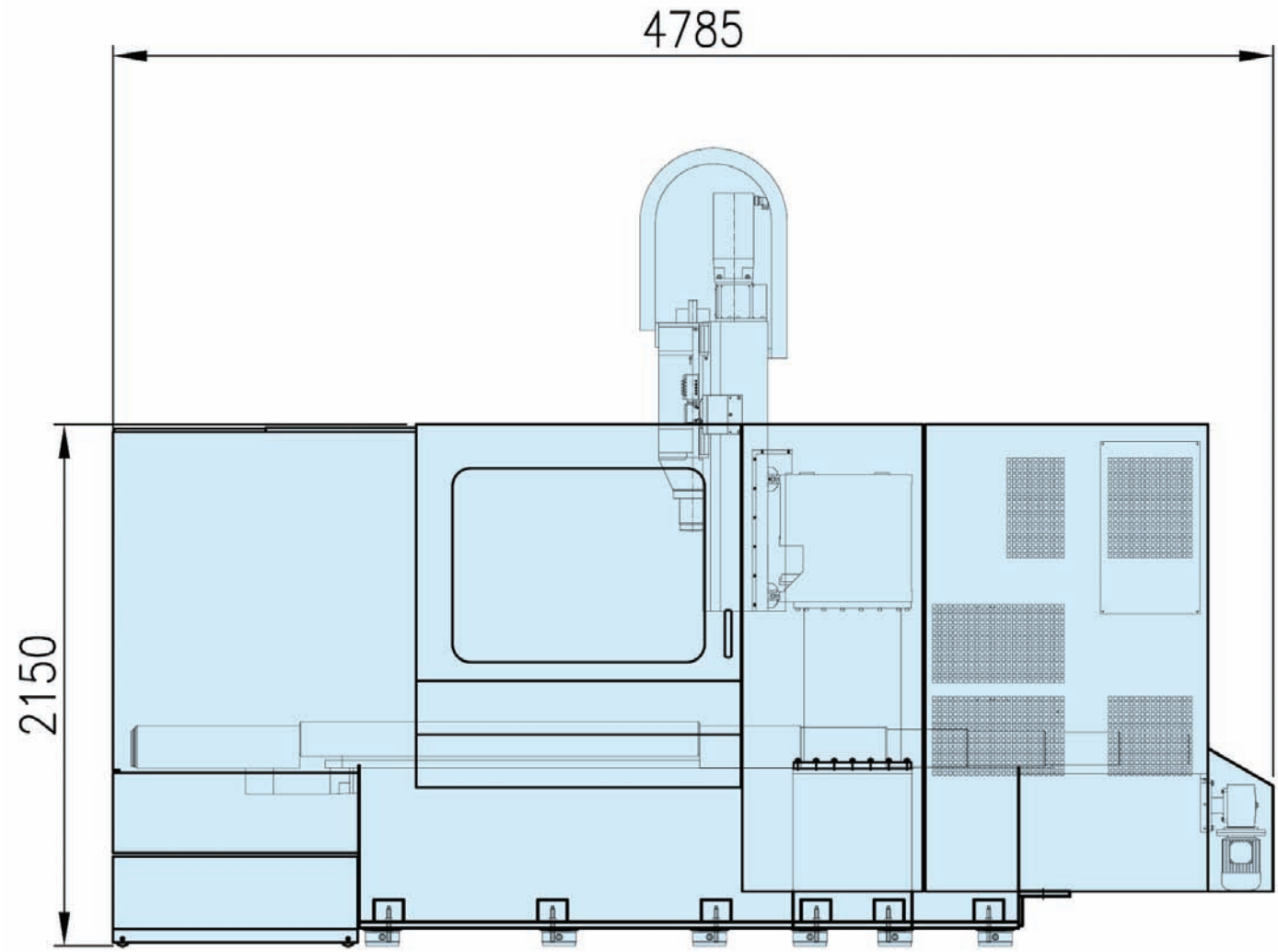
The vertical dimension for models M1015S and M1015H is 350 mm less



Specifications

M1015T - M1015S - M1015H

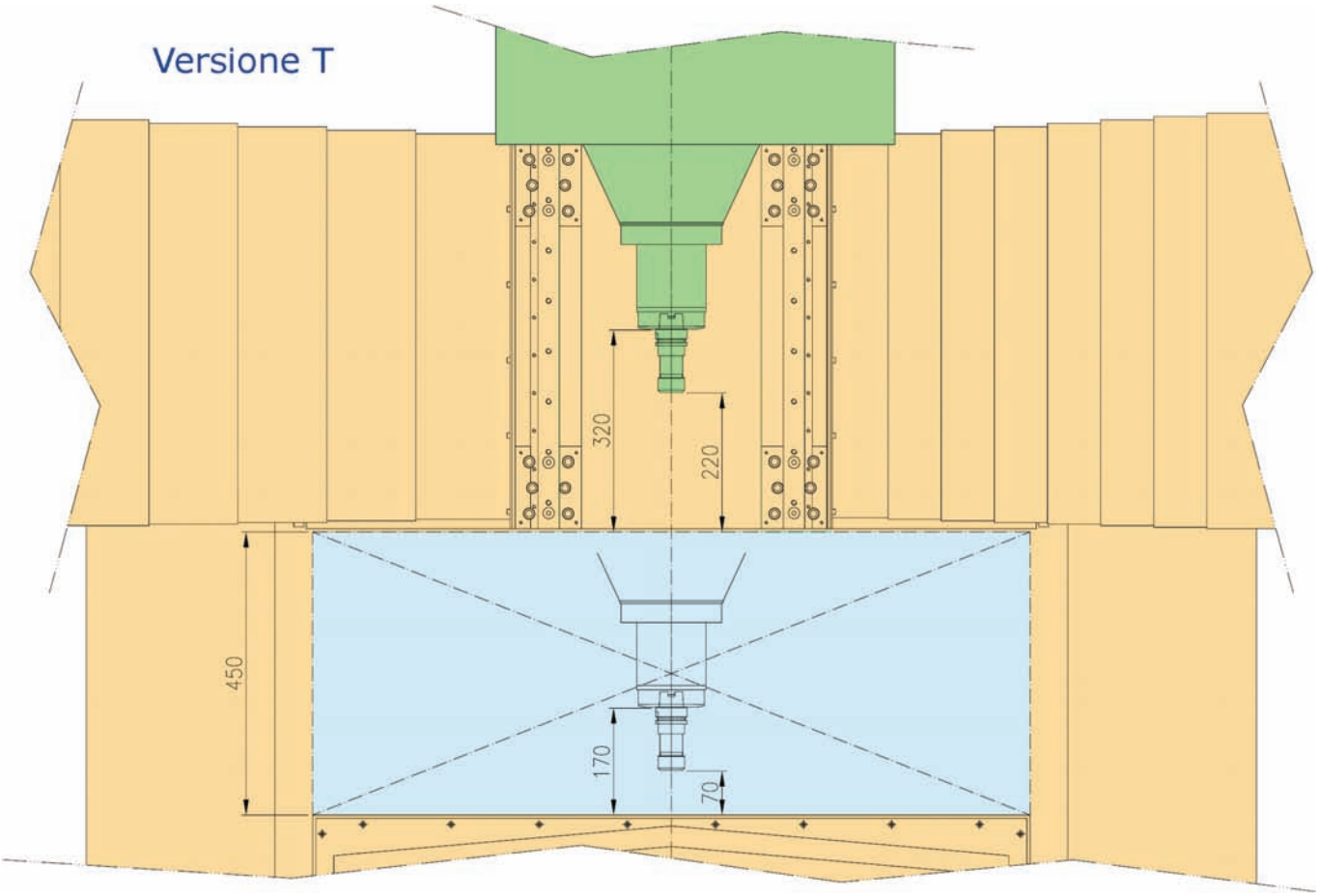
Lateral view



Specifications

M1015T

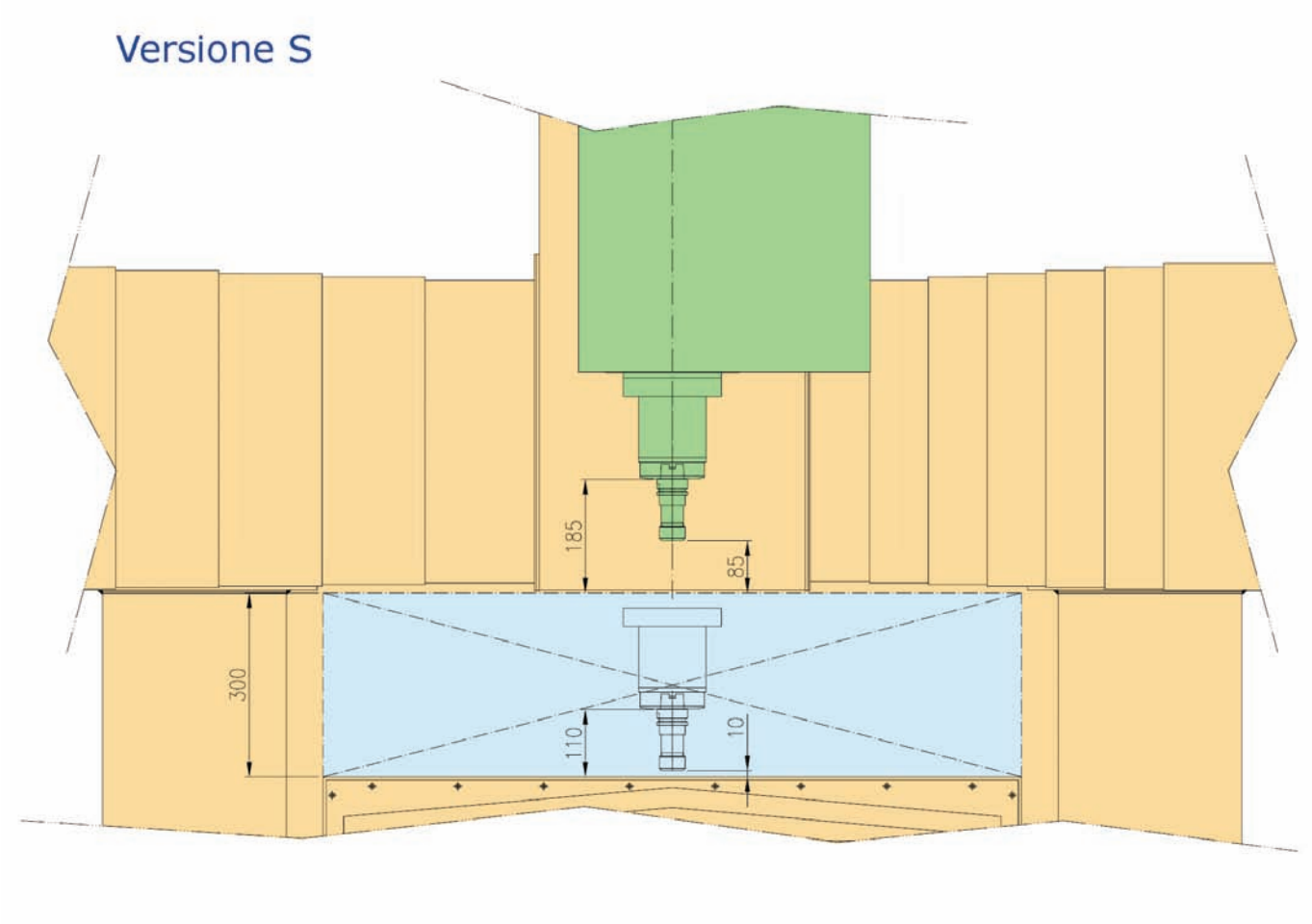
This drawing shows the maximum thickness of the work piece and the various lengths max and minimum of the tool



Specifications

M1015S

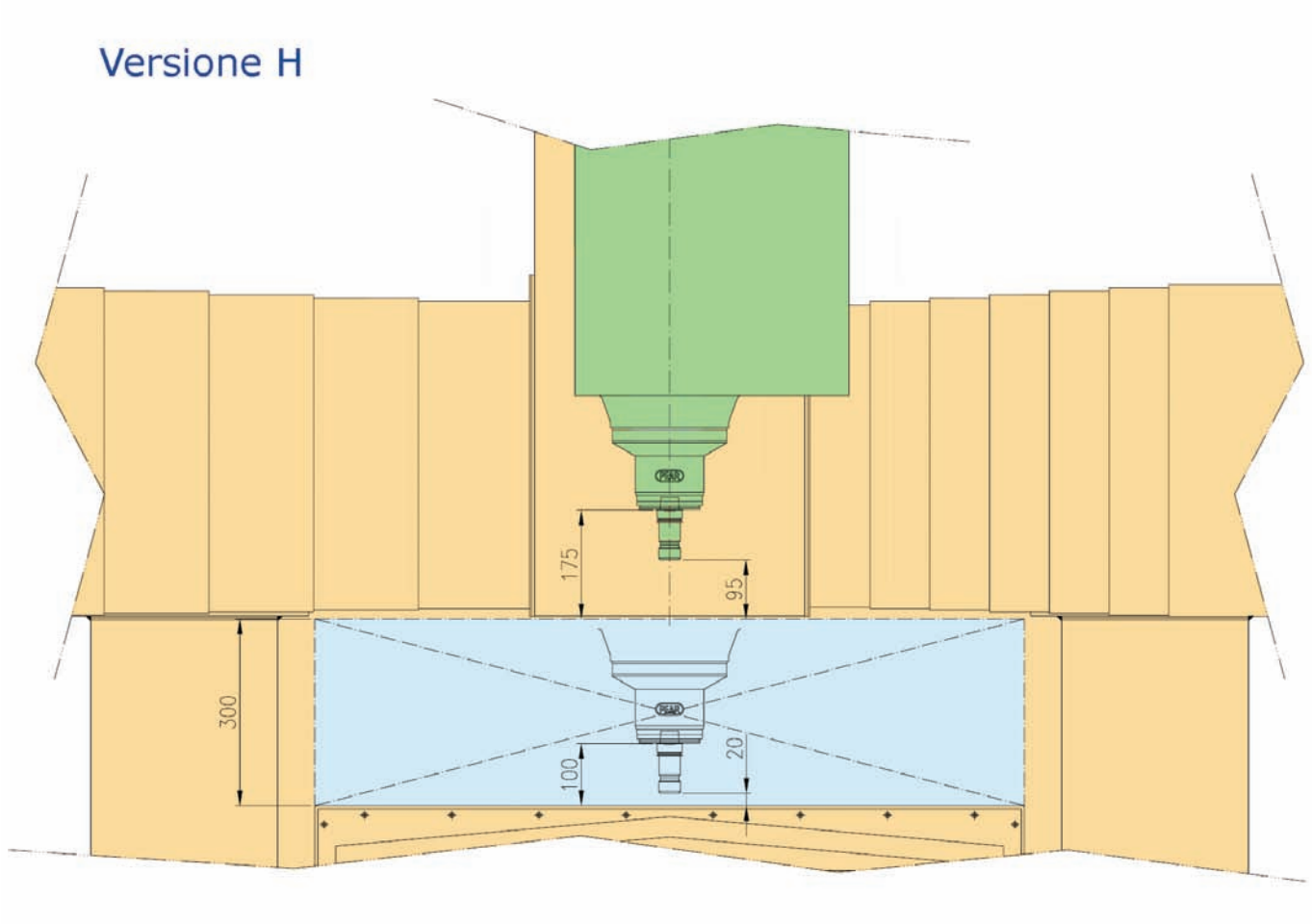
This drawing shows the maximum thickness of the work piece and the various lengths max and minimum of the tool



Specifications

M1015H

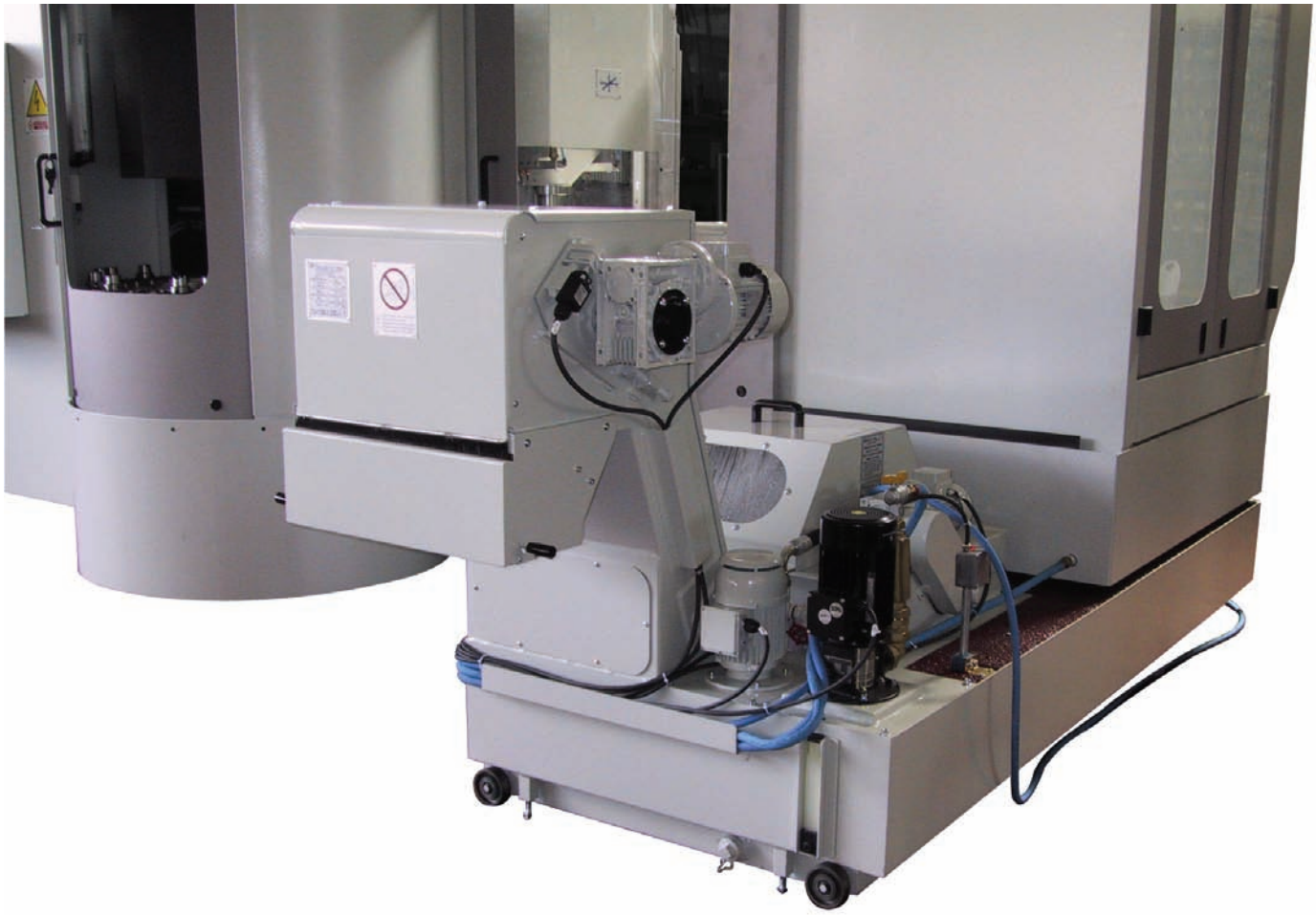
This drawing shows the maximum thickness of the work piece and the various lengths max and minimum of the tool



Specifications

M1015T - M1015S - M1015H

Chip conveyor complete with rotofilter. (Optional Accessory)



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e-mail: pear@pear.it - www.pear.it

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