

DESCRIPTION OF THE MACHINE AND TECHNICAL SPECIFICATIONS	I
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CUTTING MACHINE

The shearing machine can be used in line with manipulators or out-line, with a press for rubber compression pressing.

The shearing machine is used to cut in the length rubber sheets for the manual or automatic loading of presses for compression pressing.

The automatic machining cycle of the shearing machine foresees the unrolling of a calendered rubber roll and subsequently the cutting of the sheets by the pre-defined measure, which is adjustable.

During unrolling the shearing machine separates the rubber sheet from the nylon intermediate film and recovers it by winding onto a special reel located in the upper part of the structure.

The complete equipment is composed of:

- A basement group made of aluminium profile
- A protection gate on the side of the rubber reel loading and nylon reel unloading area
- A rubber reel rotation group
- A drive group for the rubber sheet feeding
- A pressure group for the rubber sheet driving
- A conveyor belt for the cut sheets evacuation
- A device for the rubber unrolling speed adjustment
- A rotation group for the nylon recovery reel
- A device for the nylon winding speed adjustment
- A circular cutting blade
- A group for the cutting blade vertical movement
- A group for the transversal horizontal movement of the cutting blade
- An electrical control panel
- A pneumatic system

2 Description of the working principle

Through the rotation of the driving group and the action of the pressure roll group the rubber sheet is unrolled and made to advance until it reaches a special sensor, which determines the cutting size. During the feeding of the rubber sheet the intermediate nylon film is separated, recovered and wound onto the special reel located in the upper part of the basement. After reaching the cutting size the blade comes down until it cuts into the rubber sheet. At the end of the descent run a special sensor commands the transversal horizontal translation of the cutting blade. The horizontal movement of the cutting blade determines the blade rotation that cuts into the sheet and cuts it transversally.

At the end of the transversal run the cutting blade is moved again towards the upper part and subsequently positioned at the starting point – through the translation piston - ready for the next cutting operation. The cut holes are evacuated from the cutting area by means of a conveyor belt and brought to an area from which they can be drawn by an operator or by a manipulator, who/which will see to their positioning inside the press. The control software foresees the possibility to cut several sheets for each cycle based on the weight of the matter to be printed and of the type of mould.

A special potentiometer device is self-regulating the winding speed of the intermediate nylon film. The driving and feeding speed of the rubber sheet is accurately controlled by a special inverter, which determines the driving roll speed.