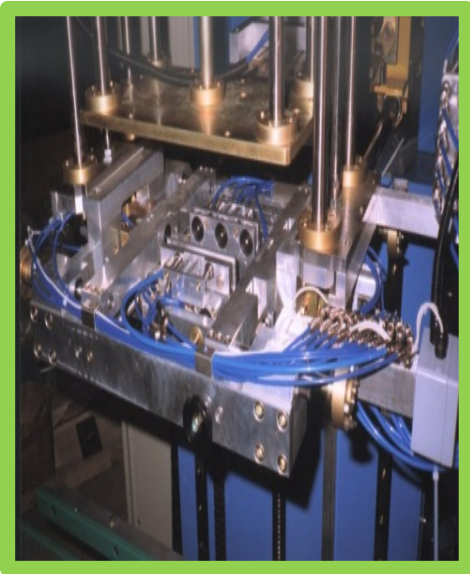




CONSTRUCTION  
BATTERY  
EQUIPMENT

ALI ASSEMBLY LINE INDUSTRIAL

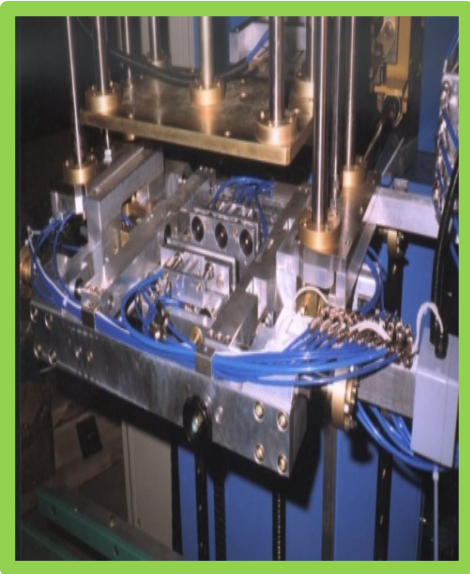


*Semi-automatic line*



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### ASSEMBLY LINE FOR TRACTION ELEMENTS MOD. 2E-T

Assembly line for traction element has the purpose of doing some workings and controls of the element. Assembly line for traction element can be considered composed of the following equipment:

Conveyor completed with separator device, which sends an element per cycle to the following equipment.

Lid placing machine: it has three lid stores with capacity of 30 lids each. This equipment has a pneumatic 'pick and place' system that takes the lid from the conveyor placed below, and deposits it on the element centered before. The lid placing machine is functional for manufacturers that produce a high quantity of elements of the same type.

Heat sealing machine: it has the purpose to close the lid on the vase. The element arrives inside the machine thanks to a centering device that stops it. Suckers attached to centering device straightens the four sides of the element, in order to get the best coupling between lid and vase. The lid taking device takes the lid, and the heating plates inserts itself between the lid and the vase, so that the plate heats the surfaces and connects the lid and the vase.

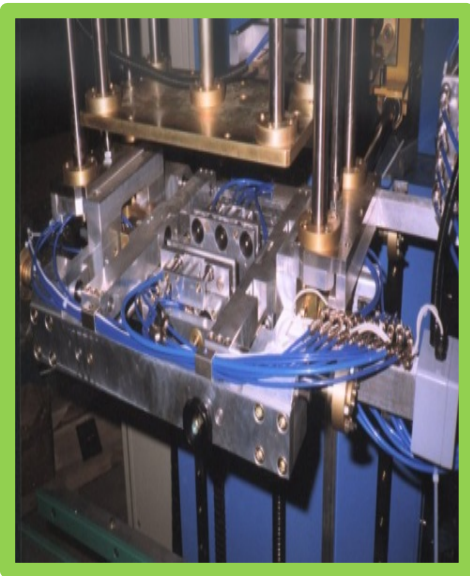
Seals placing machine: it is composed of a circular selector and a linear selector that has the purpose of bringing the seals to the selecting device in the correct orientation. An electrical-pneumatic system 'pick and place' takes the seals and positions and push it in the holes of lid of element centered before. In case the leakage between the holes and the seals is not obtained by interference and the elements therefore require the assembly of the ferrules to stop the seals, it is necessary to install two additional selectors, circular and linear, and a selecting device where the ferrule arrives in the correct way and it is taken by an electrical-pneumatic system 'pick and place' that places and screws the ferrule on the element, thanks to a pneumatic screwer.

*Semi-automatic line*



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***Semi-automatic line***

Post welding machine: machine is composed by heat sealing head completed with welding oxyacetylene torches, moved by motoreducer with height regulation system. Trimming of the welding flex: it has a cutter place at the extremity of an arm. After the element has been blocked under the rotation unit, a pneumatic cylinder pushes the arm against the element. The element rotates thanks to a rotation unit, allowing the cutter to remove the welding flex along the sides. Supplied with the machine, an aspirator allows to pick up the plastic scraps that are created during the cutting.

Leakage tester: it has a pneumatic cylinder where the air filling nozzle is attached. This is connected to a series of valves and to a transducer, which verifies the correct welding between lid and vase. After the element has arrived inside the machine and the nozzle is inserted in the hole of the lid, the element is filled with air up to the pressure previously set. The filling valve is closed and makes the first reading of the pressure value, saving it in the PLC; after some time, the second reading is made. After that, the difference among the two readings is compared: if it is inferior to the range, the element that is good continues, otherwise the element must be discarded and it is signalled by a lamp and an acoustic signal.

At the end of assembly line, it is possible to install a manipulator for creation of pallets element. The transport conveyor can be realized with step to step system or with rolls. In both cases the adjustable guides are installed according to width and height of element to work.

#### **Technical specification:**

Sizes of assembly line: they are different according to machines and productivity. We specify the sizes for assembly line composed as this leaflet:

12000 mm (length) x 1800 mm (width) x 2600 mm (height)

Voltage: 380V+Neutral—50 Hz

Sizes of element to work: Length 158 o 198 Width from 45 to 230 Height from 250 to 730

Productivity: 2 elements per minute