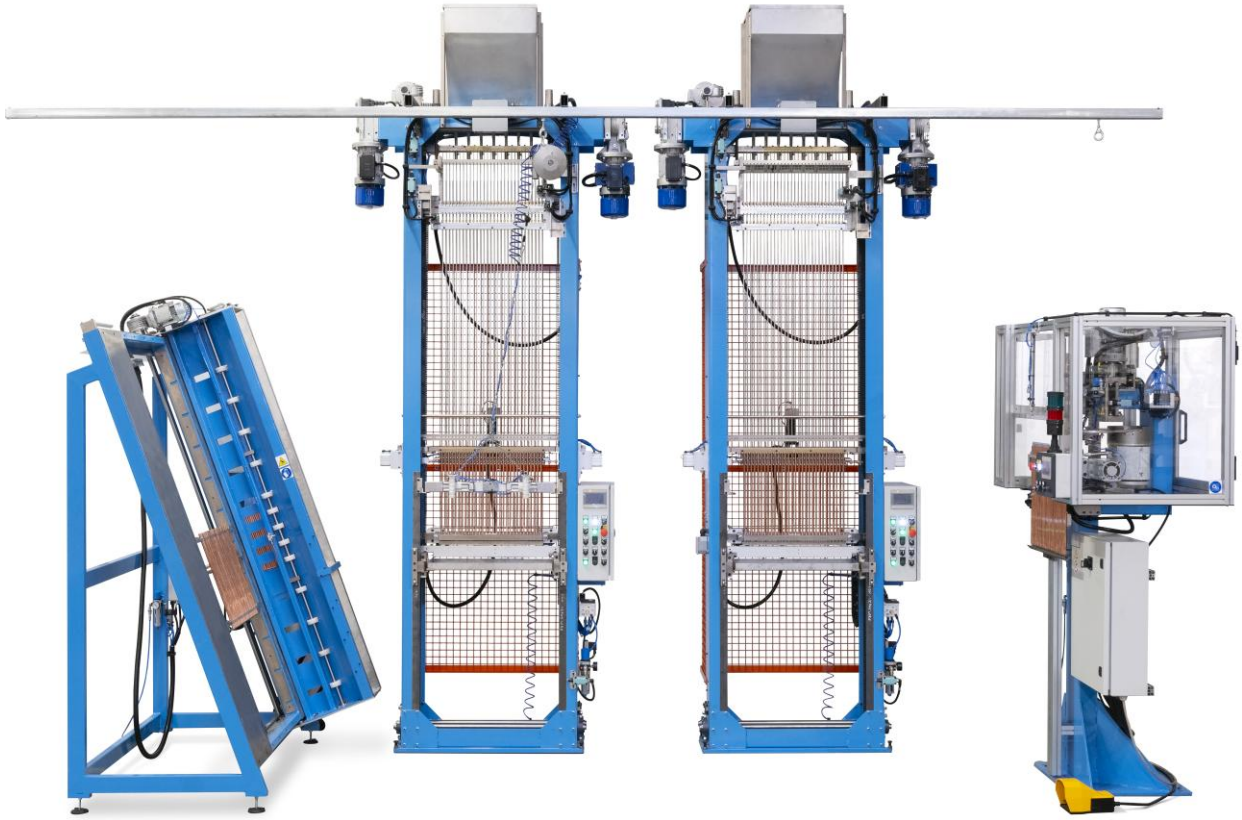
FILLING CENTRE AND DIAMETER REDUCTION FOR HEATING ELEMENTS



WATCH THE VIDEO OF THE FILLING CENTRE

The filling centre is made up of three types of machines: the tube presetter, two filling machines and the plug up unit to assembly the upper plug.

These machines are placed side by side, thus allowing a continuous cycle that makes the most of both the level of automation and the advantages of the individual machines. Therefore, only one operator is necessary for the management of the filling centre.

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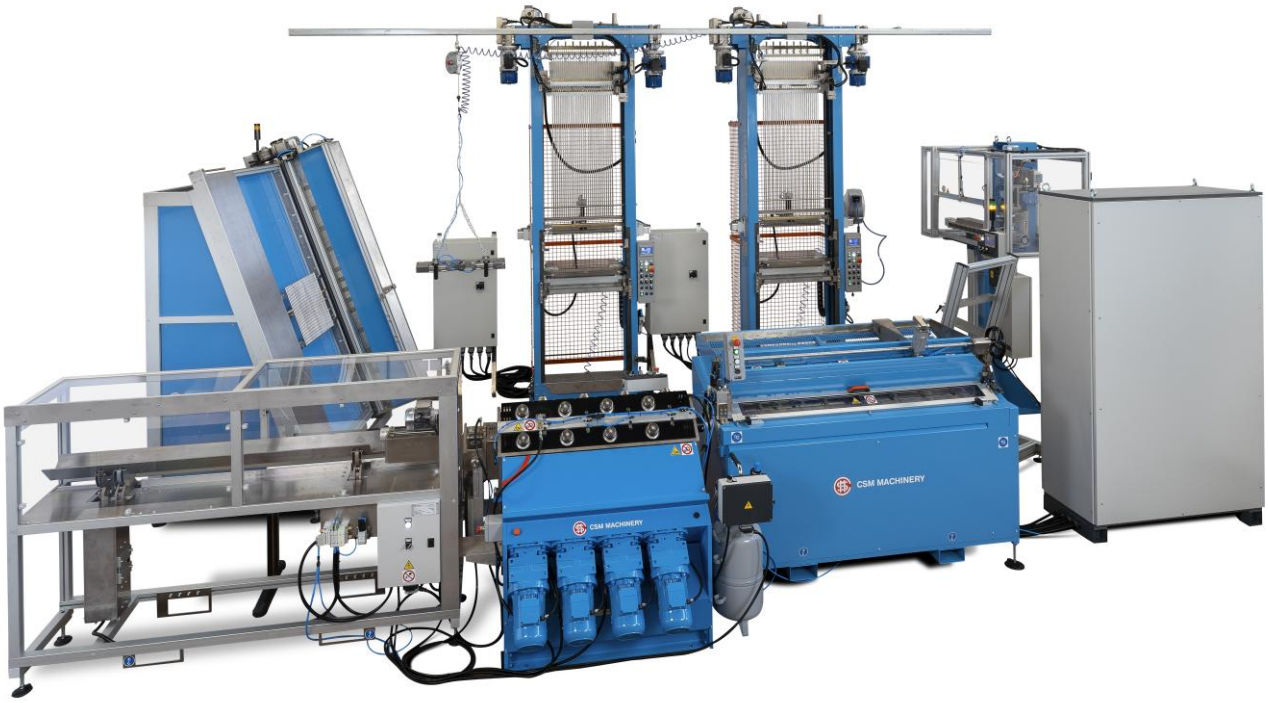

WATCH THE VIDEO OF THE FILLING CENTRE WITH ROLLING MILL

According to your production needs, it is possible to enhance the filling center with a reduction rolling mill, including automatic feeder and unloading device. This expansion broadens the functionalities of the filling center: in a single cycle it is possible not only to fill the heating elements with magnesium oxide and mount the plug on the upper terminal pin but also to reduce the diameter of the heating element by compacting the magnesium oxide inside.

Even with the addition of the roll reducing mill in the filling centre, due to the automation of all machines, only one operator is sufficient.

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Summary

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COMPOSITION

The filling center is made up of the following machines:

- An automatic or manual tube presetter (see p.5)
- Two filling machines with 15, 24, or 30 stations (see p.7)
- A plug up unit for the assembly of the plastic plug on the top terminal pin (see p.8)
- A reduction rolling mill with automatic feeder and unloading device (see p.9)

ADVANTAGES

AUTOMATION

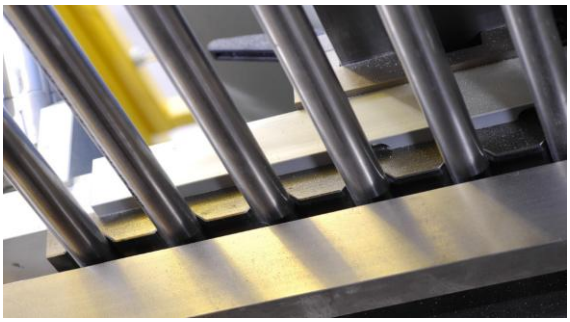
The filling centre utilizes the automated version of single machines: once set up and activated, they operate autonomously and cyclically.

ONLY ONE OPERATOR

Due to the automation of the machines, the filling center can be managed and programmed by a single operator without compromising the continuity of the cycles.

PRODUCTION RATE

Thanks to its features, the filling centre allows to produce up to 600 pieces per hour while maintaining intact the quality of the final product.



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TUBE PRESETTER

The tube presetter is a device that allows to prepare tubes which have to be filled with magnesium oxide. By doing this, the tubes are ready to be moved simultaneously to the filling machine using the appropriate clamp.

The tube presetter is available in two versions: automatic and manual.
The automatic one, once started, autonomously arranges the tubes. Conversely, with the manual version, it is the operator who prepares the tubes.

AUTOMATIC TUBE PRESETTER

After the operator places the tubes in the designated hopper feeder, the machine starts and automatically positions the tubes into the appropriate slots. Once the cycle is completed, the operator can simultaneously unload all the tubes. Then, the machine starts again and prepare another batch of tubes.

Available versions

Mod. 135/90.000000 – 30-tube version
Mod. 134/90.000000 – 24-tube version

MANUAL TUBE PRESETTER

With this version, the operator manually places the tubes to be filled into the tube presetter so that they are ready to be transferred to the filling machine all together. Different versions are available depending on the lengths of the tubes.

Available versions

30-tubes version	24-tubes version
Mod. 135/45.100000	**Mod. 134/45.100000**
Mod. 135/45.150000	**Mod. 134/45.150000**
Mod. 135/45.200000	**Mod. 134/45.200000**

Technical sheet

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PNEUMATIC LOADING/UNLOADING CLAMP TO PICK UP AND TRANSPORT TUBES OR HEATING ELEMENTS

This is a pneumatic clamp specially designed to simultaneously pick up tubes from the presetter or the heating elements from the filling machine, to facilitate their transportation to the next machine and so operation.

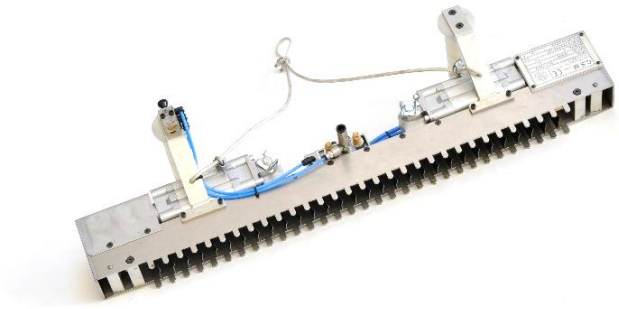
Because of the weight of the clamp in addition to the tubes/heating elements being carried, it is recommended that a suitable counterweight is used.

Tube diameter (to be defined): 7.5-10 mm.

AVAILABLE VERSION

PNEUMATIC VERSION

Pneumatic clamp to pick up and transport tubes.
Weight: 8 Kg. Minimum tube length: 300 mm

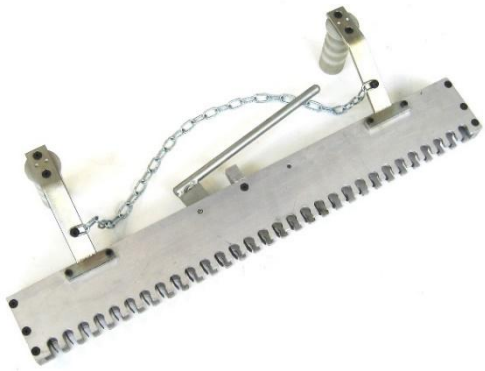


Mod. 135/31.000000 30-tube version

Mod. 134/31.000000 24-tube version

MECCANIC VERSION

Mechanic clamp to pick up and transport tubes.
Weight: 3 Kg. Tube length: 240-500 mm



Mod. 135/32.000000 30-tube version

Mod. 134/32.000000 24-tube version

OPTIONS

Mod. 135/31.100000 Adjustable counter-weight, min. 8 Kg, to support the weight of the clamp with either empty or filled tubes so as to relieve the operator from this burden and to enable the easy loading of the empty tubes and unloading of the filled tubes.

Mod. 135/31.000050 Set of parts subject to wear

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FILLING MACHINE

The filling machine for double-side heating elements is used to fill heating elements with magnesium oxide (MgO) in such a way that they can then be processed in the subsequent stages.

This machine, thanks to its state-of-the-art technology, allows a high filling speed, a uniform compaction of MgO, a scrap reduction and it is also easy to configure thanks to the use of a simple and intuitive graphic interface.

AVAILABLE VERSION

The filling machine for double-side heating elements is available in 30, 24 or 15 tubes versions depending on the diameter used. The machine can fill tubes ranging from 7,5mm up to 19mm.

Product page

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PLUG UP UNIT FOR THE ASSEMBLY OF THE UPPER PLUG

The plug up unit is a device that automatically mounts the plastic plug onto the upper terminal pin of filled heating elements, in order to prevent magnesium oxide from flowing out.

Once the filling cycle is complete, the operator loads the filled heating elements into the plug up unit using the appropriate clamp. After activating the machine, it operates autonomously.
Once the cycle is finished, the operator unloads all the heating elements simultaneously, and the machine is ready to start a new cycle.

AVAILABLE VERSION

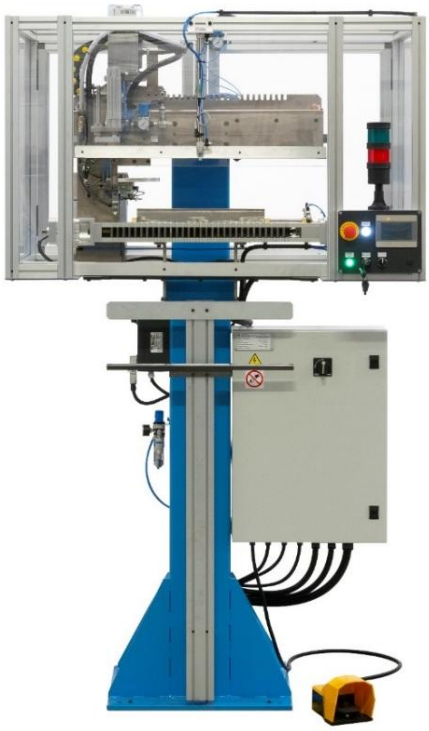
Mod. 136/30.000000 – 30-tubes version

OPTIONS

Mod. 136/30.000015 - Set of parts subject to wear

Mod. 136/30.000025 - Set of additional spare parts

Technical sheet



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ROLL REDUCING MILL

After filling the tubes and assembling the top plug, the heating elements are reduced in diameter to increase the compression of magnesium oxide (MgO) inside the heating element itself.

The machine for reducing the diameter of the heating elements is equipped with an interchangeable head that allows quick switching between tubes of different diameters.

The reduction rolling mill is available with either steel or carbide rolls; the latter ensure durability up to 4 times longer than those made of tempered steel.

The mechanical structure, the head, the straight-line transmission between gear motors and rolls, and the quiet operation make this machine among the best in its class.

AVAILABLE VERSIONS

- 8-station roll reducing mill
- 12-station roll reducing mill

Product page

THE AUTOMATIC FEEDER

The automatic loading device is added to the filling centre to ensure a constant feed and to allow heating elements to be automatically introduced into the roll reducing mill. Thanks to this device, the reduction rolling mill can work autonomously.

Technical sheet

THE AUTOMATIC UNLOADING DEVICE

The automatic unloading device allows to collect the heating elements exiting the rolling mill and conveys them to a container, which should be placed next to the machine.
Also this device permits the roll reducing mill to work automatically.

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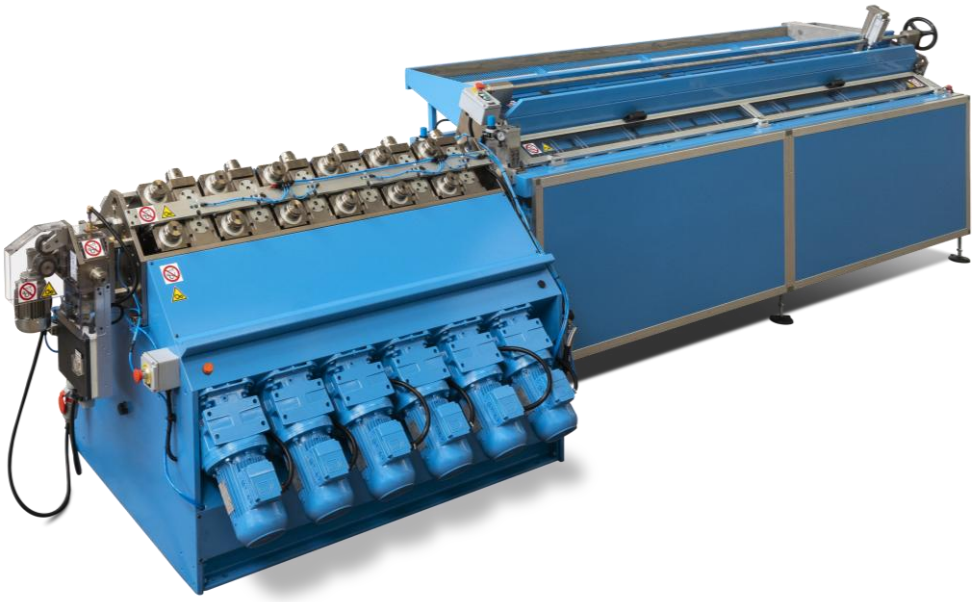

Figure 1 Roll reducing mill with 12-station rolls with unloading device.

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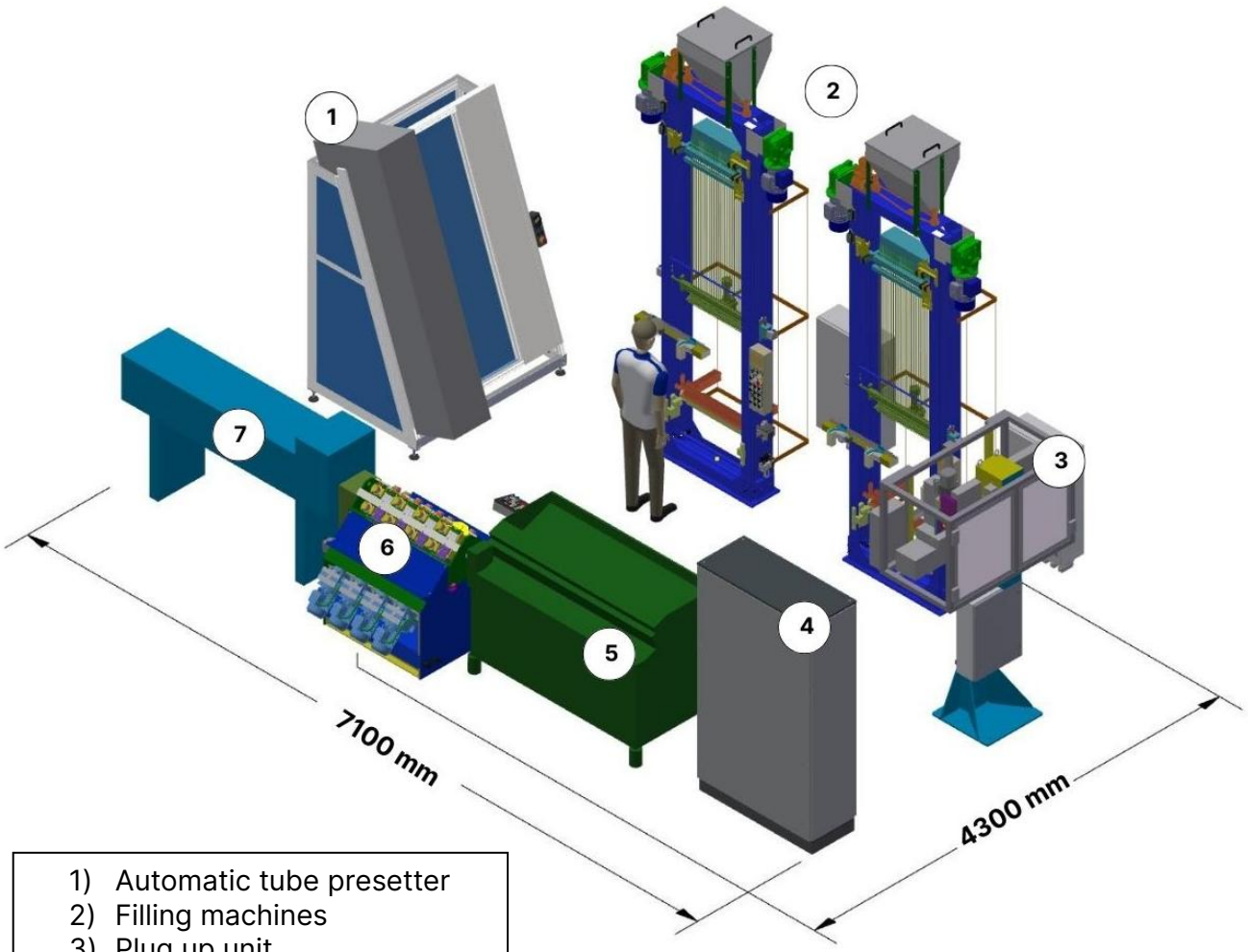
LAYOUT



1) Automatic tube presetter
2) Filling machines
3) Plug up unit
4) Electrical panel
5) Automatic feeder
6) Roll reducing mill
7) Unloading device

Figure 2 Footprint layout of the filling centre with roll reducing mill.

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