ADDA FER MECCANICA

END FACING UNIT EF4
From 1990 Adda Fer has grown in the tube machinery world increasing its know-how and its brand.

In the last 10 years, the technology of its machinery has reached the top level of its main competitors entering the top class manufacturers extending its products catalogue from the complete tube mills to the finishing lines.

Machines necessary to obtain the API certification for the products like end-facing and hydro-tester are now standard machines for Adda Fer and the new target is consolidating the productivity and the flexibility maintaining the best quality.
End-facing are generally beveling one side of the tube per time and one tube per time.

From the experience done with this standard way to bevel the tube ends, Adda Fer has improved its machine in order to be able to work 2 tubes per time using 2 parallel heads that are beveling the 2 tubes at the same time.

This permits to have almost the double of the time to bevel the tubes. This is very important when the tube mill is really performing and the risk is that the bottleneck could be the time to complete the beveling of each tube.
Always in order to reduce the time lost and to speed up as much as possible the cycle time, to avoid moving the short tubes for long distances, one couple of beveling heads is fixed and one couple of beveling heads is moving in order to reduce the distance the tubes have to be moved to process the correct tube length.

In this way, loading, moving, and beveling 2 tubes per time, the time available for the operation is higher (almost double to the single tube version) and the productivity increases with no impacts on the process.

One other advantage is that the machine doesn’t require a complicated system of motorized rollers to move the tube, but only a cylinder is enough to move the tube of few centimeters in order to align it perfectly before the beveling.

The tube is clamped with 2 hydraulics grippers (1 per tube) in order to stabilize it during the beveling operation.

To have the warranty to block the tube avoiding vibrations, there is a vise for each measure of tube. The beveling heads are also automatically adjusted on the center of the tube by PLC.

The line, in fact, is automatically setting up to the correct size, and, a system with brushless motors move up and down the axis of the mandrels to center them with the tubes.

Also the adjusting of the working length depending from the tube length is automatically set up by the PLC though 3 motors moving the conveyors and the moveable beveling head.
Adda Fer End Facing EF4 is able to process the following ranges of tube:

- Round tubes from 30 mm. up to 114 mm. outer diameter with thicknesses limited only if the customer pretends also internal beveling.
- Tubes length from 3 m. up to 12 m. all under automatic control.
- Speed up to 120 m./min. (with tubes long 6 m., 6 seconds to process 2 tubes).
- 4 chain conveyors in order to support the tubes with all the ranges.
- 2 parallel beveling head with the possibility to mount external, internal and frontal inserts to finish the surface as desired.
- Brushless motors to adjust automatically the axis of the beveling heads depending from the tube diameter.
- A sophisticated system to motorized both the mandrel acting on the 2 tubes in parallel with the same motor with a telescopic mandrel controlled by a brushless motor.
All the automation is done by SIEMENS components using Siemens SINAMICS drives and inverters.

The interface with the operator is studied in order to permit to have the full control of the parameters in order to have the perfect bevel and the maximum efficiency on the process.

The operator’s interface graphic pages is designed to allow operators a rapid takeover of the machine after the star up.

Interactive diagnostics allows the operator to identify immediately the cause of any operational stop or anomaly of the system.

The alarm/failure signals follow its logical sequence, avoiding irregular indications and the operator will be timely in helping to solve functional problems, the alarms will also be saved in data base for diagnostics and maintenance.

Pages with trend graphs of the main parameters measured by the machine will be instantly available and data based.