REPORT

ADDA FER OPEN HOUSE
RUSSIAN DELIVERY
• Tube Mill TM10 A.P.I.
• Flying Cut-Off DB10

LIGHTS OF MEXICO
METAL EXPO 2013

OCTOBER 2013
On 27th and 28th of September Adda Fer Meccanica has had the pleasure to invite, at its headquarters in Mapello, some important delegations coming from different parts of the world, to give them the opportunity to take vision of the last lines and plants totally designed and manufactured by Adda Fer Meccanica itself.

Thanks to an imminent delivery for an important Russian Customer, Adda Fer Meccanica was able to present:

- Electro welded tube line A.P.I. TM10, for the production of pipes up to diameter 273 mm. and thickness 8.0 mm.
- Electro welded tube line A.P.I. TM14, for the production of pipes up to diameter 355.6 mm. and thickness 12.7 mm.
- Double blades flying cut off DB10, for the cut of pipes up to diameter 273 mm. and thickness 8.0 mm.
- Four blades orbital flying cut off FB16, for the cut of pipes up to diameter 426 mm. and thickness 20.0 mm.
Several important partners of Adda Fer Meccanica, involved in the supply of components for its machines, participated to the event.

The decision to organize the Open House directly in the company, also gave the opportunity to the participants to see the advanced equipment used by Adda Fer for the design, construction and assembly of the various parts of its lines and plants.

These two days have been very positives for the visitors, who were able to better appreciate the business philosophy and the method of production of the company, and for the Adda Fer team, who was able to better understand directions and requests of some of the leading tube manufacturers, in this particular moment of the market.

On the following link Photogallery Open House AddaFer it is possible to consult a short photo gallery of the event.
For a prestigious russian tube manufacturer, Adda Fer Meccanica has recently projected and realized a complete plant for the production of electro welded pipe.

As with all plants that Adda Fer produce, the study of the project was performed according to specific customer requirements and tailored in all its parts, in order to provide to the customer a product that would correspond to the real needs.

The delivery and the installation of the plant are scheduled for the next November and thanks to this implementation, the Russian manufacturer will be able to increase his productivity, offering an even wider range of sizes for its customers.

Here below please find the details of the installed equipment.
LINE COMPOSITION:

- Charge coil car
- Uncoiler
- Opening Group
- Full Automatic strip joint bench
- Horizontal spiral accumulator
- Complete Profile unit composed by:
  - Break down
  - Linear Cage Forming
  - Finn-pass 3 stands
  - Edge Guiding
  - 4 rolls welding head
  - Double Scarfing Unit
  - Cooling unit
  - Sizing 4 stands
  - Turk Heads 4 Stands
- Flying cut-off double blade, cold cut
- Roll outlet table
- Electrical equipment
- H.F. Welder 600 kW Installed power
- Tooling

LINE DETAILS:

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (indicative)</td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td>90 m</td>
</tr>
<tr>
<td>Width</td>
<td>10 m</td>
</tr>
<tr>
<td>Pass-line height (indicative)</td>
<td>1.100 mm</td>
</tr>
<tr>
<td>Max working speed</td>
<td>50 m/min</td>
</tr>
</tbody>
</table>
Tube Mill **TM10 A.P.I.**

**PRODUCTION CAPACITY**

<table>
<thead>
<tr>
<th></th>
<th>Round tubes</th>
<th>Square tubes</th>
<th>Rectangular tubes</th>
<th>Tube thickness</th>
<th>Tubes length</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Min diameter</strong></td>
<td>127,0 mm.</td>
<td>120 x 120 mm.</td>
<td>140 x 100 mm.</td>
<td>3,0 mm.</td>
<td>6,0 m.</td>
</tr>
<tr>
<td><strong>Max diameter</strong></td>
<td>273,0 mm.</td>
<td>200 x 200 mm.</td>
<td>200 x 160 mm.</td>
<td>8,0 mm.</td>
<td>12,0 m.</td>
</tr>
<tr>
<td><strong>Min</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Max</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Tube Mill TM10 A.P.I.

## Material Details:

<table>
<thead>
<tr>
<th>Material</th>
<th>Low carbon steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Din</td>
<td>ST 37.2, ST 44.3, ST 52.3</td>
</tr>
<tr>
<td>En 10027-1</td>
<td>S 235 JR, S 275 JR, S 355 JR</td>
</tr>
<tr>
<td>Yield strength</td>
<td>Min 190 N/mm², Max 355 N/mm²</td>
</tr>
<tr>
<td>Ultimate tensile strength</td>
<td>Min 270 N/mm², Max 490 N/mm²</td>
</tr>
<tr>
<td>Elongation</td>
<td>Min 12%, Max 28%</td>
</tr>
<tr>
<td>Width</td>
<td>Min 400 mm, Max 800 mm</td>
</tr>
<tr>
<td>Thickness</td>
<td>Min 3.0 mm, Max 8.0 mm</td>
</tr>
<tr>
<td>Coil external diameter</td>
<td>Max 2.000 mm.</td>
</tr>
<tr>
<td>Coil internal diameter</td>
<td>Min 508 mm.</td>
</tr>
<tr>
<td>Coil weight</td>
<td>Max 10.000 Kg.</td>
</tr>
</tbody>
</table>
Flying cut-off DB10

Double blade cut off with a controlled movement along the orthogonal axis for the range of diameters 73 to 273 mm and their derivatives. It is a result of the evolution of a basic project, with already very high performances, that in its last configuration gives the following advantages:

- extreme flexibility - the wide range of sizes and sections that can be cutted always with the best parameters requested by the blades (also for this machine either HSS or TCT);

- high-quality of cut and a long blades’ service life.

A double vice group both at inlet and outlet side arrange the blocking of the tube during the phase of cut in order to avoid dangerous vibrations.

The unit is composed by:

Base:
in heavy structure in normalized welded sheet, in which, linear sliding guides are seated in the superior side, for the support of the cut carriage and, there is a side lodging for the rack that allow the motion of the same carriage.

Some shock absorber and carriage block systems are mounted at the ends of the base, for emergency, in order to avoid damages to the rack and pinion system.

Carriage:
It is composed by a normalized welded steel structure on which all tables have been worked for the support and the lodging of units for the sliding of the cut heads, the vices and the control group dimensioned for the tracking.

- The cut heads are two and work in opposite way both on longitudinal and transversal axe from the center of the tube. They are composed each one by a reduction gear properly dimensioned with “0” play gears which allow the rotation of the mandrel on which the blade is seated.

- The vices are lodged in 2 portals of big dimensions positionned close to blades in order to give the max stiffness to the system. They are powered by 1 hydraulic cylinder each one manufactured in alloyed steel quenched on surface.

- The tracking group is manufactured with a rack and pinion control, manufactured with vertical axe.
This machine has been developed to allow a good cut quality, together with high performance in term of speed. To obtain this, the cut system is double with twin heads, each unit cut 50% of the total pipe section in the same time with the milling cut technology.

**LINE DETAILS**

Dimensions (indicative)
- Length: 8,0 m.
- Width: 3,5 m.

Max working speed: 50 m/min.

Cutting speed: From 150 up to 230 m/min.

**PRODUCTION CAPACITY**

Round tubes
- Min diameter: 73,0 mm.
- Max diameter: 273,0 mm.

Square tubes
- Min: 70 x 70 mm.
- Max: 200 x 200 mm.

Rectangular tubes
- Min: 120 x 80 mm.
- Max: 200 x 160 mm.

Tube thickness
- Min: 3,0 mm.
- Max: 8,0 mm.

Tubes length
- Min: 6,0 m.
- Max: 14,0 m.
Adda Fer Meccanica has recently delivered two automatic poles welding machine for an important Mexican customer.

From 69 kV up to 400 kV, our customer manufacture a wide array of types and configurations, including single circuit, double circuit and overhead-to-underground transitions, all with or without underbuilt circuit supports.

They routinely provide reliable solutions for complex base plate specifications, special crossarm requirements and multiple accessory configurations.

Over the years they have developed a well earned reputation in the challenging high-mast lighting pole sector, supplying poles in varying heights for diverse wind conditions and equipment requirements.
LINE COMPOSITION

The machine is designed to process both poles in two shells or in one piece, in case of poles in two shells the machine after loading is able to assembly and process the long seam weld without tack weld.

- Max Thickness 16 mm.
- Min Thickness 3,2 mm.
- Max Outside Diameter at the Base 1.900 mm.
- Min Outside Diameter at the Base 600 mm.
- Max Finished Pole Length 16.000 mm.
- Min Finished Pole Length 6.000 mm.
- Max Pole Weight 10.000 Kg.
- Welding Capacity 1.250 A
- Positioning Carriage Speed 0,3 - 2,0 m/min.
- Positioning Carriage Return Speed 10 m/min.

• Loading system
It is composed by a fixed roller table with a “v” shape opened in the middle, able to support both the half shells or the poles in one piece. A series of tilting arm with rollers, allows the possibility to load the half shells by crane. After loading the shells can be handled by a remote control, to the correct position. Than the carriage by an hydraulic clamping device provide the feeding for welding. A series of mobile separators keep the two shells opened on the bottom.

• Positioning carriage
The carriage holds a clamping device controlled by a hydraulic cylinder, it is able to clamp both poles in one piece or in two pieces after loading, than move the pole from the loading position through the welding machine.

The carriage is driven by a servomotor with gearbox and pinion-rack system for the whole stroke.

This allow the possibility to program welding speed and pole positioning in automatic mode, or manually through a potentiometer.

After complete welding of the pole, if the pole is in one piece the carriage can return to its loading position by a fast return speed.

If the pole is composed in two shells, after the first welding the poles can be rotated 180° by a rotation device (not included) and then moved to the second welding machine.
LINE COMPOSITION

If the pole is composed in two shells, after the first welding the poles can be rotated 180° by a rotation device (not included) and then moved to the second welding machine.

Clamping device are of two type, one for big poles in two pieces and one for little poles in one piece.

• Welding machine
The welding machine is made of a strong rigid steel structure supporting the pole forming device composed of a series of squeezing rollers, and the welding equipment, it allows the welding operation while keeps the pole in the correct shape without tack weld.

• Pole guiding device
While the poles pushed by the positioning carriages is passing through the welding gantry, two multiple forming rollers each mounted on pushing devices, provide to keep the pole in the correct position closing the gap between the edges to allow the welding operation with the best conditions.

The two pushing devices one left and one right are composed each of a rigid sliding boom holding the forming roller mounted on a tilting bogie. Each slide, controlled by a hydraulic cylinder, is able to close the pole and to follow the slope of the same during the longitudinal welding stroke.

• Hydraulic plant
Hydraulic power unit to generate the pressure for all the machine actuators. Max working pressure 150 bar. Flexible hoses and steel pipes with connection. Oil cooling system by oil air heat exchangers. Electro valves, pressure and flow control valves, cylinders completely connected.

• Electric system
Cabinet containing power and control equipment for the power and auxiliary services. The drive for servomotors, with the PLC for the control and programming of the whole working cycle. Operator interface is very user friendly, allows set up of poles dimension and welding parameters. The standard equipment is manufactured according to CEI 44.5 standards. The power supply is 380V 60 Hz 3 phases.
Adda Fer Meccanica will be present at the next edition of the Russian fair from 12th to 15th November 2013 in Moscow.

You will find us at STAND 2E27 and the occasion will be profitable to meet customers and visitors of the sector by showing them what has been done in recent years and future projects both in terms of investments and of new products.

Next event, at which Adda Fer has already confirmed its participation, it’s Tube, from 7th to 11th April in Düsseldorf (Germany).