



## 2000 X 10 MM. FIMI – CUT TO LENGTH LINE

### **A - General characteristics:**

**Year of manufacture : 1980**

### **A1 – Entry line characteristics:**

**Material :** hot rolled steel Fe 52 UNI

- |                    |            |      |     |
|--------------------|------------|------|-----|
| - Tensile strength | N/mm2      | max. | 420 |
| - Yield strength   | N/mm2 max. |      | 280 |

### **Strip**

- |             |          |      |          |
|-------------|----------|------|----------|
| - Width     | min. 750 | max  | 2000 mm. |
| - Thickness | min. 2,5 | max. | 10 mm.   |

### **Coils**

- |                    |          |      |           |
|--------------------|----------|------|-----------|
| - Max weight       | Kgs.     |      | 30.000    |
| - Inside diameter  | mm.      | 600  | max. 810  |
| - Outside diameter | mm. min. | 1000 | max. 2000 |

### **A2 – Exit line characteristics:**

### **Sheets**

- |                           |         |     |      |
|---------------------------|---------|-----|------|
| - Stackable sheets length | mm. 750 | max | 2000 |
|---------------------------|---------|-----|------|

### **Tolerances**

- |                           |                |                                  |
|---------------------------|----------------|----------------------------------|
| - Tolerance on the length | mm. $\pm 1$    | up to 3 mt. length               |
| - Tolerance on diagonal   | mm. $\pm 0.25$ | for each additional meter length |

### **A3 - GENERAL LINE CHARACTERISTICS**

- |                      |            |        |
|----------------------|------------|--------|
| - Introduction speed | 10         | m/min. |
| - Working speed      | 0 to 30    | m/min. |
| - Thickness          | 2,5 – 10   | mm.    |
| - Uncoiler pull      | N 15.000   |        |
| - Working direction  | right/left |        |
| - Number of cuts :   |            |        |



mb consulting

---

<b>Length mm.</b>	<b>Cuts per minute</b>	<b>Line speed m/min.</b>
1500	20	30
1000	20	20
750	20	15



### **Tensions and absorptions**

- Three-phase tension 380 V - A.C.
- Auxiliar tension 110 V – 50 Hz
- Electro-valves tension 110 V – 50 Hz
- Total installed power 345 KVA

### **Hydraulic equipment**

- Nominal working pressure 120 Bar
- Cooling water consumption 270 lt/min.
- Cooling water pressure 2 Bar

### **Pneumatic characteristics**

- Working pressure 6 Bar
- Consumption 30000 l/hour (not included stacker).



## **LINE COMPOSITION**

### **B1 – FEEDER CAR**

#### **General :**

- Function           it taker the coils from the stocking ramp and brings them to the uncoiler.
- Type                mobile car – fixed lifting cylinder.

#### **Technical characteristics :**

- Capacity           Kgs     30.000
- Translation stroke   mm. ~ 2800
- Lifting stroke       mm. ~ 700
- Travel speed        m/min. 8
- Lifting speed         m/min. 3

#### **Construction**

Mobile car in welded stretched steel.

Fixed lifting stroke.

Sliding tracks on foundations

Sliding wheels mounted on bearings

Car lifting by hydraulic cylinder.

Translation motion     by hydraulic cylinder.



## **B2 – UNCOILER**

### **General :**

- Function           it receives the coil and transmits the tension to the strip during unwinding.
- Type                counterposed cones.

### **Technical characteristics :**

- Inside diameter       mm. min. 600 – max 810
- Capacity               Kgs     30.000
- Max coil diameter    mm.    2000
- Pull                    N        15000
- Braking                mechanical in axis

### **Construction :**

The structure is made in welded, stretched steel.

The shafts are in hardened and tempered alloy steel.

Shift of uncoiler structure by hydraulic cylinder.

Lubrication by local grease.

Cones rotation by hydraulic motor.

Electromagnetic decoupling clutch.



### **B3 – LEVELLING PLATE**

#### **General :**

- **Function**        the levelling plate permits the blocking, on the mandrel always in the same position, of the strips of the same width.  
By varying the equalizing stroke, the striker can be adjusted to various strips widths.  
In this way the alignment will be perfect.
  
- **Type**            hydraulically driven.

#### **Technical characteristics :**

- Levelling stroke        ~ 400 mm.

- **Construction**

Electro welded and stretched structure and in accordance with the uncoiler.

Plate positioning by hydraulic cylinder.

Lubrication by localized grease.



#### **B4 – INPUT PULL GROUP**

##### **General:**

- **Function**        it makes it easy the introduction of the first edge of the strip in the inlet line section.
- **Type**            2-rolls type; one of which is vertically mobile and the second is used as deflector roll.

##### **Technical characteristics:**

- Diameter of the upper roll            mm.    280
- Diameter of the lower roll            mm.    280
- Roll width                                mm.    2230

##### **Construction**

Steel rolls, mounted on bearings.

Support structure in welded stretched steel, anchored to the foundations.

Open/close towing rolls by hydraulic cylinders.

Towing roll driven by hydraulic cylinder.



## **B5 – TURN OPENER TABLE**

### **General:**

- **Function**        it opens the first turn of the coil and introduction in the input towing.
- 
- **Type**            telescopic table with strapping breaker tip.

### **Technical characteristics:**

- Table length            mm. 1300
- **Construction**

Table made of welded, stretched steel, articulated on the lower roll; it is driven by hydraulic cylinder.





## **B6- CENTRING DEVICES**

### **General:**

- **Function**      this device has the function to drive the strip upstream of the shear, to obtain a perfect squaring of the sheets.
- **Type**            lateral guide type.

### **Technical characteristics:**

- Guide positioning            by hand-wheel
- **Construction**  
Guides composed by vertical rolls.



## **B7 – PRESSURE ROLL**

### **General:**

- **Function**        the rolls is pressed in the outside of the coil; it prevents the unwinding of the turns.
- **Type**            hydraulic positioning.

### **Technical characteristics:**

- Roll diameter        mm.    250
- Length                mm.    800

- **Construction**

The support arm and the framing are made of welded, stretched steel.

The structure is anchored to the inlet drive unit.

The roll is coated, mounted on bearings.

Hydraulic positioning cylinder.

Roll rotation:        gearmotor.



## **B8 – 6-HI**

### **LEVELLER**

#### **General :**

- **Function**                   levelling of the strip.
  
- **Type**                       high-precision leveller, 6Hi-type and with fast change device for the roll bench and continuous counter-rolls.

#### **Technical characteristics :**

- Levelling rolls diameter                       mm.    100
- Length of levelling rolls                     mm.    2340
- Upper levelling rolls                         5
- Lower levelling rolls                         6
- Hardness of levelling rolls                 60 ÷ 62 Hro
- Motorisation of levelling rolls             D.C. motor N=130 Kw
- Localized correction lower rolls
- Parabolisation of lower rolls              A.C. motor
- Penetration drive upper bridge            A.C. motor
- Tilting drive upper bridge                 A.C. motor
- Parabola indication                         mechanical on quadrant
- Penetration indication                     mechanical on quadrant
- Localized corrections indications
- Maximum speed                             30 m/min.
- Lubrication                                 forced oil

#### **Construction**

Structure in welded, stretched steel, rigidly fixed to the foundations, pillars in forged steel, square section.

Upper cover in welded stretched steel, keyed and bolted to the 4 pillars.

Lower bridge: fixed.

Upper tilting bridge, longitudinally and transversally.

Thrust screws (2+2).

Pinion cage: in one block with helicoidal gears in treated, rectified steel, all mounted on rolling bearings (axial and radial).

Gear motor with steel box in welded, stretched steel and helicoidal gears in treated rectified steel.

Centralized lubrication.



## **B9 – FLYING**

### **SHEAR General:**

- **Function** It cuts the strip in continuous working in preselected dimensions.
- **Characteristics:** it is essentially constituted by a guillotine shear, sliding on a normalized, welded, steel base, rigidly anchored to the foundations. The shear, at every cutting cycle, is accelerated, in the advancement direction of the strip, by means of a hydraulic device, of adequate power, to permit to reach in a very brief time, the translation speed of the strip.

When the shear travel speed is about to exceed the strip speed, a mechanical device automatically intervenes, forcing the shear to proceed in perfect synchronism with the strip speed from that instant.

During this synchronized stroke time, cutting takes place without the formation of compensation loops and without interfering in any way with the drive components of the leveler, which clearly acts as a stepping machine.

Once the cut has been made, the hydraulic device recalls the shear to the starting point and the mechanical synchronizing device is automatically released.

The line speed reference signal is derived mechanically from the leveler gearbox and carried via transmission shafts to the synchronization unit mounted on the base on which the flying shear slides in its forward and return movement.

The acceleration ramp of the shear and its braking during the return and stop phase at the start of the cycle are controlled by a servo valve actuated for the acceleration phase by an electronic unit and for the braking phase by a potentiometer controlled by a suitably profiled cam.

The detection of the length of the strip, the setting of the lengths of the formats, and the number of formats to be cut for each programmed measure all rely on the electronic counter mentioned above, which makes these operations extremely simple and convenient.

An interpenetrating conveyor belt at the exit of the shear is in charge of forwarding the cut sheets in line and is designed to follow the shear in its seamless movement.

The machine is equipped with an autonomous lubrication unit upstream of the flying shear, but always supported on its base, motorized A.C. pinch-roll has the function to bring in line the tails of the coil, that at the end of the coil would block themselves between the exit of the leveler and the beginning of the interpenetrating strip of the flying shear.



**Technical characteristics:**

- Useful length                               mm.   2050
- Sheet length                                 mm.   10.000
- Number max of cuts/1'                    20
- Cutting kinematics                        clutch brake assembly
- Adjusting format lengths                 rotating selector
- Phasing between shear speed and strip speed   free wheel Fimi patented
- Main drive                                  hydraulic cylinder
- Max working speed                         30 m/min.
- Motorization                                A.C. motor N = 11kW

**Construction:**

The base is made of welded, stretched steel solidly anchored to the foundations.

The shear also made of welded, stretched steel.

Treated and ground special steel gears.

Hardened and tempered steel shafts

Blades in special steel.

± 1 mm. up to 3 mm. length constant speed

± 0,25 mm. for each additional meter in length.



## **B10 – SHEAR ENTRY PULL DEVICE**

### **General**

**Function :** Facilitates the introduction of the strip flap and the ejection of the tails.

**Type** 2-rolls type one of which is vertically mobile.

### **Technical characteristics :**

- Diameter of the upper roll                      mm.    160
- Diameter of the lower roll                      mm.    160
- Roll width    mm.    2300

### **Construction :**

Steel rollers made from tube, mounted on bearings.

Welded and stretched steel support structure anchored to the shear base.

Trailing rollers closing opening by pneumatic cylinder.

Trailing roller rotation by gear motor.



## **B11 – INSPECTION CONVEYOR**

### **General**

**Function :** It permits to inspect the sheets at the exit of the shear and the rejection of defective sheets.

**Type** Belt type.

### **Technical characteristics :**

- Conveyor length mm. 3300
- Speed m/min 364

### **Construction :**

Structure in welded steel.

Steel rolls made from tubes mounted on bearings.

Rotation by D.C. motor.



## **B12 – LAUNCH PINCH-ROLL**

### **General**

**Function :** it facilitates the stacking of the sheets.

### **Technical characteristics :**

- Upper roll diameter                      mm.    240
- Lower roll diameter                      mm.    240
- Roll width                                    mm.    2200

### **Construction :**

Steel rollers, machined from tube, mounted on bearings. Roller coating : rubberized.

Welded and stretched steel support structure, anchored to foundation.

Opening launch pinch roll closure by pneumatic cylinder.

Launch pinch roll rotation by means of AC motor.

Complete with tail beater operated by pneumatic cylinder.





## **B13 – STACKER**

### **General**

**Function :** This has the function of receiving the sheets after cut from the guillotine shear, stacking them evenly at the established height so that the package that is formed can be conveyed to the package withdrawal conveyor.

### **Structure**

The structure is made of welded, machined and assembled steel, and it is made up of:

An upper base built of steel profiles with four rows of motorized chains : the cut sheets of metal fall onto these chains. At each preselected number of sheets the lower base is vertically mobile to avoid the noise.

In between the two beams is installed a motorized tip-up device moved by means of an AC motor with a "forward-backward advancement" having the function of matching the deposited sheets of metal of the established length.

To laterally match the sheets of metal, two lateral walls, mobile on guides are provided. They are adjustable in width by means of 2 hydraulic motors connected between each other.

### **Technical characteristics:**

- Adjustable width:	700 - 2000	mm
- Stackable length	1.000 to 12.000	mm
- Height of package (maximum)	300	mm
- Maximum weight of package	7	Tons
- Diameter of rollers	140	mm (approx.)
- Installed power	12	kW.

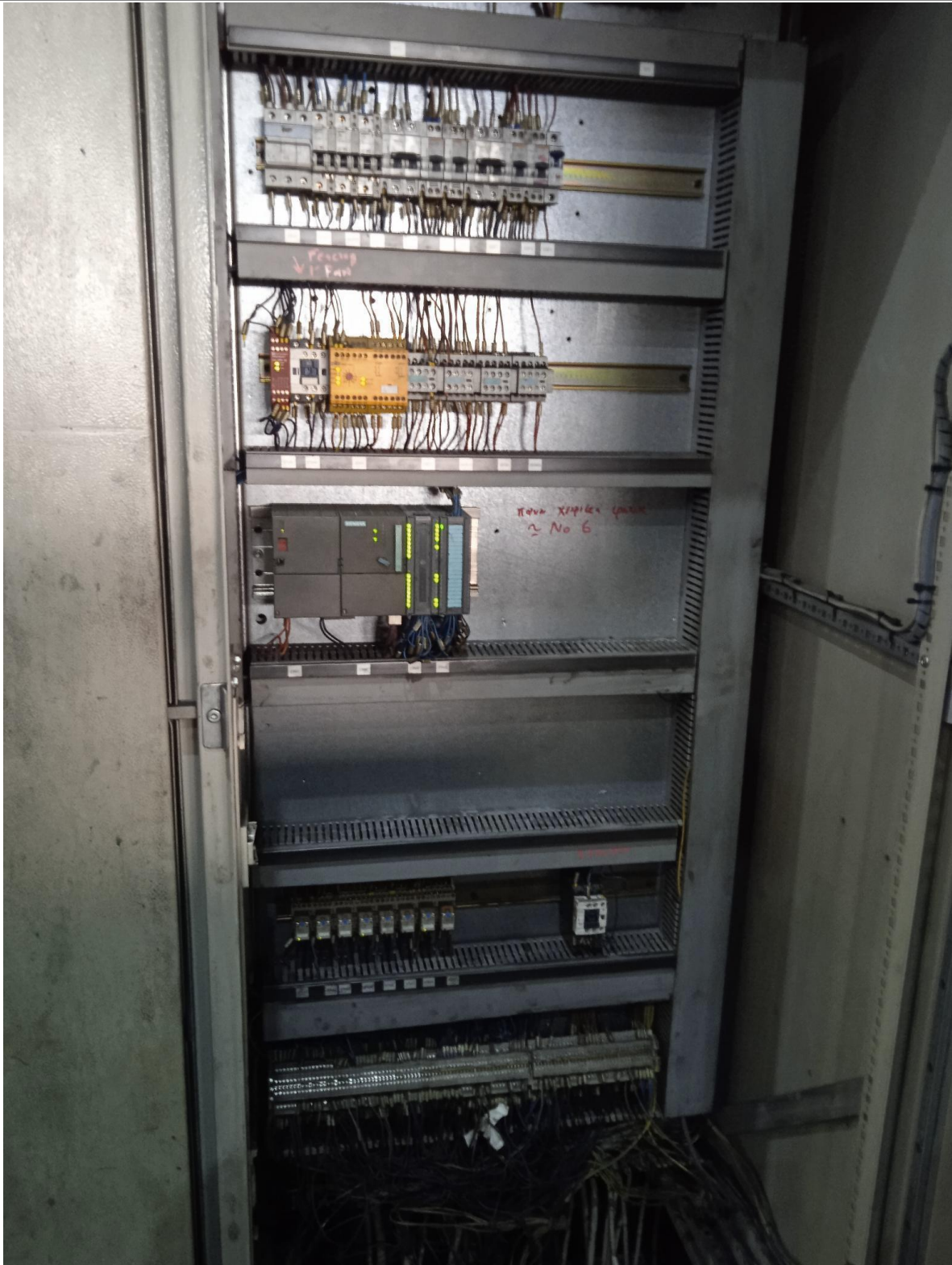


mb consulting

---

PHOTOS













































mb consulting











mb consulting



