

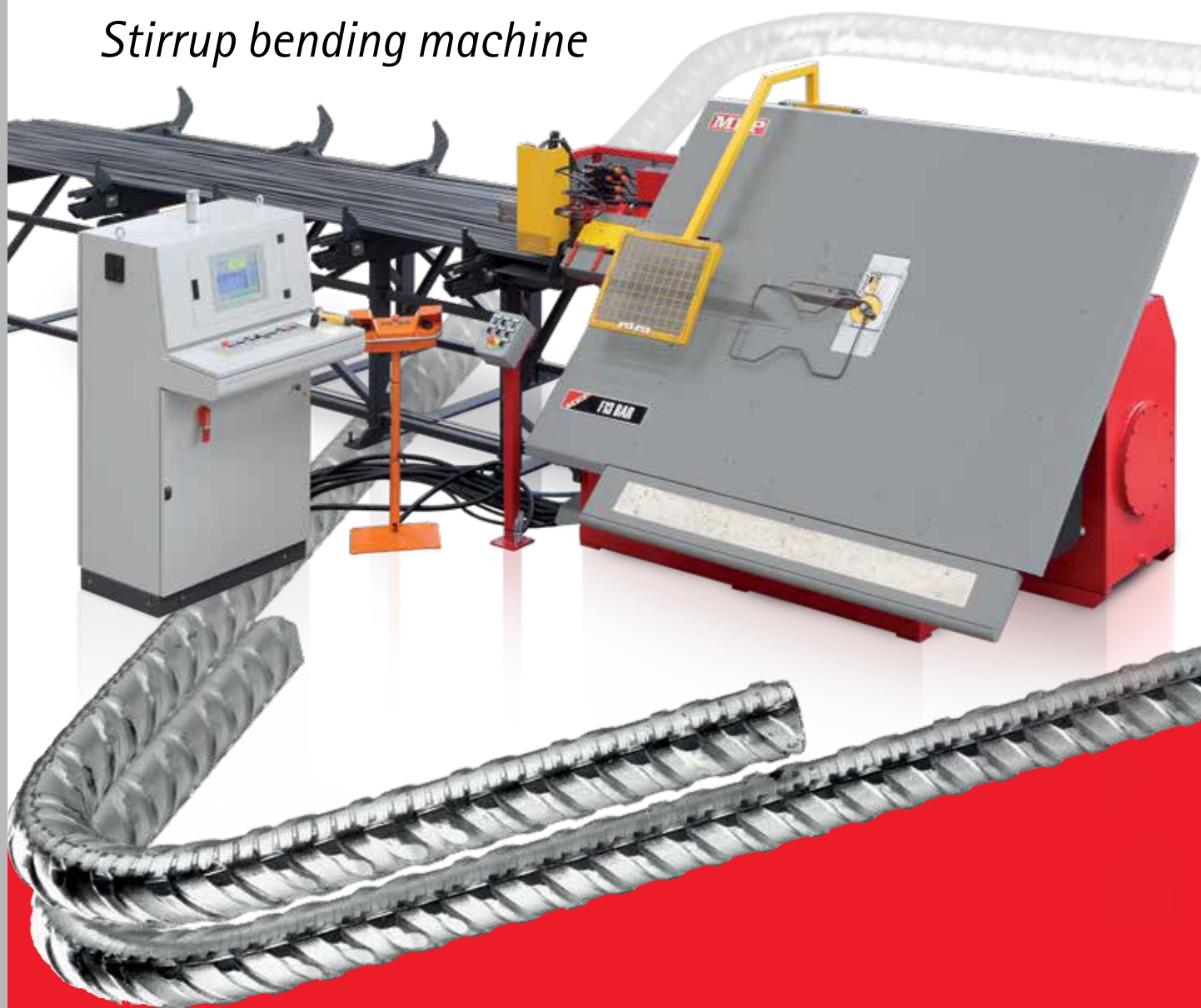


Stirrup bending machine

F13 BAR

F13 BAR 3D

Stirrup bending machine



MEP

the history of innovation



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F13 BAR F13 BAR 3D

2D-3D BAR WITH ZERO SCRAP:
"THE FIRST IN THE WORLD"

F13BAR is the most innovative stirrup machine to process bars completely automatically, guaranteeing maximum flexibility, productivity and quality of the finished product.

F13BAR is the first machine in the world of its kind, to use 100% of the length of the bar without generating additional scrap.



MAXIMUM FLEXIBILITY
AND PRODUCTIVITY AT LOW COST



Bi-directional stirrups of very small or large dimensions, bars with one or more bends on one end, circles and spirals are realized in 2D or 3D (optional patented device). The fully automatic process allows to reduce industrial costs per ton thanks to the use of fewer machines and operators.

Unrivalled quality and productivity

F13BAR allows to obtain, in a simple way, a **qualitatively superior product** thanks to the combined action of an exclusive series of **patented devices**, **drastically reducing the quantity of products destined to be discarded**. A state-of-the-art drive and control system enables **unprecedented hourly productivity rates to be achieved**.

AUTOMATIC BAR LOADER

The **automatic loading** (optional) of the bar is guaranteed by the combined action of the **bar stock rack with chains** ① and the **gripper which** picks up ② every single bar and inserts it ③ successively into the pre-feeding unit.



"TFS", THE UNIC REBAR SOLUTION

The "TFS" (track feeding system) is a traction system able to eliminate the rotary effect of the bar on its axis during the advancement phase.

This way, **always closed stirrups are obtained**.

The exclusive traction control of the bar **minimizes the difference in length and also limits the deformation of the longitudinal ribs** even if there are obvious geometrical or dimensional differences.

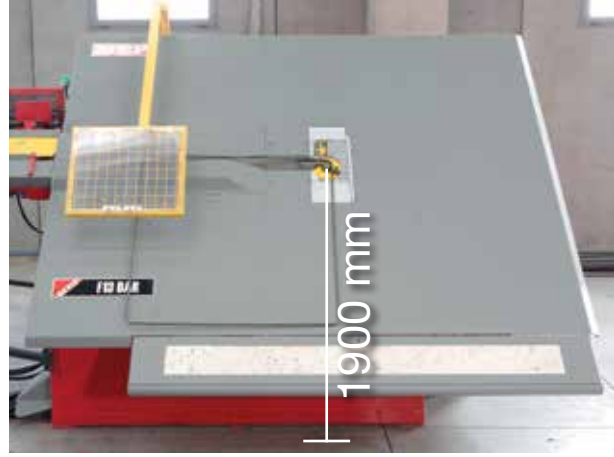


The "TFS" system always guarantees closed stirrups.

100% OF THE BAR, ZERO SCRAP

F13 BAR is the first machine of its kind in the world able to use the **entire length of the bar**, either commercial length (9-12 m) or pre-cut to size (min 2 m), fully automatically. **The scrap is reduced to zero** if the optimization allows it. A series of sensors automatically read the length of each bar, **avoiding its heading** and determining the cutting sequence. The next bar will push the one in the production, allowing the completion of the processing of the latter.

SAFETY AND ERGONOMICS



"TFS" allows to obtain **always closed stirrup**, eliminating the dangerous manual intervention of the operator during the bending phase. The **exclusive design of the worktop**, equipped with a lower collapsible element, makes it possible to produce **large stirrups** (maximum distance between the central pin and the flooris 1900mm) as well as becoming a **collection shelf for all the stirrups**, thus avoiding their fall to the floor.

The operator therefore always works in conditions of **high safety** and in an **extremely ergonomic environment**.

WORLD SYSTEM: TOTAL CONTROL

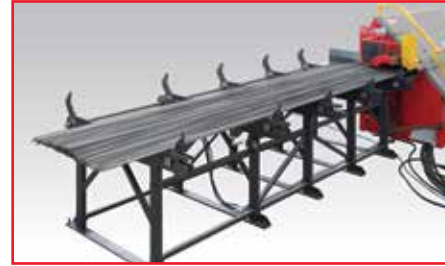


The World System through a "user friendly" interface allows a total control of all the devices of the system, enhancing its performance.

- **Operator panel Industrial P.C.MEP "World System" composed of:**
 - "Touch screen" LCD screen for displaying all the information in a "user-friendly" graphic form.
 - Compact ("embedded") low absorption ("fanless") microprocessor equipped with "compact flash disk" without moving parts ("diskless").
 - Linux operating system.
 - Automatic backup "backup" data backup system in case of accidental power interruptions to safeguard the archives and the integrity of the memory supports.
- **The software specially developed by MEP allows:**
 - Data entry with graphic display of the programmed and pre-memorized shapes with relative feasibility verification through "dynamic simulation".
 - Control and memorization of all parameters and speeds in execution through potentiometer.
 - Possibility to program up to 7 different shapes for each bar.
 - Possibility of programming and production of an automatic sequence of different pieces.
 - Memorization and storage of data relating to work cycles and generation of daily production statistics (positions, diameters, times, weights, etc.).
 - Ability to optimize the cutting lists by creating automatic work cycles.
 - System of "active diagnostics" for a constant verification of the efficiency of all the devices of the plant.
 - Automatic activation of the scheduled maintenance program.
 - Provision for optical bar code reader via RS 232 port.
 - USB port connection
 - Possibility of connection to the company network via RJ45 Ethernet port (LAN port) or RS 232.
 - Provision for remote assistance via VPN (via the factory network).



DOUBLE AUTOMATIC STOCK RACK



F13 BAR can be equipped with a **stock rack** with **double automatic chains** depending on the selected configuration. It allows the management of **two bundles** characterized by **different diameters $\varnothing 10 \div \varnothing 13$** , or of the **same diameter $\varnothing 10$** but of **different lengths 9 m - 12 m**, in order to maximize the optimization by reducing the scrap.

CHANGE PINS IN A HANDFUL OF SECONDS



F13 BAR is equipped with a series of **quick-fix bending pins**. The pins are made in **compliance with international regulations** and are **quickly replaced** when changing the diameter, allowing an immediate restart of production.

UNIVERSAL BLADES






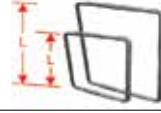


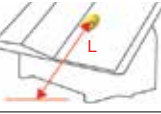


The cutting unit uses a universal knife, suitable for any type of diameter and provided with **4 cutting profiles**.

3D STIRRUPS



Patented optional system allows you to **produce 3D stirrups** in a **fully automatic way**.

TECHNICAL AND PRODUCTIVE CHARACTERISTICS

| | | | | |
|---|--|---------------------------------|---|---|
|  | WORKING BAR DIAMETER | |  |  |
| | hot rolled, smooth or ribbed rebar | | $\varnothing 8 - \varnothing 13 \text{ mm} - \#3 - \#4$ | |
| | $f_y = 600 \text{ N/mm}^2 - f_t = 700 \text{ N/mm}^2$ (other loads upon request) | | | |
|  | SQUARE STIRRUP DIMENTION | | | |
| | minimum * with wire (rebar) $\varnothing 8 \text{ mm}$ (optional pin) | | 90 mm x 90 mm - 3" 17/32 x 3" 17/32 | |
| | maximum * | | 1000 mm x 1000 mm - 3'-3" x 3'-3" | |
|  | BAR LENGTH | | LENGTH BAR CUT TO MEASURE | |
| | minimum | 2000 mm - 6'-7" | minimum | 5 mm - 3/16" |
| | maximum * | 12000 mm - 39'-4" | maximum (if equipped with support channel, optional) * | 12000 mm - 39'-4" |
|  | CENTRAL PINS DIAMETER | | | |
| | minimum * | 32 mm - 2" | | |
| | maximum | 52 mm - 3" 17/32 | | |
|  | MAXIMUM DISTANCE BETWEEN CENTRAL PIN AND FLOOR | | | |
| | standard | 1900 mm - 6' 2" 51/64 | | |
| | optional on request | > 1900 mm - > 6' 2" 51/64 | | |
|  | WORKING TEMPERATURE | | | |
| | standard | -5° C / +40° C - 23° F / 104° F | | |
| | optional on request | -15° C / +55° C - 5° F / 131° F | | |
|  | INSTALLED POWER | | | |
| | maximum (other sizes upon request) | 28,5 kW - 38.75 hp | | |

THE SYSTEM DOES NOT REQUIRE THE USE OF THE AIR COMPRESSOR.

f_y: unit load yield max - f_t: unit shear load max

* other sizes upon request

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