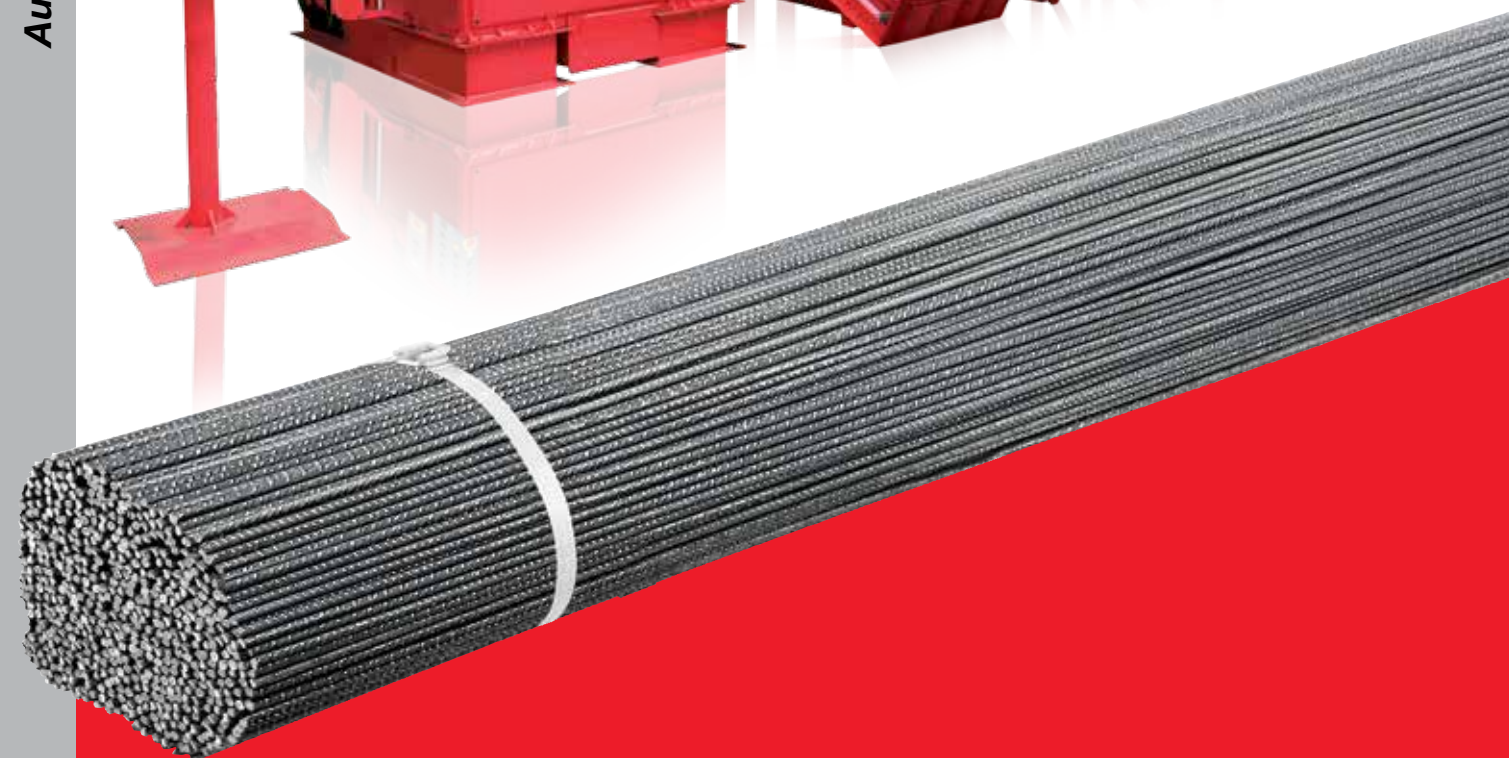




Automatic straightening machine from coil

Metronic 12-16-20 Metronic 10-13 HS Plus Bitronic 16-2

Automatic straightening machine from coil



MEP
the history of innovation



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Metronic Bitronic

TOP PRODUCTIVITY

METRONIC-BITRONIC series are the best technology expression developed for the straightening and cutting of rebar from coil, thanks to **high speed** reachable (up to 8 m/s Metronic 10-13 HS Plus) and superior **product quality** achievable for single wire production.



EFFICIENCY IN COST REDUCTION

The machine's **high productivity** (single or double wire) can always be guaranteed thanks to different possible configurations that are "tailor made" either to **mass production** (same diameter and length, commercial bars) or to "**classified**" production, where the **processing of individual building elements** such as beams and columns are made up of smaller tags consisting of different diameters and lengths. The **METRONIC** Series reaches very high efficiency levels with greatly reduced set-up times and fewer operators, therefore **drastically reducing the production cost per unit of weight**.

QUALITY AND PRODUCTIVITY

METRONIC-BITRONIC are a user friendly straightening and cutting machines producing a superior quality of finished products.

The combined action of an exclusive series of **patented devices** minimizes the setup time and **drastically reduces the amount of discarded products**.

The drive and control system is based on the very latest technology allowing the machine to achieve **unparalleled levels of productivity per hour**.

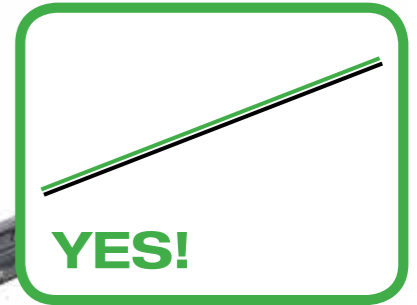


The twisting of the wire during the pulling phase creates bars not straightened.



CONTROLLED STRAIGHTENING

The combined action between the **AFS** and the **on-screen electronic pointer** provides a real and full automated automatic control of all straightening functions also during the production cycle.



patented

AN INNOVATIVE SOLUTION

The **AFS** is a straightening system that eliminates the effect of the wire rotation on its own axis. Therefore **straight bars** can be produced. The **independent control** of the traction on the wire, as well as the increased surface of contact with the **large infeed wheel** it is done directly from the **control panel**. Thanks to this design and to the consequent lower pressure applied on the **steel material**, the **coil ribs** are far less deformed by the straightening process. The lifetime of the **infeed roller** themselves is about **8 times longer** than in case of traditional straightening methods.



Unique automation for unparalleled productivity

The high **productivity** achieved by the **METRONIC-BITRONIC** is the result of the unique and unprecedented concept of **full automation at maximum speed** of all processes that normally require the intervention of the machine operator.

All **manual handling**, as well as control operations that can slow down the production and reduce efficiency are completely taken care of by the automatic control of the machinery.

WE USE 100% OF THE COIL



The extraction pulling unit (Metronic 16-20) **reduces the scrap** and **eliminates the downtime** needed for the **extraction of the "tails"**. The final section of the coil is straightened and extracted fully automatically.

THE FASTEST WIRE CHANGE

The exclusive multiple-wire pre-feeding unit (Metronic 12-16-20) **automatically changes the wire in a very short time**. At the same time **AFS** the straightening system **reconfigures itself** based on the diameter or the material to be worked and re-calling, if stored, straightening parameters previously applied. Thanks to this solution, the equipment is ready to **restart production in a few seconds** without any manual operation.

ODD OR EVEN

A special device (optional BITRONIC 16-2) allows the process of any tags indifferently containing even or odd quantities in a fully automatic way.

A FAST AND PRECISE CUT



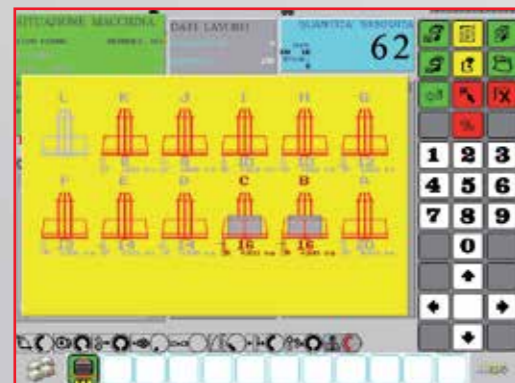
A **hydraulic shearing unit** of extremely robust design, which is capable of performing a complete cutting cycle in only **~0.1 s** (Metronic 10-13 HS Plus). This solution allows processing at **high speed** within the required **measurement tolerances**. The unit is also equipped with cutting blades which can be used on all of their edges, for a total of 8 different cutting surfaces.

NEVER BEEN SO EASY TO INSERT THE WIRE

Pre-straightening and feeding unit equipped with winch and pre-straightener with motorized roller, available on **METRONIC 20** model, eases and speeds up the alignment and the insertion of the wires. Particularly suitable for the large diameters.



4 m/s: DECOILING UNDER CONTROL



The **METRONIC 16** operates with a maximum speed of 4 m/s. This requires automatic control of the coil being processed.

The rotational speed of each motorized decoiler, is controlled in relation to the weight and diameter of the coil, thus avoiding wire overlaps and the consequent downtime.

- Motorized decoilers equipped with an automatic braking system monitored by the control panel according to the work cycle.



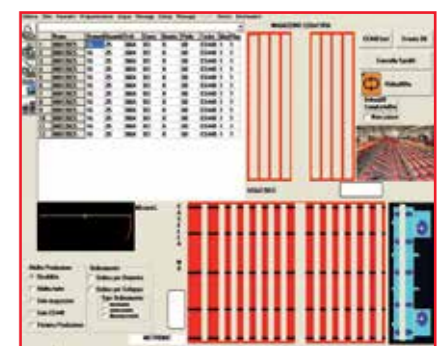
- Spacer for the use of spooled or rewind coils. (OPTIONAL)



WORLD SYSTEM: TOTAL CONTROL

The world system, via a "user friendly" interface, allows total control of all devices of the plant to enhance performance.

- **MEP Industrial PC "World System" operator control panel is comprised of:**
 - LCD "Touch Screen" for the user friendly graphic visualization of all data.
 - Compact, "embedded" microprocessor with low power consumption and a compact flash disk with no moving parts (diskless).
 - Linux operating system.
 - Automatic backup saving system in case of accidental power interruption for safeguarding files and memory support integrity.
- **The customised software developed by MEP allows:**
 - Data entry of bar production with the possibility to store multiple batches to be produced in sequence.
 - Control of all speed parameters via a potentiometer.
 - Access to the straightening correction function, without stopping the production process, through the electronic cross hair displayed on the control panel.
 - Saving and archiving of data relative to work cycles and generation of daily production statistics (positions, diameters, times, weights, etc.).
 - "Active diagnostic" system for a constant efficiency check of all machine devices.
 - Automatic activation of the scheduled maintenance program.
 - Interface compatible with optical bar code reader through RS 232 port.
 - USB connection port.
 - Possible to connect to Company Network through RJ45 Ethernet port (LAN port) or RS 232 port.
 - VPN Connection-ready for remote assistance via Internet (through Company Network).



Metronic Bitronic



AUTOMATIC WORKING CENTER

The **METRONIC-BITRONIC** can be supplied in **multiple configurations** to meet different production needs.

It manages the working cycle in a dynamic way and optimizes the production flow according to the work load assigned to the various units of the system, either for the collection of straight product or for subsequent bending. In fact, the **METRONIC-BITRONIC** actively controls every single position (tag open or closed) and determines periodically the operational priorities.

This allows **maximum versatility** in setting different job schedules, whether for **high productivity** or when **maximum flexibility** is required

The **METRONIC-BITRONIC** operates with a substantial reduction of material transition phases (buffer zones), reduced plant footprint and with less operators. The Plant lay-out is **fully modular** and therefore suitable to be integrated with any distribution and collection solution, **automatic bending stations**, tying stations and so on and can be "tailor made" according to the production requirement.



Metronic 10-13 HS Plus

VERSATILITY AT YOUR SERVICE

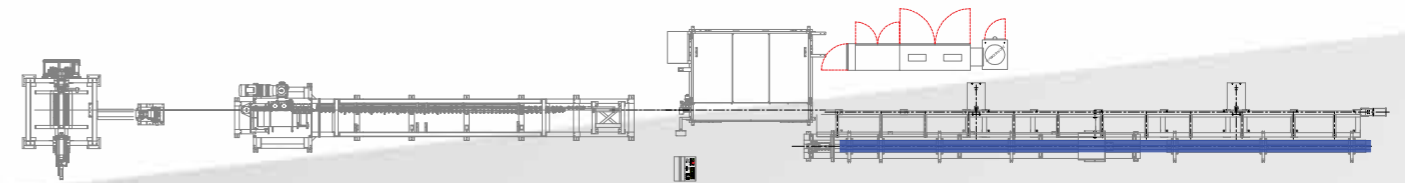


8 m/s: SURE PRODUCTIVITY

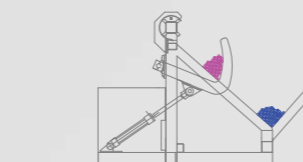
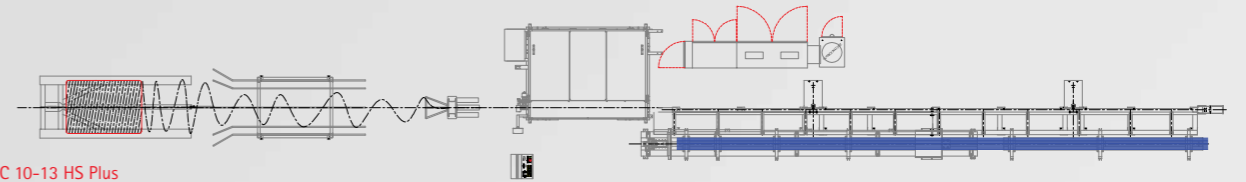
The **METRONIC 10-13 HS Plus**, due to its high speed, are suitable to produce bundles of rebar with the same diameters and lengths in large quantities. The product quality is ideally suited to the demands of welded mesh producers (where maximum tolerance in straightening and cutting is a must) as well as producers and traders of cut to length rebar material.

ENSURED DECOILING

With a maximum speed of 8 m/s, the **METRONIC 10-13 HS Plus** requires a motorized horizontal decoiler (spooled or rewind coils with a pre-unwinding, pre-straightening unit an accumulator loop system or fix (wire rod or hot rolled).



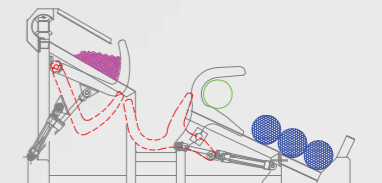
METRONIC 10-13 HS Plus



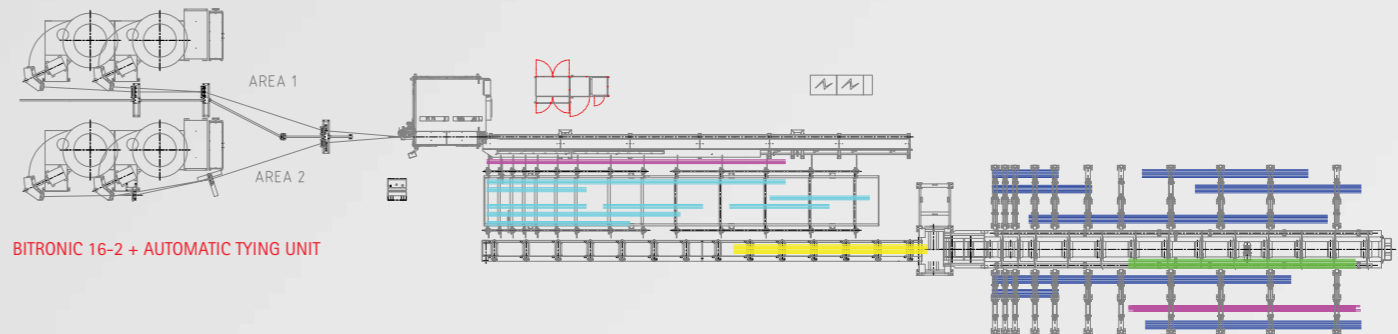
GUIDING SUPPORT + 2 COLLECTING UNITS



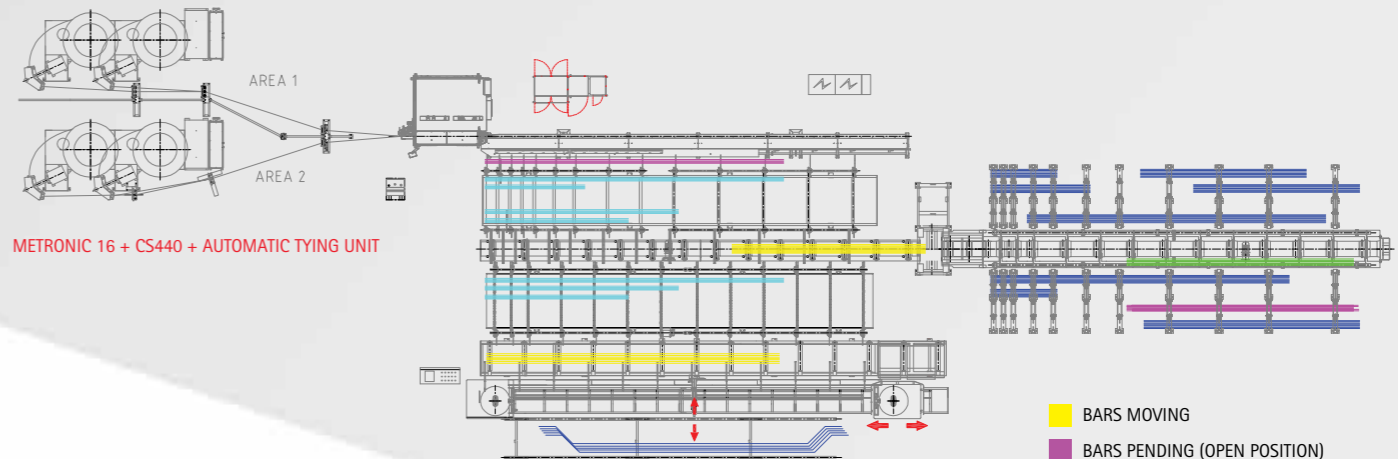
GUIDING SUPPORT WITH MOBILE STAR RACK + B1M BENCH



GUIDING SUPPORT + COLLECTING POCKET

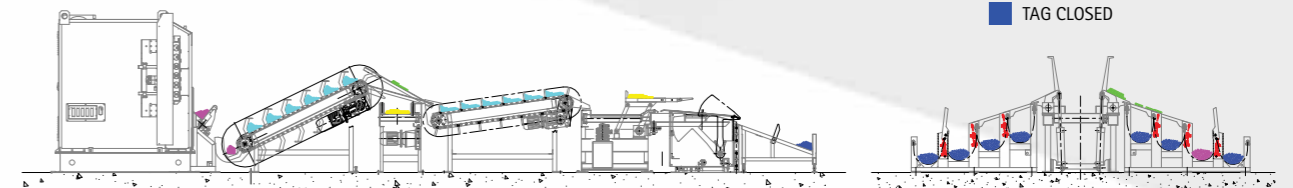


BITRONIC 16-2 + AUTOMATIC TYING UNIT

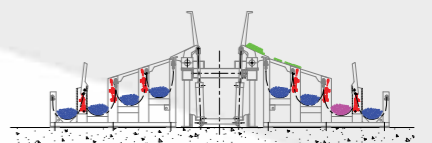


METRONIC 16 + CS440 + AUTOMATIC TYING UNIT

- BARS MOVING
- BARS PENDING (OPEN POSITION)
- BARS WAITING (CLOSED POSITION)
- BARS UNLOADING
- TAG CLOSED



CHAIN FEEDER+ B1M BENCH + ACHAIN FEEDER+ CS440SX



4+4 STORAGE RACKS

ALWAYS A CLEAN ENVIRONMENT



- The machine frame is designed to **easily collect the dust** generated during the straightening process and also it is **sound proofed** to achieve maximum noise reduction during operation.

CHAIN FEEDER



- The **chain feeder** is a unit that collects, transports and deposits the cut to size bars by creating an efficient intermediate storage station. Every single position is handled automatically. (OPTIONAL)

EVACUATION WITH TIPPER AND MOBILE STAR RACK



- Evacuation bar system with **tipper and mobile star rack** is a unit that collects, transports and deposits the cut to size bars by creating an efficient intermediate storage station. (OPTIONAL)

OUTFEED CHANNEL WITH ALIGNMENT DEVICE



- The guiding support is available in several versions, allowing the **collection and distribution of straightened bars** according to specific production needs. The version that includes the **automatic alignment device** (optional) is particularly suitable for the production of bundles intended for **welded mesh equipment**.

ACCESSORIES

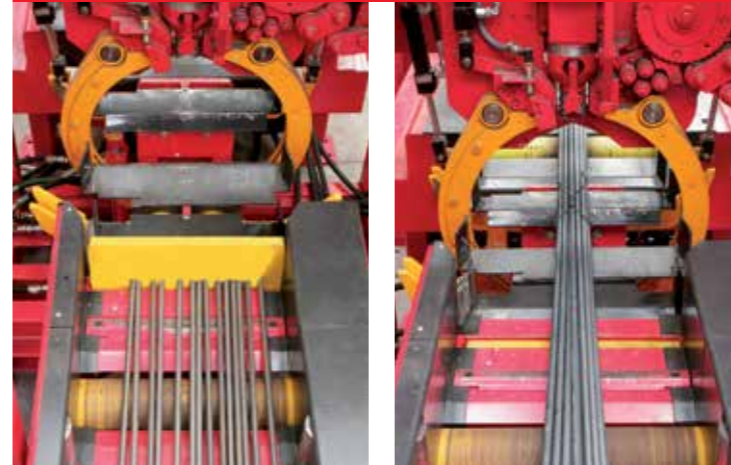


- Motorized pre-feeding rollers, for wire insertion. (BITRONIC 16-2).



- Winch equipped with clamping device for the wire end to be pulled (OPTIONAL)

AUTOMATIC TYING UNIT








- The **automatic tying unit** aligns and ties the cut to length bars. When Integrated with the **METRONIC** system, this eliminates the need for manual binding. (OPTIONAL)

STORAGE RACKS



- The **storage rack** is a unit that collects the cut to size bars automatically creating a large warehouse storage. The plant automatically manages every single job maintaining a high level of productivity. (OPTIONAL)

TECHNICAL AND PRODUCTION CHARACTERISTICS

		🇬🇧			🇺🇸		
	PROCESSING WIRE DIAMETER (other measures upon request)	METRONIC 12	METRONIC 16	METRONIC 20	METRONIC 10 HS Plus	METRONIC 13 HS Plus	BITRONIC 16-2
	cold drawn, hot rolled, smooth or ribbed wire	Ø 4 - Ø 12 mm # 2 - # 3	Ø 6 - Ø 16 mm # 2 - # 5	Ø 10 - Ø 20 mm # 3 - # 6	Ø 6 - Ø 10 mm # 2 - # 3	Ø 6 - Ø 13 mm # 2 - # 4	Ø 8 - Ø 16 mm # 2 - # 5
	$f_y = 600 \text{ N/mm}^2 - f_t = 700 \text{ N/mm}^2$ (other loads on request)						
	DOUBLE STRAND PROCESSING WIRE DIAMETER						Ø 8 - Ø 13 mm # 2 - # 4
	tondo trafilato a freddo, laminato a caldo, liscio o nervato	-	-	-	-	-	
	$f_y = 600 \text{ N/mm}^2 - f_t = 700 \text{ N/mm}^2$ (other loads on request)						
	BAR PRODUCTION						
	Lenght (other measures upon request)	100 mm ÷ 12000 mm - 4" ÷ 39-4"					
	maximum feed rate *	4 m/s - 13 fps	4 m/s - 13 fps	3 m/s - 9,8 fps	8 m/s* - 26 fps	8 m/s* - 26 fps	4 m/s - 13 fps
	Lenght tolerance	±1 mm/m - ± 1/25"	±1 mm/m - ± 1/25"	±1 mm/m - ± 1/25"	±1 mm/m - ± 1/25"	±1 mm/m - ± 1/25"	±1 mm/m - ± 1/25"
	SHEAR						
	Cutting time	~0.1 s	~0.1 s	~0,2 s	~0.1 s	~0.1 s	~0.2 s
	INSTALLED POWER						
	Maximum (other measures upon request)	77 kW 103 hp	83 kW 111 hp	96 kW 128 hp	121 kW 160 hp	121 kW 160 hp	105 kW 140 hp

THE PLANT DOES NOT REQUIRE COMPRESSED AIR

f_y : max. unit yield point - f_t : max. tensile strength

* Diameter 10 mm bar on 12000 mm (39-4") single wire, the data may change depending on the type of material.

Note: #2 = 1/4" ; #3 = 3/8" ; #5 = 5/8" ; #6 = 3/4"

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