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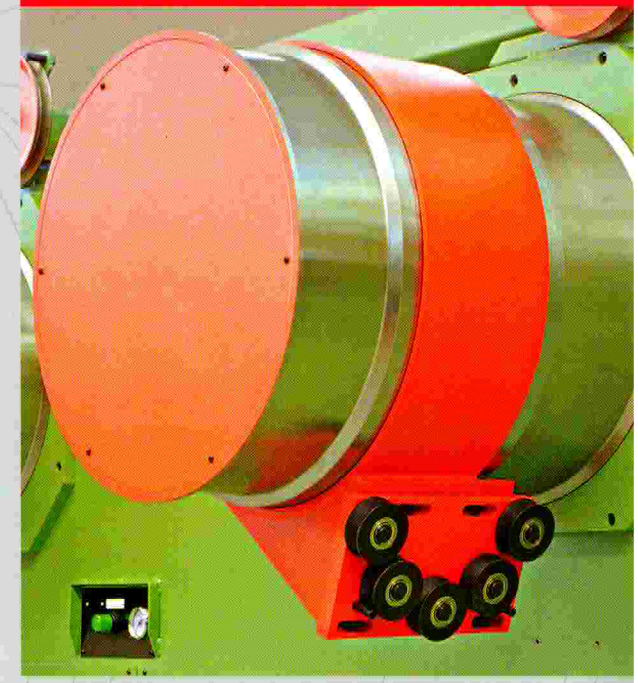
MACHINERY AND ENGINEERING
FOR THE WIRE INDUSTRY



ACCUMULATION CAPSTAN
SPOOL PAY-OFFS AND TAKE-UPS

M+E LAP 350/1000

General description

The accumulation capstans are typically used to pay-off and take-up, on spools, annealed and galvanized low carbon wire, patented and phosphated or galvanized high carbon wire, hard drawn and galvanized high carbon wire (ACSR), patented and brass coated high carbon wire (Steel Cord), hard drawn and bronze coated high carbon wire (Bead Wire), aluminum-cladded high carbon wire.

The use of accumulation capstan pay-offs and take-ups is essential where a continuous (non-stop) process is required during spool change operation.

M+E accumulation capstans are mounted on a horizontal axis above the correspondent spool in order to minimize floor space or with vertical axis, in case of the larger wire sizes, enabling best capstan accessibility for stringing-up purposes.

The main available options are:

- Hard capstan coating.
- Motorized traverse for traverse speed/pitch adjustment.
- Self regulating traverse width control.
- Full or semi-automatic spool change.
- Pneumatically operated spool lifter, in case of cylindrical spool bores.
- Hydraulically operated spool lifter, in case of multiple spool sizes.
- Safety guards.


Bead-Wire non-stop take-up
m+E UM 000/768

M•E LAZ 900/1250

Technical characteristics

The machine frame consists of heavy duty fabricated steel segments, each providing a mounting for two or more spools.

The accumulation capstans, arranged on horizontal or vertical axis, are normally manufactured of forged steel, induction hardened or hard surface coated at the wire line. Each capstan is driven by an AC motor with frequency inverter.

The take-off ring is driven by an AC motor with frequency inverter, automatically controlling the number of wire wraps on the capstan during spool change wire accumulation/disaccumulation.

The traverse mechanism, driven by the spooling motor, is the endless belt type with pneumatic clamp. As an option, the traverse can be driven by an AC motor with frequency inverter, enabling infinite adjustment of traverse speed or pitch.

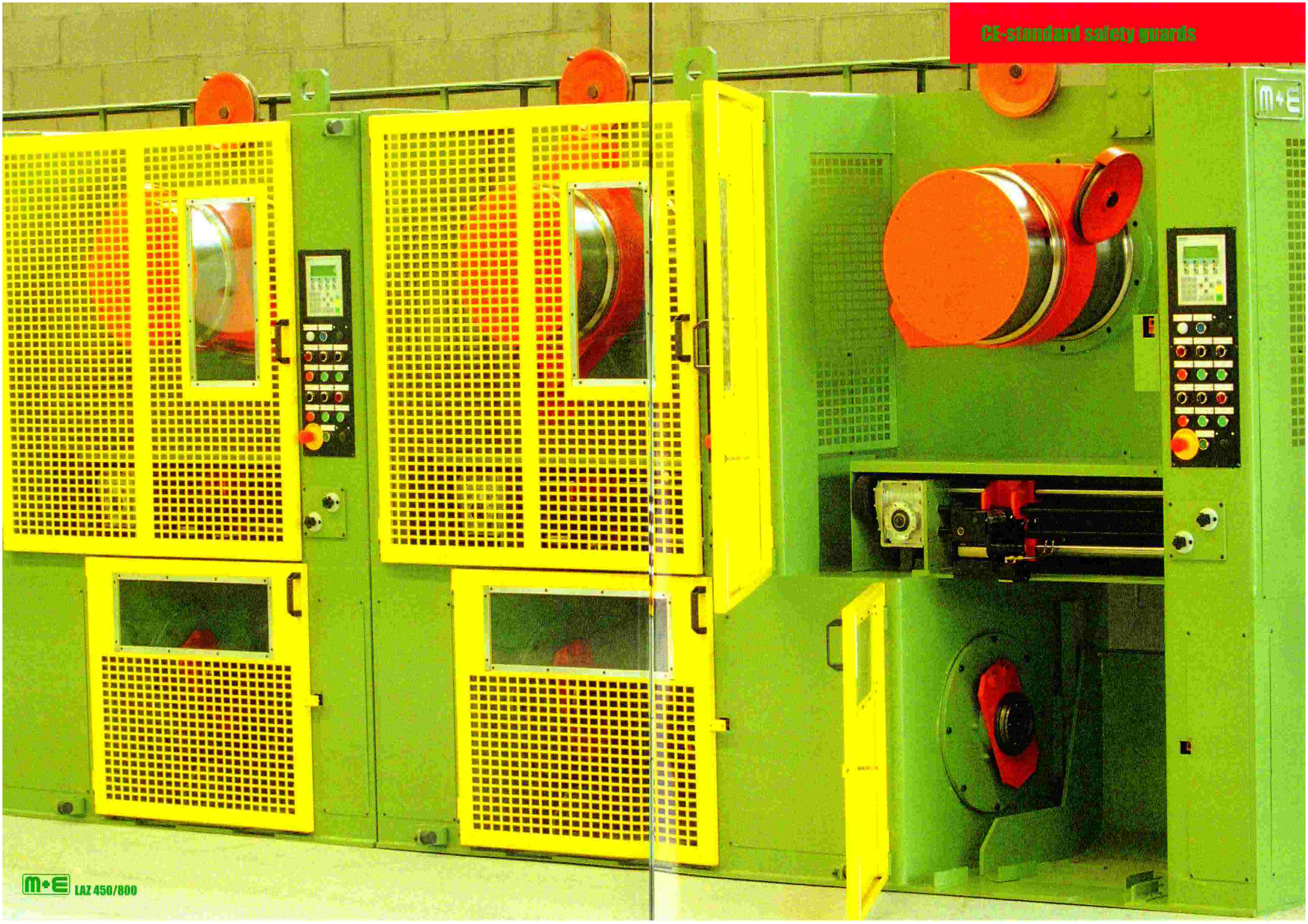
The traverse width is adjustable during operation by means of knobs, mounted on the front side of each position. As option, the width can be controlled by a PLC, adjusting automatically the reverse points.

Spool pick-up is between the tapered points of horizontal pintles. The driving pintle is axially fixed and the tailstock pintle is axially moved by means of two pneumatic cylinders. To prevent pintle opening during operation or in case of air pressure drop, electrical and mechanical safety devices are provided.

Spool loading and unloading is executed from the machine front. A pneumatically operated trolley provides for spool disengagement from the driving pintle. In case of multiple spool sizes, a hydraulically operated spool lifter is provided.

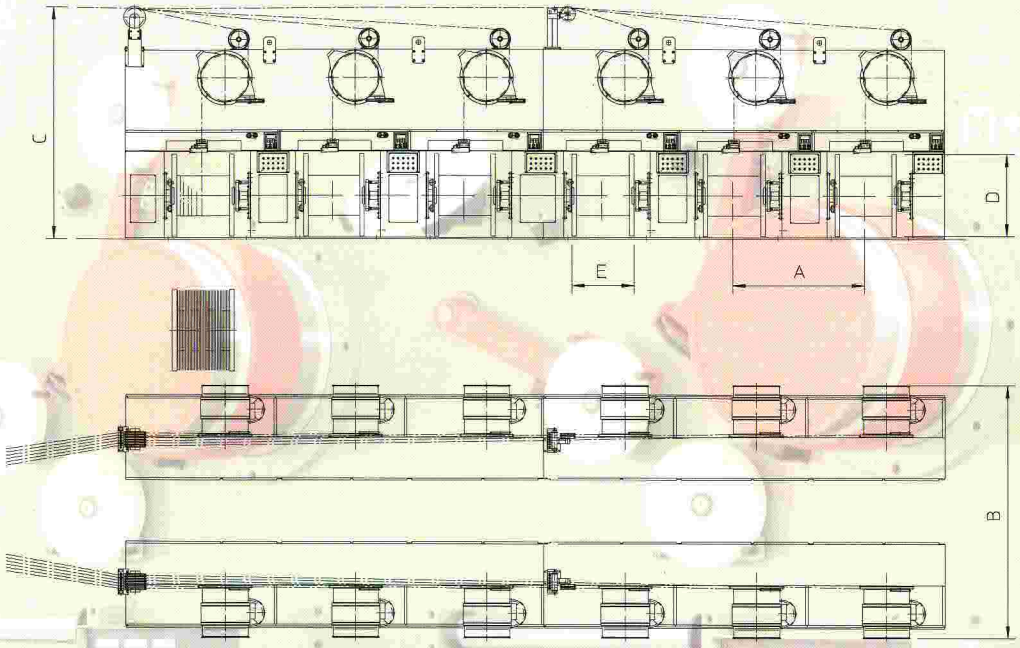
The spool is driven by an AC motor with frequency inverter. A pneumatic brake prevents the release of wire wraps when the spool is stopped.

The machine is complete with the necessary wire guiding sheaves and rollers.


CE-standard safety guards
M+E LAZ 450/800

M*E LSP 350/1000

Reference data



Capstan Ø	mm *in*	350 *13.8"*	400 *15.7"*	450 *17.7"*	500 *19.7"*	560 *22.0"*	600 *23.6"*	750 *29.5"*	900 *35.4"*
Annealed low carbon steel (max 600 MPa - 85.000 psi)	mm *in*	0.8-2.7 *.031-.106"*	1.0-3.8 *.039-.150"*	1.5-4.5 *.059-.177"*	1.8-5.0 *.071-.197"*	2.0-5.5 *.079-.217"*	2.5-6.5 *.098-.256"*	(No) *(No)*	(No) *(No)*
Patented high carbon steel (max 1300 MPa - 185.000 psi)	mm *in*	0.8-2.5 *.031-.098"*	1.0-3.5 *.039-.138"*	1.2-4.0 *.047-.157"*	1.5-4.8 *.059-.189"*	2.0-5.5 *.079-.217"*	2.3-6.0 *.091-.236"*	(No) *(No)*	(No) *(No)*
Drawn high carbon steel (max 2200 MPa - 325.000 psi)	mm *in*	0.8-2.0 *.031-.079"*	1.0-3.0 *.039-.118"*	1.2-3.5 *.047-.138"*	1.5-4.0 *.059-.157"*	2.0-5.0 *.079-.197"*	2.3-5.3 *.091-.209"*	2.8-6.3 *.110-.248"*	3.0-8.0 *.118-.315"*
Interaxis "A"	mm *in*	800+D *31.5"+D*	800+D *31.5"+D*	820+D *32.3"+D*	820+D *32.3"+D*	850+D *33.5"+D*	850+D *33.5"+D*	2250 *88.6"+D*	2400 *94.5"+D*
Width "B"	mm *in*	2600 *102.4"*	2800 *110.2"*	3000 *118.1"*	3000 *118.1"*	3100 *122.0"*	3200 *126.0"*	3300 *129.9"*	3800 *149.6"*
Height "C"	mm *in*	1700+D *66.9"+D*	1700+D *66.9"+D*	1800+D *70.9"+D*	1900+D *74.8"+D*	2000+D *78.7"+D*	2000+D *78.7"+D*	2200 *86.6"*	2450 *96.5"*