



**Reference Name:** 

# **Automatic C-Core Production Equipment**

Supplier: Customer: Market Segment: Year of Implementation:

ELVAC a.s. ArcelorMittal Technotron s.r.o. Single-Purpose Machines 2013

## Introductory text:

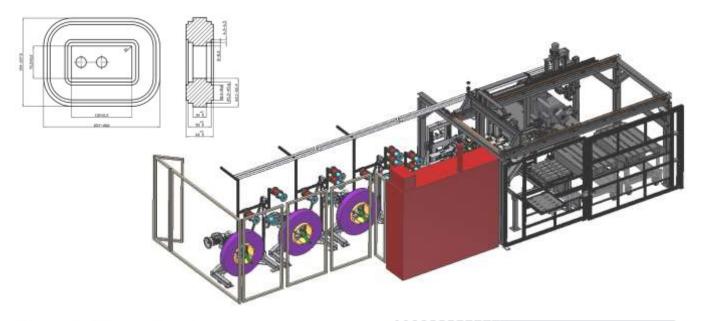
We have delivered an automatic line to ArcelorMittal Technotron s.r.o. on a turnkey basis, which is the basis for the production of transformer C-cores. The line is capable of automatically winding up to five layers of C-cores with a total maximum weight of 65 kg and a size of 350 x 420 mm.

## Application description:

The input material is a roll of transformer tape of three different widths and the winding mandrels themselves stored in a magazine. After the individual transformer tapes are introduced into the roller feeder by the operator, the rest of the winding process takes place in an automatic cycle:

- Removing the winding mandrel from the magazine by the manipulator.
- Placing the mandrel on the winding station spindle and fixing it.
- Finding the groove on the mandrel and turning it to the desired position.
- Inserting the tape from the roller feeder into the groove of the winding mandrel.
- · Winding the first layer.
- Cutting the tape and its subsequent connection to a tape of a different width by welding.
- Successive winding of other layers.
- . Ending the winding by welding the tape and breaking the tape off the core
- Removing the C-core by the manipulator and placing it on a EUR pallet.

During winding, the winding is measured by a laser sensor to ensure that the resulting winding complies with the required tolerances.





## Products and technologies used:

- Siemens control system
- Schneider Electric, Siemens electric drives
- Festo pneumatic equipment





## Line specifications:

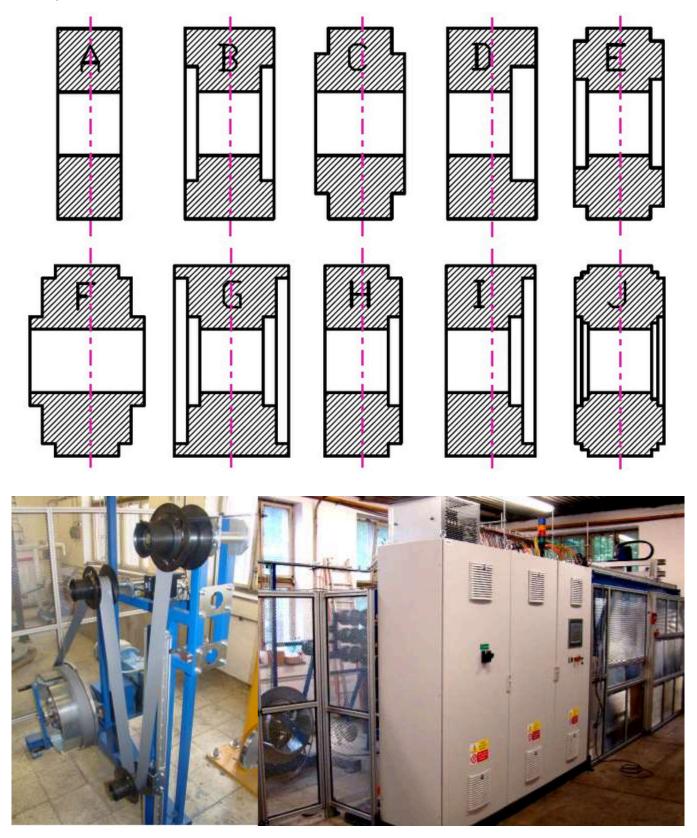
Min. winding mandrel size	50 x 60 mm
Max. winding mandrel size	190 x 300 mm
Max. resulting core size	350 x 420 mm
Max. number of tape types per core	3
Max. number of core layers	5
Strip thickness range	0,23 – 0,35 mm
Strip width range	20 – 140 mm
Max. total core weight	65 kg
Min. inner diameter of tape roll	500 mm
Max. outer diameter of tape roll	1000 mm
Cycle time 1 pc. 5-layer core with external dimensions (195 x 254 mm)	cca 450 s





## Types of cross-sections of wound cores:

The line allows winding up to five-layer C-cores, symmetrical or asymmetrical to the central axis of the winding mandrel.





## With the ELVAC a.s. solution, the customer gained the following benefits:

During the automatic cycle, the line operator can focus on replenishing winding mandrels, can transport finished C-cores for further processing, prepares additional winding mandrels that are dirty from the gluing process.

In addition, the cycle time of the automatic line is approximately 25% shorter than in similar semiautomatic lines, where the operator must fully devote himself to the winding process at all times.

The automatic line is equipped with a manipulator that inserts mandrels and removes C-cores from the winding station spindle, thereby facilitating the operator's work. Especially with heavy C-cores.



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- Industrial computers, rugged computers
- Industrial computer components
- Peripherals for industrial PC systems
- · Rear projection systems
- LED screens
- Information LCD systems

#### **Communications**

- Industrial Ethernet
- Serial Communication
- Wireless Communication
- Communication Converters

#### Data management and control

- Digital I/O Cards and Modules
- Analog I/O Cards and Modules
- Control Systems

#### Control systems

- · PLC and HMI Siemens, Schneider Electric
- · Manufacturing and assembly of switchboards

#### Wholesale of electrical materials

- Schneider
- Siemens
- Weidmuller
- Další...

#### Neon light advertising

- Illuminated and neon advertising
- Corporate totems and fuel totems

#### Design and production of single-purpose machines

# **⊘ELVAC**

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