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Bank : IBAN LU90 0030 6323 1910 0000 • BIC/SWIFT code : BGLLLULL

BEJIMAC

HENRI PAULUS CARBOMATIC M-TEC

ORDER CONFIRMATION

Dear Sirs,

We thank you very much for your order of a new carpet finishing line and we are very pleased to confirm it as follows.

Our scope of supplies is including:

ONE *HENRI PAULUS* BACK SIZING MACHINE FOR WOVEN CARPETS – WIDTH OF ROLLERS : 5300 mm

OUR NEW MODEL ENERGY – year 2015

DETAILED DESCRIPTION OF OUR SCOPE OF SUPPLY.

1. ENTRY DEVICE

At the entry of the machine, we shall install **a sewing unit**. This will include one fixed rail with needles to hold carpets during sewing operation.

It will also include the support for the sewing machine which will be sliding on a special rail, and is moved by hand. The sewing machine itself is also included.

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An enlarged space (addition of +/- 1,3M) will be foreseen to allow feeding the machine with an unwinding device from Mathijs-Evilo. (see description in enclosure)

After realisation of the seams, carpets will be fed into a preliminary stocking U-Box (not included in our price, to be realized on the spot according to our instructions) before reaching the cleaning module including **a face cleaning unit, a beater and a back brush**. These cleaning elements are fitted with individual motors and gearboxes. They are also fitted with dust collectors to be connected to the suction system (necessary space indicated on our drawing). We shall supply the exhauster (with its motor), but the other parts will be produced locally according to our instructions and drawings.

Then, the carpet is led above the whole machine to **a second stocking U-Box** (not included in our price, to be realized on the spot according to our instructions). The feeding of these preliminary and second U-Boxes is realized by independent gear-motors, and a special device allows the automatic stop of feeding when U-Box is full or empty.

During this passage, the carpet will be **automatically laterally guided** by a moving roller to allow its straight entry in the sizing machine.

At the delivery of the second U Box, one positively driven cylinder will lead carpets to the **electronic automatic weft straightener** (see description below). After this weft straightener, we shall foresee the necessary space for the possible future installation of a vertical steaming and buking unit. After this space, carpets reach

2. THE SIZING SYSTEM

It is essentially composed of:

a) Heavy frames, firmly cross-braced, made out of very thick steel sheets.

b) **Size application** unit composed of:

- A size trough made out of stainless steel. The constant glue level in this trough is made by overflow system.

- **Extra-wide** size application roller covered with ebonite and driven by motor and frequency inverter, allowing to adjust the rotation speed in both directions, in order to apply the necessary quantity of size.

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- The length of contact between carpet and size application roller is adjustable by push buttons and electric motor.

This application system allows:

- to adjust the length of contact between carpet and size application roller,
- to separate entirely carpet from size application roller,
- to separate entirely carpet and size application roller from size trough in order to ease its cleaning (extra large opening to have a very easy maintenance).

c) A scraper with adjustable inclination and contact and with recuperation of the excess of latex in the glue overflowing system is also foreseen.

3. PREPARATION AND FEEDING OF THE SIZING PRODUCTS

Our ***ENERGY*** is delivered with a **mixing machine** made out of stainless steel, with a capacity of 500 litres, and which is equipped with a pneumatic pumping system, special for the transfer of the modern sizing products. This system allows the:

- automatic feeding of size between mixing and size trough,
- return of size between size trough and mixing machine,
- cleaning of trough with fresh water,
- cleaning of feeding pipes and pump with fresh water, including a manual valve below each size trough.

4. PRE-DRYING UNIT

After back sizing, the carpet is led to a combined **pre-drying unit** composed of two vertical infra-red drying units and of 3 **x** 2 steam heated blowers , on each side, blowing hot air on the back side of the carpet, thanks to repartition rooms. They are heated by steam with a maximum pressure of 6 kg/cm^2.

This system allows to gel the size before drum and so, it prevents any sizing on the drum. This unit is integrated in a thermically insulated room and pipes for the saturated air evacuation will be foreseen, with suction through the factory roof (chimneys are not

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included and will be manufactured locally according to our drawings, but steam exhausters are included).

5. DRUM

After this combined pre-drying unit, the carpet then reaches the **steam heated drying drum** (diameter of the drum: 210 cm). It will be foreseen to be heated by steam with a pressure of maximum 8 kg/cm^2. To process a well smooth and uniform back, **the drum is externally turned.**
This drum is driven by gear motor with variable speed through frequency inverter.

6. TUNNEL UNDER THE MACHINE

Then, by passing under the whole machine, the carpet goes to a draw roller of wide diameter. This lower passage will be supplied, including an insulated room heated by **hot air blowers** for increasing the speed of the machine.

An electronic device installed in the lower part allows the automatic adjustment of the speed of the draw roller in order to avoid any exaggerated tension of the carpet under the machine, for a better production quality.

7. DELIVERY OF MACHINE

At the delivery of this lower passage, the draw roller leads the carpet above the machine again to the delivery where the carpet is laid into a U-Box before the shearing machine.
An additional guiding device is foreseen before delivery.
The very long way above the machine ensures a natural cooling of the carpet. The inspection of the back sizing process can be made very easily during this overhead passage.

8. PASSAGE OF CARPET

The design of the machine according to our approximate drawings mentioned here above assures a carpet passage in the machine without any roller contact on the pile side when the carpet is warm. This system guarantees a first quality production.

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9. MISCELLANEOUS

In our most up-to-date model, driving devices, frequency-inverters and tension adjustment system are grouped and well protected into an individual electrical cabinet. Speed regulation allows an adjustable working speed between 4 and 12 M/min.
The different electrical equipment with thermic or magneto-thermic protection are supplied and twisted into a control-box.

Computer control : Our back sizing machine will be controlled electronically by PLC through our **new touch screen computerized control panel** allowing a very easy and friendly use.

Our scope of supplies is also including :

One carpet straightening machine, type CRVMC-128

- Heavy duty model with microprocessor technology

Straightening unit with integrated scanners and LED light projectors, integrated controls for correcting, fully automatically, bow and skew weft-distorted on-line webs and integrated control and display station.

Comprising:

1. Self-Contained Weft Straightener

a) Mechanical Straightener
in heavy duty execution, especially designed for high web tensions and wide fabric width
- 2 skew rollers, made of stainless steel 1.4301, roller diameter 219 mm
- 2 bow rollers in sturdy special design, covered with Buna 8955 sleeving, roller diameter 200 mm
- guide rollers, made of stainless steel 1.4301, roller diameter 219 mm
- stepless, electromechanic control of skew and bow rollers with servo controller for instant reaction
- safety gates, made of transparent plastic

b) Scanner Assembly (integrated in mechanical straightener)
- 8 **cameras**
- automatic light output control per scanner

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- optimum spacing of the scanners with a motor-driven assembly
- optical selvedge detectors for automatic spacing of the scanners in accordance with different web width
- automatic scanner cut-off

Voltage rating: 230V 1~/400V 3~, 50 or 60 Hz

2. Electronics

accommodated in one of the machine's panels, the whole responsible for
a) evaluation of the distortion-related signals from the scanners, and
b) auto-control of bow and skew rollers and automatic projector light output,
c) inclusive of computer software

3. Control and Display Station

a) 15" TFT Color Touchscreen with Computer Station
b) Provides direct user interface with straightening system
c) Allows for:
- manual operation of self-contained weft straightener
- manual spacing of sensors
- set up of screen configuration
- sensor signal evaluation
- 2 alarm outputs
- light mode selection (reflex/penetrative light)
- recipe storage/retrieval
- service assistance menus
- projects momentary weft configuration in graphic and numeric form
- displays deviations from zero for both bow and skew distortions over a selectable period of time as trend diagram
- speach output

4. Manual Control Panel

a) Panel with two potentiometers for manual control of bow and skew rollers with indicators to register their momentary position.
b) Switches for on/off of hardware components

5. Special Cables

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Our scope of supply is also including :

AN ELECTRONIC AUTOMATIC SYSTEM FOR THE PREPARATION OF THE GLUE, with ACCESSORIES

This unit is mainly composed of:

- One 1000 l mixing unit in stainless steel with mixing system controlled by gear-motor.
- Pneumatic pumps for feeding the 1000 l mixing unit with glue and water and for the feeding from this mixing unit to the 500 l mixing unit.
- An electronic measurement system of the contents of mixing units, allowing an accurate measuring of the products to mix in order to prepare the glue.
- Different detectors placed on the mixing units and on the water tank, pneumatic valves, pneumatic control group, one electric cabinet with PLC, appropriate software used for this system and electric connections with protections and contactors.
- All the necessary accessories and cables for the connexion of the whole installation. The connexion of the drain, the water feeding and your high-capacity tanks to the feeding-pump of our 1000 l mixing unit is not included and must be supplied by you.

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After the back sizing machine, our line will include

ONE *M-TEC* SHEARING MACHINE
FOR CARPETS- WIDTH OF ROLLERS : 5400 mm
TYPE TSH 254 – year 2015

Supply volume:

One unwinding device (supplied by Matthijs-Evilo), and one sewing machine as described here above leading carpets into a U-Box (not included – same details as above).

Fabric inlet frames with draw roller, consisting of:
draw roller with direct electric drive as pilot drive for the carpet transport, machine speed infinitely variable up to 20 m/min.

Metal detector,
with control unit and cable (without sector indication)

2 shearing units, each consisting of:

Machine frames with carpet guide rollers, lateral covers and operator's platform

Support tube for the pile raising device and the shearing table

Carpet wide openers system in front of the shearing unit, consisting of deflecting roller for coated and uncoated carpets

Shearing table with a fixed shaft of 12 mm Ø and a roll of 30 mm Ø, both hardened and ground , which is called combined table.

Shearing mechanism with heavy duty shearing cylinder of 300 mm diameter,
fitted with 30 German spiral blades with 11 stripes.

Electric drive of the shear cylinder, frequency controlled, for continuously speed control at 600 rpm, incl. reversing drive for grinding

Pneumatic oscillation for the shearing cylinder in shearing and grinding

Ledger blade in special quality adjustable by setting screws over the entire width

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Supporting tube for the ledger blade; it is also used as suction tube for the shearing dust and has lateral sockets for being connected to a suction unit

Adjustment of shearing height by motor, incl. digital display (maximum height: 56 mm)

Lift-off of the shearing unit from the carpet and of the shearing cylinder from the ledger blade for control purposes of the shearing line and for grinding the ledger blade, hydraulically operated by double piston

Lubrication felt for greasing the shearing cylinder incl. an additional sealing felt to separate the suction from the lubrication zone

Automatic lubrication of shearing head, lubricating pneumatic device for lubricant, carriage with nozzle for lubricant adjustable to the working width. Adjustable time of intervals for lubricating, with oil container.

Electrically lifted transparent protective covers and indirect illumination of the shearing zone.

Electrically driven draw roller for the fabric transport, continuously adjustable machine speed up to 20 m/min, incl. digital display

Carpet tension sensitively adjustable.

Automatic reverse run of approx. 200 mm after stopping the machine; the reversing distance can be extended by a push switch

Control panel with all necessary switch elements and indications

Control terminal incl. keyboard for running the machine and display showing the machine parameters and fault readings
Substructure for the entire shearing range

Separately arranged switch cabinet for the electric installation and the PLC, incl. cabling between the machine and the switch cabinet, which is arranged at a maximum distance of 5 m at the right hand side of the machine (seen from inlet)

Pile brushing device with counter table, consisting of:
brush roller, spirally covered with perlon bristles, electric direct drive for cw/ccw run, constant circumferential speed, parallel adjustment of pile brush to the table via hand wheel with position indicator; counter table 30 mm Ø.

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Lint transporting belt with cleaning of pile brush roller and lateral joint for suction

Stationary platform between feed stand and 1st shearing unit and between both shearing units,

platform at the outlet of the machine, with delivery in your J-Box (not included in our price) before a Matthijs-Evilo winding unit, with lateral guiding (not included).

Seam detection system for JL type seams, incl. control for lifting places and programmable lifting ways

Superstructure for the machine

Electric current: AC 400 V + N 230 V, 50 cycles, 3-phase + Neutral

1 Device for grinding the ledger blade, electrically driven, including 3 spare grinding stones

Exhausters and motors for the suction unit. (star/delta starters, pipings from the dust collectors to the exhauster, and dust filter are not included and can easily be manufactured locally according to our specifications and drawings)