MODEL H04-2600

Very versatile calender specially designed for bonding / laminating / full-coating of a wide range of substrates (woven and or knitted textiles, non-woven textiles, foams and other non-textile materials) by using any thermoplastic polymer (in granules form) or reactive (in appropriate tins).
The polymer, melted by means of an appropriate extruder / fuser, is applied directly to one substrate by means of an engraved cylinder / flat cylinder (coating). In case of bonding process, the second material can be added and bonded to the first, and potentially cooled in exit thanks to an apposite cylinder connected to a chiller unit.

APPLICATIONS:

- Bonding / laminating by hot-melt.
- Coating with engraved cylinder by hot-melt.

CENTRAL MACHINE BODY

Ergonomic, solid and robust structure composed of iron shoulders machined with numerical control machine, where the following devices are installed:

ENGRAVED CYLINDER (*Ref. 7-8 of the attached drawing*)

- Engraved cylinder (*Ref. 8*) Ø 350 mm (13,78") for polymer distribution. This cylinder is chrome plated in order to support the friction with the doctor blade and it is heated by electric armoured resistances, which are immersed in diathermic oil bath.
- The working temperature is electronically controlled and is adjustable by ambient temperature up to + 230 °C.
- This cylinder works in absence of air (Monti Antonio S.p.A. system) in order to avoid oil oxidation and ensuring long duration of resistances.
- The group engraved cylinder/doctor blade is positioned on self-propelled piston rods and its movement is ensured by two dedicated pneumatic cylinders. This, in order to allow the engraved cylinder to lean against the counter-pression cylinder. The distance between engraved cylinder and counter-pression cylinder is controlled by specific actuators. Its pression is ensured by two pneumatic pistons fed by compressed air with adjustable pression up to 6 Kg/linear cm.
- Doctor blade (*Ref. 7*) for melted polymers distribution, complete of plate in heated steel (Monti Antonio S.p.A. system), isolated and covered by special anti-sticking Teflon.
- Complete of movable lateral barriers for regulation of distribution length.

COUNTERPRESSION CYLINDER FOR ENGRAVED CYLINDER *(Ref. 9 the attached drawing*)

- Silicon pressing cylinder Ø 340 mm (13,39"), installed on self-aligning supports in order to grant a perfect contact with the engraved cylinder (*Ref. 8*). The rotation of this cylinder is granted by motor managed by inverters and speed reducer with gears.
- Possibility of installing a spiral inside the cylinder for the cooling of the rubbed roll (option) (*Ref. 9*).

PRESSING CYLINDER (*Ref. 11 of the attached drawing*)

- Pressing cylinder Ø 260 mm (10,24"), chromed and heated by armoured electric resistors, immersed in diathermic oil.
- The working temperature is electronically controlled and is adjustable by ambient temperature up to + 230 °C.
- This cylinder works in absence of air (Monti Antonio S.p.A. system) in order to avoid oil oxidation and ensuring long duration of resistances.
- The rotation of this cylinder is ensured by a motor managed by inverter and speed reducer with gears. Pressing of the cylinder is ensured by two pneumatic pistons fed by compressed air adjustable up to 6 Kg/linear cm. In each piston (one for side) a mechanical stop that allows to precisely control the distance of the cylinder (*ref. 11*) related to cylinder (*ref. 9*).

I dati e le caratteristiche tecniche sono puramente indicativi, soggetti a variazione senza obbligo di preavviso e relativi a macchine standard senza optional.

MONTI ANTONIO
STANDARD & CUSTOM HEATING SOLUTIONS
Monti Antonio S.p.A.
Head Office: via dell'Elettronica n°5, 36016 Thiene (VI) Italy
Operation and Administration: viale della Fisica n°6, 36016 Thiene (VI) Italy
T. +39 0445 364619 – F. +39 0445 364033
sales@montiantonio.com – **www.montiantonio.com**

The precision of the mechanical stop is millesimal (with opening adjustable up to 20 mm). The regulation is managed by mechanical stop through a brushless motor and allows management of distance with machine in movement (without line stop).

UPPER MATERIAL ENTRY (*Ref. 14 of the attached drawing*)
Unwinding shaft with fixation cones in entry, with adjustable tension by means of disk brake pneumatically controlled, diameter 400 mm.

ENTRY FOR LOWER MATERIAL/MEMBRANES (*Ref. 24 of the attached drawing*)
Motorized unwinder with pneumatic expansion shaft and rotating heads. This unwinding position is synchronized with the main machine thanks to a control by means of a loeading cell, to ensure a precise tension control.

OPENING ROLL WITH ELASTIC CORDS, MOTORIZED (*Ref. 25 of the attached drawing*)
Motorized opening rolls to spread materials and eliminate potential folds. Thanks to their motorization these opening rolls are used for tension control of material in entry (*Ref. 24*).

MECHANIC SPEED
The machine is equipped with motors which allow a mechanic speed 2-40 Mt/min (standard machine).
For different needs the machine can be studied and dimensioned for speeds from 5-60 Mt/min (option).

MOTORIZATIONS
- The main movements are produced by asynchronous motors, three phase, servo ventilated which transmit movements to the cylinder with a reducer.
- The motor of the pressing cylinder (Ref. 9) has "master" function. All other motors have "slave" function.
- The speed of all motors is synchronized and any variation registered by the "master" effects automatically on all "slaves".
- The control of all motors is run by vector inverters, with plc.

ELECTRIC CABIN
The cabinet is in metal material and includes all control activations and electronic components.

TEMPERATURE CONTROL
- The temperature of all oil heating cylinders is guaranteed by means of an algorithm of "PID" type with feelers with thermal resistance (PT 100), which transfer measurements to PLC.
- The same process is used for the doctor blade heating.

AUTOMAZIONE
- It is controlled by a PLC, complete with digital inputs and outputs, control of analogical inputs for the temperature control, control on ETHERNET base of the movable operator panel (front) and of the other electronical devices.
- Front fix operator panel: colours LCD touch-screen with TFT, screen 10".

Monti Antonio S.p.A.
Head Office: via dell'Elettronica n°5, 36016 Thiene (VI) Italy
Operation and Administration: viale della Fisica n°6, 36016 Thiene (VI) Italy
T. +39 0445 364619 – F. +39 0445 364033
sales@montiantonio.com – **www.montiantonio.com**

TECHNICAL DATA

- Adjustable working width up to mm 2400 (94,49").
- Working speed adjustable from 2 to 40 m/min (from 5 to 60 m/min option).
- Installed power of complete machine: it depends on the requested options.
- Average electric consumption of the complete machine: it depends on the requested options.
- Compressed air pressure: 4÷8 Bar.
- Machine produced according to CE rules.
- Customs tariff: 84 51 80 80.

OPTIONS

CHILLER UNIT FOR SILICON CYLINDER (*Ref. 9 of the attached drawing*) and/or pressing cylinder (*Ref. 11 of the attached drawing*)

ADDITIONAL ENGRAVED CYLINDER

Engraved cylinder Ø 350 mm (13,78") for polymer distribution. This cylinder is chrome plated in order to support the friction with the doctor blade and it is heated by electric armoured resistances, which are immersed in diathermic oil bath.

PRESSING GROUP WITH OPENING ROLLER WITH ELASTIC CORDS Ø 120 MM, MOT. (*Ref. 13-12 of the attached drawing*)

It is composed of:

- Silicon coated cylinder (*Ref. 13*), prearranged for cooling (cylinder Ø 215 mm (8,46")).
- Opening roller with elastic cords, motorized (*Ref.12*).

COOLING CYLINDER WITHOUT CHILLER (Ø 600 MM) MOTORIZED (*Ref. 27 of the attached drawing*)

Cooling cylinder Ø 600 mm (23,62"), chrome-plated, motorised, mirror finished.
This cylinder is equipped with two rotating heads for water circulation.

SMALL WINDER ON MACHINE BODY (*Ref. 26 the attached drawing*)

This small windier is used both for winding protection/support films and for winding small quantities of treated materials in exit (sampling.

CHILLER UNIT FOR COOLING CYLINDER Ø 600 MM (23,62")

PUR FUSER, N°1 – 200 Kg

• Drum melter of 200 liters for fusing reactive polymers and having a capacity of 50/60 Kg/h. It is equipped with two heated tubes and pertaining heads (duly isolated) to keep the polymers melted until the distribution device
• Installed power: 30 kW

THERMOPLASTIC EXTRUDER 60 Kg./h

• Device for extruding thermoplastic polymers having a capacity of 60 Kg./h.. It is equipped with two heated tubes and pertaining heads (duly isolated) to keep the polymers melted until the distribution device
• Installed power: 40 kW

MONTI ANTONIO
STANDARD & CUSTOM HEATING SOLUTIONS
Monti Antonio S.p.A.
Head Office: via dell'Elettronica n°5, 36016 Thiene (VI) Italy
Operation and Administration: viale della Fisica n°6, 36016 Thiene (VI) Italy
T. +39 0445 364619 – F. +39 0445 364033
sales@montiantonio.com – **www.montiantonio.com**