COMSS: a "new" company with 30 years experience

How can a "new" company have 30 years of experience? Well, if we are speaking about screen printing, all we need to consider are the different sectors this technology is used for: textile, wood, metal, plastic and, of course glass, and then we have the answer. COMSS presents us with its production line for glass printing in this article.

THE ORIGINS

COMSS, a relatively new name for glass, has been operating in the screen printing sector for over 30 years, when Antonio Aiudi, founder of the company located in Pesaro, started the production of screen printing machines for the printing of T-shirts and relative drying furnaces for screen printing inks in 1974.

Being close to one of the most important industrial poles for the production of furniture, enabled COMSS, in the 1990s, to satisfy the needs of finishing, designing and creating high productivity capacity automatic lines for the printing of wooden panels, enabling to realize the most diverse kinds of decoration on furniture.

STARTING WITH THE GLASS SECTOR

The new century saw the creation, at COMSS workshops, of new screen printing machines expressly dedicated to the printing of flat glass panels.

During these last years, thanks to the close collaboration with its clients, and to company philosophy for "Made to measure", COMSS' product range has expanded even further and will continue to do so.

Manual, semi-automatic and fully automatic machines

The range includes *Seritab* manual screen printing machines, *Seriplan* semiautomatic machines followed by *Glassprint* fully automatic machines.

The Promix line of drying furnaces and internal movement systems complete the range.

Each of these models has been designed thanks to the study and realization of an "open" project, with the possibility to make dimensional and/or personalized changes without having any important effect on delivery times, nor on the end price of the machine.

The Seritab line includes basic models, with servo-assisted squeegee device, movement system of pivoting wheels or motorized belt.

The Seriplan line has a standard model with rising printing head and fixed work surface, or the *–EX* model with extractible work table to facilitate loading and unloading operations.

The Glassprint line includes a standard model for the printing of regular-shaped panels; the *–Axial* model with a special blockage system and reference to the central axis of the panel so as to distribute uniformly any differences in measurement that can occur in a batch of panels, caused by the cutting and processing tolerances.

Last but not least, *Shape*, with which it is possible to automatically manage panels with any size, even those with highly irregular shape. This machine is used in the sector of automotive and counter fridge glass, etc.

G-PROMIX SILK SCREEN PRINTING INK DRYING FURNACE

Technical and functional characteristics

Structure

The load-bearing structure is made of steel tubes and heat insulated plates that ensure the machine is well heat-insulated.

Transport system

The transport system consists of a fiberglass mesh conveyor belt with teflon coating that is resistant to high temperatures (standard version). On request, it can be fitted with a kevlar mesh conveyor belt with teflon coating for extra mechanical resistance. Steel idle rollers support the conveyor belt along all its length. The belt is driven and managed by an inverter and transportation speed can be adjusted by means of a potentiometer fitted on the control console.

Drying section

The drying tunnel is composed of three consecutive sets of infrared lamps, which can be selected and activated independently directly from the control console along with the possibility of regulating working temperature individually for each lamp. The first set works with low temperature for a perfect flash-off of inks, while the second set works with medium temperature and the last set with high temperature for a definitive drying process.

Each infrared lamp set ends with a blower that blows the hot air generated by the lamps themselves.

At the ends and at the centre of the drying tunnel there are three extractors to expel the vapours generated by the paints; these extractors are fitted with a collector that can be connected to a suction plant.

Cooling section

The cooling section consists of one set of eight high-pressure electric fans that allow a large quantity of air at ambient temperature to flow into the tunnel through a lamellar system, thus enabling to cool the glass panels partially. The electric fans are managed by means of the command panel and can be activated in sets of four.

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GLASSPRINT AUTOMATIC SILK SCREEN PRINTING MACHINE

Technical characteristics

Transportation and work table

Transportation of the panel inside the machine is carried out by means of retractable wheels with transportation speed managed by the control console. The loading area is also equipped with an approach ramp of the panel to the head stop, while the work table has a phenolic multilayer with non-scratch finish.

Panel positioning system

The panel positioning system has a fixed longitudinal bar located on the work front and side-cushioned pneumatic pressers with screw adjustment. Full bleed printing (maximum 12 millimetres) is also possible thanks to a head stop with adjustable height.

Printing head

The structure of the printing head is made of load-bearing profiles in extruded aluminium, with chromium-plated ground support columns, and release of the printing head from the work table for cleaning operations.

Printing unit

Movement of the printing unit is by means of ground linear guides; belt drive; and drive with inverter for the management of the start and stop ramps. Printing and covering speeds are managed separately by the control console, while working pressure of the machine is adjustable from machine front. The unit is also equipped with an anti-drip device.

Frame holder device

The frame holder device has frame holder clamps with servo-assisted adjustment, pneumatic clamp locking system, pneumatic frame locking system, and micrometric regulation to centre the pattern of the pane. The adjustable progressive release device can be deactivated if and when necessary.

Control console

The control console is positioned a stand, and is equipped with a membrane keyboard and machine-operator dialogue box for the management of work cycle times. Each step of the start-up phase can be managed in manual mode.

Absorptions

Power absorption about 3.0 Kw
Voltage required V 400 + N – 50 Hz
Maximum compressed air pressure 6 Bar

Loading transfer (optional)

This optional equipment has a loading station with (pre-set) striker bar and millimetre reference, servo-assisted loading device with load-bearing balls coated with non-scratch material, start bar for transfer start-up, and adjustable transfer speed managed by control console.

Absorptions

Power absorption about 1.0 Kw
Voltage required V 400 + N – 50 Hz
Maximum compressed air pressure 6 Bar

Unloading transfer (optional)

The unloading transfer has independent roller drive, and adjustable transportation speed is managed by control console.

Absorptions

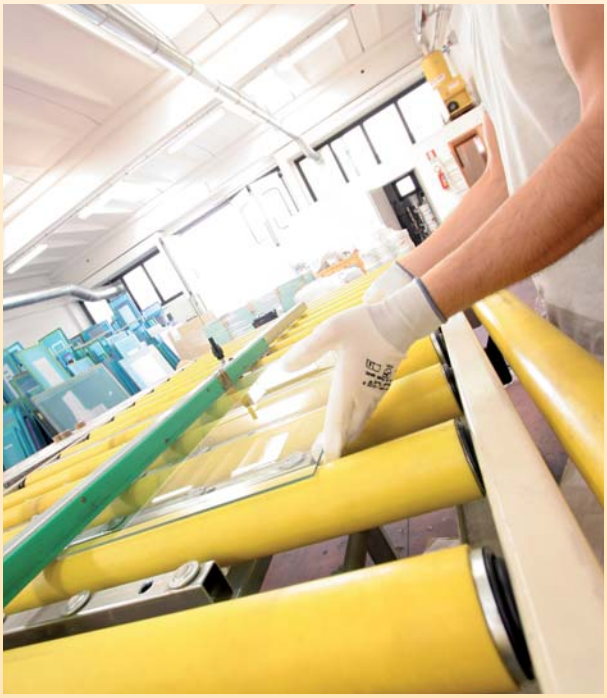
Power absorption about 1.0 Kw
Voltage required V 400 + N – 50 Hz

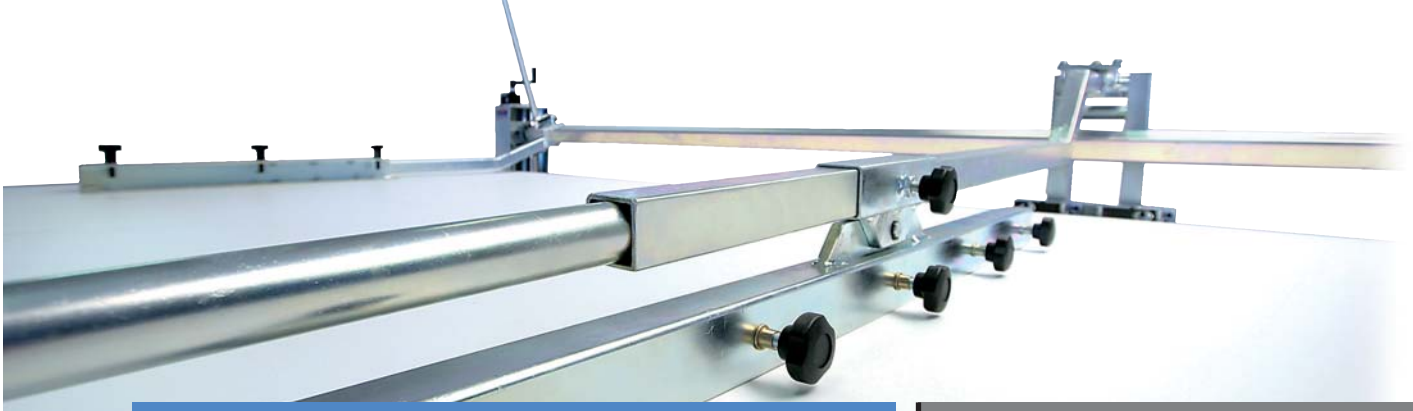
90° Transfer - storage (optional)

This optional equipment is made up of an unloading sector by means of roller bed with independent drive and adjustable translation speed managed by the control console. Panels can be stored automatically before being sent to the furnace. Belt translation system consisting of due consecutive sectors with independent drive and programmable transportation speed compatible with machine and furnace.
Rollers coated with PVC – belts in PVC

Absorptions

Power absorption about 2.5 Kw
Voltage required V 400 + N – 50 Hz
Maximum compressed air pressure 6 Bar





SERITAB 2,500 X 1,000 MANUAL SILK SCREEN PRINTING MACHINE

Technical and functional characteristics

Structure

The load-bearing structure is made of steel tubes and is equipped with pivoting wheels for easier transportation and adjustable articulated feet to maintain the table perfectly level.

Print bed

The print bed consists of a layer of wooden material with laminated surface and non-scratch finish. The printing bed is equipped with micrometric regulations along the X and Y axes (range 40 millimetres) to facilitate the setting and centring of the silk-screen frame with the panel to be printed. The micrometric regulations are carried out by means of purposely designed knobs located on the front of the machine. The print bed is also equipped with a lever locking system used to maintain the position obtained at set-up. The locking levers are located near the knobs of the Y axis. The release levers must be loosened during set-up phase.

Frame holder clamps

The silk-screen frame is mounted on purposely designed clamps that can slide along the support shaft to match the dimensions of the silkscreen frame to use. The frame is locked in position by means of screw knobs. The frame thickness can be from 20 to 50 millimetres. The two columns that support the shaft are equipped with vertical regulation (range 50 millimetres) to match the thickness of the panel to be printed. The folding aperture is assisted by counterweights that also ensure the positioning (up - down).

Printing unit (optional)

The printing Unit consists of a carriage that slides on the guides fitted on the machine structure. The carriage supports an articulated arm complete with squeegee-holder clamp. The length of the squeegee is selected according to the dimensions of the pattern to print. The arm extends up to the front of the machine and has a handle on the end that the operator must push downwards and pull to get the printing unit to move forward.

Tool drawer

The table also includes one tools drawer located on the front of the machine where to keep tools and accessories used for printing or for the maintenance of the machine.

CLIENT REFERENCES

Glassprint - Masetti

Glassprint - Ax Yorium

Vertical line with rollers

WP - Max Interdesign

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SERIPLAN-EX 2.5 X 1.2 SEMI-AUTOMATIC SILK SCREEN PRINTING MACHINE

Technical and functional characteristics

Work table
- Extractable-work table in phenolic multilayer with non-scratch finish on heavy telescopic rails
- Drive with inverter for the management of the start and stop ramps
- Positioning of glass panels by retirable nylon spheres

Printing head
- Structure made of load-bearing profiles in extruded aluminium
- Release of the printing head from the work table for cleaning operations
- Eight motorized adjusters operated from the control panel

Printing unit
- Movement of the printing unit on ground linear guides
- Belt drive
- Drive with inverter for the management of the start and stop ramps
- Printing and covering speeds managed separately by the control console
- Working pressure of the machine adjustable from machine front
- Anti-drip device

Frameholder surround
- Frame holder clamps with servo-assisted adjustment
- Pneumatic type clamp locking system
- Pneumatic type frame locking system
- Micrometric regulation for centring the pattern of the panel
- Adjustable progressive release device that can be deactivated

Control console
- Control console on stand
- Touch screen keyboard and machine-operator dialogue box for the management of the work cycle times
- Each step of the start-up phase can be managed in manual mode

Drying furnaces

As far as the Promix line of furnaces is concerned, these are machines often made to measure as per tests carried out in laboratory with materials and specifics from clients.

The internal movement systems enable to create automatisms and links between the various processing lines thanks to the different configurations: linear loading and unloading transfer, 90° and 180° transfer link with optimization functions of transport, automatic loaders and unloaders, etc.

And this is why, COMSS can now be considered a new company for the glass finishing industry, able to satisfy not only technical requests, but also to supply technological know how to those companies who enter the screen printing sector for the first time. ■

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