



Newly developed leather spraying machines bring robotics on board

French company Mercier Turner takes a bold step by marrying latest technology with 1950's design of reciprocating spraying machines.



Oblique angle view also showing part of leather entry drive.

Leather finishers are now able to take advantage of new technology that raises the performance and accuracy of what the rotary sprayer can offer. With Mercier Turner's latest machine, the shape of the leather piece entering the machine conveyor, both in area and form, is accurately read by using a detection bar such as is used by leather measuring machinery. Based upon the information supplied by the precise characteristics of the leather piece, the heart of the machine, its robotic system, comes into play. Depending upon the working width of the sprayer, either one or two robots and between six or 12 spray guns are fitted. Each robot can carry six guns. The so-called robot in fact is integral and integrated with the gun carriers and programs, monitoring the optimum spraying parameters which involve the speed settings, air pressure and spray flow for each gun. Programs once established are recorded, retaining all working data such as the number of leathers and surface sprayed; in this way the appropriate requirements are readily recalled when required. The system also automatically stops and starts the complete machine line, which also is programmable to go into standby mode when no leather is detected. Pressure, width and flow of guns can be set from the computer without touching the guns. Specific programs can be set up and used to select what is required at any given time.

Also available is permanent connection with Mercier Turner for automatic data saving as well as remote assistance.

The machine is equipped with two parallel robot gun carrier drives which are activated to achieve the necessary spray pattern requirements as determined by the area and shape of the leathers. The drives can work together or in reverse. High travel speed of the carriers is driven by brushless electric motors designed to give fast, smooth and shock free travel. The spray guns fitted are of the automatic and controllable type.

The overall build of the spraying machine uses stainless steel. Separate leather transport conveyors are part of the complete line. The section through the spraying machine carries the leather on

nylon strings. Automatic cleaning and drying is provided with circulating warmed air. The conveyor taking the leather through the drying tunnel is an endless mesh type. The line has a separate compartment with an extractor fan to remove noxious air.

Reduction or elimination of polluting elements is given a high degree of importance. Water passed through curtains is recycled. Airflow and extraction is by inverter controlled fans. Automated management of airflow takes into account both spraying pressure and the amount of spray product in use. Contamination of the inside of the spray booth or externally is avoided by the pressurised entrance and exit from the spray cabin.

This rebirth of the early reciprocating spraying machine has employed advanced technology and advantages when compared with the rotary sprayer. Mercier Turner states that it is more efficient and accurate as well as showing more even results with high product savings. Supporting this claim some of the features highlighted by the manufacturer are:

- Spray cover quality is homogenous as a result of the reciprocating gun travel.
- Efficiency is high because spraying is always within the leather area - rotary systems waste colour because guns partly travel beyond this area.
- Guns are directly connected to control valves simplifying operation and maintenance.
- Both robots can be used for more speedy spraying and only one pass may be sufficient. Using just one robot may be sufficient to cover the whole leather, leaving the second prepared to immediately change colour or different spray action.



Front view of spray cabin. Spray mechanism with see-through window.



Internal view of cabin with two gun carrier drives. Spray guns and robots can be seen.



Detail view of robots and spray guns, five per drive.

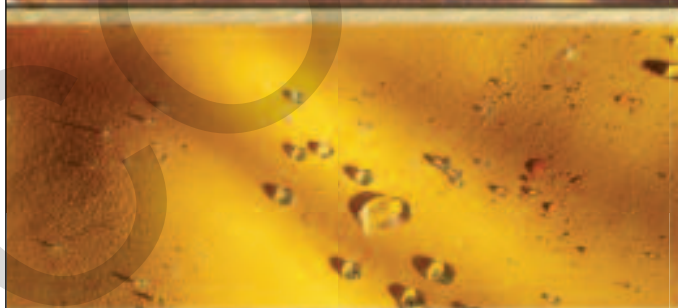
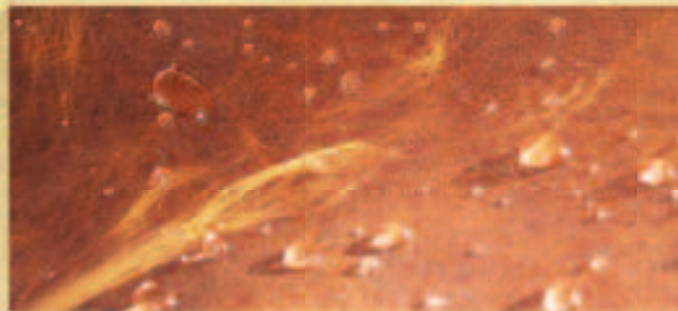
- Setting of guns is automatic. Pushing the “calibration” button the spray amount and pattern can be checked and entered into the program. The guns will be set automatically. Any changes in machine setting will cause the guns to reset accordingly. Entering the pressure required and spray amount creates a new program which is recorded.
- Based on automatic gun settings the actual process settings can be displayed on screen and can thereby be seen and controlled directly without the need to look at the leather.

- The follow up system can register, print and observe all relevant information in real time such as number of leather pieces, area sprayed and any other parameters.
- Amongst other features there is automatic cleaning programmable as set.

The new line under the designation MAP NR is available in working widths of 1500, 1800, 2300, 3000 and 3400mm. ☺



CHEMTAN COMPANY, INC.



**Consistent
Performance**

**Clean
Technology**

**Innovative
Products**

Tel: (603) 772-3741 • www.CHEMTAN.com