

## Hot off the press

*Evolution Tech, a relatively new entrant to the leather world, is bringing its low temperature, pre-heating roller press to the world of embossing. World Leather spoke to Evolution Tech's Antonello Marchino about the machine and the technology employed.*

Finishing is an recognised as an important phase in the production of leather as it defines the final product. Far be it from a simple operation, it is typically where science meets art. At the point of finishing, the manufacturer must meet the criteria set for both aesthetics – in the form of colour, shade or surface effects – and also performance, whether it be protection from humidity, dirt or mechanical stress. In the majority of cases, the most used products in finishing are thermoplastic polymers. Such products allow, when heated, to be shaped and moulded and to keep that shape once cooled – ideal for creating the look for the final leather.

The exact choice of polymer is specific to the tanner and will include acrylics, polyurethanes, butadienyl, vinyl and epoxies, the choice being defined by the leather itself as well as the application method and process steps thereafter. The embossing plays a substantial role in the finishing process and is responsible for the final look and character of the leather as it imparts the heat that allows the thermoplastic products to retain the print on the hide.

The conventional embossing process uses a static heated embossing plate while a hydraulic ram lifts the leather and presses it on to the hot plate. Various parameters can be set, such as dwell time, temperature and pressure. The main advantage of this type of embossing is the print retention. Unfortunately, there are associated disadvantages including print cross over (overlap) and slow productivity. For these reasons, rotary embossing machines

came into existence.

These machines had the advantage that being 'through feed', productivity could be increased, and wastage was reduced as no print overlap was created. Unfortunately, due to the brief contact between the leather and the embossing roller, the temperature and application pressure must be substantially increased to allow for heat transfer and print retention.

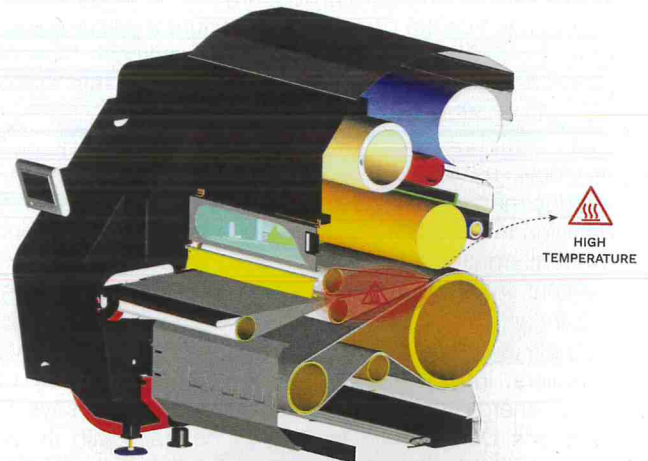
Working at these extremes could cause many issues such as the engraved roller cutting into the leather or the high temperature creating a thermal shock where the polymer is overheated causing the leather to shrink or firm.

Evolution Tech sales manager Antonello Marchino explained that these issues pushed the company to look at the processing from the leather's point of view. Having studied the chemical products and their behaviour regarding heat and combining the benefits from both types of machine – the print retention and softness of the hydraulic press plus the through feed speed of the rotary press – Evolution Tech incorporated a pre-heating introductory conveyor band to the rotary press. In this way, the leather can be pre-heated prior to the embossing, allowing the thermoplastic polymers in the finish to soften. This pre-softening allows lower temperatures and pressures to be employed, eliminating the danger of overheating the finish and giving a softer end product. "Leather is such a tactile material and quality can be felt, softer leather feels more luxurious," explains Mr Marchino. ☉



*Revotech Rotary press – incorporating patented technology to improve print capability and reduce pressure and temperature.*

ALL CREDITS: EVOLUTION TECH



*The patented pre-heating conveyor belt can be heated to 110°C allowing for reduced temperature and pressures compared with standard rotary presses. Overall pressing temperature can be lowered by about 25% to around 100°C.*