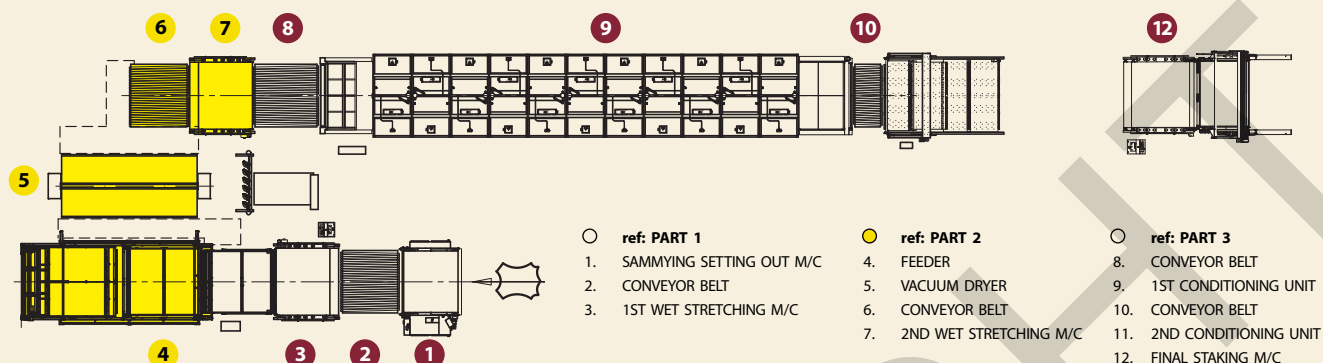


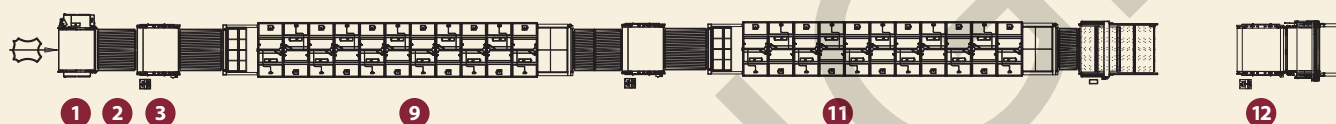


Versatility of the Cartigliano "Just in time" line: diagram shows two Cartigliano line configurations

(i) Complete Cartigliano Line with Vacuum Dryer and Conditioning unit



(ii) Complete Cartigliano Line with Double Conditioning unit



Cartigliano "Just In Time" Technology Part 2

Part 1 describing the samm/setting and the first wet stretching elements of the Cartigliano "just in time" line was published in the World Leather magazine February/March issue. This article (part 2) highlights Feeder, Vacuum Dryer and second Wet Stretching operations of the line. Its final elements will be dealt with in a later issue.

A special device is the **Feeder**, the unit developed by Cartigliano to bridge the transfer of the wet stretched leather to the Cartigliano New Turbo vacuum dryer. Its task is to accept the leather pieces from wet stretcher output and deliver it to the dryer plate position where they are retrieved and slid automatically onto the dryer plate. The feeder mechanism in itself consists of the transport conveyor plus its two loading conveyor sections. The feeder is an exceptional machine as it automatically links and continues conveyor fed leather with a piece by piece operation at the same time maintaining a determined throughput speed.

There are several considerations to satisfy the requirement. One, timing is of the essence as the leather fibre structure must not be given a long enough interval to commence relaxing and, two, the inbuilt tension needed, achieved by appropriate conveyor/feeder architecture. Further, a way to even out any flow irregularities which may occur because of the unavoidable manual handling at vacuum dryer loading has to be provided for.

The time element is covered by the basically simple construction inherent in the feeder unit. Tension maintained in transit consideration is fundamental within the concept adopted by Cartigliano. Throughout transfer points in the line the principle adopted is that of raising conveyor speed after each

previous process of the order of up to 10% thus maintaining a degree of tension in the flow direction. At right angle to the flow the conveyor bands are set to spread out, retaining tension and shapes of the leather in transit. Finally, the feeder loading system is given a small magazine capacity which allows the automatic transfer operation to continue, up to the number of leathers held in the system. The magazine capacity amounts to 4 to 5 pieces (whole hides) which is maintained in normal running. In the event of a delay or interruption in the arrival of leathers, the vacuum dryer operators can draw upon the magazine.

One further task of the feeder unit is to automatically turn the leather, previously introduced on the samm/setter with grain up, onto grain down into the vacuum table.

Next vacuum drying is ready to be dealt with. The Cartigliano New Turbo vacuum dryer comes in a choice of constructions. The number of drying plates fitted maybe from a single one up to eight tables. Dimensions are from 3000mm x 1800mm up to 7000mm x 3400mm. Obviously type, form of leather and throughput requirements will dictate the precise specification. The structure will always take the goal post type as this presents optimum freedom of access. A notable and newly developed feature is the proximity of the water pipe reticulation with respect to the heating tables optimising condensation



Details of feeder loading vacuum dryer system showing the feeder about to transfer the leather onto the vacuum dryer plate.

thereby enhancing efficiency. The design and the concept of the new turbo vacuum dryer reduce the overall consumption of energy in comparison with more classic vacuum equipment.

Now, moving away from the mechanical details to the performance capabilities of this machine, the characteristics of the leather dried by the system developed for this purpose are explored. Positive factors are the deep and uniform drying of the leather in all its surface achieved during a very short exposure at temperatures as low as those of the normal animal body. Evaporation begins at very low temperatures (starting at 23°C). The result of this treatment: the residual moisture content is uniform throughout the whole leather and migration such as retanning chemicals as well as colorants is avoided. Area loss is minimised and the grain is upgraded and the leather has a round, soft and natural feel. Substance is uniform throughout the whole leather area.

The optimum performance of the Cartigliano line is enhanced by the positioning of a **second wet stretching** machine following the vacuum drying process. When processing upholstery, automotive and some shoe upper articles, the second wet stretcher is an essential requirement, particularly as it re-opens the leather achieving an area gain reducing stretch which is not acceptable in the final product.

The construction of the second wet stretching machine is similar to that of the first wet stretcher in the line. It is placed just ahead of the conditioner and is linked to the vacuum dryer unloading station by a pair of inclined band conveyors and feeding directly into the conditioner again by an inclined band conveyor. ⦿