

TERRUZZI FERCALX S.p.A.

Technological innovations in the freeze driers field

TERRUZZI freeze driers series **TP**, laboratory models, for research and development or for pilot productions and **TLC** series, for industrial productions, up to 90 m² of loading area, are expressly realized for pharmaceutical industry and they are the result of more than 50 years of experience in construction, planning, commissioning, validation of worldwide industrial plants.

The process board with the supervision system developed by Terruzzi Fercalx and supplied as standard, makes possible to regulate and automatically control the process by PLC.

All main parameters of working are showed on the PC screen graphic pages, as well as the alarm management and the data statistical tables as support in Q.A. phases.

Every Terruzzi Fercalx freeze drier is provided with its protocol for "*Installation and Operational Qualification Protocols*" – IQ / OQ – and with documents concerning the Factory Acceptance Test realized at our factory, before delivery. Management and control system is in compliance with **GAMP**, latest edition, **CFR 21 part 11**. Particularly latest studies concern a new lay out for **freeze driers for oncological productions**, integrated with a RABs, with pizza door and access door for technical and management interventions in the technical field.

Moreover, the **stoppering system** has been improved for freeze driers with large loading areas, up to 40 m² useful area. Terruzzi Fercalx has given particular attention to the **project of the condenser**, thanks to the great experience obtained by the realization of the plants.

In fact, the particular configuration of the coils placed inside the body of the condenser, allow the regular and optimal loss of load in the natural circulation of the refrigerant liquid, granting uniformity of temperature during all the circuit.

Exceptional efficiency of condensation on all the condensation surface during the sublimation, makes easier the distribution of ice on the coils.

This allows performances which reduce time for freeze drying cycles up to 50%.

Any further information or documentation will be available at our stand.

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