

MECHANICAL INSTALLATIONS OF ARIA 1500 AND 600 FLUIDISED BED SYSTEMS

INTRODUCTION

This article shows the assembly and connection of two fluidised beds located in the Kairos Phase II plant of the Grünenthal Laboratory located at Av. Quilín 5273, Peñalolén in Santiago de Chile.

The Kairos Phase II plant consists of approximately 2000 m², within which is the Fractionation area containing Granulation Rooms 1 and 2 where the two ARIA 1500 and 600 Fluidized Bed Equipment are installed, respectively.



Photograph of installed Aria 1500

OVERVIEW

Each of the Aria 1500 and 600 machines is part of Grünenthal's medicine production process.



Aria 1500

The additional equipment, for which the supply and installation of hydraulic and treated air networks to connect each fluidised bed was contemplated, is shown below:

Hydrowash:

- WIP water pipeline installations
- Steam and condensate pipeline installations
- Installation of pipeline for PW tank connection
- Electrical installations

Aria 1500 and 600 UTA (Unit of Thermal Activation)

- Stainless steel ductwork installations for air-conditioned conveyance
- Cold water pipeline installations
- Steam and condensate pipeline installations
- Electrical installations

Aria 1500 and 600

- WIP water pipeline installations
- Electrical installations

Roto Mix 1500 and 600

- Pipeline Installations for Connection with other Aria 1500 and 600 Equipment and Processes respectively

APPLICABLE REGULATIONS

The applicable specific and general regulations are as follows: All the regulations in force for industrial installations.

- ISO 14644 for the Design, construction, commissioning, air cleanliness classification and validation of production halls and annexed controlled premises.
- European GMPs for the classification of Cleanrooms.
- NEBB (National Environmental Balancing Bureau) "Procedural Standards for Certified Testing of Cleanrooms"
- Heating, Ventilation, and Air Conditioning (HVAC) Installation Regulations
- RD 842/2002 of August 2nd of the Electrotechnical Regulation for Low Voltage (REBT).
- European Directive Specifications regarding CE marking of equipment.
- Occupational health and safety (OHS) regulations.
- ASME IX Regulation, TIG Welding with Low-Intensity Argon.

SCOPE

The project consisted of the supply and mechanical, electrical and pneumatic installation of the different services described in the previous paragraph.



Aria and Rotomix 1500 located in Granulation Room 1



Rotomix 600 located in Granulation Room 2

VALTRIA TEAMWORK

This project was a real challenge for the production area in the assembly of fluidised beds for a young delegation like that of Santiago de Chile (which did not have experience in assembling a project of this magnitude). This order was awarded while we were still assembling the pharma panelling and HVAC for phase 2.

It presented itself as a professional challenge for the production area, with many hours of study, design, modelling, supervision, TIG welding under ASME IX standards, radiographs of welds, tightness tests, and borescope inspections, among others. One of the biggest challenges of this installation was the simultaneous assembly of both equipment.

The Valtria team, full of enthusiasm and commitment, started working until we reached where we are at this moment, about to make something that initially seemed impossible a reality. Currently, both fluid bed teams December 2023 (High Sear, Rotomix, and ARIA for 1500 and 600), are delivered and in operation by the client.

Obviously, none of this would have been possible without the commitment and involvement of the entire team that worked on this project and of course with the dedication of the site managers to achieve the challenge that we had as an objective, which was no small task,

since we did not have previous experience in assembling these equipments. Sincerely, I want to thank Dangelo Nuñez and Jose Miguel Orellana for this achievement that we have achieved with the best quality standards and with customer satisfaction, as our goal is to meet the needs of our customers.

Every day, with our contractors and Valtria site managers, we reviewed and/or re-evaluated the equipment and pipeline routes of all supplies to avoid any interference and find the best way to maintain the equipment in the future. It is worth mentioning that we had the opportunity to learn more about this beautiful project every day.

To this day, everything is running like clockwork despite the contextual difficulties, starting with the commercial team, study department, engineering department, BIM department, our colleagues in OHS ensuring our safety and that of our collaborators, purchasing department, administration, and marketing, Production Managers of all delegations, and the group management aligned with a single purpose, to help and collaborate.