

Case Study

FILTER DRYER UPGRADE, AUSTRIA

THE OBJECTIVE:

The original equipment, a PSL 0.3m² Agitated Nutsche Filter Dryer with Heel Removal GloveBox, was being removed from service in the USA to be re-installed in Austria, Europe.

The equipment required to be refurbished to comply with the current EEU (ATEX) directive 94/9/EC and TÜV Austria pressure vessel certification.

THE SOLUTION:

The Filter Dryer was returned to PSL Liverpool, UK. Upon its return the equipment was inspected to assess that the components complied with the original specification and checked for any worn/damaged components that could affect PSL's ability to complete the refurbishment.

An engineering review of all the components was required to comply with ATEX requirements.

Necessary components and modules were designed and manufactured in compliance with the EEU directive.

All new mechanical, electrical/control parts were inspected and checked against the engineering design. Once approved, any new components were re-assembled onto the equipment.

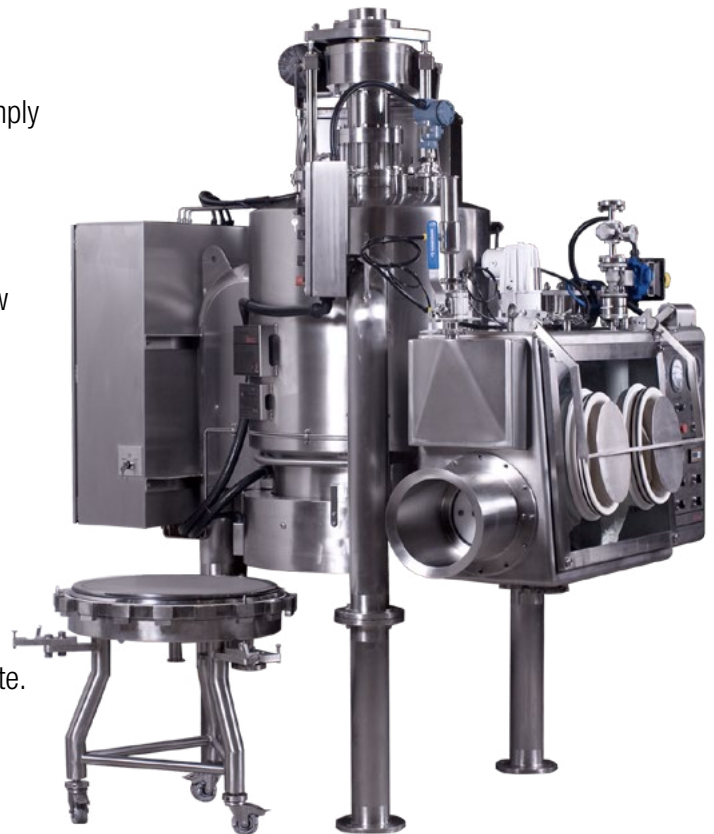
Where feasible the components were integrated and tested to PSL's acceptance criteria.

Pressure Vessel re-certification

The original design verification documents such as design calculations, manufacturing drawings, weld and welder qualifications/procedures etc. were submitted to a third party authority (TÜV Austria) for design review. Upon acceptance the vessel was then hydrostatically third party tested at the client's site.

Major Components replaced

- Power distribution from 115VAC to 230VAC
- Agitator gearbox drive
- Motor assembly
- Mechanical Seal assembly
- Vessel Light
- Isolator light
- Emergency stop safety relay's
- Cables and cable glands
- Vessel nameplate



Original Equipment Area Classification	External / Internal: Class I Div 1, Groups C&D T3C
New Equipment Area Classification	Vessel Internal: Cat 1 Zone 1/21 IIC T4, Glovebox Internal: Cat 2 Zone 1/21 IIC T4, External: Cat 3 Zone 2 IIC T4.



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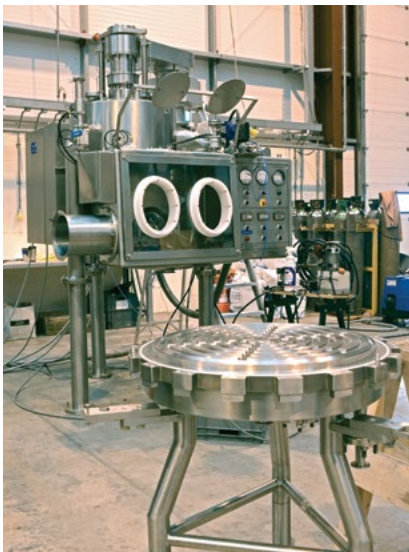
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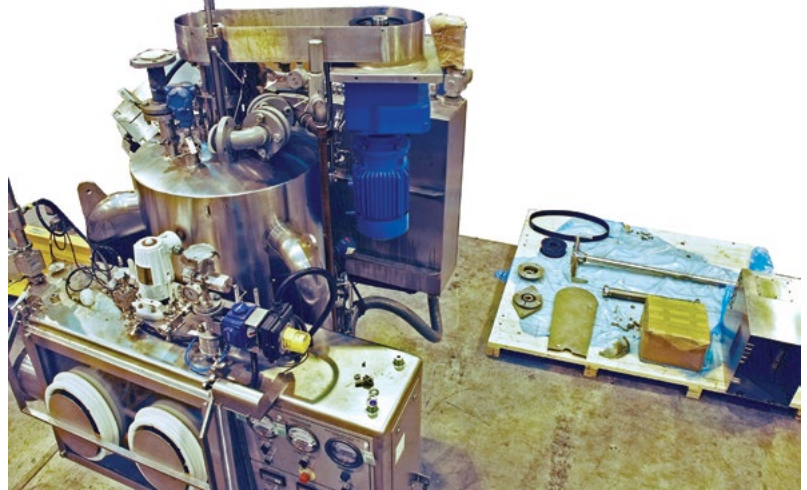
Original Filter Dryer delivered in USA in 2008



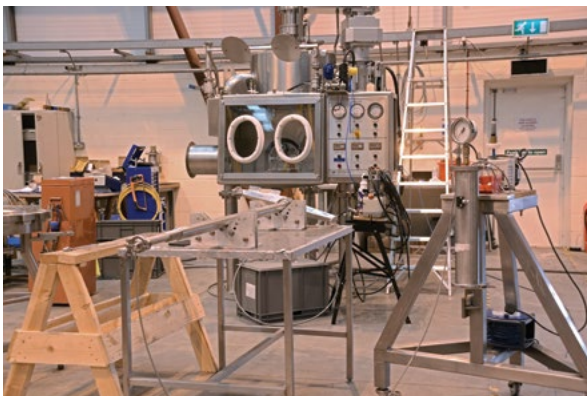
Filter Dryer returned to PSL in 2015



Filter Dryer Plate during re-assembly and testing



All components being inspected



Filter Dryer Agitator during testing



Name Plate with certifications changed