



# Vacuum Dryer

## Case Study

Improved vacuum pressure results in reduced drying time,  
increased quality and production cost savings

# Eliminated product batch contamination from strands of braided packing

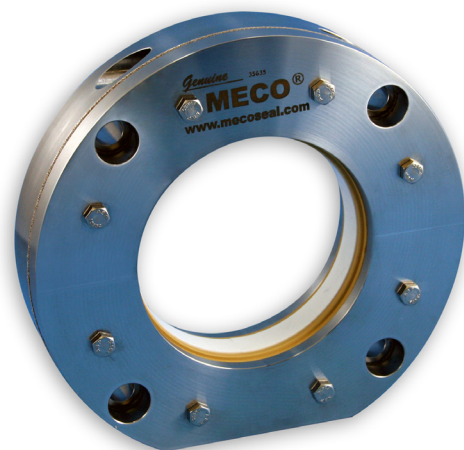
## Introduction

FTL has been supplying superior sealing solutions to the pharmaceutical industry for many years, which has resulted in a deep understanding of many of the unique challenges faced in critical manufacturing applications.

Our engineers have designed, manufactured and installed seals for all types of processing equipment, including blenders, mixers, agitators, and screw conveyors, as well as seals for cooking and extrusion.

## The Client

A global manufacturer of process equipment including filters, filter-dryers and vacuum dryers for the pharmaceutical and fine-chemical and chemical industries.



*MECO AH Type 2 Seal*

# No atmospheric ingress results in significant productivity gains and cost savings

## The Challenge

A 3 cubic meter vacuum dryer used in a pharmaceutical application to manufacture antibiotics.

The client was using a live loaded braided packing assembly and experiencing a number of issues:

- Strands of packing entering the product batch
- increased consumption of nitrogen trying to maintain a barrier system
- Reduced vacuum levels resulting in increased drying time
- Batch contamination due to atmospheric ingress - significantly impacting quality, costs and productivity

## The Solution

FTL recommended a MECO seal be fitted at each end of the dryer and a nitrogen purge system utilised that was always a few hundred millibar above process pressure. The primary function was to provide some condition monitoring but it also satisfied the isolation of product from atmosphere in the event of a seal failure.

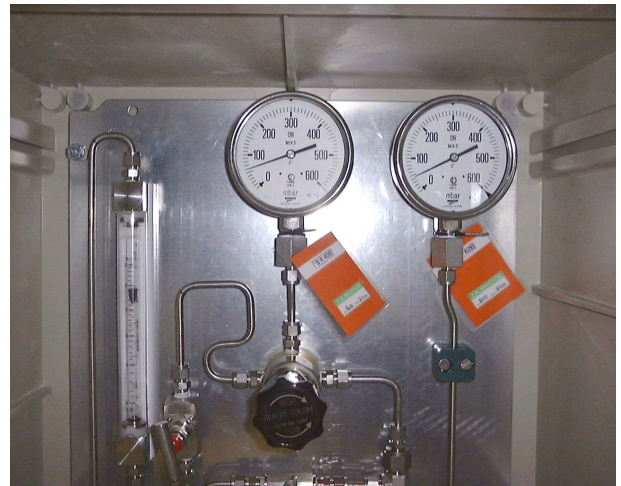
Maximum flow through the seal was 12 litres per hour and typically operated below 8 litres per hour. Measuring flow rates was not the key driver but the nitrogen cabinets were fitted with supply gauge, seal cavity gauge and flow meter so it was easy to qualify the flow rate and use this data as an indication of seal performance.

Increased seal  
life and constant  
nitrogen flow rate  
monitoring provide  
peace of mind

## The Benefit

The seals were overhauled annually in line with the customer's maintenance procedures. Inspection of the removed wear parts indicated that a longer service life could be achieved but their maintenance programme remained unchanged.

The customer never lost a product batch due to the seals. The improved vacuum levels reduced the drying times, whilst at the same time improving quality and achieving significant cost savings.



*Seal cavity gauge and flow meter*

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