

# Sealing Technology Centre

*With over 50 years in providing Sealing Solutions to all Industrial sectors we have designed these programmes on Sealing Technology for our customers & distributors at our facility in Brussels, Belgium.*

*The programme is suitable for Users of Seals, Sales/Purchase team members, Techno-commercial Personnel, Application Engineers, New recruits at our customers & distributors and for further skill development of your experienced team members.*

*As we know the basic fundamentals of Seals are not commonly taught in university curriculums, hence these programmes are highly suitable for personnel in the Sealing Industry. This programme is not in complex engineering terminology but in simple terms that we deal in everyday being in the Sealing industry, This Training programme can be added to the company's ISO, ASME certification programs.*

## **1- Introduction to Sealing Technology**

*Half Day Programme*

- Complete overview on all types of Sealing elements and Sealing applications.
- Understanding of all types of Sealing materials and their Compatibilities to working medias.
- Introduction to manufacturing processes of Seals.

## **2- Advanced Sealing Technology**

*Full Day Programme*

- Criteria for Selecting Seals based on the customer's application.
- To be able in assisting your customers with the right selection of Seals.
- Identifying Seal profiles and understanding their applications.
- Understanding the Manufacturing process of Seals from Mould making to Rubber compounding.
- Causes of Seal failures & corrective actions for them along with Installation & storage of Seals

*It will be our pleasure to organise these programmes for your company personnel at our facility in Brussels. Please let us know on :*

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## Topics covered at the Sealing Technology Programme

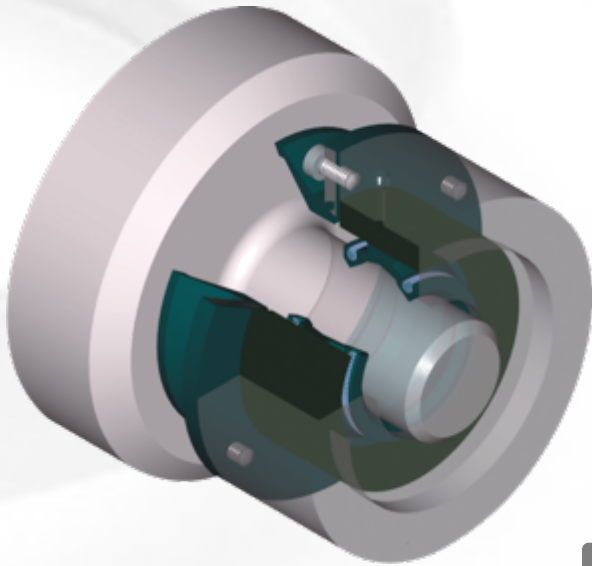
- **Criteria for selection of Seals based on**
  - 1. *Material & Their Properties*
    - *Chemical Compatibility and Lubrication properties*
    - *Temperature Resistance*
    - *Material Compounds*
    - *Commonly used material*
    - *Easy identification of Polymers*
  - 2. *Effects of Pressure + Speed + Load on the Seals*
  
- **Identifying Seal profiles and its applications**
  - *Different profiles of Hydraulic / Pneumatic / Rotary Shaft Seals*
  - *Use of dust lips*
  - *Reducing downtime in replacing Seals (Chevron + Oil Seal)*
  - *Construction of a typical Hydraulic & Pneumatic Cylinder*
  - *Ordering Information*

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- **Causes of Seal failure**
  - Joule effect and Diesel effect
  - Material not compatible with media
  - Poor material properties
  - Excess Temperature / Pressure / Speed / Load
  - Improper fitment of the Seal & Improper Storage
  - Dents, Pitt marks or Scratches on Sealing surface
  - Lack of lubrication and contamination of Oil/Air
  - Shaft to Bore Misalignment and Dynamic run out
  - Due to Higher Running cost of Equipment
  - Storage and Cleaning of Seals
  
- **Installation of Seals**
  - Fitting of Hydraulic Seals
  - Fitting of Rotary Shaft seals
  - Uses of filters for Hydraulics
  
- **Manufacturing process of Seals**
  - Product design and job card process
  - Tool Designing and Mould making process
  - Raw material – Batch/Compounding
  - Production (Mouldings)
  - Quality Control & Laboratory (R&D)



## Rotary Shaft Seals



### Fabric Shaft Seals



**NBR-Fabric** Speed: **10 m/s** Pressure: **0.5 Bar**  
A spring loaded NBR Sealing lip bonded with NBR-Fabric exterior. To be installed back to back with a metal spacer (lantern ring) to provide lubricant between the seals.

**App.** : Used in Heavy machinery & engineering industries.

### Metal Shaft Seals



**NBR + MS** Speed: **7 m/s** Pressure : **0.5 Bar**  
This profile has robust steel spacer encbsed into hard CRC (metal) cup with a rubber lip and a cup type spring pre loaded with a garter spring to give double tension on the shaft. Can be used in the application where the shaft has an eccentric movement.

**App.** : Used in steel mills and heavy industries for high speed applications

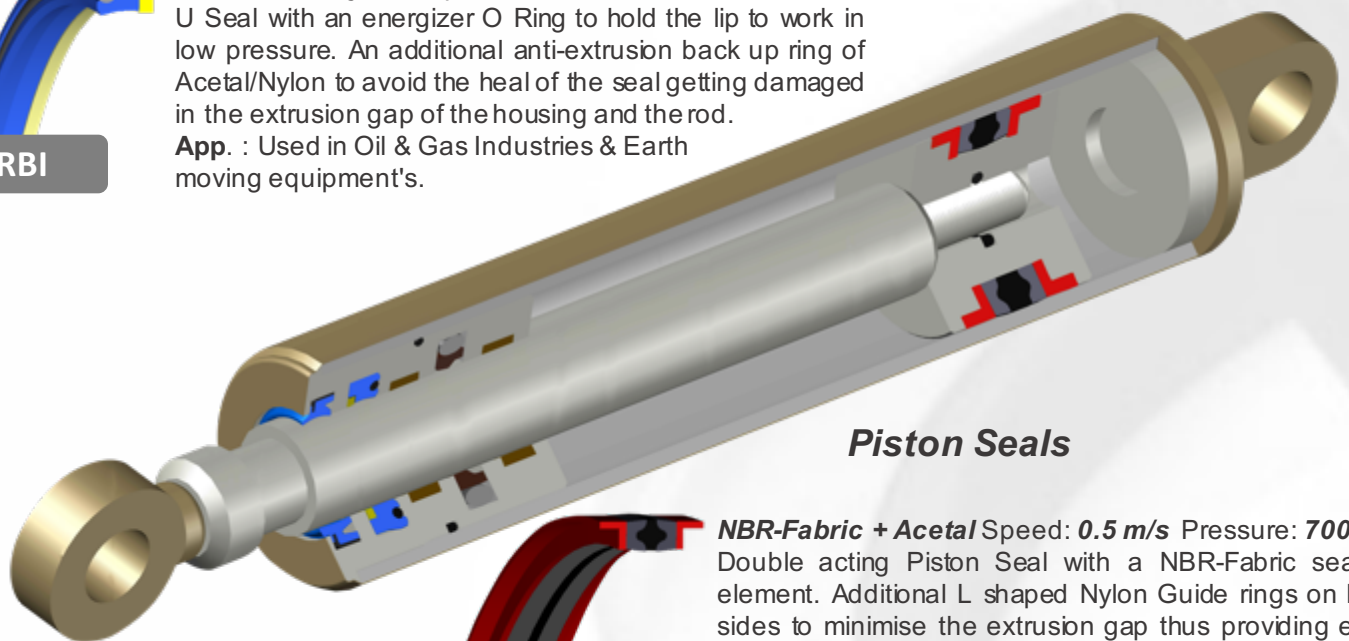
## Hydraulic Sealing Systems

### Rod Seals



**PU + NBR + Nylon** Speed: **0.5 m/s** Pressure: **400 Bar**  
U Seal with an energizer O Ring to hold the lip to work in low pressure. An additional anti-extrusion back up ring of Acetal/Nylon to avoid the heal of the seal getting damaged in the extrusion gap of the housing and the rod.

**App.** : Used in Oil & Gas Industries & Earth moving equipment's.



### Piston Seals



**NBR-Fabric + Acetal** Speed: **0.5 m/s** Pressure: **700 Bar**  
Double acting Piston Seal with a NBR-Fabric sealing element. Additional L shaped Nylon Guide rings on both sides to minimise the extrusion gap thus providing extra backup in guiding the piston in the cylinder bore.

**App.** : Used in a wide variety of medium duty applications.

Suebel Seals Belgium