

# Turcon® V-Stack Seal Assembly

MULTI-ELEMENT LIP SEAL FOR HIGH PRESSURE OIL AND GAS APPLICATIONS



## Custom made seal assemblies to suit high pressure requirements and applications.

The Turcon® V-Stack seal assembly from Trelleborg Sealing Solutions is a multi-element lip seal which provides increased sealing efficiency in high pressure environments due to a number of sealing elements called Vee-Rings. These are activated by a Male Adapter and backed up by an anti-extrusion ring, (often called a Female Adapter).

The Vee-Rings are designed with a radial cross-section larger than the hardware groove depth. Installed in the groove, these rings are then radially compressed with interference fit for initial sealing at zero pressure. In addition to the radial compression, V-Stack seal assemblies can be activated by mechanical axial compression or by a spring- or O-Ring activated Male Adapter. The anti-extrusion ring is most often made in a high modulus material such as PEEK and is in most cases without radial interference fit. The Male Adapter, when not spring or O-Ring activated, is typically also in a high modulus material, often the same as the anti-extrusion ring.

Vee-Rings which perform the actual sealing often come in different materials, some soft and some hard in order to benefit from the specific characteristics of the different seal materials. In some cases elastomer Vee-Rings can also be used to improve gas sealing.

### Features and Benefits

- High pressure capability 30,000 psi / 207 MPa
- Pre-load adjustment capability for extending seal life.
- Considered as a highly reliable design due to the multiple sealing elements and the possibility of re-adjustment
- No adhesion to the hardware with Turcon® and Zurcon® materials.
- High temperature capability, 500 °F / 260 °C
- High chemical resistance.
- Wide diameter and cross section range
- Machined V-Stack elements require no mold cost
- Good sealing performance against poor hardware surfaces.

### Applications

High pressure sealing environments including:

- Down-hole tools
- Valve-stems
- Down-hole flow control
- Sub surface safety valves
- Polished bore receptacles
- Sliding sleeves
- Hydraulic cylinders

## TECHNICAL INFORMATION FOR TURCON® V-STACK SEAL ASSEMBLY

| General Data              |  |
|---------------------------|--|
| <b>Operating Pressure</b> | Up to 30,000 psi / 207 MPa with custom components          |
| <b>Speed</b>              | Up to 3.3 ft/s / 1 m/s                                     |
| <b>Temperature</b>        | 49 °F to +500 °F / -45 °C to +260 °C depending on material |