

Valve Applications



**Engineered sealing solutions
for Valve applications**



Our products in application

Valve applications can be found in a broad range of industries such as Oil & Gas, Water & Wastewater, Food & Beverage and Hydraulics & Pneumatics where you can find a variety of styles including ball, gate, flap, plug, butterfly, spool, check and solenoid valves.

Depending on the application, our range of products are manufactured in a variety of materials and have industry specific approvals such as Norsok M710, ISO23936-2, NACE, WRAS and FDA.

Body bonnet joint: Static

Products: O-rings, backing rings, metal C-seals

A static sealing location that can often be sealed with an O-ring with a wide range of material options to satisfy fluid compatibility demands but depending fluid, pressures and temperatures, other seals may be more suited. For subsea valves, seals capable of handling alternating pressure regimes and multiple media types may be required.

Seat body cartridge: Static & semi dynamic

Products: O-rings, spring energised PTFE seals, slipper seals, axial metal C-rings

Valve seats are often mounted in a housing/carrier which has a sealed interface with the valve body and in these cases, a critical location to seal correctly. Dependant on design, the seal may be subject to upstream or downstream pressures at various points in the valve operation. In some cases fluid flow through the valve can pull or wash-out seals from their grooves if the design does not prevent this. As pressure conditions change with valve operation, the seals may need to withstand small, but sometimes frequent, movements of the carrier without sticking or wearing .

Actuation: Pneumatic, hydraulic & manual

Products: Slipper seals, rotary seals, diaphragms, O-rings, gaskets

We offer sealing solutions to suit the variety of actuation types employed with valves. Seal materials are available to suit all ranges of temperatures and media associated with the actuator and any external contaminants.

Stem: Linear, rotary & helical

Products: O-rings, backing rings, chevron packings, slipper seals, excluders, wear rings

A critical dynamic sealing location with often demanding requirements. Seals here may see frequent dynamic operation and will require a long wear life. In other cases the valve may be static for long periods and then require operation with minimal break-out friction forces. In all cases secure sealing is paramount and we offer a range of linear and rotary seals, using either elastomer or PTFE material options. Full review of valve duty cycle, media and pressure is required to specify optimum sealing solution.

Products



O-Rings



Metal seals



Mouldings



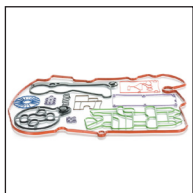
Diaphragms



Chevrons



Rotary seals



Gaskets



PTFE Spring Energised



PTFE Slipper Seal




Metal/Plastic Rubber

Valve seats


Products: Diaphragms, machined polymer seals, rubber/metal bonded seats, custom mouldings

We have a wide variety of elastomers and engineered polymer materials that can be moulded or machined to suit valve seat components. This includes bonding rubber to metal, or rubber to plastic to provide bespoke solutions that benefits space envelope, component count or ease of assembly.

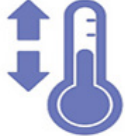
Product Focus: Metal Seals




High performance for challenging and critical seal applications.



Extreme high & low temperature performance and resistance to highly aggressive chemicals.

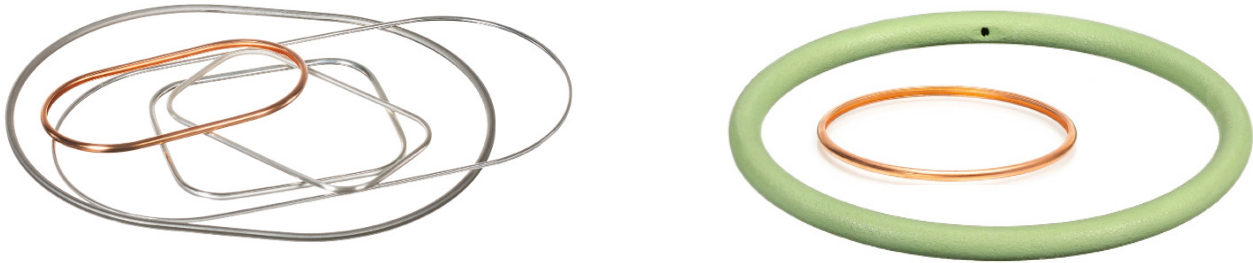


Wide range of base materials and precious metal plating combinations.



Complete seal design service from experienced application engineers.

- A wide range of materials are available including Stainless steels, Inconel and Hastelloy.
- Various specialised platings can be applied to the seals to suit different surface finishes.
- Heat treatments can be applied to further expand suitability. Some alloys can also be heat treated to NACE for the Oil and Gas industry.



Seal Selection at a glance





































 Excellent

 Very Good


 Good

 Fair


 Not recommended

Seal Type	Sealing Requirements					
	High Springback	Low Load	High Load	Low Leak rate	Pressure Capability	Low Cost
C Ring						
E-Ring						
O-Ring						
U-Ring						
Wire Ring						
Spring Energised C-Ring						


Product Focus: Diaphragms




Accurate control, zero leakage and no lubrication required.



Re-inforced diaphragm materials capable of withstanding high pressure applications.



Extensive range of material combinations for manufacture.




Complete seal design service from experienced application engineers.


- Sensitivity to signal pressure change enables reliable valve positioning with excellent sealing.
- Diaphragms allow for fast responses to small pressure changes and give excellent hysteresis performance.
- Available in a wide range of materials including elastomers, fabric reinforced & thermoplastics to suit all requirements.
- Supplied in sizes up to 46" diameter.




Product Focus: PTFE Seals




Extraordinary chemical resistance and suitable for low and high temperature extremes.



Self lubrication allows continuous dry running ability in dynamic sealing applications, low friction and high wear resistance.



Huge variety of material combinations; including virgin and filled PTFE compounds



Complete seal design service from experienced application engineers.

- Typically used in Stem sealing and seat body cartridge applications due to low permeability and low stick-slip, allowing for trouble-free dynamic movement when needed.
- High wear resistance gives long life in even high pressure applications.
- Over 38 standard profiles; with bespoke designs when necessary in diameters between 3mm to 3200mm.
- Outstanding chemical resistance makes these seals suitable for the most harsh environments.



Design & Development

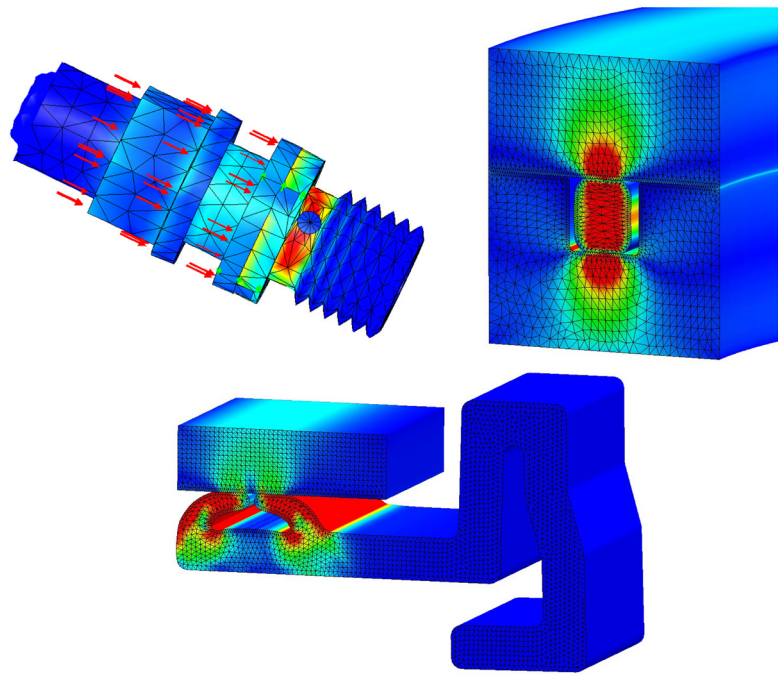
Our engineering team make sure our customers benefit from the best possible seal performance at optimum cost.

We understand the application demands associated with valve sealing.

Our engineers consider all parameters including temperature and pressure ranges, long life and maintenance free operation, materials to suit fluid compatibility and seals with low breakout friction designs that offer no stick-slip following prolonged static periods.

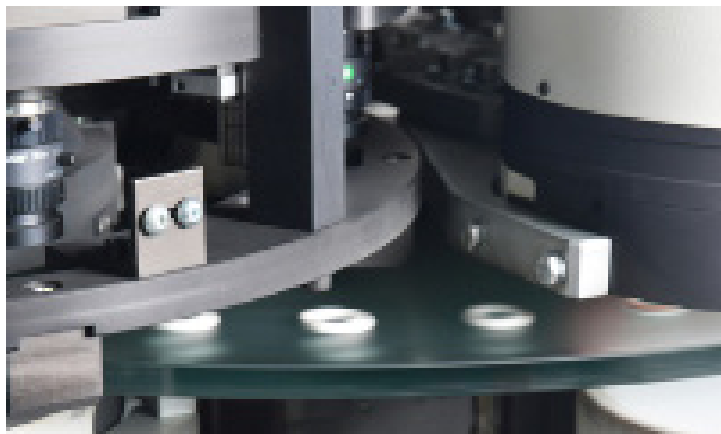
We are dedicated to providing a complete design service.

From initial seal geometry and profile choice, to material selection and prototyping, through to final production. We utilise years of seal design experience and materials expertise, alongside technology such as 2D/3D CAD and FEA analysis programs to simulate performance before finalising each individual seal design.



Quality Assurance

We maintain strict quality procedures at all stages of our design, development and manufacturing processes. We are ISO9001:2016 approved and our manufacturing facilities approved to IATF16949 and ISO13485.



Our team of Engineers and Inspectors ensure quality planning (APQP) is at the heart of our quality function.

Our stringent quality principles and proactive controls mean our customers have reduced claims, increased change control, and prevention of productivity loss.

With our manufacturing facilities we develop continuous improvements to processes such as follow up-audits, implementation of adequate

prevention measures, analysis and review of similar products to prevent future issues, effective root cause analysis and preventative actions review.

Ceetak Ltd Head Office:

Fraser Road, Priory Business Park,
Bedford, MK44 3WH
Tel: +44 (0) 1234 832200

Web: www.ceetak.com

Email: enquiries@ceetak.com

Ceetak Aberdeen:

Block 1, Unit 13,
Souterhead Rd,
Altens Industrial Estate,
Aberdeen, AB12 3LF
Tel: +44 (0) 1224 249690