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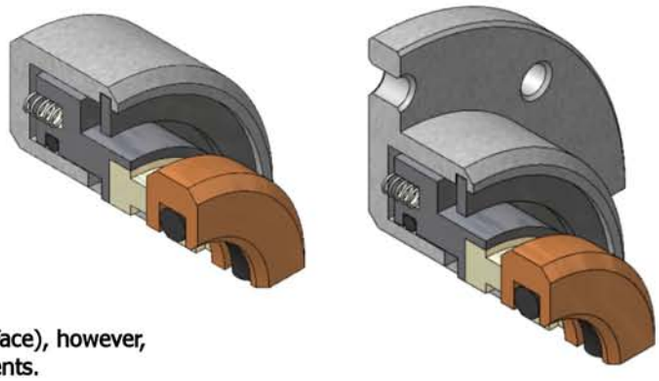
WESTON SEALS

...BESPOKE SEALING SOLUTIONS MADE TO YOUR SPECIFICATION...

Mechanical Face Seals
For extended service life in demanding environments

With the increasing demands on industry to reduce waste and clean up processes there has never been a better time to review the benefits of Weston Mechanical Face Seals.
Some of the benefits are...

- Extremely long maintenance free service life
- No leakage, even in the most demanding environments
- Easy to service and refurbish
- No adjustment required
- High speed / High pressure capabilities
- No shaft wear or fretting
- Narrow radial section
- Short axial length



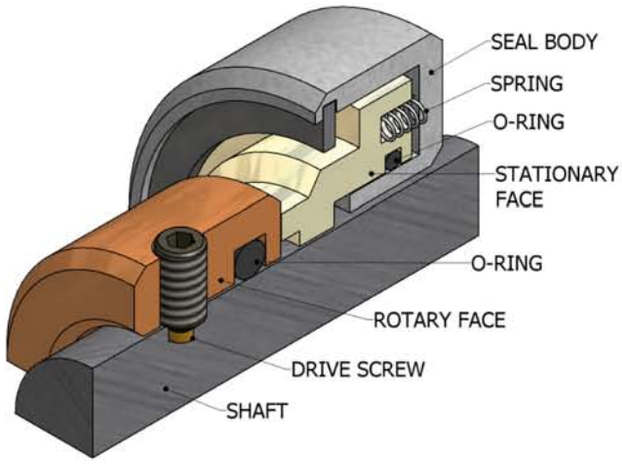
Weston Seals typically include matched contact ring (Rotary Face), however, seals can be designed to run directly onto customer components.

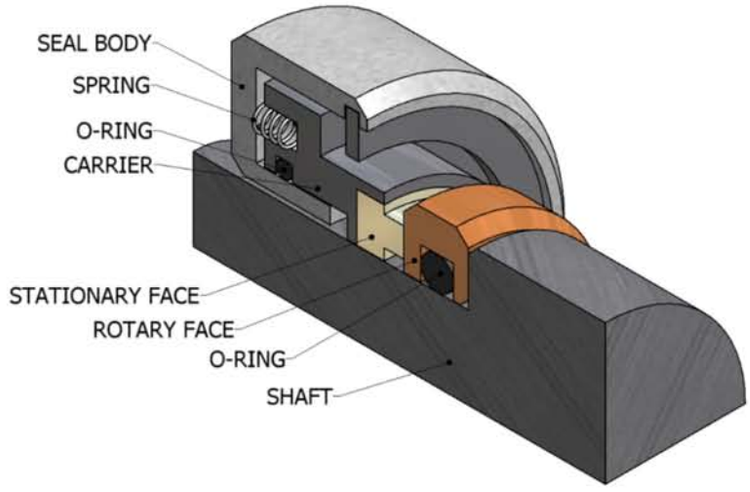
Seal retention can be achieved by interference fit or bolted flange. (Shown above).

BA Type Seals

BA Type seals are 'Balanced Pressure' seals typically used in well lubricated environments. The seals feature multiple spring energizing for even face loading and are axially compact. Material selections are application specific. Typical performance characteristics are shown below.

	m/sec	kg/cm2	Celsius	bar/m/sec
Max Speed	45			
Max Pressure		25		
Max Temp			180	
Max PV Value				300





CBA Type Seals

Design of CBA Type seals is very similar to BA Type seals. However, CBA type seals are capable of running with limited lubrication. This is achieved by bonding the primary seal onto the carrier.
Typical performance charateristics are shown below.

	m/sec	kg/cm2	Celsius	bar/m/sec
Max Speed	45			
Max Pressure		25		
Max Temp			160	
Max PV Value				400

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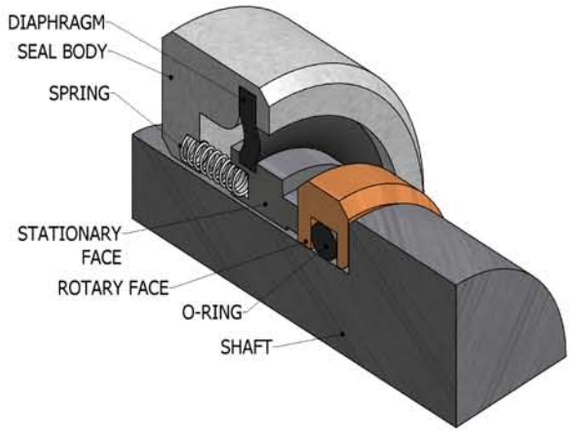
MRZ Type Seals

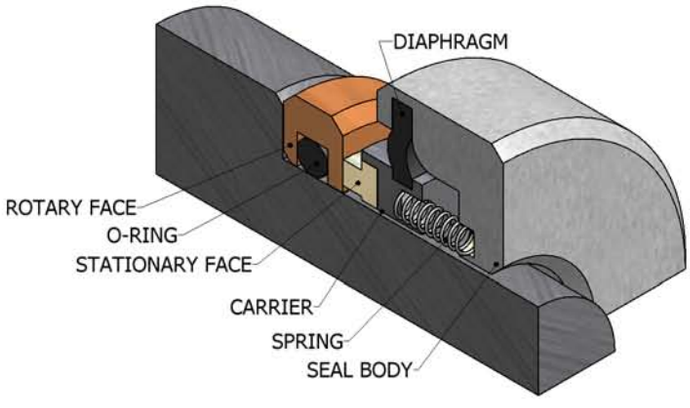
MRZ Type seals are non-balanced seals designed for well lubricated, low pressure applications. MRZ Type seals are particularly well suited to applications involving slurries and sludges.

The principle feature of this seal is that the secondary seal is a flexible diaphragm that prevents slurries entering the spring and drive peg cavity.

Typical performance characteristics are shown below.

	m/sec	kg/cm2	Celsius	bar/m/sec
Max Speed	45			
Max Pressure		25		
Max Temp			150	
Max PV Value				15





CRZ Type Seals

Design of the CRZ type seal is very similar to the MRZ Type seals. However, CRZ Type seals are capable of running with limited lubrication. This is achieved by bonding the primary seal onto the carrier.

Typical performance characteristics are shown below.

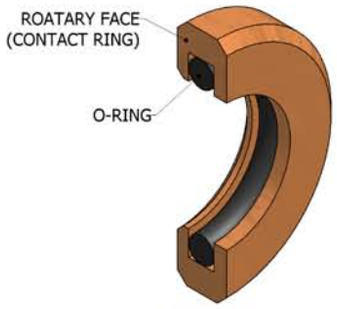
	m/sec	kg/cm2	Celsius	bar/m/sec
Max Speed	45			
Max Pressure		25		
Max Temp			150	
Max PV Value				15

Contact Rings

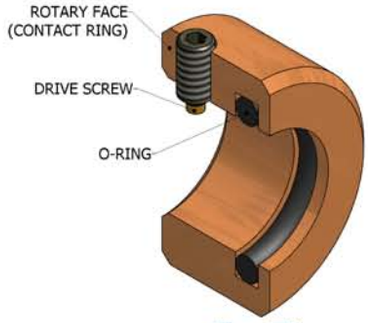
All seal types are typically supplied with a matched contact ring. The materials selected must be compatible with the media to be sealed and with each other in order to extend life. There are two commonly utilized designs, however customer requirements are easily accomodated.

Type T1 is a push fit on the shaft and is designed for pressures of 0.3bar Max. The contact ring is simply pressed onto an abutment face. For higher pressures axial constraint must be provided with this design.

Type T2 feature 3 Equi-Spaced driving pins suitable for both high and low pressure and can be utilized in applications where the shaft may be drilled.



Type T1



Type T2

What Is A Balanced Pressure Seal?

In a conventional unbalanced mechanical seal design the fluid pressure acts directly onto the back of the primary sealing face. Although this has the benefit that the sealing force increases with the fluid pressure, it has the negative effect of increasing friction and wear.

Our balanced pressure seals are designed so that the fluid is routed to apply pressure to both sides of the seal face, causing the pressure to balance. This allows the seal to always operate at its calculated working force, ensuring reliablility and long life.

Material Selection Guide

Below is a table of general materials used in the construction of Westoon Mechanical Face Seals.

Seal Type	Max Press Bar	Max Temp °C	Max Speed m/sec	Lubrication 1=Little 10=Full	Material Codes																
					Seal Face					Counter Face					Secondary Seals						
					A	B	C	D	E	N	P	V	W	Y	200 1	200 2	200 3	120 5	150 6	120 7	200 8
BA,BAF	25	180	45	8	■					■	■				■					■	
		180	45	7		■				■	■				■					■	
CBA,CBAF	25	120	45	6			■			■	■				■					■	
		160	45	5				■	■	■	■	■	■	■	■	■				■	■
		150	45	3				■	■			■	■	■	■	■				■	■
MRZ,MRZF	0.3	150	45	8	■					■	■						■	■	■		
		150	45	7		■				■	■						■	■	■		
CRZ,CRZF	0.3	120	30	6			■			■	■						■	■	■		
		150	45	5				■	■	■	■	■	■	■			■		■		
		130	30	3				■	■			■	■	■			■		■		

Key

Seal Face

A - Phosphour Bronze
B - Lead Bronze
C - Phenolic Resin
D - Carbon (General Purpose)
E - Carbon (Special Purpose)

Contact Ring

N - Hardened Steel
P - Corrosion Resistant Stainless Steel
V - Stellite On Acid Resist Stainless Steel
W - Stellite On Mild Steel
Y - Stellite On Stainless Steel

Secondary Seal (O-rings and Diaphragms)

1 - Fluoroelastomer
2 - PTFE Encapsulated Elastomer
3 - PTFE
5 - Fibre Reinforced Elastomer (120 Celcius)
6 - Fibre Reinforced Elastomer (160 Celcius)
7 - Nitrile
8 - Silicone

Typical Seal Sizes

Pioneer Weston can design and manufacture seals for practically any shaft size upto 500mm as standard - and have supplied special seals for shafts of 1500mm.

Below is a table of general envelope sizes and tolerances.

METRIC			
Size Code	Shaft DIA (mm)	Housing Bore Tolerance for Press Fit(mm)	Width Required(mm)
250	25	+0.03/-0 H7	21.5
300	30		
350	35		
400	40		
450	45	+0.035/-0 H7	
500	50		
550	55		
600	60		
650	65		
700	70		
800	80	+0.04/-0 H7	
900	90		
1000	100		
1250	125		
1500	150		

IMPERIAL			
Size Code	Shaft dia(in)	Housing Bore Tolerance for Press Fit (in)	Width Required(in)
254	1	+0.0014"/-0H7	0.846"
317	1.25		
381	1.5		
444	1.75		
508	2	+0.0014"/-0 H7	
571	2.25		
635	2.5		
698	2.75		
762	3		
889	3.5		
1016	4	+0.0016"/-0 H7	
1270	5		
1524	6		

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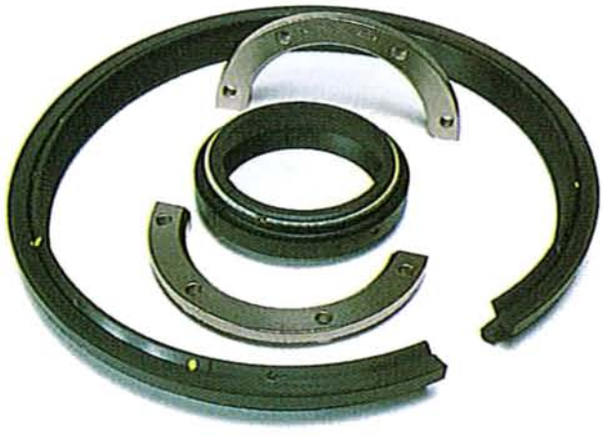
Split Seals

Designed to minimize downtime

Pioneer Weston Split Seals offer unique benefits over standard lip seals and other split seals.

Key Benefits

- Suitable for surface speeds up to 15m/s
- Low frictional losses
- Effects a gas tight seal
- Accommodates shaft diameters upto 1000mm
- Application driven material selection
- Replacement without machinery break down



Design Features

The seal comprises an elastomeric sealing element, split at only one point, a hook and eye garter spring that energizes the sealing element, split half clamp plates and an adapter when required.

The sealing element has a flexible beam with a circumferential dovetail section laterally secured by the split half clamp plates.

Effective radial compression of the sealing element ensures that the split is fully closed when assembled. Circumferential interference of the sealing lip is achieved by the garter spring.

Maintenance Features

All components are split to provide quick and easy seal replacement. Simply remove the half clamp plates then withdraw the sealing element and garter spring. Fit the replacement element and spring then replace the half clamp plates. There is no need to remove the pulley, couplings or drive keys.

Typical Profiles

Single Seal Type 100

Double Seal Type 400

Double Seal Type 500

Operating Parameters

Maximum Speed 15m/s
Maximum Temperature 185 Celcius
Minimum Temperature -65 Celcius
Maximum Pressure 0.35bar

Sealing Products

Catering For All of your sealing needs

Pioneer Weston have an extensive range of Shaft Seals, Quad Rings, V-Rings and O-Rings

Should a standard not meet your requirements, Pioneer Weston can design and manufacture specific seals for your application.

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"Our ambition is to be the preferred supplier of bespoke sealing solutions by continuing to produce goods that are;
Technically Superior
Manufactured to the Highest Standards
Delivered On Time
Competitively Priced"

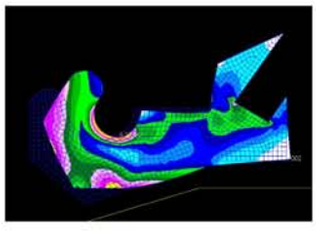
About Us

- Providing sealing solutions for over 60 years
- Specialists in providing bespoke sealing solutions for demanding rotary shaft applications
- Design expertise in both radial lip seal and mechanical face seal technologies
- Combine the best of global manufacturing capabilities
- ISO/TS16949:2002 and ISO9000:2000 Quality Certifications
- Operate from within a new purpose built premises



Design

- Parametric 3D CAD and FEA software to minimize design realization
- 3D Designs can be output for inclusion in customer systems
- Rendered visualizations increase product 'feel' before manufacture
- Investment in new design technologies and materials to remain competitive


Research and Development

- Comprehensive test capabilities
- Environmental testing - Temperature, humidity, pressure dust, slurry etc
- Customer validation programs carried out
- High shaft speed, up to 20,000rpm
- PLC controlled test cycles
- Full Data acquisition



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Designers And Manufacturers Of Mechanical, PTFE
And Elastomeric Rotary Shaft Seals

Pioneer Weston International Limited
206 Cavendish Place,Birchwood Park, Warrington,
Cheshire, WA3 6WU. UK.
T: +44 (0)1925 853000 F: +44 (0)1925 853030
E: sales@pwi-ltd.com W: www.pwi-ltd.com