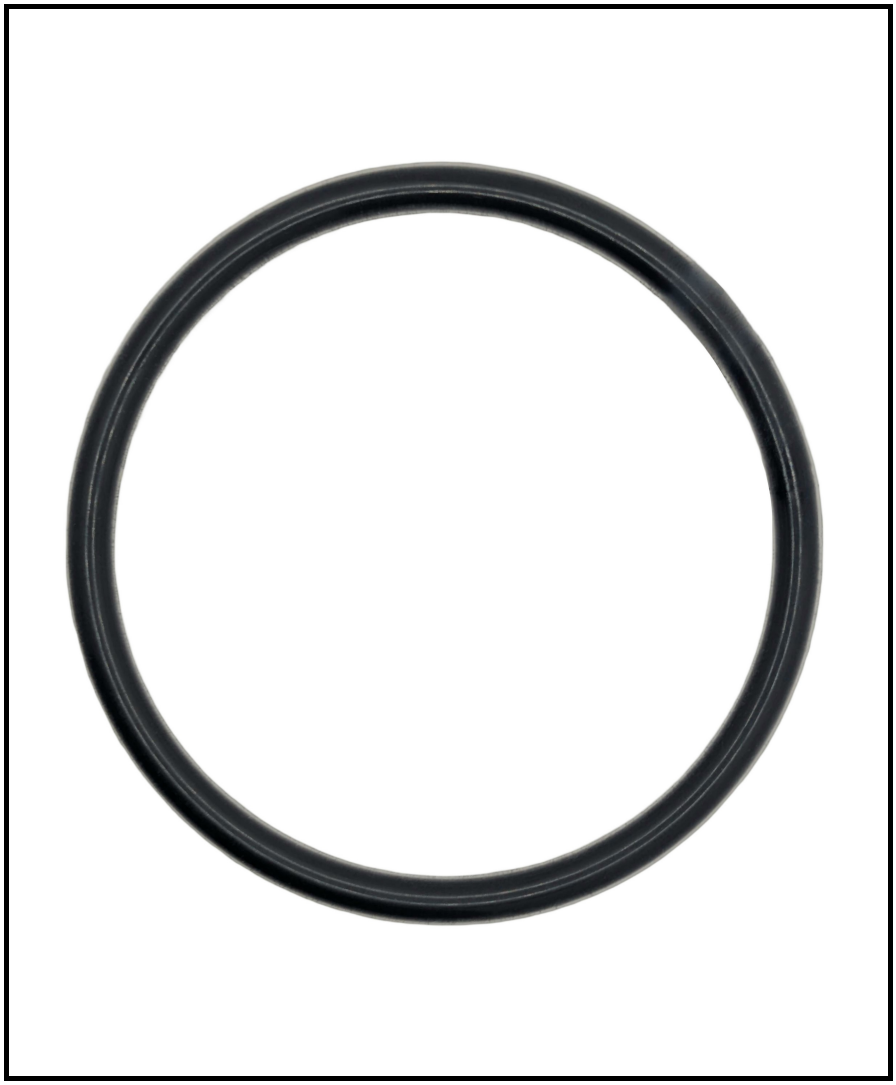
RS PRO Red O-Ring Seal, Shore A 85 to 90

RS Stock No: 731-750



FEATURES

- **Fluorinated Ethylene Propylene and Silicone Material**: Provides excellent chemical resistance and durability.
- **Temperature Range -60 °C to 205 °C**: Suitable for a wide range of thermal environments.
- **Shore A Hardness 85 to 90**: Ensures optimal flexibility and sealing capability.
- **31.42 mm Inside Diameter**: Fits standard applications requiring this specific size.
- **2.62 mm Thickness**: Offers robust sealing performance.
- **Red Colour**: Easy identification and differentiation in complex systems.

RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

Product Description

This RS PRO O-Ring Seal is designed for reliable sealing in a variety of industrial applications. Made from high-quality fluorinated ethylene propylene and silicone, it offers excellent resistance to extreme temperatures, making it ideal for both high and low-temperature environments. Its primary benefit is ensuring leak-proof performance in demanding conditions.

General Specifications

Colour	Red
Hardness	Shore A 85 to 90
Product Type	O-Ring Seal
Sub Type	O-Ring

Mechanical Specifications

Inside Diameter	31.42 mm
Material	Fluorinated Ethylene Propylene, Silicone
Outside Diameter	36.66 mm
Thickness	2.62 mm

Operation Environment Specifications

Maximum Operating Temperature	205 °C
Minimum Operating Temperature	-60 °C

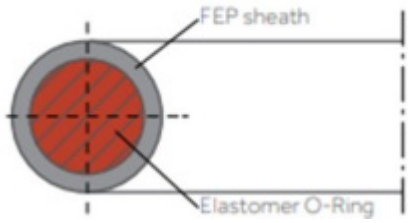
Approvals

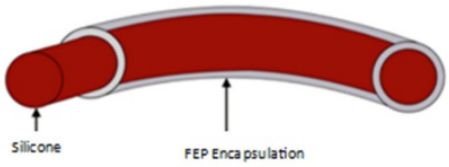
Standards/Approvals	BS ISO 3601-1, AS 568, EC 1935:2004, FDA, ISO 14001:2015, ISO 45001:2015, ISO 9001:2015, LABS, TSCA, USP Class VI, WRAS

FEP Encapsulated Silicone O-Ring

FEP Encapsulated 'O'-ring seal is an ‘O’-ring bound by a seamless and uniform Fluorinated Ethylene Propylene (FEP) encapsulation, which encloses an elastomeric core, completely protecting it from the media. The combination of elastomers and encapsulation choice enables our encapsulated seals to achieve a combination of temperature, chemical and cost performance unrivalled by pure elastomeric solutions. The elastomeric core provides the energising sealing force.

Silicone Inner Core
Commercially the best inner core material option, providing excellent flexibility and sealing performance.





Groove Dimension Table

FEP Rings are designed to be used in all standard 'O'-ring grooves with the same housing dimensions and clearances as for standard elastomeric seals. Our recommendations for BS ISO 3601-1/AS 568 imperial standard 'O'- ring grooves are tabled here.

Cross Section	A	B		
		Static	Dynamic	Pneumatic
1.78 mm 0.070"	2.36 – 2.49 mm 0.093 – 0.098"	1.42 – 1.52 mm 0.0563 – 0.060"	1.55 – 1.60 mm 0.061 – 0.063"	1.63 – 1.65 mm 0.064 – 0.065"
2.62 mm 0.103"	3.56 – 3.68 mm 0.140 – 0.145"	2.082 – 2.21 mm 0.082 – 0.087"	2.29 – 2.36 mm 0.090 – 0.093"	2.38 – 2.44 mm 0.094 – 0.096"
3.53 mm 0.139"	4.78 – 4.88 mm 0.187 – 0.192"	2.82 – 3.00 mm 0.111 – 0.118"	3.10 – 3.18 mm 0.122 – 0.125"	3.23 – 3.28 mm 0.127 – 0.129"
5.33 mm 0.210"	7.14 – 7.26 mm 0.281 – 0.286"	4.27 – 4.52 mm 0.168 – 0.178"	4.67 – 4.80 mm 0.184 – 0.189"	4.90 – 4.95 mm 0.193 – 0.195"
6.99 mm 0.275"	9.53 – 9.65 mm 0.375 – 0.380"	5.59 – 5.89 mm 0.220 – 0.232"	6.15 – 6.27 mm 0.242 – 0.247"	6.43 – 6.48 mm 0.253 – 0.255"

Degree of Squeeze

- **Static Applications** : 15% - 22% Squeeze
- **Dynamic Applications** : 10% - 15% Squeeze
- **Pneumatic Applications** : 8% - 10% Squeeze

The amount of squeeze required varies with many factors, most critically, the pressure to be sealed.

Seal Extrusion & Radial Clearance Details

If the radial clearance gap (C on below diagram) between the sealing surface and the groove corners are too large and the pressure exceeds the deformation limit of the 'O' ring, extrusion of the ring material can occur. When this happens, the extruded material wears or frays with cycling and can cause seal failure.

There are two possible options to minimise the potential for 'O' ring extrusion:

- Preferably, close the clearance gap (C) by modifying the shaft or housing dimensions, or use backup washers or other anti-extrusion devices.
- Alternatively, use the harder, higher modulus Viton™/FKM core, at the possible expense of higher friction and greater tendency to leak at lower pressure ranges.

Radial Clearance Gap

Maximum Pressure (PSI)	FEP / A Silicone
100	0.381 mm / 0.015"
250	0.355 mm / 0.014"
500	0.304 mm / 0.012"
750	0.254 mm / 0.010"
1000	0.228 mm / 0.009"
1500	0.152 mm / 0.006"
2000	0.127 mm / 0.005"
3000	0.076 mm / 0.003"