

# Back-Up Rings



Back-up rings or anti extrusion rings as they are sometimes called have been used for many years in conjunction with O-rings in high pressure applications.

A back-up ring is a rigid ring that holds an elastomeric seal to its designed shape and in its correct place. Back-up rings are most commonly used with O-rings to prevent extrusion at high pressures.

When sealing the piston inside a pneumatic cylinder, a soft and flexible material is required to prevent leakage, but those same properties may leave the seal material vulnerable to being pulled out of its seat and then pinched or torn in the narrow space between piston and cylinder wall. If the joint cannot be redesigned, or a more resistant elastomer used, then the solution may be direct reinforcement with a stiffer material - in the form of a hard inner ring in this case.

In general terms, for dynamic applications over 100 bar, and static applications around 950 bar, back-up rings should be used. Each application can vary so you must check and use this as a general guideline only.

Traditionally PTFE has been used for these items, but in recent years contoured elastomer rings have been developed and are now very widely used. We hold large stocks of Contoured rings in both Nitrile and Viton®.

Depending on the fitting arrangement either Solid, Split or Spiral PTFE rings are used, or the contoured alternative. We can supply which ever type you require.



Fig 1.1 Rectangular, uncut



Fig 1.2 Rectangular, cut



Fig 1.3 Spiral

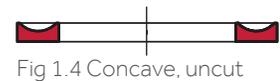


Fig 1.4 Concave, uncut

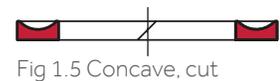


Fig 1.5 Concave, cut

Fig 1 Back-up ring types

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