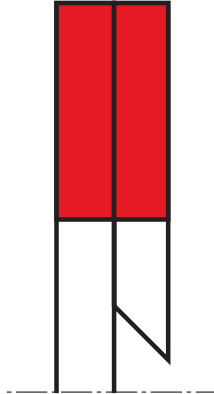


back-up ring ST60

seal spec



description

back-up rings have no intended sealing function. instead, as their name indicates, they are protective and supporting elements made from extrusion resistant materials which generally have a rectangular cross section. they are installed in a groove together with an elastomeric sealing element preferably with a corresponding o-ring in static applications.

due to the tight fit of the back-up ring in the housing, they prevent extrusion of the pressurised elastomeric sealing element into the sealing gap. spiral-shaped split bearing component with rectangular cross section.

application



category of profile

molded/standard/trade product only

applications

- injection moulding machines
- machine tools
- presses
- excavators
- agricultural machines
- valves for hydraulic circuits

advantages

- use of o-rings in high pressure applications
- use of o-ring materials with a low hardness
- compensation of radial sealing gaps
- use for internal and external sealing applications
- reciprocating and rotating movements possible
- compensation for large temperature fluctuations
- static and dynamic applications

external sealing (bore)

back-up ring types, spiral

- rectangular cross section
- cut angle of 30° or 45°
- consists as standard two spiral windings which are cut at the ends at an angle
- static and dynamic use
- for reciprocating movements only
- preferred for installations in a closed groove where uncut back-up ring are not suitable
- compensation of large temperature changes and tolerances without difficulties by a screw-like elongation and contraction. easy installation in closed grooves for external sealing applications
- the dimensions are different compared to standard back-up rings

**internal sealing (rod)***back-up ring types, spiral*

- rectangular cross section
- cut angle of 30° or 45°
- consists as standard two spiral windings which are cut at the ends at an angle
- static and dynamic use
- for reciprocating movements only
- preferred for installations in a closed groove where uncut back-up ring are not suitable
- compensation of large temperature changes and tolerances without difficulties by a screw-like elongation and contraction.

operating parameters & material

material	temperature	max. surface speed	max. pressure ¹ static application	max. pressure ¹ dynamic application	max. pressure ¹ oscillating
s-mart PTFE virgin	-200 °C ... +260 °C	2,0 m/s	2500 bar (250 MPa)	250 bar (25 MPa)	150 bar (15 MPa)
s-mart PTFE glass	-200 °C ... +260 °C	2,0 m/s	2500 bar (250 MPa)	400 bar (40 MPa)	150 bar (15 MPa)
s-mart PTFE carbon	-200 °C ... +260 °C	2,0 m/s	2500 bar (250 MPa)	400 bar (40 MPa)	150 bar (15 MPa)
s-mart PTFE bronze	-200 °C ... +260 °C	2,0 m/s	2500 bar (250 MPa)	400 bar (40 MPa)	150 bar (15 MPa)

*the stated operation conditions represent general indications. it is recommended not to use all maximum values simultaneously.
surface speed limits apply only to the presence of adequate lubrication film.*

tolerance recommendation

surface finish according to o-ring instructions

seal housing tolerances

Ød	f7
ØD	H9

the location of the sealing surface is determinant for the functionality

seal housing tolerances

Ød	h9
ØD	H8

design instructions

the recommendations for o-rings (see catalogue "o-rings") are generally valid for the use of back-up rings. this applies to the groove design, surface roughness, lead-in chamfers, etc.

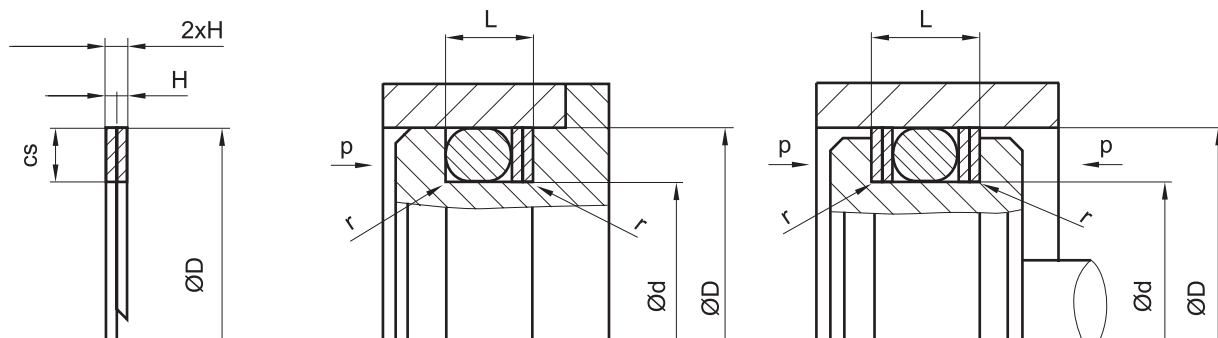
when the pressure is applied from one side only, it is sufficient to install a back-up ring on the downstream side of the o-ring. when the seal is exposed to pressure from both sides, two back-up rings -one on each side of the o-ring have to be used.

permissible sealing gap

the use of back-up rings allows the service pressure and/or permissible sealing gap specified in our o-ring catalogue to be increased. back-up ring installation, depending on the direction of the pressure.

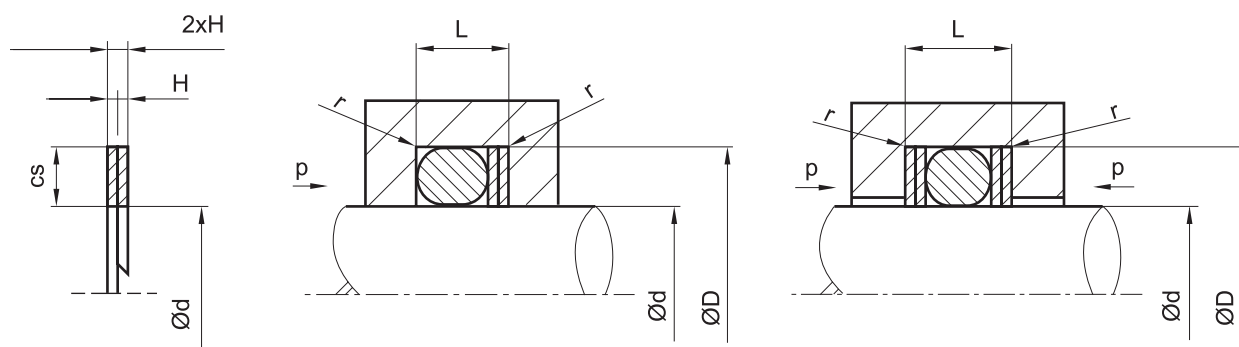
installation recommendations static & dynamic application

external sealing (bore), back-up ring types spiral, r max 0,2mm





internal sealing (Rod), Back-up Ring types spiral, r max 0,2mm



don't hesitate to contact our technical department for further information or for special requirements (temperature, speed etc.), so that suitable materials and/or designs can be recommended.