

X-RINGS



X-rings are double-action four-lip seals with a nearly square cross-section profile. DICHTOMATIK offers X-rings made of NBR and FKM from its inventory. The processing of additional materials, such as VMQ, EPDM and HNBR, is available upon request.

X-rings achieve their sealing effect from the mounting process and compression in an axial or radial installation space. In the operational state, media pressure strengthens the sealing function. The handling and applications for X-rings and O-rings are comparable. X-rings are predominantly used for dynamic sealing, since they require less prestressing than O-rings and thus produce less friction.

APPLICATIONS

- Radial and axial sealing of flanges, connectors and covers (static applications)
- Sealing of pistons and rods, rotating shafts and superimposed screw movements (dynamic application)
- Travel motions, swivel motions, etc. (quasi-static application)
- Modern roller chains (e.g. motorcycle chains)

DIMENSIONS

The currently available dimensions can be found on our website and in our webshop at www.dichtomatik.com.

YOUR ADVANTAGES AT A GLANCE

- Great stability in dynamic applications thanks to a nearly square cross-section
- Less radial prestressing than O-rings; due to the reduced pressing forces, less friction is produced
- A lubricant reservoir can form between the seal lips

- Optimized sealing effect due to better pressing distribution across the nearly square cross-section
- No impairment due to mold separation burr since it – unlike the situation with O-rings – is not positioned at the center on the external diameter but rather between the seal lips

MOUNTING

During mounting, any damage to the X-ring must be avoided. Otherwise, leakage could occur. Furthermore, the following instructions should be followed:

- Do not expand the X-ring to the limits of its elongation
- Edges must be free of burrs, radii and angles must be installed seamlessly
- Dust, dirt, metal chips and other particles must be removed
- Crests of threads and installation housings for other sealing and guiding elements should be covered by an assembly sleeve
- The mounting surface and the X-ring should be given a suitable lubricating grease
- Easier stretching by heating the X-ring in oil or hot water (about 80 °C)
- Use mounting tools, e.g. expanding mandrels or expansion sleeves, made of soft material (e.g. POM)
- X-ring should not be rolled over the mounting surface. The X-ring must not be twisted as it is snapped into the groove

Material	Colour	Shore A hardness	Temperature (°C)	Speed (m/s)	Pressure (bar)	Media resistance
NBR	black	70	-30 to +100			<ul style="list-style-type: none"> Petroleum oil and grease Hydraulic oil H, HL, HLP Flame-resistant pressure fluids HFA, HFB, HFC to about +50 °C Water up to a maximum of +80 °C
FKM	black	70	-15 to +200	<ul style="list-style-type: none"> Translational: ≤ 0,5 Rotating: ≤ 2 	<ul style="list-style-type: none"> Dynamic translational: up to 50; up to 300 with backup rings Dynamic rotating: up to 50; up to 150 with backup rings Static: up to 50; up to 400 with backup rings 	<ul style="list-style-type: none"> Petroleum oil and grease Synthetic oils and greases Engine, transmission and ATF oils up to +150 °C Fuels Flame-resistant HFD pressure fluids Aliphatic, aromatic and chlorinated hydrocarbons Water up to a maximum of +80 °C Very good weathering, ozone and aging resistance Very low gas permeability and print (thus well suited to vacuum applications) Broad chemical resistance

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