

Seals for SAE J518 and ISO 6162-1 Flanges



Single-acting

Axial hydraulic sealing

Material:

Elastomers and polyurethane



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■ Seals for SAE J518 and ISO 6162-1 Flanges

DESCRIPTION

Flanges to the SAE J518 and ISO 6162-1 standards are among the most widely used static connections for high volume flows. They are functionally reliable and simple to assemble and dismantle. The individual elements for sealing these flanges can be Nitrile O-Rings, Nitrile rectangular rings, or Zurcon® Z20 polyurethane compact sealing rings (Type DRV5), specially developed for mobile hydraulic systems.

APPLICATION EXAMPLES

- Mobile hydraulics
- Injection molding machines
- Machine tools
- Presses
- Excavators
- Agricultural machines

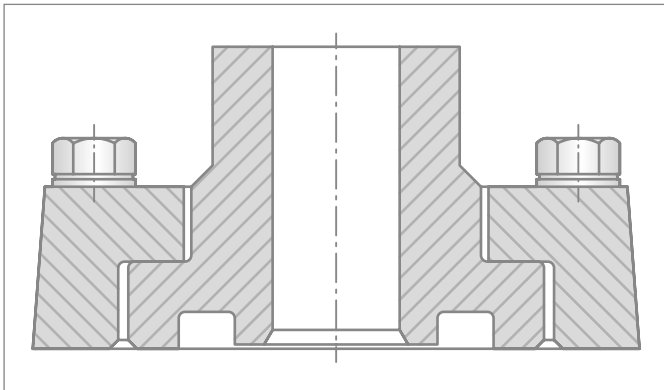


Figure 34: Flange in accordance with SAE J518



Table 24: Imperial dimensions of flange heads according to SAE J518 (see Figure 35)

Nominal Flange Size	D _N Max.	D ₁ (Min. - Max.)	H (Min. - Max.)	L (Min. - Max.)
1/2"	0.5"	1" - 1.005"	0.155" - 0.175"	0.11" - 0.115"
3/4"	0.75"	1.25" - 1.255"	0.155" - 0.175"	0.11" - 0.115"
1"	1"	1.561" - 1.565"	0.155" - 0.175"	0.11" - 0.115"
1.25"	1.25"	1.75" - 1.755"	0.155" - 0.175"	0.11" - 0.115"
1.5"	1.5"	2.115" - 2.125"	0.155" - 0.175"	0.11" - 0.115"
2"	2"	2.49" - 2.5"	0.155" - 0.175"	0.11" - 0.115"

Table 25: Metric dimensions of flange heads according to ISO 6162-1 (see Figure 36)

Nominal Flange Size	d ₂ Max.	d ₁₁ (Min. - Max.)	H (Min. - Max.)	L (Min. - Max.)
13	13.0 mm	25.40 - 25.53 mm	4.1 - 4.5 mm	2.8 - 2.9 mm
19	19.2 mm	31.75 - 31.88 mm	4.1 - 4.5 mm	2.8 - 2.9 mm
25	25.6 mm	39.62 - 39.75 mm	4.1 - 4.5 mm	2.8 - 2.9 mm
32	32.0 mm	44.45 - 44.58 mm	4.1 - 4.5 mm	2.8 - 2.9 mm
38	38.2 mm	53.72 - 53.98 mm	4.1 - 4.5 mm	2.8 - 2.9 mm
51	51.0 mm	63.25 - 63.50 mm	4.1 - 4.5 mm	2.8 - 2.9 mm

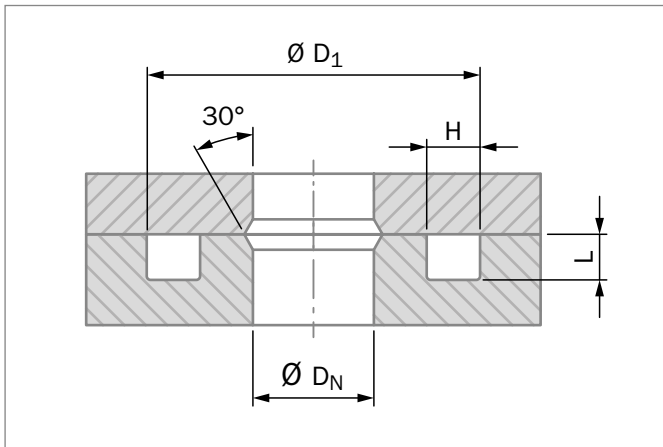


Figure 35: Flanged head according to SAE J518

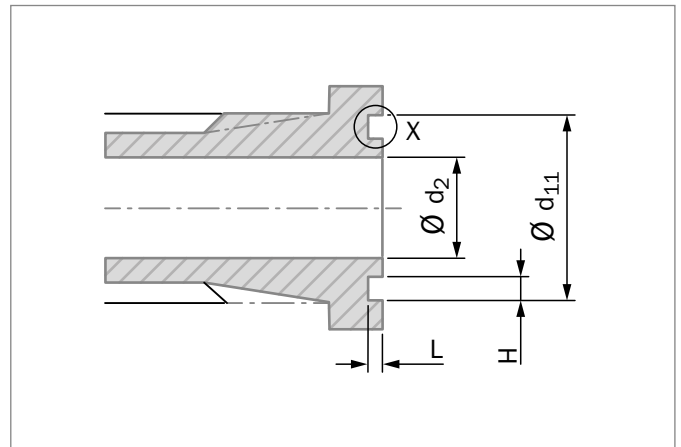


Figure 36: Flanged head according to ISO 6162-1



O-Ring

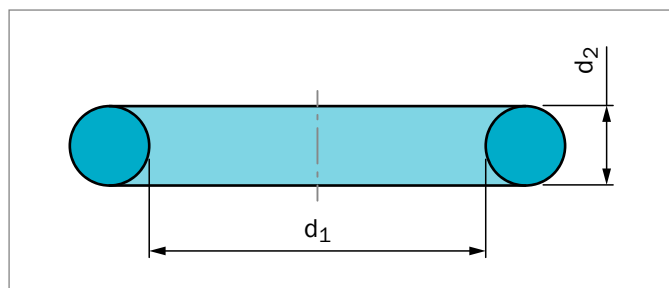


Figure 37: O-Ring in accordance with SAE J518

FEATURES AND BENEFITS

- Simple design
- Economical sealing
- Ex-stock availability

OPERATING CONDITIONS

Pressure:	Up to 21 MPa / 3,000 psi
Standard Material:	NBR 90 Shore A
Temperature:	-25 °C to +100 °C -13 °F to +212 °F
Media/compatibility:	HL, HLP, HETG, HEPG, HEES and HFC hydraulic fluids

For more information on O-Ring tolerances and surface quality, see the Trelleborg Sealing Solutions O-Rings and Back-up Rings Catalog.

IMPORTANT NOTE

The application limits for pressure and temperature given in this catalog are maximum values. Achieving the maximum values in the field may not be possible due to the interaction of operating parameters and media. Contact your local Customer Solution Center for more information.

ORDERING EXAMPLE

Type:	O-Ring, ISO 3601 / AS568, ref. 214
Dimensions:	Inside diameter $d_1 = 24.99 \text{ mm} / 0.984 \text{ inch}$ Cross section $d_2 = 3.53 \text{ mm} / 0.139 \text{ inch}$
Material:	NBR 90 Shore A

TSS Article No.

OR AR 00214 - N90

TSS Article - Group

Standard ISO 3601-1/AS568

Size Code (Dash-No.)

Quality Index (Standard)

Material Code

For O-Ring dimensions and TSS Part No. see Table 26.

For installation dimensions, see Table 24 and Table 25, page 86.

Ordering numbers can also be made using the O-Ring dimensions and material.

Table 26: Dimensions / TSS Part No.

Nominal flange size	d_1	d_2	TSS Part No.
1/2" / 13 mm	0.734" / 18.64 mm	0.139" / 3.53 mm	ORAR00210
3/4" / 19 mm	0.984" / 24.99 mm	0.139" / 3.53 mm	ORAR00214
1" / 25 mm	1.296" / 32.92 mm	0.139" / 3.53 mm	ORAR00219
1 1/4" / 32 mm	1.484" / 37.69 mm	0.139" / 3.53 mm	ORAR00222
1 1/2" / 38 mm	1.859" / 47.22 mm	0.139" / 3.53 mm	ORAR00225
2" / 51 mm	2.234" / 56.74 mm	0.139" / 3.53 mm	ORAR00228



■ Rectangular Seal

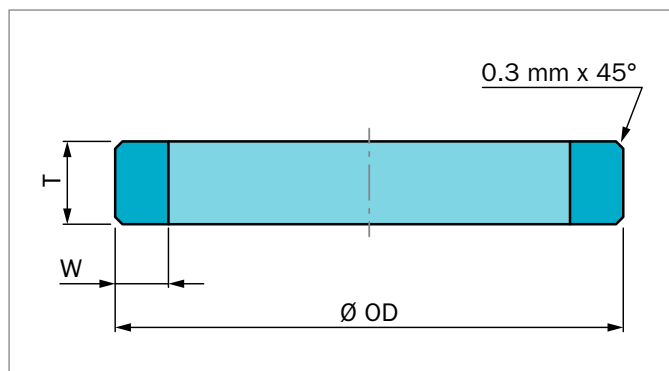


Figure 38: Rectangular Seal

FEATURES AND BENEFITS

- Minimal mechanical deformation of the cross-section
- Outstanding sealing behavior over long periods
- No twisting in the groove due to its rectangular profile
- Less sensitive to gap extrusion
- No relative movements during pressure cycles
- Dimensionally stable under pressure
- High leak-tightness
- Fits at the outer diameter due to its interference with the groove

OPERATING CONDITIONS

Pressure:	Up to 42 MPa / 6,000 psi
Standard Material:	NBR 90 Shore A
Temperature:	-25 °C to +100 °C -13 °F to +212 °F
Media/compatibility:	HL, HLP, HETG, HEPG, HEES and HFC hydraulic fluids

IMPORTANT NOTE

The application limits for pressure and temperature given in this catalog are maximum values. Achieving the maximum values in the field may not be possible due to the interaction of operating parameters and media. Contact your local Customer Solution Center for more information.

ORDERING

For more information on this product, or for orders and enquiries, contact your local Customer Solution Center.

For Rectangular Seal dimensions and TSS Part No. see Table 27.

For installation dimensions, see Table 24 and Table 25, page 86.

Table 27: Dimensions / TSS Article No.

Nominal flange size	OD	W	T	TSS Article No.
1/2" / 13 mm	1.018" / 25.85 mm	0.110" / 2.8 mm	0.134" / 3.4 mm	DRYD001482N90
3/4" / 19 mm	1.272" / 32.30 mm	0.110" / 2.8 mm	0.134" / 3.4 mm	DRYD001481N90
1" / 25 mm	1.581" / 40.15 mm	0.110" / 2.8 mm	0.134" / 3.4 mm	DRYD001480N90
1 1/4" / 32 mm	1.774" / 45.05 mm	0.110" / 2.8 mm	0.134" / 3.4 mm	DRYD001479N90
1 1/2" / 38 mm	2.142" / 54.40 mm	0.110" / 2.8 mm	0.134" / 3.4 mm	DRYD001484N90
2" / 51 mm	2.516" / 63.90 mm	0.110" / 2.8 mm	0.134" / 3.4 mm	DRYD001483N90



■ Zurcon® DRV5 Flange Seal

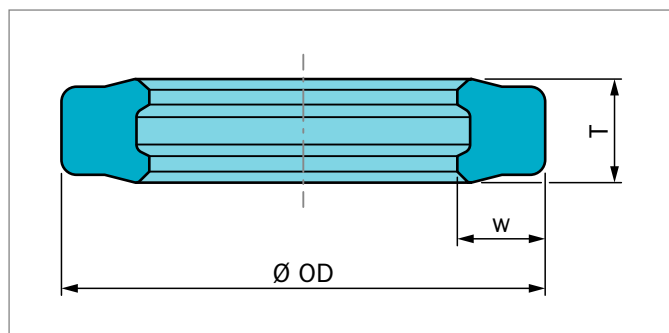


Figure 39: Zurcon® DRV5 Flange Seal

IMPORTANT NOTE

The application limits for pressure and temperature given in this catalog are maximum values. Achieving the maximum values in the field may not be possible due to the interaction of operating parameters and media. Contact your local Customer Solution Center for more information.

ORDERING EXAMPLE

For more information on this product, or for orders and enquiries, contact your local Customer Solution Center.

FEATURES AND BENEFITS

- Good abrasion resistance
- Usable with rough surface finishes
- Sealing edge offers improved sealing
- Very high resistance to extrusion
- Low compression set
- Prevents extrusion and nibbling
- Eliminates micro-pumping leakage
- Offers easy assembly – outside diameter interference and a symmetrical profile eliminate potential for errors on the assembly line
- Increases duty cycles

For DRV5 Flange Seal dimensions and TSS Part No. see Table 28.

For installation dimensions, see Table 24 and Table 25, page 86.

OPERATING CONDITIONS

Pressure:	Up to 42 MPa / 6,000 psi
Standard	Zurcon® Z20
Material:	polyurethane 93 Shore A
Temperature:	Zurcon® Z20 -35 °C to +110 °C -31 °F to +230 °F Zurcon® Z22 (Low temp.) -50 °C to +110 °C -58 °F to +230 °F
Media/compatibility:	HL and HLP hydraulic fluids

**Table 28: Dimensions / TSS Part No.**

TSS Part No.	Nominal flange size	OD	W	T
DRV500130	1/2" / 13 mm	1.018" / 25.85 mm	0.114" / 2.9 mm	0.134" / 3.4 mm
DRV500190	3/4" / 19 mm	1.266" / 32.15 mm	0.114" / 2.9 mm	0.134" / 3.4 mm
DRV500250	1" / 25 mm	1.575" / 40.00 mm	0.114" / 2.9 mm	0.134" / 3.4 mm
DRV500320	1.25" / 32 mm	1.768" / 44.90 mm	0.114" / 2.9 mm	0.134" / 3.4 mm
DRV500380	1.5" / 38 mm	2.142" / 54.40 mm	0.114" / 2.9 mm	0.134" / 3.4 mm
DRV500510	2" / 51 mm	2.516" / 63.90 mm	0.114" / 2.9 mm	0.134" / 3.4 mm

APPLICATION PARAMETERS OF ELASTOMERS

Elastomers, as all other organic chemicals, have limited use. External influences such as media, oxygen or ozone, as well as pressure and temperature, will affect the material properties and therefore their sealing capability.

Elastomers can swell, shrink or harden and develop cracks or even tears. Figure 3 and Figure 4 on pages 32 and 33, illustrate the performance of various elastomers under different application parameters.