
DUALSEAL



- Radial sealing -
- For O-Ring grooves -
- Material Zurcon[®] -





■ Description

In current hydraulic cylinder design, O-Ring or O-Ring/Back-up Ring combinations are mainly used as static seals. However, this sealing solution hides the risk that during assembly the O-Ring may become twisted and that the position of the Back-up Ring is not optimal. This solution also exhibits weaknesses with regard to pressure pulsation and the ingress of dirt.

The Dualseal as a single component static hydraulic seal offers a good alternative in such cases.

Advantages

Compared with the O-Ring / Back-up Ring combination, the Dualseal offers the following advantages:

- High resistance to twisting
- Easy assembly
- Long service life
- High extrusion resistance

Table 1 Surface finish

Type of load	Surface	Rt μm	Rz μm	Ra μm
Radial-static	Mating surface Groove surface (groove diameter, groove flanks)	≤ 10.0 ≤ 16.0	≤ 6.3	≤ 1.6 ≤ 3.2

Lead-in chamfers

Groove depth $< .12$ inches (3 mm) \Rightarrow $.12$ inches x 15° (3 mm x 15°)

Groove depth $> .12$ inches (3 mm) \Rightarrow $.20$ inches x 15° (5 mm x 15°)

Preferred sealing gap

Bore H8

Gland g6

Due to the high extrusion resistance of the seal a radial sealing gap (S) of $.008$ inches (0.2 mm) can be realised.

In case of low temperature applications deviations of the gland to the bore and rod should be avoided.

Technical data

Operating pressure: Max. 7,500 psi (Max. 50 MPa)

Operating temperature: -31°F to $+230^\circ\text{F}$
(-35°C to $+110^\circ\text{C}$)

Important Note:

The application limits for pressure and temperature given in this catalogue are maximum values. During practical applications it should be remembered that due to the interaction of operating parameters the maximum values must be set correspondingly lower.

Applications

The Dualseal allows general use in hydraulic cylinders:

- Fork lifts
- Mobile hydraulics
- Industrial hydraulics
- Machine tools
- Injection molding machines
- Hydraulic presses
- Cartridge valves

Dualeal performs leak-free and is highly extrusion resistant under the following test conditions:

	High pressure test	Pressure pulsation test
Pressure p	6,000/7,800 psi (40/52 MPa)	4,500 psi (30 MPa)
Temperature T	212°F / 176°F (100°C / 80°C)	140°F (60°C) (max. tank temperature)
Medium	Hydraulic oil HLP 46	Hydraulic oil HLP 46
Test duration	72 h	500,000 Pressure pulsations

Material

Standard material: Zurcon® Z20 polyurethane 93 shore A, turquoise. Suitable for all HL and HLP hydraulic fluids.



■ Installation Recommendation (Inch Series)

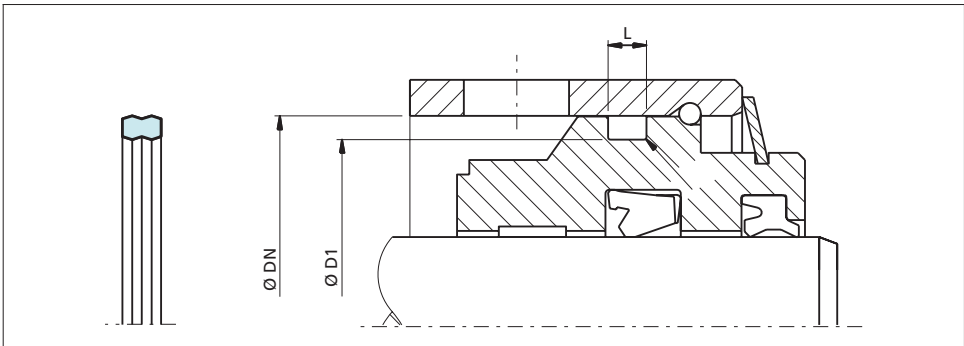


Figure 1 Installation drawing

Table II Installation dimensions / TSS Part No.

ASTM A5568 Size	Bore Diam.	Groove Diam.	Groove Width	TSS Part No.
	DN H9	D1 h9	L +0.2	
117	1.000	.838	.140	DUB001000-Z20
121	1.250	1.088	.140	DUB001250-Z20
125	1.500	1.338	.140	DUB001500-Z20
129	1.750	1.588	.140	DUB001750-Z20
133	2.000	1.838	.140	DUB002000-Z20
137	2.250	2.088	.140	DUB002250-Z20
141	2.500	2.338	.140	DUB002500-Z20
232	3.000	2.778	.187	DUC003000-Z20
234	3.250	3.028	.187	DUC003250-Z20
236	3.500	3.278	.187	DUC003500-Z20
238	3.750	3.528	.187	DUC003750-Z20
240	4.000	3.778	.187	DUC004000-Z20
242	4.250	4.028	.187	DUC004250-Z20
244	4.500	4.278	.187	DUC004500-Z20
246	4.750	4.528	.187	DUC004750-Z20
248	5.000	4.778	.187	DUC005000-Z20
250	5.250	5.028	.187	DUC005250-Z20
354	5.500	5.160	.281	DUD005500-Z20
358	6.000	5.660	.281	DUD006000-Z20
117	1.000	.838	.171	DUB101000-Z20
121	1.250	1.088	.171	DUB101250-Z20

The sizes listed in bold font are preferred sizes (more likely to be available for immediate shipment).



ASTM AS568 Size	Bore Diam.	Groove Diam.	Groove Width	TSS Part No.
	DN H9	D1 h9	L +0.2	
125	1.500	1.338	.171	DUB101500-Z20
129	1.750	1.588	.171	DUB101750-Z20
133	2.000	1.838	.171	DUB102000-Z20
137	2.250	2.088	.171	DUB102250-Z20
141	2.500	2.338	.171	DUB102500-Z20
232	3.000	2.778	.208	DUC103000-Z20
234	3.250	3.028	.208	DUC103250-Z20
236	3.500	3.278	.208	DUC103500-Z20
238	3.750	3.528	.208	DUC103750-Z20
240	4.000	3.778	.208	DUC104000-Z20
242	4.250	4.028	.208	DUC104250-Z20
246	4.750	4.528	.208	DUC104500-Z20
248	5.000	4.778	.208	DUC104750-Z20
250	5.250	5.028	.208	DUC105000-Z20
250	5.250	5.028	.208	DUC105250-Z20
354	5.500	5.160	.311	DUC105500-Z20
358	6.000	5.660	.311	DUD106000-Z20

The sizes listed in bold font are preferred sizes (more likely to be available for immediate shipment).