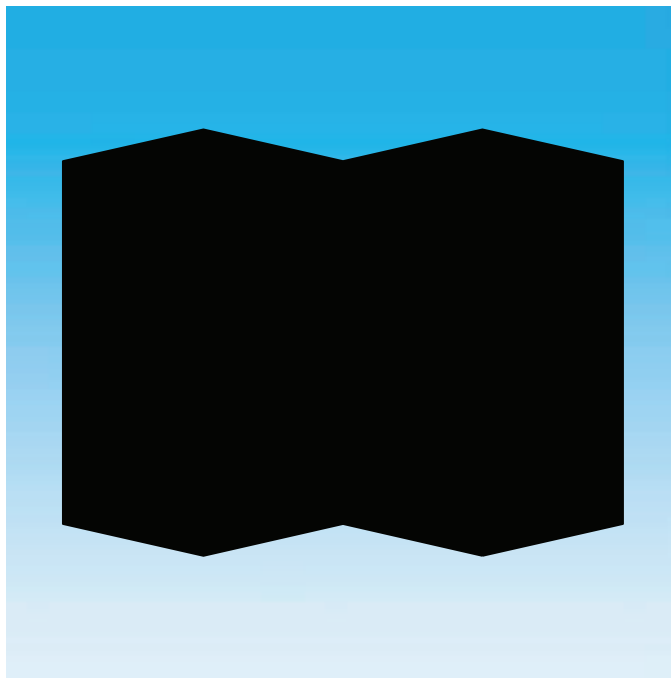

DUALSEAL



- Radial sealing -
- For O-Ring grooves -

- Material Polyurethane -





■ 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 of the material

Table XXI Surface finish

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

Lead-in chamfers

Groove depth < 3 mm \Rightarrow 3x15°

Groove depth > 3 mm \Rightarrow 5x15°

Preferred sealing gap

Bore H8

Gland g6

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

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

Applications

The Dualseal allows general use in hydraulic cylinders e.g.

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

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

Technical data

Operating pressure: Max. 50 MPa
 Operating temperature: -35 °C to +110 °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.

	High pressure test	Pressure pulsation test
Pressure p	40/52 MPa	30 MPa
Temperature T	100 °C / 80 °C	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 recommendations Dualseal

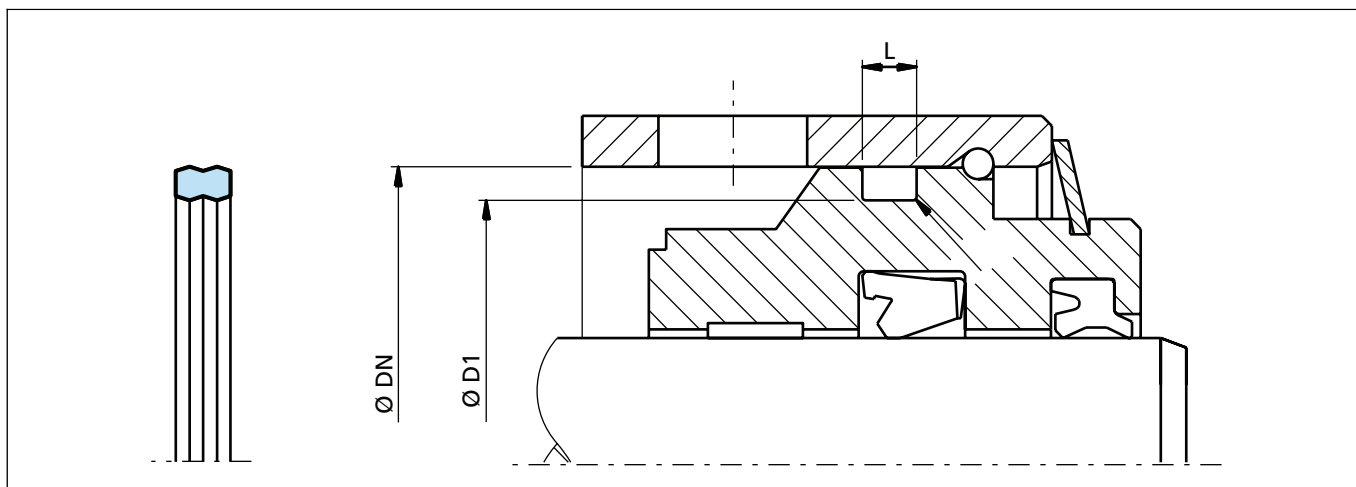


Figure 17 Installation drawing

Ordering example

TSS Article No.: DU0202500-Z20

Table XXII Installation dimensions / TSS Part No.

Bore Ø	Groove Ø	Groove width	Radius	TSS Part No.
DN H8	D1 h9	L +0.2	r ± 0.2	
6.0	4.6	2.4	0.3	DU000060
10.0	7.6	3.6	0.3	DU000100
11.0	8.6	2.6	0.3	DU000110
12.0	9.6	3.6	0.3	DU000120
13.8	9.2	3.1	0.3	DU000138
15.0	12.6	3.6	0.3	DU000150
15.5	13.1	3.6	0.3	DU000155
16.0	13.6	3.6	0.3	DU000160
16.6	12.0	3.1	0.3	DU000166
17.0	14.6	2.6	0.3	DU000170
17.0	14.6	3.6	0.3	DU0100170
17.5	15.1	2.6	0.3	DU000175
17.5	15.1	3.6	0.3	DU0100175
18.0	14.0	5.8	0.3	DU0100180
18.0	15.6	3.6	0.3	DU000180

Further sizes on request

This table shows the possible range of available dimensions (Dual Seal). However, these dimensions are not always stock item.



Bore ø	Groove ø	Groove width	Radius	TSS Part No.
DN H8	D1 h9	L +0.2	r ± 0.2	
19.0	15.6	4.4	0.3	DU0100190
19.0	15.6	3.6	0.3	DU0000190
19.0	16.6	2.6	0.3	DU0200190
19.0	16.6	3.6	0.3	DU0300190
20.0	16.0	5.8	0.3	DU0000200
20.0	16.6	4.4	0.3	DU0100200
20.0	16.6	3.6	0.3	DU0300200
20.0	17.6	3.6	0.3	DU0400200
20.5	17.2	5.0	0.3	DU0000205
21.0	17.6	4.4	0.3	DU0000210
21.0	18.6	3.6	0.3	DU0100210
21.5	18.1	4.4	0.3	DU0000215
21.5	19.1	2.6	0.3	DU0100215
22.0	19.6	3.6	0.3	DU0000220
23.0	19.6	4.4	0.3	DU0100230
23.0	20.6	3.6	0.3	DU0000230
24.0	20.0	4.8	0.3	DU0000240
24.0	21.6	3.6	0.3	DU0100240
26.0	22.0	4.4	0.3	DU0000260
26.8	22.0	5.4	0.3	DU0000268
28.0	23.8	5.3	0.3	DU0000280
28.6	25.6	3.6	0.3	DU0000286
30.0	25.1	4.4	0.3	DU0000300
30.0	25.4	5.4	0.3	DU0100300
31.0	26.4	5.0	0.3	DU0000310
32.0	27.4	5.4	0.3	DU0000320
33.0	20.0	15.6	0.6	DU0200200
34.0	28.4	5.3	0.3	DU0000340
34.0	31.1	3.6	0.3	DU0100340
35.0	30.4	5.0	0.3	DU0000350
35.5	30.9	5.0	0.3	DU0000355
36.0	32.0	6.2	0.3	DU0000360
38.0	32.4	5.3	0.3	DU0000380
40.0	35.2	5.4	0.3	DU0000400
40.0	35.4	5.4	0.3	DU0100400
42.8	38.0	6.8	0.3	DU0000428

Further sizes on request

This table shows the possible range of available dimensions (Dual Seal). However, these dimensions are not always stock item.



Dualseal

Bore ø	Groove ø	Groove width	Radius	TSS Part No.
DN H8	D1 h9	L +0.2	r ± 0.2	
43.4	37.8	6.2	0.3	DU0000434
45.0	35.8	9.7	0.3	DU0100450
45.0	40.0	5.4	0.3	DU0000450
50.0	40.8	9.7	0.6	DU0000500
50.0	43.8	5.6	0.3	DU0300500
50.0	44.6	6.2	0.3	DU0100500
50.0	45.4	5.4	0.3	DU0200500
50.0	45.4	3.9	0.3	DU0400500
55.0	45.8	9.8	0.3	DU0300550
55.0	49.6	6.2	0.3	DU0000550
55.0	49.9	5.3	0.3	DU0100550
55.0	50.0	6.7	0.3	DU0400550
55.0	51.0	3.6	0.3	DU0200550
57.0	52.2	4.1	0.3	DU0000570
58.0	50.0	9.0	0.3	DU0000580
60.0	50.8	9.7	0.6	DU0000600
60.0	54.4	5.8	0.3	DU0100600
60.0	54.6	6.2	0.3	DU0200600
63.0	53.8	9.7	0.3	DU0000630
63.0	56.6	6.4	0.3	DU0100630
63.0	57.4	4.8	0.3	DU0200630
63.0	57.6	6.2	0.3	DU0300630
63.0	58.4	5.4	0.3	DU0400630
65.0	59.4	5.0	0.3	DU0000650
65.0	59.6	6.2	0.3	DU0100650
65.0	60.0	5.0	0.3	DU0200650
68.0	62.7	5.0	0.3	DU0000680
69.6	65.0	3.9	0.3	DU0000696
70.0	65.0	5.0	0.3	DU0100700
70.0	66.4	6.2	0.3	DU0000700
72.0	66.4	5.0	0.3	DU0000720
73.5	70.0	5.0	0.3	DU0000735
74.6	70.0	3.8	0.3	DU0000746
75.0	65.8	9.7	0.6	DU0200750
75.0	69.4	5.3	0.3	DU0000750
75.0	69.6	6.2	0.4	DU0100750

Further sizes on request

This table shows the possible range of available dimensions (Dual Seal). However, these dimensions are not always stock item.



Bore ø	Groove ø	Groove width	Radius	TSS Part No.
DN H8	D1 h9	L +0.2	r ± 0.2	
76.6	72.0	4.8	0.3	DU0000766
77.0	70.8	6.2	0.3	DU0000770
78.0	73.0	5.0	0.3	DU0000780
80.0	70.8	9.0	0.6	DU0400800
80.0	70.8	9.7	0.6	DU0000800
80.0	73.6	6.4	0.3	DU0100800
80.0	73.8	6.9	0.3	DU0200800
80.0	74.4	5.3	0.3	DU0300800
80.0	75.4	5.4	0.3	DU0500800
80.0	76.0	3.6	0.3	DU0600800
85.0	79.4	5.3	0.3	DU0000850
85.1	80.5	3.9	0.3	DU0000851
90.0	81.4	9.0	0.3	DU0000900
90.0	83.0	6.5	0.3	DU0100900
90.0	84.4	4.8	0.3	DU0200900
93.0	87.4	5.3	0.3	DU0000930
95.0	89.4	6.2	0.3	DU0000950
97.0	91.4	4.8	0.3	DU0000970
100.0	90.8	9.7	0.3	DU0001000
100.0	91.4	9.0	0.3	DU0101000
100.0	91.6	8.6	0.3	DU0201000
100.0	93.8	6.9	0.3	DU0301000
102.0	95.8	6.2	0.3	DU0001020
105.0	96.4	9.0	0.3	DU0001050
110.0	100.8	9.7	0.6	DU0101100
110.0	101.4	9.0	0.3	DU0001100
114.0	107.8	6.2	0.3	DU0001140
115.0	106.6	8.6	0.6	DU0001150
125.0	115.8	9.7	0.6	DU0001250
125.0	116.4	9.0	0.3	DU0101250
125.0	116.6	8.6	0.3	DU0201250
140.0	128.4	12.3	0.6	DU0001400
140.0	130.8	9.7	0.6	DU0201400
140.0	131.6	8.6	0.3	DU0101400
150.0	138.4	12.3	0.6	DU0001500
150.0	140.8	9.7	0.6	DU0201500

Further sizes on request

This table shows the possible range of available dimensions (Dual Seal). However, these dimensions are not always stock item.



Dualseal

Bore ∅	Groove ∅	Groove width	Radius	TSS Part No.
DN H8	D1 h9	L +0.2	r ± 0.2	
150.0	141.6	8.6	0.3	DU0101500
160.0	148.4	12.3	0.6	DU0001600
160.0	150.8	9.7	0.6	DU0101600
165.0	153.4	12.3	0.6	DU0001650
165.0	155.8	9.7	0.6	DU0201650
165.0	156.6	8.6	0.3	DU0101650
170.0	158.4	12.3	0.6	DU0001700
170.0	160.8	9.7	0.6	DU0101700
180.0	168.4	12.3	0.6	DU0001800
180.0	170.8	9.7	0.6	DU0201800
180.0	171.6	8.6	0.3	DU0101800
190.0	178.4	12.3	0.6	DU0001900
200.0	188.4	12.3	0.6	DU0002000
200.0	190.8	9.7	0.6	DU0202000
200.0	191.6	8.6	0.3	DU0102000
225.0	213.0	10.9	0.6	DU0002250
250.0	238.0	10.9	0.6	DU0002500
250.0	238.4	12.3	0.6	DU0102500
250.0	240.8	9.7	0.6	DU0202500
270.0	258.4	12.3	0.6	DU0002700
280.0	268.0	10.9	0.6	DU0002800

Further sizes on request

This table shows the possible range of available dimensions (Dual Seal). However, these dimensions are not always stock item.