

Design

Used in tandem, the Hallite 16 rod seal provides the designer with a compact low friction seal for light to medium duty hydraulic cylinders.

It has a special filled PTFE ring with a pre-loaded lip energised by an O ring. The lip is designed to have a contact area with the rod adequate to retain the media at low pressure. As high pressure acts on the O ring it compresses the lip against the rod increasing the contact area and the effectiveness of the seal.

The special PTFE ring has the low frictional properties normally associated with this material but is strengthened by additives to reduce creep. It has a low breakout friction so stick-slip is eliminated.

Standard seals are supplied with a nitrile O ring but other materials can be provided.

For the best results it is recommended two seals are fitted. The PTFE ring should always be mounted with the sealing lip on the pressure side. Sizes above 30mm are easily installed by deforming the PTFE ring into a kidney shape, sizes under 30mm are best installed using a tool, details of which can be provided.

A number of material options can be provided to extend operating conditions. Please ensure that the correct part number is specified for the material option as indicated.

NB: Part numbers suffixed by “‡” indicate housing sizes to meet ISO7425-2.

Features

- Ultra low friction
- Compact housing
- Inch sizes available on request
- Seal ring component machined by Hallite, so any size can be catered for

Material

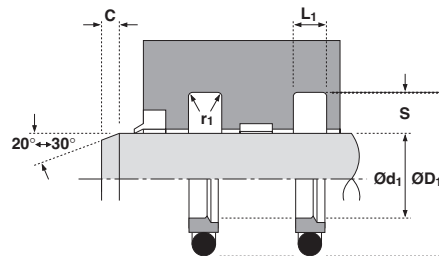
Face Material - O Ring
Standard material
 15% Glass/PTFE – NBR

Material options:

15% Glass/PTFE – FKM

Bronze/PTFE – NBR

Bronze/PTFE – FKM



Technical details

Operating conditions

Maximum Speed 4.0 m/sec
 Temperature Range -30°C + 100°C
 Maximum Pressure 300 bar

Inch

12.0 ft/sec
 -22°F + 212°F
 4500 p.s.i.

Maximum extrusion gap

	100	150	250	300
Pressure bar	100	150	250	300
Maximum Gap mm	0.6	0.5	0.45	0.4
Pressure p.s.i.	1500	2400	3750	4500

Figures show the maximum permissible gap all on one side using minimum rod \varnothing and maximum clearance \varnothing . Refer to Housing Design section.

Surface roughness

	μmRa	μmRt	μinCLA	μinRMS
Dynamic Sealing Face $\varnothing d_1$	0.1 < > 0.4	4 max	4 < > 16	5 < > 18
Static Sealing Face $\varnothing D_1$	1.6 max	10 max	63 max	70 max
Static Housing Faces L_1	3.2 max	16 max	125 max	140 max

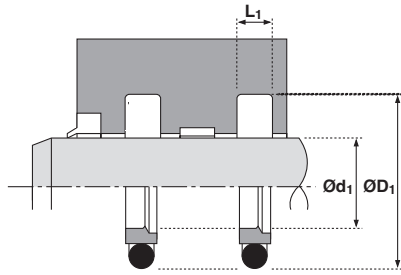
Chamfers & Radii

	3.75	5.50	7.75	10.50	12.25
Groove Section $\leq S$ mm	3.75	5.50	7.75	10.50	12.25
Min Chamfer C mm	2.0	3.0	5.0	7.5	8.0
Max Fillet Rad r_1 mm	0.4	0.8	1.2	1.6	1.6

Tolerances

$\varnothing d_1$	$\varnothing D_1$	L_1 mm
f9	H11	+0.2 -0

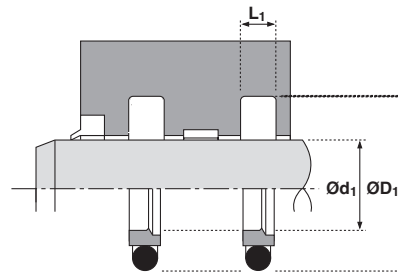




* Split housing recommended

Ød ₁	TOL f9	ØD ₁	TOL H11	L ₁ +0.2-0	PART No.
12	-0.016 -0.059	19.5	+0.13 +0.00	3.2	86106_ _ ‡
14	-0.016 -0.059	21.5	+0.13 +0.00	3.2	86098_ _ ‡
15	-0.016 -0.059	22.5	+0.13 +0.00	3.2	86179_ _
16	-0.016 -0.059	23.5	+0.13 +0.00	3.2	66225_ _ ‡
18	-0.016 -0.059	25.5	+0.13 +0.00	3.2	66226_ _ ‡
20	-0.020 -0.072	31.0	+0.16 +0.00	4.2	65948_ _ ‡*
22	-0.020 -0.072	33.0	+0.16 +0.00	4.2	65949_ _ ‡*
25	-0.020 -0.072	36.0	+0.16 +0.00	4.2	65950_ _ ‡*
28	-0.020 -0.072	39.0	+0.16 +0.00	4.2	66227_ _ ‡*
30	-0.020 -0.072	41.0	+0.16 +0.00	4.2	65951_ _
32	-0.025 -0.087	43.0	+0.16 +0.00	4.2	65952_ _ ‡
35	-0.025 -0.087	46.0	+0.16 +0.00	4.2	66228_ _
36	-0.025 -0.087	47.0	+0.16 +0.00	4.2	65953_ _ ‡
40	-0.025 -0.087	55.5	+0.19 +0.00	6.3	65954_ _
43	-0.025 -0.087	58.5	+0.19 +0.00	6.3	86075_ _
45	-0.025 -0.087	60.5	+0.19 +0.00	6.3	65955_ _
50	-0.025 -0.087	65.5	+0.19 +0.00	6.3	65956_ _
56	-0.030 -0.104	71.5	+0.19 +0.00	6.3	65957_ _
60	-0.030 -0.104	75.5	+0.19 +0.00	6.3	65958_ _
63	-0.030 -0.104	78.5	+0.19 +0.00	6.3	65959_ _ ‡
65	-0.030 -0.104	80.5	+0.22 +0.00	6.3	65960_ _
70	-0.030 -0.104	85.5	+0.22 +0.00	6.3	65961_ _ ‡
75	-0.030 -0.104	90.5	+0.22 +0.00	6.3	65962_ _

Ød ₁	TOL f9	ØD ₁	TOL H11	L ₁ +0.2-0	PART No.
78	-0.030 -0.104	93.5	+0.22 +0.00	6.3	86112_ _
80	-0.030 -0.104	95.5	+0.22 +0.00	6.3	65963_ _ ‡
85	-0.036 -0.123	100.5	+0.22 +0.00	6.3	65964_ _
90	-0.036 -0.123	105.5	+0.22 +0.00	6.3	65965_ _ ‡
95	-0.036 -0.123	110.5	+0.22 +0.00	6.3	65966_ _
97	-0.036 -0.123	112.5	+0.22 +0.00	6.3	86113_ _
100	-0.036 -0.123	115.5	+0.22 +0.00	6.3	65967_ _ ‡
105	-0.036 -0.123	120.5	+0.25 +0.00	6.3	86478_ _
110	-0.036 -0.123	125.5	+0.25 +0.00	6.3	66229_ _ ‡
115	-0.036 -0.123	130.5	+0.25 +0.00	6.3	66391_ _
120	-0.036 -0.123	135.5	+0.25 +0.00	6.3	86099_ _
125	-0.043 -0.143	140.5	+0.25 +0.00	6.3	66392_ _ ‡
130	-0.043 -0.143	145.5	+0.25 +0.00	6.3	86102_ _
135	-0.043 -0.143	150.5	+0.25 +0.00	6.3	86103_ _
140	-0.043 -0.143	155.5	+0.25 +0.00	6.3	66393_ _ ‡
145	-0.043 -0.143	160.5	+0.25 +0.00	6.3	86156_ _
150	-0.043 -0.143	165.5	+0.25 +0.00	6.3	86157_ _
160	-0.043 -0.143	175.5	+0.25 +0.00	6.3	66394_ _ ‡
170	-0.043 -0.143	185.5	+0.25 +0.00	6.3	86083_ _
180	-0.043 -0.143	195.5	+0.29 +0.00	6.3	66395_ _ ‡
190	-0.050 -0.165	205.5	+0.29 +0.00	6.3	86074_ _
200	-0.050 -0.165	221.0	+0.29 +0.00	8.1	66396_ _ ‡
210	-0.050 -0.165	231.0	+0.29 +0.00	8.1	86094_ _



* Split housing recommended

Ød ₁	TOL f9	ØD ₁	TOL H11	L ₁ +0.2-0	PART No.
220	-0.050 -0.165	241.0	+0.29 +0.00	8.1	66397_ _ ‡
240	-0.050 -0.165	261.0	+0.29 +0.00	8.1	86159_ _
250	-0.050 -0.165	271.0	+0.32 +0.00	8.1	66398_ _ ‡
270	-0.056 -0.186	294.5	+0.32 +0.00	8.1	86069_ _
280	-0.056 -0.186	304.5	+0.32 +0.00	8.1	66399_ _ ‡
290	-0.056 -0.186	314.5	+0.32 +0.00	8.1	86173_ _
300	-0.056 -0.186	324.5	+0.36 +0.00	8.1	66400_ _
320	-0.062 -0.202	344.5	+0.36 +0.00	8.1	86082_ _ ‡

Ød ₁	TOL f9	ØD ₁	TOL H11	L ₁ +0.2-0	PART No.
330	-0.062 -0.202	354.5	+0.36 +0.00	8.1	86196_ _
340	-0.062 -0.202	364.5	+0.36 +0.00	8.1	86197_ _
350	-0.062 -0.202	374.5	+0.36 +0.00	8.1	86198_ _
360	-0.062 -0.202	384.5	+0.36 +0.00	8.1	86199_ _ ‡
370	-0.062 -0.202	394.5	+0.36 +0.00	8.1	86200_ _
380	-0.062 -0.202	404.5	+0.40 +0.00	8.1	86201_ _
390	-0.062 -0.202	414.5	+0.40 +0.00	8.1	86202_ _
400	-0.062 -0.202	424.5	+0.40 +0.00	8.1	86203_ _

