

Design

The Hallite 754 double acting piston seal is a compact low friction seal for light to medium duty hydraulic cylinders. As standard, it comprises a tough, wear resistant thermoplastic elastomer face, (see below for face material options) which is pre-loaded by an O ring. The housing width allows a narrow width piston to be used, but it is recommended that an adequate bearing is mounted on one or both sides of the seal.

Housing dimensions for use with Hallite 87 and 506 bearing strip are given in the installation details. For further details of bearing strip grooves, please refer to the appropriate data sheets.

NB: Part numbers suffixed by “±” indicate housing sizes to meet ISO 7425-1.

Features

- Low breakout and operating friction levels
- Rapid recovery of face after assembly
- More tolerant to contamination
- Excellent position holding characteristics under load
- Compatible with most hydraulic fluids
- Excellent wear resistance
- Operates on wide range of surface finishes
- Ideal for use with Hallite 506 or 87 bearing
- ISO 7425 housing

Material

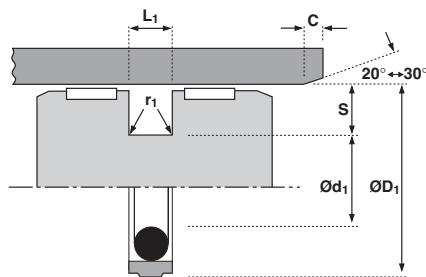
Face Material options:

Polyester elastomer - standard 55D

----- 0

Hydrolysis stabilised polyester elastomer Dark Red 72D

----- 3



Technical details

Metric

Inch

Operating conditions

Maximum Speed	1.0 m/sec
Temperature Range	-40°C +110°C
Maximum Pressure	350 bar- standard 55D material 500 bar- 72D material

3ft/sec
40°C+230°F
5000 p.s.i
7500 p.s.i

Maximum extrusion gap

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

Polyester elastomer - standard (red 55D) material 9270061

Pressure bar	100	160	250	350
Maximum Gap (S>7) mm	1.0	0.8	0.6	0.4
Maximum Gap (S<7) mm	0.8	0.6	0.5	0.3
Pressure p.s.i	1500	2400	3750	5000

Hydrolysis stabilised polyester elastomer (dark red 72D) material 9270051

Pressure bar	160	250	400	500
Maximum Gap (S>7) mm	1.0	0.8	0.6	0.4
Maximum Gap (S<7) mm	0.8	0.6	0.4	0.2
Pressure p.s.i	2400	3750	6000	7500

Surface roughness

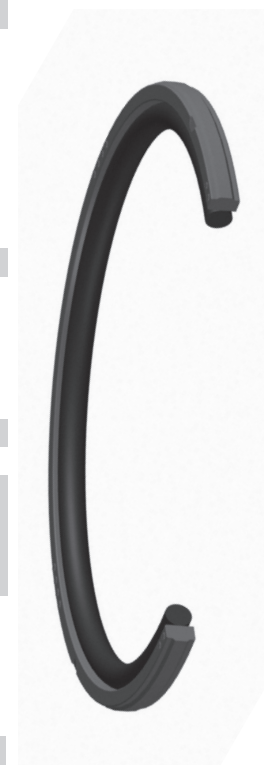
	µmRa	µmRt	µinCLA	µinRMS
Dynamic Sealing Face ØD ₁	0.1 < > 0.4	4 max	4 < > 16	5 < > 18
Static Sealing Face Ød ₁	1.6 max	10 max	63 max	70 max
Static Housing Faces L ₁	3.2 max	16 max	125 max	140 max

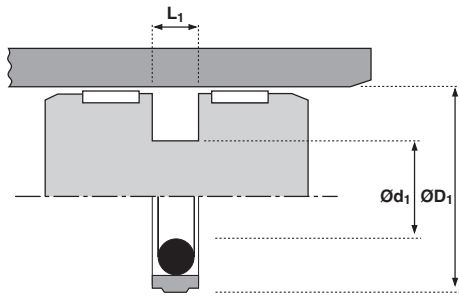
Chamfers & Radii

Groove Section ≤ S mm	3.75	5.50	7.75	10.50
Min Chamfer C mm	2.00	2.50	5.00	5.00
Max Fillet Rad r ₁ mm	0.40	0.80	1.20	1.60
Groove Section ≤ S in	0.150	0.220	0.310	0.410
Min Chamfer C in	0.080	0.100	0.200	0.200
Max Fillet Rad r ₁ in	0.016	0.032	0.047	0.063

Tolerances

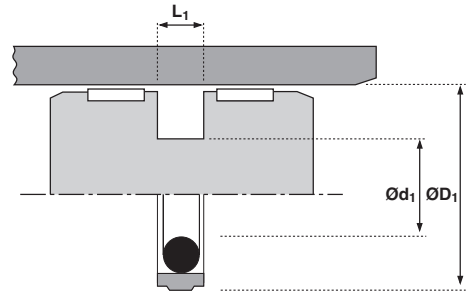
ØD ₁	Ød ₁	L ₁ mm	L ₁ in
H9	h9	+0.2 -0	+0.008-0





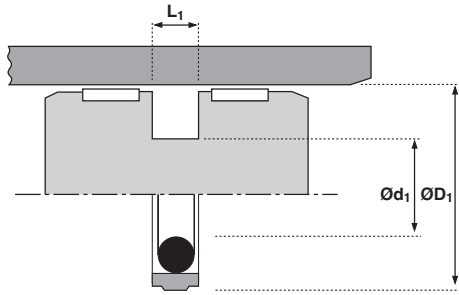
ØD ₁	TOL H9	Ød ₁	TOL h9	L ₁ +0.2 -0	PART No.
15	+0.04 +0.00	7.5	+0.000 -0.036	3.2	444641_
16	+0.04 +0.00	8.5	+0.000 -0.036	3.2	440061_‡
20	+0.05 +0.00	12.5	+0.000 -0.043	3.2	436231_‡
25	+0.05 +0.00	17.5	+0.000 -0.052	3.2	433961_‡
28	+0.05 +0.00	20.5	+0.000 -0.052	3.2	476591_
30	+0.05 +0.00	22.5	+0.000 -0.052	3.2	433971_
32	+0.06 +0.00	24.5	+0.000 -0.052	3.2	433981_‡
35	+0.06 +0.00	27.5	+0.000 -0.052	3.2	435241_
36	+0.06 +0.00	28.5	+0.000 -0.052	3.2	4787510
40	+0.06 +0.00	29.0	+0.000 -0.052	4.2	433921_‡
40	+0.06 +0.00	32.5	+0.000 -0.062	3.2	474001_‡
42	+0.06 +0.00	31.0	+0.000 -0.062	4.2	4787610
45	+0.06 +0.00	34.0	+0.000 -0.062	4.2	434231_
50	+0.06 +0.00	34.5	+0.000 -0.062	6.3	442741_‡
50	+0.06 +0.00	39.0	+0.000 -0.062	4.2	432711_‡
55	+0.07 +0.00	39.5	+0.000 -0.062	6.3	435561_
55	+0.07 +0.00	44.0	+0.000 -0.062	4.2	446551_
60	+0.07 +0.00	44.5	+0.000 -0.062	6.3	439071_
60	+0.07 +0.00	49.0	+0.000 -0.062	4.2	432701_
63	+0.07 +0.00	47.5	+0.000 -0.062	6.3	443111_‡
63	+0.07 +0.00	50.0	+0.000 -0.062	6.3	447231_
63	+0.07 +0.00	52.0	+0.000 -0.074	4.2	432691_‡
65	+0.07 +0.00	49.5	+0.000 -0.062	6.3	436201_

ØD ₁	TOL H9	Ød ₁	TOL h9	L ₁ +0.2 -0	PART No.
65	+0.07 +0.00	52.0	+0.000 -0.074	6.3	438491_
65	+0.07 +0.00	54.0	+0.000 -0.074	4.2	435301_
70	+0.07 +0.00	54.5	+0.000 -0.074	6.3	476341_
70	+0.07 +0.00	57.0	+0.000 -0.074	6.3	439081_
70	+0.07 +0.00	59.0	+0.000 -0.074	4.2	432681_
75	+0.07 +0.00	59.5	+0.000 -0.074	6.3	470491_
75	+0.07 +0.00	64.0	+0.000 -0.074	4.2	433991_
80	+0.07 +0.00	64.5	+0.000 -0.074	6.3	427091_‡
80	+0.07 +0.00	69.0	+0.000 -0.074	4.2	476851_‡
85	+0.09 +0.00	69.5	+0.000 -0.074	6.3	456401_
90	+0.09 +0.00	74.5	+0.000 -0.074	6.3	437271_
95	+0.09 +0.00	84.0	+0.000 -0.074	4.2	483161_
95	+0.09 +0.00	79.5	+0.000 -0.074	6.3	456951_
100	+0.09 +0.00	84.5	+0.000 -0.087	6.3	433931_‡
105	+0.09 +0.00	89.5	+0.000 -0.087	6.3	437251_
110	+0.09 +0.00	94.5	+0.000 -0.087	6.3	441931_
115	+0.09 +0.00	94.0	+0.000 -0.087	8.1	478851_
115	+0.09 +0.00	99.5	+0.000 -0.087	6.3	435581_
120	+0.09 +0.00	99.0	+0.000 -0.087	8.1	453501_
120	+0.09 +0.00	104.5	+0.000 -0.087	6.3	446541_
125	+0.10 +0.00	104.0	+0.000 -0.087	8.1	437651_‡
125	+0.10 +0.00	109.5	+0.000 -0.087	6.3	434001_‡
130	+0.10 +0.00	109.0	+0.000 -0.087	8.1	440241_



$\text{Ø}D_1$	TOL H9	$\text{Ø}d_1$	TOL h9	L_1 +0.2 -0	PART No.
130	+0.10 +0.00	114.5	+0.000 -0.087	6.3	434221_
135	+0.10 +0.00	114.0	+0.000 -0.087	8.1	453511_
140	+0.10 +0.00	119.0	+0.000 -0.087	8.1	434011_
140	+0.10 +0.00	124.5	+0.000 -0.100	6.3	449941_
150	+0.10 +0.00	129.0	+0.000 -0.100	8.1	439691_
160	+0.10 +0.00	139.0	+0.000 -0.100	8.1	434021_‡
165	+0.10 +0.00	144.0	+0.000 -0.100	8.1	445221_
170	+0.10 +0.00	149.0	+0.000 -0.100	8.1	434031_
180	+0.10 +0.00	159.0	+0.000 -0.100	8.1	434041_

$\text{Ø}D_1$	TOL H9	$\text{Ø}d_1$	TOL h9	L_1 +0.2 -0	PART No.
190	+0.12 +0.00	169.0	+0.000 -0.100	8.1	434241_
200	+0.12 +0.00	179.0	+0.000 -0.100	8.1	434051_‡
210	+0.12 +0.00	189.0	+0.000 -0.115	8.1	435151_
220	+0.12 +0.00	199.0	+0.000 -0.115	8.1	4735710
225	+0.12 +0.00	204.0	+0.000 -0.115	8.1	451281_
230	+0.12 +0.00	209.0	+0.000 -0.115	8.1	476401_
240	+0.12 +0.00	219.0	+0.000 -0.115	8.1	455361_
250	+0.12 +0.00	229.0	+0.000 -0.115	8.1	439371_‡
300	+0.13 +0.00	279.0	+0.000 -0.130	8.1	457281_



ØD_1	TOL H9	Ød_1	TOL h9	L_1 +0.008 -0	PART No.
1.250	+0.003 +0.000	0.974	+0.000 -0.002	0.126	433981_
1.375	+0.003 +0.000	1.079	+0.000 -0.002	0.126	435241_
1.500	+0.003 +0.000	1.067	+0.000 -0.002	0.165	443231_
1.500	+0.003 +0.000	1.204	+0.000 -0.003	0.125	442871_
2.000	+0.003 +0.000	1.567	+0.000 -0.003	0.165	432711_
2.500	+0.003 +0.000	2.067	+0.000 -0.003	0.165	432691_

ØD_1	TOL H9	Ød_1	TOL h9	L_1 +0.008 -0	PART No.
2.750	+0.003 +0.000	2.318	+0.000 -0.003	0.165	432681_
2.750	+0.003 +0.000	2.140	+0.000 -0.003	0.248	476341_
3.250	+0.003 +0.000	2.640	+0.000 -0.003	0.248	442881_
4.000	+0.003 +0.000	3.390	+0.000 -0.004	0.248	442891_
5.000	+0.004 +0.000	4.390	+0.000 -0.004	0.248	442901_