

770

PISTON SEAL

*Double-Acting
Polyester Face with
Rubber Energizer for O-Ring Housings*

DESIGN

The Hallite 770 double-acting piston seal is a compact, low friction seal for light to medium-duty applications designed to fit standard inch O-ring housings.

The Hallite 770 is comprised of a tough, self-lubricated thermoplastic elastomeric face seal which is pre-loaded by a rectangular cross-section NBR expander. The standard material is only suitable for hydraulic mineral oil applications. Other material options are available for water-based (HFA and HFB) fluids and synthetic esters (HEES). For intermittent single-acting applications and in certain sizes, we recommend using Hythane® 181 for the face material.

The Hallite 770 can be used on SG iron pistons or on pistons where there is an adequate remote bearing, such as the Hallite 506, 533, and 87 bearings. For further details of bearing grooves, please refer to the appropriate product data sheet.



FEATURES

- Low breakout and low operating friction levels
- Excellent wear resistance
- More tolerant to contamination
- Rapid recovery after assembly
- Operates on wide range of surface finishes
- Ideal for use with Hallite 506, 533, or 87 bearing

MATERIALS

This product comes in a number of material options to extend operating conditions. Contact your local Hallite technical team to decide which is best for your application. Use the part designator in the table below as the last digit of the part number to specify material choice when ordering. For further material details, please refer to the Hallite Material Table.

MATERIAL OPTIONS	Name	Face Type	Face Color	Part Designator
Standard	TPE 261 - NBR	TPE	Cream	2
Optional	TPE 061 - NBR	TPE	Red	0
Optional	TPE 111 - NBR	TPE	Grey	1
Optional	TPE 051 - NBR	TPE	Dark Red	3
Optional - Limited Size Range	Hythane® 181 - NBR	TPU-EU	Blue	4

TECHNICAL DETAILS

OPERATING CONDITIONS	METRIC	INCH
Maximum Speed	1.0 m/sec	3.0 ft/sec
Temperature Range	-40°C +110°C	-40°F +230°F
Maximum Pressure	350 bar	5000 psi

NOTE

Data given are maximum values and can apply depending on specific application. Maximum ratings of temperature, pressure, or operating speeds are dependent on fluid medium, surface, gap value, and other variables such as dynamic or static service. Maximum values are not intended for use together at the same time, e.g. max temperature and max pressure. Please contact your Hallite technical representative for application support.

NOTE

Technical details shown are for the standard material TPE 261.

MAXIMUM EXTRUSION GAP				
Pressure bar	100	160	250	350
Maximum Gap mm	0.75	0.64	0.50	0.25
Pressure psi	1500	2400	3750	5000
Maximum Gap in	0.030	0.025	0.020	0.010

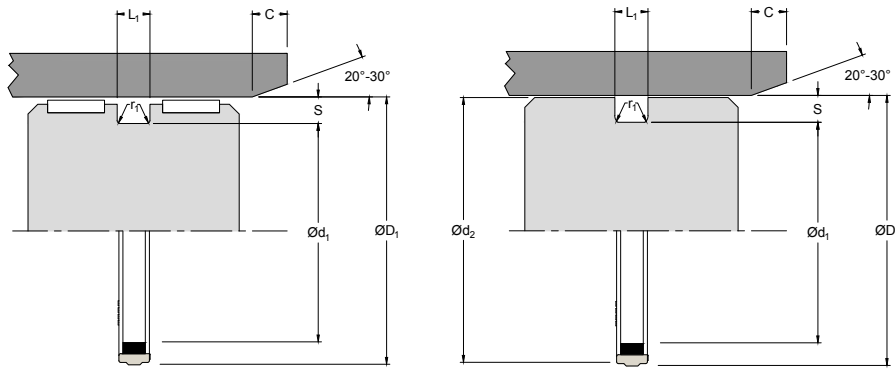
NOTE

Figures show the maximum permissible gap all on one side using minimum rod \varnothing and maximum clearance \varnothing . Refer to Housing Design section. Technical details shown are for standard cream 55D lubricated polyester elastomer.

SURFACE ROUGHNESS	μmRa	μmRz	μmRt	μinRa	μinRz	μinRt
Dynamic Sealing Face $\varnothing D_1$	0.1 - 0.4	1.6 max	4 max	4-16	63 max	157 max
Static Sealing Face $\varnothing d_1$	1.6 max	6.3 max	10 max	63 max	250 max	394 max
Static Housing Faces L_1	3.2 max	10 max	16 max	125 max	394 max	630 max

CHAMFERS & RADII			
Groove Section $\leq S$ in	0.125	0.187	0.250
Min Chamfer C in	0.100	0.150	0.200
Max Fillet Rad r_1 in	0.016	0.016	0.016

TOLERANCES	$\varnothing D_1$	$\varnothing d_1$	$\varnothing d_2$	L_1
in	+0.002 -0	+0 -0.002	+0 -0.001	+0.005 -0



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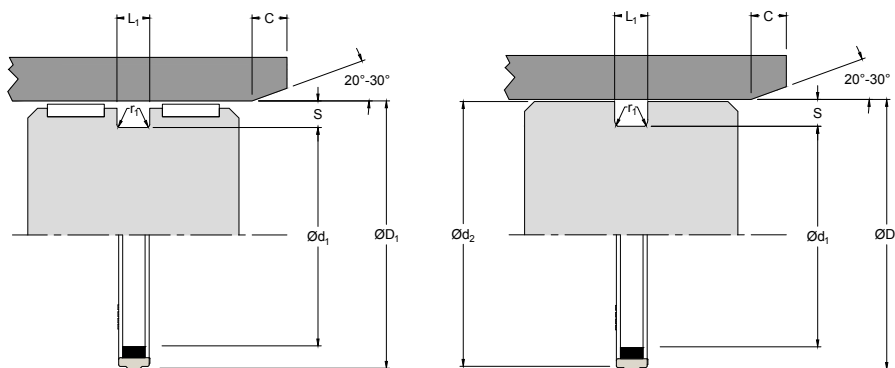
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PART NUMBER RANGE

INCH					
ØD ₁	TOL	Ød ₁ +0-0.002	Ød ₂ +0-0.001	L ₁ +0.005-0	PART No.
0.750	+0.002 0.000	0.508	0.747	0.187	4817712
0.875	+0.002 0.000	0.633	0.872	0.187	4817812
1.000	+0.002 0.000	0.758	0.997	0.187	4817912
1.125	+0.002 0.000	0.883	1.122	0.187	4818012
1.250	+0.002 0.000	1.008	1.247	0.187	4554412
1.375	+0.002 0.000	1.133	1.372	0.187	4716912
1.500	+0.002 0.000	1.258	1.497	0.187	4717012
1.625	+0.002 0.000	1.383	1.622	0.187	4717112
1.750	+0.002 0.000	1.508	1.747	0.187	4717212
2.000	+0.002 0.000	1.630	1.997	0.281	4553512
2.125	+0.002 0.000	1.755	2.122	0.281	4717312
2.250	+0.002 0.000	1.880	2.247	0.281	4717412
2.500	+0.002 0.000	2.130	2.497	0.281	4490012
2.750	+0.002 0.000	2.380	2.747	0.281	4817512
2.875	+0.002 0.000	2.505	2.872	0.281	4817612
3.000	+0.002 0.000	2.630	2.997	0.281	4349412

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PART NUMBER RANGE

INCH					
ØD_1	TOL	Ød_1 +0-0.002	Ød_2 +0-0.001	L_1 +0.005-0	PART No.
3.250	+0.002 0.000	2.880	3.247	0.281	4349512
3.500	+0.002 0.000	3.130	3.497	0.281	4349612
3.750	+0.002 0.000	3.380	3.747	0.281	4349712
4.000	+0.002 0.000	3.630	3.997	0.281	4349812
4.250	+0.002 0.000	3.880	4.247	0.281	4349912
4.500	+0.002 0.000	4.130	4.497	0.281	4350012
4.750	+0.002 0.000	4.380	4.747	0.281	4350112
5.000	+0.004 0.000	4.630	4.997	0.281	4350212
5.250	+0.004 0.000	4.778	5.247	0.375	4350322
5.500	+0.004 0.000	5.028	5.497	0.375	4350422
6.000	+0.004 0.000	5.528	5.997	0.375	4350522
6.250	+0.004 0.000	5.778	6.247	0.375	4350622
6.500	+0.004 0.000	6.028	6.497	0.375	4350722
7.000	+0.004 0.000	6.528	6.997	0.375	4350822
8.000	+0.004 0.000	7.528	7.997	0.375	4351122