

780

PISTON SEAL

*Double-Acting
Five Part Assembly*

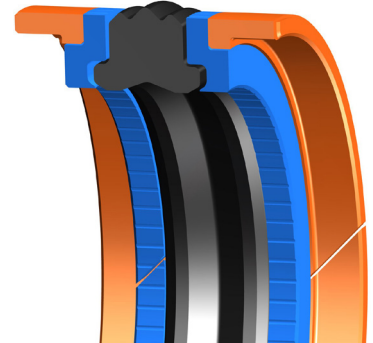
DESIGN

The Hallite 780 double-acting piston seal in a robust five part assembly is designed specifically for one piece pistons in a wide range of medium duty applications. The seal is also suitable for two piece pistons.

The Hallite 780 is comprised of a nitrile rubber sealing element, two split support rings, and two split L-shaped bearings located either side of the seal. The well-proven nitrile rubber sealing element is designed to be extremely wear resistant with multi-lips for efficient dynamic sealing with minimal low pressure friction and, when pressurized, will be protected from extrusion damage by the extending lips of the support rings.

The support ring is manufactured from a tough, flexible, wear resistant thermoplastic polyester elastomer (TPE) and scarf cut for assembly.

Both the L-shaped bearings and support rings are grooved to ensure that the fluid pressure properly energizes the sealing element and to prevent the possibility of any pressure trapping within the seal assembly.



FEATURES

- Excellent position holding characteristics under load
- Excellent on a variety of tube surface finishes
- Extremely well proven in a variety of applications using hydraulic oil
- Extremely wear resistant
- Low friction

MATERIALS

As standard, this product comes in the following materials. Contact your local Hallite technical team if you would like to find out if this profile can be made in a custom material to suit your application. For further material details, please refer to the Hallite Material Table.

MATERIAL OPTIONS	Name	Color
Standard	Nitrile 1411-Polyester-POM	Black-Blue-Orange

TECHNICAL DETAILS

OPERATING CONDITIONS	METRIC	INCH
Maximum Speed	0.5 m/sec	1.5 ft/sec
Temperature Range	-30°C +100°C	-22°F +212°F
Maximum Pressure	400 bar	6000 psi

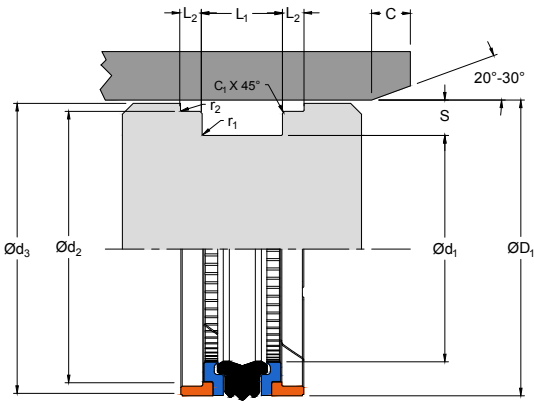
NOTE

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.

SURFACE ROUGHNESS	μmRa	μmRz	μmRt	μinRa	μinRz	μinRt
Dynamic Sealing Face ØD_1	0.1 - 0.4	1.6 max	4 max	4 - 16	63 max	157 max
Static Sealing Face Ød_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

RADII						
Groove Section $\leq S$ mm	5.00	7.50	8.00	10.00	12.50	15.00
Min Chamfer C mm	2.40	4.00	5.00	5.00	6.50	7.50
Max Chamfer C, mm	0.40	0.40	0.40	0.80	0.80	0.80
Max Fillet Rad r_1 mm	0.40	0.40	0.40	0.40	0.80	0.80
Max Fillet Rad r_2 mm	0.40	0.40	0.40	0.40	0.80	0.80
Groove Section $\leq S$ in	0.312	0.375	0.500			
Min Chamfer C in	0.156	0.187	0.217			
Max Chamfer C, in	0.016	0.032	0.032			
Max Fillet Rad r_1 in	0.016	0.016	0.032			
Max Fillet Rad r_2 in	0.016	0.016	0.032			

TOLERANCES	ØD_1	Ød_1	Ød_2	Ød_3	L_1	L_2
mm	H9	h9	h9	h11	+0.20 -0	+0.10 -0
in	H9	h9	h9	h11	+0.016 +0.005	+0.004 -0



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PART NUMBER RANGE

INCH										
ØD ₁	TOL H9	Ød ₁	TOL h9	Ød ₂	TOL h9	Ød ₃	TOL h11	L ₁ +0.016 +0.005	L ₂ +0.004-0	PART No.
1.750	+0.003 0.000	1.380	0.000 -0.003	1.640	0.000 -0.003	1.720	0.000 -0.006	0.490	0.240	5008510
2.000	+0.003 0.000	1.375	0.000 -0.003	1.820	0.000 -0.003	1.950	0.000 -0.006	0.750	0.250	5010910
2.000	+0.003 0.000	1.625	0.000 -0.003	1.888	0.000 -0.003	1.970	0.000 -0.006	0.490	0.240	5010010
2.250	+0.003 0.000	1.625	0.000 -0.003	2.070	0.000 -0.003	2.200	0.000 -0.007	0.750	0.250	5011010
2.375	+0.003 0.000	1.750	0.000 -0.003	2.196	0.000 -0.003	2.325	0.000 -0.007	0.760	0.250	5001030
2.500	+0.003 0.000	1.875	0.000 -0.003	2.320	0.000 -0.003	2.450	0.000 -0.007	0.750	0.250	5011110
2.500	+0.003 0.000	2.000	0.000 -0.003	2.320	0.000 -0.003	2.470	0.000 -0.007	0.650	0.240	5010110
3.000	+0.003 0.000	2.250	0.000 -0.003	2.773	0.000 -0.003	2.940	0.000 -0.007	0.937	0.250	5011210
3.000	+0.003 0.000	2.375	0.000 -0.003	2.772	0.000 -0.003	2.970	0.000 -0.007	0.778	0.240	5010210
3.500	+0.004 0.000	2.750	0.000 -0.003	3.273	0.000 -0.004	3.440	0.000 -0.009	0.937	0.250	5011310
3.500	+0.004 0.000	2.852	0.000 -0.003	3.272	0.000 -0.004	3.470	0.000 -0.009	0.778	0.290	5010310
4.000	+0.004 0.000	3.250	0.000 -0.004	3.772	0.000 -0.004	3.940	0.000 -0.009	0.937	0.250	5011410
4.000	+0.004 0.000	3.376	0.000 -0.004	3.772	0.000 -0.004	3.970	0.000 -0.009	0.778	0.240	5010410
4.500	+0.004 0.000	3.500	0.000 -0.004	4.231	0.000 -0.004	4.428	0.000 -0.009	1.250	0.250	5011510
4.500	+0.004 0.000	3.876	0.000 -0.004	4.272	0.000 -0.004	4.470	0.000 -0.009	0.778	0.240	5010510
5.000	+0.004 0.000	4.000	0.000 -0.004	4.711	0.000 -0.004	4.910	0.000 -0.010	1.250	0.375	5011610
5.000	+0.004 0.000	4.252	0.000 -0.004	4.772	0.000 -0.004	4.970	0.000 -0.010	0.958	0.240	5010610
6.000	+0.004 0.000	5.000	0.000 -0.004	5.711	0.000 -0.004	5.910	0.000 -0.010	1.250	0.375	5011710

PART NUMBERS ON THIS PAGE ARE LISTED IN THE STANDARD MATERIAL OPTION. FOR MATERIAL VARIATIONS OR FOR CUSTOM SIZES, MATERIALS, OR SEAL DESIGNS, PLEASE CONTACT YOUR LOCAL HALLITE REPRESENTATIVE.