

Piston Seals

Technical details

Operating conditions

Maximum Speed	0.5 m/sec
Temperature Range	-30°C +100°C
Maximum Pressure	400 bar

Inch

1.5 ft/sec
-22°F +212°F
6,000 p.s.i.



Maximum extrusion gap

Pressure bar
Pressure p.s.i.
Maximum Gap in

Figures show the maximum permissible gap all on one side using minimum clearance \emptyset and maximum bore \emptyset .

160	250	400
2400	3750	6000
0.024	0.020	0.016

Surface roughness

Dynamic Sealing Face $\emptyset D_1$	μmRa	μmRt	μinCLA	μinRMS
Static Sealing Face $\emptyset d_1$ $\emptyset d_2$	0.1 <> 0.4	4 max	4 <> 16	5 <> 18
Static Housing Faces $\emptyset d_3$ L_1 L_2	1.6 max	10 max	63 max	70 max
	3.2 max	16 max	125 max	140 max

μmRa	μmRt	μinCLA	μinRMS
0.1 <> 0.4	4 max	4 <> 16	5 <> 18
1.6 max	10 max	63 max	70 max
3.2 max	16 max	125 max	140 max

Chamfers & Radii

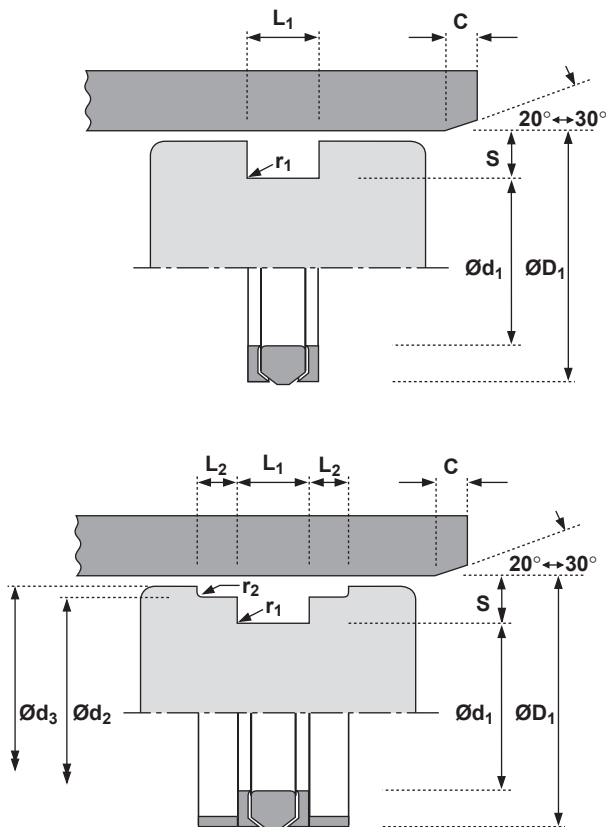
Groove Section $\leq S$ in	0.187	0.250	0.375
Min Chamfer C in	0.156	0.187	0.250
Max Fillet Rad r_1 in	0.010	0.016	0.016
Max Fillet Rad r_2 in	0.010	0.016	0.016

0.187	0.250	0.375
0.156	0.187	0.250
0.010	0.016	0.016
0.010	0.016	0.016

Tolerances

in
$\emptyset d_2$ in \geq

$\emptyset D_1$	$\emptyset d_1$	$\emptyset d_3$	L_1	L_2
H10	h10	± 0.005	+0.005-0	+0.004 -0
	1.5	2.5	3.5	
-0.001	-0.003	-0.001 -0.004	-0.001 -0.005	



Design

The Hallite 83 Tri-Seal assembly offers the engineer many advantages when considering the design of cast iron, bronze, alloy etc. one-piece pistons in double-acting hydraulic cylinders, not the least being cost effectiveness with long and efficient seal life.

The Tri-Seal consists of two split plastic anti-extrusion rings and a nitrile synthetic rubber sealing member. Under pressure, the seal exerts a wedging action on the anti-extrusion ring, reducing the clearance between the cylinder bore and the piston, thus minimising the possibility of extrusion of the seal.

Wear rings are also available for this assembly, allowing the designer to benefit from the following advantages :

- Eliminate metal to metal contact in the bore
- One piece steel piston
- Improved alignment for optimum seal life
- Smoother operation

Note : For availability of sizes not listed please consult your local Hallite sales department.

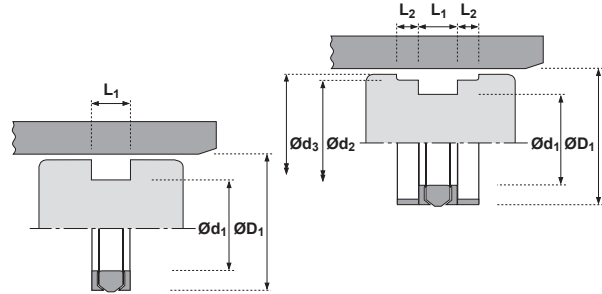
When ordering Hallite 83 with wear rings please replace the last digit of the part number as indicated:

Without wear rings	
Last digit of part no.	_____ 0
With wear rings	
Last digit of part no.	_____ 9



Piston Seals inch

83



ØD ₁	TOL H10	Ød ₁	TOL h10	Ød ₂	TOL	Ød ₃ ±0.005	L ₁ + 0.005 - 0	L ₂ + 0.004 - 0	PART No.
1.500	+0.004 +0.000	1.125	+0.000 -0.004	1.321	-0.001 -0.003	1.450	0.452	0.250	611191_
2.000	+0.005 +0.000	1.500	+0.000 -0.004	1.821	-0.001 -0.003	1.950	0.587	0.250	232631_
2.500	+0.005 +0.000	2.000	+0.000 -0.005	2.321	-0.001 -0.004	2.450	0.587	0.250	212201_
3.000	+0.005 +0.000	2.500	+0.000 -0.004	2.774	-0.001 -0.004	2.940	0.587	0.250	212211_
3.250	+0.005 +0.000	2.750	+0.000 -0.005	3.023	-0.001 -0.004	3.190	0.587	0.250	232761_
3.500	+0.005 +0.000	3.000	+0.000 -0.005	3.274	-0.001 -0.005	3.440	0.587	0.250	212221_
4.000	+0.005 +0.000	3.250	+0.000 -0.005	3.773	-0.001 -0.005	3.940	0.780	0.250	232641_
4.500	+0.005 +0.000	3.750	+0.000 -0.005	4.232	-0.001 -0.005	4.440	0.780	0.250	236041_
5.000	+0.006 +0.000	4.250	+0.000 -0.005	4.713	-0.001 -0.005	4.910	0.780	0.375	232651_
6.000	+0.006 +0.000	5.250	+0.000 -0.006	5.713	-0.001 -0.005	5.910	0.780	0.375	232661_
7.000	+0.006 +0.000	6.250	+0.000 -0.006	6.673	-0.001 -0.005	6.910	0.780	0.500	236191_
8.000	+0.007 +0.000	7.250	+0.000 -0.007	7.685	-0.001 -0.005	7.910	0.780	0.500	236171_



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