Design

The Hallite 58 double acting piston seal combines the Hallite 56 seal with bearing rings to give a very robust heavy duty seal assembly for split pistons. It enables the designer to use larger clearances and, with the integral bearing rings, to restrict the piston length.

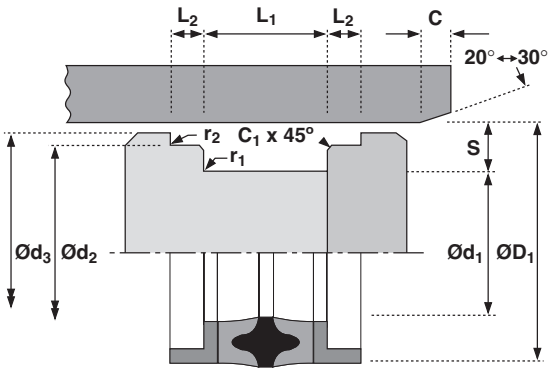
The assembly comprises a seal and two L shaped bearings. The centre of the seal is rubber which is bonded to two 'U' section bases of rubberised fabric, and is compressed by the housing to obtain an effective low pressure seal. When the pressure increases the rubber energises the 'U' section and deforms it to the housing, increasing the sealing area and improving the seal.

Rubberised fabric is used to protect the rubber, because it has strength and durability which combines with its ability to retain lubricant to help keep friction low and reduce wear.

Supporting the seal at either end is a polyacetal bearing proportioned to react to the pressure on the seal to prevent extrusion damage, and support the piston and its side load.

Features

- Well proven design
- Tolerant to contamination
- High pressure capability



Technical details

	Metric					Inch	
Operating conditions							
Maximum Speed	0.5 m/sec					1.5 ft/sec	
Temperature Range	-30°C +100°C					-22°F +212°F	
Maximum Pressure	700 bar					10,000 p.s.i.	
Surface roughness	**µmRa**		**µmRt**			**µinCLA**	**µinRMS**
Dynamic Sealing Face $ØD_1$	0.1 < > 0.4		4 max			4 < > 16	5 < > 18
Static Sealing Face $Ød_1$ $Ød_2$	1.6 max		10 max			63 max	70 max
Static Housing Faces $Ød_3$ L_1 L_2	3.2 max		16 max			125 max	140 max
Chamfers & Radii							
Groove Section ≤ S mm	5.0	7.5	10.0	12.5	15.0		
Min Chamfer C mm	2.5	4.0	5.0	6.5	7.5		
Min Chamfer C_1 mm	1.0	1.0	1.0	1.5	1.5		
Max Fillet Rad r_1 mm	0.2	0.2	0.2	0.4	0.4		
Max Fillet Rad r_2 mm	0.2	0.2	0.2	0.4	0.4		
Groove Section ≤ S in	0.187	0.250	0.312	0.375	0.500	0.625	
Min Chamfer C in	0.093	0.125	0.156	0.187	0.217	0.250	
Min Chamfer C_1 in	0.032	0.032	0.032	0.062	0.062	0.062	
Max Fillet Rad r_1 in	0.008	0.008	0.008	0.008	0.016	0.016	
Max Fillet Rad r_2 in	0.008	0.008	0.008	0.008	0.016	0.016	

Tolerances	**$ØD_1$**	**$Ød_1$**	**$Ød_2$**	**$Ød_3$**	**L_1**	**L_2**
mm	H11	js11	h9	js11	+0.25 -0	0 -0.15
in	H11	js11	h9	js11	+0.035 +0.025	0 -0.005