

## Piston Seals

### 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	700 bar	10,000 p.s.i.

#### Maximum extrusion gap

Pressure bar	160	250	400	700
Maximum Gap mm	0.35	0.3	0.2	0.1
Pressure p.s.i.	2400	3750	6000	10,000

Figures show the maximum permissible gap all on one side using minimum rod  $\varnothing$  and maximum clearance  $\varnothing$ .

#### Surface roughness

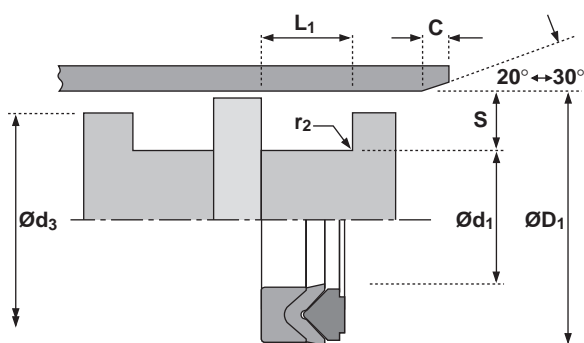
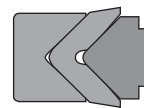
Dynamic Sealing Face $\varnothing Dd_1$	$\mu\text{mRa}$	$\mu\text{mRt}$	$\mu\text{inCLA}$	$\mu\text{inRMS}$
Static Sealing Face $\varnothing d_1$	0.1 <> 0.4	4 max	4 <> 16	5 <> 18
Static Housing Faces $L_1$	1.6 max	10 max	63 max	70 max
	3.2 max	16 max	125 max	140 max

#### Chamfers & Radii

Groove Section $\leq S$ mm	7.5	10.0	12.5	15.0
Min Chamfer C mm	4.0	5.0	6.5	7.5
Max Fillet Rad $r_1$ mm	0.8	1.2	1.6	1.6

#### Tolerances

mm	$\varnothing D_1$	$\varnothing d_1$	$\varnothing d_3$	$L_1$
	H9	h11	+0 -0.3	+0.25 -0



### Design

The Hallite 51 is a heavy duty piston seal which, when installed in pairs, provides an excellent double acting piston design. It is particularly suitable for difficult operating conditions such as pressure surging, vibration or some misalignment.

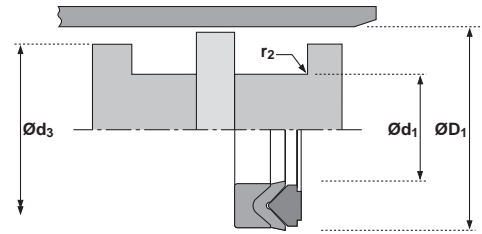
The seal is an assembly of three parts, a male adaptor, a V ring and a female adaptor. Both the V ring and the female adaptor are made from rubberised fabric which has durability and strength, it also retains lubricant at the sliding surfaces so friction and wear are kept to a minimum. The V ring being the primary seal is more flexible than the adaptor which supports it and prevents extrusion damage. At higher pressures the adaptor deforms and becomes a secondary seal.

The polyacetal male adaptor has grooves across the face to ensure pressure is evenly applied to the V ring.

### Features

- Effective seal for extreme applications
- Precision moulded vee packs
- High load capability
- Pressure activating grooves

# 51



ØD <sub>1</sub>	TOL H9	Ød <sub>1</sub>	TOL h11	Ød <sub>3</sub> Tol +0 -0.3	L <sub>1</sub> +0.25-0	PART No.
30	+0.05 +0.00	20	+0.00 -0.13	29.0	9.30	4208310
40	+0.06 +0.00	25	+0.00 -0.13	39.0	11.50	4208010
50	+0.06 +0.00	35	+0.00 -0.16	49.0	11.50	4207610
55	+0.07 +0.00	40	+0.00 -0.16	54.0	11.50	4207110
60	+0.07 +0.00	45	+0.00 -0.16	59.0	11.50	4207210
63	+0.07 +0.00	48	+0.00 -0.16	62.0	13.00	4207410
70	+0.07 +0.00	50	+0.00 -0.16	68.5	15.20	4208210
80	+0.07 +0.00	60	+0.00 -0.19	78.5	15.20	4208110
90	+0.09 +0.00	70	+0.00 -0.19	88.5	21.20	4207710
100	+0.09 +0.00	80	+0.00 -0.19	98.5	21.20	4207510
110	+0.09 +0.00	90	+0.00 -0.22	108.5	21.20	4207910

ØD <sub>1</sub>	TOL H9	Ød <sub>1</sub>	TOL h11	Ød <sub>3</sub> Tol +0 -0.3	L <sub>1</sub> +0.25-0	PART No.
125	+0.10 +0.00	100	+0.00 -0.22	123.5	25.80	4207810
140	+0.10 +0.00	115	+0.00 -0.22	138.5	25.80	4208410
150	+0.10 +0.00	120	+0.00 -0.22	148.0	29.00	4208510
160	+0.10 +0.00	130	+0.00 -0.25	158.0	29.00	4208710
180	+0.10 +0.00	150	+0.00 -0.25	178.0	31.50	4208610
200	+0.12 +0.00	170	+0.00 -0.25	198.0	33.50	4209010
225	+0.12 +0.00	195	+0.00 -0.29	223.0	33.50	6582110
250	+0.12 +0.00	220	+0.00 -0.29	248.0	33.50	6582310
275	+0.13 +0.00	245	+0.00 -0.29	273.0	33.50	6582410
300	+0.13 +0.00	270	+0.00 -0.32	298.0	33.50	6582510
320	+0.14 +0.00	290	+0.00 -0.36	318.0	33.50	6582610