

Design

The Hallite 52 is a two piece piston seal for heavy duty applications which, when installed in pairs, provides an excellent double-acting piston design. It is suitable for difficult operating conditions such as pressure surging, vibration or some misalignment.

Both parts are manufactured from rubberised fabric which gives strength and durability and retains lubrication to keep friction low and reduce wear.

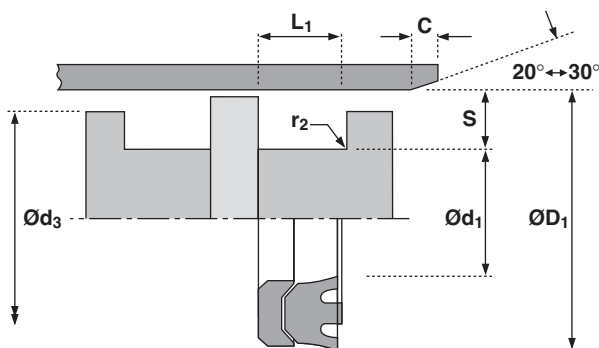
By extending the centre of the seal past the sealing edges, they are protected from damage should inter-seal pressure force the seal against the housing wall. Grooves across the protruding face allow pressure to reach both sealing edges.

The support ring is manufactured from a hard rubberised fabric to protect the seal from extrusion damage. The 'U' shape of the ring provides a secondary seal as pressure deforms the lips to increase the sealing area.

NB: Part numbers suffixed by “±” indicate housing sizes to meet ISO 5597.

Features

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



Technical details

Operating conditions

| | |
|-------------------|--------------|
| Maximum Speed | 0.8 m/sec |
| Temperature Range | -30°C +100°C |
| Maximum Pressure | 600 bar |

Inch

| |
|--------------|
| 2.4 ft/sec |
| -22°F +212°F |
| 9000 p.s.i. |

Maximum extrusion gap

| | | | | |
|-----------------|------|------|------|------|
| Pressure bar | 160 | 250 | 400 | 600 |
| Maximum Gap mm | 0.35 | 0.3 | 0.2 | 0.1 |
| Pressure p.s.i. | 2400 | 3750 | 6000 | 9000 |

Figures show the maximum permissible gap all on one side using minimum rod Ø and maximum clearance Ø. Refer to Housing Design section.

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 | 1.6 max | 10 max | 63 max | 70 max |
| Static Housing Faces L ₁ | 3.2 max | 16 max | 125 max | 140 max |

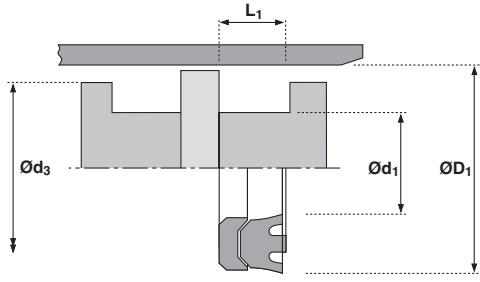
Chamfers & Radii

| | | | | | |
|----------------------------------|-----|-----|------|------|------|
| 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 |
| Max Fillet Rad r ₁ mm | 0.8 | 0.8 | 0.8 | 1.2 | 1.6 |

Tolerances

| | ØD ₁ | Ød ₁ | Ød ₃ | L ₁ |
|----|-----------------|-----------------|-----------------|----------------|
| mm | H9 | h11 | +0 -0.3 | +0.3 -0 |





| ØD ₁ | TOL H9 | Ød ₁ | TOL h11 | Ød ₃ +0 -0.3 | L ₁ +0.3 -0 | PART No. |
|-----------------|----------------|-----------------|----------------|----------------------------|---------------------------|-------------|
| 25 | +0.05 +0.00 | 15 | +0.00 -0.11 | 24.0 | 6.30 | 6619810‡ |
| 32 | +0.06 +0.00 | 20 | +0.00 -0.13 | 31.0 | 7.80 | 1791610 |
| 32 | +0.06 +0.00 | 22 | +0.00 -0.13 | 31.0 | 6.30 | 6619910‡ |
| 40 | +0.06 +0.00 | 25 | +0.00 -0.13 | 39.0 | 10.00 | 2149810 |
| 40 | +0.06 +0.00 | 30 | +0.00 -0.13 | 39.0 | 6.30 | 6620010‡ |
| 45 | +0.06 +0.00 | 30 | +0.00 -0.13 | 44.0 | 10.00 | 2150010 |
| 50 | +0.06 +0.00 | 35 | +0.00 -0.16 | 49.0 | 9.50 | 2150210‡ |
| 55 | +0.07 +0.00 | 40 | +0.00 -0.16 | 54.0 | 10.00 | 2150410 |
| 60 | +0.07 +0.00 | 45 | +0.00 -0.16 | 59.0 | 10.00 | 2150610 |
| 63 | +0.07 +0.00 | 48 | +0.00 -0.16 | 62.0 | 9.50 | 2150810‡ |
| 70 | +0.07 +0.00 | 50 | +0.00 -0.16 | 68.5 | 13.00 | 2151010 |
| 80 | +0.07 +0.00 | 60 | +0.00 -0.19 | 78.5 | 12.50 | 2151210‡ |
| 90 | +0.09 +0.00 | 70 | +0.00 -0.19 | 88.5 | 13.00 | 2151410 |

| ØD ₁ | TOL H9 | Ød ₁ | TOL h11 | Ød ₃ +0 -0.3 | L ₁ +0.3 -0 | PART No. |
|-----------------|----------------|-----------------|----------------|----------------------------|---------------------------|-------------|
| 100 | +0.09 +0.00 | 80 | +0.00 -0.19 | 98.5 | 12.50 | 2151610‡ |
| 110 | +0.09 +0.00 | 90 | +0.00 -0.22 | 108.5 | 13.00 | 2151810 |
| 125 | +0.10 +0.00 | 100 | +0.00 -0.22 | 123.5 | 16.00 | 2152010‡ |
| 140 | +0.10 +0.00 | 115 | +0.00 -0.22 | 138.5 | 16.20 | 2152210 |
| 160 | +0.10 +0.00 | 130 | +0.00 -0.25 | 158.0 | 19.80 | 2152410 |
| 160 | +0.10 +0.00 | 135 | +0.00 -0.25 | 158.0 | 16.00 | 6620110‡ |
| 180 | +0.10 +0.00 | 150 | +0.00 -0.25 | 178.0 | 19.80 | 2152610 |
| 200 | +0.12 +0.00 | 170 | +0.00 -0.25 | 198.0 | 20.00 | 2152810‡ |
| 225 | +0.12 +0.00 | 195 | +0.00 -0.29 | 223.0 | 19.80 | 2197010 |
| 250 | +0.12 +0.00 | 220 | +0.00 -0.29 | 248.0 | 20.00 | 2197210‡ |
| 275 | +0.13 +0.00 | 245 | +0.00 -0.29 | 273.0 | 19.80 | 2197410 |
| 300 | +0.13 +0.00 | 270 | +0.00 -0.32 | 298.0 | 19.80 | 2188310 |