

754

PISTON SEAL

*Double-Acting
Polyester Face with Pre-Loaded O-Ring*

DESIGN

The Hallite 754 double-acting piston seal is a compact, low friction seal for light to medium duty applications.

The Hallite 754 is comprised of a tough, wear-resistant thermoplastic elastomer face seal which is pre-loaded by a NBR O-ring. The face material comes in a number of material options to extend operating conditions. The housing width allows a narrow width piston to be used.

We recommend that an adequate bearing, such as the Hallite 506 or 87 bearing strip, is mounted on one or both sides of the seal. For further details of bearing grooves, please refer to the appropriate product data sheet.



FEATURES

- Excellent position holding characteristics under load
- Low breakout and low operating friction levels
- Excellent wear resistance
- More tolerant to contamination
- Rapid recovery of face after assembly
- Compatible with most hydraulic fluids
- Operates on wide range of surface finishes
- Ideal for use with Hallite 506 or 87 bearing

MATERIALS

This product comes in a number of material options to extend operating conditions. Contact your local Hallite technical team to decide which is best for your application. Use the part designator in the table below as the last digit of the part number to specify material choice when ordering. For further material details, please refer to the Hallite Material Table.

| MATERIAL OPTIONS | Name | Face Type | Face Colour | Part Designator |
|------------------|---------------|-----------|-------------|-----------------|
| Standard | TPE 061 - NBR | TPE | Red | 0 |
| Optional | TPE 051 - NBR | TPE | Dark Red | 3 |

TECHNICAL DETAILS

| OPERATING CONDITIONS | METRIC | INCH |
|-----------------------------------|--------------|--------------|
| Maximum Speed | 1.0 m/sec | 3.0 ft/sec |
| Temperature Range | -40°C +110°C | -40°F +230°F |
| Maximum Pressure for TPE 061 Face | 350 bar | 5000 psi |
| Maximum Pressure for TPE 051 Face | 500 bar | 75000 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.

| MAXIMUM EXTRUSION GAP | | | | |
|-------------------------|-------|-------|-------|-------|
| TPE 061 FACE | | | | |
| Pressure bar | 100 | 160 | 250 | 350 |
| Maximum Gap (S>7 mm) | 1.00 | 0.80 | 0.60 | 0.40 |
| Maximum Gap (S<7 mm) | 0.80 | 0.60 | 0.50 | 0.30 |
| Pressure psi | 1500 | 2400 | 3750 | 5000 |
| Maximum Gap (S>0.25 in) | 0.040 | 0.032 | 0.024 | 0.016 |
| Maximum Gap (S<0.25 in) | 0.032 | 0.024 | 0.020 | 0.012 |
| TPE 051 FACE | | | | |
| Pressure bar | 160 | 250 | 400 | 500 |
| Maximum Gap (S>7 mm) | 1.00 | 0.80 | 0.60 | 0.40 |
| Maximum Gap (S<7 mm) | 0.80 | 0.60 | 0.40 | 0.20 |
| Pressure psi | 2400 | 3750 | 6000 | 7500 |
| Maximum Gap (S>0.25 in) | 0.040 | 0.032 | 0.024 | 0.016 |
| Maximum Gap (S<0.25 in) | 0.032 | 0.024 | 0.016 | 0.008 |

NOTE

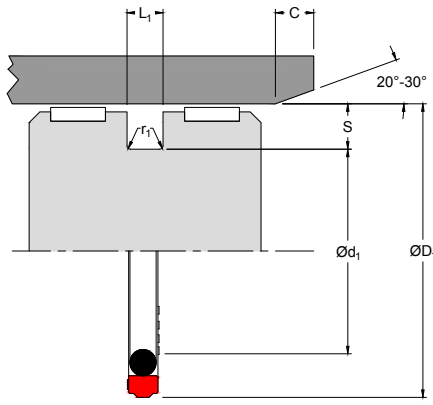
Figures show the maximum permissible gap all on one side using minimum rod \varnothing and maximum clearance \varnothing . Refer to Housing Design section.

| SURFACE ROUGHNESS | μmRa | μmRz | μmRt | μinRa | μinRz | μinRt |
|--|-----------------|-----------------|-----------------|------------------|------------------|------------------|
| Dynamic Sealing Face $\varnothing D_1$ | 0.1 - 0.4 | 1.6 max | 4 max | 4 - 16 | 63 max | 157 max |
| Static Sealing Face $\varnothing d_1$ | 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 |

| CHAMFERS & RADII | | | | |
|----------------------------|-------|-------|-------|-------|
| Groove Section $\leq S$ mm | 3.75 | 5.50 | 7.75 | 10.50 |
| Min Chamfer C mm | 2.00 | 2.50 | 5.00 | 5.00 |
| Max Fillet Rad r_1 mm | 0.40 | 0.80 | 1.20 | 1.60 |
| Groove Section $\leq S$ in | 0.150 | 0.220 | 0.310 | 0.410 |
| Min Chamfer C in | 0.080 | 0.100 | 0.200 | 0.200 |
| Max Fillet Rad r_1 in | 0.016 | 0.032 | 0.047 | 0.063 |

| TOLERANCES | $\varnothing D_1$ | $\varnothing d_1$ | L_1 |
|------------|-------------------|-------------------|----------|
| mm | H9 | h9 | +0.20 -0 |
| in | H9 | h9 | +0.008-0 |





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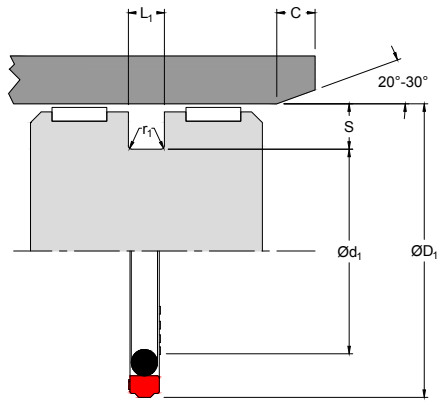
*Double-Acting
Polyester Face with Pre-Loaded O-Ring*

PART NUMBER RANGE

| METRIC | | | | | |
|-----------------|---------------|-----------------|---------------|---------------------------|-------------|
| ØD ₁ | TOL H9 | Ød ₁ | TOL h9 | L ₁ +0.20-0 | PART No. |
| 15.00 | +0.04 0.00 | 7.50 | 0.00 -0.04 | 3.20 | 4446410 |
| 16.00 | +0.04 0.00 | 8.50 | 0.00 -0.04 | 3.20 | 4400610‡ |
| 20.00 | +0.05 0.00 | 12.50 | 0.00 -0.04 | 3.20 | 4362310‡ |
| 25.00 | +0.05 0.00 | 17.50 | 0.00 -0.04 | 3.20 | 4339610‡ |
| 28.00 | +0.05 0.00 | 20.50 | 0.00 -0.05 | 3.20 | 4765910 |
| 30.00 | +0.05 0.00 | 22.50 | 0.00 -0.05 | 3.20 | 4339710 |
| 32.00 | +0.06 0.00 | 24.50 | 0.00 -0.05 | 3.20 | 4339810‡ |
| 35.00 | +0.06 0.00 | 27.50 | 0.00 -0.05 | 3.20 | 4352410 |
| 36.00 | +0.06 0.00 | 28.50 | 0.00 -0.05 | 3.20 | 4787510 |
| 40.00 | +0.06 0.00 | 29.00 | 0.00 -0.05 | 4.20 | 4339210‡ |
| 40.00 | +0.06 0.00 | 32.50 | 0.00 -0.06 | 3.20 | 4740010‡ |
| 42.00 | +0.06 0.00 | 31.00 | 0.00 -0.06 | 4.20 | 4787610 |
| 45.00 | +0.06 0.00 | 34.00 | 0.00 -0.06 | 4.20 | 4342310 |
| 50.00 | +0.06 0.00 | 34.50 | 0.00 -0.06 | 6.30 | 4427410‡ |
| 50.00 | +0.06 0.00 | 39.00 | 0.00 -0.06 | 4.20 | 4327110‡ |
| 55.00 | +0.07 0.00 | 39.50 | 0.00 -0.06 | 6.30 | 4355610 |
| 55.00 | +0.07 0.00 | 44.00 | 0.00 -0.06 | 4.20 | 4465510 |

NOTE

Part numbers suffixed by "‡" indicate housing sizes to meet ISO 7425-1.



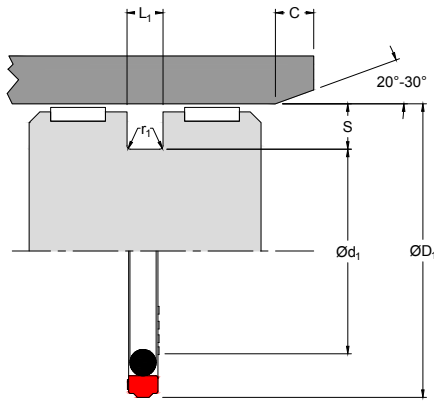
PART NUMBER RANGE

| METRIC | | | | | |
|-------------------|-------------------|-------------------|-------------------|------------------|-------------|
| $\varnothing D_1$ | TOL H9 0.00 | $\varnothing d_1$ | TOL h9 0.00 | L_1 +0.20-0 | PART No. |
| 60.00 | +0.07 0.00 | 44.50 | 0.00 -0.06 | 6.30 | 4390710‡ |
| 60.00 | +0.07 0.00 | 49.00 | 0.00 -0.06 | 4.20 | 4327010‡ |
| 63.00 | +0.07 0.00 | 47.50 | 0.00 -0.06 | 6.30 | 4431110‡ |
| 63.00 | +0.07 0.00 | 50.00 | 0.00 -0.06 | 6.30 | 4472310 |
| 63.00 | +0.07 0.00 | 52.00 | 0.00 -0.07 | 4.20 | 4326910‡ |
| 65.00 | +0.07 0.00 | 49.50 | 0.00 -0.06 | 6.30 | 4362010 |
| 65.00 | +0.07 0.00 | 52.00 | 0.00 -0.07 | 6.30 | 4384910 |
| 65.00 | +0.07 0.00 | 54.00 | 0.00 -0.07 | 4.20 | 4353010 |
| 70.00 | +0.07 0.00 | 54.50 | 0.00 -0.07 | 6.30 | 4763410 |
| 70.00 | +0.07 0.00 | 57.00 | 0.00 -0.07 | 6.30 | 4390810 |
| 70.00 | +0.07 0.00 | 59.00 | 0.00 -0.07 | 4.20 | 4326810 |
| 75.00 | +0.07 0.00 | 59.50 | 0.00 -0.07 | 6.30 | 4704910 |
| 75.00 | +0.07 0.00 | 64.00 | 0.00 -0.07 | 4.20 | 4339910 |
| 80.00 | +0.07 0.00 | 64.50 | 0.00 -0.07 | 6.30 | 4270910‡ |
| 80.00 | +0.07 0.00 | 69.00 | 0.00 -0.07 | 4.20 | 4768510‡ |
| 85.00 | +0.09 0.00 | 69.50 | 0.00 -0.07 | 6.30 | 4564010 |
| 90.00 | +0.09 0.00 | 74.50 | 0.00 -0.07 | 6.30 | 4372710 |

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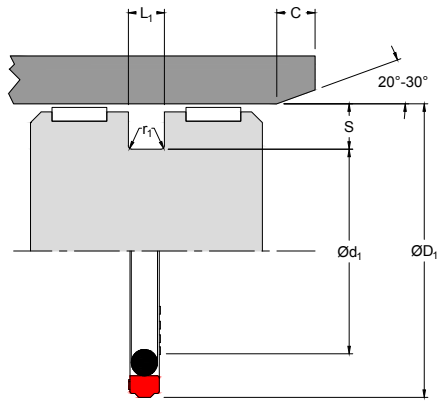
PART NUMBER RANGE

| METRIC | | | | | |
|-----------------|---------------|-----------------|---------------|---------------------------|-------------|
| ØD ₁ | TOL H9 | Ød ₁ | TOL h9 | L ₁ +0.20-0 | PART No. |
| 95.00 | +0.09 0.00 | 79.50 | 0.00 -0.07 | 6.30 | 4569510 |
| 95.00 | +0.09 0.00 | 84.00 | 0.00 -0.09 | 4.20 | 4831610 |
| 100.00 | +0.09 0.00 | 84.50 | 0.00 -0.09 | 6.30 | 4339310‡ |
| 105.00 | +0.09 0.00 | 89.50 | 0.00 -0.09 | 6.30 | 4372510 |
| 110.00 | +0.09 0.00 | 94.50 | 0.00 -0.09 | 6.30 | 4419310 |
| 115.00 | +0.09 0.00 | 94.00 | 0.00 -0.09 | 8.10 | 4788510 |
| 115.00 | +0.09 0.00 | 99.50 | 0.00 -0.09 | 6.30 | 4355810 |
| 120.00 | +0.09 0.00 | 99.00 | 0.00 -0.09 | 8.10 | 4535010 |
| 120.00 | +0.09 0.00 | 104.50 | 0.00 -0.09 | 6.30 | 4465410 |
| 125.00 | +0.10 0.00 | 104.00 | 0.00 -0.09 | 8.10 | 4376510‡ |
| 125.00 | +0.10 0.00 | 109.50 | 0.00 -0.09 | 6.30 | 4340010‡ |
| 130.00 | +0.10 0.00 | 109.00 | 0.00 -0.09 | 8.10 | 4402410 |
| 130.00 | +0.10 0.00 | 114.50 | 0.00 -0.09 | 6.30 | 4342210 |
| 135.00 | +0.10 0.00 | 114.00 | 0.00 -0.09 | 8.10 | 4535110 |
| 140.00 | +0.10 0.00 | 119.00 | 0.00 -0.09 | 8.10 | 4340110 |
| 140.00 | +0.10 0.00 | 124.50 | 0.00 -0.10 | 6.30 | 4499410 |
| 150.00 | +0.10 0.00 | 129.00 | 0.00 -0.10 | 8.10 | 4396910 |

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PART NUMBER RANGE

| METRIC | | | | | |
|-----------------|-------------------|-----------------|-------------------|---------------------------|-------------|
| ØD ₁ | TOL H9 0.00 | Ød ₁ | TOL h9 0.00 | L ₁ +0.20-0 | PART No. |
| 160.00 | +0.10 0.00 | 139.00 | 0.00 -0.10 | 8.10 | 4340210‡ |
| 165.00 | +0.10 0.00 | 144.00 | 0.00 -0.10 | 8.10 | 4452210 |
| 170.00 | +0.10 0.00 | 149.00 | 0.00 -0.10 | 8.10 | 4340310 |
| 180.00 | +0.10 0.00 | 159.00 | 0.00 -0.10 | 8.10 | 4340410 |
| 190.00 | +0.12 0.00 | 169.00 | 0.00 -0.10 | 8.10 | 4342410 |
| 200.00 | +0.12 0.00 | 179.00 | 0.00 -0.10 | 8.10 | 4340510‡ |
| 210.00 | +0.12 0.00 | 189.00 | 0.00 -0.12 | 8.10 | 4351510 |
| 220.00 | +0.12 0.00 | 199.00 | 0.00 -0.12 | 8.10 | 4735710 |
| 225.00 | +0.12 0.00 | 204.00 | 0.00 -0.12 | 8.10 | 4512810 |
| 230.00 | +0.12 0.00 | 209.00 | 0.00 -0.12 | 8.10 | 4764010 |
| 240.00 | +0.12 0.00 | 219.00 | 0.00 -0.12 | 8.10 | 4553610 |
| 250.00 | +0.12 0.00 | 229.00 | 0.00 -0.12 | 8.10 | 4393710‡ |
| 300.00 | +0.13 0.00 | 279.00 | 0.00 -0.13 | 8.10 | 4572810 |

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