

# 730

## PISTON SEAL

*Double-Acting  
Four Part Assembly with AE Rings  
for Heavy-Duty Applications*

### DESIGN

The Hallite 730 double-acting piston seal in a four part assembly is designed for use in heavy-duty applications where position holding ability is important, such as longwall mining roof support applications using water-based fluids and large diameter crane cylinders using standard hydraulic oils.

The Hallite 730 is comprised of a tough, wear resistant thermoplastic polyester elastomer (TPE) face seal pre-loaded by a profiled nitrile rubber energiser. The Hallite 730 design also contains a pair of rectangular polyacetal anti-extrusion rings.

The standard TPE face material is suitable for both roller-burnished and honed tubing. While rarely used in alternate material, the face material can be provided in a number of material options including lubricated polyester and PTFE.

For your reference, we have included an installation guide for the Hallite 730 double-acting piston seal which you can find after the part number range pages of this data sheet.



### FEATURES

- Excellent position holding characteristics under load
- High pressure and shock load capability
- Extremely well proven in longwall mining applications
- Proven on both roller-burnished and honed tubing
- Extremely well proven in HFA water-based fluids

### MATERIALS

As standard, this product comes in the following materials. Contact your local Hallite technical team if you would like to find out if this profile can be made in a custom material to suit your application. For further material details, please refer to the Hallite Material Table.

| MATERIAL OPTIONS | Name                          | Face Type | Face Colour |
|------------------|-------------------------------|-----------|-------------|
| Standard         | TPE 111-Nitrile 1411-POM 0011 | TPE       | Grey        |

## TECHNICAL DETAILS

| OPERATING CONDITIONS                 | METRIC       | INCH         |
|--------------------------------------|--------------|--------------|
| Maximum Speed                        | 0.3 m/sec    | 1.0 ft/sec   |
| Temperature Range Hydraulic Oils     | -40°C +110°C | -40°F +230°F |
| Temperature Range Water-Based Fluids | -0°C +60°C   | 32°F +140°F  |
| Maximum Pressure                     | 700 bar      | 10000 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 |       |       |       |       |
|-----------------------|-------|-------|-------|-------|
| Pressure bar          | 160   | 250   | 500   | 700   |
| Maximum Gap mm        | 1.00  | 0.80  | 0.40  | 0.25  |
| Pressure psi          | 1.00  | 0.80  | 0.40  | 0.25  |
| Maximum Gap in        | 0.040 | 0.032 | 0.016 | 0.010 |

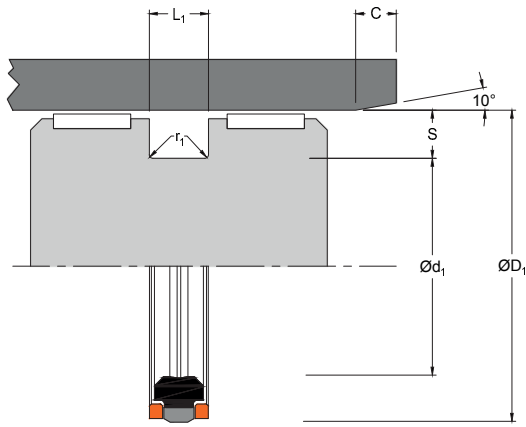
**NOTE**

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                      | $\mu\text{mRa}$ | $\mu\text{mRz}$ | $\mu\text{mRt}$ | $\mu\text{inRa}$ | $\mu\text{inRz}$ | $\mu\text{inRt}$ |
|--|-----------------|-----------------|-----------------|------------------|------------------|------------------|
| 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 | 7.50 | 10.00 | 12.50 | 15.00 |
| Min Chamfer $C$ mm         | 8.00 | 10.00 | 13.00 | 15.00 |
| Max Fillet Rad $r_1$ mm    | 0.20 | 0.40  | 0.80  | 0.80  |

| TOLERANCES | $\varnothing D_1$ | $\varnothing d_1$ | $L_1$    |
|------------|-------------------|-------------------|----------|
| mm         | H10               | h9                | +0.20 -0 |



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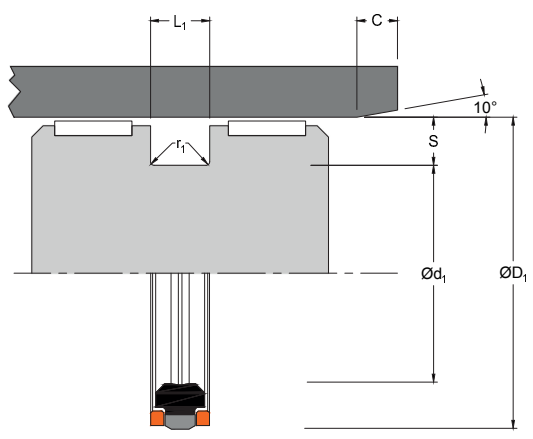
*Double-Acting  
Four Part Assembly with AE Rings  
for Heavy-Duty Applications*

### PART NUMBER RANGE

| METRIC          |               |                 |               |                           |             |
|-----------------|---------------|-----------------|---------------|---------------------------|-------------|
| ØD <sub>1</sub> | TOL<br>H10    | Ød <sub>1</sub> | TOL<br>h9     | L <sub>1</sub><br>+0.20-0 | PART<br>No. |
| 40.00           | +0.10<br>0.00 | 28.00           | 0.00<br>-0.05 | 11.50                     | 2390810     |
| 50.00           | +0.10<br>0.00 | 38.00           | 0.00<br>-0.06 | 11.50                     | 2335410     |
| 60.00           | +0.12<br>0.00 | 44.00           | 0.00<br>-0.06 | 13.00                     | 2390710     |
| 60.00           | +0.12<br>0.00 | 44.00           | 0.00<br>-0.06 | 20.50                     | 2356710     |
| 63.00           | +0.12<br>0.00 | 50.00           | 0.00<br>-0.06 | 14.50                     | 2331210     |
| 75.00           | +0.12<br>0.00 | 55.00           | 0.00<br>-0.07 | 23.00                     | 2346420     |
| 80.00           | +0.12<br>0.00 | 66.00           | 0.00<br>-0.07 | 17.00                     | 2330310     |
| 90.00           | +0.14<br>0.00 | 75.00           | 0.00<br>-0.07 | 13.50                     | 2331310     |
| 90.00           | +0.14<br>0.00 | 76.00           | 0.00<br>-0.07 | 16.00                     | 2364810     |
| 100.00          | +0.14<br>0.00 | 82.00           | 0.00<br>-0.09 | 22.50                     | 2331410     |
| 100.00          | +0.14<br>0.00 | 85.00           | 0.00<br>-0.09 | 12.50                     | 2342910*    |
| 100.00          | +0.14<br>0.00 | 85.00           | 0.00<br>-0.09 | 13.50                     | 2335010     |
| 100.00          | +0.14<br>0.00 | 86.00           | 0.00<br>-0.09 | 22.50                     | 2359710     |
| 105.00          | +0.14<br>0.00 | 80.00           | 0.00<br>-0.07 | 22.50                     | 2346710     |
| 105.00          | +0.14<br>0.00 | 91.00           | 0.00<br>-0.09 | 16.50                     | 2348210     |
| 110.00          | +0.14<br>0.00 | 95.00           | 0.00<br>-0.09 | 12.50                     | 2343010*    |
| 110.00          | +0.14<br>0.00 | 95.00           | 0.00<br>-0.09 | 16.00                     | 2331610     |

#### NOTE

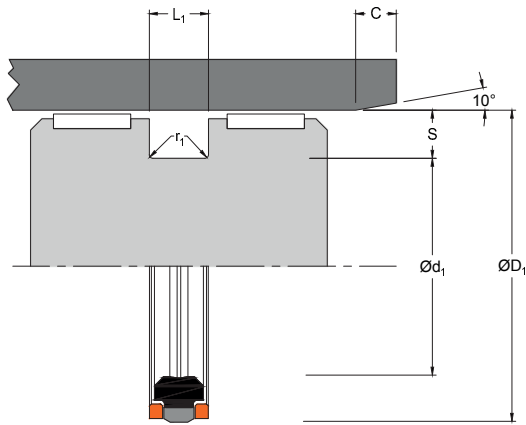
Part numbers suffixed by "\*" indicate use of Hallite 754 face ring.



## PART NUMBER RANGE

| METRIC            |               |                   |               |                  |             |
|-------------------|---------------|-------------------|---------------|------------------|-------------|
| $\varnothing D_1$ | TOL<br>H10    | $\varnothing d_1$ | TOL<br>h9     | $L_1$<br>+0.20-0 | PART<br>No. |
| 115.00            | +0.14<br>0.00 | 90.00             | 0.00<br>-0.09 | 21.00            | 2329110     |
| 115.00            | +0.14<br>0.00 | 97.00             | 0.00<br>-0.09 | 22.50            | 2356110     |
| 115.00            | +0.14<br>0.00 | 100.00            | 0.00<br>-0.09 | 16.00            | 2329210     |
| 120.00            | +0.14<br>0.00 | 105.00            | 0.00<br>-0.09 | 16.00            | 2337410     |
| 125.00            | +0.16<br>0.00 | 110.00            | 0.00<br>-0.09 | 15.80            | 2331510     |
| 130.00            | +0.16<br>0.00 | 113.00            | 0.00<br>-0.09 | 12.50            | 2339110*    |
| 130.00            | +0.16<br>0.00 | 113.00            | 0.00<br>-0.09 | 20.50            | 2369010     |
| 135.00            | +0.16<br>0.00 | 118.00            | 0.00<br>-0.09 | 20.50            | 2348110     |
| 135.00            | +0.16<br>0.00 | 120.00            | 0.00<br>-0.09 | 16.00            | 2334010     |
| 140.00            | +0.16<br>0.00 | 123.00            | 0.00<br>-0.10 | 16.00            | 2357910     |
| 140.00            | +0.16<br>0.00 | 125.00            | 0.00<br>-0.10 | 16.00            | 2329410     |
| 150.00            | +0.16<br>0.00 | 130.00            | 0.00<br>-0.10 | 16.00            | 2339010     |
| 150.00            | +0.16<br>0.00 | 133.00            | 0.00<br>-0.10 | 20.00            | 2360510     |
| 150.00            | +0.16<br>0.00 | 135.00            | 0.00<br>-0.10 | 16.00            | 2338210     |
| 160.00            | +0.16<br>0.00 | 143.00            | 0.00<br>-0.10 | 20.00            | 2365510     |
| 160.00            | +0.16<br>0.00 | 145.00            | 0.00<br>-0.10 | 16.00            | 2331910     |
| 165.00            | +0.16<br>0.00 | 145.00            | 0.00<br>-0.10 | 20.00            | 2348910     |

**NOTE** Part numbers suffixed by "\*" indicate use of Hallite 754 face ring.



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## PISTON SEAL

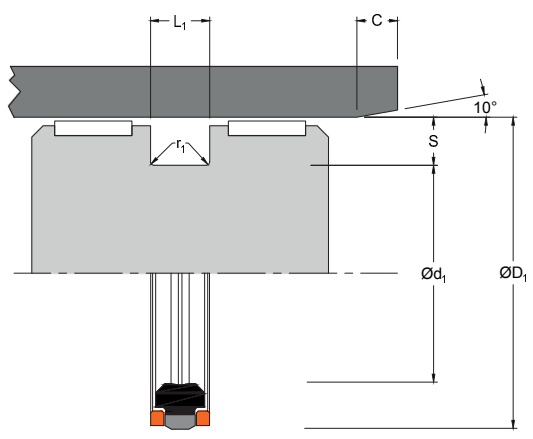
*Double-Acting  
Four Part Assembly with AE Rings  
for Heavy-Duty Applications*

### PART NUMBER RANGE

| METRIC          |               |                 |               |                           |             |
|-----------------|---------------|-----------------|---------------|---------------------------|-------------|
| ØD <sub>1</sub> | TOL<br>H10    | Ød <sub>1</sub> | TOL<br>h9     | L <sub>1</sub><br>+0.20-0 | PART<br>No. |
| 165.00          | +0.16<br>0.00 | 150.00          | 0.00<br>-0.10 | 16.00                     | 2332010     |
| 170.00          | +0.16<br>0.00 | 145.00          | 0.00<br>-0.10 | 25.00                     | 2345510     |
| 170.00          | +0.16<br>0.00 | 150.00          | 0.00<br>-0.10 | 16.00                     | 2331110     |
| 175.00          | +0.16<br>0.00 | 155.00          | 0.00<br>-0.10 | 16.00                     | 2335110     |
| 180.00          | +0.16<br>0.00 | 160.00          | 0.00<br>-0.10 | 16.00                     | 2328510     |
| 180.00          | +0.16<br>0.00 | 163.00          | 0.00<br>-0.10 | 20.00                     | 2365210     |
| 185.00          | +0.19<br>0.00 | 165.00          | 0.00<br>-0.10 | 16.00                     | 2328410     |
| 185.00          | +0.19<br>0.00 | 165.00          | 0.00<br>-0.10 | 20.00                     | 2364010     |
| 190.00          | +0.19<br>0.00 | 170.00          | 0.00<br>-0.10 | 16.00                     | 2332210     |
| 195.00          | +0.19<br>0.00 | 175.00          | 0.00<br>-0.10 | 16.00                     | 2334710     |
| 200.00          | +0.19<br>0.00 | 180.00          | 0.00<br>-0.10 | 16.00                     | 2329310     |
| 200.00          | +0.19<br>0.00 | 180.00          | 0.00<br>-0.10 | 20.00                     | 2348810     |
| 200.00          | +0.19<br>0.00 | 183.00          | 0.00<br>-0.12 | 20.00                     | 2365010     |
| 210.00          | +0.19<br>0.00 | 190.00          | 0.00<br>-0.12 | 16.00                     | 2332410     |
| 210.00          | +0.19<br>0.00 | 190.00          | 0.00<br>-0.12 | 20.00                     | 2364710     |
| 215.00          | +0.19<br>0.00 | 195.00          | 0.00<br>-0.12 | 16.00                     | 2332510     |
| 215.00          | +0.19<br>0.00 | 195.00          | 0.00<br>-0.12 | 20.00                     | 2345110     |

#### NOTE

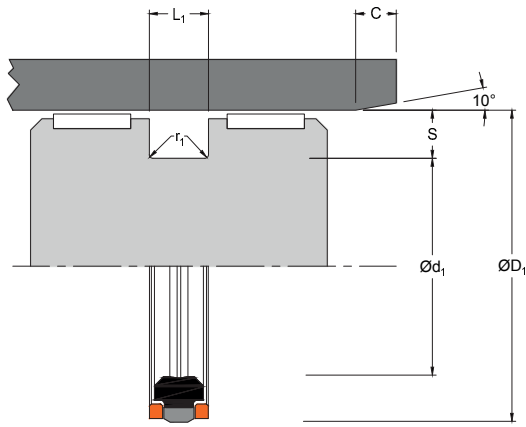
Part numbers suffixed by "\*" indicate use of Hallite 754 face ring.



## PART NUMBER RANGE

| METRIC            |               |                   |               |                  |             |
|-------------------|---------------|-------------------|---------------|------------------|-------------|
| $\varnothing D_1$ | TOL<br>H10    | $\varnothing d_1$ | TOL<br>h9     | $L_1$<br>+0.20-0 | PART<br>No. |
| 220.00            | +0.19<br>0.00 | 195.00            | 0.00<br>-0.12 | 16.00            | 2345810     |
| 220.00            | +0.19<br>0.00 | 195.00            | 0.00<br>-0.12 | 22.00            | 2333920     |
| 220.00            | +0.19<br>0.00 | 195.00            | 0.00<br>-0.12 | 25.00            | 2333910     |
| 220.00            | +0.19<br>0.00 | 200.00            | 0.00<br>-0.12 | 20.50            | 2356510     |
| 224.00            | +0.19<br>0.00 | 204.00            | 0.00<br>-0.12 | 20.50            | 2348510     |
| 225.00            | +0.19<br>0.00 | 205.00            | 0.00<br>-0.12 | 16.00            | 2332610     |
| 225.00            | +0.19<br>0.00 | 205.00            | 0.00<br>-0.12 | 20.00            | 2346810     |
| 230.00            | +0.19<br>0.00 | 210.00            | 0.00<br>-0.12 | 16.00            | 2332710     |
| 230.00            | +0.19<br>0.00 | 210.00            | 0.00<br>-0.12 | 20.00            | 2344510     |
| 240.00            | +0.19<br>0.00 | 215.00            | 0.00<br>-0.12 | 25.00            | 2333010     |
| 240.00            | +0.19<br>0.00 | 220.00            | 0.00<br>-0.12 | 25.00            | 2364310     |
| 245.00            | +0.19<br>0.00 | 220.00            | 0.00<br>-0.12 | 25.00            | 2328810     |
| 250.00            | +0.19<br>0.00 | 225.00            | 0.00<br>-0.12 | 25.00            | 2348310     |
| 255.00            | +0.21<br>0.00 | 230.00            | 0.00<br>-0.12 | 25.00            | 2348320     |
| 260.00            | +0.21<br>0.00 | 230.00            | 0.00<br>-0.12 | 30.00            | 2347810     |
| 260.00            | +0.21<br>0.00 | 235.00            | 0.00<br>-0.12 | 25.00            | 2347910     |
| 275.00            | +0.21<br>0.00 | 250.00            | 0.00<br>-0.12 | 25.00            | 2362210     |

**NOTE** Part numbers suffixed by "\*" indicate use of Hallite 754 face ring.



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## PISTON SEAL

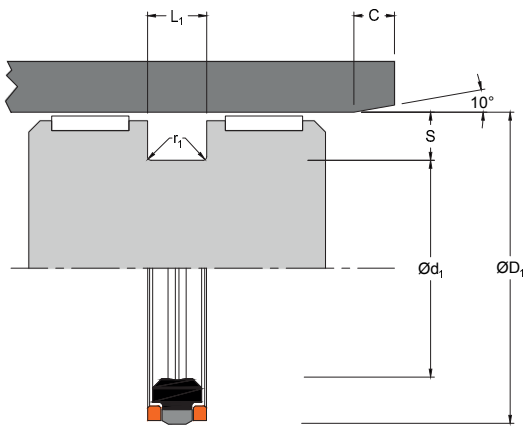
*Double-Acting  
Four Part Assembly with AE Rings  
for Heavy-Duty Applications*

### PART NUMBER RANGE

| METRIC          |               |                 |               |                           |             |
|-----------------|---------------|-----------------|---------------|---------------------------|-------------|
| ØD <sub>1</sub> | TOL<br>H10    | Ød <sub>1</sub> | TOL<br>h9     | L <sub>1</sub><br>+0.20-0 | PART<br>No. |
| 280.00          | +0.21<br>0.00 | 255.00          | 0.00<br>-0.13 | 25.00                     | 2333510     |
| 285.00          | +0.21<br>0.00 | 260.00          | 0.00<br>-0.13 | 25.00                     | 2362410     |
| 290.00          | +0.21<br>0.00 | 265.00          | 0.00<br>-0.13 | 27.00                     | 2364410     |
| 300.00          | +0.21<br>0.00 | 275.00          | 0.00<br>-0.13 | 25.00                     | 2333610     |
| 305.00          | +0.21<br>0.00 | 280.00          | 0.00<br>-0.13 | 25.00                     | 2333630     |
| 310.00          | +0.21<br>0.00 | 285.00          | 0.00<br>-0.13 | 25.00                     | 2333710     |
| 320.00          | +0.23<br>0.00 | 290.00          | 0.00<br>-0.13 | 30.00                     | 2348010     |
| 340.00          | +0.23<br>0.00 | 310.00          | 0.00<br>-0.13 | 30.00                     | 2366010     |
| 340.00          | +0.23<br>0.00 | 310.00          | 0.00<br>-0.13 | 32.00                     | 2390910     |
| 345.00          | +0.23<br>0.00 | 315.00          | 0.00<br>-0.13 | 30.00                     | 2363610     |
| 350.00          | +0.23<br>0.00 | 320.00          | 0.00<br>-0.14 | 30.00                     | 2345410     |
| 360.00          | +0.23<br>0.00 | 330.00          | 0.00<br>-0.14 | 30.00                     | 2345430     |
| 360.00          | +0.23<br>0.00 | 330.00          | 0.00<br>-0.14 | 31.50                     | 2365410     |
| 370.00          | +0.23<br>0.00 | 340.00          | 0.00<br>-0.14 | 30.00                     | 2362710     |
| 380.00          | +0.23<br>0.00 | 350.00          | 0.00<br>-0.14 | 32.00                     | 2362110     |
| 390.00          | +0.23<br>0.00 | 360.00          | 0.00<br>-0.14 | 32.00                     | 2362120     |
| 400.00          | +0.23<br>0.00 | 370.00          | 0.00<br>-0.14 | 32.00                     | 2359810     |

#### NOTE

Part numbers suffixed by "\*" indicate use of Hallite 754 face ring.



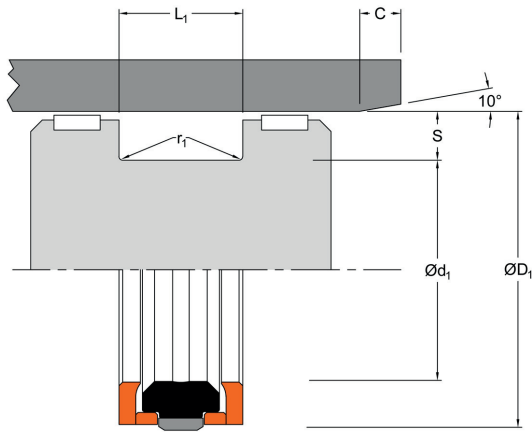
## PART NUMBER RANGE

| METRIC          |               |                 |               |                           |             |
|-----------------|---------------|-----------------|---------------|---------------------------|-------------|
| ØD <sub>1</sub> | TOL<br>H10    | Ød <sub>1</sub> | TOL<br>h9     | L <sub>1</sub><br>+0.20-0 | PART<br>No. |
| 410.00          | +0.25<br>0.00 | 380.00          | 0.00<br>-0.14 | 32.00                     | 2359820     |
| 420.00          | +0.25<br>0.00 | 390.00          | 0.00<br>-0.14 | 32.00                     | 2366410     |
| 440.00          | +0.25<br>0.00 | 410.00          | 0.00<br>-0.16 | 32.00                     | 2365910     |
| 450.00          | +0.25<br>0.00 | 410.00          | 0.00<br>-0.16 | 32.00                     | 2390510     |
| 480.00          | +0.25<br>0.00 | 440.00          | 0.00<br>-0.16 | 32.00                     | 2391010     |
| 500.00          | +0.25<br>0.00 | 470.00          | 0.00<br>-0.16 | 32.00                     | 2369410     |
| 530.00          | 0.28<br>0.00  | 500.00          | 0.00<br>-0.16 | 32.00                     | 2391910     |
| 600.00          | 0.28<br>0.00  | 560.00          | 0.00<br>-0.18 | 35.00                     | 2392610     |

### NOTE

Part numbers suffixed by "\*" indicate use of Hallite 754 face ring.





# 730

## PISTON SEAL

*Double-Acting  
Assembly with Special Support Rings  
for Inner Stage of Leg Cylinder*

### PART NUMBER RANGE

| METRIC          |              |                 |               |                           |             |
|-----------------|--------------|-----------------|---------------|---------------------------|-------------|
| ØD <sub>1</sub> | TOL<br>H10   | Ød <sub>1</sub> | TOL<br>h9     | L <sub>1</sub><br>+0.20-0 | PART<br>No. |
| 110.00          | 0.14<br>0.00 | 95.00           | 0.00<br>-0.09 | 18.00                     | 2331640*    |
| 115.00          | 0.14<br>0.00 | 97.00           | 0.00<br>-0.09 | 30.00                     | 2328910*    |
| 130.00          | 0.16<br>0.00 | 105.00          | 0.00<br>-0.09 | 30.00                     | 2356610*    |
| 135.00          | 0.16<br>0.00 | 110.00          | 0.00<br>-0.09 | 30.00                     | 2346610*    |
| 155.00          | 0.16<br>0.00 | 135.00          | 0.00<br>-0.10 | 20.00                     | 2356210*    |
| 165.00          | 0.16<br>0.00 | 145.00          | 0.00<br>-0.10 | 25.40                     | 2329010*    |
| 170.00          | 0.16<br>0.00 | 150.00          | 0.00<br>-0.10 | 20.00                     | 2331130*    |
| 175.00          | 0.16<br>0.00 | 155.00          | 0.00<br>-0.10 | 20.00                     | 2335130*    |
| 180.00          | 0.16<br>0.00 | 160.00          | 0.00<br>-0.10 | 18.00                     | 2328520*    |
| 180.00          | 0.16<br>0.00 | 163.00          | 0.00<br>-0.10 | 25.00                     | 2365220(1)  |
| 190.00          | 0.19<br>0.00 | 160.00          | 0.00<br>-0.10 | 30.00                     | 2338610*    |
| 200.00          | 0.19<br>0.00 | 175.00          | 0.00<br>-0.10 | 28.00                     | 2334320(2)  |
| 200.00          | 0.19<br>0.00 | 183.00          | 0.00<br>-0.12 | 25.00                     | 2365020(1)  |
| 210.00          | 0.19<br>0.00 | 190.00          | 0.00<br>-0.12 | 24.00                     | 2332420(2)  |
| 220.00          | 0.19<br>0.00 | 200.00          | 0.00<br>-0.12 | 28.50                     | 2356540(2)  |
| 225.00          | 0.19<br>0.00 | 205.00          | 0.00<br>-0.12 | 25.00                     | 2332620*    |
| 230.00          | 0.19<br>0.00 | 205.00          | 0.00<br>-0.12 | 25.00                     | 2360720*    |

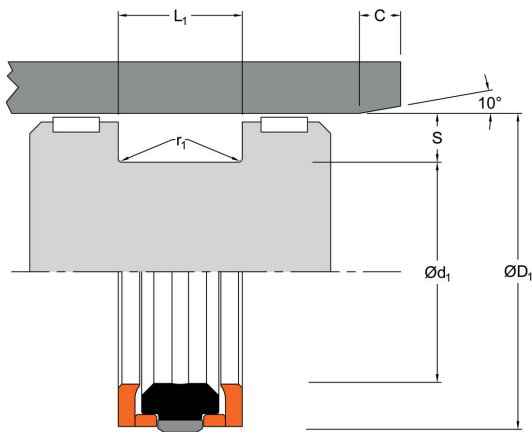
#### NOTE

Part numbers suffixed by "\*" indicate use of special full depth support rings.

Part numbers suffixed by (1) indicate 730 with one full depth support ring.

Part numbers suffixed by (2) indicate 730 with two full depth support rings.

For further information about our 730 support ring products, please contact your local Hallite sales office.



## PART NUMBER RANGE

| METRIC          |              |                 |               |                           |             |
|-----------------|--------------|-----------------|---------------|---------------------------|-------------|
| ØD <sub>1</sub> | TOL<br>H10   | Ød <sub>1</sub> | TOL<br>h9     | L <sub>1</sub><br>+0.20-0 | PART<br>No. |
| 230.00          | 0.19<br>0.00 | 205.00          | 0.00<br>-0.12 | 30.00                     | 2360730*    |
| 235.00          | 0.19<br>0.00 | 210.00          | 0.00<br>-0.12 | 30.00                     | 2338720*    |
| 240.00          | 0.19<br>0.00 | 215.00          | 0.00<br>-0.12 | 33.00                     | 2333030(2)  |
| 250.00          | 0.19<br>0.00 | 225.00          | 0.00<br>-0.12 | 33.00                     | 2348330(2)  |
| 260.00          | 0.21<br>0.00 | 235.00          | 0.00<br>-0.12 | 30.00                     | 2347920(1)  |
| 260.00          | 0.21<br>0.00 | 235.00          | 0.00<br>-0.12 | 35.00                     | 2347930(2)  |
| 270.00          | 0.21<br>0.00 | 245.00          | 0.00<br>-0.12 | 24.00                     | 2363210*    |
| 270.00          | 0.21<br>0.00 | 245.00          | 0.00<br>-0.12 | 29.00                     | 2363220*    |
| 280.00          | 0.21<br>0.00 | 255.00          | 0.00<br>-0.13 | 30.00                     | 2333540(1)  |
| 280.00          | 0.21<br>0.00 | 255.00          | 0.00<br>-0.13 | 33.00                     | 2333530(2)  |
| 290.00          | 0.21<br>0.00 | 265.00          | 0.00<br>-0.13 | 37.00                     | 2364440(2)  |
| 300.00          | 0.21<br>0.00 | 275.00          | 0.00<br>-0.13 | 33.00                     | 2333620(2)  |
| 305.00          | 0.21<br>0.00 | 280.00          | 0.00<br>-0.13 | 30.00                     | 2333640(1)  |
| 310.00          | 0.21<br>0.00 | 285.00          | 0.00<br>-0.13 | 33.00                     | 2333720(2)  |
| 330.00          | 0.23<br>0.00 | 305.00          | 0.00<br>-0.13 | 25.00                     | 2341610*    |
| 360.00          | 0.23<br>0.00 | 330.00          | 0.00<br>-0.14 | 35.00                     | 2345440(1)  |
| 360.00          | 0.23<br>0.00 | 330.00          | 0.00<br>-0.14 | 41.50                     | 2365420(2)  |
| 380.00          | 0.23<br>0.00 | 350.00          | 0.00<br>-0.14 | 37.00                     | 2362130(1)  |

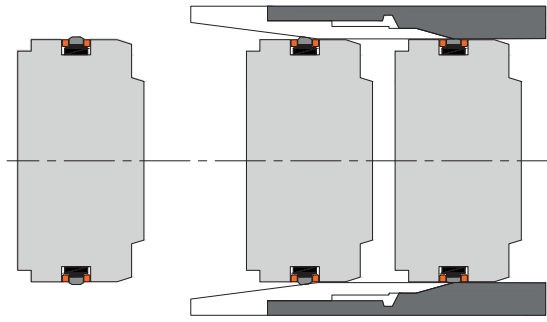
### NOTE

Part numbers suffixed by "\*" indicate use of special full depth support rings.

Part numbers suffixed by (1) indicate 730 with one full depth support ring.

Part numbers suffixed by (2) indicate 730 with two full depth support rings.

For further information about our 730 support ring products, please contact your local Hallite sales office.



# 730

## PISTON SEAL

*Double-Acting  
Four Part Assembly with AE Rings  
for Heavy-Duty Applications*

### INSTALLATION INSTRUCTIONS FOR HALLITE 730

**NOTE**

Before installation of the seals onto the piston, check that the piston is free of dirt and sharp edges. Sharp edged tools which could damage the seal during installation must not be used.

### INSTALLATION

The rubber energiser must be installed first. It can be pulled over the piston with a circling movement using a flexible plastic installation strip to stretch the energiser.

The energiser should then be positioned in the centre of the groove with a clearance on either side.

The first AE-ring is fitted next. It must be positioned opposite the installation side for the TPE face. The face is fitted over the NBR energiser using a flexible plastic installation strip. Please note that the TPE face ring needs to be installed directly against the AE ring. This can be easily achieved by circling movements with a circling movement using a flexible plastic installation strip.

The second AE ring can now be snapped on. To provide the necessary seal interference, the seal will be considerably larger than the piston diameter. The assembly chamfer on the cylinder tube should be as long and as flat as possible. Ensure that all edges are deburred and the intersection points of the assembly chamfers with the bore are smoothly rounded. A maximum slope angle of 10° is recommended.

Before the cylinders are assembled, the seal surface should be well greased. The grease also helps the seal to slip into the tube easily. For tubes longer than 800 mm the bore needs to be greased as well.

### FURTHER POINTS

Keep the surface between energiser and face ring free of grease.

For Hallite 730 with nominal groove lengths above 16 mm, an installation sleeve is required. An installation sleeve may also be helpful for groove lengths up to 16 mm. This sleeve is needed to extend the assembly chamfer. A slope angle between 7° and 10° is required to prevent the face ring deforming into conical shape, which would allow the rear AE-ring to slip under the TPE face ring. The installation sleeve should be machined from a suitable plastic, such as polyacetal or polyamide. It can be made as a one piece design or as two half shells.

When automatic screwing equipment is used for the installation of the associated gland the maximum surface speed of the seal, with respect to the bore, must not exceed 0.1 m/s.