



## Piston seals

### TECHNICAL DETAILS

METRIC

INCH



### OPERATING CONDITIONS

MAXIMUM SPEED  
 TEMPERATURE RANGE  
 MAXIMUM PRESSURE  
 SURFACE ROUGHNESS  
 DYNAMIC SEALING FACE  $\varnothing D_1$   
 STATIC SEALING FACE  $\varnothing d_1$   $\varnothing d_2$   
 STATIC HOUSING FACES  $\varnothing d_3$   $L_1$   $L_2$

0.5 m/sec  
 -30°C + 100°C  
 700 bar

1.5 ft/sec  
 -22°F + 212°F  
 10,000 p.s.i.

$\mu\text{mRa}$      $\mu\text{mRt}$   
 0.1  $\ddot{\text{O}}$  0.4    4 max  
 1.6 max    10 max  
 3.2 max    16 max

$\mu\text{inCLA}$      $\mu\text{inRMS}$   
 4  $\ddot{\text{O}}$  16    5  $\ddot{\text{O}}$  18  
 63 max    70 max  
 125 max    140 max

### CHAMFERS & RADII

GROOVE SECTION S mm  
 MIN CHAMFER C mm  
 MIN CHAMFER  $C_1$  mm  
 MAX FILLET RAD  $r_1$  mm  
 MAX FILLET RAD  $r_2$  mm  
 GROOVE SECTION S in  
 MIN CHAMFER C in  
 MIN CHAMFER  $C_1$  in  
 MAX FILLET RAD  $r_1$  in  
 MAX FILLET RAD  $r_2$  in

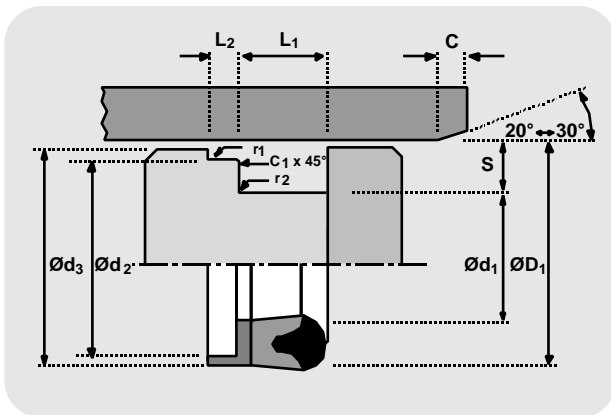
5.0	7.5	10.0	12.5	15.0
2.5	4.0	5.0	6.5	7.5
1.0	1.0	1.0	1.5	1.5
0.2	0.2	0.2	0.4	0.4
0.2	0.2	0.2	0.4	0.4

0.187	0.250	0.312	0.375	0.500	0.625
0.093	0.125	0.156	0.187	0.217	0.250
0.032	0.032	0.032	0.062	0.062	0.062
0.008	0.008	0.008	0.008	0.016	0.016
0.008	0.008	0.008	0.008	0.016	0.016

### TOLERANCES

mm  
in

$\varnothing D_1$	$\varnothing d_1$	$\varnothing d_1$	$\varnothing d_1$	$L_1$	$L_2$
H8	js11	h9	js11	+0.50 +0.25	0 -0.15
H8	js11	h9	js11	+0.02 +0.01	0 -0.005



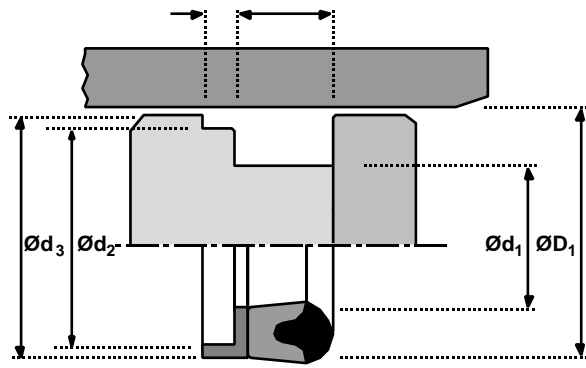
## DESIGN

The Hallite 71 single acting fluid seal assembly consists of the standard Hallite 18 single acting fluid seal and the Hallite 62 L shaped bearing ring (wear ring). Manufactured in very hard wearing polyacetal resin, the bearing ring was originally designed to replace conventional bronze or cast iron piston bearings, reducing the problem of cylinder bore scoring to a minimum and allowing the designer to use compact, strong, cost effective steel pistons. The inherent nature of the material enables it to settle to the bore size once it has been pressurized, therefore providing an excellent anti-extrusion member and also increasing seal life.

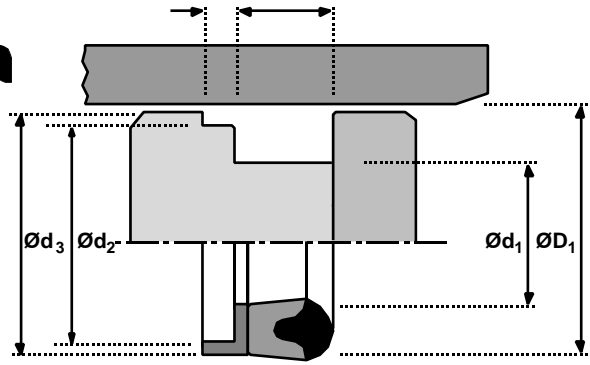
Due to its flexibility it should not be used primarily as a bearing where severe knuckling or excessive side loading may occur. Under these conditions we suggest the use of conventional bronze or cast iron bearings or the additional use of the Hallite 506 bearings.

The proportions of the range have been determined to give a satisfactory performance when used with the recommended operating conditions.

Other sizes are available outside this range.



ØD <sub>1</sub>	TOL H8	Ød <sub>1</sub>	TOL js11	Ød <sub>2</sub>	TOL h9	Ød <sub>3</sub>	TOL js11	L <sub>1</sub> + 0.50 + 0.25	L <sub>2</sub> 0 - 0.15	PART No.
40	+0.062 +0.000	25	+0.07 -0.07	34.85	+0.000 -0.062	39.00	+0.08 -0.08	13.50	6.00	0472810
50	+0.062 +0.000	35	+0.08 -0.08	44.85	+0.000 -0.062	48.50	+0.08 -0.08	13.50	6.00	0474610
60	+0.074 +0.000	40	+0.08 -0.08	53.85	+0.000 -0.074	58.50	+0.10 -0.10	17.00	7.00	0282010
63	+0.074 +0.000	48	+0.08 -0.08	57.85	+0.000 -0.074	61.50	+0.10 -0.10	13.50	6.00	0205210
65	+0.074 +0.000	50	+0.08 -0.08	59.85	+0.000 -0.074	63.50	+0.10 -0.10	13.50	6.00	0383810
70	+0.074 +0.000	50	+0.08 -0.08	63.85	+0.000 -0.074	68.00	+0.10 -0.10	17.00	7.00	0294610
75	+0.074 +0.000	55	+0.10 -0.10	68.85	+0.000 -0.074	73.00	+0.10 -0.10	17.00	7.00	0818610
80	+0.074 +0.000	60	+0.10 -0.10	73.85	+0.000 -0.074	78.00	+0.10 -0.10	17.00	7.00	0294910
90	+0.087 +0.000	70	+0.10 -0.10	83.85	+0.000 -0.087	88.00	+0.11 -0.11	17.00	7.00	0296010
100	+0.087 +0.000	80	+0.10 -0.10	93.85	+0.000 -0.087	98.00	+0.11 -0.11	17.00	7.00	0295110
110	+0.087 +0.000	90	+0.11 -0.11	103.85	+0.000 -0.087	108.00	+0.11 -0.11	18.00	7.00	0712410
120	+0.087 +0.000	100	+0.11 -0.11	113.85	+0.000 -0.087	118.00	+0.11 -0.11	17.00	7.00	0296110
125	+0.100 +0.000	100	+0.11 -0.11	118.85	+0.000 -0.087	123.00	+0.13 -0.13	22.00	9.50	0418610
130	+0.100 +0.000	104	+0.11 -0.11	123.85	+0.000 -0.100	128.00	+0.13 -0.13	22.00	9.50	0244310
140	+0.100 +0.000	120	+0.11 -0.11	133.85	+0.000 -0.100	138.00	+0.13 -0.13	15.00	7.00	0250510
150	+0.100 +0.000	120	+0.11 -0.11	143.85	+0.000 -0.100	148.00	+0.13 -0.13	27.00	9.50	1289510
160	+0.100 +0.000	135	+0.13 -0.13	153.85	+0.000 -0.100	158.00	+0.13 -0.13	22.00	9.50	0080410
180	+0.100 +0.000	160	+0.13 -0.13	173.85	+0.000 -0.100	178.00	+0.13 -0.13	18.00	7.00	1283110



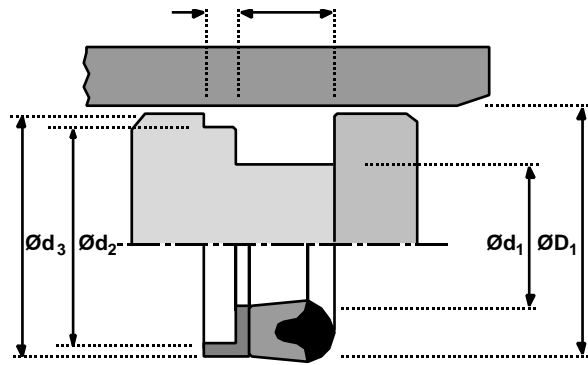
ØD <sub>1</sub>	TOL H8	Ød <sub>1</sub>	TOL js11	Ød <sub>2</sub>	TOL h9	Ød <sub>3</sub>	TOL js11	L <sub>1</sub> + 0.02 + 0.01	L <sub>2</sub> 0 - 0.005	PART No.
1.000	+0.002 +0.000	0.625	+0.002 -0.002	0.868	+0.000 -0.002	0.968	+0.003 -0.003	0.343	0.187	1247610
1.250	+0.002 +0.000	0.750	+0.003 -0.003	1.118	+0.000 -0.002	1.218	+0.003 -0.003	0.437	0.250	0403710
1.375	+0.002 +0.000	0.875	+0.003 -0.003	1.238	+0.000 -0.002	1.343	+0.003 -0.003	0.437	0.250	0401310
1.500	+0.002 +0.000	1.000	+0.003 -0.003	1.371	+0.000 -0.002	1.468	+0.003 -0.003	0.437	0.250	0422410
1.750	+0.002 +0.000	1.125	+0.003 -0.003	1.555	+0.000 -0.002	1.687	+0.003 -0.003	0.531	0.250	0778210
2.000	+0.003 +0.000	1.375	+0.003 -0.003	1.805	+0.000 -0.002	1.937	+0.004 -0.004	0.531	0.250	0778410
2.250	+0.003 +0.000	1.625	+0.003 -0.003	2.055	+0.000 -0.003	2.187	+0.004 -0.004	0.531	0.250	1432610
2.500	+0.003 +0.000	1.875	+0.003 -0.003	2.305	+0.000 -0.003	2.437	+0.004 -0.004	0.531	0.250	0867210
2.625	+0.003 +0.000	2.000	+0.004 -0.004	2.428	+0.000 -0.003	2.562	+0.004 -0.004	0.531	0.250	1371010
2.750	+0.003 +0.000	2.000	+0.004 -0.004	2.485	+0.000 -0.003	2.687	+0.004 -0.004	0.687	0.250	1369110
3.000	+0.003 +0.000	2.250	+0.004 -0.004	2.735	+0.000 -0.003	2.937	+0.004 -0.004	0.687	0.250	1098410
3.250	+0.003 +0.000	2.500	+0.004 -0.004	2.985	+0.000 -0.003	3.187	+0.004 -0.004	0.687	0.250	0782410
3.500	+0.003 +0.000	2.750	+0.004 -0.004	3.235	+0.000 -0.003	3.437	+0.004 -0.004	0.687	0.250	0437810
3.750	+0.003 +0.000	3.000	+0.004 -0.004	3.485	+0.000 -0.003	3.687	+0.004 -0.004	0.687	0.250	0410510
4.000	+0.003 +0.000	3.250	+0.004 -0.004	3.735	+0.000 -0.003	3.937	+0.004 -0.004	0.687	0.250	1407710
4.250	+0.003 +0.000	3.500	+0.004 -0.004	3.985	+0.000 -0.003	4.187	+0.004 -0.004	0.687	0.250	1128810
4.500	+0.003 +0.000	3.500	+0.004 -0.004	4.234	+0.000 -0.003	4.437	+0.004 -0.004	0.875	0.375	0448810
4.750	+0.004 +0.000	3.750	+0.004 -0.004	4.485	+0.000 -0.003	4.687	+0.004 -0.004	0.875	0.375	1007010
5.000	+0.004 +0.000	4.000	+0.004 -0.004	4.735	+0.000 -0.004	4.937	+0.005 -0.005	0.875	0.375	0443010
5.250	+0.004 +0.000	4.250	+0.004 -0.004	4.985	+0.000 -0.004	5.187	+0.005 -0.005	0.875	0.375	0892210
5.500	+0.004 +0.000	4.500	+0.004 -0.004	5.236	+0.000 -0.004	5.437	+0.005 -0.005	0.875	0.375	0133210
6.000	+0.004 +0.000	5.000	+0.005 -0.005	5.736	+0.000 -0.004	5.937	+0.005 -0.005	0.875	0.375	1367010
6.500	+0.004 +0.000	5.500	+0.005 -0.005	6.236	+0.000 -0.004	6.437	+0.005 -0.005	0.875	0.375	1164110

# Hallite

Piston seals

# 71

inch



$\text{ØD}_1$	TOL H8	$\text{Ød}_1$	TOL js11	$\text{Ød}_2$	TOL h9	$\text{Ød}_3$	TOL js11	L1 + 0.50 + 0.25	L2 0 - 0.15	PART No.
7.000	+0.004 +0.000	6.000	+0.005 -0.005	6.736	+0.000 -0.004	6.937	+0.005 -0.005	0.875	0.375	1188810

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