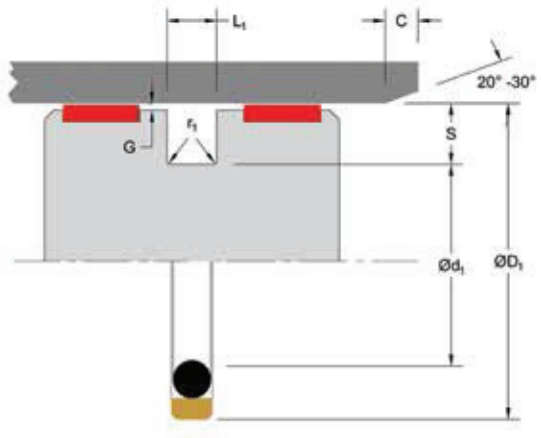


P54

PISTON SEAL

Double-Acting

TECHNICAL DETAILS

The Hallite P54 is a double-acting, o-ring energized, low-friction piston seal that performs well in both high- and low-pressure systems. High-performance Armorlene® materials, like HLX, provide outstanding wear and extrusion-resistance properties as well as large range of temperature and media compatibility. The P54 has a proven design pedigree as a high-performance seal used in demanding applications. The standard P54 seal face includes pressure notches, which makes the seal very responsive to changes in pressure or direction of travel. Used successfully for years in performance-critical applications in construction equipment, machine tools, material handling, agricultural equipment, and other industries, the Hallite P54 is a workhorse compact, double- acting, piston-sealing solution. Its design fits a variety of housing sizes, including ISO 7425-1 grooves, and is offered in a wide range of metric and inch options. Hallite recommends proper guidance be used with this seal in heavy-duty applications (see Hallite Bearings section).

This seal is available in a variety of Hallite's high-performance Armorlene® and Hythane® materials to suit a wide range of demanding applications.

FEATURES

- No stick-slip
- Low breakout and running friction
- Excellent in high-speed applications
- Compact piston design
- Seal ring component can be machined to any size
- Pressure notches to optimize seal response at all pressures

Part Number Structure

P54MR00900NHLX _

P54	M	R	00900	N	HLX	___
PROFILE DESIGNATION	**UNIT OF MEASUREMENT** **M** = Metric **E** = Inch	**APPLICATION** Refer to ***Installation Recommendations*** and use designator for desired application	**BORE DIAMETER** **Metric** = mm X 10 **Inch** = inches X 1000	**ENERGIZER MATERIAL** Refer to ***Energizer Table*** for desired energizer material	**PTFE MATERIAL** Refer to ***Material Table*** for desired PTFE (face) material	**SPECIAL FEATURE** **Blank** = Std profile (with notches) **X** = No Notches *Notches not offered with groove widths (L_1) of 2.2mm (0.087in) or 3.2mm (0.126in)*

OPERATING CONDITIONS

	metric	inch
Maximum Speed	Up to 15m/sec	Up to 50.0ft/sec
Temperature Range*	-45 to 200°C	-49 to 392°F
Maximum Dynamic Pressure**	600 bar	8700 psi

**Dependent upon energizer used (NBR, FKM, etc.). **For pressures above 400 bar (5800 psi), contact Hallite Engineering.*

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.

SURFACE FINISH RECOMMENDATIONS

	metric			inch			RMR*
SURFACE ROUGHNESS	**µMRA**	**µMRZ**	**µMRT**	**µINRA**	**µINRZ**	**µINRT**	
Dynamic Sealing Face $ØD_1$	0.05 - 0.2	1.3 max	2 max	2 - 8	52 max	78 max	60% - 90%
Static Sealing Face $Ød_1$	1.6 max	7 max	10 max	63 max	276 max	394 max	
Static Housing Faces L_1	3.2 max	10 max	16 max	125 max	394 max	630 max	

**RMR is measured at a depth of 25% of the Rz value based upon a reference level (zero line) at 5% material/bearing area.*

ENERGIZER TABLE

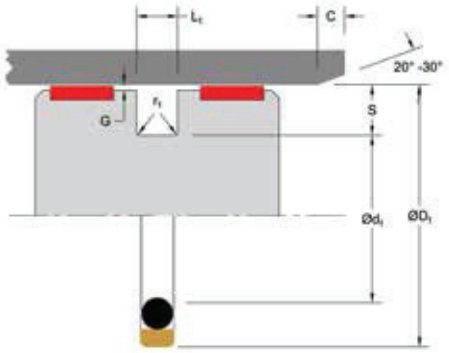
ENERGIZER MATERIAL (SHORE A)	ENERGIZER TYPE	ENERGIZER DESIGNATION	ENERGIZER OPERATING TEMPERATURE°C	ENERGIZER OPERATING TEMPERATURE°F
NBR - 70A	O-Ring	N	-30 to 100°C	-22 to 212°F
NBR - 70A Low temp.	O-Ring	L	-45 to 80°C	-49 to 176°F
FKM - 75A	O-Ring	F	-10 to 200°C	14 to 392°F
EPDM - 70A	O-Ring	E	-45 to 145°C	-49 to 293°F
HNBR - 70A	O-Ring	H	-25 to 150°C	-13 to 302°F
NBR - 90A	O-Ring	Q	-30 to 100°C	-22 to 212°F
HNBR - 90A	O-Ring	U	-25 to 150°C	-13 to 302°F
No Energizer*	None	X	-	-

**Seal ratings are based upon capabilities of its matched material components. Hallite cannot rate seal performance when the seal is mixed with other manufacturers' energizers/components.*

MATERIALS

MATERIAL FEATURES AND APPLICATIONS	FILLER	MATERIAL DESIGNATOR	COLOR	TEMPERATURE RANGE°C	TEMPERATURE RANGE°F	MAXIMUM DYNAMIC PRESSURE - BAR	MAXIMUM DYNAMIC PRESSURE - PSI
ARMORLENE® HLX • Standard material for hydraulic applications • High compressive strength • Excellent extrusion resistance • Extended wear resistance	Special Bronze Compound	HLX	Gold	-73 to 288°C	-100 to 550°F	500 bar	7250 psi
ARMORLENE® HLA • Excellent in all hydraulic fluids • Excellent wear resistance • Excellent low-friction properties • Good extrusion resistance	Special Mineral Compound	HLA	Gray	-73 to 260°C	-100 to 500°F	500 bar	7250 psi
ARMORLENE® 702 • Excellent in lubricating and non-lubricating hydraulic fluids • Good low-friction properties • Excellent extrusion resistance • Good chemical resistance	Glass Molybdenum Disulfide	702	Gray	-73 to 260°C	-100 to 500°F	300 bar	4350 psi
ARMORLENE® 706 • Excellent in lubricating and non-lubricating hydraulic fluids • Excellent extrusion resistance • Good chemical resistance • Good dielectrical properties	15% Glass	706	Off-White	-73 to 260°C	-100 to 500°F	300 bar	4350 psi
ARMORLENE® 700 • Excellent in all hydraulic fluids • Recommended for use with soft mating surfaces • Low friction and no stick-slip	Unfilled	700	White	-184 to 204°C	-300 to 400°F	200 bar	2900 psi
ARMORLENE® HCF • Excellent in lubricating and non-lubricating hydraulic fluids (includes water) w/o zinc content • Not recommended for gas sealing applications • Not recommended for electrical conductive fluids	Carbon Fiber Filled	HCF	Gray/ Black	-73 to 260°C	-100 to 500°F	250 bar	3600 psi
ARMORLENE® HCV • Recommended for lubricating and non-lubricating fluids • Excellent for high-frequency and short-stroke applications • Not recommended for gas sealing applications • Not recommended for electrical conductive fluids	High Carbon Fiber Filled	HCV	Gray/ Black	-73 to 260°C	-100 to 500°F	300 bar	4350 psi
ARMORLENE® 711 • Excellent in all lubricating fluids and pneumatic applications • High chemical resistance • Excellent extrusion resistance • Excellent wear properties	25% Carbon/ Graphite	711	Black	-73 to 288°C	-100 to 550°F	400 bar	5800 psi
ARMORLENE® 713 • High compressive strength • Excellent extrusion resistance • Excellent wear properties	60% Bronze Content	713	Bronze	-73 to 288°C	-100 to 550°F	600 bar	8700 psi
HU9 - POLYURETHANE, 95A • Positive position load holding • Excellent extrusion resistance • Excellent wear resistance	Standard	HU9	Red	-20 to 115°C	-4 to 240°F	500 bar	7250 psi
HU5 - POLYURETHANE, 55D • Positive position load holding • Excellent extrusion resistance • Excellent wear resistance	Standard	HU5	Yellow	-20 to 115°C	-4 to 240°F	500 bar	7250 psi
HYTHANE® 9270111 - POLYESTER, 55D • Positive position load holding • Hydrolysis stabilized • Strong chemical resistance • Excellent extrusion resistance • Excellent wear properties	Hydrolysis Stabilized	111	Gray	-40 to 120°C	-40 to 250°F	500 bar	7250 psi
HYTHANE® 9270261 - POLYESTER, 55D • Positive position load holding • Internal lubrication provides extended wear in high-speed applications • Excellent extrusion resistance • Excellent wear resistance	Internally Lubricated	261	Off-White	-40 to 120°C	-40 to 250°F	500 bar	7250 psi
HE5 - POLYESTER, 55D • Positive position load holding • Excellent extrusion resistance • Excellent wear resistance	Standard	HE5	Gray/ Black	-20 to 115°C	-40 to 240°F	500 bar	7250 psi
748 - UHMWPE • Excellent impact resistance • Good dielectrical properties • Excellent abrasion resistance • Low coefficient of friction	Standard	748	Translucent	-184 to 82°C	-300 to 180°F	350 bar	5000 psi

For other material options consult the Master Materials Index at the front of the catalog. If you do not find the material that you require, please contact your local Hallite sales office.



Applications with maximum radial clearance that are using nylon, phenolic, or PTFE bearings must ensure proper clearance in accordance with the bearing recommendations to avoid metal-to-metal contact. Please refer to Hallite Type 87, Type 506, and Type 533 Specification Sheets for this information.

INSTALLATION RECOMMENDATIONS

metric

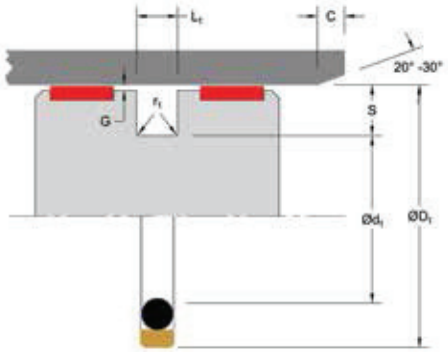
BORE DIAMETER ØD$_1$ H9			GROOVE DIAMETER	GROOVE WIDTH	RADIUS	CHAMFER	GROOVE SECTION	RADIAL CLEARANCE G max*			O-RING CROSS SECTION
DIAMETER RANGE			Ød$_1$ h9	L$_1$ + 0.2	r$_1$	C	S	Up to 100 bar	Up to 200 bar	Up to 400 bar	O-Ring
Standard Duty Application - R	Light Duty Application - L	Heavy Duty Application - H									
8.0 - 14.9	15.0 - 39.9	-	D$_1$ - 4.9	2.2	0.4	2.0	2.45	0.30	0.20	0.15	1.78
15.0 - 39.9	40.0 - 79.9	-	D$_1$ - 7.5	3.2	0.6	3.0	3.75	0.40	0.25	0.15	2.62
40.0 - 79.9	80.0 - 132.9	15.0 - 39.9	D$_1$ - 11.0	4.2	1.0	4.0	5.50	0.40	0.25	0.20	3.53
80.0 - 132.9	133.0 - 329.9	40.0 - 79.9	D$_1$ - 15.5	6.3	1.3	6.0	7.75	0.50	0.30	0.20	5.33
133.0 - 329.9	330.0 - 669.9	80.0 - 132.9	D$_1$ - 21.0	8.1	1.8	8.0	10.50	0.60	0.35	0.25	6.99
330.0 - 669.9	670.0 - 999.9	133.0 - 329.9	D$_1$ - 24.5	8.1	1.8	8.0	12.25	0.60	0.35	0.25	6.99
670.0 - 999.9	≥ 1000.0	330.0 - 669.9	D$_1$ - 28.0	9.5	2.5	9.0	14.00	0.70	0.50	0.30	8.40
≥ 1000.0	-	670.0 - 999.9	D$_1$ - 38.0	13.8	3.0	10.0	19.00	1.00	0.70	0.60	12.00

At pressure >400 bar use diameter tolerance H8/f7.
**Radial Clearance G max. = maximum permissible gap all on one side using max. tube diameter and min. clearance diameter.*

inch

BORE DIAMETER ØD$_1$ H9			GROOVE DIAMETER	GROOVE WIDTH	RADIUS	CHAMFER	GROOVE SECTION	RADIAL CLEARANCE G max*			O-RING CROSS SECTION
DIAMETER RANGE			Ød$_1$ h9	L$_1$ + .008	r$_1$	C	S	Up to 1500 psi	Up to 2900 psi	Up to 5800 psi	O-Ring
Standard Duty Application - R	Light Duty Application - L	Heavy Duty Application - H									
0.312 - 0.562	0.563 - 1.562	-	D$_1$ - 0.193	0.087	0.015	0.079	0.097	0.012	0.008	0.006	0.070
0.563 - 1.562	1.563 - 3.125	-	D$_1$ - 0.295	0.126	0.025	0.118	0.148	0.016	0.010	0.006	0.103
1.563 - 3.125	3.126 - 5.250	0.563 - 1.562	D$_1$ - 0.433	0.165	0.025	0.157	0.217	0.016	0.010	0.008	0.139
3.126 - 5.250	5.251 - 12.500	1.563 - 3.125	D$_1$ - 0.610	0.248	0.035	0.236	0.305	0.020	0.012	0.008	0.210
5.251 - 12.500	12.501 - 26.000	3.126 - 5.250	D$_1$ - 0.827	0.319	0.035	0.315	0.414	0.024	0.014	0.010	0.275
12.501 - 26.000	-	5.251 - 12.500	D$_1$ - 0.965	0.319	0.035	0.354	0.483	0.024	0.014	0.010	0.275

At pressure >5800 psi use diameter tolerance H8/f7.
**Radial Clearance G max. = maximum permissible gap all on one side using max. tube diameter and min. clearance diameter.*



P54

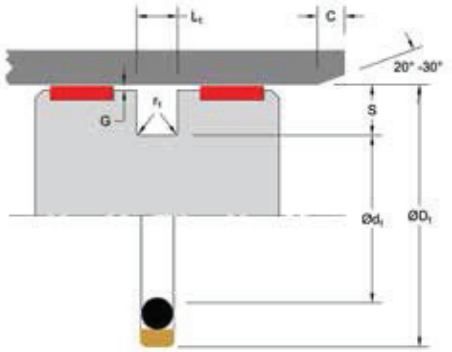
PISTON SEAL

Double-Acting

PART NUMBER RANGE (METRIC)*

metric			
$ØD_1$	$Ød_1$	L_1	PART NUMBER
Tol. H9	Tol. H9	Tol. +0.2	
8.0	3.1	2.2	P54MR00080****
10.0	5.1	2.2	P54MR00100****
12.0	7.1	2.2	P54MR00120****
14.0	9.1	2.2	P54MR00140****
15.0	7.5	3.2	P54MR00150****
16.0	11.1	2.2	P54ML00160****
16.0	8.5	3.2	P54MR00160****
18.0	13.1	2.2	P54ML00180****
18.0	10.5	3.2	P54MR00180****
20.0	15.1	2.2	P54ML00200****
20.0	12.5	3.2	P54MR00200****
21.0	13.5	3.2	P54MR00210****
22.0	17.1	2.2	P54ML00220****
22.0	14.5	3.2	P54MR00220****
24.0	16.5	3.2	P54MR00240****
24.0	19.1	2.2	P54ML00240****
25.0	20.1	2.2	P54ML00250****
25.0	17.5	3.2	P54MR00250****
25.0	14.0	4.2	P54MH00250****
28.0	20.5	3.2	P54MR00280****
30.0	22.5	3.2	P54MR00300****
32.0	27.1	2.2	P54ML00320****
32.0	24.5	3.2	P54MR00320****
32.0	21.0	4.2	P54MH00320****
35.0	27.5	3.2	P54MR00350****
35.0	24.0	4.2	P54MH00350****
36.0	28.5	3.2	P54MR00360****
38.0	30.5	3.2	P54MR00380****

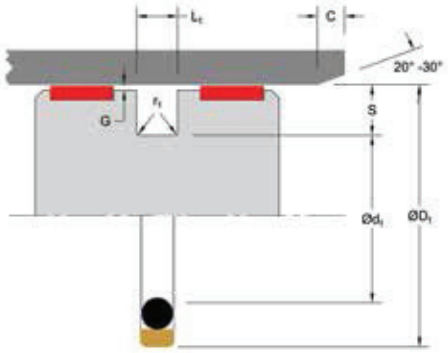
metric			
$ØD_1$	$Ød_1$	L_1	PART NUMBER
Tol. H9	Tol. H9	Tol. +0.2	
40.0	32.5	3.2	P54ML00400****
40.0	29.0	4.2	P54MR00400****
42.0	31.0	4.2	P54MR00420****
45.0	34.0	4.2	P54MR00450****
48.0	37.0	4.2	P54MR00480****
50.0	42.5	3.2	P54ML00500****
50.0	39.0	4.2	P54MR00500****
50.0	34.5	6.3	P54MH00500****
50.8	43.3	3.2	P54ML00508****
50.8	39.8	4.2	P54MR00508****
52.0	41.0	4.2	P54MR00520****
53.0	42.0	4.2	P54MR00530****
55.0	44.0	4.2	P54MR00550****
57.0	46.0	4.2	P54MR00570****
58.0	47.0	4.2	P54MR00580****
60.0	49.0	4.2	P54MR00600****
62.0	51.0	4.2	P54MR00620****
63.0	52.0	4.2	P54MR00630****
63.0	47.5	6.3	P54MH00630****
65.0	54.0	4.2	P54MR00650****
68.0	57.0	4.2	P54MR00680****
70.0	59.0	4.2	P54MR00700****
70.0	54.5	6.3	P54MH00700****
75.0	64.0	4.2	P54MR00750****
75.0	59.5	6.3	P54MH00750****
80.0	69.0	4.2	P54ML00800****
80.0	64.5	6.3	P54MR00800****
80.0	59.0	8.1	P54MH00800****



PART NUMBER RANGE (METRIC)*

metric			
$ØD_1$	$Ød_1$	L_1	PART NUMBER
Tol. H9	Tol. H9	Tol. +0.2	
82.5	67.0	6.3	P54MR00825****
85.0	69.5	6.3	P54MR00850****
85.0	64.0	8.1	P54MH00850****
90.0	79.0	4.2	P54ML00900****
90.0	74.5	6.3	P54MR00900****
90.0	69.0	8.1	P54MH00900****
95.0	84.0	4.2	P54ML00950****
95.0	79.5	6.3	P54MR00950****
95.0	74.0	8.1	P54MH00950****
100.0	89.0	4.2	P54ML01000****
100.0	84.5	6.3	P54MR01000****
100.0	79.0	8.1	P54MH01000****
101.6	86.1	6.3	P54MR01016****
105.0	94.0	4.2	P54ML01050****
105.0	89.5	6.3	P54MR01050****
108.0	92.5	6.3	P54MR01080****
110.0	99.0	4.2	P54ML01100****
110.0	94.5	6.3	P54MR01100****
110.0	89.0	8.1	P54MH01100****
115.0	99.5	6.3	P54MR01150****
120.0	109.0	4.2	P54ML01200****
120.0	104.5	6.3	P54MR01200****
120.0	99.0	8.1	P54MH01200****
125.0	114.0	4.2	P54ML01250****
125.0	109.5	6.3	P54MR01250****
125.0	104.0	8.1	P54MH01250****
127.0	111.5	6.3	P54MR01270****
130.0	114.5	6.3	P54MR01300****

metric			
$ØD_1$	$Ød_1$	L_1	PART NUMBER
Tol. H9	Tol. H9	Tol. +0.2	
130.0	109.0	8.1	P54MH01300****
132.0	121.0	4.2	P54ML01320****
135.0	114.0	8.1	P54MR01350****
140.0	124.5	6.3	P54ML01400****
140.0	119.0	8.1	P54MR01400****
145.0	129.5	6.3	P54ML01450****
145.0	124.0	8.1	P54MR01450****
150.0	134.5	6.3	P54ML01500****
150.0	129.0	8.1	P54MR01500****
155.0	134.0	8.1	P54MR01550****
160.0	144.5	6.3	P54ML01600****
160.0	139.0	8.1	P54MR01600****
165.0	144.0	8.1	P54MR01650****
170.0	149.0	8.1	P54MR01700****
175.0	154.0	8.1	P54MR01750****
180.0	164.5	6.3	P54ML01800****
180.0	159.0	8.1	P54MR01800****
185.0	164.0	8.1	P54MR01850****
190.0	169.0	8.1	P54MR01900****
194.0	178.5	6.3	P54ML01940****
200.0	184.5	6.3	P54ML02000****
200.0	179.0	8.1	P54MR02000****
205.0	184.0	8.1	P54MR02050****
210.0	189.0	8.1	P54MR02100****
215.0	194.0	8.1	P54MR02150****
220.0	199.0	8.1	P54MR02200****
225.0	204.0	8.1	P54MR02250****
230.0	214.5	6.3	P54ML02300****



P54

PISTON SEAL

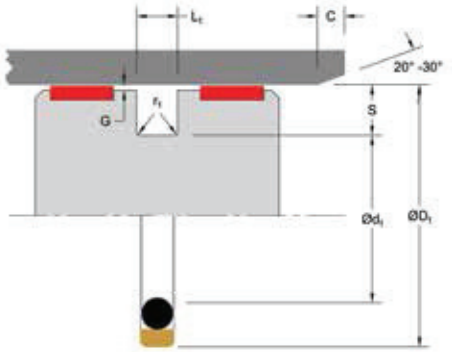
Double-Acting

PART NUMBER RANGE (METRIC)*

metric			
$ØD_1$	$Ød_1$	L_1	PART NUMBER
Tol. H9	Tol. H9	Tol. +0.2	
230.0	209.0	8.1	P54MR02300****
240.0	219.0	8.1	P54MR02400****
250.0	229.0	8.1	P54MR02500****
250.0	225.5	8.1	P54MH02500****
250.0	234.5	6.3	P54ML02500****
254.0	233.0	8.1	P54MR02540****
260.0	239.0	8.1	P54MR02600****
265.0	244.0	8.1	P54MR02650****
268.0	247.0	8.1	P54MR02680****
270.0	249.0	8.1	P54MR02700****
280.0	259.0	8.1	P54MR02800****
290.0	269.0	8.1	P54MR02900****
300.0	279.0	8.1	P54MR03000****
300.0	275.5	8.1	P54MH03000****
304.8	283.8	8.1	P54MR03048****
310.0	289.0	8.1	P54MR03100****
320.0	299.0	8.1	P54MR03200****
320.0	295.5	8.1	P54MH03200****
330.0	305.5	8.1	P54MR03300****
340.0	315.5	8.1	P54MR03400****
350.0	325.5	8.1	P54MR03500****
360.0	335.5	8.1	P54MR03600****
370.0	345.5	8.1	P54MR03700****
380.0	355.5	8.1	P54MR03800****
390.0	365.5	8.1	P54MR03900****
400.0	375.5	8.1	P54MR04000****
420.0	395.5	8.1	P54MR04200****
430.0	405.5	8.1	P54MR04300****

metric			
$ØD_1$	$Ød_1$	L_1	PART NUMBER
Tol. H9	Tol. H9	Tol. +0.2	
440.0	415.5	8.1	P54MR04400****
450.0	425.5	8.1	P54MR04500****
460.0	435.5	8.1	P54MR04600****
480.0	455.5	8.1	P54MR04800****
500.0	475.5	8.1	P54MR05000****
555.0	530.5	8.1	P54MR05550****
600.0	575.5	8.1	P54MR06000****
640.0	615.5	8.1	P54MR06400****
660.0	635.5	8.1	P54MR06600****
700.0	672.0	9.5	P54MR07000****
710.0	682.0	9.5	P54MR07100****
740.0	712.0	9.5	P54MR07400****
780.0	752.0	9.5	P54MR07800****
800.0	772.0	9.5	P54MR08000****
900.0	872.0	9.5	P54MR09000****
1000.0	972.0	9.5	P54ML10000****
1000.0	962.0	13.8	P54MR10000****
1050.0	1022.0	9.5	P54ML10500****
1065.0	1027.0	13.8	P54MR10650****
1070.0	1032.0	13.8	P54MR10700****
1200.0	1172.0	9.5	P54ML12000****
1200.0	1162.0	13.8	P54MR12000****
1225.0	1187.0	13.8	P54MR12250****

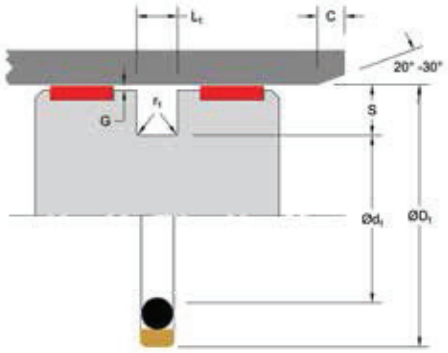
**Please contact Hallite for custom sizes, material selection, or seal design.*



PART NUMBER RANGE (INCH)*

inch			
$ØD_1$	$Ød_1$	L_1	PART NUMBER
Tol. H9	Tol. H9	Tol. +0.008	
0.500	0.307	0.087	P54ER00500****
0.562	0.369	0.087	P54ER00562****
0.625	0.330	0.126	P54ER00625****
0.687	0.392	0.126	P54ER00687****
0.750	0.455	0.126	P54ER00750****
0.812	0.517	0.126	P54ER00812****
0.875	0.580	0.126	P54ER00875****
0.937	0.642	0.126	P54ER00937****
1.000	0.705	0.126	P54ER01000****
1.062	0.767	0.126	P54ER01062****
1.125	0.830	0.126	P54ER01125****
1.187	0.892	0.126	P54ER01187****
1.250	0.955	0.126	P54ER01250****
1.312	1.017	0.126	P54ER01312****
1.375	1.080	0.126	P54ER01375****
1.437	1.142	0.126	P54ER01437****
1.500	1.205	0.126	P54ER01500****
1.562	1.267	0.126	P54ER01562****
1.625	1.192	0.165	P54ER01625****
1.687	1.254	0.165	P54ER01687****
1.750	1.317	0.165	P54ER01750****
1.812	1.379	0.165	P54ER01812****
1.875	1.442	0.165	P54ER01875****
1.937	1.504	0.165	P54ER01937****
2.000	1.567	0.165	P54ER02000****
2.125	1.692	0.165	P54ER02125****
2.250	1.817	0.165	P54ER02250****
2.375	1.942	0.165	P54ER02375****

inch			
$ØD_1$	$Ød_1$	L_1	PART NUMBER
Tol. H9	Tol. H9	Tol. +0.008	
2.500	2.067	0.165	P54ER02500****
2.625	2.192	0.165	P54ER02625****
2.750	2.317	0.165	P54ER02750****
2.875	2.442	0.165	P54ER02875****
3.000	2.567	0.165	P54ER03000****
3.125	2.692	0.165	P54ER03125****
3.250	2.640	0.248	P54ER03250****
3.375	2.765	0.248	P54ER03375****
3.500	2.890	0.248	P54ER03500****
3.625	3.015	0.248	P54ER03625****
3.750	3.140	0.248	P54ER03750****
3.875	3.265	0.248	P54ER03875****
4.000	3.390	0.248	P54ER04000****
4.125	3.515	0.248	P54ER04125****
4.250	3.640	0.248	P54ER04250****
4.375	3.765	0.248	P54ER04375****
4.500	3.890	0.248	P54ER04500****
4.625	4.015	0.248	P54ER04625****
4.750	4.140	0.248	P54ER04750****
4.875	4.265	0.248	P54ER04875****
5.000	4.390	0.248	P54ER05000****
5.125	4.515	0.248	P54ER05125****
5.250	4.640	0.248	P54EL05250****
5.375	4.548	0.319	P54ER05375****
5.500	4.673	0.319	P54ER05500****
5.625	4.798	0.319	P54ER05625****
5.750	4.923	0.319	P54ER05750****
6.000	5.173	0.319	P54ER06000****



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PISTON SEAL

Double-Acting

PART NUMBER RANGE (INCH)*

inch			
$ØD_1$	$Ød_1$	L_1	PART NUMBER
Tol. H9	Tol. H9	Tol. +0.008	
6.250	5.423	0.319	P54ER06250****
6.500	5.673	0.319	P54ER06500****
6.750	5.923	0.319	P54ER06750****
7.000	6.173	0.319	P54ER07000****
7.250	6.423	0.319	P54ER07250****
7.500	6.673	0.319	P54ER07500****
7.750	6.923	0.319	P54ER07750****
8.000	7.173	0.319	P54ER08000****
8.250	7.423	0.319	P54ER08250****
8.500	7.673	0.319	P54ER08500****
8.750	7.923	0.319	P54ER08750****
9.000	8.173	0.319	P54ER09000****
9.250	8.423	0.319	P54ER09250****
9.500	8.673	0.319	P54ER09500****
9.750	8.923	0.319	P54ER09750****
10.000	9.173	0.319	P54ER10000****
10.500	9.673	0.319	P54ER10500****
11.000	10.173	0.319	P54ER11000****
11.500	10.673	0.319	P54ER11500****
12.000	11.173	0.319	P54ER12000****
12.500	11.673	0.319	P54ER12500****
13.000	12.035	0.319	P54ER13000****
13.500	12.535	0.319	P54ER13500****
14.000	13.035	0.319	P54ER14000****
14.500	13.535	0.319	P54ER14500****
15.000	14.035	0.319	P54ER15000****
15.500	14.535	0.319	P54ER15500****
16.000	15.035	0.319	P54ER16000****

inch			
$ØD_1$	$Ød_1$	L_1	PART NUMBER
Tol. H9	Tol. H9	Tol. +0.008	
16.500	15.535	0.319	P54ER16500****
17.000	16.035	0.319	P54ER17000****
17.500	16.535	0.319	P54ER17500****
18.000	17.035	0.319	P54ER18000****
18.500	17.535	0.319	P54ER18500****
19.000	18.035	0.319	P54ER19000****
19.500	18.535	0.319	P54ER19500****
20.000	19.035	0.319	P54ER20000****

**Please contact Hallite for custom sizes, material selection, or seal design.*