

P16

PISTON SEAL

Single-Acting

TECHNICAL DETAILS

The Hallite P16 is a single-acting, o-ring energized, low-friction piston seal especially useful where smooth movement and location accuracy is required. The P16 design is based on the very successful R16 rod-seal design which has been proven in the market to be an excellent seal. High-performance Armorlene® materials, like HLX, provide outstanding wear and extrusion-resistance properties as well as large range of temperature and high-speed capabilities.

The P16's design eliminates the potential for stick-slip and its very low running friction makes it ideal for high-speed applications. In particular, this seal is well-suited for use in piston accumulators in conjunction with other Hallite piston seals. The P16 is designed to fit a variety of inch and metric grooves, including ISO 7425-1 standard.

This seal is available in a variety of Hallite's high-performance Armorlene® materials to suit a wide range of demanding applications. A tandem arrangement using the P54 or P16 in an Armorlene® material is effective in sealing high-frequency and long-stroke applications.



FEATURES

- Low breakout friction and elimination of stick-slip action
- Excellent dynamic and static sealability
- Long wear and high extrusion resistance
- Ability to absorb shock loads from pressure spikes

Part Number Structure

P16MR00500NHLX __

P16	M	R	00500	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

OPERATING CONDITIONS

	metric	inch
Maximum Speed	Up to 15.0m/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

SURFACE ROUGHNESS	metric			inch			RMR*
	μMRA	μMRZ	μMRT	μINRA	μINRZ	μINRT	
Dynamic Sealing Face ØD₁	0.05 - 0.2	1.3 max	2 max	2 - 8	52 max	78 max	60% - 90%
Static Sealing Face Ød₁	1.6 max	7 max	10 max	63 max	276 max	394 max	
Static Housing Faces L₁	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	-	-

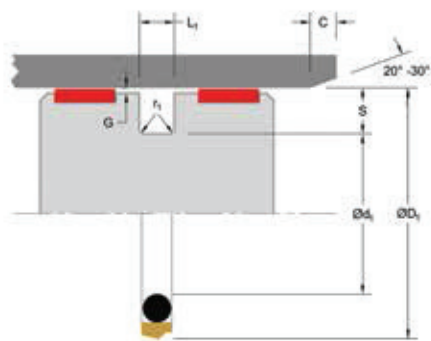
*Seal ratings are based upon capabilities of its matched material components. Hallite cannot rate seal performance when the seal is mixed with other manufacturers' energizers/components.

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 <ul style="list-style-type: none"> 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® 713 <ul style="list-style-type: none"> 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
ARMORLENE® HCF <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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® 700 <ul style="list-style-type: none"> 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® 706 <ul style="list-style-type: none"> 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	400 bar	5800 psi
ARMORLENE® 702 <ul style="list-style-type: none"> 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	400 bar	5800 psi
ARMORLENE® 711 <ul style="list-style-type: none"> 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® HLA <ul style="list-style-type: none"> 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® 782 <ul style="list-style-type: none"> Good abrasion resistance Recommended for lubricating and non-lubricating fluids Recommended for high frequency and short-stroke applications Not recommended for electrical and conductive fluids 	Modified Carbon Fiber Filled	782	Black	-73 to 260°C	-100 to 500°F	300 bar	4350 psi
748 - UHMWPE <ul style="list-style-type: none"> 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 - 16.9	17.0 - 26.9	-	D ₁ - 4.9	2.2	0.4	2.0	2.45	0.30	0.20	0.15	1.78
17.0 - 26.9	27.0 - 59.9	-	D ₁ - 7.5	3.2	0.6	3.0	3.75	0.40	0.25	0.15	2.62
27.0 - 59.9	60.0 - 199.9	17.0 - 26.9	D ₁ - 11.0	4.2	1.0	4.0	5.50	0.50	0.30	0.20	3.53
60.0 - 199.9	200.0 - 255.9	27.0 - 59.9	D ₁ - 15.5	6.3	1.3	6.0	7.75	0.70	0.40	0.25	5.33
200.0 - 255.9	256.0 - 669.9	60.0 - 199.9	D ₁ - 21.0	8.1	1.8	8.0	10.50	0.80	0.60	0.35	6.99
256.0 - 669.9	670.0 - 999.9	200.0 - 255.9	D ₁ - 24.5	8.1	1.8	8.0	12.25	0.90	0.70	0.40	6.99
670.0 - 999.9	≥1000.0	256.0 - 669.9	D ₁ - 28.0	9.5	2.5	9.0	14.00	1.00	0.80	0.60	8.40
≥1000.0	-	670.0 - 999.9	D ₁ - 38.0	13.8	3.0	10.0	19.00	1.20	0.90	0.60	12.00

At pressure >400 bar use diameter tolerance H8/f7.

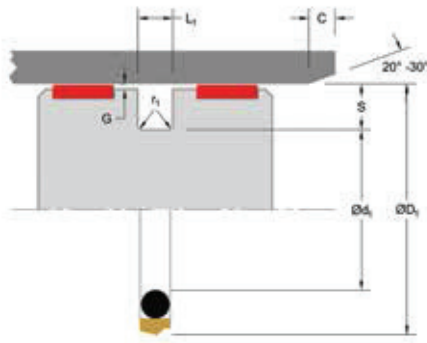
*Radial Clearance G max. = maximum permissible gap all on one side using max. tube diameter and min. clearance diameter.

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 + 0.008	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 - 0.749	0.750 - 1.499	-	D ₁ - 0.193	0.087	0.020	0.079	0.097	0.012	0.009	0.007	0.070
0.750 - 1.499	1.500 - 2.499	-	D ₁ - 0.287	0.126	0.020	0.118	0.144	0.016	0.012	0.008	0.103
1.500 - 2.499	2.500 - 7.999	0.625 - 1.499	D ₁ - 0.421	0.165	0.025	0.157	0.211	0.016	0.012	0.009	0.139
2.500 - 7.999	8.000 - 9.999	1.000 - 2.499	D ₁ - 0.594	0.248	0.030	0.236	0.297	0.020	0.014	0.010	0.210
8.000 - 9.999	10.000 - 26.000	3.125 - 7.999	D ₁ - 0.807	0.319	0.035	0.315	0.404	0.024	0.017	0.012	0.275
10.000 - 26.000	-	8.000 - 9.999	D ₁ - 0.945	0.319	0.035	0.315	0.473	0.024	0.017	0.012	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.



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PISTON SEAL

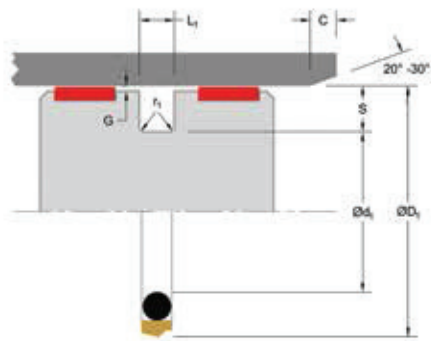
Single-Acting

PART NUMBER RANGE (METRIC)*

metric			PART NUMBER		ØD ₁	Ød ₁	L ₁
ØD ₁	Ød ₁	L ₁					
Tol. f8/h9	Tol. H9	Tol. +0.2					
8.0	3.1	2.2	P16MR00080****	Also Fits	-	-	-
9.0	4.1	2.2	P16MR00090****	Also Fits	-	-	-
10.0	5.1	2.2	P16MR00100****	Also Fits	-	-	-
12.0	7.1	2.2	P16MR00120****	Also Fits	-	-	-
14.0	9.1	2.2	P16MR00140****	Also Fits	-	-	-
15.0	10.1	2.2	P16MR00150****	Also Fits	-	-	-
16.0	11.1	2.2	P16MR00160****	Also Fits	-	-	-
18.0	10.5	3.2	P16MR00180****	Also Fits	18.0	10.7	3.2
18.0	13.1	2.2	P16ML00180****	Also Fits	-	-	-
20.0	12.5	3.2	P16MR00200****	Also Fits	20.0	12.7	3.2
20.0	15.1	2.2	P16ML00200****	Also Fits	-	-	-
20.0	9.0	4.2	P16MH00200****	Also Fits	20.0	9.3	4.2
22.0	14.5	3.2	P16MR00220****	Also Fits	22.0	14.7	3.2
22.0	11.0	4.2	P16MH00220****	Also Fits	22.0	11.3	4.2
25.0	17.5	3.2	P16MR00250****	Also Fits	25.0	17.7	3.2
25.0	20.1	2.2	P16ML00250****	Also Fits	-	-	-
25.0	14.0	4.2	P16MH00250****	Also Fits	25.0	14.3	4.2
28.0	17.0	4.2	P16MR00280****	Also Fits	28.0	17.3	4.2
28.0	20.5	3.2	P16ML00280****	Also Fits	28.0	20.7	3.2
28.0	12.5	6.3	P16MH00280****	Also Fits	28.0	12.9	6.3
30.0	19.0	4.2	P16MR00300****	Also Fits	30.0	19.3	4.2
30.0	22.5	3.2	P16ML00300****	Also Fits	30.0	22.7	3.2
30.0	14.5	6.3	P16MH00300****	Also Fits	30.0	14.9	6.3
32.0	21.0	4.2	P16MR00320****	Also Fits	32.0	21.3	4.2
32.0	24.5	3.2	P16ML00320****	Also Fits	32.0	24.7	3.2
35.0	24.0	4.2	P16MR00350****	Also Fits	35.0	24.3	4.2
35.0	27.5	3.2	P16ML00350****	Also Fits	35.0	27.7	3.2
36.0	25.0	4.2	P16MR00360****	Also Fits	36.0	25.3	4.2

metric			PART NUMBER		ØD ₁	Ød ₁	L ₁
ØD ₁	Ød ₁	L ₁					
Tol. f8/h9	Tol. H9	Tol. +0.2					
36.0	28.5	3.2	P16ML00360****	Also Fits	36.0	28.7	3.2
40.0	29.0	4.2	P16MR00400****	Also Fits	40.0	29.3	4.2
40.0	32.5	3.2	P16ML00400****	Also Fits	40.0	32.7	3.2
40.0	24.5	6.3	P16MH00400****	Also Fits	40.0	24.9	6.3
42.0	31.0	4.2	P16MR00420****	Also Fits	42.0	31.3	4.2
42.0	34.5	3.2	P16ML00420****	Also Fits	42.0	34.7	3.2
43.0	27.5	6.3	P16MH00430****	Also Fits	43.0	27.9	6.3
45.0	34.0	4.2	P16MR00450****	Also Fits	45.0	34.3	4.2
45.0	37.5	3.2	P16ML00450****	Also Fits	45.0	37.7	3.2
45.0	29.5	6.3	P16MH00450****	Also Fits	45.0	29.9	6.3
48.0	40.5	3.2	P16ML00480****	Also Fits	48.0	40.7	3.2
50.0	39.0	4.2	P16MR00500****	Also Fits	50.0	39.3	4.2
50.0	42.5	3.2	P16ML00500****	Also Fits	50.0	42.7	3.2
50.0	34.5	6.3	P16MH00500****	Also Fits	50.0	34.9	6.3
52.0	44.5	3.2	P16ML00520****	Also Fits	52.0	44.7	3.2
55.0	44.0	4.2	P16MR00550****	Also Fits	55.0	44.3	4.2
55.0	47.5	3.2	P16ML00550****	Also Fits	55.0	47.7	3.2
55.0	39.5	6.3	P16MH00550****	Also Fits	55.0	39.9	6.3
56.0	45.0	4.2	P16MR00560****	Also Fits	56.0	45.3	4.2
56.0	40.5	6.3	P16MH00560****	Also Fits	56.0	40.9	6.3
60.0	44.5	6.3	P16MR00600****	Also Fits	60.0	44.9	6.3
60.0	49.0	4.2	P16ML00600****	Also Fits	60.0	49.3	4.2
63.0	47.5	6.3	P16MR00630****	Also Fits	63.0	47.9	6.3
63.0	52.0	4.2	P16ML00630****	Also Fits	63.0	52.3	4.2
65.0	49.5	6.3	P16MR00650****	Also Fits	65.0	49.9	6.3
65.0	54.0	4.2	P16ML00650****	Also Fits	65.0	54.3	4.2
70.0	54.5	6.3	P16MR00700****	Also Fits	70.0	54.9	6.3
70.0	59.0	4.2	P16ML00700****	Also Fits	70.0	59.3	4.2

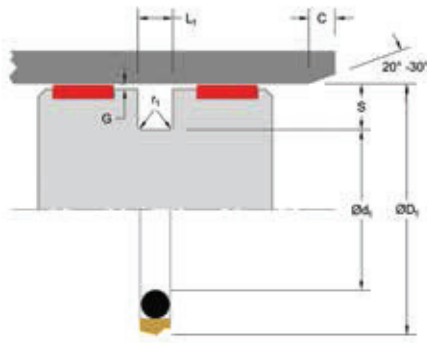




PART NUMBER RANGE (METRIC)*

metric			PART NUMBER	Also Fits	metric		
$\varnothing D_1$	$\varnothing d_1$	L_1			$\varnothing D_1$	$\varnothing d_1$	L_1
Tol. f8/h9	Tol. H9	Tol. +0.2			Tol. f8/h9	Tol. H9	Tol. +0.2
75.0	59.5	6.3	P16MR00750****	Also Fits	75.0	59.9	6.3
75.0	64.0	4.2	P16ML00750****	Also Fits	75.0	63.3	4.2
78.0	62.5	6.3	P16MR00780****	Also Fits	78.0	62.9	6.3
78.0	67.0	4.2	P16ML00780****	Also Fits	78.0	66.3	4.2
80.0	64.5	6.3	P16MR00800****	Also Fits	80.0	64.9	6.3
80.0	69.0	4.2	P16ML00800****	Also Fits	80.0	69.3	4.2
80.0	59.0	8.1	P16MH00800****	Also Fits	80.0	59.5	8.1
85.0	69.5	6.3	P16MR00850****	Also Fits	85.0	69.9	6.3
85.0	74.0	4.2	P16ML00850****	Also Fits	85.0	74.3	4.2
85.0	64.0	8.1	P16MH00850****	Also Fits	85.0	64.5	8.1
90.0	74.5	6.3	P16MR00900****	Also Fits	90.0	74.9	6.3
90.0	79.0	4.2	P16ML00900****	Also Fits	90.0	79.3	4.2
90.0	69.0	8.1	P16MH00900****	Also Fits	90.0	69.5	8.1
95.0	79.5	6.3	P16MR00950****	Also Fits	95.0	79.9	6.3
95.0	84.0	4.2	P16ML00950****	Also Fits	95.0	84.3	4.2
95.0	74.0	8.1	P16MH00950****	Also Fits	95.0	74.5	8.1
97.0	81.5	6.3	P16MR00970****	Also Fits	97.0	81.9	6.3
97.0	76.0	8.1	P16MH00970****	Also Fits	97.0	76.5	8.1
100.0	84.5	6.3	P16MR01000****	Also Fits	100.0	84.9	6.3
100.0	89.0	4.2	P16ML01000****	Also Fits	100.0	89.3	4.2
100.0	79.0	8.1	P16MH01000****	Also Fits	100.0	79.5	8.1
105.0	89.5	6.3	P16MR01050****	Also Fits	105.0	89.9	6.3
105.0	94.0	4.2	P16ML01050****	Also Fits	105.0	94.3	4.2
105.0	84.0	8.1	P16MH01050****	Also Fits	105.0	84.5	8.1
110.0	94.5	6.3	P16MR01100****	Also Fits	110.0	94.9	6.3
110.0	99.0	4.2	P16ML01100****	Also Fits	110.0	99.3	4.2
110.0	89.0	8.1	P16MH01100****	Also Fits	110.0	89.5	8.1
115.0	99.5	6.3	P16MR01150****	Also Fits	115.0	99.9	6.3

metric			PART NUMBER	Also Fits	metric		
$\varnothing D_1$	$\varnothing d_1$	L_1			$\varnothing D_1$	$\varnothing d_1$	L_1
Tol. f8/h9	Tol. H9	Tol. +0.2			Tol. f8/h9	Tol. H9	Tol. +0.2
115.0	104.0	4.2	P16ML01150****	Also Fits	115.0	99.3	4.2
115.0	94.0	8.1	P16MH01150****	Also Fits	115.0	94.5	8.1
120.0	104.5	6.3	P16MR01200****	Also Fits	120.0	104.9	6.3
120.0	109.0	4.2	P16ML01200****	Also Fits	120.0	104.3	4.2
120.0	99.0	8.1	P16MH01200****	Also Fits	120.0	99.5	8.1
125.0	109.5	6.3	P16MR01250****	Also Fits	125.0	109.9	6.3
125.0	114.0	4.2	P16ML01250****	Also Fits	125.0	109.3	4.2
125.0	104.0	8.1	P16MH01250****	Also Fits	125.0	104.5	8.1
130.0	114.5	6.3	P16MR01300****	Also Fits	130.0	114.9	6.3
130.0	119.0	4.2	P16ML01300****	Also Fits	130.0	114.3	4.2
130.0	109.0	8.1	P16MH01300****	Also Fits	130.0	109.5	8.1
135.0	119.5	6.3	P16MR01350****	Also Fits	135.0	119.9	6.3
135.0	124.0	4.2	P16ML01350****	Also Fits	135.0	124.3	4.2
135.0	114.0	8.1	P16MH01350****	Also Fits	135.0	114.5	8.1
140.0	124.5	6.3	P16MR01400****	Also Fits	140.0	124.9	6.3
140.0	129.0	4.2	P16ML01400****	Also Fits	140.0	129.3	4.2
140.0	119.0	8.1	P16MH01400****	Also Fits	140.0	119.5	8.1
145.0	129.5	6.3	P16MR01450****	Also Fits	145.0	129.9	6.3
145.0	134.0	4.2	P16ML01450****	Also Fits	145.0	134.3	4.2
145.0	124.0	8.1	P16MH01450****	Also Fits	145.0	124.5	8.1
150.0	134.5	6.3	P16MR01500****	Also Fits	150.0	134.9	6.3
150.0	139.0	4.2	P16ML01500****	Also Fits	150.0	139.3	4.2
150.0	129.0	8.1	P16MH01500****	Also Fits	150.0	129.5	8.1
155.0	139.5	6.3	P16MR01550****	Also Fits	155.0	139.9	6.3
155.0	144.0	4.2	P16ML01550****	Also Fits	155.0	144.3	4.2
155.0	134.0	8.1	P16MH01550****	Also Fits	155.0	134.5	8.1
160.0	144.5	6.3	P16MR01600****	Also Fits	160.0	144.9	6.3
160.0	149.0	4.2	P16ML01600****	Also Fits	160.0	149.3	4.2



P16

PISTON SEAL

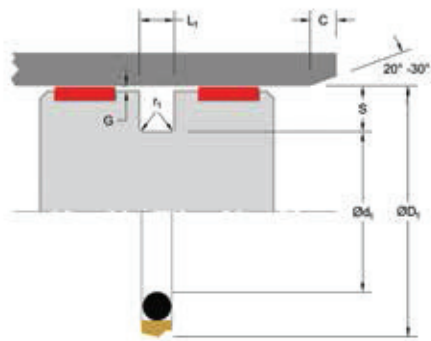
Single-Acting

PART NUMBER RANGE (METRIC)*

metric			PART NUMBER	Also Fits	metric		
ØD ₁	Ød ₁	L ₁			ØD ₁	Ød ₁	L ₁
Tol. f8/h9	Tol. H9	Tol. +0.2			Tol. f8/h9	Tol. H9	Tol. +0.2
160.0	139.0	8.1	P16MH01600****	Also Fits	160.0	139.5	8.1
165.0	154.0	4.2	P16ML01650****	Also Fits	165.0	154.3	4.2
170.0	154.5	6.3	P16MR01700****	Also Fits	170.0	154.9	6.3
170.0	159.0	4.2	P16ML01700****	Also Fits	170.0	159.3	4.2
170.0	149.0	8.1	P16MH01700****	Also Fits	170.0	149.5	8.1
175.0	164.0	4.2	P16ML01750****	Also Fits	175.0	164.3	4.2
180.0	164.5	6.3	P16MR01800****	Also Fits	180.0	164.9	6.3
180.0	169.0	4.2	P16ML01800****	Also Fits	180.0	169.3	4.2
180.0	159.0	8.1	P16MH01800****	Also Fits	180.0	159.5	8.1
190.0	174.5	6.3	P16MR01900****	Also Fits	190.0	174.9	6.3
190.0	179.0	4.2	P16ML01900****	Also Fits	190.0	179.3	4.2
190.0	169.0	8.1	P16MH01900****	Also Fits	190.0	169.5	8.1
200.0	179.0	8.1	P16MR02000****	Also Fits	200.0	179.5	8.1
200.0	184.5	6.3	P16ML02000****	Also Fits	200.0	184.9	6.3
205.0	189.5	6.3	P16ML02050****	Also Fits	205.0	189.9	6.3
210.0	189.0	8.1	P16MR02100****	Also Fits	210.0	189.5	8.1
210.0	194.5	6.3	P16ML02100****	Also Fits	210.0	194.9	6.3
210.0	185.5	8.1	P16MH02100****	Also Fits	210.0	186.0	8.1
220.0	199.0	8.1	P16MR02200****	Also Fits	220.0	199.5	8.1
220.0	204.5	6.3	P16ML02200****	Also Fits	220.0	204.9	6.3
220.0	195.5	8.1	P16MH02200****	Also Fits	220.0	196.0	8.1
225.0	204.0	8.1	P16MR02250****	Also Fits	225.0	204.5	8.1
225.0	200.5	8.1	P16MH02250****	Also Fits	225.0	201.0	8.1
230.0	214.5	6.3	P16ML02300****	Also Fits	230.0	214.9	6.3
240.0	219.0	8.1	P16MR02400****	Also Fits	240.0	219.5	8.1
240.0	224.5	6.3	P16ML02400****	Also Fits	240.0	224.9	6.3
240.0	215.5	8.1	P16MH02400****	Also Fits	240.0	216.0	8.1
250.0	229.0	8.1	P16MR02500****	Also Fits	250.0	229.5	8.1

metric			PART NUMBER	Also Fits	metric		
ØD ₁	Ød ₁	L ₁			ØD ₁	Ød ₁	L ₁
Tol. f8/h9	Tol. H9	Tol. +0.2			Tol. f8/h9	Tol. H9	Tol. +0.2
250.0	234.5	6.3	P16ML02500****	Also Fits	250.0	234.9	6.3
250.0	225.5	8.1	P16MH02500****	Also Fits	250.0	226.0	8.1
260.0	235.5	8.1	P16MR02600****	Also Fits	260.0	236.0	8.1
260.0	239.0	8.1	P16ML02600****	Also Fits	260.0	239.5	8.1
260.0	232.0	9.5	P16MH02600****	Also Fits	-	-	-
270.0	245.5	8.1	P16MR02700****	Also Fits	270.0	246.0	8.1
270.0	249.0	8.1	P16ML02700****	Also Fits	270.0	249.5	8.1
270.0	242.0	9.5	P16MH02700****	Also Fits	-	-	-
280.0	255.5	8.1	P16MR02800****	Also Fits	280.0	256.0	8.1
280.0	259.0	8.1	P16ML02800****	Also Fits	280.0	259.5	8.1
280.0	252.0	9.5	P16MH02800****	Also Fits	-	-	-
290.0	265.5	8.1	P16MR02900****	Also Fits	290.0	266.0	8.1
290.0	269.0	8.1	P16ML02900****	Also Fits	290.0	269.5	8.1
300.0	275.5	8.1	P16MR03000****	Also Fits	300.0	276.0	8.1
300.0	279.0	8.1	P16ML03000****	Also Fits	300.0	279.5	8.1
300.0	272.0	9.5	P16MH03000****	Also Fits	-	-	-
310.0	282.0	9.5	P16MH03100****	Also Fits	-	-	-
320.0	295.5	8.1	P16MR03200****	Also Fits	320.0	296.0	8.1
320.0	299.0	8.1	P16ML03200****	Also Fits	320.0	299.5	8.1
320.0	292.0	9.5	P16MH03200****	Also Fits	-	-	-
330.0	305.5	8.1	P16MR03300****	Also Fits	330.0	306.0	8.1
330.0	309.0	8.1	P16ML03300****	Also Fits	330.0	309.5	8.1
330.0	302.0	9.5	P16MH03300****	Also Fits	-	-	-
340.0	315.5	8.1	P16MR03400****	Also Fits	340.0	316.0	8.1
340.0	319.0	8.1	P16ML03400****	Also Fits	340.0	319.5	8.1
340.0	312.0	9.5	P16MH03400****	Also Fits	-	-	-
345.0	320.5	8.1	P16MR03450****	Also Fits	345.0	321.0	8.1
350.0	325.5	8.1	P16MR03500****	Also Fits	350.0	326.0	8.1

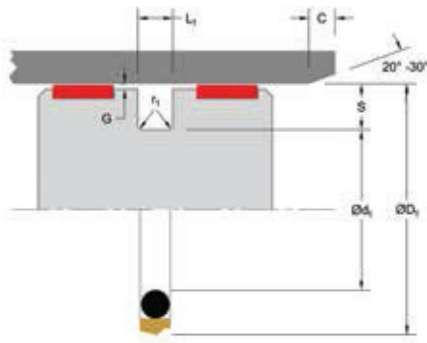




PART NUMBER RANGE (METRIC)*

metric			PART NUMBER		metric		
$\varnothing D_1$	$\varnothing d_1$	L_1			$\varnothing D_1$	$\varnothing d_1$	L_1
Tol. f8/h9	Tol. H9	Tol. +0.2			Tol. f8/h9	Tol. H9	Tol. +0.2
350.0	329.0	8.1	P16ML03500****	Also Fits	350.0	329.5	8.1
350.0	322.0	9.5	P16MH03500****	Also Fits	-	-	-
360.0	335.5	8.1	P16MR03600****	Also Fits	360.0	336.0	8.1
360.0	339.0	8.1	P16ML03600****	Also Fits	360.0	339.5	8.1
360.0	332.0	9.5	P16MH03600****	Also Fits	-	-	-
370.0	345.5	8.1	P16MR03700****	Also Fits	370.0	346.0	8.1
370.0	349.0	8.1	P16ML03700****	Also Fits	370.0	349.5	8.1
370.0	342.0	9.5	P16MH03700****	Also Fits	-	-	-
380.0	355.5	8.1	P16MR03800****	Also Fits	380.0	356.0	8.1
380.0	359.0	8.1	P16ML03800****	Also Fits	380.0	359.5	8.1
380.0	352.0	9.5	P16MH03800****	Also Fits	-	-	-
390.0	369.0	8.1	P16ML03900****	Also Fits	390.0	369.5	8.1
390.0	362.0	9.5	P16MH03900****	Also Fits	-	-	-
400.0	375.5	8.1	P16MR04000****	Also Fits	400.0	376.0	8.1
400.0	379.0	8.1	P16ML04000****	Also Fits	400.0	379.5	8.1
400.0	372.0	9.5	P16MH04000****	Also Fits	-	-	-
410.0	389.0	8.1	P16ML04100****	Also Fits	410.0	389.5	8.1
410.0	382.0	9.5	P16MH04100****	Also Fits	-	-	-
420.0	395.5	8.1	P16MR04200****	Also Fits	420.0	396.0	8.1
420.0	399.0	8.1	P16ML04200****	Also Fits	420.0	399.5	8.1
420.0	392.0	9.5	P16MH04200****	Also Fits	-	-	-
430.0	405.5	8.1	P16MR04300****	Also Fits	430.0	406.0	8.1
440.0	415.5	8.1	P16MR04400****	Also Fits	440.0	416.0	8.1
450.0	425.5	8.1	P16MR04500****	Also Fits	450.0	426.0	8.1
450.0	429.0	8.1	P16ML04500****	Also Fits	450.0	429.5	8.1
450.0	422.0	9.5	P16MH04500****	Also Fits	-	-	-
460.0	439.0	8.1	P16ML04600****	Also Fits	460.0	439.5	8.1
460.0	432.0	9.5	P16MH04600****	Also Fits	-	-	-

metric			PART NUMBER		metric		
$\varnothing D_1$	$\varnothing d_1$	L_1			$\varnothing D_1$	$\varnothing d_1$	L_1
Tol. f8/h9	Tol. H9	Tol. +0.2			Tol. f8/h9	Tol. H9	Tol. +0.2
480.0	455.5	8.1	P16MR04800****	Also Fits	480.0	456.0	8.1
480.0	459.0	8.1	P16ML04800****	Also Fits	480.0	459.5	8.1
480.0	452.0	9.5	P16MH04800****	Also Fits	-	-	-
500.0	475.5	8.1	P16MR05000****	Also Fits	500.0	476.0	8.1
500.0	479.0	8.1	P16ML05000****	Also Fits	500.0	479.5	8.1
500.0	472.0	9.5	P16MH05000****	Also Fits	-	-	-
520.0	495.5	8.1	P16MR05200****	Also Fits	520.0	496.0	8.1
520.0	499.0	8.1	P16ML05200****	Also Fits	520.0	499.5	8.1
520.0	492.0	9.5	P16MH05200****	Also Fits	-	-	-
540.0	515.5	8.1	P16MR05400****	Also Fits	540.0	516.0	8.1
550.0	529.0	8.1	P16ML05500****	Also Fits	550.0	529.5	8.1
550.0	522.0	9.5	P16MH05500****	Also Fits	-	-	-
560.0	539.0	8.1	P16ML05600****	Also Fits	560.0	539.5	8.1
560.0	532.0	9.5	P16MH05600****	Also Fits	-	-	-
590.0	569.0	8.1	P16ML05900****	Also Fits	590.0	569.5	8.1
590.0	562.0	9.5	P16MH05900****	Also Fits	-	-	-
600.0	575.5	8.1	P16MR06000****	Also Fits	600.0	576.0	8.1
600.0	579.0	8.1	P16ML06000****	Also Fits	600.0	579.5	8.1
600.0	572.0	9.5	P16MH06000****	Also Fits	-	-	-
625.0	604.0	8.1	P16ML06250****	Also Fits	625.0	604.5	8.1
625.0	597.0	9.5	P16MH06250****	Also Fits	-	-	-
650.0	625.5	8.1	P16MR06500****	Also Fits	650.0	626.0	8.1
650.0	629.0	8.1	P16ML06500****	Also Fits	650.0	629.5	8.1
650.0	622.0	9.5	P16MH06500****	Also Fits	-	-	-
700.0	672.0	9.5	P16MR07000****	Also Fits	-	-	-
700.0	675.5	8.1	P16ML07000****	Also Fits	700.0	676.0	8.1
700.0	662.0	13.8	P16MH07000****	Also Fits	-	-	-
750.0	722.0	9.5	P16MR07500****	Also Fits	-	-	-



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PISTON SEAL

Single-Acting

PART NUMBER RANGE (METRIC)*

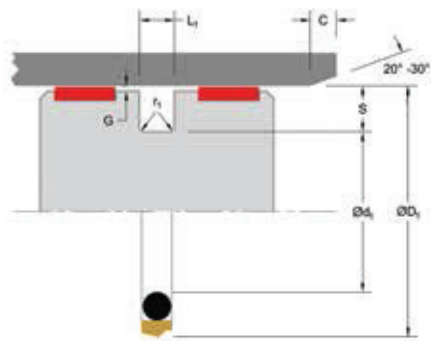
metric							
ØD ₁	Ød ₁	L ₁	PART NUMBER	Also Fits	ØD ₁	Ød ₁	L ₁
Tol. f8/h9	Tol. H9	Tol. +0.2			Tol. f8/h9	Tol. H9	Tol. +0.2
800.0	772.0	9.5	P16MR08000****	Also Fits	-	-	-
800.0	775.5	8.1	P16ML08000****	Also Fits	800.0	776.0	8.1
800.0	762.0	13.8	P16MH08000****	Also Fits	-	-	-
850.0	822.0	9.5	P16MR08500****	Also Fits	-	-	-
850.0	812.0	13.8	P16MH08500****	Also Fits	-	-	-
860.0	835.5	8.1	P16ML08600****	Also Fits	860.0	836.0	8.1
900.0	872.0	9.5	P16MR09000****	Also Fits	-	-	-
900.0	875.5	8.1	P16ML09000****	Also Fits	900.0	876.0	8.1
900.0	862.0	13.8	P16MH09000****	Also Fits	-	-	-
920.0	895.5	8.1	P16ML09200****	Also Fits	920.0	896.0	8.1
920.0	882.0	13.8	P16MH09200****	Also Fits	-	-	-
950.0	922.0	9.5	P16MR09500****	Also Fits	-	-	-
1000.0	962.0	13.8	P16MR10000****	Also Fits	-	-	-
1000.0	972.0	9.5	P16ML10000****	Also Fits	-	-	-
1050.0	1012.0	13.8	P16MR10500****	Also Fits	-	-	-
1050.0	1022.0	9.5	P16ML10500****	Also Fits	-	-	-
1100.0	1062.0	13.8	P16MR11000****	Also Fits	-	-	-
1100.0	1072.0	9.5	P16ML11000****	Also Fits	-	-	-
1150.0	1112.0	13.8	P16MR11500****	Also Fits	-	-	-
1150.0	1122.0	9.5	P16ML11500****	Also Fits	-	-	-
1200.0	1162.0	13.8	P16MR12000****	Also Fits	-	-	-
1200.0	1172.0	9.5	P16ML12000****	Also Fits	-	-	-
1250.0	1212.0	13.8	P16MR12500****	Also Fits	-	-	-
1300.0	1262.0	13.8	P16MR13000****	Also Fits	-	-	-
1350.0	1312.0	13.8	P16MR13500****	Also Fits	-	-	-

*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	P16ER00500****
0.562	0.369	0.087	P16ER00562****
0.625	0.432	0.087	P16ER00625****
0.687	0.494	0.087	P16ER00687****
0.750	0.557	0.087	P16EL00750****
0.750	0.329	0.165	P16EH00750****
0.812	0.525	0.126	P16ER00812****
0.812	0.391	0.165	P16EH00812****
0.875	0.588	0.126	P16ER00875****
0.875	0.454	0.165	P16EH00875****
0.937	0.650	0.126	P16ER00937****
0.937	0.516	0.165	P16EH00937****
1.000	0.713	0.126	P16ER01000****
1.000	0.579	0.165	P16EH01000****
1.062	0.775	0.126	P16ER01062****
1.062	0.641	0.165	P16EH01062****
1.125	0.838	0.126	P16ER01125****
1.125	0.704	0.165	P16EH01125****
1.187	0.900	0.126	P16ER01187****
1.187	0.766	0.165	P16EH01187****
1.250	0.963	0.126	P16ER01250****
1.250	0.829	0.165	P16EH01250****
1.312	1.025	0.126	P16ER01312****
1.312	0.891	0.165	P16EH01312****
1.375	1.088	0.126	P16ER01375****
1.375	0.954	0.165	P16EH01375****
1.437	1.150	0.126	P16ER01437****
1.437	1.016	0.165	P16EH01437****

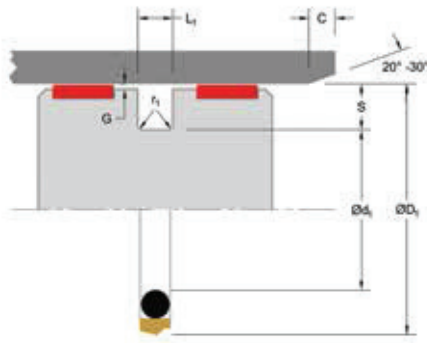




PART NUMBER RANGE (INCH)*

inch			PART NUMBER
$\varnothing D_1$	$\varnothing d_1$	L_1	
Tol. H9	Tol. H9	Tol. +0.008	
1.500	1.213	0.126	P16EL01500****
1.500	1.079	0.165	P16ER01500****
1.500	0.906	0.248	P16EH01500****
1.562	1.141	0.165	P16ER01563****
1.562	0.968	0.248	P16EH01563****
1.625	1.204	0.165	P16ER01625****
1.625	1.031	0.248	P16EH01625****
1.687	1.266	0.165	P16ER01687****
1.687	1.093	0.248	P16EH01687****
1.750	1.329	0.165	P16ER01750****
1.750	1.156	0.248	P16EH01750****
1.812	1.391	0.165	P16ER01812****
1.812	1.218	0.248	P16EH01812****
1.875	1.454	0.165	P16ER01875****
1.875	1.281	0.248	P16EH01875****
1.937	1.516	0.165	P16ER01937****
1.937	1.343	0.248	P16EH01937****
2.000	1.579	0.165	P16ER02000****
2.000	1.406	0.248	P16EH02000****
2.125	1.704	0.165	P16ER02125****
2.125	1.531	0.248	P16EH02125****
2.250	1.829	0.165	P16ER02250****
2.250	1.656	0.248	P16EH02250****
2.375	1.954	0.165	P16ER02375****
2.375	1.781	0.248	P16EH02375****
2.500	2.079	0.165	P16EL02500****
2.500	1.906	0.248	P16ER02500****
2.625	2.204	0.165	P16EL02625****

inch			PART NUMBER
$\varnothing D_1$	$\varnothing d_1$	L_1	
Tol. H9	Tol. H9	Tol. +0.008	
2.625	2.031	0.248	P16ER02625****
2.750	2.329	0.165	P16EL02750****
2.750	2.156	0.248	P16ER02750****
2.875	2.454	0.165	P16EL02875****
2.875	2.281	0.248	P16ER02875****
3.000	2.579	0.165	P16EL03000****
3.000	2.406	0.248	P16ER03000****
3.125	2.704	0.165	P16EL03125****
3.125	2.531	0.248	P16ER03125****
3.250	2.829	0.165	P16EL03250****
3.250	2.656	0.248	P16ER03250****
3.375	2.954	0.165	P16EL03375****
3.375	2.781	0.248	P16ER03375****
3.500	3.079	0.165	P16EL03500****
3.500	2.906	0.248	P16ER03500****
3.625	3.204	0.165	P16EL03625****
3.625	3.031	0.248	P16ER03625****
3.750	3.329	0.165	P16EL03750****
3.750	3.156	0.248	P16ER03750****
3.875	3.454	0.165	P16EL03875****
3.875	3.281	0.248	P16ER03875****
4.000	3.579	0.165	P16EL04000****
4.000	3.406	0.248	P16ER04000****
4.125	3.704	0.165	P16EL04125****
4.125	3.531	0.248	P16ER04125****
4.250	3.829	0.165	P16EL04250****
4.250	3.656	0.248	P16ER04250****
4.375	3.954	0.165	P16EL04375****



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PISTON SEAL

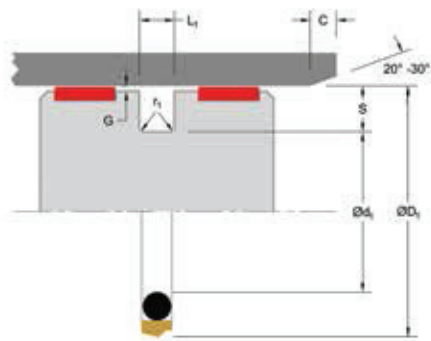
Single-Acting

PART NUMBER RANGE (INCH)*

inch			PART NUMBER
ØD ₁	Ød ₁	L ₁	
Tol. H9	Tol. H9	Tol. +0.008	
4.375	3.781	0.248	P16ER04375****
4.500	4.079	0.165	P16EL04500****
4.500	3.906	0.248	P16ER04500****
4.625	4.031	0.248	P16ER04625****
4.625	3.818	0.319	P16EH04625****
4.750	4.156	0.248	P16ER04750****
4.750	3.943	0.319	P16EH04750****
4.875	4.281	0.248	P16ER04875****
4.875	4.068	0.319	P16EH04875****
5.000	4.406	0.248	P16ER05000****
5.000	4.193	0.319	P16EH05000****
5.125	4.531	0.248	P16ER05125****
5.125	4.318	0.319	P16EH05125****
5.250	4.656	0.248	P16ER05250****
5.250	4.443	0.319	P16EH05250****
5.375	4.781	0.248	P16ER05375****
5.375	4.568	0.319	P16EH05375****
5.500	4.906	0.248	P16ER05500****
5.500	4.693	0.319	P16EH05500****
5.625	5.031	0.248	P16ER05625****
5.625	4.818	0.319	P16EH05625****
5.750	5.156	0.248	P16ER05750****
5.750	4.943	0.319	P16EH05750****
6.000	5.406	0.248	P16ER06000****
6.000	5.193	0.319	P16EH06000****
6.250	5.656	0.248	P16ER06250****
6.250	5.443	0.319	P16EH06250****
6.500	5.906	0.248	P16ER06500****

inch			PART NUMBER
ØD ₁	Ød ₁	L ₁	
Tol. H9	Tol. H9	Tol. +0.008	
6.500	5.693	0.319	P16EH06500****
6.750	6.156	0.248	P16ER06750****
6.750	5.943	0.319	P16EH06750****
7.000	6.406	0.248	P16ER07000****
7.000	6.193	0.319	P16EH07000****
7.250	6.656	0.248	P16ER07250****
7.250	6.443	0.319	P16EH07250****
7.500	6.906	0.248	P16ER07500****
7.500	6.693	0.319	P16EH07500****
7.750	7.156	0.248	P16ER07750****
7.750	6.943	0.319	P16EH07750****
8.000	7.193	0.319	P16ER08000****
8.250	7.443	0.319	P16ER08250****
8.500	7.693	0.319	P16ER08500****
8.750	7.943	0.319	P16ER08750****
9.000	8.193	0.319	P16ER09000****
9.250	8.443	0.319	P16ER09250****
9.500	8.693	0.319	P16ER09500****
9.750	8.943	0.319	P16ER09750****
10.000	9.193	0.319	P16EL10000****
10.000	9.055	0.319	P16ER10000****
10.500	9.693	0.319	P16EL10500****
10.500	9.555	0.319	P16ER10500****
11.000	10.193	0.319	P16EL11000****
11.000	10.055	0.319	P16ER11000****
11.500	10.693	0.319	P16EL11500****
11.500	10.555	0.319	P16ER11500****
12.000	11.055	0.319	P16ER12000****





PART NUMBER RANGE (INCH)*

inch			PART NUMBER
ØD ₁	Ød ₁	L ₁	
Tol. H9	Tol. H9	Tol. +0.008	
12.500	11.555	0.319	P16ER12500****
13.000	12.055	0.319	P16ER13000****
13.500	12.555	0.319	P16ER13500****
14.000	13.055	0.319	P16ER14000****
14.500	13.555	0.319	P16ER14500****
15.000	14.055	0.319	P16ER15000****
15.500	14.555	0.319	P16ER15500****
16.000	15.055	0.319	P16ER16000****

inch			PART NUMBER
ØD ₁	Ød ₁	L ₁	
Tol. H9	Tol. H9	Tol. +0.008	
16.500	15.555	0.319	P16ER16500****
17.000	16.055	0.319	P16ER17000****
17.500	16.555	0.319	P16ER17500****
18.000	17.055	0.319	P16ER18000****
18.500	17.555	0.319	P16ER18500****
19.000	18.055	0.319	P16ER19000****
19.500	18.555	0.319	P16ER19500****
20.000	19.055	0.319	P16ER20000****

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