

RDS

ROD SEAL

Double-Acting

TECHNICAL DETAILS

The Hallite RDS is a double-acting low-friction rod seal solution for compact o-ring grooves, that extends the service range above what an o-ring alone is capable of supporting. The RDS is designed for light-duty applications, is particularly suited for small-diameter installations, and due to its size and design, is easy to install. High-performance Armorlene® materials, like HLX, provide outstanding wear and extrusion-resistance properties as well as large range of temperature and media compatibility.

Hallite's RDS is designed to be used in existing dynamic o-ring grooves and does not require any groove modification. A good choice for pneumatic and hydraulic equipment sealing needs, the RDS is proven to extend the service range and seal longevity over stand-alone o-ring installations.

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



FEATURES

- Compact design to save metal spacing
- Low breakout friction and elimination of stick-slip action
- Effective in pneumatic cylinder and light-duty hydraulic cylinder
- Can be used in standard AS-568 dynamic o-ring groove
- Fits groove dimensions per MIL-G-5514F
- Recommended for light-duty and smaller-diameter applications

Part Number Structure

RDSMR00700NHLX _

RDS	M	R	00700	N	HLX	—
PROFILE DESIGNATION	UNIT OF MEASUREMENT M = Metric E = Inch	APPLICATION Refer to Installation Recommendations and use designator for desired application	ROD 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 N = Notches

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	350 bar	5000 psi

*Dependent upon energizer used (NBR, FKM, etc.).

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	-	-

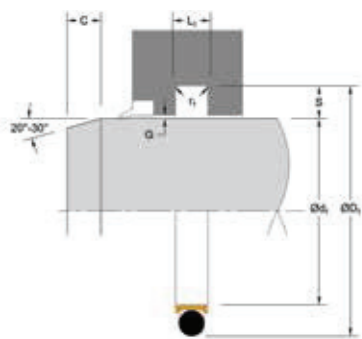
*Seal ratings are based upon capabilities of its matched material components. Hallite cannot rate seal performance when the seal is mixed with other manufacturers' energizers/components.

MATERIALS

MATERIAL FEATURES AND APPLICATIONS	FILLER	MATERIAL DESIGNATOR	COLOR	TEMPERATURE RANGE°C	TEMPERATURE RANGE°F	MAXIMUM DYNAMIC PRESSURE - BAR	MAXIMUM DYNAMIC PRESSURE - PSI
<p>ARMORLENE® HLX</p> <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	350 bar	5000 psi
<p>ARMORLENE® 711</p> <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	350 bar	5000 psi
<p>ARMORLENE® 700</p> <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

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.





INSTALLATION RECOMMENDATIONS

metric

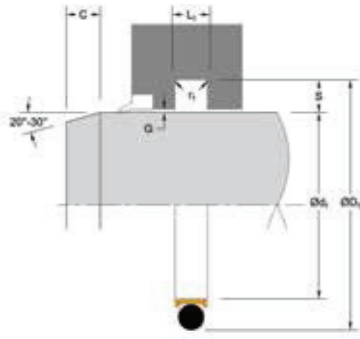
ROD DIAMETER Ød ₁ f8/h9			GROOVE DIAMETER	GROOVE WIDTH	RADIUS	CHAMFER	GROOVE SECTION	RADIAL CLEARANCE G MAX*			O-RING CROSS SECTION
DIAMETER RANGE			ØD ₁ H9	L ₁ + 0.2	R ₁	C	S	Up to 100 bar	Up to 200 bar	Up to 350 bar	O-Ring
Standard Duty Application - R	Light Duty Application - L										
4.0 - 9.9	10.0 - 19.9		d ₁ + 2.9	2.4	0.4	2.0	1.45	0.10	0.08	0.05	1.78
10.0 - 19.9	20.0 - 39.9		d ₁ + 4.5	3.6	0.4	3.0	2.25	0.15	0.10	0.07	2.62
20.0 - 39.9	40.0 - 119.9		d ₁ + 6.2	4.8	0.6	4.0	3.10	0.20	0.15	0.08	3.53
40.0 - 119.9	120.0 - 649.9		d ₁ + 9.4	7.1	0.8	6.0	4.70	0.25	0.20	0.10	5.33
120.0 - 649.9	650.0 - 999.9		d ₁ + 12.2	9.5	0.8	8.0	6.10	0.30	0.25	0.15	6.99
650.0 - 999.9	-		d ₁ + 15.0	10.0	1.0	1.0	7.50	0.40	0.30	0.20	8.40

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

inch

ROD DIAMETER Ød ₁ f8/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 5000 PSI	O-Ring
Standard Duty Application - R	Light Duty Application - L	Heavy Duty Application - H									
0.125 - 0.499	0.500 - 0.874	-	d ₁ + 0.110	0.093	0.005	0.079	0.055	0.004	0.003	0.002	0.070
0.500 - 0.874	0.875 - 1.624	0.125 - 0.499	d ₁ + 0.176	0.140	0.005	0.118	0.088	0.006	0.004	0.003	0.103
0.875 - 1.624	1.625 - 4.499	0.500 - 0.874	d ₁ + 0.242	0.187	0.010	0.157	0.121	0.008	0.006	0.003	0.139
1.625 - 4.499	4.500 - 16.000	0.875 - 1.624	d ₁ + 0.370	0.281	0.020	0.236	0.185	0.010	0.008	0.004	0.210
4.500 - 16.000	-	-	d ₁ + 0.474	0.375	0.020	0.315	0.237	0.012	0.010	0.006	0.275

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



RDS

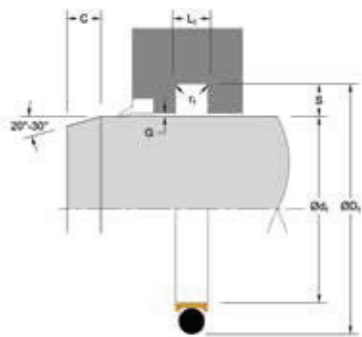
ROD SEAL
Double-Acting

PART NUMBER RANGE (METRIC)*

metric			PART NUMBER
Ød ₁	ØD ₁	L ₁	
Tol. f8/h9	Tol. H9	Tol. +0.2	
4.0	6.9	2.4	RDSMR00040****
5.0	7.9	2.4	RDSMR00050****
6.0	8.9	2.4	RDSMR00060****
8.0	10.9	2.4	RDSMR00080****
10.0	14.5	3.6	RDSMR00100****
12.0	16.5	3.6	RDSMR00120****
14.0	18.5	3.6	RDSMR00140****
15.0	19.5	3.6	RDSMR00150****
16.0	20.5	3.6	RDSMR00160****
18.0	22.5	3.6	RDSMR00180****
20.0	26.2	4.8	RDSMR00200****
22.0	28.2	4.8	RDSMR00220****
25.0	31.2	4.8	RDSMR00250****
28.0	34.2	4.8	RDSMR00280****
30.0	36.2	4.8	RDSMR00300****
32.0	38.2	4.8	RDSMR00320****
35.0	41.2	4.8	RDSMR00350****
36.0	42.2	4.8	RDSMR00360****
40.0	49.4	7.1	RDSMR00400****
42.0	51.4	7.1	RDSMR00420****
45.0	54.4	7.1	RDSMR00450****
48.0	57.4	7.1	RDSMR00480****
50.0	59.4	7.1	RDSMR00500****
52.0	61.4	7.1	RDSMR00520****
55.0	64.4	7.1	RDSMR00550****
56.0	65.4	7.1	RDSMR00560****
60.0	69.4	7.1	RDSMR00600****
63.0	72.4	7.1	RDSMR00630****

metric			PART NUMBER
Ød ₁	ØD ₁	L ₁	
Tol. f8/h9	Tol. H9	Tol. +0.2	
65.0	74.4	7.1	RDSMR00650****
70.0	79.4	7.1	RDSMR00700****
80.0	89.4	7.1	RDSMR00800****
85.0	94.4	7.1	RDSMR00850****
90.0	99.4	7.1	RDSMR00900****
95.0	104.4	7.1	RDSMR00950****
100.0	109.4	7.1	RDSMR01000****
105.0	114.4	7.1	RDSMR01050****
110.0	119.4	7.1	RDSMR01100****
115.0	124.4	7.1	RDSMR01150****
120.0	132.2	9.5	RDSMR01200****
125.0	137.2	9.5	RDSMR01250****
130.0	142.2	9.5	RDSMR01300****
135.0	147.2	9.5	RDSMR01350****
140.0	152.2	9.5	RDSMR01400****
150.0	162.2	9.5	RDSMR01500****
160.0	172.2	9.5	RDSMR01600****
170.0	182.2	9.5	RDSMR01700****
180.0	192.2	9.5	RDSMR01800****
190.0	202.2	9.5	RDSMR01900****
200.0	212.2	9.5	RDSMR02000****
210.0	222.2	9.5	RDSMR02100****
220.0	232.2	9.5	RDSMR02200****
230.0	242.2	9.5	RDSMR02300****
240.0	252.2	9.5	RDSMR02400****
250.0	262.2	9.5	RDSMR02500****
280.0	292.2	9.5	RDSMR02800****
300.0	312.2	9.5	RDSMR03000****





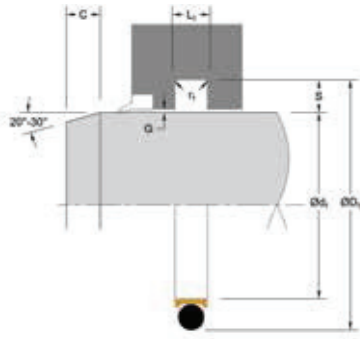
PART NUMBER RANGE (METRIC)*

metric			PART NUMBER
$\varnothing d_1$	$\varnothing D_1$	L_1	
Tol. f8/h9	Tol. H9	Tol. +0.2	
320.0	332.2	9.5	RDSMR03200****
350.0	362.2	9.5	RDSMR03500****
360.0	372.2	9.5	RDSMR03600****
400.0	412.2	9.5	RDSMR04000****
500.0	512.2	9.5	RDSMR05000****
600.0	612.2	9.5	RDSMR06000****
650.0	665.0	10.0	RDSMR06500****
700.0	715.0	10.0	RDSMR07000****
800.0	815.0	10.0	RDSMR08000****
900.0	915.0	10.0	RDSMR09000****
950.0	965.0	10.0	RDSMR09500****

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

PART NUMBER RANGE (INCH)*

inch			PART NUMBER
$\varnothing d_1$	$\varnothing D_1$	L_1	
Tol. f8/h9	Tol. H9	Tol. +0.008	
0.500	0.610	0.093	RDSEL00500****
0.562	0.672	0.093	RDSEL00562****
0.625	0.735	0.093	RDSEL00625****
0.687	0.797	0.093	RDSEL00687****
0.750	0.860	0.093	RDSEL00750****
0.812	0.922	0.093	RDSEL00812****
0.875	1.051	0.140	RDSEL00875****
0.937	1.113	0.140	RDSEL00937****
1.000	1.176	0.140	RDSEL01000****
1.062	1.238	0.140	RDSEL01062****
1.125	1.301	0.140	RDSEL01125****
1.187	1.363	0.140	RDSEL01187****
1.250	1.426	0.140	RDSEL01250****
1.312	1.488	0.140	RDSEL01312****
1.375	1.551	0.140	RDSEL01375****
1.437	1.613	0.140	RDSEL01437****
1.500	1.676	0.140	RDSEL01500****
1.562	1.738	0.140	RDSEL01562****
1.625	1.867	0.187	RDSEL01625****
1.687	1.929	0.187	RDSEL01687****
1.750	1.992	0.187	RDSEL01750****
1.812	2.054	0.187	RDSEL01812****
1.875	2.117	0.187	RDSEL01875****
1.937	2.179	0.187	RDSEL01937****
2.000	2.242	0.187	RDSEL02000****
2.062	2.304	0.187	RDSEL02062****
2.125	2.367	0.187	RDSEL02125****
2.187	2.429	0.187	RDSEL02187****



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PART NUMBER RANGE (INCH)*

inch			PART NUMBER
$\varnothing d_1$	$\varnothing D_1$	L_1	
Tol. f8/h9	Tol. H9	Tol. +0.008	
2.250	2.492	0.187	RDSEL02250****
2.312	2.554	0.187	RDSEL02312****
2.375	2.617	0.187	RDSEL02375****
2.437	2.679	0.187	RDSEL02437****
2.500	2.742	0.187	RDSEL02500****
2.625	2.867	0.187	RDSEL02625****
2.750	2.992	0.187	RDSEL02750****
2.875	3.117	0.187	RDSEL02875****
3.000	3.242	0.187	RDSEL03000****
3.125	3.367	0.187	RDSEL03125****
3.250	3.492	0.187	RDSEL03250****
3.375	3.617	0.187	RDSEL03375****
3.500	3.742	0.187	RDSEL03500****
3.625	3.867	0.187	RDSEL03625****
3.750	3.992	0.187	RDSEL03750****
3.875	4.117	0.187	RDSEL03875****
4.000	4.242	0.187	RDSEL04000****
4.125	4.367	0.187	RDSEL04125****
4.250	4.492	0.187	RDSEL04250****
4.375	4.617	0.187	RDSEL04375****
4.500	4.870	0.281	RDSEL04500****
4.625	4.995	0.281	RDSEL04625****
4.750	5.120	0.281	RDSEL04750****
4.875	5.245	0.281	RDSEL04875****
5.000	5.474	0.375	RDSER05000****
5.125	5.599	0.375	RDSER05125****
5.250	5.724	0.375	RDSER05250****
5.375	5.849	0.375	RDSER05375****

inch			PART NUMBER
$\varnothing d_1$	$\varnothing D_1$	L_1	
Tol. f8/h9	Tol. H9	Tol. +0.008	
5.500	5.974	0.375	RDSE05500****
5.625	6.099	0.375	RDSE05625****
5.750	6.224	0.375	RDSE05750****
5.875	6.349	0.375	RDSE05875****
6.000	6.474	0.375	RDSE06000****
6.250	6.724	0.375	RDSE06250****
6.500	6.974	0.375	RDSE06500****
6.750	7.224	0.375	RDSE06750****
7.000	7.474	0.375	RDSE07000****
7.250	7.724	0.375	RDSE07250****
7.500	7.974	0.375	RDSE07500****
7.750	8.224	0.375	RDSE07750****
8.000	8.474	0.375	RDSE08000****
8.500	8.974	0.375	RDSE08500****
9.000	9.474	0.375	RDSE09000****
9.500	9.974	0.375	RDSE09500****
10.000	10.474	0.375	RDSE10000****

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