

RCG

ROD SEAL

Double-Acting

TECHNICAL DETAILS

The Hallite RCG is a double-acting, o-ring energized, low-friction rod seal designed for low- and medium-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 compact design of the RCG provides an ideal sealing solution where housing space is limited. This seal is available in a variety of Hallite's high-performance Armorlene® materials to suit a wide range of demanding applications.



FEATURES

- Low breakout friction and elimination of stick-slip action
- Compact design to save metal spacing
- High service temperature, long wear, and high extrusion resistance

Part Number Structure

RCGMR00400NHLX _

RCG	M	R	00400	N	HLX	_
PROFILE DESIGNATION	UNIT OF MEASUREMENT M = Metric E = Inch	APPLICATION Refer to <i>Installation Recommendations</i> and use designator for desired application	ROD DIAMETER Metric = mm X 10 Inch = inches X 1000	ENERGIZER MATERIAL Refer to <i>Energizer Table</i> for desired energizer material	PTFE MATERIAL Refer to <i>Material Table</i> 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	200 bar	2900 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
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	200 bar	2900 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	200 bar	2900 psi
ARMORLENE® 700 <ul style="list-style-type: none"> Excellent in all hydraulic fluids Recommended for hard mating surfaces only Low friction and no stick-slip 	Unfilled	700	White	-184 to 204°C	-300 to 400°F	200 bar	2900 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	200 bar	2900 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	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	GROOVE SECTION	RADIAL CLEARANCE G MAX*	O-RING CROSS SECTION
DIAMETER RANGE	ØD ₁ H9	L ₁ + 0.02	r ₁	S	Up to 200 bar	O-Ring
Standard Duty Application - R						
4.0 - 7.9	d ₁ + 4.0	2.00	0.5	2.00	0.05	1.78
8.0 - 18.9	d ₁ + 6.0	2.85	0.5	3.00	0.08	2.62
19.0 - 37.9	d ₁ + 7.5	3.80	0.5	3.75	0.08	3.53
38.0 - 119.9	d ₁ + 12.5	5.60	0.9	6.25	0.10	5.33
120.0 - 164.9	d ₁ + 15.0	7.55	0.9	7.50	0.10	6.99
165.0 - 219.9	d ₁ + 18.0	7.55	0.9	9.00	0.10	6.99
220.0 - 400.0	d ₁ + 24.0	7.55	0.9	12.00	0.10	6.99

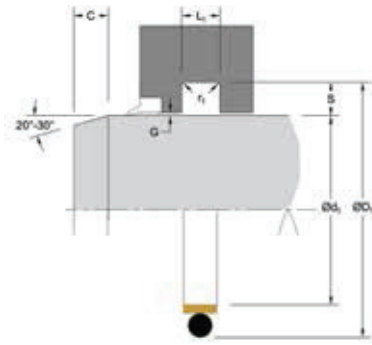
*Radial Clearance G max. = maximum permissible gap all on one side using min. rod diameter and max. clearance diameter.

metric						
ROD DIAMETER ØD ₁ F7/H8	GROOVE DIAMETER	GROOVE WIDTH	RADIUS	GROOVE SECTION	RADIAL CLEARANCE G MAX*	O-RING CROSS SECTION
DIAMETER RANGE	ØD ₁ H9	L ₁ + 0.02	r ₁	S	Up to 200 bar	O-Ring
Standard Duty Application - S						
10.0 - 22.0	d ₁ + 6.2	3.20	0.5	3.1	0.08	2.40
22.1 - 56.0	d ₁ + 7.2	4.00	0.5	3.6	0.08	3.00
56.1 - 100.0	d ₁ + 12.2	7.50	0.9	6.1	0.10	5.70

*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	GROOVE SECTION	RADIAL CLEARANCE G MAX*	O-RING CROSS SECTION
DIAMETER RANGE	ØD ₁ H9	L ₁ + 0.008	r ₁	S	Up to 2900 psi	O-Ring
Standard Duty Application - R						
Light Duty Application - L						
0.250 - 0.999	1.000 - 2.499	d ₁ + 0.172	0.079	0.020	0.002	0.070
1.000 - 2.499	2.500 - 3.499	d ₁ + 0.236	0.112	0.020	0.003	0.103
2.500 - 3.499	3.500 - 4.499	d ₁ + 0.363	0.149	0.030	0.003	0.139
3.500 - 4.499	4.500 - 5.999	d ₁ + 0.491	0.221	0.050	0.004	0.210
4.500 - 5.999	-	d ₁ + 0.593	0.297	0.060	0.004	0.275
6.000 - 7.999	-	d ₁ + 0.718	0.297	0.060	0.004	0.275
8.000 - 15.000	-	d ₁ + 0.968	0.297	0.060	0.004	0.275

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



RCG

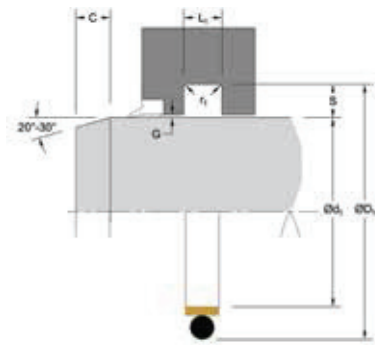
ROD SEAL
Double-Acting

PART NUMBER RANGE (METRIC)*

metric			PART NUMBER
Ød ₁	ØD ₁	L ₁	
Tol. f8/h9	Tol. H9	Tol. +0.2	
7.0	11.0	2.00	RCGMR00070****
9.0	15.0	2.85	RCGMR00090****
10.0	16.0	2.85	RCGMR00100****
10.0	16.2	3.20	RCGMS00100****
12.0	18.0	2.85	RCGMR00120****
12.0	18.2	3.20	RCGMS00120****
14.0	20.0	2.85	RCGMR00140****
14.0	20.2	3.20	RCGMS00140****
15.0	21.2	3.20	RCGMS00150****
16.0	22.0	2.85	RCGMR00160****
16.0	22.2	3.20	RCGMS00160****
18.0	24.0	2.85	RCGMR00180****
18.0	24.2	3.20	RCGMS00180****
20.0	26.2	3.20	RCGMS00200****
20.0	27.5	3.80	RCGMR00200****
22.0	28.2	3.20	RCGMS00220****
22.0	29.5	3.80	RCGMR00220****
25.0	32.5	3.80	RCGMR00250****
25.0	32.2	4.00	RCGMS00250****
28.0	35.5	3.80	RCGMR00280****
28.0	35.2	4.00	RCGMS00280****
30.0	37.5	3.80	RCGMR00300****
30.0	37.2	4.00	RCGMS00300****
32.0	39.5	3.80	RCGMR00320****
32.0	39.2	4.00	RCGMS00320****
35.0	42.5	3.80	RCGMR00350****
35.0	42.2	4.00	RCGMS00350****
36.0	43.5	3.80	RCGMR00360****

metric			PART NUMBER
Ød ₁	ØD ₁	L ₁	
Tol. f8/h9	Tol. H9	Tol. +0.2	
36.0	43.2	4.00	RCGMS00360****
38.0	45.2	4.00	RCGMS00380****
40.0	47.2	4.00	RCGMS00400****
40.0	52.5	5.60	RCGMR00400****
42.0	49.2	4.00	RCGMS00420****
42.0	54.5	5.60	RCGMR00420****
45.0	52.2	4.00	RCGMS00450****
45.0	57.5	5.60	RCGMR00450****
48.0	55.2	4.00	RCGMS00480****
50.0	57.2	4.00	RCGMS00500****
50.0	62.5	5.60	RCGMR00500****
52.0	59.2	4.00	RCGMS00520****
55.0	62.2	4.00	RCGMS00550****
55.0	67.5	5.60	RCGMR00550****
56.0	63.2	4.00	RCGMS00560****
60.0	72.2	7.50	RCGMS00600****
60.0	72.5	5.60	RCGMR00600****
63.0	75.2	7.50	RCGMS00630****
63.0	75.5	5.60	RCGMR00630****
65.0	77.2	7.50	RCGMS00650****
65.0	77.5	5.60	RCGMR00650****
70.0	82.2	7.50	RCGMS00700****
70.0	82.5	5.60	RCGMR00700****
75.0	87.2	7.50	RCGMS00750****
75.0	87.5	5.60	RCGMR00750****
80	92.2	7.50	RCGMS00800****
80	92.5	5.60	RCGMR00800****
85	97.2	7.50	RCGMS00850****





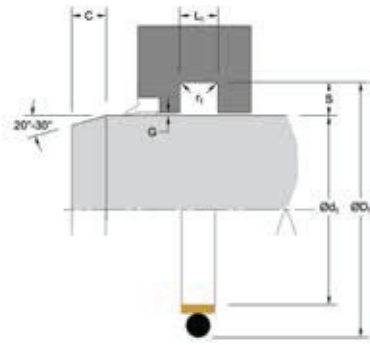
PART NUMBER RANGE (METRIC)*

metric			PART NUMBER
Ød ₁	ØD ₁	L ₁	
Tol. f8/h9	Tol. H9	Tol. +0.2	
85.0	97.5	5.60	RCGMR00850****
90.0	102.2	7.50	RCGMS00900****
90.0	102.5	5.60	RCGMR00900****
92.0	104.5	5.60	RCGMR00920****
95.0	107.2	7.50	RCGMS00950****
100.0	112.2	7.50	RCGMS01000****
100.0	112.5	5.60	RCGMR01000****
105.0	117.5	5.60	RCGMR01050****
110.0	122.5	5.60	RCGMR01100****
115.0	127.5	5.60	RCGMR01150****
120.0	135.0	7.55	RCGMR01200****
125.0	140.0	7.55	RCGMR01250****
130.0	145.0	7.55	RCGMR01300****
140.0	155.0	7.55	RCGMR01400****
150.0	165.0	7.55	RCGMR01500****
160.0	175.0	7.55	RCGMR01600****
200.0	218.0	7.55	RCGMR02000****

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

PART NUMBER RANGE (INCH)*

inch			PART NUMBER
Ød ₁	ØD ₁	L ₁	
Tol. f8/h9	Tol. H9	Tol. +0.008	
0.250	0.422	0.079	RCGER00250****
0.312	0.484	0.079	RCGER00312****
0.375	0.547	0.079	RCGER00375****
0.437	0.609	0.079	RCGER00437****
0.500	0.672	0.079	RCGER00500****
0.562	0.734	0.079	RCGER00562****
0.625	0.797	0.079	RCGER00625****
0.687	0.859	0.079	RCGER00687****
0.750	0.922	0.079	RCGER00750****
0.812	0.984	0.079	RCGER00812****
0.875	1.047	0.079	RCGER00875****
0.937	1.109	0.079	RCGER00937****
1.000	1.236	0.112	RCGER01000****
1.062	1.298	0.112	RCGER01062****
1.125	1.361	0.112	RCGER01125****
1.187	1.423	0.112	RCGER01187****
1.250	1.486	0.112	RCGER01250****
1.312	1.548	0.112	RCGER01312****
1.375	1.611	0.112	RCGER01375****
1.437	1.673	0.112	RCGER01437****
1.500	1.736	0.112	RCGER01500****
1.562	1.798	0.112	RCGER01562****
1.625	1.861	0.112	RCGER01625****
1.687	1.923	0.112	RCGER01687****
1.750	1.986	0.112	RCGER01750****
1.812	2.048	0.112	RCGER01812****
1.875	2.111	0.112	RCGER01875****
1.937	2.173	0.112	RCGER01937****



RCG

ROD SEAL
Double-Acting

PART NUMBER RANGE (INCH)*

inch			PART NUMBER
Ød ₁	ØD ₁	L ₁	
Tol. f8/h9	Tol. H9	Tol. +0.008	
2.000	2.236	0.112	RCGER02000****
2.062	2.298	0.112	RCGER02062****
2.125	2.361	0.112	RCGER02125****
2.187	2.423	0.112	RCGER02187****
2.250	2.486	0.112	RCGER02250****
2.312	2.548	0.112	RCGER02312****
2.375	2.611	0.112	RCGER02375****
2.437	2.673	0.112	RCGER02437****
2.500	2.736	0.112	RCGER02500****
2.625	2.988	0.149	RCGER02625****
2.750	3.113	0.149	RCGER02750****
2.875	3.238	0.149	RCGER02875****
3.000	3.363	0.149	RCGER03000****
3.125	3.488	0.149	RCGER03125****
3.250	3.613	0.149	RCGER03250****
3.375	3.738	0.149	RCGER03375****
3.500	3.991	0.221	RCGER03500****
3.625	4.116	0.221	RCGER03625****
3.750	4.241	0.221	RCGER03750****
3.875	4.366	0.221	RCGER03875****
4.000	4.491	0.221	RCGER04000****
4.125	4.616	0.221	RCGER04125****
4.250	4.741	0.221	RCGER04250****
4.375	4.866	0.221	RCGER04375****
4.500	5.093	0.297	RCGER04500****
4.625	5.218	0.297	RCGER04625****
4.750	5.343	0.297	RCGER04750****
4.875	5.468	0.297	RCGER04875****

inch			PART NUMBER
Ød ₁	ØD ₁	L ₁	
Tol. f8/h9	Tol. H9	Tol. +0.008	
5.000	5.593	0.297	RCGER05000****
5.125	5.718	0.297	RCGER05125****
5.250	5.843	0.297	RCGER05250****
5.375	5.968	0.297	RCGER05375****
5.500	6.093	0.297	RCGER05500****
5.625	6.218	0.297	RCGER05625****
5.750	6.343	0.297	RCGER05750****
5.875	6.468	0.297	RCGER05875****
6.000	6.718	0.297	RCGER06000****
6.250	6.968	0.297	RCGER06250****
6.500	7.218	0.297	RCGER06500****
6.750	7.468	0.297	RCGER06750****
7.000	7.718	0.297	RCGER07000****
7.250	7.968	0.297	RCGER07250****
7.500	8.218	0.297	RCGER07500****
7.750	8.468	0.297	RCGER07750****
8.000	8.968	0.297	RCGER08000****
8.500	9.468	0.297	RCGER08500****
9.000	9.968	0.297	RCGER09000****
9.500	10.468	0.297	RCGER09500****
10.000	10.968	0.297	RCGER10000****
10.500	11.468	0.297	RCGER10500****
11.000	11.968	0.297	RCGER11000****
11.500	12.468	0.297	RCGER11500****
12.000	12.968	0.297	RCGER12000****

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