

# EXG

## WIPER/EXCLUDER

Double-Acting

### TECHNICAL DETAILS

The Hallite EXG is a double-acting, two o-ring energized, rod wiper/excluder designed to include two different unique wiping lip geometries. The EXG wiper is primarily designed for environments with heavy contamination, particularly when the rod is facing upwards. The two wiping lips combine to scrape debris from the rod and contain residual oil on rod extension. Hallite's innovative Umbrella® wiper technology is designed to eliminate debris buildup from in front of the primary wiping lip by forcing it to flow to the outer diameter of the cylinder away from the rod. The EXG design requires two o-ring energizers; one o-ring energizer provides downward force to maintain the engagement of the inner wiping lip, while the other o-ring provides the necessary force and static sealing of the primary wiping lip area to the sliding surface.

Typically made from exclusive Hallite Armorlene® materials, this seal is capable of high-speed applications and eliminates any potential for stick-slip. High-performance Armorlene® materials, like HLX, provide outstanding wear and scraping capability as well as large range of temperature and media compatibility. The Halite EXG wiper employs the same basic principles of design function as the Hallite E2W, E5W, and EXF, though the EXG wiper may require a gland drain to properly relieve pressure between the wiper and rod seal.



### FEATURES

- Low friction and elimination of stick-slip
- Excellent in high-speed applications
- More stable design for application with excessive side-to-side movement on rod
- Balanced design keeps contamination out of cylinder while also minimizing oil film on rod

### Part Number Structure

EXGMR00400NHLX \_

<b>EXG</b>	<b>M</b>	<b>R</b>	<b>00400</b>	<b>N</b>	<b>HLX</b>	<b>—</b>
<b>PROFILE DESIGNATION</b>	<b>UNIT OF MEASUREMENT</b> M = Metric E = Inch	<b>APPLICATION</b> Refer to <i>Installation Recommendations</i> and use designator for desired application	<b>ROD DIAMETER</b> Metric = mm X 10 Inch = inches X 1000	<b>ENERGIZER MATERIAL</b> Refer to <i>Energizer Table</i> for desired energizer material	<b>PTFE MATERIAL</b> Refer to <i>Material Table</i> for desired PTFE (face) material	<b>SPECIAL FEATURE</b> Blank = Std profile

## OPERATING CONDITIONS

	metric	inch
<b>Maximum Speed</b>	Up to 5.0m/sec	Up to 16.4ft/sec
<b>Temperature Range*</b>	-45 to 200°C	-49 to 392°F

\*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	
<b>Dynamic Sealing Face Ød<sub>1</sub></b>	0.05 - 0.2	1.3 max	2 max	2 - 8	52 max	78 max	60% - 90%
<b>Static Sealing Face ØD<sub>1</sub> and ØD<sub>2</sub></b>	1.6 max	7 max	10 max	63 max	276 max	394 max	
<b>Static Housing Faces L<sub>1</sub></b>	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
<b>NBR - 70A</b>	O-Ring	N	-30 to 100°C	-22 to 212°F
<b>NBR - 70A Low temp.</b>	O-Ring	L	-45 to 80°C	-49 to 176°F
<b>FKM - 75A</b>	O-Ring	F	-10 to 200°C	14 to 392°F
<b>EPDM - 70A</b>	O-Ring	E	-45 to 145°C	-49 to 293°F
<b>HNBR - 70A</b>	O-Ring	H	-25 to 150°C	-13 to 302°F
<b>NBR - 90A</b>	O-Ring	Q	-30 to 100°C	-22 to 212°F
<b>HNBR - 90A</b>	O-Ring	U	-25 to 150°C	-13 to 302°F
<b>No Energizer*</b>	None	X	-	-

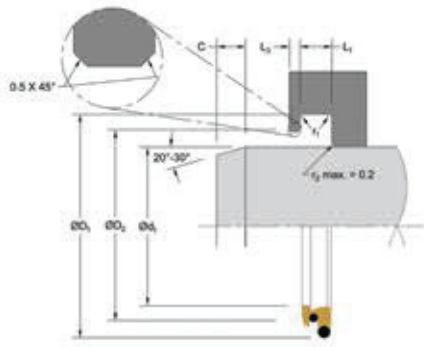
\*Seal ratings are based upon capabilities of its matched material components. Hallite cannot rate seal performance when the seal is mixed with other manufacturers' energizers/components.

## MATERIALS

MATERIAL FEATURES AND APPLICATIONS	FILLER	MATERIAL DESIGNATOR	COLOR	TEMPERATURE RANGE°C	TEMPERATURE RANGE°F
<b>ARMORLENE® HLX</b> <ul style="list-style-type: none"> <li>Standard material for hydraulic applications</li> <li>High compressive strength</li> <li>Excellent extrusion resistance</li> <li>Extended wear resistance</li> </ul>	Special Bronze Compound	HLX	Gold	-73 to 288°C	-100 to 550°F
<b>ARMORLENE® HCF</b> <ul style="list-style-type: none"> <li>Excellent in lubricating and non-lubricating hydraulic fluids (includes water) w/o zinc content</li> <li>Not recommended for gas sealing applications</li> <li>Not recommended for electrical conductive fluids</li> </ul>	Carbon Fiber Filled	HCF	Gray/Black	-73 to 260°C	-100 to 500°F
<b>ARMORLENE® 702</b> <ul style="list-style-type: none"> <li>Excellent in lubricating and non-lubricating hydraulic fluids</li> <li>Good low-friction properties</li> <li>Excellent extrusion resistance</li> <li>Good chemical resistance</li> </ul>	Glass Molybdenum Disulfide	702	Gray	-73 to 260°C	-100 to 500°F
<b>ARMORLENE® 711</b> <ul style="list-style-type: none"> <li>Excellent in all lubricating fluids and pneumatic applications</li> <li>High chemical resistance</li> <li>Excellent extrusion resistance</li> <li>Excellent wear properties</li> </ul>	25% Carbon/Graphite	711	Black	-73 to 288°C	-100 to 550°F
<b>ARMORLENE® 700</b> <ul style="list-style-type: none"> <li>Excellent in all hydraulic fluids</li> <li>Recommended for use with soft mating surfaces</li> <li>Low friction and no stick-slip</li> </ul>	Unfilled	700	White	-184 to 204°C	-300 to 400°F
<b>748 - UHMWPE</b> <ul style="list-style-type: none"> <li>Excellent impact resistance</li> <li>Good dielectrical properties</li> <li>Excellent abrasion resistance</li> <li>Low coefficient of friction</li> </ul>	Standard	748	Translucent	-184 to 82°C	-300 to 180°F
<b>HU5 - POLYURETHANE, 55D</b> <ul style="list-style-type: none"> <li>Positive position load holding</li> <li>Excellent extrusion resistance</li> <li>Excellent wear resistance</li> <li>Available up to 2540mm (100 inches) diameter</li> </ul>	Standard	HU5	Yellow	-20 to 115°C	-4 to 240°F
<b>HU9 - POLYURETHANE, 95A</b> <ul style="list-style-type: none"> <li>Positive position load holding</li> <li>Excellent extrusion resistance</li> <li>Excellent wear resistance</li> <li>Available up to 2540mm (100 inches) diameter</li> </ul>	Standard	HU9	Red	-20 to 115°C	-4 to 240°F

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 $\text{Ø}d_1$ f8/h9		GROOVE DIAMETER	GROOVE WIDTH	BORE DIAMETER	STEP WIDTH	RADIUS	CHAMFER	O-RING CROSS SECTION	O-RING 2 CROSS SECTION
DIAMETER RANGE		$\text{Ø}D_1$ H8	$L_1 + 0.2$	$D_2$ H8	$L_3$ $+0-0.1$	$r_1$	C	O-Ring	O-Ring
Standard Duty Application - R	Extended Range - L								
120.0 - 229.9	230.0 - 299.9	$d_1 + 22.2$	6.3	$d_1 + 10.7$	4.2	1.2	4.0	5.33	3.53
230.0 - 299.9	300.0 - 629.9	$d_1 + 24.2$	6.3	$d_1 + 10.7$	4.2	1.2	4.0	5.33	3.53
300.0 - 629.9	630.0 - 999.9	$d_1 + 33.0$	8.1	$d_1 + 15.1$	6.3	1.2	6.0	6.99	5.33
630.0 - 999.9	$\geq 1000.0$	$d_1 + 36.5$	9.5	$d_1 + 15.1$	6.3	2.0	6.0	8.40	5.33