

E2W

WIPER/EXCLUDER

Double-Acting

TECHNICAL DETAILS

The Hallite E2W is a double-acting, o-ring energized, rod wiper/excluder designed to include two different unique wiping lip geometries. The two lips combine to scrape debris from the rod and contain residual oil on rod extension, as well as allowing oil to pump back into the cylinder. The o-ring energizer provides the force necessary to maintain the engagement of the wiping lips against the sliding surface and allow the wiper to adjust for deflection.

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 E2W works well paired with rod seals that support the requisite dynamic pressure pump-back, like the Hallite R16 rod seal. When paired, they produce a sealing system capable of handling higher speeds, large range of fluid compatibilities, and temperature range of service. For other rod seal arrangements with E2W, it is necessary to make sure the rod seal will provide proper pressure pump-back, or alternatively vent the system. 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.

*See Hallite 87, 506 or 533 bearing data sheets.



FEATURES

- Low friction and elimination of stick-slip action
- Self-adjustment for side movement of rod
- High-performance PTFE material as standard offering
- Balanced design keeps contamination out of cylinder while also minimizing oil film on rod

Part Number Structure

E2WMR00500NHLX _

E2W	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	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

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

*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 and ØD₂	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	-	-

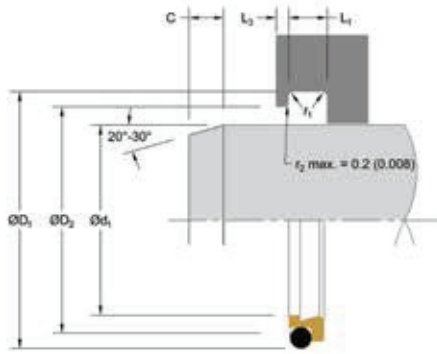
*Seal ratings are based upon capabilities of its matched material components. Hallite cannot rate seal performance when the seal is mixed with other manufacturers' energizers/components.

MATERIALS

MATERIAL FEATURES AND APPLICATIONS	FILLER	MATERIAL DESIGNATOR	COLOR	TEMPERATURE RANGE°C	TEMPERATURE RANGE°F
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
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
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
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
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
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
HU5 - POLYURETHANE, 55D <ul style="list-style-type: none"> Positive position load holding Excellent extrusion resistance Excellent wear resistance Available up to 2540mm (100 inches) diameter 	Standard	HU5	Yellow	-20 to 115°C	-4 to 240°F
HU9 - POLYURETHANE, 95A <ul style="list-style-type: none"> Positive position load holding Excellent extrusion resistance Excellent wear resistance Available up to 2540mm (100 inches) diameter 	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.





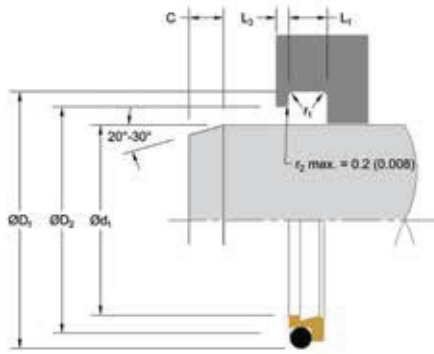
INSTALLATION RECOMMENDATIONS

metric			GROOVE DIAMETER	GROOVE WIDTH	BORE DIAMETER	STEP WIDTH	RADIUS	CHAMFER	O-RING CROSS SECTION
ROD DIAMETER $\varnothing d_1$ f8/h9									
DIAMETER RANGE*			D ₁ H9	L ₁ + 0.2	D ₂ H11	L ₃ Min	r ₁	C	O-Ring
Standard Duty Application - R	Light Duty Application - L								
4.0 - 11.9	12.0 - 64.9		d ₁ + 4.8	3.7	d ₁ + 1.5	2.0	0.5	2.0	1.78
12.0 - 64.9	65.0 - 250.9		d ₁ + 6.8	5.0	d ₁ + 1.5	2.0	0.5	3.0	2.62
65.0 - 250.9	251.0 - 420.9		d ₁ + 8.8	6.0	d ₁ + 1.5	3.0	0.8	4.0	3.53
251.0 - 420.9	421.0 - 650.9		d ₁ + 12.2	8.4	d ₁ + 2.0	4.0	1.0	6.0	5.33
421.0 - 650.9	651.0 - 999.9		d ₁ + 16.0	11.0	d ₁ + 2.0	4.0	1.5	8.0	6.99
651.0 - 999.9	≥ 1000.0		d ₁ + 20.0	14.0	d ₁ + 2.5	5.0	1.5	8.0	8.40

*For diameters >400 mm Hallite recommends using the E5W.

inch				GROOVE DIAMETER	GROOVE WIDTH	BORE DIAMETER	STEP WIDTH	RADIUS	CHAMFER	O-RING CROSS SECTION
ROD DIAMETER $\varnothing d_1$ f8/h9										
DIAMETER RANGE*				D ₁ H9	L ₁ + 0.2	D ₂ H11	L ₃ Min	r ₁	C	O-Ring
Standard Duty Application - R	Light Duty Application - L	Heavy Duty Application - H								
0.313 - 0.499	0.500 - 2.499	-		d ₁ + 0.190	0.146	d ₁ + 0.060	0.079	0.015	0.079	0.070
0.500 - 2.499	2.500 - 9.999	0.375 - 0.499		d ₁ + 0.270	0.196	d ₁ + 0.060	0.079	0.015	0.118	0.103
2.500 - 7.999	-	1.000 - 2.499		d ₁ + 0.345	0.236	d ₁ + 0.060	0.118	0.015	0.157	0.139
8.000 - 9.999	10.000 - 15.750	-		d ₁ + 0.345	0.236	d ₁ + 0.060	0.150	0.015	0.157	0.139
10.000 - 16.999	17.000 - 19.999	2.500 - 9.999		d ₁ + 0.480	0.332	d ₁ + 0.080	0.150	0.035	0.236	0.210
17.000 - 19.999	20.000 - 25.750	10.000 - 16.999		d ₁ + 0.630	0.434	d ₁ + 0.080	0.150	0.035	0.315	0.275

*For diameters >15.750 inch Hallite recommends using the E5W.



E2W

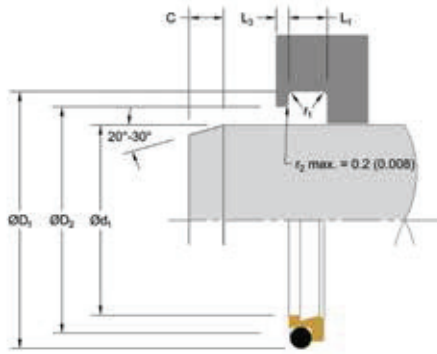
WIPER/EXCLUDER
Double-Acting

PART NUMBER RANGE (METRIC)*

metric					
Ød ₁	ØD ₁	L ₁	ØD ₂	STEP WIDTH	PART NUMBER
Tol. f8/h9	Tol. H9	Tol. +0.2	Tol. H11	L ₃ Min	
4.0	8.8	3.7	5.5	2.0	E2WMR00040****+
5.0	9.8	3.7	6.5	2.0	E2WMR00050****+
6.0	10.8	3.7	7.5	2.0	E2WMR00060****+
8.0	12.8	3.7	9.5	2.0	E2WMR00080****+
10.0	14.8	3.7	11.5	2.0	E2WMR00100****+
12.0	18.8	5.0	13.5	2.0	E2WMR00120****+
14.0	20.8	5.0	15.5	2.0	E2WMR00140****+
15.0	21.8	5.0	16.5	2.0	E2WMR00150****
16.0	20.8	3.7	17.5	2.0	E2WML00160****
16.0	22.8	5.0	17.5	2.0	E2WMR00160****+
18.0	22.8	3.7	19.5	2.0	E2WML00180****
18.0	24.8	5.0	19.5	2.0	E2WMR00180****+
20.0	26.8	5.0	21.5	2.0	E2WMR00200****+
22.0	28.8	5.0	23.5	2.0	E2WMR00220****+
25.0	31.8	5.0	26.5	2.0	E2WMR00250****+
28.0	34.8	5.0	29.5	2.0	E2WMR00280****+
30.0	34.8	3.7	31.5	2.0	E2WML00300****
30.0	36.8	5.0	31.5	2.0	E2WMR00300****
32.0	38.8	5.0	33.5	2.0	E2WMR00320****+
35.0	41.8	5.0	36.5	2.0	E2WMR00350****
36.0	42.8	5.0	37.5	2.0	E2WMR00360****+
37.0	43.8	5.0	38.5	2.0	E2WMR00370****
40.0	46.8	5.0	41.5	2.0	E2WMR00400****+
42.0	48.8	5.0	43.5	2.0	E2WMR00420****
45.0	51.8	5.0	46.5	2.0	E2WMR00450****+
49.0	55.8	5.0	50.5	2.0	E2WMR00490****
50.0	56.8	5.0	51.5	2.0	E2WMR00500****+
50.8	57.6	5.0	52.3	2.0	E2WMR00508****

metric					
Ød ₁	ØD ₁	L ₁	ØD ₂	STEP WIDTH	PART NUMBER
Tol. f8/h9	Tol. H9	Tol. +0.2	Tol. H11	L ₃ Min	
54.0	60.8	5.0	55.5	2.0	E2WMR00540****
55.0	61.8	5.0	56.5	2.0	E2WMR00550****
56.0	62.8	5.0	57.5	2.0	E2WMR00560****+
60.0	66.8	5.0	61.5	2.0	E2WMR00600****
63.0	69.8	5.0	64.5	2.0	E2WMR00630****+
65.0	73.8	6.0	66.5	3.0	E2WMR00650****
70.0	78.8	6.0	71.5	3.0	E2WMR00700****
75.0	83.8	6.0	76.5	3.0	E2WMR00750****
80.0	88.8	6.0	81.5	3.0	E2WMR00800****
85.0	93.8	6.0	86.5	3.0	E2WMR00850****
90.0	98.8	6.0	91.5	3.0	E2WMR00900****
95.0	103.8	6.0	96.5	3.0	E2WMR00950****
100.0	108.8	6.0	101.5	3.0	E2WMR01000****
105.0	113.8	6.0	106.5	3.0	E2WMR01050****
110.0	118.8	6.0	111.5	3.0	E2WMR01100****
115.0	123.8	6.0	116.5	3.0	E2WMR01150****
120.0	128.8	6.0	121.5	3.0	E2WMR01200****
125.0	133.8	6.0	126.5	3.0	E2WMR01250****
130.0	138.8	6.0	131.5	3.0	E2WMR01300****
135.0	143.8	6.0	136.5	3.0	E2WMR01350****
137.0	145.8	6.0	138.5	3.0	E2WMR01370****
140.0	148.8	6.0	141.5	3.0	E2WMR01400****
145.0	153.8	6.0	146.5	3.0	E2WMR01450****
150.0	158.8	6.0	151.5	3.0	E2WMR01500****
160.0	168.8	6.0	161.5	3.0	E2WMR01600****
170.0	178.8	6.0	171.5	3.0	E2WMR01700****
180.0	188.8	6.0	181.5	3.0	E2WMR01800****
190.0	198.8	6.0	191.5	3.0	E2WMR01900****

* Fits ISO 6195 Type D grooves.



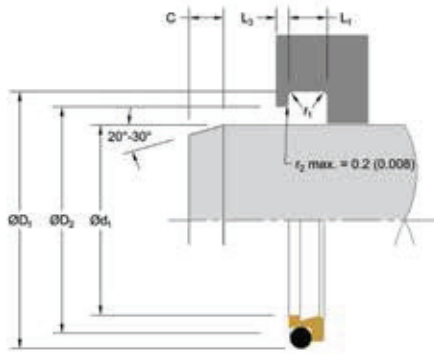
PART NUMBER RANGE (METRIC)*

metric					PART NUMBER
Ød ₁	ØD ₁	L ₁	ØD ₂	STEP WIDTH	
Tol. f8/h9	Tol. H9	Tol. +0.2	Tol. H11	L ₂ Min	
200.0	208.8	6.0	201.5	3.0	E2WMR02000****
210.0	218.8	6.0	211.5	3.0	E2WMR02100****
220.0	228.8	6.0	221.5	3.0	E2WMR02200****
230.0	238.8	6.0	231.5	3.0	E2WMR02300****
240.0	248.8	6.0	241.5	3.0	E2WMR02400****
250.0	258.8	6.0	251.5	3.0	E2WMR02500****
260.0	272.2	8.4	262.0	4.0	E2WMR02600****
280.0	292.2	8.4	282.0	4.0	E2WMR02800****
300.0	312.2	8.4	302.0	4.0	E2WMR03000****
320.0	332.2	8.4	322.0	4.0	E2WMR03200****
350.0	362.2	8.4	352.0	4.0	E2WMR03500****
360.0	372.2	8.4	362.0	4.0	E2WMR03600****
370.0	382.2	8.4	372.0	4.0	E2WMR03700****
400.0	412.2	8.4	402.0	4.0	E2WMR04000****
440.0	456.0	11.0	442.0	4.0	E2WMR04400****
480.0	496.0	11.0	482.0	4.0	E2WMR04800****
600.0	616.0	11.0	602.0	4.0	E2WMR06000****
630.0	646.0	11.0	632.0	4.0	E2WMR06300****
680.0	700.0	14.0	682.5	5.0	E2WMR06800****
700.0	720.0	14.0	702.5	5.0	E2WMR07000****
770.0	790.0	14.0	772.5	5.0	E2WMR07700****
828.0	848.0	14.0	830.5	5.0	E2WMR08280****
880.0	900.0	14.0	882.5	5.0	E2WMR08800****
900.0	920.0	14.0	902.5	5.0	E2WMR09000****
1030.0	1050.0	14.0	1032.5	5.0	E2WML10300****
1180.0	1200.0	14.0	1182.5	5.0	E2WML11800****

+ Fits ISO 6195 Type D grooves. *Please contact Hallite for custom sizes, material selection, or seal design.

PART NUMBER RANGE (INCH)*

inch					PART NUMBER
Ød ₁	ØD ₁	L ₁	ØD ₂	STEP WIDTH	
Tol. f8/h9	Tol. H9	Tol. +.008	Tol. H11	L ₂ Min	
1.500	1.770	0.196	1.560	0.079	E2WER01500****
1.562	1.832	0.196	1.623	0.079	E2WER01562****
1.625	1.895	0.196	1.685	0.079	E2WER01625****
1.687	1.957	0.196	1.748	0.079	E2WER01687****
1.750	2.020	0.196	1.810	0.079	E2WER01750****
1.812	2.082	0.196	1.873	0.079	E2WER01812****
1.875	2.145	0.196	1.935	0.079	E2WER01875****
1.937	2.207	0.196	1.998	0.079	E2WER01937****
2.000	2.270	0.196	2.060	0.079	E2WER02000****
2.125	2.395	0.196	2.185	0.079	E2WER02125****
2.250	2.520	0.196	2.310	0.079	E2WER02250****
2.375	2.645	0.196	2.435	0.079	E2WER02375****
2.500	2.845	0.236	2.560	0.118	E2WER02500****
2.625	2.970	0.236	2.685	0.118	E2WER02625****
2.750	3.095	0.236	2.810	0.118	E2WER02750****
2.875	3.220	0.236	2.935	0.118	E2WER02875****
3.000	3.345	0.236	3.060	0.118	E2WER03000****
3.125	3.470	0.236	3.185	0.118	E2WER03125****
3.250	3.595	0.236	3.310	0.118	E2WER03250****
3.375	3.720	0.236	3.435	0.118	E2WER03375****
3.500	3.845	0.236	3.560	0.118	E2WER03500****
3.625	3.970	0.236	3.685	0.118	E2WER03625****
3.750	4.095	0.236	3.810	0.118	E2WER03750****
3.875	4.220	0.236	3.935	0.118	E2WER03875****
4.000	4.345	0.236	4.060	0.118	E2WER04000****
4.125	4.470	0.236	4.185	0.118	E2WER04125****
4.250	4.595	0.236	4.310	0.118	E2WER04250****
4.375	4.720	0.236	4.435	0.118	E2WER04375****



E2W

WIPER/EXCLUDER

Double-Acting

PART NUMBER RANGE (INCH)*

inch					
Ød ₁	ØD ₁	L ₁	ØD ₂	STEP WIDTH	PART NUMBER
Tol. f8/h9	Tol. H9	Tol. +.008	Tol. H11	L ₃ Min	
4.500	4.845	0.236	4.560	0.118	E2WER04500****
4.625	4.970	0.236	4.685	0.118	E2WER04625****
4.750	5.095	0.236	4.810	0.118	E2WER04750****
4.875	5.220	0.236	4.935	0.118	E2WER04875****
5.000	5.345	0.236	5.060	0.118	E2WER05000****
5.125	5.470	0.236	5.185	0.118	E2WER05125****
5.250	5.595	0.236	5.310	0.118	E2WER05250****
5.375	5.720	0.236	5.435	0.118	E2WER05375****
5.500	5.845	0.236	5.560	0.118	E2WER05500****
5.625	5.970	0.236	5.685	0.118	E2WER05625****
5.750	6.095	0.236	5.810	0.118	E2WER05750****
6.000	6.345	0.236	6.060	0.118	E2WER06000****
6.250	6.595	0.236	6.310	0.118	E2WER06250****
6.500	6.845	0.236	6.560	0.118	E2WER06500****
6.750	7.095	0.236	6.810	0.118	E2WER06750****
7.000	7.345	0.236	7.060	0.118	E2WER07000****
7.250	7.595	0.236	7.310	0.118	E2WER07250****
7.500	7.845	0.236	7.560	0.118	E2WER07500****
7.750	8.095	0.236	7.810	0.118	E2WER07750****
8.000	8.345	0.236	8.060	0.150	E2WER08000****
8.250	8.595	0.236	8.310	0.150	E2WER08250****
8.500	8.845	0.236	8.560	0.150	E2WER08500****
8.750	9.095	0.236	8.810	0.150	E2WER08750****
9.000	9.345	0.236	9.060	0.150	E2WER09000****
9.250	9.595	0.236	9.310	0.150	E2WER09250****
9.500	9.845	0.236	9.560	0.150	E2WER09500****
9.750	10.095	0.236	9.810	0.150	E2WER09750****
10.000	10.480	0.332	10.080	0.150	E2WER10000****

inch					
Ød ₁	ØD ₁	L ₁	ØD ₂	STEP WIDTH	PART NUMBER
Tol. f8/h9	Tol. H9	Tol. +.008	Tol. H11	L ₃ Min	
10.500	10.980	0.332	10.580	0.150	E2WER10500****
11.000	11.480	0.332	11.080	0.150	E2WER11000****
11.500	11.980	0.332	11.580	0.150	E2WER11500****
12.000	12.480	0.332	12.080	0.150	E2WER12000****
12.500	12.980	0.332	12.580	0.150	E2WER12500****
13.000	13.480	0.332	13.080	0.150	E2WER13000****
13.500	13.980	0.332	13.580	0.150	E2WER13500****
14.000	14.480	0.332	14.080	0.150	E2WER14000****
14.500	14.980	0.332	14.580	0.150	E2WER14500****
15.000	15.480	0.332	15.080	0.150	E2WER15000****
15.500	15.980	0.332	15.580	0.150	E2WER15500****
16.000	16.480	0.332	16.080	0.150	E2WER16000****
16.500	16.980	0.332	16.580	0.150	E2WER16500****
17.000	17.630	0.434	17.080	0.150	E2WER17000****
17.500	18.130	0.434	17.580	0.150	E2WER17500****
18.000	18.630	0.434	18.080	0.150	E2WER18000****
18.500	19.130	0.434	18.580	0.150	E2WER18500****
19.000	19.630	0.434	19.080	0.150	E2WER19000****
19.500	20.130	0.434	19.580	0.150	E2WER19500****
20.000	20.630	0.434	20.080	0.150	E2WEL20000****

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

