

# 621

## ROD SEAL

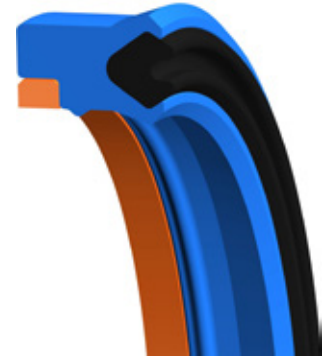
*Twin Lip  
Polyurethane with AE Ring and Profiled  
Rubber Energizer for Heavy Duty Applications*

### DESIGN

The Hallite 621 is a top-of-the-range twin lip rod seal designed to provide a dry sealing solution in heavy-duty applications.

The secondary sealing lip located behind the primary sealing lip improves stability of the seal in the gland. The unique profile of the NBR energiser ensures the precision trimmed primary sealing lips maintain contact under low or no pressure situations while ensuring proper sealing at higher pressures. This unique profile is also used in the Hallite 622 twin lip rod seal. The Hallite 621 also incorporates an acetyl anti-extrusion ring to withstand side loads and extreme pressure peaks even with the extrusion gaps, which are the result of using remote plastic bearing strips like the Hallite 506 or 708.

The Hallite 621's seal shell is molded in Hythane® 181, Hallite's high-performance polyurethane, for easy installation and excellent low temperature performance.



### FEATURES

- High pressure and shock load capability
- Low temperature capabilities
- Low friction
- Increased seal stability
- Primary lip protection
- Easy to install

### MATERIALS

As standard, this product comes in the following materials. Contact your local Hallite technical team if you would like to find out if this profile can be made in a custom material to suit your application. For further material details, please refer to the Hallite Material Table.

MATERIAL OPTIONS	Name	Shell Type	Shell Color
Standard	Hythane® 181-NBR-POM 0011	TPU-EU	Blue



## TECHNICAL DETAILS

OPERATING CONDITIONS	METRIC	INCH
Maximum Speed	1.0 m/sec	3.0 ft/sec
Temperature Range	-45°C +110°C	-50°F +230°F
Maximum Pressure	700 bar	10000 psi

**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.

MAXIMUM EXTRUSION GAP					
Pressure bar	160	250	400	500	700
Maximum Gap mm	1.00	0.80	0.60	0.40	0.25
Pressure psi	2400	3750	6000	7500	10000
Maximum Gap in	0.040	0.032	0.024	0.016	0.010

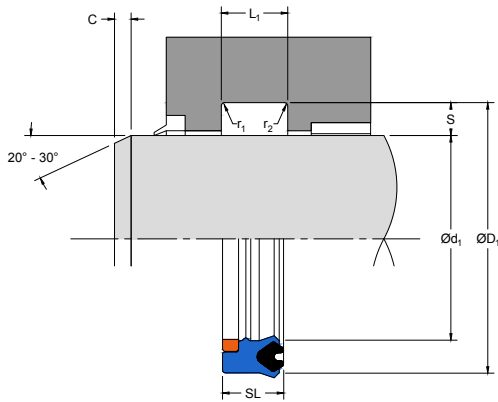
**NOTE**

Figures show the maximum permissible gap all on one side, using minimum rod  $\varnothing$  and maximum clearance  $\varnothing$ . Refer to Housing Design section.

SURFACE ROUGHNESS	$\mu\text{mRa}$	$\mu\text{mRz}$	$\mu\text{mRt}$	$\mu\text{inRa}$	$\mu\text{inRz}$	$\mu\text{inRt}$
Dynamic Sealing Face $\varnothing d_1$	0.1 - 0.4	1.6 max	4 max	4 - 16	63 max	157 max
Static Sealing Face $\varnothing D_1$	1.6 max	6.3 max	10 max	63 max	250 max	394 max
Static Housing Faces $L_1$	3.2 max	10 max	16 max	125 max	394 max	630 max

CHAMFERS & RADII						
Groove Section <S mm	4.00	5.00	7.50	10.00	12.50	15.00
Min Chamfer C mm	3.00	3.50	5.00	6.50	7.00	8.00
Max Fillet Rad $r_1$ mm	0.20	0.40	0.80	0.80	2.30	1.60
Max Fillet Rad $r_2$ mm	0.400	0.800	1.200	1.60	1.60	2.40
Groove Section <S in	0.125	0.187	0.250	0.312	0.375	0.500
Min Chamfer C in	0.093	0.093	0.125	0.156	0.187	0.217
Max Fillet Rad $r_1$ in	0.008	0.008	0.016	0.016	0.032	0.032
Max Fillet Rad $r_2$ in	0.016	0.016	0.032	0.032	0.047	0.047

TOLERANCES	$\varnothing d_1$	$\varnothing D_1$	$L_1$
mm	f9	Js11	+0.25 -0
in	f9	Js11	+0.010 -0



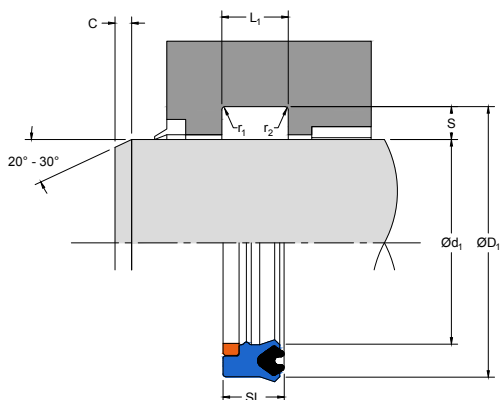
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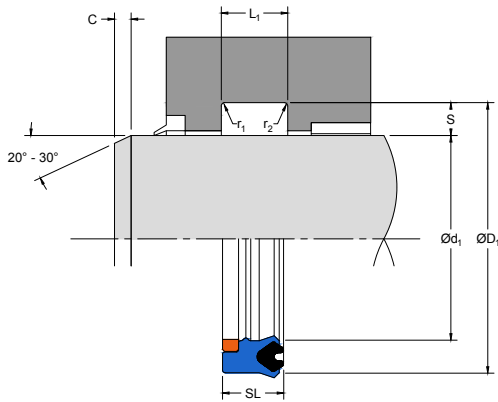
### PART NUMBER RANGE

INCH						
Ød <sub>1</sub>	TOL f9	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.010-0	PART No.
1.250	-0.001 -0.003	1.625	+0.003 -0.003	0.250	0.275	4794110
1.250	-0.001 -0.003	1.625	+0.003 -0.003	0.313	0.344	4809910
1.375	-0.001 -0.003	1.875	+0.003 -0.003	0.375	0.413	4707710
1.500	-0.001 -0.003	1.875	+0.003 -0.003	0.250	0.275	4484410
1.500	-0.001 -0.003	1.875	+0.003 -0.003	0.312	0.344	4484510
1.500	-0.001 -0.003	2.000	+0.004 -0.004	0.375	0.413	4484910
1.750	-0.001 -0.003	2.125	+0.004 -0.004	0.250	0.275	4484610
1.750	-0.001 -0.003	2.125	+0.004 -0.004	0.375	0.413	4484710
1.750	-0.001 -0.003	2.250	+0.004 -0.004	0.375	0.413	4485010
2.000	-0.001 -0.004	2.375	+0.004 -0.004	0.375	0.413	4484810
2.000	-0.001 -0.004	2.500	+0.004 -0.004	0.375	0.413	4485110
2.125	-0.001 -0.004	2.625	+0.004 -0.004	0.375	0.413	4592510
2.250	-0.001 -0.004	2.750	+0.004 -0.004	0.375	0.413	4485210
2.375	-0.001 -0.004	2.875	+0.004 -0.004	0.375	0.413	4485310
2.500	-0.001 -0.004	3.000	+0.004 -0.004	0.375	0.413	4485410
2.500	-0.001 -0.004	3.125	+0.004 -0.004	0.500	0.550	4794310



## PART NUMBER RANGE

INCH						
Ød <sub>1</sub>	TOL f9	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.010-0	PART No.
2.750	-0.001 -0.004	3.250	+0.004 -0.004	0.375	0.413	4485510
3.000	-0.001 -0.004	3.500	+0.004 -0.004	0.375	0.413	4485610
3.000	-0.001 -0.004	3.625	+0.004 -0.004	0.500	0.550	4486810
3.000	-0.001 -0.004	3.750	+0.004 -0.004	0.625	0.688	4489310
3.250	-0.001 -0.005	3.750	+0.004 -0.004	0.375	0.413	4485710
3.250	-0.001 -0.005	4.000	+0.004 -0.004	0.625	0.688	4790710
3.500	-0.001 -0.005	4.000	+0.004 -0.004	0.375	0.413	4485810
3.500	-0.001 -0.005	4.125	+0.004 -0.004	0.500	0.550	4486910
3.500	-0.001 -0.005	4.250	+0.004 -0.004	0.625	0.688	4573610
3.750	-0.001 -0.005	4.125	+0.004 -0.004	0.375	0.413	4709310
3.750	-0.001 -0.005	4.250	+0.004 -0.004	0.375	0.413	4790810
4.000	-0.001 -0.005	4.500	+0.004 -0.004	0.375	0.413	4486010
4.000	-0.001 -0.005	4.500	+0.004 -0.004	0.562	0.619	4486110
4.000	-0.001 -0.005	4.625	+0.004 -0.004	0.375	0.413	4778610
4.000	-0.001 -0.005	4.625	+0.004 -0.004	0.500	0.550	4792610
4.000	-0.001 -0.005	4.625	+0.004 -0.004	0.562	0.619	4487010



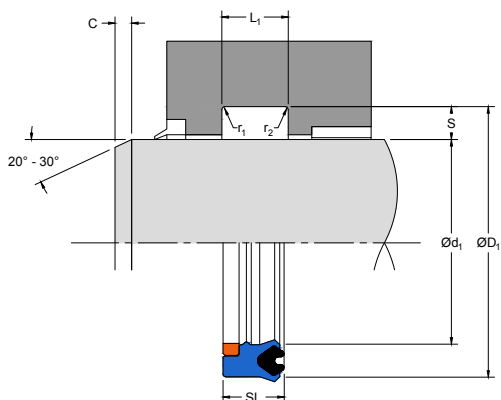
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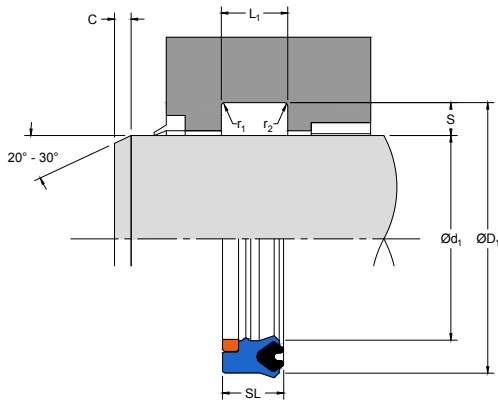
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INCH						
$\text{Ø}d_1$	TOL f9	$\text{Ø}D_1$	TOL Js11	SL	$L_1$ +0.010-0	PART No.
4.000	-0.001 -0.005	4.750	+0.005 -0.005	0.625	0.688	4483310
4.250	-0.001 -0.005	5.000	+0.005 -0.005	0.625	0.688	4790910
4.500	-0.001 -0.005	5.000	+0.005 -0.005	0.375	0.413	4486210
4.500	-0.001 -0.005	5.000	+0.005 -0.005	0.562	0.619	4486310
4.500	-0.001 -0.005	5.125	+0.005 -0.005	0.375	0.413	4791010
4.500	-0.001 -0.005	5.125	+0.005 -0.005	0.625	0.688	4486410
4.500	-0.001 -0.005	5.250	+0.005 -0.005	0.625	0.688	4483410
4.750	-0.002 -0.006	5.500	+0.005 -0.005	0.375	0.413	4791210
4.750	-0.002 -0.006	5.500	+0.005 -0.005	0.625	0.688	4791110
5.000	-0.002 -0.006	5.500	+0.005 -0.005	0.562	0.619	4486510
5.000	-0.002 -0.006	5.625	+0.005 -0.005	0.625	0.688	4487110
5.000	-0.002 -0.006	5.750	+0.005 -0.005	0.625	0.688	4483510
5.250	-0.002 -0.006	6.000	+0.005 -0.005	0.625	0.688	4791310
5.500	-0.002 -0.006	6.000	+0.005 -0.005	0.562	0.619	4486610
5.500	-0.002 -0.006	6.125	+0.005 -0.005	0.375	0.413	4791410
5.750	-0.002 -0.006	6.500	+0.005 -0.005	0.625	0.688	4791510



## PART NUMBER RANGE

INCH						
Ød <sub>1</sub>	TOL f9	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.010-0	PART No.
6.000	-0.002 -0.006	6.500	+0.005 -0.005	0.562	0.619	4486710
6.000	-0.002 -0.006	6.750	+0.005 -0.005	0.625	0.688	4487210
6.250	-0.002 -0.006	7.000	+0.005 -0.005	0.625	0.688	4791610
6.500	-0.002 -0.006	7.250	+0.006 -0.006	0.500	0.550	4791710
6.750	-0.002 -0.006	7.250	+0.006 -0.006	0.562	0.619	4791810
7.000	-0.002 -0.006	7.500	+0.006 -0.006	0.500	0.550	4791910
7.000	-0.002 -0.006	7.625	+0.006 -0.006	0.562	0.619	4792310
7.000	-0.002 -0.006	7.750	+0.006 -0.006	0.562	0.619	4792710
7.000	-0.002 -0.006	7.750	+0.006 -0.006	0.625	0.688	4588210
8.000	-0.002 -0.006	8.500	+0.006 -0.006	0.562	0.619	4792110
8.000	-0.002 -0.006	8.750	+0.006 -0.006	0.625	0.688	4573210
8.500	-0.002 -0.006	9.250	+0.006 -0.006	0.625	0.688	4745010
9.000	-0.002 -0.006	9.750	+0.006 -0.006	0.625	0.688	4808810
9.000	-0.002 -0.006	10.000	+0.006 -0.006	0.750	0.825	4809810
10.000	-0.002 -0.007	10.500	+0.006 -0.006	0.562	0.619	4792210
10.000	-0.002 -0.007	10.750	+0.006 -0.006	0.625	0.688	4808910



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INCH						
$\text{Ø}d_1$	TOL f9	$\text{Ø}D_1$	TOL Js11	SL	$L_1$ +0.010-0	PART No.
10.000	-0.002 -0.007	11.000	+0.006 -0.006	0.750	0.825	4809410
10.500	-0.002 -0.007	11.125	+0.006 -0.006	0.562	0.619	4792410
11.000	-0.002 -0.007	11.750	+0.006 -0.006	0.625	0.688	4809210
12.000	-0.002 -0.007	12.750	+0.007 -0.007	0.625	0.688	4809310
12.000	-0.002 -0.007	13.000	+0.007 -0.007	0.750	0.825	4809510
13.000	-0.003 -0.008	13.625	+0.007 -0.007	0.562	0.619	4792510
14.000	-0.003 -0.008	15.000	+0.007 -0.007	0.750	0.825	4809610
15.000	-0.003 -0.008	16.000	+0.008 -0.008	0.750	0.825	4809710