

# 621

## ROD SEAL

*Twin Lip*

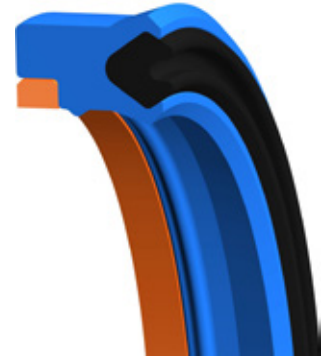
*Polyurethane with AE Ring and Profiled Rubber Energiser for Heavy-Duty Applications*

### 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 acetal 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 Colour
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

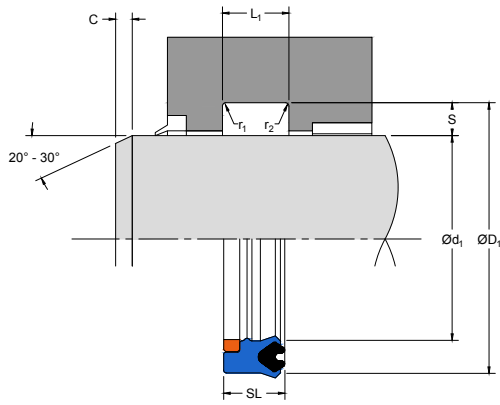
**NOTE**

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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*Twin Lip*

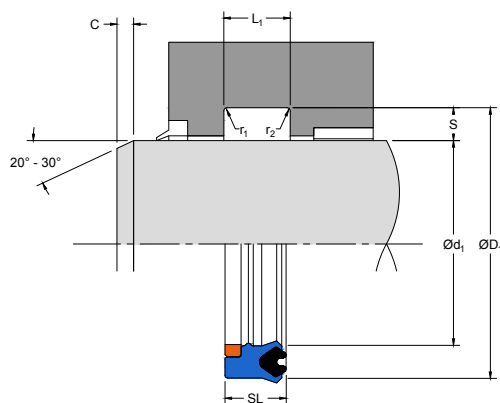
*Polyurethane with AE Ring and Profiled Rubber Energiser for Heavy-Duty Applications*

### PART NUMBER RANGE

METRIC						
Ød <sub>1</sub>	TOL f <sub>9</sub>	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.25-0	PART No.
30.00	-0.02 -0.07	40.00	+0.08 -0.08	7.30	8.00	4577110
30.00	-0.02 -0.07	40.00	+0.08 -0.08	10.00	11.00	4831310
35.00	-0.03 -0.09	45.00	+0.08 -0.08	10.00	11.00	4831410
35.00	-0.03 -0.09	50.00	+0.08 -0.08	9.50	10.50	4335310
36.00	-0.03 -0.09	46.00	+0.08 -0.08	7.30	8.00	4317010‡
40.00	-0.03 -0.09	50.00	+0.08 -0.08	7.30	8.00	4317110‡
40.00	-0.03 -0.09	50.00	+0.08 -0.08	10.00	11.00	4755010
45.00	-0.03 -0.09	55.00	+0.10 -0.10	7.30	8.00	4317210‡
45.00	-0.03 -0.09	55.00	+0.10 -0.10	10.00	11.00	4831510
45.00	-0.03 -0.09	60.00	+0.10 -0.10	11.40	12.50	4295510‡
50.00	-0.03 -0.09	60.00	+0.10 -0.10	7.30	8.00	4317310‡
50.00	-0.03 -0.09	60.00	+0.10 -0.10	10.00	11.00	4802310†
50.00	-0.03 -0.09	65.00	+0.10 -0.10	10.00	11.00	4752910
50.00	-0.03 -0.09	65.00	+0.10 -0.10	11.40	12.50	4293410‡
55.00	-0.03 -0.10	65.00	+0.10 -0.10	10.00	11.00	4831210
55.00	-0.03 -0.10	70.00	+0.10 -0.10	9.00	10.00	4810210†
55.00	-0.03 -0.10	70.00	+0.10 -0.10	11.40	12.50	4403610

#### NOTE

Part numbers suffixed by "†" are designed to suit popular Asian housings.  
Part numbers suffixed by "‡" indicate housing sizes to meet ISO 5597.



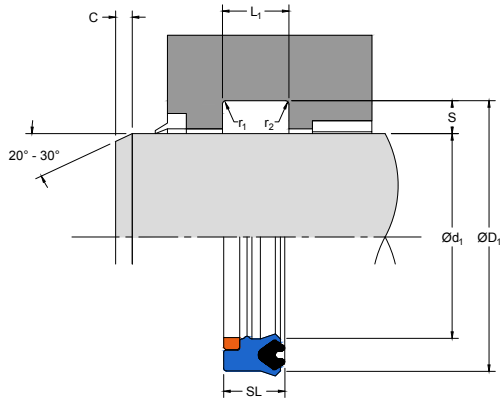
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METRIC						
Ød <sub>1</sub>	TOL f <sub>9</sub>	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.25-0	PART No.
56.00	-0.03 -0.10	71.00	+0.10 -0.10	11.40	12.50	4317410‡
60.00	-0.03 -0.10	73.00	+0.10 -0.10	13.00	14.00	4526010†
60.00	-0.03 -0.10	75.00	+0.10 -0.10	11.40	12.50	4298410
63.00	-0.03 -0.10	78.00	+0.10 -0.10	11.40	12.50	4317510‡
63.00	-0.03 -0.10	83.00	+0.11 -0.11	11.80	13.00	4520510†
65.00	-0.03 -0.10	75.00	+0.10 -0.10	10.00	11.00	4755110
65.00	-0.03 -0.10	80.00	+0.10 -0.10	10.00	11.00	4761810
65.00	-0.03 -0.10	80.00	+0.10 -0.10	11.40	12.50	4783710
65.00	-0.03 -0.10	80.00	+0.10 -0.10	13.00	14.00	4810310
70.00	-0.03 -0.10	83.00	+0.11 -0.11	13.00	14.00	4810410
70.00	-0.03 -0.10	85.00	+0.11 -0.11	10.00	11.00	4893010†
70.00	-0.03 -0.10	85.00	+0.11 -0.11	11.40	12.50	4317610‡
75.00	-0.03 -0.10	88.00	+0.11 -0.11	13.00	14.00	4526110†
75.00	-0.03 -0.10	90.00	+0.11 -0.11	12.00	13.00	4810510
75.00	-0.03 -0.10	90.00	+0.11 -0.11	13.00	14.00	4784710
75.00	-0.03 -0.10	95.00	+0.11 -0.11	11.40	12.50	4810610
75.00	-0.03 -0.10	95.00	+0.11 -0.11	14.60	16.00	4801510†

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*Twin Lip*

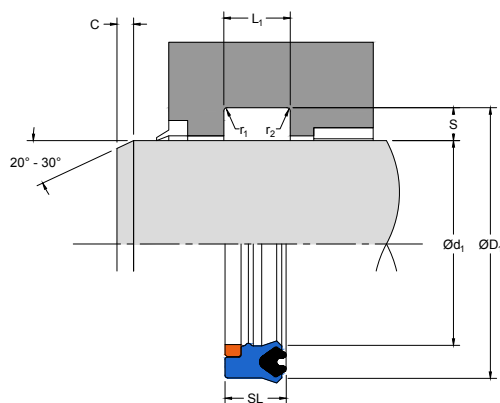
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### PART NUMBER RANGE

METRIC						
Ød <sub>1</sub>	TOL f <sub>9</sub>	ØD <sub>1</sub>	TOL Js <sub>11</sub>	SL	L <sub>1</sub> +0.25-0	PART No.
80.00	-0.03 -0.10	93.00	+0.11 -0.11	13.00	14.00	4810710†
80.00	-0.03 -0.10	95.00	+0.11 -0.11	11.40	12.50	4317710‡
80.00	-0.03 -0.10	95.00	+0.11 -0.11	13.00	14.00	4540610†
85.00	-0.04 -0.12	100.00	+0.11 -0.11	11.80	13.00	4766410
85.00	-0.04 -0.12	100.00	+0.11 -0.11	13.00	14.00	4540710†
85.00	-0.04 -0.12	105.00	+0.11 -0.11	14.60	16.00	4810810†
90.00	-0.04 -0.12	105.00	+0.11 -0.11	11.40	12.50	4317810‡
90.00	-0.04 -0.12	105.00	+0.11 -0.11	13.00	14.00	4526310†
90.00	-0.04 -0.12	110.00	+0.11 -0.11	14.60	16.00	4810910†
95.00	-0.04 -0.12	110.00	+0.11 -0.11	12.00	13.00	4811010†
95.00	-0.04 -0.12	110.00	+0.11 -0.11	13.00	14.00	4540810†
95.00	-0.04 -0.12	115.00	+0.11 -0.11	14.60	16.00	4811110†
100.00	-0.04 -0.12	115.00	+0.11 -0.11	13.00	14.00	4540910†
100.00	-0.04 -0.12	120.00	+0.11 -0.11	14.60	16.00	4317910‡
105.00	-0.04 -0.12	120.00	+0.11 -0.11	12.00	13.00	4811210†
105.00	-0.04 -0.12	120.00	+0.11 -0.11	13.00	14.00	4811310†
105.00	-0.04 -0.12	125.00	+0.13 -0.13	14.60	16.00	4811410†

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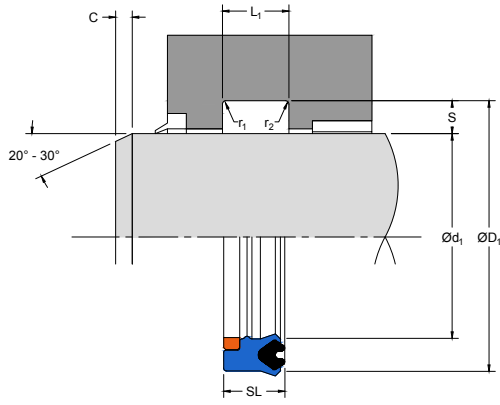
## PART NUMBER RANGE

METRIC						
Ød <sub>1</sub>	TOL f <sub>9</sub>	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.25-0	PART No.
110.00	-0.04 -0.12	125.00	+0.13 -0.13	13.00	14.00	4811510†
110.00	-0.04 -0.12	130.00	+0.13 -0.13	13.00	14.00	4541010†
110.00	-0.04 -0.12	130.00	+0.13 -0.13	14.60	16.00	4318010‡
115.00	-0.04 -0.12	135.00	+0.13 -0.13	14.60	16.00	4783810
120.00	-0.04 -0.12	135.00	+0.13 -0.13	14.60	16.00	4318110
120.00	-0.04 -0.12	140.00	+0.13 -0.13	13.00	14.00	4541110†
120.00	-0.04 -0.12	140.00	+0.13 -0.13	14.60	16.00	4783910†
125.00	-0.04 -0.14	145.00	+0.13 -0.13	14.60	16.00	4318210‡
130.00	-0.04 -0.14	145.00	+0.13 -0.13	13.00	14.00	4811610†
130.00	-0.04 -0.14	150.00	+0.13 -0.13	14.60	16.00	4709810†
140.00	-0.04 -0.14	155.00	+0.13 -0.13	13.00	14.00	4811710†
140.00	-0.04 -0.14	160.00	+0.13 -0.13	13.00	14.00	4541210†
140.00	-0.04 -0.14	160.00	+0.13 -0.13	14.60	16.00	4318310‡
150.00	-0.04 -0.14	170.00	+0.13 -0.13	14.60	16.00	4784010
160.00	-0.04 -0.14	180.00	+0.13 -0.13	14.60	16.00	4454810
160.00	-0.04 -0.14	185.00	+0.14 -0.14	14.60	16.00	4723410‡
180.00	-0.04 -0.14	200.00	+0.14 -0.14	14.60	16.00	4454910

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*Twin Lip*

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METRIC						
Ød <sub>1</sub>	TOL f9	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.25-0	PART No.
200.00	-0.05 -0.17	220.00	+0.14 -0.14	14.60	16.00	4455110
215.00	-0.05 -0.17	235.00	+0.14 -0.14	14.60	16.00	4705610

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