

653

ROD BUFFER SEAL

*Single-Acting
Polyurethane with AE Ring*

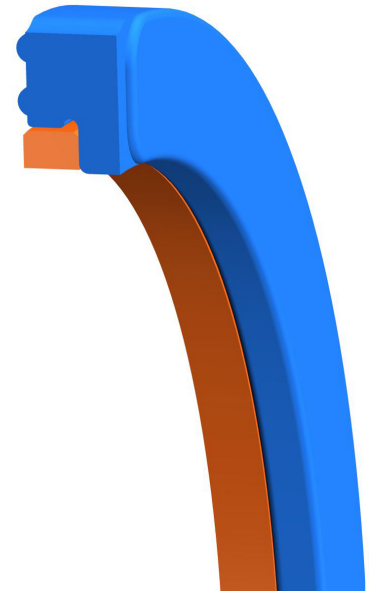
DESIGN

The Hallite 653 single-acting rod buffer seal is designed to be used in conjunction with a high-performance rod seal, such as the Hallite 605 and 621, to protect the primary seal from shock pressure loading and high frequency pressure spikes in the hydraulic system. The design allows oil to pass through to the rod seal while holding back pressure spikes. The Hallite 653 is a patented product (European patent no. 0427554B1; U.S.A. patent no. 5088747) that also allows pressure to pass back into the system preventing a pressure trap between the rod seal and the buffer seal. The Hallite 653 is an excellent pressure buffer option in heavy-duty applications and offers extended sealing system life and performance.

The Hallite 653 is also interchangeable with common PTFE buffer seal housings.

The Hallite 653 is moulded in Hythane® 181, Hallite's high-performance polyurethane, for easy installation and excellent low temperature performance. The Hallite 653 is also offered in a number of other high-performance polyurethanes, such as the Hythane® 361.

The design also incorporates a polyacetal anti-extrusion ring to provide maximum extrusion resistance against shock pressure loads.



FEATURES

- Prevents inter-seal pressure build up
- Interchangeable with common PTFE buffer seal housings
- Excellent temperature range
- Long seal life
- Easy to install

MATERIALS

This product comes in a number of material options to extend operating conditions. Contact your local Hallite technical team to decide which is best for your application. Use the part designator in the table below as the last digit of the part number to specify material choice when ordering. For further material details, please refer to the Hallite Material Table.

MATERIAL OPTIONS	Name	Seal Type	Seal Colour	Part Designator
Standard	Hythane® 181-POM	TPU-EU	Blue	0
Optional	Hythane® 361-POM	TPU-AU	Orange	6



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 (S<=6 mm)	0.60	0.50	0.40	0.30	0.20
Maximum Gap (S>6 mm)	1.00	0.80	0.60	0.40	0.25
Pressure psi	2400	3750	6000	7500	10000
Maximum Gap (S<=0.250 in)	0.024	0.020	0.016	0.012	0.008
Maximum Gap (S>0.250 in)	0.040	0.032	0.024	0.016	0.010

NOTE

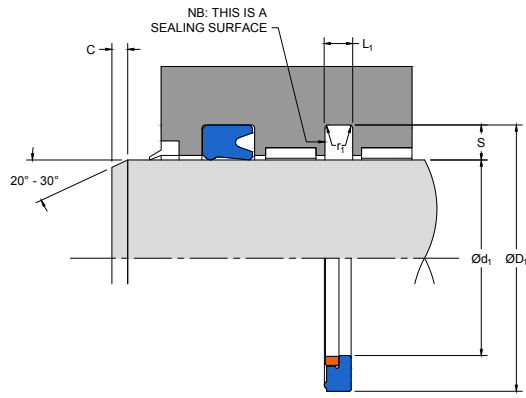
Figures show the maximum permissible gap all on one side, for rod seals using minimum rod \varnothing and maximum clearance \varnothing and for piston seals using the minimum clearance \varnothing and maximum bore \varnothing . Refer to Housing Design section.

SURFACE ROUGHNESS	μmRa	μmRz	μmRt	μinRa	μinRz	μinRt
Dynamic Sealing Face $\varnothing d_1$	0.1 - 0.4	1.6 max	4 max	4 - 16	63 max	157 max
Static Sealing Face L_1	1.6 max	6.3 max	10 max	63 max	250 max	394 max
Static Housing Faces $\varnothing D_1, L_1$	3.2 max	10 max	16 max	125 max	394 max	630 max

CHAMFERS & RADII				
Groove Section <S mm	3.75	5.50	7.75	10.50
Min Chamfer C mm	3.00	3.50	5.00	7.50
Max Fillet Rad r_1 mm	0.50	0.70	1.20	1.60
Groove Section <S in	0.150	0.215	0.306	0.413
Min Chamfer C in	0.125	0.140	0.200	0.300
Max Fillet Rad r_1 in	0.020	0.028	0.047	0.062

TOLERANCES	$\varnothing d_1$	$\varnothing D_1$	L_1
mm	f9	H10	+0.25 -0
in	f9	Js11	+0.010 -0





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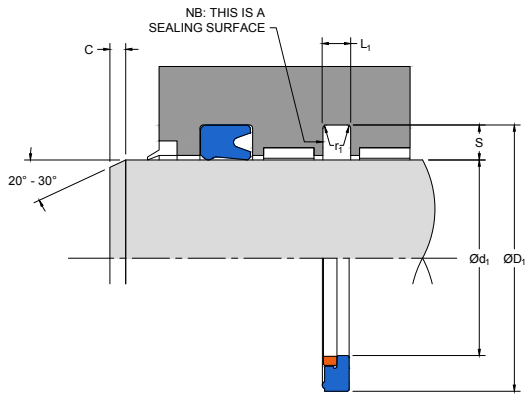
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PART NUMBER RANGE

METRIC					
Ød ₁	TOL f ₉	ØD ₁	TOL H10	L ₁ +0.25-0	PART No.
40.00	-0.03 -0.09	55.50	+0.12 0.00	6.30	4772710
45.00	-0.03 -0.09	56.00	+0.12 0.00	4.20	4575510‡
45.00	-0.03 -0.09	60.50	+0.12 0.00	6.30	4772810
50.00	-0.03 -0.09	65.50	+0.12 0.00	6.30	4403210
55.00	-0.03 -0.10	70.50	+0.12 0.00	6.30	4403310
60.00	-0.03 -0.10	75.50	+0.12 0.00	6.30	4403410
63.00	-0.03 -0.10	78.50	+0.12 0.00	6.30	4751110‡
65.00	-0.03 -0.10	80.50	+0.14 0.00	6.30	4742110
70.00	-0.03 -0.10	85.50	+0.14 0.00	6.30	4742310‡
75.00	-0.03 -0.10	90.50	+0.14 0.00	6.30	4742410
80.00	-0.03 -0.10	95.50	+0.14 0.00	6.30	4742510‡
85.00	-0.04 -0.12	100.50	+0.14 0.00	6.30	4742610
90.00	-0.04 -0.12	105.50	+0.14 0.00	6.30	4523710‡
95.00	-0.04 -0.12	110.50	+0.14 0.00	6.30	4742810
100.00	-0.04 -0.12	115.50	+0.14 0.00	6.30	4742910‡
110.00	-0.04 -0.12	125.50	+0.16 0.00	6.30	4743010‡
124.00	-0.04 -0.14	139.50	+0.16 0.00	6.30	4824710

NOTE

Part numbers suffixed by "‡" indicate housing sizes to meet ISO 7425-2.



PART NUMBER RANGE

METRIC					
Ød ₁	TOL f9	ØD ₁	TOL H10	L ₁ +0.25-0	PART No.
125.00	-0.04 -0.14	140.50	+0.16 0.00	6.30	4824810‡
130.00	-0.04 -0.14	145.50	+0.16 0.00	6.30	4830210
135.00	-0.04 -0.14	150.50	+0.16 0.00	6.30	4824910
140.00	-0.04 -0.14	155.50	+0.16 0.00	6.30	4770810‡
150.00	-0.04 -0.14	165.50	+0.16 0.00	6.30	4825010
150.00	-0.04 -0.14	170.00	+0.16 0.00	10.00	4804110
155.00	-0.04 -0.14	170.50	+0.16 0.00	6.30	4825110
160.00	-0.04 -0.14	175.50	+0.16 0.00	6.30	4825210‡
170.00	-0.04 -0.14	185.50	+0.19 0.00	6.30	4820210
180.00	-0.04 -0.14	195.50	+0.19 0.00	6.30	4804010‡
215.00	-0.05 -0.17	236.00	+0.19 0.00	8.10	4705710

NOTE

Part numbers suffixed by "‡" indicate housing sizes to meet ISO 7425-2.