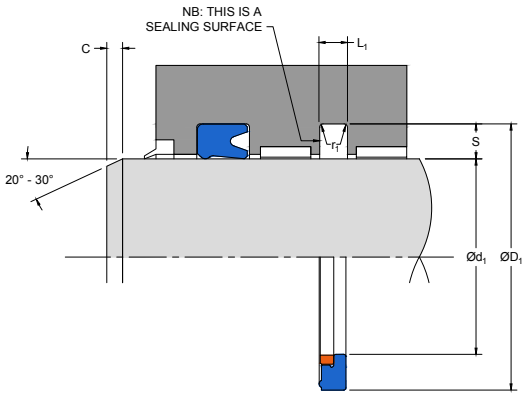


653

ROD BUFFER SEAL

Single-Acting
Polyurethane with AE Ring

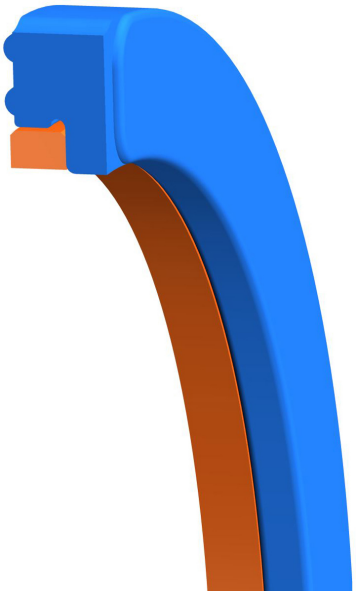
DESIGN

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. 0427554BI; 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 molded 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 polyacetyl 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 Color	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

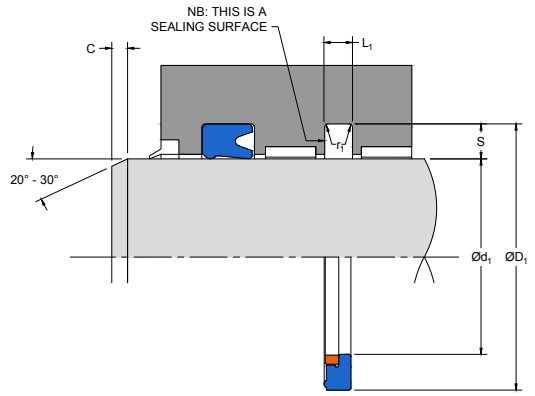
NOTE

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

SURFACE ROUGHNESS	µmRa	µmRz	µmRt	µinRa	µinRz	µinRt
Dynamic Sealing Face $Ød_1$	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 $ØD_1$, 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	$Ød_1$	$ØD_1$	L_1
mm	f9	H10	+0.25 -0
in	f9	Js11	+0.010 -0



653

ROD BUFFER SEAL

Single-Acting
Polyurethane with AE Ring

PART NUMBER RANGE

INCH					
$Ød_1$	TOL f9	$ØD_1$	TOL H10	L_1 +0.010-0	PART No.
1.250	-0.001 -0.003	1.674	+0.003 -0.003	0.166	4878110
2.000	-0.001 -0.004	2.424	+0.004 -0.004	0.166	4521310
2.500	-0.001 -0.004	2.924	+0.004 -0.004	0.166	4514610
2.750	-0.001 -0.004	3.174	+0.004 -0.004	0.166	4533510
3.000	-0.001 -0.004	3.616	+0.004 -0.004	0.247	4515910
3.500	-0.001 -0.005	4.116	+0.004 -0.004	0.247	4514810
4.000	-0.001 -0.005	4.616	+0.004 -0.004	0.247	4524610
7.000	-0.002 -0.006	7.616	+0.006 -0.006	0.247	4588310
8.000	-0.002 -0.006	8.610	+0.006 -0.006	0.247	4753410
8.500	-0.002 -0.006	9.116	+0.006 -0.006	0.247	4744810
12.000	-0.002 -0.007	12.950	+0.007 -0.007	0.319	4764910

PART NUMBERS ON THIS PAGE ARE LISTED IN THE STANDARD MATERIAL OPTION. FOR MATERIAL VARIATIONS OR FOR CUSTOM SIZES, MATERIALS, OR SEAL DESIGNS, PLEASE CONTACT YOUR LOCAL HALLITE REPRESENTATIVE.