



Design

The Hallite 416 is a buffer seal developed to work in conjunction with high performance rod seals, such as the Hallite 605 and 621.

It has a bronze filled PTFE ring with a pre-loaded lip energised by an O-Ring. This seal is designed to protect the primary rod seal from pressure spikes in the cylinder. It has a self relieving design in order to prevent excessive pressure build up in the cavity between the buffer seal and the rod seal.

The special PTFE ring has the low frictional properties normally associated with this material but is strengthened by additives to reduce creep. It has a low breakout friction so stick slip is eliminated.

Standard seals are supplied with a nitrile O-Ring but other materials can be provided.

The PTFE ring should always be mounted with the internal step on the pressure side. Sizes above 30mm are easily installed by deforming the PTFE ring into a kidney shape. Sizes under 30mm are best installed using a tool, details of which can be provided.

Features

- Self relieving design prevents pressure trapping
- Low friction - no stick slip
- High strength precision machined PTFE cap ring
- Wide range of materials
- Simple groove design and installation

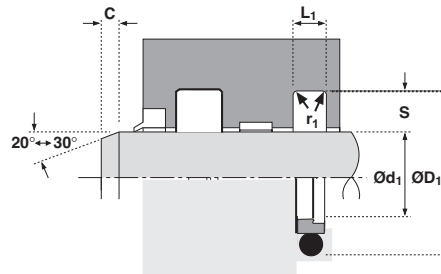
Materials

Face Material - O Ring
Standard material
Bronze/PTFE – NBR
----- 00

Material options:
15% Glass/PTFE – NBR
----- 01

15% Glass/PTFE – FKM
----- 11

Bronze/PTFE – FKM
----- 10



Technical details

Operating conditions

Maximum Speed	4.0 m/sec
Temperature Range	-30°C + 100°C
Maximum Pressure	300 bar

Inch

12.0 ft/sec
-22°F + 212°F
4500 p.s.i.

Maximum extrusion gap

Figures show the maximum permissible gap on one side using minimum rod \varnothing and maximum clearance \varnothing .

Pressure bar	100	150	250	300
Pressure p.s.i.	1500	2400	3750	4500
Maximum Gap in	0.024	0.020	0.018	0.016

Surface roughness

	μmRa	μmRt	μinCLA	μinRMS
Dynamic Sealing Face $\varnothing d_1$	0.1 < > 0.4	4 max	4 < > 16	5 < > 18
Static Sealing Face $\varnothing D_1$	1.6 max	10 max	63 max	70 max
Static Housing Faces L_1	3.2 max	16 max	125 max	140 max

Chamfers & Radii

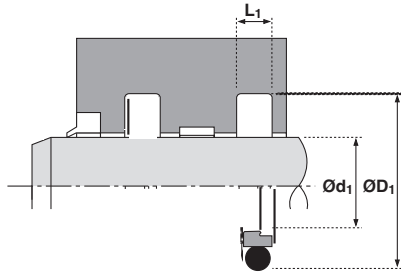
Groove Section $\leq S$ in	0.148	0.216	0.305	0.413	0.482
Min Chamfer C in	0.079	0.118	0.197	0.295	0.315
Max Fillet Rad r_1 in	0.016	0.031	0.047	0.059	0.059

Tolerances

$\varnothing d_1$	$\varnothing D_1$	L_1 in
f9	H11	+0.008 -0



rod buffer seals



Ød ₁	TOL f ₉	ØD ₁	TOL H10	L ₁ +0.008	PART No.
0.750	-0.0008	1.037	+0.003	0.126	72005__
	-0.0028		-0.000		
1.000	-0.0008	1.287	+0.004	0.126	72010__
	-0.0028		-0.000		
1.250	-0.0010	1.587	+0.004	0.126	72012__
	-0.0034		-0.000		
1.500	-0.0010	1.787	+0.004	0.126	72015__
	-0.0034		-0.000		
1.500	-0.0010	1.921	+0.004	0.165	72025__
	-0.0034		-0.000		
1.750	-0.0010	2.037	+0.005	0.126	72020__
	-0.0034		-0.000		
1.750	-0.0010	2.171	+0.005	0.165	72030__
	-0.0034		-0.000		
2.000	-0.0012	2.421	+0.005	0.165	72035__
	-0.0041		-0.000		
2.500	-0.0012	2.921	+0.005	0.165	72040__
	-0.0041		-0.000		
2.750	-0.0012	3.171	+0.005	0.165	72045__
	-0.0041		-0.000		
2.750	-0.0012	3.344	+0.005	0.248	72054__
	-0.0041		-0.000		
3.000	-0.0012	3.421	+0.005	0.165	72050__
	-0.0041		-0.000		
3.000	-0.0014	3.594	+0.005	0.248	72055__
	-0.0048		-0.000		
3.500	-0.0014	4.094	+0.005	0.248	72060__
	-0.0048		-0.000		
3.625	-0.0014	4.219	+0.005	0.248	72065__
	-0.0048		-0.000		

Ød ₁	TOL f ₉	ØD ₁	TOL H10	L ₁ +0.008	PART No.
3.750	-0.0014	4.344	+0.005	0.248	72070__
	-0.0048		-0.000		
4.000	-0.0014	4.594	+0.005	0.248	72075__
	-0.0048		-0.000		
4.500	-0.0014	5.307	+0.006	0.319	72100__
	-0.0048		-0.000		
4.500	-0.0014	5.094	+0.006	0.248	72079__
	-0.0048		-0.000		
4.750	-0.0014	5.344	+0.006	0.248	72080__
	-0.0048		-0.000		
5.000	-0.0014	5.594	+0.006	0.248	72085__
	-0.0048		-0.000		
5.125	-0.0017	5.719	+0.006	0.248	72090__
	-0.0056		-0.000		
5.375	-0.0017	5.969	+0.006	0.248	72095__
	-0.0056		-0.000		
5.500	-0.0017	6.307	+0.006	0.319	72105__
	-0.0056		-0.000		
6.000	-0.0017	6.807	+0.006	0.319	72110__
	-0.0056		-0.000		
7.000	-0.0017	7.807	+0.007	0.319	72115__
	-0.0056		-0.000		
8.000	-0.0020	8.807	+0.007	0.319	72120__
	-0.0065		-0.000		
9.000	-0.0020	9.801	+0.007	0.319	72125__
	-0.0065		-0.000		
10.000	-0.0022	10.807	+0.008	0.319	72130__
	-0.0073		-0.000		
12.000	-0.0022	12.807	+0.009	0.319	72135__
	-0.0073		-0.000		

416
rod buffer seals - inch

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