Design

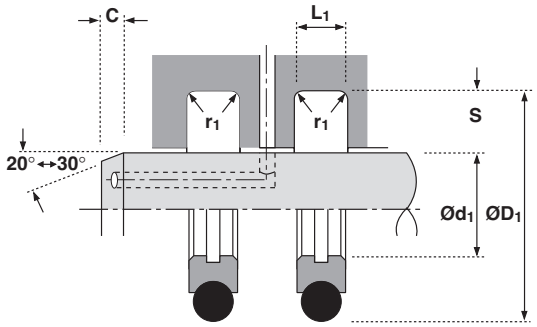
The Hallite 310 rotary pressure seal is designed specifically for use in hydraulic swivel joints. The seal assembly consists of a carbon filled PTFE seal ring energised by an NBR O ring. For aggressive media an FKM O ring can be substituted. The face material and design provides high abrasion resistance and low friction to allow running at low rotational speeds with minimal stick-slip. The low friction is helped by the groove in the sliding face, which provides an oil reservoir. The groove also reduces the contact area with the rotating counterface and allows a higher contact pressure. The circular recess in the outer diameter increases the contact of the face with the O ring and minimises the possibility of the sealing components rotating relative to each other.

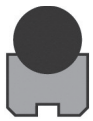
NB: Part numbers suffixed by "‡" indicate housing sizes to meet ISO7425-2.

Note: When the Hallite 310 is used as an end seal, it is recommended that it is protected with a wiper.

Features

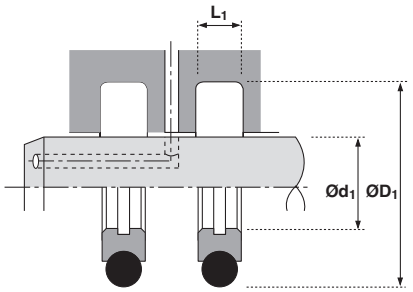
- Minimal stick-slip
- Very low friction
- Can be mounted into one piece housings (over 30mm rod diameter)
- High temperature capability
- Low counterface wear
- Good extrusion resistance
- Compact housings - small installation space





Technical details

	Metric		Inch	
Operating conditions				
Maximum Speed	0.5 m/sec		1.5 ft/sec	
Maximum Temperature	-30°C + 100°C		-22°F +212°F	
Maximum Pressure	300 bar		4,500 p.s.i.	
Limiting PV Value Lubricated	40 bar m/sec		1900 p.s.i ft/sec	
Maximum extrusion gap	**Figures show the maximum permissible gap all on one side using minimum rod Ø and maximum clearance Ø. Refer to Housing Design section.**			
Pressure bar	100	200	350	
Maximum gap L_1=4.2mm	0.20	0.10	H7/f7 fit	
Maximum gap L_1=6.3mm	0.30	0.25	H7/f7 fit	
Surface roughness	**µmRa**	**µmRt**	**µinCLA**	**µinRMS**
Dynamic Sealing Face $Ød_1$	0.5 < > 0.2	2.5 max	2 < >8	2 < >9
Static Sealing Face $ØD_1$	1.6 max	10 max	63 max	70 max
Static Housing Faces L_1	2.5 max	16 max	100 max	110 max
Chamfers & Radii				
Groove Section ≤ S mm	5.5	7.75		
Min Chamfer C mm	3.0	5.0		
Max Fillet Rad r_1 mm	0.8	1.2		
Tolerances	**$Ød_1$**	**$ØD_1$**	**L_1 mm**	
	f9	H11	+0.2 -0	



Ød1	TOL f9	ØD1	TOL H11	L1 +0.2 -0	PART No.
40	-0.025 -0.087	51.0	+0.19 +0.00	4.2	8679710‡
45	-0.025 -0.087	56.0	+0.19 +0.00	4.2	8679810‡
50	-0.025 -0.087	61.0	+0.19 +0.00	4.2	8679910‡
56	-0.030 -0.104	67.0	+0.19 +0.00	4.2	8680010‡
60	-0.030 -0.104	71.0	+0.19 +0.00	4.2	8680110
63	-0.030 -0.104	74.0	+0.19 +0.00	4.2	8680210‡
70	-0.030 -0.104	81.0	+0.22 +0.00	4.2	8680310
75	-0.030 -0.104	86.0	+0.22 +0.00	4.2	8680410
80	-0.030 -0.104	91.0	+0.22 +0.00	4.2	8680510
90	-0.036 -0.123	101.0	+0.22 +0.00	4.2	8680610
100	-0.036 -0.123	111.0	+0.22 +0.00	4.2	8680710
110	-0.036 -0.123	121.0	+0.25 +0.00	4.2	8680810
115	-0.036 -0.123	126.0	+0.25 +0.00	4.2	8680910

Ød1	TOL f9	ØD1	TOL H11	L1 +0.2 -0	PART No.
120	-0.036 -0.123	131.0	+0.25 +0.00	4.2	8681010
125	-0.043 -0.143	136.0	+0.25 +0.00	4.2	8681110
130	-0.043 -0.143	141.0	+0.25 +0.00	4.2	8681210
140	-0.043 -0.143	151.0	+0.25 +0.00	4.2	8681310
150	-0.043 -0.143	161.0	+0.25 +0.00	4.2	8681410
160	-0.043 -0.143	171.0	+0.25 +0.00	4.2	8681510
170	-0.043 -0.143	181.0	+0.29 +0.00	4.2	8681610
180	-0.043 -0.143	191.0	+0.29 +0.00	4.2	8681710
190	-0.050 -0.165	201.0	+0.29 +0.00	4.2	8681810
200	-0.050 -0.165	215.5	+0.29 +0.00	6.3	8681910
210	-0.050 -0.165	225.5	+0.29 +0.00	6.3	8682010
220	-0.050 -0.165	235.5	+0.29 +0.00	6.3	8682110
250	-0.050 -0.165	265.5	+0.32 +0.00	6.3	8682210