

Design

A robust assembly designed specifically for one piece pistons, the Hallite 780 double acting seal uses a rubber sealing element that has proved itself in service to be extremely wear resistant and capable of working most effectively in a wide range of medium duty applications. The seal is also suitable for two piece pistons.

The assembly comprises a rubber sealing element, two split support rings and two split L-shaped bearings, one of each located either side of the seal.

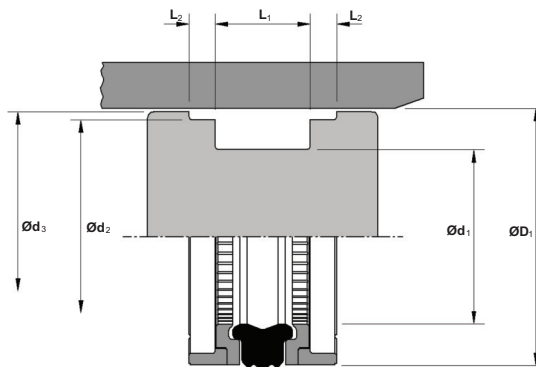
The nitrile rubber sealing element is designed with multi-lips for efficient dynamic sealing with minimal low pressure friction and, when pressurised, be protected from extrusion damage by the extending lips of the support ring.

Both the L-shaped bearings and support rings are grooved to ensure that the fluid pressure properly energises the sealing element and to prevent the possibility of any pressure trapping within the seal assembly.

NB: Part numbers suffixed by “±” indicate housing sizes to meet ISO 6547.

Features

- Well proven design
- Long life
- Extremely wear resistant



Technical details

Operating conditions

Maximum Speed	0.5 m/sec
Temperature Range	-30°C +100°C
Maximum Pressure	400 bar

Inch

1.5 ft/sec
-22°F +212°F
6000 p.s.i.

Surface roughness

	µmRa	µmRt
Dynamic Sealing Face Ød ₁	0.1 < > 0.4	4 max
Static Sealing Face Ød ₁ Ød ₂	1.6 max	10 max
Static Housing Faces Ød ₃ L ₁ L ₂	3.2 max	16 max

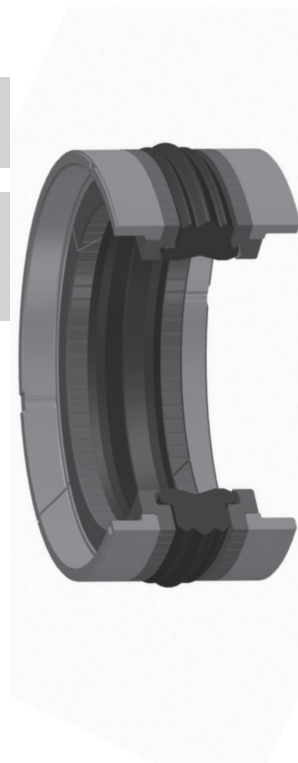
µinCLA	µinRMS
4 < > 16	5 < > 18
63 max	70 max
125 max	140 max

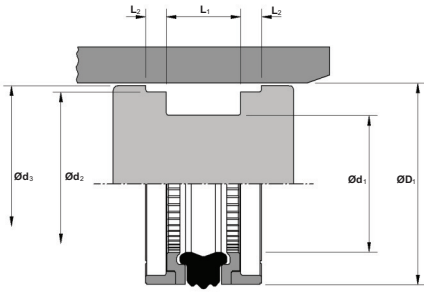
Chamfers & Radii

	5.0	7.5	8.0	10.0	12.5	15.0
Groove Section ≤ S mm						
Min Chamfer C mm	2.4	4.0	5.0	5.0	6.5	7.5
Max Fillet Rad r ₁ mm	0.4	0.4	0.4	0.4	0.8	0.8
Max Fillet Rad r ₂ mm	0.4	0.4	0.4	0.4	0.8	0.8

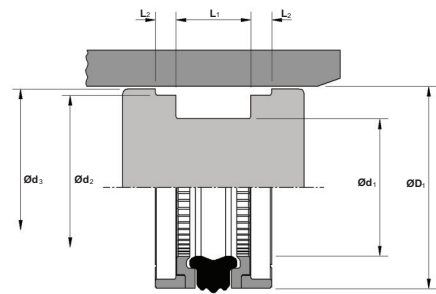
Tolerances

	ØD ₁	Ød ₁	Ød ₂	Ød ₃	L ₁	L ₂
mm	H9	h9	h9	h11	+0.2 -0	+0.1 -0

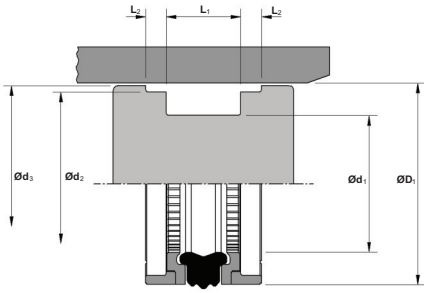




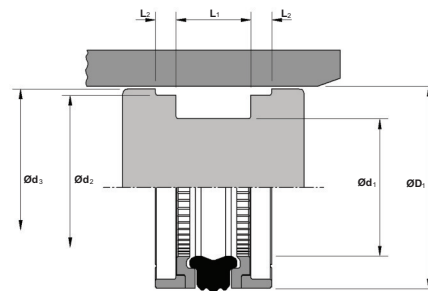
ØD ₁	TOL H9	Ød ₁	TOL h9	Ød ₂	TOL h9	Ød ₃	TOL h11	L ₁ +0.2 -0	L ₂ +0.1 -0	PART No.
20	+0.05 +0.00	11	+0.00 -0.04	17.00	+0.00 -0.04	19.0	+0.00 -0.13	13.5	2.10	5006710
25	+0.05 +0.00	15	+0.00 -0.04	21.00	+0.00 -0.05	24.0	+0.00 -0.13	12.0	4.00	5003710
25	+0.05 +0.00	16	+0.00 -0.04	22.00	+0.00 -0.05	24.0	+0.00 -0.13	13.5	2.10	5003810
30	+0.05 +0.00	17	+0.00 -0.04	27.00	+0.00 -0.05	29.0	+0.00 -0.13	15.4	6.35	5006410
30	+0.05 +0.00	21	+0.00 -0.05	27.00	+0.00 -0.05	29.0	+0.00 -0.13	13.5	2.10	5003910
32	+0.06 +0.00	22	+0.00 -0.05	28.00	+0.00 -0.07	31.0	+0.00 -0.16	15.5	2.60	5001420
32	+0.06 +0.00	22	+0.00 -0.05	28.50	+0.00 -0.05	30.5	+0.00 -0.16	16.4	6.35	5001410
35	+0.06 +0.00	25	+0.00 -0.05	31.00	+0.00 -0.06	34.0	+0.00 -0.16	15.5	2.60	5001520
35	+0.06 +0.00	25	+0.00 -0.05	31.40	+0.00 -0.06	33.5	+0.00 -0.16	16.4	6.35	5001510
40	+0.06 +0.00	24	+0.00 -0.05	35.40	+0.00 -0.06	38.5	+0.00 -0.16	18.4	6.35	5001310
40	+0.06 +0.00	26	+0.00 -0.05	36.00	+0.00 -0.06	39.0	+0.00 -0.16	15.5	2.60	5008010
40	+0.06 +0.00	30	+0.00 -0.05	37.00	+0.00 -0.06	39.0	+0.00 -0.16	12.5	4.00	5005810
40	+0.06 +0.00	30	+0.00 -0.05	35.40	+0.00 -0.06	38.5	+0.00 -0.16	16.4	6.35	5004010
40	+0.06 +0.00	32	+0.00 -0.05	36.00	+0.00 -0.06	39.4	+0.00 -0.16	15.5	3.20	5008110
45	+0.06 +0.00	29	+0.00 -0.05	40.40	+0.00 -0.06	43.5	+0.00 -0.16	18.4	6.35	5000710
45	+0.06 +0.00	31	+0.00 -0.06	41.00	+0.00 -0.06	44.0	+0.00 -0.16	15.5	2.60	5004110
45	+0.06 +0.00	35	+0.00 -0.06	40.40	+0.00 -0.06	43.5	+0.00 -0.16	16.4	6.35	5001610
50	+0.06 +0.00	34	+0.00 -0.06	45.40	+0.00 -0.06	48.5	+0.00 -0.16	18.4	6.35	5000810
50	+0.06 +0.00	34	+0.00 -0.06	46.00	+0.00 -0.06	49.0	+0.00 -0.16	20.5	3.10	5000820
50	+0.06 +0.00	38	+0.00 -0.06	46.00	+0.00 -0.06	49.4	+0.00 -0.16	20.5	4.20	5004810
50	+0.06 +0.00	40	+0.00 -0.06	47.00	+0.00 -0.06	49.0	+0.00 -0.16	12.5	4.00	5005910‡
55	+0.07 +0.00	39	+0.00 -0.06	50.36	+0.00 -0.07	53.5	+0.00 -0.19	18.4	6.35	5000910
55	+0.07 +0.00	39	+0.00 -0.06	51.00	+0.00 -0.07	54.0	+0.00 -0.19	20.5	3.10	5000920



$\varnothing D_1$	TOL H9	$\varnothing d_1$	TOL h9	$\varnothing d_2$	TOL h9	$\varnothing d_3$	TOL h11	L_1 +0.2 -0	L_2 +0.1 -0	PART No.
60	+0.07 +0.00	44	+0.00 -0.06	55.40	+0.00 -0.07	58.5	+0.00 -0.19	18.4	6.35	5001010
60	+0.07 +0.00	44	+0.00 -0.06	56.00	+0.00 -0.07	59.0	+0.00 -0.19	20.5	3.10	5001020
60	+0.07 +0.00	48	+0.00 -0.06	56.00	+0.00 -0.07	59.4	+0.00 -0.19	20.5	4.20	5004910
63	+0.07 +0.00	47	+0.00 -0.06	58.40	+0.00 -0.07	61.5	+0.00 -0.19	18.4	6.35	5001110
63	+0.07 +0.00	47	+0.00 -0.06	58.40	+0.00 -0.07	61.5	+0.00 -0.19	19.4	6.35	5001120
63	+0.07 +0.00	47	+0.00 -0.06	59.00	+0.00 -0.07	62.0	+0.00 -0.19	20.5	3.10	5001130
63	+0.07 +0.00	51	+0.00 -0.07	59.00	+0.00 -0.07	62.4	+0.00 -0.19	20.5	4.20	5005010
63	+0.07 +0.00	53	+0.00 -0.07	60.00	+0.00 -0.07	62.0	+0.00 -0.19	12.5	4.00	5006010‡
65	+0.07 +0.00	49	+0.00 -0.06	61.00	+0.00 -0.07	64.0	+0.00 -0.19	20.5	3.10	5005510
65	+0.07 +0.00	50	+0.00 -0.06	60.40	+0.00 -0.07	63.5	+0.00 -0.19	18.4	6.35	5001210
65	+0.07 +0.00	53	+0.00 -0.07	61.00	+0.00 -0.07	64.4	+0.00 -0.19	20.5	4.20	5010710
70	+0.07 +0.00	50	+0.00 -0.06	64.20	+0.00 -0.07	68.3	+0.00 -0.19	22.4	6.35	5000210
70	+0.07 +0.00	54	+0.00 -0.07	66.00	+0.00 -0.07	69.0	+0.00 -0.19	20.5	3.10	5004210
70	+0.07 +0.00	58	+0.00 -0.07	66.00	+0.00 -0.07	69.4	+0.00 -0.19	20.5	4.20	5005110
75	+0.07 +0.00	55	+0.00 -0.07	69.20	+0.00 -0.07	73.3	+0.00 -0.19	22.4	6.35	5000310
75	+0.07 +0.00	59	+0.00 -0.07	71.00	+0.00 -0.07	74.0	+0.00 -0.19	20.5	3.10	5004310
75	+0.07 +0.00	63	+0.00 -0.07	71.00	+0.00 -0.07	74.4	+0.00 -0.19	20.5	4.20	5010810
80	+0.07 +0.00	60	+0.00 -0.07	74.15	+0.00 -0.07	78.3	+0.00 -0.19	22.4	6.35	5000110
80	+0.07 +0.00	60	+0.00 -0.07	75.00	+0.00 -0.07	78.0	+0.00 -0.19	25.0	6.30	5000120
80	+0.07 +0.00	62	+0.00 -0.07	76.00	+0.00 -0.07	79.0	+0.00 -0.19	22.5	3.60	5004410
80	+0.07 +0.00	65	+0.00 -0.07	76.00	+0.00 -0.07	78.5	+0.00 -0.19	20.0	5.00	5008710‡
80	+0.07 +0.00	66	+0.00 -0.07	76.00	+0.00 -0.07	79.4	+0.00 -0.19	22.5	5.20	5005210
85	+0.09 +0.00	65	+0.00 -0.07	79.15	+0.00 -0.07	83.3	+0.00 -0.22	22.4	6.35	5000410



ØD ₁	TOL H9	Ød ₁	TOL h9	Ød ₂	TOL h9	Ød ₃	TOL h11	L ₁ +0.2 -0	L ₂ +0.1 -0	PART No.
90	+0.09 +0.00	70	+0.00 -0.07	84.15	+0.00 -0.09	88.3	+0.00 -0.22	22.4	6.35	5000510
90	+0.09 +0.00	72	+0.00 -0.07	86.00	+0.00 -0.09	89.0	+0.00 -0.22	22.5	3.60	5007910
90	+0.09 +0.00	76	+0.00 -0.07	86.00	+0.00 -0.09	89.4	+0.00 -0.22	22.5	5.20	5005310
95	+0.09 +0.00	75	+0.00 -0.07	89.15	+0.00 -0.09	93.3	+0.00 -0.22	22.4	6.35	5000610
100	+0.09 +0.00	75	+0.00 -0.07	93.15	+0.00 -0.09	98.0	+0.00 -0.22	22.4	6.35	5001710
100	+0.09 +0.00	80	+0.00 -0.07	95.00	+0.00 -0.09	98.0	+0.00 -0.22	25.0	6.30	5004710‡
100	+0.09 +0.00	82	+0.00 -0.09	96.00	+0.00 -0.09	99.0	+0.00 -0.22	22.5	3.60	5004510
100	+0.09 +0.00	85	+0.00 -0.09	96.00	+0.00 -0.09	98.5	+0.00 -0.22	20.0	5.00	5006110‡
100	+0.09 +0.00	86	+0.00 -0.09	96.00	+0.00 -0.09	99.4	+0.00 -0.22	22.5	5.20	5005410
105	+0.09 +0.00	80	+0.00 -0.07	98.10	+0.00 -0.09	103.0	+0.00 -0.22	22.4	6.35	5001810
110	+0.09 +0.00	85	+0.00 -0.09	103.10	+0.00 -0.09	108.0	+0.00 -0.22	22.4	6.35	5001910
110	+0.09 +0.00	92	+0.00 -0.09	106.00	+0.00 -0.09	109.0	+0.00 -0.22	22.5	3.60	5007810
115	+0.09 +0.00	90	+0.00 -0.09	108.10	+0.00 -0.09	113.0	+0.00 -0.22	22.4	6.35	5002010
120	+0.09 +0.00	95	+0.00 -0.09	113.10	+0.00 -0.09	118.0	+0.00 -0.22	22.4	6.35	5002110
120	+0.09 +0.00	106	+0.00 -0.09	116.00	+0.00 -0.09	119.4	+0.00 -0.22	22.5	5.20	5008810
125	+0.10 +0.00	100	+0.00 -0.09	118.10	+0.00 -0.09	123.0	+0.00 -0.25	25.4	6.35	5002310
125	+0.10 +0.00	103	+0.00 -0.09	121.0	+0.00 -0.09	124.0	+0.00 -0.25	26.5	5.10	5007710
125	+0.10 +0.00	105	+0.00 -0.09	120.00	+0.00 -0.09	123.0	+0.00 -0.25	25.0	6.30	5006210‡
130	+0.10 +0.00	105	+0.00 -0.09	123.10	+0.00 -0.10	128.0	+0.00 -0.25	25.4	6.35	5002420
130	+0.10 +0.00	105	+0.00 -0.09	122.60	+0.00 -0.10	128.0	+0.00 -0.25	25.4	9.50	5002410
135	+0.10 +0.00	110	+0.00 -0.09	127.60	+0.00 -0.10	133.0	+0.00 -0.25	25.4	9.50	5002510
140	+0.10 +0.00	115	+0.00 -0.09	133.00	+0.00 -0.10	138.0	+0.00 -0.25	25.4	6.35	5002220
140	+0.10 +0.00	115	+0.00 -0.09	132.60	+0.00 -0.10	138.0	+0.00 -0.25	25.4	9.50	5002210



ØD_1	TOL H9	Ød_1	TOL h9	Ød_2	TOL h9	Ød_3	TOL h11	L_1 +0.2 -0	L_2 +0.1 -0	PART No.
145	+0.10 +0.00	120	+0.00 -0.09	137.60	+0.00 -0.10	143.0	+0.00 -0.25	25.4	9.50	5002610
150	+0.10 +0.00	125	+0.00 -0.10	142.60	+0.00 -0.10	148.0	+0.00 -0.25	25.4	9.50	5002710
150	+0.10 +0.00	125	+0.00 -0.10	143.00	+0.00 -0.10	148.0	+0.00 -0.25	25.4	6.35	5002720
155	+0.10 +0.00	130	+0.00 -0.10	147.60	+0.00 -0.10	153.0	+0.00 -0.25	25.4	9.50	5002810
160	+0.10 +0.00	130	+0.00 -0.10	152.60	+0.00 -0.10	158.0	+0.00 -0.25	25.4	9.50	5004610
160	+0.10 +0.00	130	+0.00 -0.10	153.00	+0.00 -0.10	158.0	+0.00 -0.25	25.4	6.35	5004620
160	+0.10 +0.00	135	+0.00 -0.10	152.60	+0.00 -0.10	158.0	+0.00 -0.25	25.4	9.50	5005610
160	+0.10 +0.00	143	+0.00 -0.10	156.00	+0.00 -0.10	159.4	+0.00 -0.25	26.5	7.20	5008910
165	+0.10 +0.00	140	+0.00 -0.10	157.60	+0.00 -0.10	163.0	+0.00 -0.25	25.4	9.50	5002910
170	+0.10 +0.00	145	+0.00 -0.10	161.70	+0.00 -0.10	168.0	+0.00 -0.25	25.4	12.70	5003010
175	+0.10 +0.00	150	+0.00 -0.10	166.70	+0.00 -0.10	173.0	+0.00 -0.25	25.4	12.70	5003110
180	+0.10 +0.00	150	+0.00 -0.10	172.95	+0.00 -0.10	178.0	+0.00 -0.25	35.4	6.35	5006310
180	+0.10 +0.00	155	+0.00 -0.10	171.70	+0.00 -0.10	178.0	+0.00 -0.25	25.4	12.70	5003210
185	+0.12 +0.00	160	+0.00 -0.10	176.70	+0.00 -0.10	183.0	+0.00 -0.25	25.4	12.70	5003310
190	+0.12 +0.00	165	+0.00 -0.10	181.70	+0.00 -0.12	188.0	+0.00 -0.29	25.4	12.70	5003410
195	+0.12 +0.00	170	+0.00 -0.10	186.70	+0.00 -0.12	193.0	+0.00 -0.29	25.4	12.70	5003510
200	+0.12 +0.00	175	+0.00 -0.10	191.60	+0.00 -0.12	198.0	+0.00 -0.29	25.4	12.70	5003610
210	+0.12 +0.00	185	+0.00 -0.10	201.60	+0.00 -0.12	208.0	+0.00 -0.29	25.4	12.70	5008210
220	+0.12 +0.00	195	+0.00 -0.10	311.60	+0.00 -0.12	218.0	+0.00 -0.29	25.4	12.70	5008310
230	+0.12 +0.00	205	+0.00 -0.10	221.60	+0.00 -0.12	227.0	+0.00 -0.29	25.4	12.70	5006510
240	+0.12 +0.00	215	+0.00 -0.10	231.60	+0.00 -0.12	238.0	+0.00 -0.29	25.4	12.70	5008410
250	+0.12 +0.00	225	+0.00 -0.10	241.60	+0.00 -0.12	247.0	+0.00 -0.29	25.4	12.70	5006610

