

714

PISTON SEAL

*Double-Acting
Glass-Filled Nylon Face with Rubber Energiser
for Heavy-Duty Applications*

DESIGN

The Hallite 714 double-acting piston seal is a compact seal for medium to heavy-duty applications.

In double-acting telescopic cylinders or phasing cylinders, the seal's reinforced, heat-stabilized, thermoplastic sealing face with step-cut joint is an ideal choice because it allows the seal to pass over ports without damage. The rugged, extrusion resistant design also performs extremely well in high-pressure off-highway and earthmoving applications where the seal face can tolerate the large extrusion gaps which are required to prevent piston-to-bore contact.

The abrasion resistant glass-filled nylon (GFN) face seal material allows the seal to work well on super smooth inside diameter (SSID) as drawn tube. The precision moulded face has chamfers which coupled with a profiled NBR expander allows for easier cylinder assembly.

The expander material 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.



FEATURES

- Passes over ports
- High pressure capability
- Static load holding capability
- Excellent wear and abrasion resistance well proven for use on SSID tube
- Replaces multiple piston rings in double-acting telescopic cylinders
- Chamfered cap with profiled expander for easier cylinder assembly
- Excellent dynamic and static sealing performance

MATERIALS

As standard, this product comes in the following materials. Contact your local Hallite technical team if you would like to find out if this profile can be made in a custom material to suit your application. For further material details, please refer to the Hallite Material Table.

MATERIAL OPTIONS	Name	Face Type	Face Colour
Standard	PA 533-NBR	PA-GF	Black

TECHNICAL DETAILS

OPERATING CONDITIONS	METRIC	INCH
Maximum Speed	1.0 m/sec	3.0 ft/sec
Temperature Range	-40°C +110°C	-40°F +230°F
Maximum Pressure	500 bar	7250 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	500			
Groove Section S mm	5.5	7.75	10.5	12.25
Maximum Gap mm	0.35	0.50	0.60	0.80
Pressure psi	7250			
Groove Section S in	0.269	0.296	0.38	0.438
Maximum Gap in	0.014	0.020	0.024	0.032

NOTE

Figures show the maximum permissible gap all on one side using minimum rod \varnothing and maximum clearance \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 $\varnothing d_1$	1.6 max	6.3 max	10 max	63 max	250 max	394 max
Static Housing Faces L_1	3.2 max	10 max	16 max	125 max	394 max	630 max

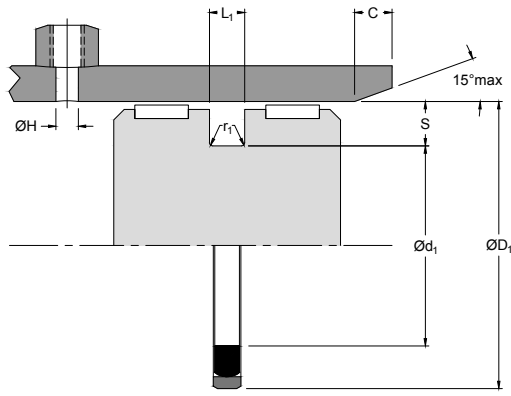
CHAMFERS & RADII								
Groove Section S	5.50	7.75	10.50	12.25	0.269	0.296	0.380	0.438
Min Chamfer C	4.00	6.00	8.00	10.00	0.250	0.250	0.375	0.375
Max Fillet Rad r_1	0.40	0.80	0.80	0.80	0.016	0.032	0.032	0.032

PORT DIAMETER		
Max $\varnothing H$	$L_1 \text{ mm} \times 0.85$	$L_1 \text{ in} \times 0.850$

NOTE

If the seal is to pass over the port, step-cut joint position must be taken into account.

TOLERANCES	$\varnothing D_1$	$\varnothing d_1$	L_1
mm	H9	h9	+0.20 -0
in	H9	h9	+0.008 -0



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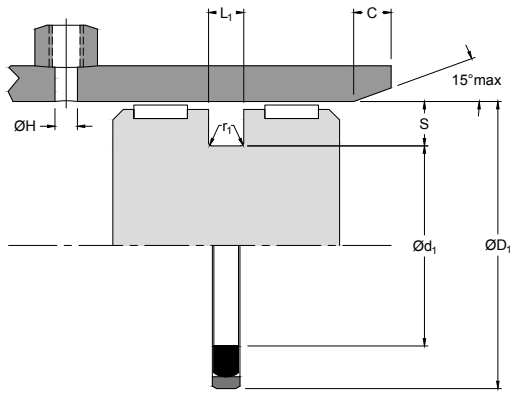
PART NUMBER RANGE

METRIC					
ØD ₁	TOL H9	Ød ₁	TOL h9	L ₁ +0.20-0	PART No.
40.00	+0.06 0.00	29.00	0.00 -0.05	4.20	7270510‡
45.00	+0.06 0.00	34.00	0.00 -0.06	4.20	7270610
50.00	+0.06 0.00	34.50	0.00 -0.06	6.30	7272310‡
50.00	+0.06 0.00	39.00	0.00 -0.06	4.20	7270810‡
55.00	+0.07 0.00	39.50	0.00 -0.06	6.30	7274810
60.00	+0.07 0.00	49.00	0.00 -0.06	4.20	7270910‡
63.00	+0.07 0.00	44.70	0.00 -0.06	7.00	7274910
63.00	+0.07 0.00	47.50	0.00 -0.06	6.30	7272410‡
63.00	+0.07 0.00	52.00	0.00 -0.07	4.20	7271010‡
70.00	+0.07 0.00	54.50	0.00 -0.07	6.30	7273710
70.00	+0.07 0.00	59.00	0.00 -0.07	4.20	7271310
75.00	+0.07 0.00	54.00	0.00 -0.07	8.10	7273010
75.00	+0.07 0.00	59.50	0.00 -0.07	6.30	7271410
80.00	+0.07 0.00	59.00	0.00 -0.07	8.10	7273310
80.00	+0.07 0.00	64.50	0.00 -0.07	6.30	7270010‡
85.00	+0.09 0.00	64.00	0.00 -0.07	8.10	7273110
90.00	+0.09 0.00	69.00	0.00 -0.07	8.10	7273210

NOTE

Part numbers suffixed by "‡" indicate housing sizes to meet ISO 7425-1.





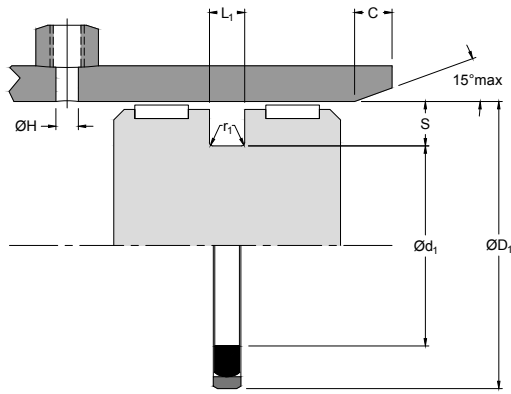
PART NUMBER RANGE

METRIC					
$\text{Ø}D_1$	TOL H9	$\text{Ø}d_1$	TOL h9	L_1 +0.20-0	PART No.
90.00	+0.09 0.00	74.50	0.00 -0.07	6.30	7271610
95.00	+0.09 0.00	74.00	0.00 -0.07	8.10	7273510
100.00	+0.09 0.00	79.00	0.00 -0.07	8.10	7273810
100.00	+0.09 0.00	84.50	0.00 -0.09	6.30	7271810‡
105.00	+0.09 0.00	84.00	0.00 -0.09	8.10	7272910
110.00	+0.09 0.00	89.00	0.00 -0.09	8.10	7273410
115.00	+0.09 0.00	94.00	0.00 -0.09	8.10	7273910
120.00	+0.09 0.00	99.00	0.00 -0.09	8.10	7272010
120.00	+0.09 0.00	104.50	0.00 -0.09	6.30	7275210
125.00	+0.10 0.00	104.00	0.00 -0.09	8.10	7272110‡
125.00	+0.10 0.00	109.50	0.00 -0.09	6.30	7272810‡
130.00	+0.10 0.00	109.00	0.00 -0.09	8.10	7274010
140.00	+0.10 0.00	119.00	0.00 -0.09	8.10	7272210
150.00	+0.10 0.00	129.00	0.00 -0.10	8.10	7274110
150.00	+0.10 0.00	130.60	0.00 -0.10	9.60	7275310
160.00	+0.10 0.00	139.00	0.00 -0.10	8.10	7272510‡
180.00	+0.10 0.00	159.00	0.00 -0.10	8.10	7272610

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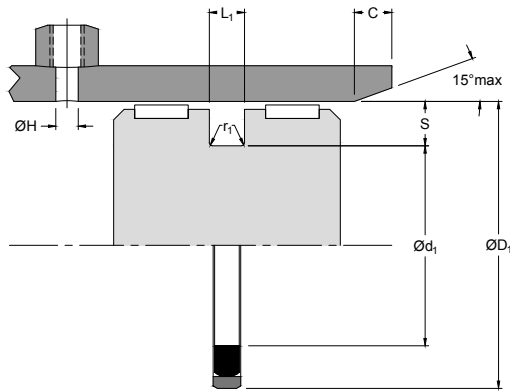
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METRIC					
ØD ₁	TOL H9	Ød ₁	TOL h9	L ₁ +0.20-0	PART No.
190.00	+0.12 0.00	169.00	0.00 -0.10	8.10	7274210
200.00	+0.12 0.00	179.00	0.00 -0.10	8.10	7272710‡
220.00	+0.12 0.00	199.00	0.00 -0.12	8.10	7274310
250.00	+0.12 0.00	229.00	0.00 -0.12	8.10	7273610‡
280.00	+0.13 0.00	255.50	0.00 -0.13	8.10	7274410

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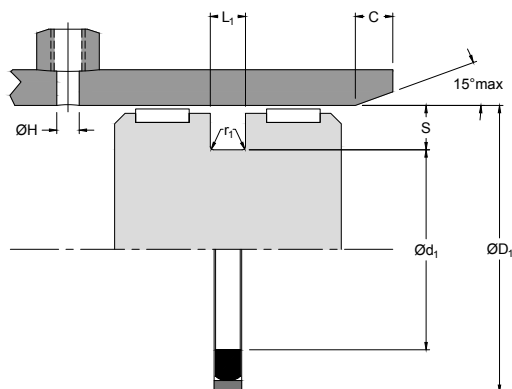
PART NUMBER RANGE

INCH					
ØD ₁	TOL H9	Ød ₁	TOL h9	L ₁ +0.008 -0	PART No.
1.750	+0.003 0.000	1.212	0.000 -0.003	0.282	7267610
2.000	+0.003 0.000	1.462	0.000 -0.003	0.282	7268210
2.250	+0.003 0.000	1.712	0.000 -0.003	0.282	7267710
2.500	+0.003 0.000	1.908	0.000 -0.003	0.312	7261710
2.500	+0.003 0.000	1.962	0.000 -0.003	0.282	7260810
2.750	+0.003 0.000	2.212	0.000 -0.003	0.282	7267810
3.000	+0.003 0.000	2.408	0.000 -0.003	0.312	7261810
3.000	+0.003 0.000	2.442	0.000 -0.003	0.282	7260910
3.250	+0.004 0.000	2.692	0.000 -0.003	0.282	7262910
3.500	+0.004 0.000	2.908	0.000 -0.003	0.312	7261910
3.500	+0.004 0.000	2.942	0.000 -0.003	0.282	7261110
3.750	+0.004 0.000	3.192	0.000 -0.004	0.282	7263110
4.000	+0.004 0.000	3.408	0.000 -0.004	0.312	7262110
4.000	+0.004 0.000	3.442	0.000 -0.004	0.282	7261210
4.250	+0.004 0.000	3.692	0.000 -0.004	0.282	7263210

NOTE

These part numbers supercede legacy 714 part numbers for the same size grooves given in earlier catalogs and data sheets. For more information on the legacy part numbers please contact your local Hallite sales representative.





PART NUMBER RANGE

INCH					
ØD_1	TOL H9	Ød_1	TOL h9	L_1 +0.008 -0	PART No.
4.500	+0.004 0.000	3.908	0.000 -0.004	0.312	7262210
4.500	+0.004 0.000	3.942	0.000 -0.004	0.282	7261310
4.750	+0.004 0.000	4.192	0.000 -0.004	0.282	7267910
5.000	+0.004 0.000	4.240	0.000 -0.004	0.375	7262310
5.000	+0.004 0.000	4.442	0.000 -0.004	0.282	7268310
5.250	+0.004 0.000	4.490	0.000 -0.004	0.375	7268410
5.500	+0.004 0.000	4.740	0.000 -0.004	0.375	7261410
6.000	+0.004 0.000	5.240	0.000 -0.004	0.375	7261610
6.500	+0.004 0.000	5.740	0.000 -0.004	0.375	7262410
7.000	+0.004 0.000	6.240	0.000 -0.004	0.375	7262610
7.500	+0.004 0.000	6.740	0.000 -0.004	0.375	7262710
8.000	+0.004 0.000	7.240	0.000 -0.004	0.375	7262810
9.000	+0.004 0.000	8.124	0.000 -0.004	0.375	7268010
10.000	+0.005 0.000	9.124	0.000 -0.004	0.375	7268110

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