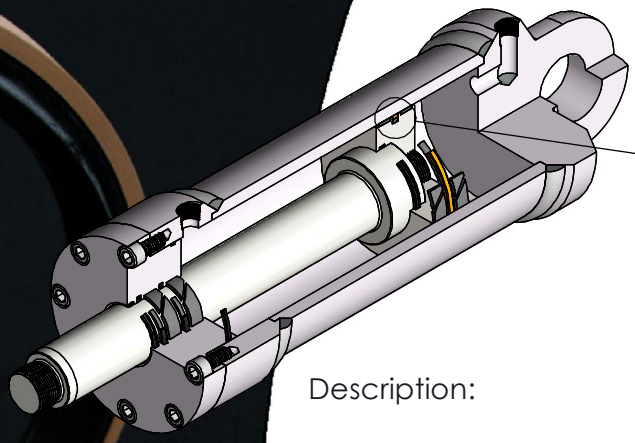
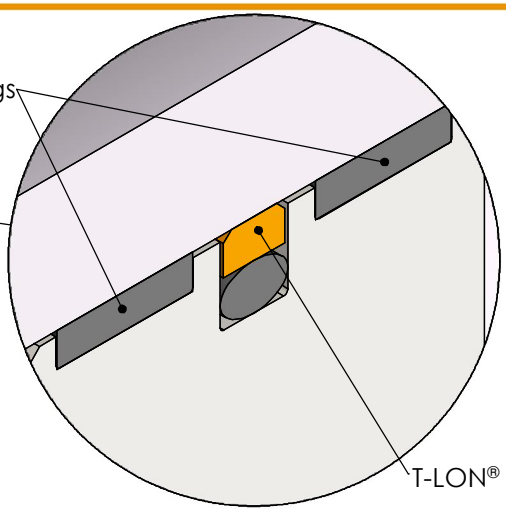
T-LON® "GPI" Series Piston Seal





Description:

The GPI hydraulic piston seal is a proven reliable seal for both low and high pressure systems.

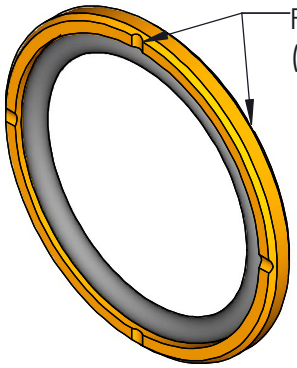
The GPI seal is a double-acting filled T-LON® PTFE compound with an o-ring elastomer energizer designed for reciprocating applications. The filled PTFE seal ring is manufactured with an interference fit with the bore and optimum compression with the o-ring energizer. This offers excellent sealability at low pressures and high pressures when the cylinder experiences ballooning. Since the energizers are standard AS568 o-ring sizes, many elastomer compounds are readily available. The chamfers on the GPI ring aid in assembly and crossing over ports in the cylinder.

Advantages:

- Low seal drag/friction (Minimize energy loss)
- No Stick-slip (Smooth Operation)
- Long seal life from T-LON® filled PTFE compounds
- Available for cylinders up to 20" diameter

Face Grooves (Optional):

For applications of high pressure rise rates, pressure spikes, and rapid change of direction, the seal is apt to experience blow-by. To prevent blow-by and to energize the seal rapidly, face grooves are added to both sides of the seal.



Applications:

- Mobile Hydraulic Cylinders
- Pneumatic Piston Cylinders
- Agriculture Equipment
- Hydraulic Valves and Pumps
- Filling Machines
- Testing Machinery

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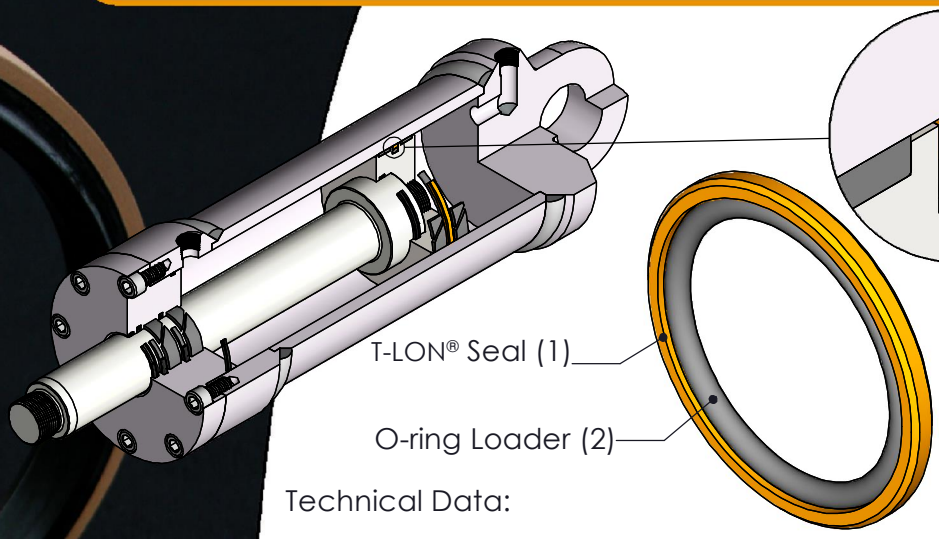

MAXIMUM E-GAP (40% BZ PTFE)***			
SIZE	1500 PSI	3000 PSI	5800 PSI
	(in)	(in)	(in)
-0-	0.016	0.010	0.006
-1-	0.016	0.010	0.006
-2-	0.016	0.010	0.008
-3-	0.020	0.012	0.008
-4-	0.021	0.014	0.010

***USE PISTON WEAR RINGS SO E-GAP DOES NOT EXCEED TABLED VALUES

Technical Data:

(1) T-LON® seal compound determines allowable pressure and velocity ranges
- Velocity: Up to 12 ft/s
- Pressure: Up to 8500 psi

(Function of e-gap and T-LON® compound. Max velocity and pressure cannot be used together)

Most Common:

BRONZE FILLED PTFE ("21" or "22")
- Highest Extrusion Resistance (Higher bronze content increases extrusion/wear resistance; I.E. larger e-gap allowable)
- Good sealability

GLASS/MoS2 FILLED PTFE ("31")
- Good wear resistance for tubes with rougher surface finish
- More chemical resistant and used in applications when seal could run dry

(2) Loader compound determines temperature and chemical compatibility

Most Common:

NBR SHORE 70 A ("P")
- Working Temp. Range -30°F to 230°F (250°F intermittent)
- Commonly used with greases, aliphatic hydrocarbon mineral and vegetable oils, and various hydraulic fluids

EPDM SHORE 70 A ("E")
- Working Temp. Range -50°F to 300°F (400°F steam intermittent)
- Commonly used with water, steam, water/ silicone/ glycol based fluids, and app's affected by ozone and weathering.

ORDERING INFORMATION

GPI - __ __ __ __ - __ - __ __ - __ - __ __

BORE Ø
"0100" = 1.00"
"1050" = 10.50"

LOADER SERIES
"1" = 100 SERIES AS568A (3/32")
"3" = 300 SERIES AS568A (3/16")

TLON MATERIAL
"03" = 15% GLASS PTFE
"21" = 40% BRONZE PTFE
"22" = 60% BRONZE PTFE
"31" = 15% glass/5% MoS2 PTFE

GROOVE OPTION
OMIT IF NO FACE GROOVES REQ'D
"G" = ADD FACE GROOVES

PACKAGING
OMIT IF NO LOADERS REQ'D
"B" = BULK PACKAGE COMPONENTS
"I" = INDIVIDUALLY PACKAGE SEALS

LOADER MATL
OMIT IF NO LOADERS REQ'D
"P" = STANDARD NBR 70A
"E" = EPDM 70A

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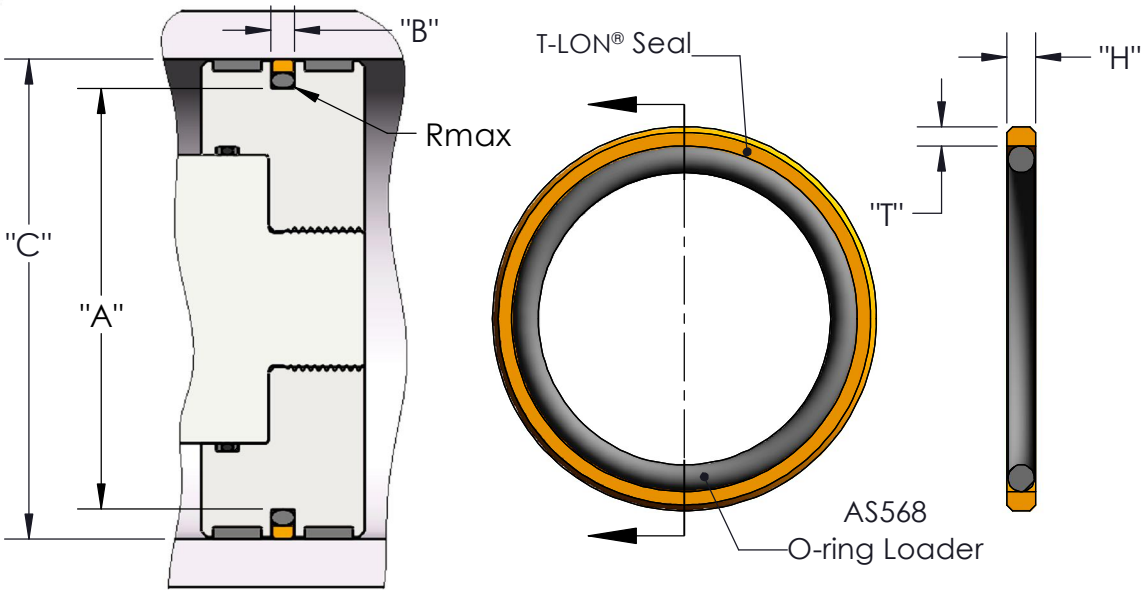

T-LON® "GPI" Series Piston Seal Sizes (More Available Upon Request)

Groove dimensions for "GPI" Series (Dimensions in inches)

Size	Bore Dia. (C)	TOL	Groove Dimension				O-ring Loader No.
			Dia. (A)	TOL	Width +.008 -.000 (B)	R_{Max}	
0031-0	0.312	+.002 -.000	0.119	+.000 -.003	0.087	0.015	-006
0038-0	0.375		0.182				-008
0044-0	0.437		0.244				-010
0050-0	0.500		0.307				-011
0056-0	0.562		0.369				-012
0063-0	0.625		0.432				-013
0063-1	0.625	+.002 -.000	0.330	+.000 -.003	0.126	0.025	-109
0075-1	0.750		0.455				-111
0088-1	0.875		0.580				-113
0100-1	1.000		0.705				-115
0125-1	1.250		0.955				-119
0150-1	1.500		1.205				-123
0175-2	1.750	+.003 -.000	1.317	+.000 -.003	0.165	0.025	-219
0200-2	2.000		1.567				-222
0250-2	2.500		2.067				-226
0275-2	2.750		2.317				-228
0300-2	3.000		2.567				-230

Size	Bore Dia. (C)	TOL	Groove Dimension				O-ring Loader No.
			Dia. (A)	TOL	Width +.008 -.000 (B)	R_{Max}	
0325-3	3.250	+.004 -.000	2.640	+.000 -.004	0.248	0.035	-334
0350-3	3.500		2.890				-336
0375-3	3.750		3.140				-338
0400-3	4.000		3.390				-340
0425-3	4.250		3.640				-342
0450-3	4.500		3.890				-344
0500-3	5.000		4.390				-348
0525-3	5.250		4.640				-350
0550-4	5.500	+.005 -.000	4.673	+.000 -.005	0.319	0.04	-426
0750-4	7.500		6.673				-439
0950-4	9.500		8.673				-446
1050-4	10.500		9.673				-448
1200-4	12.000		11.173				-451
1300-4HD	13.000		12.035				-453
1600-4HD	16.000		15.035				-459
1800-4HD	18.000		17.035				-463
2000-4HD	20.000		19.035				-467