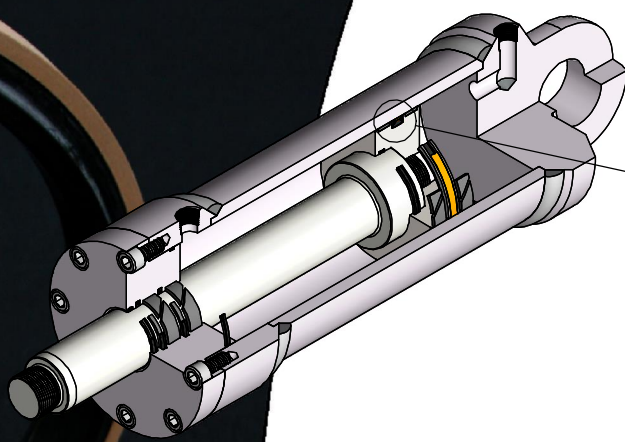
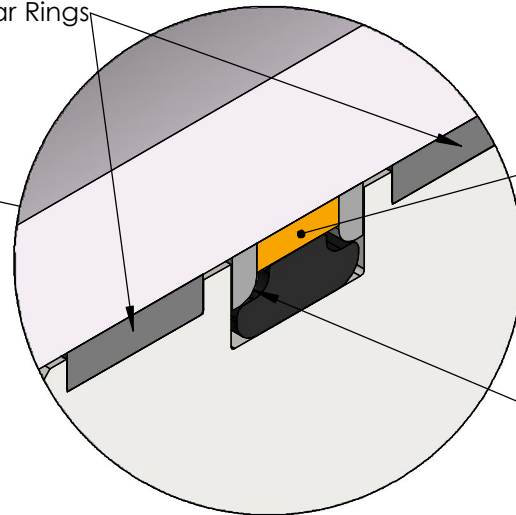




Wear Rings



T-LON® "TLM4" Seal

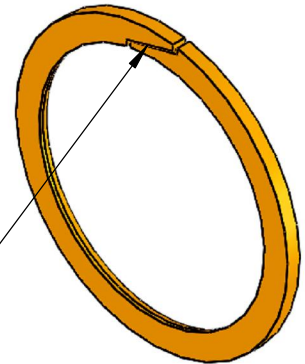
Note back-up ring radius facing towards the seal center

Description:

Rigorously tested statically and dynamically, the TLM4 hydraulic piston seal is a proven reliable seal for both low and high pressure systems. The unique patented JZ-cut on the back-up rings was a creative solution to prevent seal degradation, loader nibbling, and extrusion during operation

The TLM4 seal is a double-acting filled T-LON® PTFE compound with a T-shaped elastomer energizer and two high compressive strength back-up rings designed for extreme pressures in reciprocating applications. The filled PTFE seal ring is manufactured with an interference fit with the bore and optimum compression with the T-shaped energizer. This offers excellent sealability at low pressures and high pressures when the cylinder experiences ballooning. The two **back-up rings must be installed with the inner radius facing the center of the seal** and are designed asymmetrical to prevent loader damage during the life of the seal.

Patented JZ-cut



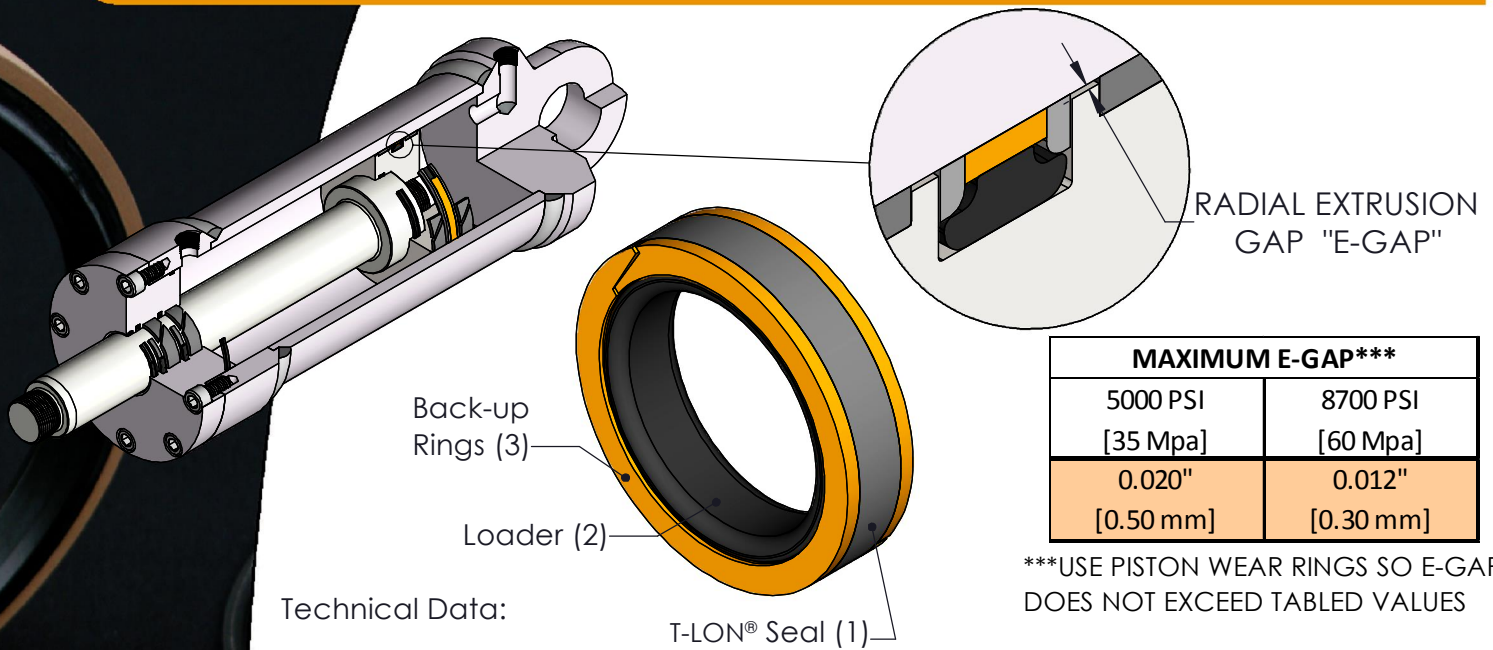
Advantages:

- 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 530mm diameter

Applications:

- Heavy Duty Hydraulic Cylinders
- Agriculture Equipment
- Excavators
- Testing Machinery





Technical Data:

- (1) **T-LON® seal compound** determines velocity and seal life
- Velocity: Up to 5 ft/s [1.5 m/s]
 - Pressure: Up to 10,000 psi [69 MPa]
- (Function of E-gap and Temperature. Max velocity and pressure cannot be used together)

Most Common:

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

BRONZE FILLED PTFE ("21")

- Highest Extrusion Resistance (Higher bronze content increases extrusion/wear resistance)
- Good sealability

- (2) **Loader compound** determines temperature and chemical compatibility

Standard:

Low-Temp NBR

- Working Temp. Range -65°F to 275°F [-54°C to 135°C]
- Commonly used with greases, aliphatic hydrocarbon mineral and vegetable oils, and various hydraulic fluids

- (3) **Back-up rings** prevent seal extrusion and allow larger e-gaps. Note temperature and chemical limitations

Standard:

MoS2 Filled Polyamide

- Working Temp. Range -65°F to 275°F [-54°C to 135°C]
- Commonly used with greases, aliphatic hydrocarbon mineral and vegetable oils, and various hydraulic fluids. Avoid water based fluids.

Available:

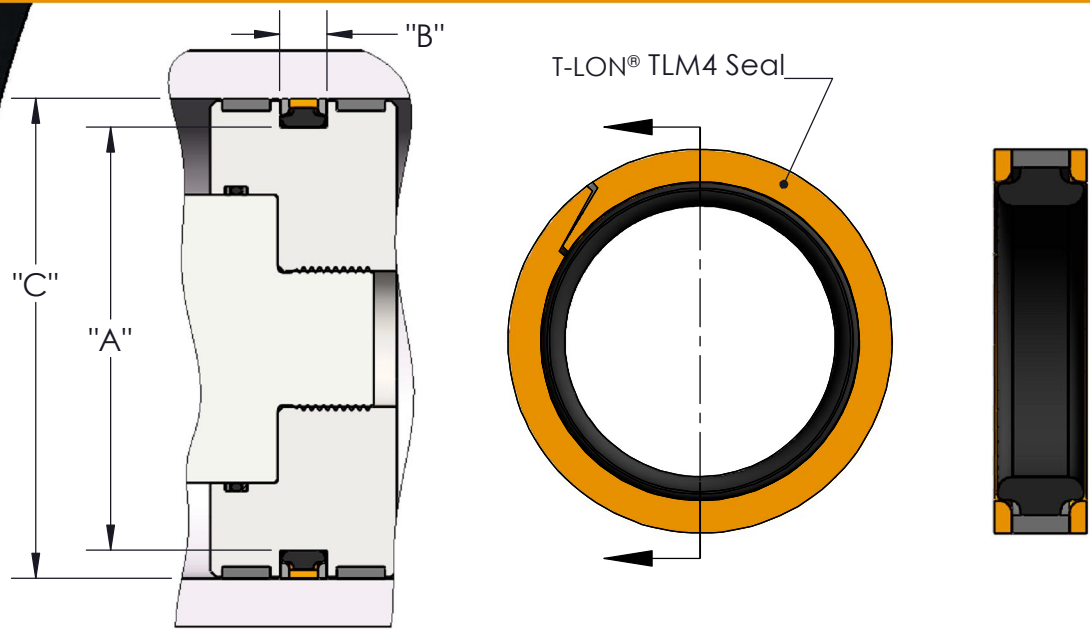
Acetal (POM)

- Working Temp. Range -65°F to 275°F [-54°C to 135°C]
- Low water absorption

ORDERING INFORMATION

TLM4 - - - -

B O R E	G R O O V E	W I D T H	T L O N S E A L	M A T E R I A L	B A C K U P R I N G
"050" = 50mm "280" = 280mm					
	"090" = 9.0mm "175" = 17.5mm				
		"21" = 40% BRONZE PTFE "31" = 15% GLASS/ 5%MoS2 PTFE			
				OMIT = MD Polyamide "D" = Machined Acetal	



T-LON® "TLM4" Series Piston Seal Sizes (More Available Upon Request)
Groove dimensions for "TLM4" series

Size	Bore Dia ISO H9 (C)	Groove Dimensions		
		Diameter ISO h9 (A)	Width (B)	
050-090	50.0	36.0	9.0	+ 0.20 / -0.00
055-090	55.0	41.0		
060-090	60.0	46.0		
063-110	63.0	48.0	11.0	
065-110	65.0	50.0		
070-110	70.0	55.0		
075-110	75.0	60.0		
080-110	80.0	65.0		
085-110	85.0	70.0		
090-110	90.0	75.0		
095-125	95.0	80.0	12.5	
100-125	100.0	85.0		
105-125	105.0	90.0		
110-125	110.0	95.0		
115-125	115.0	100.0		
120-125	120.0	105.0		

Size	Bore Dia ISO H9 (C)	Groove Dimensions		
		Diameter ISO h9 (A)	Width (B)	
125-160	125.0	102.0	16.0	+ 0.20 / -0.00
130-160	130.0	107.0		
135-160	135.0	112.0		
140-160	140.0	117.0		
145-160	145.0	122.0		
150-160	150.0	127.0		
155-160	155.0	132.0		
160-160	160.0	137.0		
165-160	165.0	142.0		
170-160	170.0	147.0		
180-160	180.0	157.0		