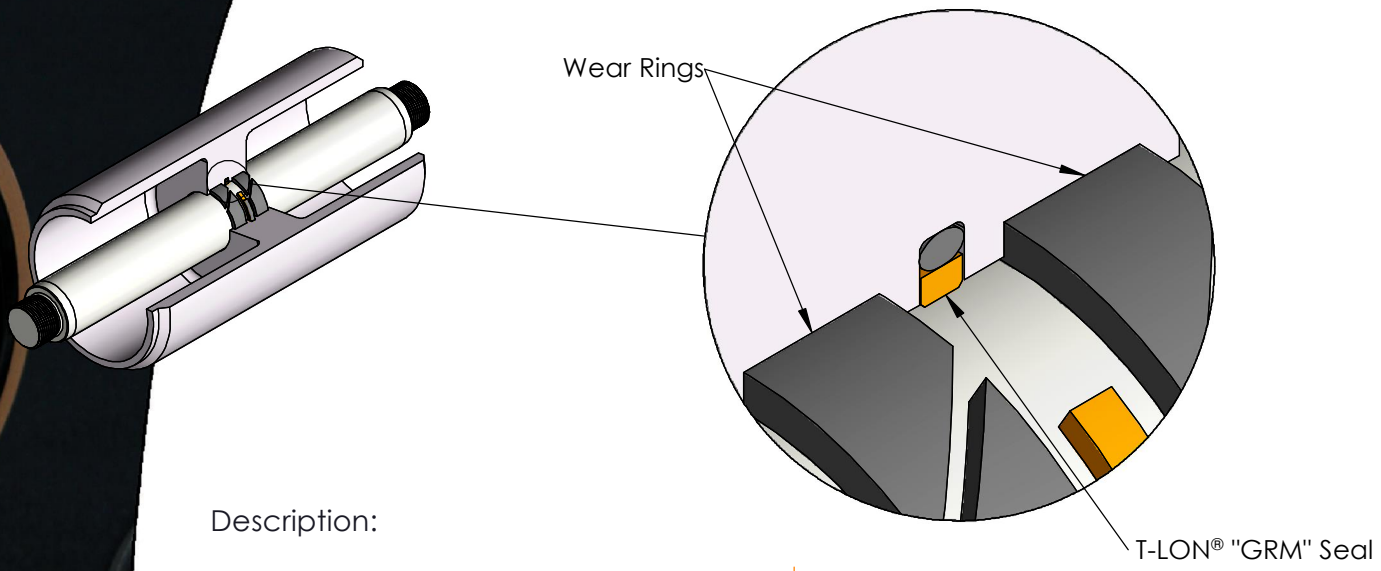
T-LON® "GRM" Metric Bi-Directional Rod Seal



Description:

The GRM metric rod seal is a proven reliable seal for both low and high pressure systems.

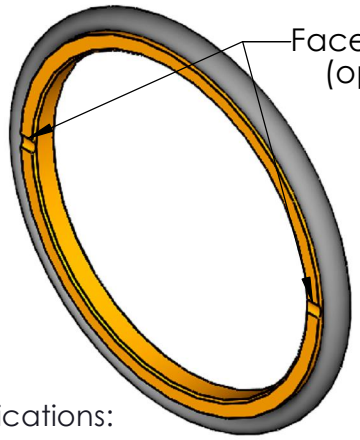
The GRM seal is a bi-directional seal and filled T-LON® PTFE compound with an o-ring elastomer energizer designed for reciprocating applications. The filled PTFE seal ring is manufactured with an interference fit with the rod and optimum compression with the o-ring energizer. The optimized sealing surface allows a fluid film to form between the seal and rod during reciprocating motion with excellent sealability for static holding applications.

Advantages:

- Low seal drag/friction (Minimize energy loss)
- No Stick-slip (Smooth Operation)
- Long seal life from T-LON® filled PTFE compounds
- Available for rods up to 500 mm

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.



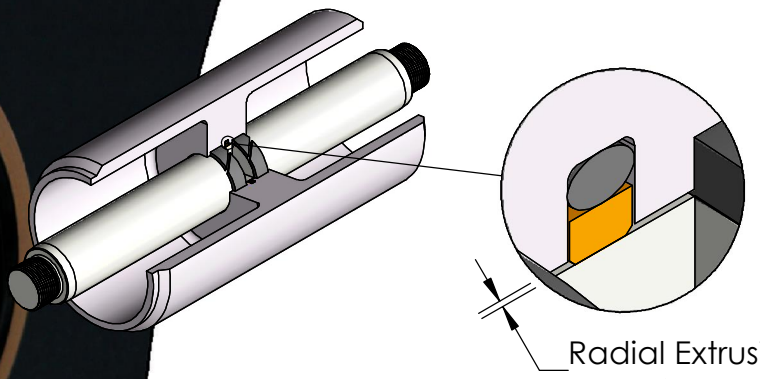
Applications:

- Hydraulic Rams/Presses
- Hydraulic & Pneumatic Valves
- Injection Molding Machines

1110 Richards Rd • Hartland, WI 53029
Telephone 262 / 367-2333 • FAX 262 / 367-8159

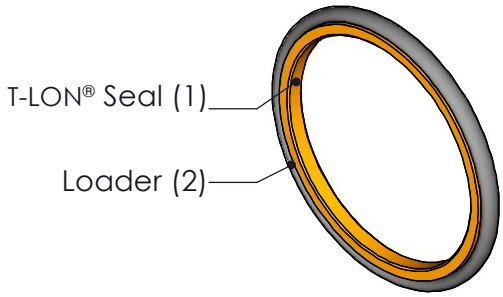
T-LON® is a Registered Trademark of T-Lon Products, Inc.

T-LON® "GRM" Metric Bi-Directional Rod Seal



MAXIMUM E-GAP (40% BZ PTFE)***			
O-RING SERIES	10 MPa (mm)	20 MPa (mm)	40 MPa (mm)
-0-	0.40	0.25	0.15
-1-	0.40	0.25	0.15
-2-	0.40	0.25	0.20
-3-	0.50	0.30	0.20
-4-	0.60	0.35	0.25
-4HD-	0.60	0.35	0.25

***USE ROD 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 4 m/s
- Pressure: Up to 60 MPa

(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

CARBON/GRAPHITE FILLED PTFE ("36")
- Good for pneumatics and non-lubricating fluids
- More chemical resistant and used in applications with short stroke movements/vibrations

(2) Loader compound determines temperature and chemical compatibility

Most Common:

NBR SHORE 70 A ("P")
- Working Temp. Range -35°C to 110°C (121°C intermittent)
- Commonly used with greases, aliphatic hydrocarbon mineral and vegetable oils, and various hydraulic fluids

EPDM SHORE 70 A ("E")
- Working Temp. Range -45°C to 150°C (204°C steam intermittent)
- Commonly used with water, steam, water/ silicone/ glycol based fluids, and app's affected by ozone and weathering.

ORDERING INFORMATION

GRM - ___ ___ ___ - ___ - ___ ___ - ___ - ___ ___

ROD Ø
"050" = 50mm
"150" = 150mm

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

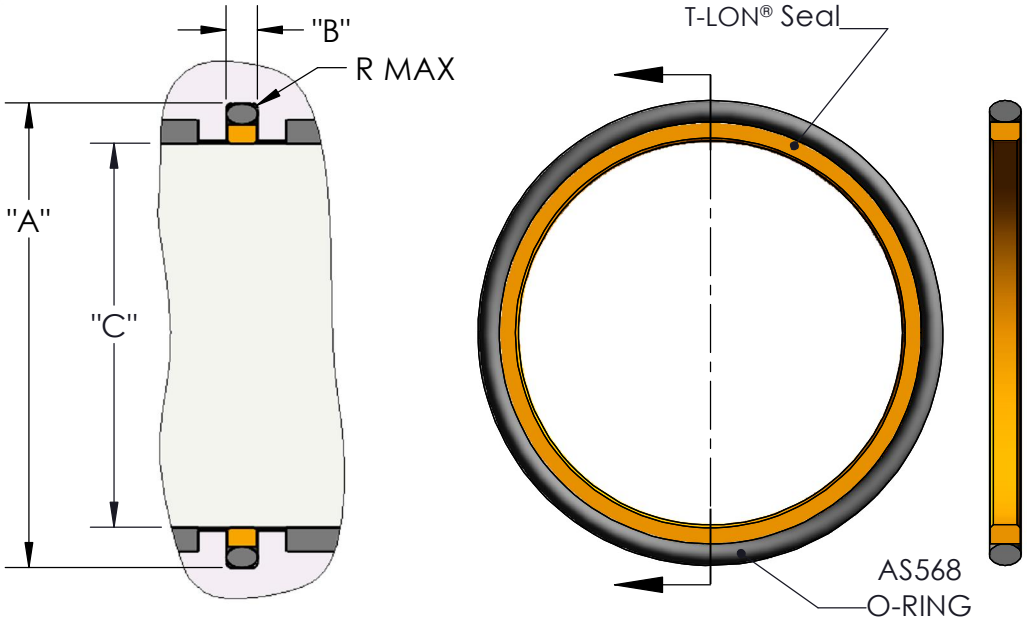
TLON MATERIAL
"21" = 40% BRONZE PTFE
"22" = 60% BRONZE PTFE
"36" = CARBON/GRAPHITE PTFE

FACE GROOVES
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

T-LON® "GRM" Metric Bi-Directional Rod Seal



T-LON® "GRM" Series Rod Seal Sizes (More Available Upon Request)

Groove dimensions for "GRM" Series (Dim. in mm)

Size	Rod Dia (C)		Groove Dimension Dia. (A)		Groove Dimension Width (B)		R_{Max}	O-ring No.
004-0	4.0	+.00 -.05	8.9	+.05 -.00	2.2	+.20 -.00	0.4	-009
006-0	6.0		10.9					-011
008-0	8.0		12.9					-012
010-0	10.0		14.9					-013
012-0	12.0		16.9					-015
008-1	8.0		15.3		3.2		0.6	-111
010-1	10.0		17.3					-112
012-1	12.0		19.3					-113
014-1	14.0		21.3					-114
016-1	16.0		23.3					-116
018-1	18.0		25.3					-117
020-2	20.0	+.00 -.08	30.7	+.08 -.00	4.2		1.0	-213
022-2	22.0		32.7					-215
025-2	25.0		35.7					-217
028-2	28.0		38.7					-218
030-2	30.0		40.7					-220
032-2	32.0		42.7					-221
036-2	36.0		46.7					-223
035-3	35.0	+.00 -.10	50.1	+.10 -.00	6.3		1.3	-326
040-3	40.0		55.1					-327
045-3	45.0		60.1					-329
050-3	50.0		65.1					-330
055-3	55.0		70.1					-332
056-3	56.0		71.1					-332
060-3	60.0		75.1					-334
063-3	63.0		78.1					-335
065-3	65.0		80.1					-335
070-3	70.0		85.1					-337
075-3	75.0		90.1					-338

Size	Rod Dia (C)		Groove Dimension Dia. (A)		Groove Dimension Width (B)		R_{Max}	O-ring No.
080-3	80.0	+.00 -.10	95.1	+.10 -.00	6.3	+.20 -.00	1.3	-340
085-3	85.0		100.1					-342
090-3	90.0		105.1					-343
095-3	95.0		110.1					-345
100-3	100.0		115.1					-346
105-3	105.0		120.1					-348
110-3	110.0		125.1					-349
115-3	115.0		130.1					-351
120-3	120.0		135.1					-353
125-3	125.0		140.1					-354
130-3	130.0		145.1					-356
135-3	135.0		150.1					-357
140-3	140.0		155.1					-359
145-3	145.0		160.1					-360
150-3	150.0		165.1					-361
155-3	155.0		170.1					-362
160-3	160.0		175.1					-363
170-3	170.0		185.1					-364
180-3	180.0		195.1					-366
190-3	190.0		205.1					-368
200-4	200.0	+.13 -.00	220.5	+.00 -.13	8.1		1.8	-445
220-4	220.0		240.5					-447
250-4	250.0		270.5					-449
280-4HD	280.0		304.0					-452
320-4HD	320.0		344.0					-455
360-4HD	360.0		384.0					-458
400-4HD	400.0		424.0					-461
450-4HD	450.0		474.0					-465
500-4HD	500.0		524.0					-469