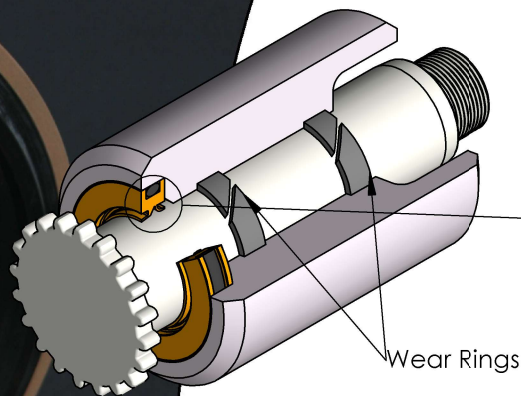
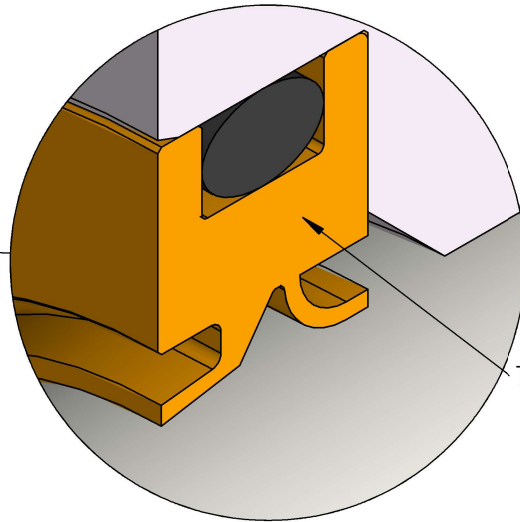


T-LON® "T-LIP" Series Rotary Lip Seals



Wear Rings



T-LON® "T-LIP" Seal

Description:

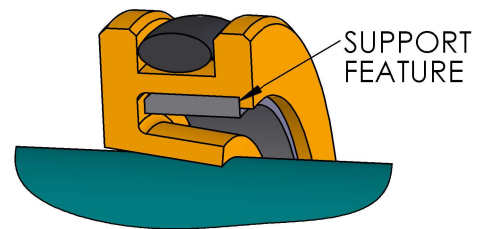
The T-LIP seals are single or double acting rotary seals designed with filled T-LON® PTFE and T-SMART® PTFE compounds for high speed and low pressure applications. The PTFE compounds allow the seal to run dry continuously with minimal friction and energy loss. An o-ring is located on the static side for leak-tight sealing and to lock the seal in position. A retaining ring or face plate is typically added to the assembly to prevent the seal from walking out of the seal groove.

Advantages:

- Low seal drag/friction (Minimize energy loss)
- High PV with no lubrication required
- Long seal life from T-LON® filled PTFE compounds
- Available for rods up to 18" diameter
- Available for bores up to 20" diameter

Options:

If the seal is >4"[100mm] in diameter or used in temperatures < 0°F, a support feature is recommended to prevent the seal from contracting after installation



SUPPORT FEATURE

Sealing Applications:

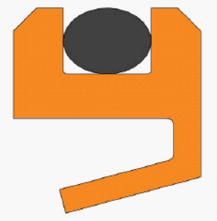
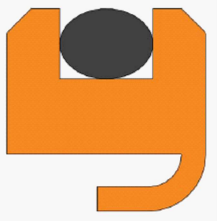
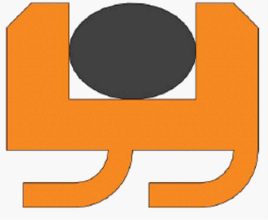
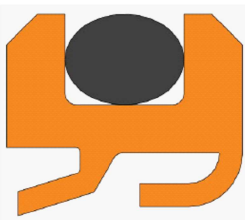
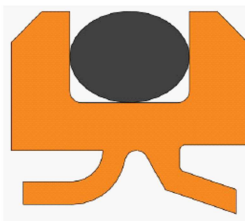
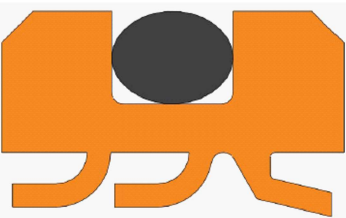
- Axles
- Oil and Fuel Pumps
- Vacuum Pumps
- Blenders and Mixers
- Rotary Compressors
- Medical Drills



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.

Standard T-Lip Seal Profiles (Other profiles available upon request)

Characteristics Profile	Profile Code	Min Groove Width (in [mm])	Min Groove Cross-Section (in [mm])	Seal Information
	TL22	0.118 [3]	.092 [2.34]	TL22 seals are single-acting and have the lowest torque drag with the lightest lip loading. Best used as an excluder where a leak tight seal is not required. Shaft surface speeds up to 6000 fpm (30m/s). Typical pressure rating < 30 psi (2 bar)
	TL23	0.118 [3]	.092 [2.34]	TL23 seals are single-acting and have a single formed lip for better sealability. Best used for sealing media from the environment. Shaft surface speeds up to 5000 fpm (25m/s). Typical pressure rating < 60 psi (4.1 bar)
	TL24	.165 [4.2]	.092 [2.34]	TL24 seals are single-acting and have dual formed lips for better sealability in submerged applications. Shaft surface speeds up to 5000 fpm (25m/s). Typical pressure rating < 150 psi (10.3 bar)
	TL25	.312 [7.9]	.250 [6.35]	TL25 seals are single-acting and have a single formed seal lip with a machined excluder lip for low drag and good sealability. Shaft surface speeds up to 5000 fpm (25m/s). Typical pressure rating < 150 psi (10.3 bar)
	TL26	.312 [7.9]	.250 [6.35]	TL26 seals are double-acting and have a single formed lip to seal media inside a system with an opposing machined lip to exclude contaminants. Shaft surface speeds up to 5000 fpm (25m/s). Typical pressure rating < 60 psi (4.1 bar)
	TL27	.437 [11.1]	.250 [6.35]	TL27 seals are double-acting and have dual formed lips to seal submerged media inside a system with an opposing machined lip to exclude contaminants. Shaft surface speeds up to 5000 fpm (25m/s). Typical pressure rating < 150 psi (10.3 bar)

Use the T-LIP profile codes, above, in the
"Ordering Information" Section
(See Sheet 3)



(1) Most Common T-LIP seal compounds

Properties Material	Color	FDA Compliant	Dynamic Surface Abrasion (Relative)	Typical Applications
T-Lon-E6 PPS/Carbon/ Graphite filled PTFE	Black	No	Moderate	High PV compound for lubricated or dry running app's. Dynamic Mating Surface >50Rc
T-Lon-D1 Polyimide T-SMART® PTFE	Tan	Yes* *Only Temp <212°F	Very Low	Very Low Friction Non-abrasive for soft metals, aluminum, and plastic parts. Good with dry air and water applications at moderate speeds and low pressures.
T-Lon-D5 Mineral/MoS2 T-SMART® PTFE	Dark Grey	No	Moderate	Good all-around performance compound (dry/wet/lubricated media) Dynamic Mating Surface >45Rc
T-Lon-D9 Carbon T-SMART® PTFE	Black	Yes	Low	Low Friction Great dry-running App's (Motor Seals) Good with Steam or Water Dynamic Mating Surface >45Rc

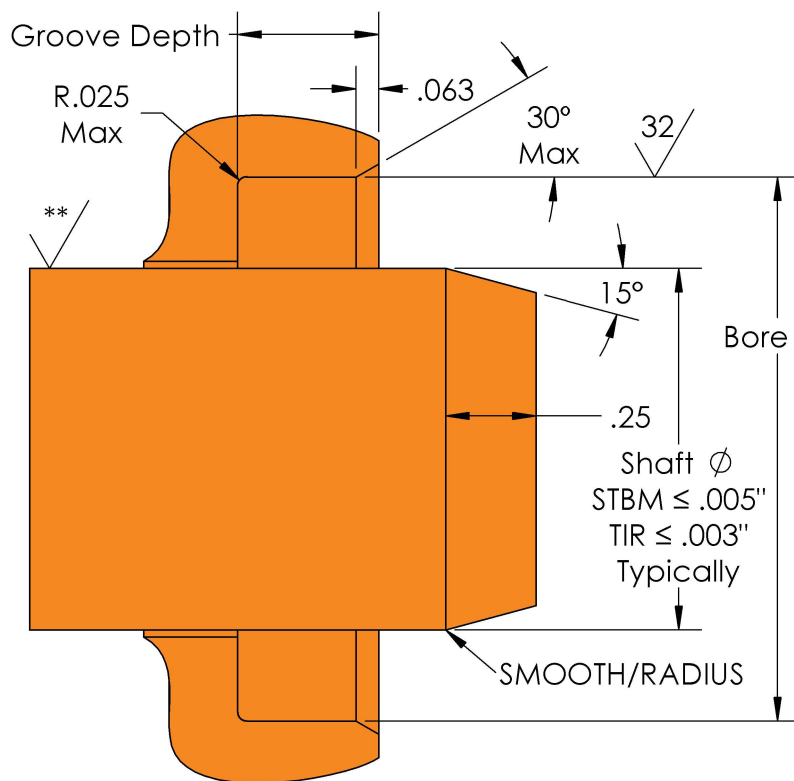
TL	-	-	-	-	-	-	-	-
P R O F I L E	S H A F T	D I A (C)	G L A N D C R O S S	S E A L A N T C R O S S	M A X I M U M W I D T H S E A L (A)	S E A L M A T E R I A L	O R I G I N A L M A T E R I A L	S U P P O R T F E A T U R E
See Sht 3 Examples: TL22 TL26	Examples: "01500" = 1.500" dia "07500" = 7.500" dia		Examples: 250 = .250" 375 = .375"	Examples: 250 = .250" 375 = .375"	Examples:			"M" = 1
				D5 = Mineral MoS2 filled T-SMART D9 = Carbon filled T-SMART				

*** sales@t-lon.com ***
*** (262) 367-2333 ***

Examples: —
 "N" = NBR 70A
 "E" = EPDM 70A
 "V" = FKM 75A

Mating Component Specifications:

Media	**Shaft Surface Finish	
- Cryogenic Applications - Low Molecular Weight Gases (e.g. H, He, N, O)	$R_t = 1.00 \text{ m}_m$	$R_t = 39 \text{ m}_{in}$
	$R_z = 0.63 \text{ m}_m$	$R_z = 25 \text{ m}_{in}$
- Low Viscosity Fluids (e.g. water, alcohols, natural gas, air)	$R_a = 0.10 \text{ m}_m$	$R_a = 4 \text{ m}_{in}$
	$M_r = 50-90\% \text{ at } C=.25R_z$	$M_r = 50-90\% \text{ at } C=.25R_z$
All other media	$R_t = 2.50 \text{ m}_m$	$R_t = 100 \text{ m}_{in}$
	$R_z = 1.60 \text{ m}_m$	$R_z = 63 \text{ m}_{in}$
	$R_a = 0.20 \text{ m}_m$	$R_a = 8 \text{ m}_{in}$
	$M_r = 50-90\% \text{ at } C=.25R_z$	$M_r = 50-90\% \text{ at } C=.25R_z$

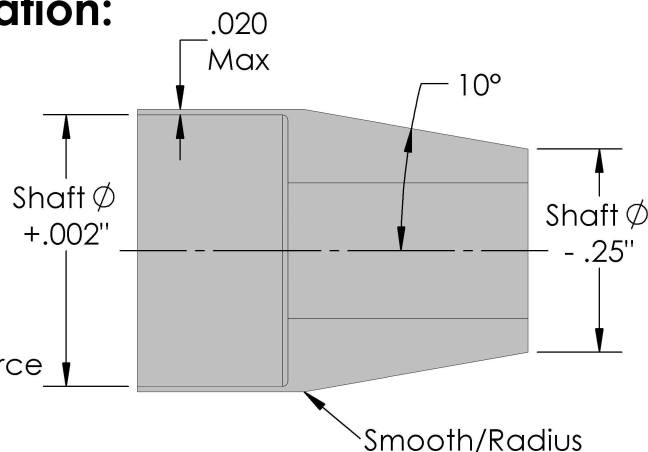
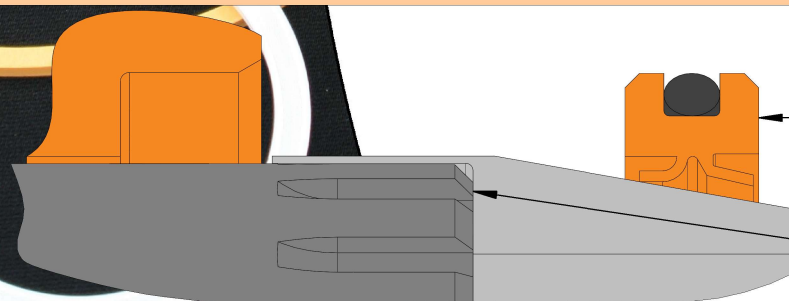


Bore Characteristics		
1) Cast Iron, Steel, Stainless Steel, Aluminum, and other metals acceptable	Bore Ø	Bore Tolerance
	$\phi \leq 3.000$	$\pm .001$
2) An $R_a < 32 \mu in$ ensures proper sealing between seal and housing.	$3.000 < \phi \leq 6.000$	$\pm .0015$
	$6.000 < \phi \leq 8.000$	$\pm .002$
	$8.000 < \phi \leq 11.500$	$\pm .0025$

Shaft Characteristics		
1) Plunge ground with zero lead angle, $0 \pm 0.05^\circ$ (Ref. RMA OS-1-1)	Shaft Ø	Shaft Tolerance
	$\phi \leq 2.000$	$\pm .002$
2) >62 HRC optimal for low wear and friction (PTFE compounds available for all materials/hardnesses)	$2.000 < \phi \leq 4.000$	$\pm .003$
	$4.000 < \phi \leq 6.000$	$\pm .004$
	$6.000 < \phi \leq 10.000$	$\pm .005$

Alternate Seal Installation:

1. Place installation cone onto shaft
2. Place T-LIP seal onto installation cone
3. Quickly apply uniform force to slide seal onto shaft (DO NOT allow seal to dwell on installation cone)
4. Remove installation cone
5. Press seal into bore (Seal to be square with shaft/bore)



Shaft shown without proper lead-in which will damage seal lip(s)



Engineering Design Request

1110 Richards Road Hartland, WI 53029

Phone: (888)-340-TLON Fax: (262) 367-8159 Web: www.t-lon.com

Application _____ New ☐ Current ☐
 Annual Usage _____ Quote Qtys _____

Seal Motion Rotary ☐ Oscillatory ☐
 Seal Type Rod / Shaft ☐ Piston ☐
 RPM _____ Operating _____ Max _____ Min _____
 Rotation Degrees Operating _____ Max _____ Min _____
 Velocity (circle one) Ft / Min m/sec Operating _____ Max _____ Min _____

Pressure (circle one) psi bar Operating _____ Max _____ Min _____
 Pressure Direction Unidirectional ☐ Bidirectional ☐
 Temp (circle one) F C Operating _____ Max _____ Min _____
 Media(s) _____

Rod / Shaft Seals

Rod / Shaft Dia _____ Tol _____ Material _____ Hardness Rc _____ Finish Ra _____
 Seal Groove Dia _____ Tol _____ Material _____ Hardness Rc _____ Finish Ra _____
 Seal Groove Width _____ Tol _____

Piston Seals

Cyl Bore Dia _____ Tol _____ Material _____ Hardness Rc _____ Finish Ra _____
 Seal Groove Dia _____ Tol _____ Material _____ Hardness Rc _____ Finish Ra _____
 Seal Groove Width _____ Tol _____

Life Requirement Cycles _____ Hours _____ Years _____
 Leakage Max _____ Rate _____ Friction / Torque Max _____ @ Press _____

Comments: