

TRD Manufacturing, Inc.

A **BIMBA** Company

Bulletin: RL-06

“RL” Series ROD LOCK CYLINDER



Patent Pending

Patent Pending

BORE SIZES

1 1/2" - 6" Standard Rod

2" - 6" **OVERSIZED** Rod

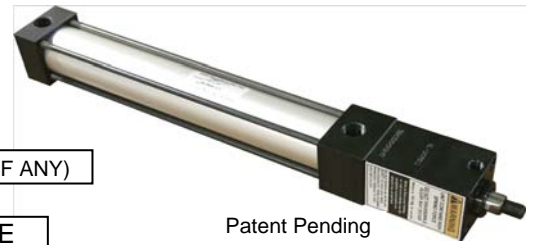
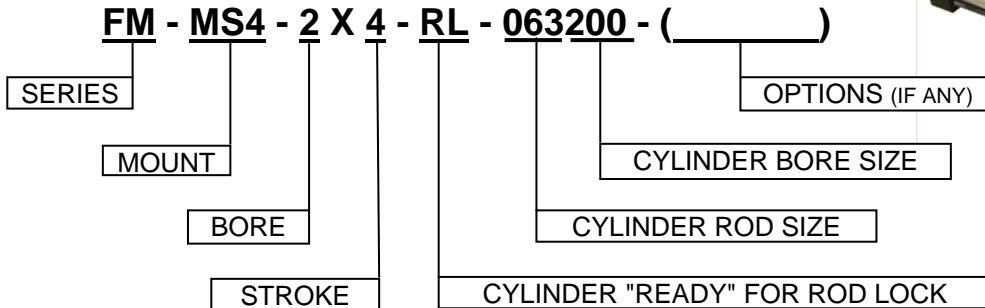
NFPA Mounts:

MXO, MS1, MS2, MS4,
MF1, MF2, MP1, MP2,
MP4, MT1, MT2, BaseBar

ROD LOCK SPECS

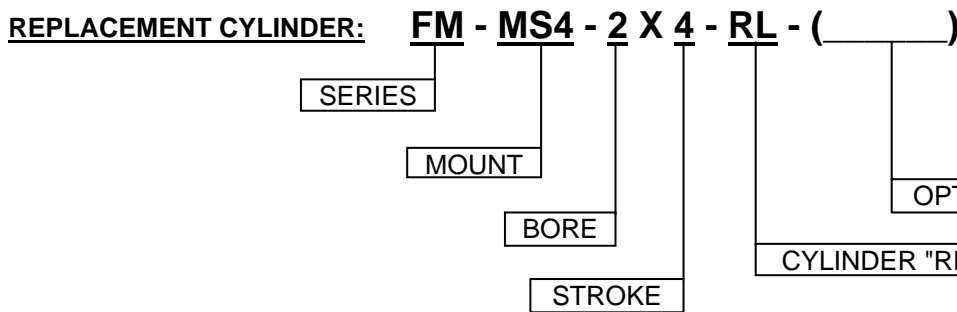
- **CONSTRUCTION-** Anodized Aluminum Housing and precision ground Tool Steel locking mechanism. (Optional: Stainless Steel Housing)
- **HEAVY-DUTY DESIGN-** Rated for Millions of trouble-free Rod Lock actuations
- **PRECISION DESIGN-** Provides extremely low backlash and ZERO rod movement on actuation
- **RESPONSE TIME:** 200 ms
- **FM SERIES CYLINDER-** Rod Lock is designed to “bolt- on” to the FM Series cylinder, allowing for easy maintenance
- **APPLICATIONS-** Can be used in Emergency Stop (E-STOP), intermediate stroke positioning, “drop” prevention and for precise holding applications
- **HOW IT WORKS-** Air supply to the Rod Lock will OPEN (unlock) unit. When the air supply is removed, spring force actuates a precision mechanism **LOCKING** the unit. A 3-way air valve is typically used to control the Rod Lock unit.
- **PROPER USE-** The RL Series Rod Lock is intended for static applications. The Rod Lock is rated for axial loads in either direction. Dynamic braking applications may cause damage to the cylinder piston rod and Rod Lock unit.

How to order: CYLINDER WITH ROD LOCK



Note: Refer to TRD catalog pages 19-30 for complete FM Series information and available options

How to order: CYLINDER / ROD LOCK Replacement Parts



NOTE: Cylinders will ship with standard rod end (KK1) and standard rod extension (RLC dimension) unless otherwise noted by customer. (Refer to Rod Extension page for more info.)

REPLACEMENT ROD LOCK (WITH MOUNTING KIT): RL - 063200

ROD LOCK MODEL NUMBER



Patent Pending

ROD LOCK ONLY (NO MOUNTING KIT): RL - 063200-1

ROD LOCK MODEL NUMBER

"-1" INDICATES NO MOUNTING KIT



Patent Pending

REPLACEMENT MOUNTING KIT: MK - 063200

MOUNTING KIT

ROD LOCK MODEL



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September 1, 2006

ROD LOCK PARTS LIST

BORE	ROD DIA.	ROD LOCK MODEL (INCLUDES MOUNTING KIT)	RATED HOLDING FORCE* (POUNDS)	ROD LOCK (Only) (<u>NO</u> MOUNTING KIT)	MOUNTING KIT
1 1/2	5/8	RL-063150	200	RL-063150-1	MK-063150
2	5/8	RL-063200	400	RL-063200-1	MK-063200
	1	RL-100200	300	RL-100200-1	MK-100200
2 1/2	5/8	RL-063250	650	RL-063250-1	MK-063250
	1	RL-100250	450	RL-100250-1	MK-100250
3 1/4	1	RL-100325	950	RL-100325-1	MK-100325
	1 3/8	RL-138325	950	RL-138325-1	MK-138325
4	1	RL-100400	1550	RL-100400-1	MK-100400
	1 3/8	RL-138400	1550	RL-138400-1	MK-138400
5	1	RL-100500	2150	RL-100500-1	MK-100500
	1 3/8	RL-138500	1950	RL-138500-1	MK-138500
6	1 3/8	RL-138600	2650	RL-138600-1	MK-138600
	1 3/4	RL-175600	2450	RL-175600-1	MK-175600

NOTES:

*HOLDING FORCE- Is the minimum rating over the entire life of the rod lock.
Initial actual holding forces are higher.

DO NOT disassemble Rod Lock- UNIT CONTAINS HIGH SPRING FORCE. Return to TRD Mfg. for service.

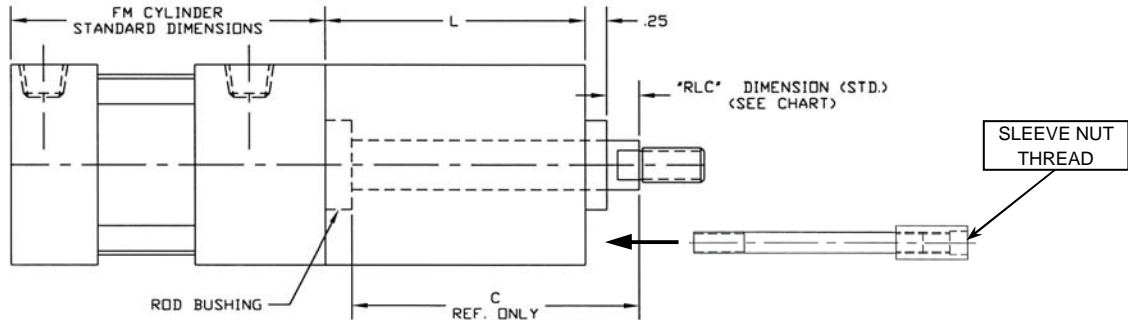
Replacement Rod Locks are shipped with a steel shaft. **DO NOT** remove 60-150 PSI supply air to Rod Lock without steel shaft or cylinder rod in place- permanent damage to Rod Lock may occur.

ROD LOCK WARRANTY- 12 Months from date of shipment

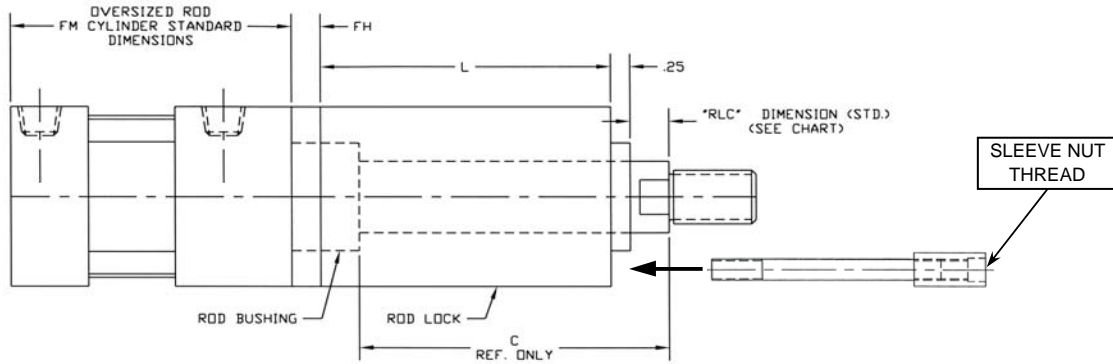
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ROD EXTENTION DATA



FM CYLINDER WITH STANDARD ROD							
BORE	ROD DIA.	ROD LOCK MODEL	DIMENSIONS				
			RLC	L	(Ref. Only) C	SLEEVE NUT THREAD	
1 1/2	5/8	RL-063150	0.375	3.000	3.312	1/4-28 UNF	
2	5/8	RL-063200	0.375	3.000	3.312	5/16-24 UNF	
2 1/2	5/8	RL-063250	0.375	3.250	3.562	5/16-24 UNF	
3 1/4	1	RL-100325	0.500	4.000	4.313	3/8-24 UNF	
4	1	RL-100400	0.500	4.000	4.313	3/8-24 UNF	
5	1	RL-100500	0.500	4.125	4.438	1/2-20 UNF	
6	1 3/8	RL-138600	0.625	4.500	4.813	1/2-20 UNF	



FM CYLINDER WITH OVERSIZED ROD							
BORE	ROD DIA.	ROD LOCK MODEL	DIMENSIONS				
			RLC	L	(Ref. Only) C	SLEEVE NUT THREAD	FH
2	1	RL-100200	0.500	3.750	4.000	5/16-24 UNF	0.375
2 1/2	1	RL-100250	0.500	3.750	4.000	5/16-24 UNF	0.375
3 1/4	1 3/8	RL-138325	0.625	4.000	4.500	3/8-24 UNF	0.625
4	1 3/8	RL-138400	0.625	4.000	4.500	3/8-24 UNF	0.625
5	1 3/8	RL-138500	0.625	4.125	4.625	1/2-20 UNF	0.625
6	1 3/4	RL-175600	0.750	4.500	5.125	1/2-20 UNF	0.750

HOW TO ORDER ROD EXTENTION

For a FM - MS4 - 2 X 4 - RL-063200 with 1" additional Rod Extension (RLC Dim.), the part number would be as follows:

FM - MS4 - 2 X 4 - RL -063200- RLC = 1.375

NOTE

The "C" dimension (without Rod Lock installed) is with the "RL BUSHING" installed. "RL" Bushings are different than standard FM rod bushings.

The "C" dimension is shown for reference only.

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ROD LOCK INSTALLATION INSTRUCTIONS

- 1.) Apply constant air supply to Rod Lock port (60-150 PSI).
- 2.) Remove shipping arbor from inside Rod Lock. Save for future use.
- 3.) Remove excess grease and dirt from cylinder piston rod. Slide Rod Lock onto piston rod, using care not to damage seals or bearings.
- 4.) Align Rod Lock to cylinder so that unit is square and flush.
- 5.) Remove 60-150 PSI air supply to Rod Lock.
- 6.) Fasten Rod Lock to cylinder using (4) Sleeve Nuts & Rods. Tighten Sleeve Nuts a little at a time, in a clockwise rotation, finishing with the proper torque specification.
- 7.) Cycle Rod Lock by applying 60-150 PSI to Rod Lock port, then removing 60-150 PSI pressure; cycle several times in this manner.
- 8.) Apply constant 60-150 PSI air supply to Rod Lock, then hand-cycle the cylinder piston rod to check for proper alignment.
- 9.) If cylinder piston rod does not move freely, remove Rod Lock and repeat Installation Instructions. If the piston rod still “drags” or is difficult to move, check the squareness of the Rod Lock to the cylinder.

WARNING– DO NOT DISASSEMBLE ROD LOCK - UNIT CONTAINS HIGH SPRING FORCE. Return to TRD Mfg. for service.

CAUTION- DO NOT REMOVE 60-150 PSI AIR SUPPLY TO ROD LOCK UNIT WITHOUT SHIPPING ARBOR OR CYLINDER PISTON ROD IN PLACE– PERMANENT DAMAGE MAY OCCUR.

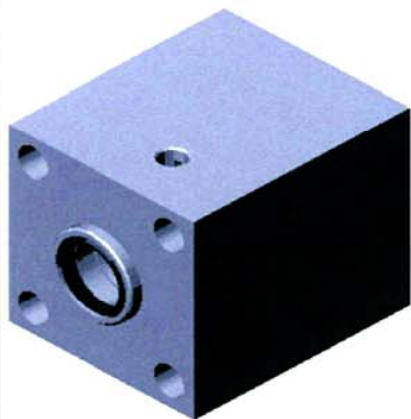


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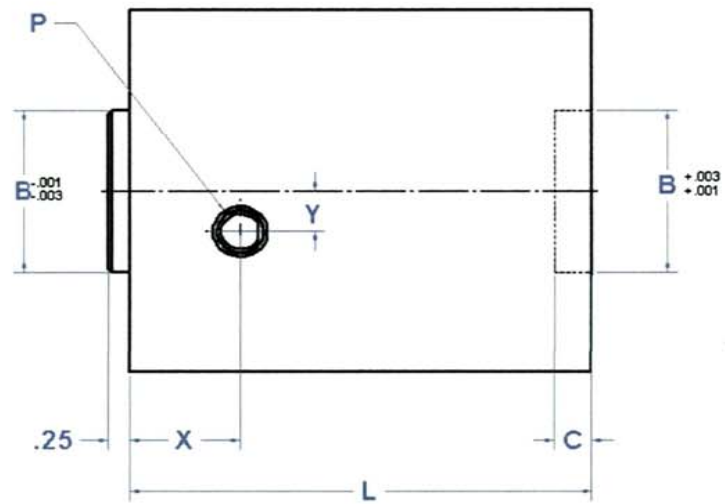
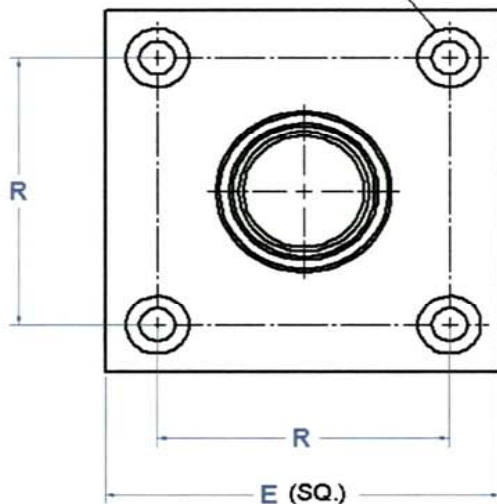
SLEEVE NUT TORQUE SPECS

<u>BORE</u>	<u>TORQUE (FT./LBS)</u>
1 1/2	5—7
2	12—14
2 1/2	12—14
3 1/4	30
4	35
5	45
6	50





4x \varnothing FB THRU
 \varnothing D C'BORE
 FL DEEP



REVISIONS					
IC#	ZONE	REV.	DESCRIPTION	DATE	APPROVED
		PRO		11/18/2006	
		A		12/14/2006	
		B		3/21/2008	

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ROD LOCK TECHNICAL DATA

Rod Lock Type- RL	Rod Dia. [in]	Bore Dia. [in]	Axial Holding Force [lbf]	B [in]	C [in]	D [in]	FL [in]	E [in]	FB [in]	L [in]	P [in]	R [in]	X [in]	Y [in]	Weight [lb]
RL-063160	0.625	1.500	200	1.125	0.375	0.422	0.896	2.00	0.281	3.000	1/8 NPT	1.430	0.31	0.25	3.0
RL-063200	0.625	2.000	400	1.125	0.375	0.515	1.031	2.50	0.343	3.000	1/8 NPT	1.840	0.31	0.38	4.0
RL-063250	0.625	2.500	650	1.125	0.375	0.515	1.031	3.00	0.343	3.250	1/8 NPT	2.19	0.38	0.5	5.0
RL-100200	1.000	2.000	300	1.500	0.563	0.515	1.031	2.50	0.343	3.750	1/8 NPT	1.840	0.50	0.38	3.5
RL-100260	1.000	2.500	450	1.500	0.563	0.515	1.031	3.00	0.343	3.750	1/8 NPT	2.190	0.50	0.5	5.0
RL-100325	1.000	3.250	950	1.500	0.563	0.719	1.281	3.75	0.406	4.000	1/4 NPT	2.760	0.56	0.00	8.0
RL-100400	1.000	4.000	1650	1.500	0.563	0.719	1.281	4.50	0.406	4.000	1/4 NPT	3.320	0.56	0.00	14.0
RL-100500	1.000	5.000	2150	1.500	0.563	0.844	1.500	5.50	0.531	4.125	1/4 NPT	4.100	0.56	0.00	18.0
RL-138325	1.375	3.250	950	2.000	0.625	0.719	1.281	3.75	0.406	4.000	1/4 NPT	2.760	0.56	0.00	9.0
RL-138400	1.375	4.000	1650	2.000	0.625	0.719	1.281	4.50	0.406	4.000	1/4 NPT	3.320	0.56	0.00	13.0
RL-138500	1.375	5.000	1950	2.000	0.625	0.844	1.500	5.50	0.531	4.125	1/4 NPT	4.100	0.56	0.00	19.0
RL-138600	1.375	6.000	2650	2.000	0.625	0.844	1.500	6.50	0.531	4.500	1/4 NPT	4.880	0.56	0.00	16.0
RL-175600	1.750	6.000	2450	2.375	0.750	0.844	1.500	6.50	0.531	4.500	1/4 NPT	4.880	0.56	0.00	14.0

ROD LOCK OPERATING DATA

- Apply 60 PSI Min. / 150 PSI Max. to release Rod Lock. Remove Air Supply to "LOCK" Rod in place.
- Aluminum housing, black anodized finish.
- Required Rod Diameter:
Nominal Size +.000" / -.002"
- Rod Movement in LOCKED Position: .006"-.012"
- DO NOT DISASSEMBLE ROD LOCK- UNIT CONTAINS HIGH SPRING FORCE. Return to TRD Mfg. for Service.
- DO NOT REMOVE 60-150 PSI AIR SUPPLY TO ROD LOCK WHEN DISASSEMBLED FROM CYLINDER- PERMANENT DAMAGE TO ROD LOCK MAY OCCUR.

TRD Manufacturing, Inc. A SPM/SA Company	
TITLE: ROD LOCK	TRD MFG. NO.: RL-TRD
SCALE: 1:1 MAKE: 5/7 SHEET 1 OF 1	DATE: 11/18/2006 DRAWN BY: [Signature] CHECKED BY: [Signature]