

AIR CONTROLS AND PROGRAMMING



CYLINDER MOUNTING

NOTE: Avoid repeated overlapping conditions when programming the Rod Lock into your system. (i.e.: forced motion during engagement or disengagement of the Rod Lock.) Shaft and/or collar wear will result. Design the control system to use the Rod Lock in static conditions.

Cylinder functioning is regulated by a 5/3 valve, center open on the central port and supplied by exhaust ports.

NOTE: Do not use a valve with a closed center. This will cause imbalance in the piston if any of the circuits leak.

One-directional flow reducers can be used to control the speed of the cylinder rod. To ensure fast braking of the rod, a quick exhaust valve can be installed on or near the rod lock.

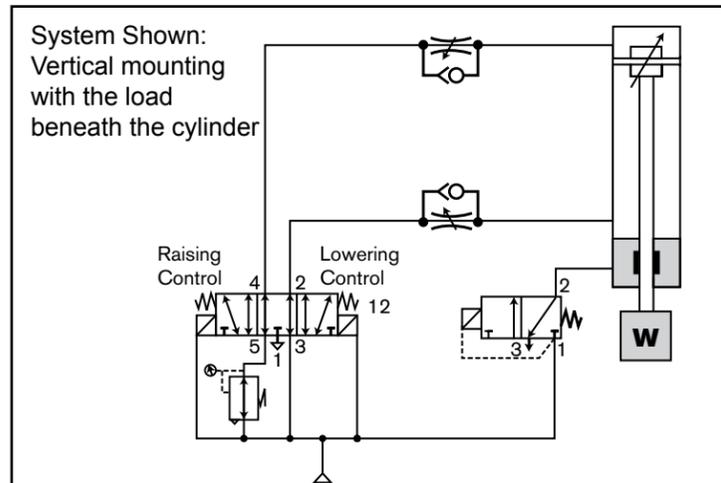
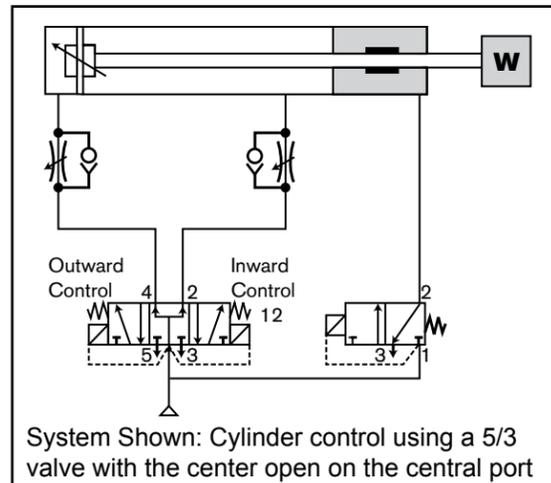
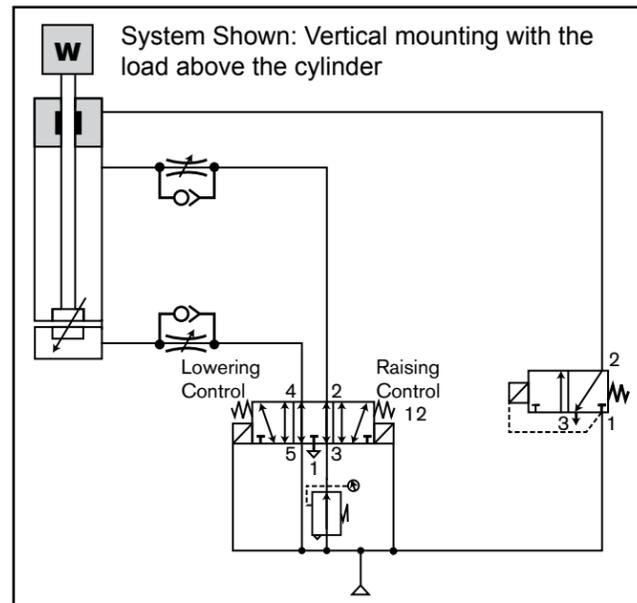
A normally closed (NC) solenoid valve directs air supply to the rod lock, keeping it disengaged until the electrical signal is interrupted.

Vertical Mounting: The force on the piston must not exceed its locking capacity when it is combined with the force of the load.

Use of a 5/3 valve provides a braking effect and maintains accurate rod positioning. Stopping precision is determined by the rate of speed of the rod and loads in motion.

Horizontal Mounting: Pressure is maintained on both sides of the cylinder piston, keeping it balanced and preventing rod displacement upon release. Use exhaust ports 3 and 5 (see below).

Minimum release pressure = 60 psi
Maximum pressure = 120 psi



NFPA ROD LOCK CYLINDER



ST3RL option

FEATURES

- No Rod Displacement on Engagement
- Large Clamping Surface
- IP67 Rated [exceeds NEMA 4X]
- Fast Response Time
- Extremely Low Backlash
- Spring-Engaged Units
- Rated for 2,750,000 Cycles
- 4 bar [60 psi] Release Pressure

BENEFITS

- Maintains Accurate Positioning
- Consistent Clamping Force
- Suitable for Wash-Down Areas
- High Cycle Rates, Accuracy
- Precision Holding
- Holds Load During Power/Pressure Loss
- Long, Maintenance-Free Life
- Compact Unit, Easy Integration
- Broad Application

WWW.STARCYL.COM

In accordance with Starcyl's established policy of constant product improvement, the specifications contained in this document are subject to change without notice. Technical data listed in this document are based on the latest information available at the time of printing and are also subject to change without notice. For current information, please consult www.starcyl.com

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Precision Operation Maintains Accurate Positioning

The ST3RL series of Rod Locks guarantees accurate positioning and provides precision holding while other operations are performed. The Rod Lock engages without causing any rod displacement, and also features extremely low backlash during operation, making them ideal for precision applications.

Large Clamping Surface Ensures Consistent Performance

The ST3RL line is designed with a large clamping surface that provides uniform force to the rod contact area on every engagement. The clamping mechanism utilizes numerous ball bearings to reduce friction and has close to a 3,000,000 cycle life.

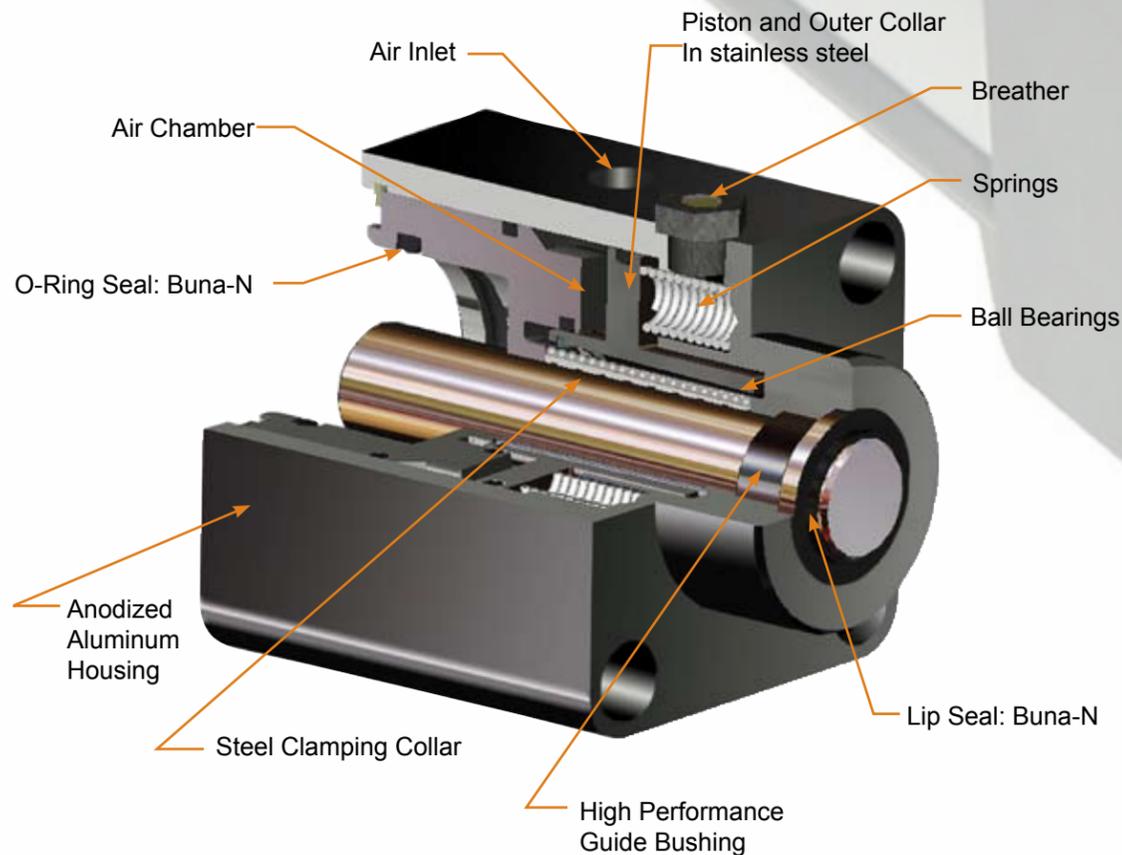
Spring-engaged Units Engage in Power-off Situations

Star cyl's Cylinder Rod Locks are spring-engaged, so they operate even in power-off situations to promote safety for operators and machinery. The fast response time of these spring-engaged products also increases positioning accuracy.

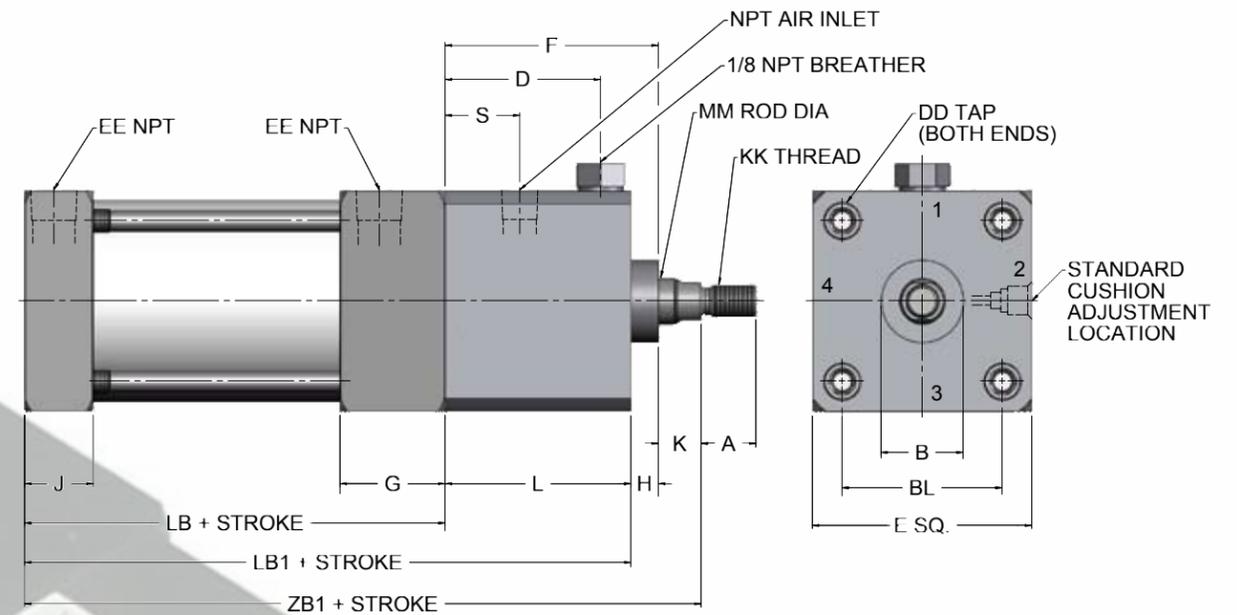
Sealed to Withstand Harsh Environments

Every ST3RL Rod Lock is sealed to protect internal components. These seals are designed to withstand even harsh wash-down environments and are IP67 rated (exceed NEMA 4X rating).

ROD LOCK CUTAWAY



CYLINDER ROD LOCK BASIC DIMENSIONS



EXAMPLE : ST3 **RL** F1-1.5X4-#2 is a 1.5" bore, 4" stroke Front Flange Mount, 5/8" rod, 7/16-20 Male rod end, Both ends cushion.
(see STAR 3 - NFPA air cylinders series catalog for more details)

BORE	1.5"	2"	2.5"	3.25"	4	5	6
Holding Force	180 lbs	314 lbs	491 lbs	830 lbs	1300 lbs	2000 lbs	2850 lbs
A	3/4	3/4	3/4	1-1/8	1-1/8	1-1/8	1-5/8
B	1.123 ^{±.001}	1.123 ^{±.001}	1.123 ^{±.001}	1.498 ^{±.001}	1.498 ^{±.001}	1.498 ^{±.001}	1.998 ^{±.001}
BL	1.43	1.84	2.19	2.78	3.32	4.12	4.88
DD (thread x depth)	1/4-28 x 3/8	5/16-24 x 3/8	5/16-24 x 3/8	3/8-24 x 1/2	3/8-24 x 1/2	1/2-20 x 5/8	1/2-20 x 3/4
E	2.00	2.50	3.00	3.75	4.50	5.50	6.50
EE	3/8	3/8	3/8	1/2	1/2	1/2	3/4
G	1-1/2	1-1/2	1-1/2	1-3/4	1-3/4	2	2
J	1	1	1	1-1/4	1-1/4	1-1/2	1-1/2
KK	7/16-20	7/16-20	7/16-20	3/4-16	3/4-16	3/4-16	1-14
LB	3-5/8	3-5/8	3-5/8	4-1/4	4-1/4	4-1/2	5
MM	5/8	5/8	5/8	1	1	1	1-3/8
V	5/8	5/8	5/8	7/8	7/8	7/8	1
D	1.95	2.08	2.13	2.99	2.99	2.99	3.54
F	2.77	2.80	2.91	4.48	4.48	4.69	5.36
H	0.375	0.375	0.375	0.500	0.500	0.500	0.625
K	0.788	0.703	0.585	0.899	0.899	0.686	0.760
L	2.337	2.422	2.540	3.976	3.976	4.189	4.740
S	0.91	1.02	1.02	1.56	1.56	1.56	1.68
NPT	1/8	1/8	1/8	1/4	1/4	1/4	3/8
LB1	5.962	6.047	6.290	8.226	8.226	8.689	9.740
ZB1	7.125	7.125	7.250	9.625	9.625	9.875	11.125

oversize rods are also available ask factory

OTHER MOUNTINGS AVAILABLE (SEE STAR3 CATALOG)

