THE MOST RELIABLE LOCKING DEVICE

BEAR-LOC

York Precision
MACHINING & HYDRAULICS
**WHAT IS A BEAR-LOC®**

BEAR-LOC® is a simple, reliable locking device which can be used where infinite-position locking, zero backlash and high system stiffness are required. BEAR-LOC® has a unique patented design based on the principle of elastic expansion of metal under pressure. It is simpler, more efficient and more reliable than any other available locking system. BEAR-LOC® has been designed in a wide range of sizes, with rod diameters from 1 inch to 25 inches, sleeve lengths from 1 inch to seven feet and lock capacities up to 4 million pounds.

![Bear-Loc Diagram](image)

**BEAR-LOC® OPERATING PRINCIPLES**

The BEAR-LOC® Section is comprised of a rod and liners enclosed in a sleeve which forms an interference fit with the outside diameter of the rod. This interference provides a positive mechanical connection to lock the rod in any phase of the stroke. As soon as hydraulic pressure is applied, the sleeve expands radially removing the interference and creating enough clearance for the rod to be stroked with minimal resistance. Simply remove the hydraulic pressure and the BEAR-LOC® re-engage automatically.

**BEAR-LOC® UNIQUE FEATURES**

**AUTOMATIC LOCKING:** BEAR-LOC® locks automatically when sleeve pressure is removed. Whether pressure is removed on command, or if pressure is lost, the BEAR-LOC® will engage automatically providing the most reliable, positive, FAIL-SAFE locking device in the industry.

**DESIGN SIMPLICITY:** BEAR-LOC® does not depend on moving parts, valves or other components to obtain its positive mechanical lock.

**INFINITE POSITION - BIDIRECTIONAL LOCKING:** The rod can be engaged by the lock in any position along its stroke, and motion is impossible in ANY direction when the BEAR-LOC® is engaged and operated within its rated capacity.

**VERSATILITY:** BEAR-LOC®s are available in a wide range of configurations such as Linear BEAR-LOC® Actuators, Linear BEAR-LOC® Units, and Rotary BEAR-LOC® Units. All available in both Tie Rod and Mill Type Constructions.

**ENGINEERING DESIGN:** York Precision Machining & Hydraulics is staffed with its own Engineers available to design any specific BEAR-LOC® for your application. Contact York Precision Sales/Engineering with your specific needs.
## BEAR-LOC® ACTUATOR - EYE MOUNT

![Diagram of BEAR-LOC® ACTUATOR - EYE MOUNT](image)

| BORE | ROD | A   | B   | C   | D   | E   | F   | G   | H   | J   | K   | L   | M   | N   | P   | Q   | R   | S   | T   | U   | V   | W   | X   |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1.50 | 1.00| 1.75| 3.00| 2.50| 1.00| 1.12| 1.12| .59  | 1.38| .88  | .75 | .75 | .75 | .500| 2.50| 1.62| .75| .44 | 3/4-16| .500| .78 | .92 | .500| 3/4-16| 1/2-20|
| 2.50 | 1.75| 1.75| 2.87| 3.00| 1.25| 2.06| 1.82| 1.60 | 1.50| .88  | .78 | .62 | .78 | 1.000| 2.50| 2.56| 1.25| .500| 1-1/4-12| .250| .500| 1-1/4-12| .500| .78 | .92 | .500| 3/4-16| 1/2-20|
| 4.00 | 2.50| 2.50| 3.25| 3.75| 1.50| 3.00| 2.38| 1.62 | 2.00 | 1.25 | .88  | .81 | 1.000| 1.625| 5.00| 3.81| 2.00 | .69 | 1-7/8-12| 1.50 | 1.000| 1.750| .78 | .92 | .500| .78 | .92 | .500| 3/4-16| 1/2-20|
| 6.00 | 4.00| 4.00| 4.98| 3.75| 1.62| 4.00| 3.00| 2.25 | 2.88 | 1.31 | 1.25 | .88  | 2.250| 7.50 | 5.75| 2.50 | 1.00 | 3-12 | 1.50 | 1.000| 1.500| .78 | .92 | .500| .78 | .92 | .500| 3/4-16| 1/2-20|
| 8.00 | 5.00| 5.00| 4.75| 5.12| 1.62| 5.50| 4.00| 3.00 | 3.50 | 1.75 | 1.43| 1.00 | 3.000| 9.50 | 7.50| 3.00 | 1.19 | 4-12 | 2.12 | 1.750| 1.500| .78 | .92 | .500| .78 | .92 | .500| 3/4-16| 1/2-20|

Other sizes also available.

## BEAR-LOC® UNIT - FLANGE MOUNT

![Diagram of BEAR-LOC® UNIT - FLANGE MOUNT](image)

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**NOTE:** Because end blocks are interchangeable, flange can be assembled at either end.

Trunnion, foot, heavy flange, and extended tie rod mounting configuration also available, please call with your application.
**LOCK SELECTION PROCEDURE:**

- Choose Hydraulic System Pressure (2000 to 5000 psi).
- Use Rod Diameter Consistent With Structural Load Requirements.
- Determine Load to be Locked (Maximum Design Load Times Desired Safety Factor).
- Using Chart, Find Lock Length Required.

**EXAMPLE:**

- System Pressure - 3000 psi
- 4 inch Rod
- (48,000)(1.25) = 60,000 lbs.
- Lock Unit - (-14) 61,600 lbs.
- Lock Length (L) is 15.25"