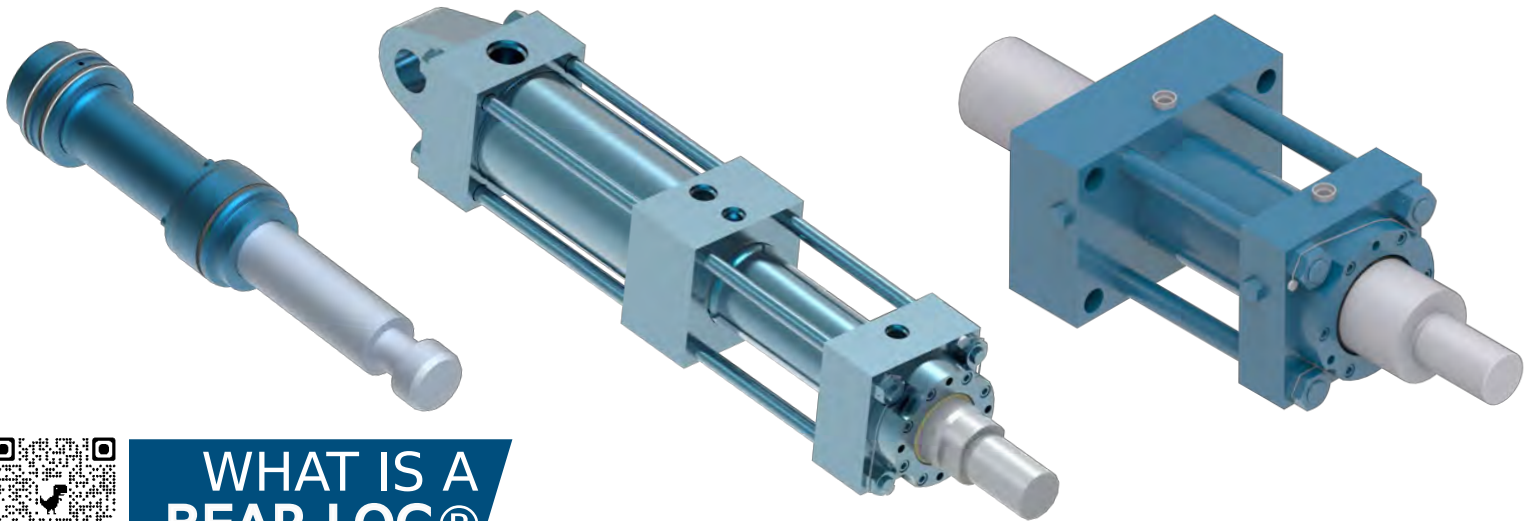




York Precision MACHINING & HYDRAULICS



Home of the **BEAR-LOC®** Hydraulic Locking System and Load Control.
Trusted by industries worldwide.

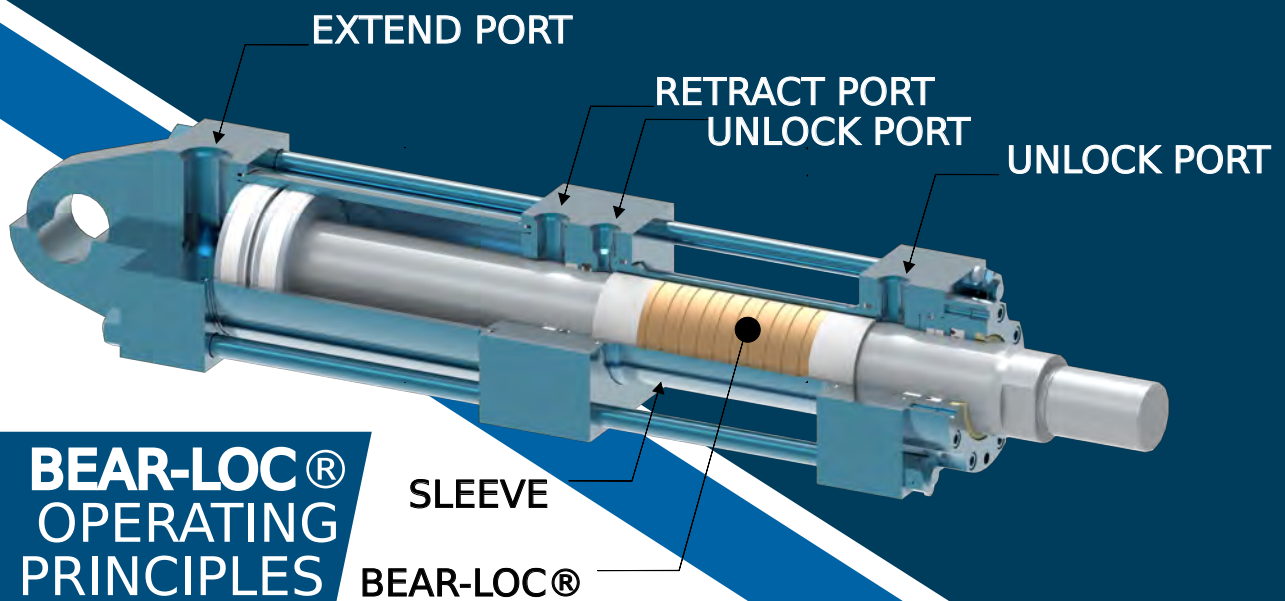


WHAT IS A BEAR-LOC®

BEAR-LOC® is a simple, reliable locking device which can be used where infinite position locking, zero backlash, and high system stiffness are needed for safety and performance.

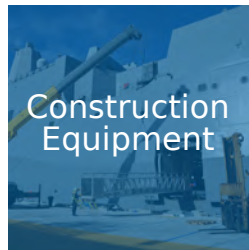
BEAR-LOC® has a unique patented design based on the principles of elastic expansion of metal under pressure. It is simpler, more efficient, and more reliable than any other available locking system.

BEAR-LOC® has been designed in a wide range of sizes, with rod diameters from 1 - 27 inches, sleeve lengths from 2.75 inches to seven feet and lock/load capacities up to 4 million pounds.



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 fit 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 freely stroked.
- When hydraulic pressure is removed the BEAR-LOC® engages instantly with no drift.



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, Linear BEAR-LOC® Piston Locks, 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.

BEAR-LOC® CASE STUDIES



Hydraulic Automotive Parts Press

An automotive stamping or forming press is a massive machine in the range of 1,500 tons. If a press brake relies on hydraulic pressure to remain locked, loss of pressure represents a life-threatening danger.

Loss of pressure could be caused by a number of factors, such as power failure, part failure, or operator error. So for devices that use pressure to lock, the risks are enormous. Safety issues with this mission-critical manufacturing process can mean costly fines, perhaps even close down operations. The loss of human limb or life? Incalculable.



Failsafe Reliability In Brutal Hydraulic Oil Jacking Rig Conditions

Frigid North Sea conditions. Few settings demand as much from a locking hydraulic system. Our **Bear-Loc®** serves on hydraulic oil jacking rigs. Our most extensive installation was on a mobile rig, operated by GlobalSantaFe (now owned by another company).

Twenty-four **Bear-Locs®**, each with 610 ton locking capacity, were installed—six on each of the four legs—to assure that the platform remained safely positioned. It's mission critical.

Human lives and the surrounding environment depend on the failsafe reliability of **Bear-Locs®**.



Crushers: A More Efficient Way, with **Bear-Loc®**

Crusher processing generates debris that can cause abrasion, vibration and other demands that could harm the system.

This is where the **Bear-Loc®** shines. The **Bear-Loc®** is used to lock down the crusher service door, or lid, of the crushing chamber as material is repeatedly thrown against it during the crushing process.

The **Bear-Loc®**'s power to lock down this system comes from its positive locking capabilities. This interference fit will not shake loose or create any backlash when used within its operating limits; perfect for holding down the lid of a crushing chamber.



Hydraulic Shock Tube For Architectural Testing

It's called a Shock Tube, short for Shock Tube Blast Load Simulator. Its rocket-like shape resembles something you might see at NASA.

Designed by Architectural Testing, now Intertek, the Shock Tube allows building product manufacturers from around the country find out whether their products can withstand the shock wave from a blast event, such as an explosion.



LOCK LENGTH SELECTION CHART

Solution driven design.
Other rod sizes available.
Mounting styles customizable.

1" ROD					
LOCK UNIT	LOCK LENGTH	LOCK CAPACITY			LOCK LENGTH
		SERIES 2000	SERIES 3000	SERIES 5000	
-2	2.75	880	1760	3550	2.75
-3	3.75	1320	2640	5325	3.75
-4	4.75	1760	3520	7100	4.75
-5	5.75	2200	4400	8875	5.75
-6	6.75	2640	5280		
-7	7.75	3080	6160		
-8	8.75	3520	7040		
-9	9.75	3960	7920		
-10	10.75	4400	8800		

LOCK SELECTION PROCEDURE
• Choose hydraulic system pressure: (2,000 to 5,000 psi.)
• Use rod diameter consistent with structural load requirements.
• Determine load to be locked (lbs). (Maximum design load times desired safety factor.)
• Using chart, find lock length required.

1-3/4" ROD					
LOCK UNIT	LOCK LENGTH	LOCK CAPACITY			LOCK LENGTH
		SERIES 2000	SERIES 3000	SERIES 5000	
-2	2.88	1870	3740	6430	3.12
-3	3.88	2800	5610	9650	4.12
-4	4.88	3740	7480	12860	5.12
-5	5.88	4670	9350	16080	6.12
-6	6.88	5610	11220	19300	7.12
-7	7.88	6540	13090	22510	8.12
-8	8.88	7480	14960	25730	9.12
-9	9.88	8410	16830		
-10	10.88	9350	18700		
-11	11.88	10280	20570		
-12	12.88	11220	22440		
-13	13.88	12150	24310		

EXAMPLE:
• System pressure - 3,000 psi
• 4" rod
• $(48,000)(1.25) = 60,000$ lbs
• Lock unit (-14) 61,600 lbs
• Lock length (l) is 15.25"

2.5" ROD					
LOCK UNIT	LOCK LENGTH	LOCK CAPACITY			LOCK LENGTH
		SERIES 2000	SERIES 3000	SERIES 5000	
-2	3.12	2630	5260	9500	3.62
-3	4.12	3940	7890	14260	4.62
-4	5.12	5260	10520	19010	5.62
-5	6.12	6570	13150	23750	6.62
-6	7.12	7890	15780	28510	7.62
-7	8.12	9200	18410	33260	8.62
-8	9.12	10520	21040	38020	9.62
-9	10.12	11830	23670	42770	10.62
-10	11.12	13150	26300	47520	11.62
-11	12.12	14460	28930	52270	12.62
-12	13.12	15780	31560	57020	13.62
-13	14.12	17090	34190	61780	14.62
-14	15.12	18410	36820		
-15	16.12	19720	39450		
-16	17.12	21040	42080		
-17	18.12	22350	44710		
-18	19.12	23670	47340		
-19	20.12	24960	49970		
-20	21.12	26300	52600		
-21	22.12	27610	55230		
-22	23.12	28930	57860		
-23	24.12	30240	60490		
-24	25.12	31560	63120		

4" ROD					
LOCK UNIT	LOCK LENGTH	LOCK CAPACITY			LOCK LENGTH
		SERIES 2000	SERIES 3000	SERIES 5000	
-2	3.25	4400	8800	15700	4.25
-3	4.25	6600	13200	23550	5.25
-4	5.25	8800	17600	34100	6.25
-5	6.25	11000	22000	39250	7.25
-6	7.25	13200	26400	47100	8.25
-7	8.25	15400	30800	51950	9.25
-8	9.25	17600	35200	62800	10.25
-9	10.25	19800	39600	70650	11.25
-10	11.25	22000	44000	78500	12.25
-11	12.25	24200	48400	86350	13.25
-12	13.25	26400	52800	94200	14.25
-13	14.25	28600	57200	102050	15.25
-14	15.25	30800	61600	109900	16.25
-15	16.25	33000	66000	117750	17.25
-16	17.25	35200	70400	125600	18.25
-17	18.25	37400	74800		
-18	19.25	39600	79200		
-19	20.25	41800	83600		
-20	21.25	44000	88000		
-21	22.25	46200	92400		
-22	23.25	48400	96800		
-23	24.25	50600	101200		
-24	25.25	52800	105600		
-25	26.25	55000	110000		
-26	27.25	57200	114400		
-27	28.25	59400	118800		
-28	29.25	61600	123200		
-29	30.25	63800	127600		
-30	31.25	66000	132000		

5-1/2" ROD					
LOCK UNIT	LOCK LENGTH	LOCK CAPACITY			LOCK LENGTH
		SERIES 2000	SERIES 3000	SERIES 5000	
-2	3.5	7000	14000	22120	5.0
-3	4.5	10500	21000	33170	6.0
-4	5.5	14000	28000	44230	7.0
-5	6.5	17500	35000	55290	8.0
-6	7.5	21000	42000	66350	9.0
-7	8.5	24500	49000	77410	10.0
-8	9.5	28000	56000	88460	11.0
-9	10.5	31500	63000	99520	12.0
-10	11.5	35000	70000	110580	13.0
-11	12.5	38500	77000	121640	14.0
-12	13.5	42000	84000	132700	15.0
-13	14.5	45500	91000	143750	16.0
-14	15.5	49000	98000	154800	17.0
-15	16.5	52500	105000	165870	18.0
-16	17.5	56000	112000	176930	19.0
-17	18.5	59500	119000	187990	20.0
-18	19.5	63000	126000	199040	21.0
-19	20.5	66500	133000	210100	22.0
-20	21.5	70000	140000	221160	23.0
-21	22.5	73500	147000	232220	24.0
-22	23.5	77000	154000	243280	25.0
-23	24.5	80500	161000	254330	26.0
-24	25.5	84000	168000		
-25	26.5	87500	175000		
-26	27.5	91000	182000		
-27	28.5	94500	189000		
-28	29.5	98000	196000		
-29	30.5	101500	203000		
-30	31.5	105000	210000		
-31	32.5	108500	217000		
-32	33.5	112000	224000		
-33	34.5	115500	231000		
-34	35.5	119000	238000		
-35	36.5	122500	245000		
-36	37.5	126000			

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