



ACTUATION PNEUS

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John Condon, student leader for the FIRST robotics team from Arrowhead High School in Hartland, WI, poses with his team's robot, which used a Bimba actuator for its ball retention flipper.

Robots invade the country to enrich the lives of young people everywhere.

Bimba actuators were in action this spring in a Midwest robotics competition that encourages junior and senior high school students to develop their engineering skills.

The *For Inspiration and Recognition of Science and Technology* (FIRST) 2002 Robotics Competition Championship is a nationwide annual contest designed to encourage students to develop their competency in engineering by participating in a task-oriented competition. FIRST was founded by inventor Dean Kamen, who most recently invented the Segway human transporter.

Bimba Manufacturing was recognized as a Gold Supplier to the FIRST competition by its donation of 800 actuators for use by more

than 600 teams from the U.S., Canada, Brazil and England.

The Midwest competition, held at Northwestern University in Evanston IL, in March, was a two-minute robotic contest, with remote-controlled robots battling to pick up soccer balls and place them in a goal. After the balls were placed in the goal, the robots moved the goal into a designated area and quickly returned to the original starting zone — within a two-minute deadline. Bimba actuators were components of many of the participants, including the third place winner at the Midwest Regional, Team Hammond. The Hammond, Indiana school team won the national competition in Florida in April.



The Midwest competition, held at Northwestern University in Evanston IL, in March drew thousands of spectators.

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Web Order Tracking

Bimba now offers online order tracking of your factory direct shipment from your browser.

Simply go to www.bimba.com, and click on the 'Order Tracking' copy that surrounds the Bimba logo in the center of the home page.



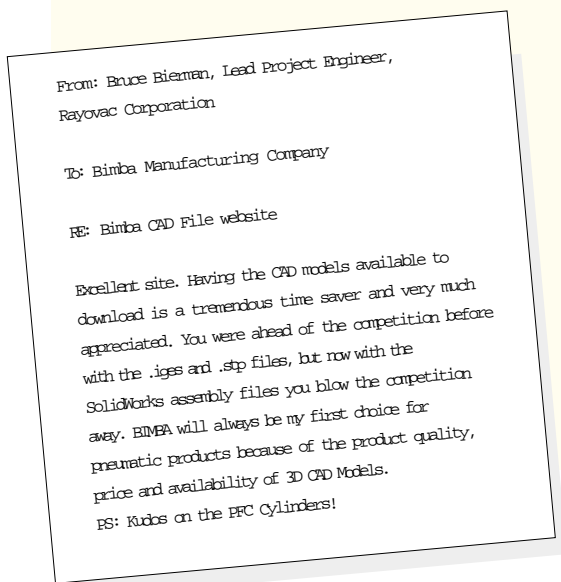
Customers can review price, availability, order status, shipping date, and link to UPS tracking around the clock. A simple P.O. number entry and ZIP code will allow order checking.



Bimba unveils improved Website access to CAD Files

Now customers have improved access to CAD and computer-generated drawings of Bimba products on www.bimba.com/cad/new3dfrmst.htm

By going to the site, users can select from PROE, SOLIDWORKS, or .IGES or .STP files. Users can also generate stroke sensitive models for viewing and downloading. Preliminary feedback from the enhanced site, which went live on June 1st, is very positive.



Tech Tips

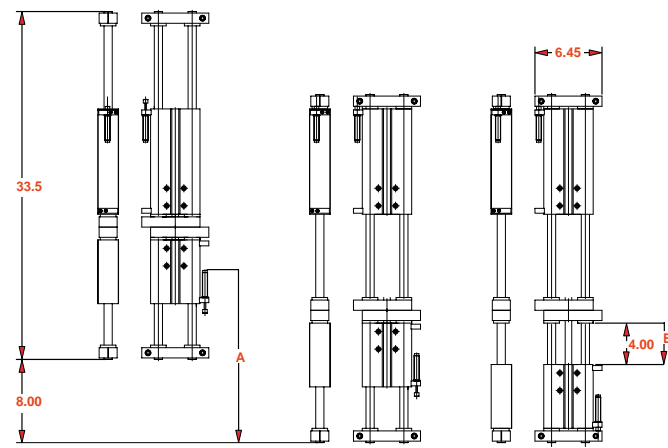
Life expectancy for Pneumatic Robot

Bimba's Actuators have been put to work in a postal sortation robot. The fifteen-pound load is moved by this pneumatic robotic device composed of two Extruded Linear Thrusters working in tandem in a conveying application to move the mail.



Testing included a 15-pound load offset 3" from the center of gravity.

Life expectancy achieved during testing was two million cycles.



The high velocity and position control of the application is critical in both directions.

The first extend is from 0 to 8 inches in .45 seconds (A)

The second extend is 8 to 12 inches in .30 seconds (B)

The first retraction is to 8 inches in .50 seconds

The second retraction is back to 0 in .70 seconds.

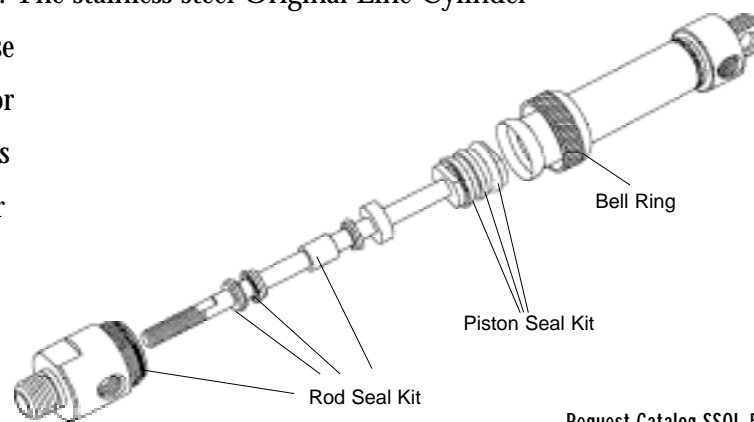
Tech Bulletin

Bimba stainless steel Original Line Cylinder now offers repairable, bell ring construction

A repairable stainless steel version of the Original Line Cylinder can have seals serviced without use of hand tools, as Bimba offers a bell ring design that secures the body to the rod guide with a knurled, threaded nut.

Designed for the food processing, chemical, medical and pharmaceutical industries, the stainless steel repairable Original Line series come in 3/4" and 1 1/16" bore sizes. It will soon be offered in a 1 1/2" bore model. The rod seal and piston seal assemblies can easily be changed by loosening the knurled nut and accessing the components. The stainless steel Original Line Cylinder repairable model has front nose Optional stainless steel accessor Mounting Nut and Rod Clevis versions, and Pivot Bracket for Universal mounting version.

	Front Mounting	Universal Mounting
3/4" Bore	D-4161-A-□ Accessories: D-129-SS Foot Bracket; D-9-SS Mounting Nut; D-166-3-SS Rod Clevis □ Stroke Length	D-4231-A-□ Accessories: D-129-SS Foot Bracket; D-4447-A Pivot Bracket; D-9-SS Mounting Nut; D-166-3-SS Rod Clevis □ Stroke Length
1 1/16" Bore	D-4173-A-□ Accessories: D-241-SS Foot Bracket; D-3556-SS Mounting Nut; D-166-1-SS Rod Clevis □ Stroke Length	D-4232-A-□ Accessories: D-241-SS Foot Bracket; D-4446-SS Pivot Bracket; D-3556-SS Mounting Nut; D-166-1-SS Rod Clevis □ Stroke Length



Request Catalog SSOL-502/0L

Web Site FAQ

Q: This question comes to us via BIMBA's website from Dave Whitten on 5/1/02

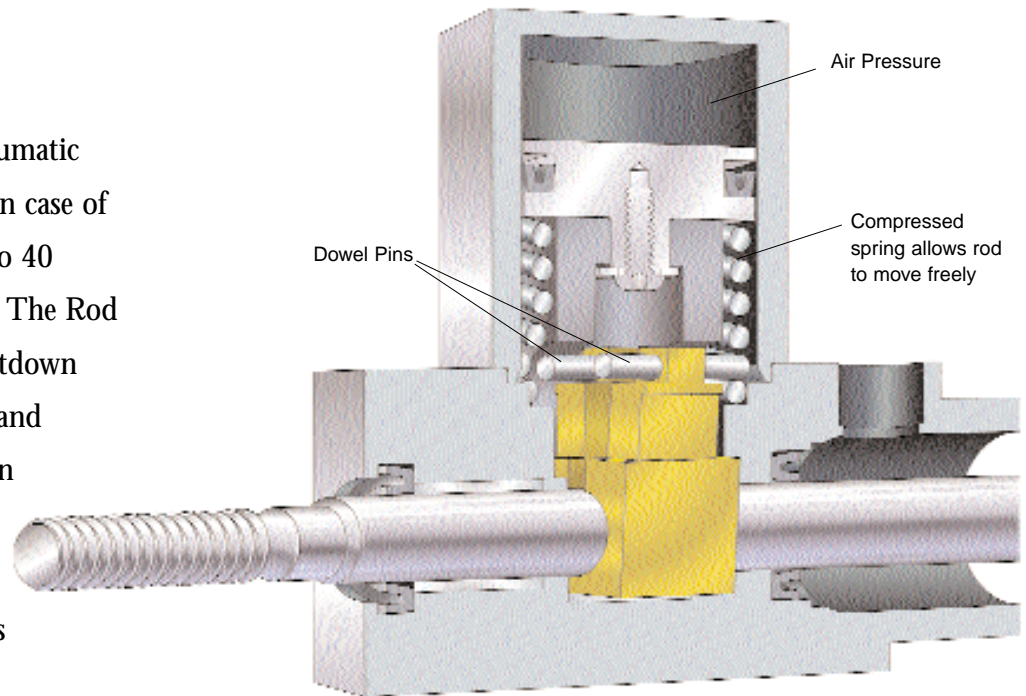
I need an actuator to survive under a semi-trailer where it will be exposed to salt corrosion. Do you have any data on the ability of roundline stainless steel cylinders to resist a road salt environment?

A: As you realize, road salt is extremely corrosive. Our standard roundline cylinders have aluminum endcaps which do not react favorably. We can substitute Delrin for the endcap material which should react better. I would also suggest you take a look at our Double Wall Cylinder, which has an epoxy-coated outer body. This cylinder may be your best choice based on the location of the cylinder. Conventional cylinders, when hit by road debris like a rock, may become damaged, rendering them useless or leaking. The Double Wall construction is designed specifically to protect the internal working parts of the cylinder for these applications.

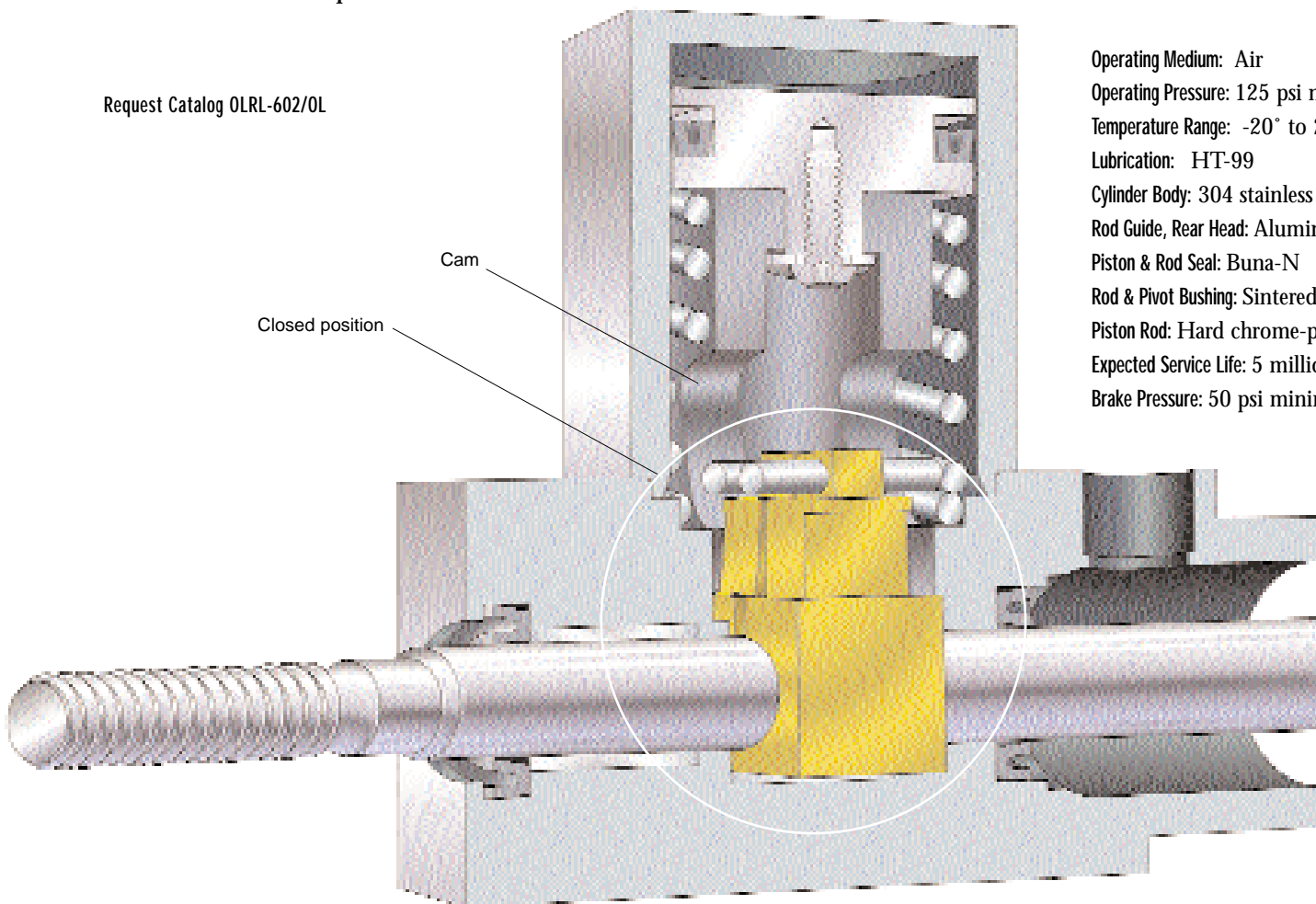
Inside Bimba

Original Line Rod Lock Cylinder

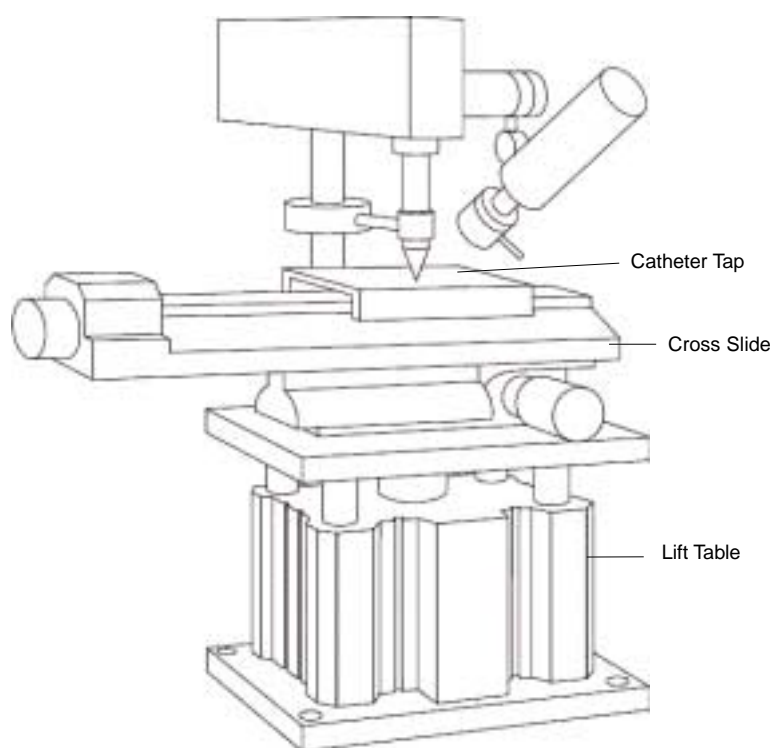
BIMBA has produced the industry's first round line pneumatic clamping/cam device to hold the piston rod in position in case of loss of air pressure. The original Rod Lock can hold up to 40 pounds in 3/4" bore and up to 700 pounds in a 3" bore. The Rod Lock is ideal for holding loads stationary at machine shutdown and preventing tool drift. The device uses a unique cam and dowel-pin design. When air pressure is present, the piston actuates and dowel pins follow the cam to an open position, allowing the piston rod to travel freely through the clamp. When air pressure is absent, the spring presses up against the piston and the dowels follow to the closed position.



Request Catalog OLRL-602/OL



- Operating Medium: Air
- Operating Pressure: 125 psi maximum
- Temperature Range: -20° to 200°F
- Lubrication: HT-99
- Cylinder Body: 304 stainless steel
- Rod Guide, Rear Head: Aluminum
- Piston & Rod Seal: Buna-N
- Rod & Pivot Bushing: Sintered bronze
- Piston Rod: Hard chrome-plated stainless steel
- Expected Service Life: 5 million cylinder actuations, 1 million lock actuations
- Brake Pressure: 50 psi minimum to release piston



Actuation Applications

Medical Catheter Manufacturing

Problem: A manufacturer of medical devices had space constraints and a tricky procedure to tap into catheters.

Bimba Solution: Bimba's low-profile lift table featured outstanding rigidity and minimal height to move a cross slide into position. The result was a precise cost-effective solution that allowed the manufacturer to ensure the accuracy, repeatability and durability necessary to run the manufacturing procedure thousands of times.

Request Catalog XXXXXX-XXXX

New Products

Air-to-Air Booster Cylinder

The 2:1 ratio air-to-air booster is small and self-contained, and can amplify inadequate air pressure since doubling the input pressure can increase the output force of a cylinder. The CSS-00118-A has a maximum input pressure of 125 psi, and operating temperature range of 15 degrees to 160 F. The unit is typically plumbed to a reserve tank and begins reciprocating upon supply pressure input. It builds to maximum outlet and stops. It restarts upon pressure drop.

Request Catalog NPB-302



Low Profile Air Table Actuator

The Low Profile Actuator, LPA-80, was developed for applications that require precise load guiding, with tight space constraints. The actuator minimizes the thickness of construction with a linear recirculating ball rail alongside the bore. Stroke lengths come in 10, 20, 30, 40, 50 and 75 mm.

Request Catalog NPB-302



Narrow Profile Air Table Actuator

The Narrow Profile Actuator, NPA-120, offers precise load guiding with a recirculating ball rail located above its bore. With stroke lengths from 5 to 95 mm, the NPA-120 offers choice of a single bearing block or adding a second to accommodate higher precision applications.

Request Catalog NPB-302



Original Line Stainless Steel Repairable Version

An Original Line Cylinder in stainless steel is now offered in a version that can be serviced without using tools. The OL stainless steel repairable version is ideal for food processing, chemical, medical and pharmaceutical, marine and waste management applications. Accessibility to the rod seal and piston seal is possible through Bimba's unique bell ring design, where a knurled nut can be removed by hand. The OL stainless steel repairable version comes in 3/4" and 1 1/16" bore sizes, which will soon be joined by a 1 1/2" size. Rated up to 250 lbs psi, the OL Stainless Steel offers two mounting styles and stainless steel mounting accessories.

Request Catalog SSOL-502/OL



Twist/Clamp Cylinder

The EFCL, EFCR (Left, Right Hand rotation) is a development of the EF1 Cylinder body that provides a twisting motion to the rod upon actuation. This clamping action is ideal for an application where the normal action of the rod interferes with removal of the work piece. The cylinder incorporates a chrome-plated piston rod and a hardened steel rod guide bearing. The clamp arm accessory kit includes an arm, hardened clamp bolt and locknut.

Request Catalog EFC-802/F0



Stopper Cylinder

The EFL and EFLR conveyor stop cylinder is a development of the EF1 Cylinder body that was modified with a heavy-duty mounting for a conveyor stopping application. With stroke lengths of 15, 20 and 25 mm, the EFL (Double-acting, load bearing) and EFLR (Double-acting failsafe, spring extended) offer a stainless steel piston rod, aluminum cylinder body and sintered iron rod bearing.

Request Catalog NPB-302



Original Line Rod Lock Cylinder

The Original Line Rod Lock incorporates a clamp/cam device to hold the piston rod in position upon loss of air pressure. The OL Rod Lock is ideal for preventing drift of tools upon machine shut down. The cylinder is actuated with 50 psi of air pressure, and when pressure is absent the lock feature is activated to clamp the rod. Available in six bore sizes from 3/4" to 3", the OL Rod Lock has holding force from 40 pounds (3/4" bore) to 700 pounds (3" bore). The OL Rod Lock has a block front with a magnet and rod wiper as standard features, and comes in two mounting styles and can operate in ranges from -40 degrees to 400 F.

Request Catalog OLRL-602/02



Extruded Linear Thruster

The Extruded Linear Thruster, CSS-00116-A, offers a design that incorporates the cylinder and switch tracks in an integrated body. Stroke lengths of 1/2", 1", 2", 3", 4", 5", 6", 7", 8", 9" and 10" are available. The CSS-00116-A offers self-lubricated nylon guideshaft bearings and stainless steel guide shafts, anodized aluminum housing and tooling plate, and high side load capabilities.

Request Catalog ET-802/AP



Diaphragm Cylinder

The CSS-00119-A is designed for a clamping application with minimal friction loss. It has a .12" stroke length and 1 1/4" bore. Maximum operating pressure is 120 psi.

Request Catalog NPB-302



New Literature

OLRL-602/OL	Original Line Rod Lock Cylinder
SSOL-502/OL	Original Line Stainless Steel Repairable Cylinder
BRCH-TRDSS-601	TRD Stainless Steel Cylinders Brochure
CADCDROM3.1	Bimba CAD Drawing Library
APM-402	Metric Flat-1, Pneu-Turn, and Ultran
BL-402	ISO6431/6432 Metric Cylinders & Flow Controls
EFC-802/F0	Twist Clamp Cylinders
ET-802/AP	Extruded Thrusters

Trade Show Schedule

Assembly Technology Expo	September 24-26, 2002	Booth #15107	Rosemont, IL
PACK EXPO International	November 3-7, 2002	Booth #E-6829	Chicago, IL

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Bimba is an employee-owned company.