

BIMBA LIFE SCIENCE PRODUCT AND SOLUTIONS GUIDE



HOSPITAL

SURGICAL

PHARMACEUTICAL

BIOTECHNOLOGY

MEDICAL DEVICES



BIMBA

HOSPITAL AND SURGICAL

From the operating room to an emergency room, Bimba's medical solutions are evident in hospitals everywhere. Bimba has provided solutions used in medical procedures ranging from angioplasty to joint replacements. Sterilization of hospital equipment and doctor's instruments utilizes stainless steel actuators as well as customized dispensing valves. For any hospital or surgical application that requires force, motion and control, or automation, Bimba can provide a solution.

HOSPITAL APPLICATIONS

Dialysis

Traditional Stainless Steel round line Bimba cylinders have always been incorporated as the pinching mechanisms in portable dialysis machines. Bimba integrated the pinching back-stop surface as well as the plunger into one cylinder, reducing the number of parts, simplifying machine assembly, and ensuring a consistent pinch force.



Dental

Manufacturers of dental furniture utilize Bimba stainless steel round line cylinders to open and close cabinet doors. The cylinders work in conjunction with proximity sensors that detect hand motion. This eliminates the need to touch the cabinet doors and promotes a more hygienic dentist office.



Waste Disposal

Manual disposal of medical waste using hospital medical carts proved to be both inefficient and hazardous. To automate this process, a designer created a lifting system that utilized a 125 mm bore Bimba actuator to provide smooth actuation and the force needed to lift a full 55 gallon drum safely.



Dosing

A medical manufacturer needed a sanitary and ergonomically sound way to dispense fluid. Bimba developed an easy-to-operate pneumatic foot pedal that sent a precise amount of air to a dispenser head with a simple press of the pedal.



SURGICAL APPLICATIONS

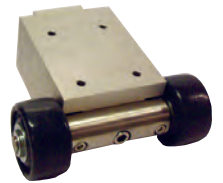
Hand Tools

Bimba has developed air-driven hand tools for direct use in surgical procedures. These hand tools can be driven by either air or carbon dioxide to perform such tasks as clamping, cutting or impacting. The tools are designed for repeat use. The stainless steel construction of a typical Bimba product is excellent for exposure in an autoclave for sterilization.



Imaging

Real time surgical imaging is an exciting advancement in medicine today. A Bimba solution has been implemented in a mobile scanning device. Once wheeled into the operating room, Bimba's actuator uses 1000 psi of hydraulic fluid to extend castors (wheels) to the floor, allowing the scanning device to traverse a stationary patient.



Sterilization

As surgical tools become more sophisticated, sterilization becomes more challenging. Bimba is currently involved in the advancement of sterilization technology. These common applications use Bimba actuators to open doors, lock doors, and to dispense aggressive chemicals used in the sterilization process.



Cardiac

Bimba has worked with SynCardia Systems, Inc. in the development of their 12-lb Freedom™ discharge driver, designed to power the world's only FDA-approved Total Artificial Heart: the SynCardia temporary CardioWest™ Total Artificial Heart. The Freedom™ driver is intended to allow stable Total Artificial Heart patients to leave the hospital and enjoy life at home and in their community while they wait for a matching donor heart. Bimba has been an integral part in the development of both the pneumatic driver technology and corresponding valving.



CAUTION—The Freedom™ driver is an investigational device, limited by United States and EU law to investigational use.

PHARMACEUTICAL AND BIOTECHNOLOGY

Pharmaceutical and biotechnology industries use actuators for a variety of familiar applications where materials compatibility and performance requirements pose unique design challenges. In addition, there are specialized applications with specialized requirements unique to pharmaceutical and biotech that require custom engineering. Bimba's expertise and flexibility providing built to order solutions makes us the most qualified solutions provider.

PHARMACEUTICAL/ BIOTECHNOLOGY APPLICATIONS

Blood Work

In the medical industry, even the tiniest seams, seals, and moving components in traditional valves can cause dead zones in the process fluid stream. Fluids can collect and stagnate, allowing microscopic contamination to grow. Bimba's pinch valve design is a turnkey valve solution that pinches an uninterrupted fluid line, keeping fluids pure.



Assay Automation

Historically, a manufacturer of biological and medical laboratory test equipment used traditional unguided pneumatic actuators in their compact analyzer for clinical diagnostics. Technology advancements pushed the manufacturer to reduce equipment size, increase testing speed, and provide improved sampling methods. Bimba's Narrow Profile Air Table (NPA) provided reduced envelope dimensions and improved performance by utilizing a ball bushing rail system to provide excellent breakaway and tight end play tolerances.



Lab

A Bimba actuator is helping a lab prepare donated organs for transplant surgery. The Double Wall Bimba actuator with an inner stainless steel body powers a custom application to dissect a human spinal column for use in repair of critical spinal injuries. The actuator provides the force to section the spine into precise lengths for transplant.



Cryogenics

Bimba has designed an actuator using exotic materials for its piston rod assembly. A cylinder rod made of a plastic called Torlon is used to withstand exposure to a cryogenic vacuum chamber. In this application Bimba actuators routinely exceed 100 million cycles. Bimba solutions have also incorporated materials such as PEEK™ and PVDF.



Biomedical

Bimba has provided solutions that include electric actuators for precise control of focused, localized treatments. Actuators are also used to simulate motion or replicate the impact seen on human joints.

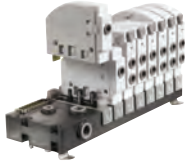


"We trust Bimba's knowledge and expertise to help us deliver portable technology that our patients can depend on," said Rodger Ford, President and CEO of SynCardia. "We are proud to have Bimba as a part of our development team."

MEDICAL DEVICE MANUFACTURING

OEMs specializing in Medical Device Technology use a wide range of fluid power components. Whether developing a table-top analyzer for a lab or manufacturing an automated medicinal liquid dispensing and packaging machine, Bimba has the components needed to complete the process.

Control Valves



With an innovative concept and a pioneering approach to valve design, our new technology has directly challenged traditional valve technology. Unique manufacturing processes have overcome many common restrictions and limitations, resulting in a superior design that minimizes valve size, reduces air turbulence, and provides excellent air flow.

Stainless Steel or Plastic Actuators



Bimba's unitized cylinder construction creates a cost effective approach for millions of maintenance free cycles. Urethane wipers are installed to withstand exposure to harsh chemical solutions while limiting the ingress of solutions into the cylinder. Type 303 stainless steel or Delrin™ endcaps, a type 303 stainless steel rod and type 304 stainless steel body make-up the exposed components. A repairable all stainless steel design is also available in type 316 stainless steel for larger bore sizes.

Stainless Steel Air Preparation Equipment



From stainless steel air regulators to combination air filter/check valves, Bimba has proven solutions and capabilities for specialized air preparation solution designs.

Process Control Valves and Pumps



Bimba provides valves and pumps designed for specific process control applications. We address customer-specified performance requirements and use specialized materials such as PEEK™ plastic to meet compatibility needs.

Find more Life Science solutions from Bimba at www.bimba.com/solutionshop

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