



PRODUCT OVERVIEW

VALVE AUTOMATION

BALL VALVES | BUTTERFLY VALVES | VALVE ACCESSORIES |
ELECTRIC & PNEUMATIC ACTUATORS | THERMAL SHUT-OFF VALVES |
CUSTOM VALVE MOUNTING HARDWARE



WHERE DO YOU FIND BI-TORQ VALVES?

“Where do your valves go?” is a frequently asked question for those new to BI-TORQ valve packages. The general answer is anywhere media (liquid or solid) needs to be conveyed or regulated in a piping system, or stored in a tank. That answer helps, but is quite general. We need to narrow the scope down to the industry level and add some sample series that you’ll find there to get a better idea.

Industry/BI-TORQ Series	IS	BY	IP	IC	FL	DM	PN	BI	CH	FS	KG	LB
Oil & Gas	X				X				X			X
Instruments & Controls	X						X		X			
General Manufacturing	X	X					X	X	X	X		
Utilities/Energy	X		X	X								
Building/Construction	X	X	X									
Chemical Production	X			X	X					X		X
Food & Beverage	X					X					X	
Automotive		X			X	X						
HVAC							X		X			
Agriculture/Forestry	X		X								X	
Aerospace & Defense	X	X			X				X			
Government		X			X		X	X	X	X		
Pharmaceutical	X								X			
Commercial		X	X						X	X		
Transportation		X			X					X		X
Plastics & Rubber	X				X						X	
Pulp & Paper/ Textiles	X										X	X

IS - Stainless steel ball valves:

2-way & 3-way w/NPT, SW, sanitary, or flanged ends.

BY - Cast iron butterfly valves:

lug or wafer style w/EPDM, Buna, Viton, or TFE seats.

IP - Brass ball valves:

2-way & 3-way w/ NPT ends; optional SS ball or lead free.

LB - Line blinds:

Strahman safety devices for permanent line shut-off.

BI - Electric actuators:

open/close or modulating service; optional spring return.

IC - PVC/CPVC ball valves:

2-way & 3-way w/ NPT or SW ends; optional viton seals.

FL - Thermal shutoff valves:

fire safe valves with automatic shutoff for isolation in a fire.

DM - Spring return handles:

“deadman” handles up to 830 in/lbs of torque.

PN - Pneumatic actuators:

Spring return or double acting; optional stainless bodies.

CH - Customized hardware:

mounting kits, stem extensions, lock-out kits, or linkage kits.

FS - Automated fire safe valves:

stainless or carbon steel bodies w/NPT, SW, or flanged ends.

KG - Knife gate valves:

Wafer or lug style, stainless or cast iron bodies.













AUTOMATED BALL VALVES



PNEUMATIC AND ELECTRICALLY ACTUATED BALL VALVES

Valve styles include 2-piece and 3-piece stainless steel, brass, 150# ANSI flanged, sanitary clamp end, PVC/CPVC, and multi-port valves. Most InstruPak automated units are direct actuator mount for low profile, cost-efficient operations.

STAINLESS STEEL 2-PIECE		SIZE RANGE 1/4" - 3" full port SEATS & SEALS RTFE and TFE PRESSURE RATING 1000WOG/150PSI steam TEMPERATURE RATING -40F to +450F END CONNECTIONS NPT 2-piece design	STAINLESS STEEL 3-PIECE		SIZE RANGE 1/4" - 3" full port SEATS & SEALS RTFE and TFE PRESSURE RATING 1000WOG/150PSI steam TEMPERATURE RATING -40F to +450F END CONNECTIONS NPT or socket weld 3-piece swing-out design
SANITARY CLAMP END		SIZE RANGE 1/2" - 4" full port SEATS & SEALS Cavity filled TFE PRESSURE RATING 1000WOG/150PSI steam TEMPERATURE RATING -40F to +450F END CONNECTIONS sanitary clamp ends	SANITARY 3-WAY CLAMP END		SIZE RANGE 1/2" - 2" full port SEATS & SEALS Cavity filled TFE PRESSURE RATING 1000WOG TEMPERATURE RATING -40F to +450F END CONNECTIONS sanitary clamp ends
STAINLESS 3-WAY NPT		SIZE RANGE 1/2" - 2" full port SEATS & SEALS TFE and RTFE PRESSURE RATING 1000WOG TEMPERATURE RATING -40F to +450F END CONNECTIONS NPT 3-way design (L-port or T-port)	STAINLESS 3-WAY FLANGED		SIZE RANGE 1/2" - 4" full port SEATS & SEALS RTFE and TFE PRESSURE RATING Class 150 TEMPERATURE RATING -40F to +450F END CONNECTIONS designed to ANSI B16.34 (L-port or T-port)
FIRE SAFE 3-PIECE NPT		SIZE RANGE 1/2" - 2" full port SEATS & SEALS RTFE and Graphoil PRESSURE RATING 2000WOG/125PSI steam TEMPERATURE RATING -40F to +450F (std. seats) END CONNECTIONS NPT or socket weld	STAINLESS STEEL FLANGED		SIZE RANGE 1/2" - 6" full port SEATS & SEALS RTFE and TFE PRESSURE RATING ANSI class 150 TEMPERATURE RATING -40F to +450F min./max END CONNECTIONS designed to ANSI B16.34
FIRE SAFE FLANGED		SIZE RANGE 1/2" - 6" full port SEATS & SEALS PTFE and Graphoil PRESSURE RATING ANSI class 150 TEMPERATURE RATING -40F to +450F min./max END CONNECTIONS designed to ANSI B16.34	PVC/CPVC 3-WAY		SIZE RANGE 1/2" - 2" SEATS & SEALS RTFE, EPDM or Viton® PRESSURE RATING varies with seal material TEMPERATURE RATING varies with seal material END CONNECTIONS threaded or socket L-port or T-port
BRASS 2-PIECE NPT		SIZE RANGE 1/4" - 4" full port SEATS & SEALS TFE and Viton® PRESSURE RATING 600WOG/125PSI steam TEMPERATURE RATING +320F maximum END CONNECTIONS NPT 2-piece design	BRASS 3-WAY NPT		SIZE RANGE 1/4" - 2" standard port SEATS & SEALS TFE and Viton® PRESSURE RATING 435WOG to 1-1/2" TEMPERATURE RATING +320F maximum END CONNECTIONS NPT 3-way design (L-port or T-port)
PVC/CPVC TRUE UNION		SIZE RANGE 1/2" - 4" full port SEATS & SEALS RTFE, EPDM or Viton® PRESSURE RATING varies with seal material TEMPERATURE RATING varies with seal material END CONNECTIONS NPT, socket, flanged			

AUTOMATED BUTTERFLY VALVES

Cast Iron Bodies w/Stainless Disc and Stem

- CAST IRON BODY WITH STANDARD STAINLESS STEEL DISC
- LUG AND WAFER DESIGN
- STANDARD VALVES 2" THROUGH 12"; ADDITIONAL MODELS AVAILABLE THROUGH 24"
- EPDM, BUNA-N, TFE, OR VITON® LINERS AVAILABLE
- PNEUMATIC, ELECTRIC OR GEAR OPERATORS

WORKING PRESSURE: 225PSI TO 8"; 150PSI 10", 12"
WORKING TEMPERATURE: EPDM: -30F to +275F
BUNA-N: +10F to +180F



PNEUMATIC ACTUATORS

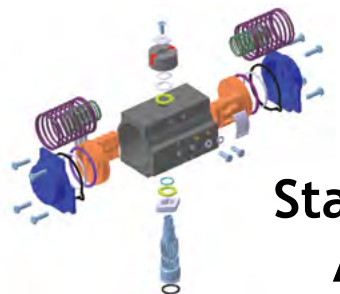
Rack and Pinion Actuators



Spring Return
Double Acting
ISO/NAMUR Mounting
Anodized Aluminum
Dual Limit Stops

BI-TORQ offers a full range of pneumatic valve actuators from 40 to 27,000 inch pounds output torque in both double acting and spring return/fail safe design. The star shaped female output shaft and ISO mounting allows for direct mounting a variety of ISO style valves. Our anodized aluminum actuators also offer true ISO and NAMUR accessory mounting for limit switches, solenoids and positioners. All stainless steel actuators are available for highly corrosive atmospheres.

Stainless Steel Actuators



CORROSION RESISTANT ACTUATORS
Made from all stainless steel, our BI-SS pneumatic series offers corrosion resistant actuation for sanitary, food and chemical operations. A stream-lined design reduces the areas where dust and dirt can accumulate.

ELECTRIC ACTUATORS



On-off, Jog, or
Modulating
NEMA 4, 4X and 7
Position feedback

NEW BH SERIES
available through
8,800 in/lbs

Heavy Duty Industrial Actuators

Our economic, durable electric actuators feature voltages in 115VAC, 220VAC, 12VDC, 24VDC and 24VAC. True ISO bottom mounting allows for direct mounting to ISO valves. A permanently lubricated gear train, integral thermal overload protection and a reversing type motor ensure long-lasting operation and consistent torque output. All BI-TORQ electric actuators have a range of optional accessories, including modulating positioner boards, temperature controls, speed controls, timers, brakes and explosion proof enclosures.

AUTOMATION ACCESSORIES



Pneumatic Valve Positioners



SMART POSITIONERS
NOW AVAILABLE

PNEUMATIC AND ELECTRO-PNEUMATIC POSITIONERS

Our line of positioners include 3-15PSI pneumatically operated or 4-20mA electro-pneumatic models for a wide variety of control applications. Enclosures are rated for NEMA 4/4X or intrinsically safe with an optional high visibility dome indicator. Other options include integrated limit switches, feedback potentiometers, transmitters and flow control modules. Mounting, piping and testing are done on all complete packages.

NAMUR MOUNT SOLENOID VALVES

BI-TORQ offers a full range of NAMUR mount solenoid valves with voltages in 115VAC, 220VAC, 24VAC, 12VDC and 24VDC with cV factors to 1.8 for high flow applications. These solenoids come with NEMA 4, NEMA 7 or intrinsically safe options. The standard connector is a DIN plug with options for a variety of different coil connections. One unit easily can be converted in the field for 3/2 way (spring return) or 5/2 way (double acting) operations. Dual coils also are available for all NAMUR mount solenoids.

120, 220 and 24 VAC
12 and 24 VDC
NEMA 4, 4X, 7 or 9
Field Convertable 3/2 or 5/2
DIN Connectors or Flying Leads

NAMUR Mount Solenoids



Limit Switches

Mechanical or Proximity Switches
NEMA 4, 4X, 7 or 9
Standard Dome Indicator
Include SS Bracket
Factory Mounted and Tested

ROTARY AND LINEAR LIMIT SWITCHES

BI-TORQ can provide a full line of switches and transmitters that represent the most innovative technology available in the industry. We offer a full array of switch boxes for quarter-turn actuators in NEMA 4, 4X, 7 and 9 enclosures with intrinsically safe options. The standard switch has 2 SPDT mechanical switches with options for proximity or reed type. All switch boxes for BI-TORQ actuators come standard with a SS mounting bracket. We also offer a superior line of proximity switches for linear and multi-turn applications.

SAFETY DEVICES

Thermal Shutdown Valves



THERMAL SHUTDOWN

Available with Proximity Switches for Position Feedback



THERMAL SHUTDOWN FOR FIRE SAFE VALVES

Our thermal shutdown valves are designed for fail safe situations where high temperature heat from a fire results in a main valve springing close when the fusible link breaks. This specially designed system incorporates an API 607 fire rated valve, a spring loaded operator, a fusible link and customized mounting assembly. We can supply the assembly on a customer owned valve or mount a complete assembly on our own line of API 607 fire safe ball or butterfly valves.

- API 607 fire rated ball, butterfly, or plug valves
- Heavy duty spring packs and arming devices
- The same valve can be used as BOTH an armed fusible link and a manual valve
- Ball valves to 8", butterfly valves to 24"



THERMAL-ELECTRIC

3 CLASSES OF PROTECTION

THERMAL SHUT-OFF: "Sentry-type" protection with fusible link.

THERMAL-ELECTRIC: Local thermal protection coupled with remote closure capability via a low voltage signal.

RE-SETTABLE BLOCK VALVE (R-EBV): Local and remote protection with the ability to quickly test regularly as part of a maintenance program.

Line Blinds



Spreading or non-spreading
Automation options
Large size range
Position feedback
Quick ship program



LINE BLINDS FOR PERMANENT OR LONG TERM ISOLATION

A line blind is a safety device designed for **positive shut-off of piping, equipment, or storage tanks**. The positive shut-off feature makes line blinds perfectly attuned for permanent or long-term piping or tank isolation. Additionally, line blinds offer substantial benefits in saving time, equipment, and labor costs over traditional spectacle blinds. They also provide the security and safety an isolation valve cannot. Line blinds are a safety device, not a valve, and should only be used after a system has been drained and no longer under pressure.

PIPE SIZE	BLINDING TECHNIQUE		SAVINGS EFFECT
	SPECTACLE PLATE	STRAHMAN LINE BLIND	
1/2" - 12"	Time: 1-4 hrs. Personnel: 2-4 people Resources: tools, gaskets, pipe wedge, equipment	Time: 30 sec. or less Personnel: 1 person Resources: none	<ul style="list-style-type: none"> • 2-16 man-hours • Gaskets, tools, fasteners, equipment • Safety
14" - 48"	Time: 4-12 hrs. Personnel: 4-10 people Resources: tools, gaskets, equipment	Time: 30 sec. - 3 minutes Personnel: 1 person Resources: none	<ul style="list-style-type: none"> • 16-120 man-hours • Gaskets, tools, fasteners, equipment • Safety

SPRING RETURN DEADMAN SAFETY HANDLES

Spring return deadman handles help to meet OSHA requirements or plant safety specifications where a valve must return to the closed position automatically after operation. Unlike a standard lever handle or gear operator that will stay in the last position, deadman handles will always return to a pre-designated position. This device can be mounted on a variety of 1/4 turn valve models.

Automatic Closing
Safety Handle
Fail Open or Closed
Torque Outputs to
830 in/lbs
Custom Mounting

Deadman Handles



Automatically closes the valve when the operator releases the handle

MORE QUALITY VALVE PRODUCTS



Manually Operated Ball and Butterfly Valves

BALL, BUTTERFLY, KNIFE GATE AND SPECIALTY VALVES

BI-TORQ Valve Automation offers a full range of manually operated valves in addition to our automated packages. Stainless steel, brass and carbon steel valves with a variety of seats/seals can handle a range of applications, including steam service, high pressure and fire safe requirements. Heat extensions, deadman and custom made handles are available for most models.

Knife Gate Valves



Cast iron or Stainless
Wafer or Lug
Automated or Manual
Variety of Seat Materials

HEAVY DUTY INDUSTRIAL KNIFE GATE VALVES

Our line of knife gate valves are ideal for tough applications that demand high performance and sure closing. Knife gate valves are suitable for slurries, solids and other thick media such as those found in the pulp and paper industry. We also offer a full array of hydraulic and pneumatic cylinders to create a complete automated package.

CUSTOMIZED MOUNTING HARDWARE

Mounting Hardware



For the past four decades, BI-TORQ Valve Automation has engineered complete bracket, coupler and mounting hardware assemblies to mount any ball, butterfly, plug, gate or damper valve to any make or model of actuator. Our wide range of AutoCad® engineered drawings ensures that we can link virtually any automated valve assembly, whether the valve has been in line for 20 years or needs to be installed by the end of the week. Carbon steel, stainless steel and epoxy-coated options are available for most mounting kits. We also offer a full range of mounting kits for limit switches and positioners to actuators or manual valves.



Custom Broaching



Lock-Out Devices



Valve Stem Extensions



Tandem Linkages



Three-Way Tee Linkages

SMART SYSTEM FOR VALVE SELECTION

Although our technical expertise and helpful customer support system make it possible to promote our product with very little knowledge of valves or automation, there are crucial questions you can ask to make all of our jobs a little easier.

We call this *The SMART System*.

SIZE

... of the valve is determined by the pipeline dimensions and the rate of flow required by the customer.

Along with size, it also is very important to know the **end connection types**. We have literature to help with that too.

MEDIA

... indicates the type of material flowing through the valve. Valve torque, actuator sizing and materials of construction can be affected depending on the temperature and/or viscosity of the media.

ACTUATION?

... is the valve manually operated (with a handle or lever) or does it have an actuator?

The most common types of actuators include:

- Pneumatic (operates with air)
- Electric (operates with a voltage signal)
- Gear operated (uses a gear and a handwheel to turn the valve)

RATE

... or "line pressure," indicates flow of the media through the pipeline against which the valve will have to close. The higher the line pressure, the greater torque required from the valve actuator.

TEMPERATURE

... can relate to either **service temperature**, which is the maximum and minimum temperature of the media. Extraordinary high line temperatures might require special heat insulation, extended brackets, or special high temperature valve seats/seals.

... or **ambient temperature**, which refers to the maximum and minimum air temperature of the air surrounding the actuator. High temperatures might require special actuator seals or insulation. Low temperatures might require special actuator seals or heaters and thermostats.



**STRAHMAN
GROUP**

PRECISION AND PERFORMANCE

