BI–TORQ
VALVE AUTOMATION

PRODUCT OVERVIEW

VALVE AUTOMATION

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



STRAHMAN GROUP

an fch business

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.

	BI-TORQ SERIES										
Industry	IS	BY	IP	IC	FL	DM	PN	BI	CH	FS	KG
Oil & Gas	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	
Food & Beverage	X					X					X
Automotive		X			X	X					
HVAC							X		X		
Agriculture/Forestry	X		X								X
Aerospace & Defense	X	X			X				X		
Goverment		X			X		X	X	X	X	
Pharmaceutical	X								X		
Commercial		X	X						X	X	
Transportation		X			X					X	
Plastics & Rubber	X				X						X
Pulp & Paper/ Textiles	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.

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.

BI - ELECTRIC ACTUATORS
open/close or modulating service; optional spring return.

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.



WHERE DO YOU FIND BI-TORQ VALVES?

the BI-TORQ INSTRUPAK 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/100PSI steam
TEMPERATURE RATING
-40F to +450F (std. seats)
END CONNECTIONS
NPT or socket weld

AVAILABLE IN CARBON OR STAINLESS STEEL

STAINLESS STEEL FLANGED



SIZE RANGE
1/2" - 6" full port
SEATS & SEALS
RTFE and TFE
PRESSURE RATING
ANSI class 150 /100PSI steam
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 150/100PSI steam
TEMPERATURE RATING
-40F to +450F min./max
END CONNECTIONS
designed to ANSI B16.34

AVAILABLE IN CARBON OR STAINLESS STEEL

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
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
	VITON: 0°F to 350° F
	PTFE: -20°F to 250°F





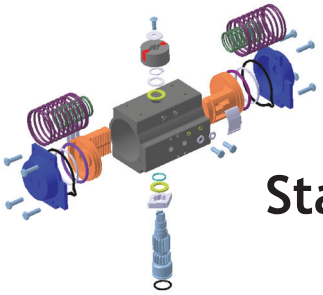
PNEUMATIC ACTUATORS



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.

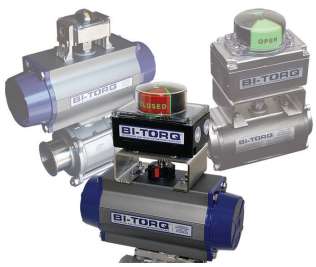
NAMUR Mount Solenoid Valves

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

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. We also offer a superior line of proximity switches for linear and multi-turn applications.



FLP-LT series fusible link shown with FM approved actuator

FLP Complete Assemblies

BI-TORQ Valve Automation's complete line of API 607 certified quarter-turn valves suit a wide range of applications. Carbon and stainless steel ball valves are available in 1/4" through 6" sizes with ANSI flanges and NPT or socket weld ends. Fire safe high performance butterfly valves come in 2" through 24" sizes.

FL Series & Customer Specified Valves

In addition to our own valves, we manufacture customized assemblies for a range of customer-specified quarter turn valves. In addition, a retrofit assembly can be used where safety regulations dictate the addition of a fusible link on valves currently installed.



FLP-LT series fusible link shown with FM approved actuator

2 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.

BI-TORQs Thermal Shutdown Fire Safe Valves Help Meet Insurance Requirements

- AUTOMATIC SHUT-OFF IN CASE OF FIRE
- API 607 FIRE SAFE APPROVAL ON ALL BALL AND BUTTERFLY VALVES
- VALVE CAN BE OPERATED EVEN WHILE SPRING PACK IS ARMED (LT & MT SERIES)
- UL OR FM-APPROVED LINKS AVAILABLE
- HEAVY DUTY ARMING DEVICE
- FACTORY ASSEMBLED AND TESTED
- LINK TEMPERATURES FROM 165°F TO 360°F
- FAIL OPEN OR FAIL CLOSED ORIENTATIONS FOR A VARIETY OF APPLICATIONS



BI-TORQ fusible link assemblies are used in a wide range of applications, including:

- TANK FARMS
- REFINERIES
- CHEMICAL PRODUCTION
- AIRPORT AND TRUCK FUELING STATIONS
- PETROCHEMICAL AND BIOFUELS
- PAINT AND TOXIC CHEMICALS

FUSIBLE LINKS & SAFETY DEVICES



FL-1: For LT, MT and HT-109 models

- Factory Mutual approved; UL and C-UL Listed
- Fusible Link Halves: Stainless Steel
- Fusible Assembly: Solder, Copper, Stainless Steel

NOTE: Model FL-1 Fusible Links are not rated for use in corrosive atmospheres.

LINK PART NUMBER	LINK YIELD TEMPERATURE	MAXIMUM AMBIENT TEMPERATURE
FL-1-165	165°F/74°C	100°F/38°C
FL-1-212	212°F/100°C	150°F/66°C
FL-1-286	286°F/138°C	225°F/107°C
FL-1-360	360°F/182°C	300°F/140°C



K: HT-129 through BT-189 models

- UL listed
- Minimum Load: 3 lbs. (1.36 kg.)
- Maximum Load : 50 lbs. (22.68 kg.)
- Corrosion resistant bronze construction

LINK PART NUMBER	LINK YIELD TEMPERATURE	MAXIMUM AMBIENT TEMPERATURE
314165	165°F/74°C	100°F/38°C
314212	212°F/100°C	150°F/66°C
314280	280°F/138°C	225°F/107°C
314360	360°F/182°C	300°F/140°C

Deadman Handles

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



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.

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.

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)

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.

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PRECISION AND PERFORMANCE

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