MANUAL & ACTUATED TRUE UNION BALL VALVES

Engineered thermoplastic ball valves with trunnion design in PVC, CPVC, PVDF and Natural Polypropylene

A COMPLETE LINE:
- Lateral Reducing Ball Valve
- Manual Ball Valves
- Three-Way Ball Valves
- Air x Air Actuators
- Air x Spring (Fail Safe) Actuators
- Electric Actuators
- Limit Stops
- Limit Switches

THE ONLY THERMOPLASTIC BALL VALVE WITH ALL THESE SAFETY FEATURES:
- True union ends
- Trunnion design
- Heavy-duty, large diameter shaft
- PTFE bearing on shaft
- Dual stem O-rings
- Self-compensating PTFE seats backed with O-rings
- Mounting lugs on body
- 100% individual testing

ELECTRIC & PNEUMATIC ACTUATOR FEATURES:
- Install easily to True Blue Ball Valves... no modifications or special adapters required
- Water and dust-tight designs
- Rugged thermoplastics resist corrosion
- Manual override standard on all popular actuators; available as an option on all others
- Long cycle life – extensively tested and proven
- Compact designs – very small footprint
- Lightweight assemblies reduce piping stress and save shipping cost
SAMPLE SPECIFICATIONS

Series MBV
Thermoplastic (Geon PVC, Corzan CPVC, Kynar PVDF, Natural Polypropylene) ball valves (size) are to have trunnion design, spherically machined ball, PTFE thrust bearing on actuating shaft, mounting lugs on outer body, PTFE seats pre-loaded with O-rings, and (FKM or EPDM) seals. Fittings shall be true-union type (threaded, socket, metric, etc.). All valves are to be 100% individually tested prior to shipment. As manufactured by Plast-O-Matic Valves, Inc.

Series EBV with Ball Valve
All thermoplastic (valve material) ball valves (size) are to be supplied with pneumatically powered actuators. Actuator housing shall be of thermoplastic design, NEMA 4X type to eliminate atmospheric corrosion. It shall include pre-powered limit switch, position indicator and actuator running lights, manual override, and thermal overload protection. Valves are to have trunnion design, spherically machined ball, PTFE thrust bearing on actuating shaft, mounting lugs on outer body, PTFE seats pre-loaded with O-rings, and (FKM or EPDM) seals. Fittings shall be true-union type (threaded, socket, metric, etc.). All actuated valves are to be 100% individually tested prior to shipment. As manufactured by Plast-O-Matic Valves, Inc.

Series ABVA or ABRA with Ball Valve
All thermoplastic (valve material) ball valves (size) are to be supplied with pneumatically (or hydraulically) powered double-acting actuators. Actuator housing shall be of thermoplastic design, water and dust-tight to eliminate atmospheric corrosion. It shall include manual override and position indicator. Valves are to have trunnion design, spherically machined ball, PTFE thrust bearing on actuating shaft, mounting lugs on outer body, PTFE seats pre-loaded with O-rings, and (FKM or EPDM) seals. Fittings shall be true-union type (threaded, socket, metric, etc.). All actuated valves are to be 100% individually tested prior to shipment. As manufactured by Plast-O-Matic Valves, Inc.

Series ABVS or ABMS with Ball Valve
All thermoplastic (valve material) ball valves (size) are to be supplied with pneumatically (or hydraulically) powered fail-safe spring return actuators, pre-set for normally closed (or specify normally open) operation. Actuator housing shall be of thermoplastic design, water and dust-tight to eliminate atmospheric corrosion. It shall include manual override and position indicator. Valves are to have trunnion design, spherically machined ball, PTFE thrust bearing on actuating shaft, mounting lugs on outer body, PTFE seats pre-loaded with O-rings, and (FKM or EPDM) seals. Fittings shall be true-union type (threaded, socket, metric, etc.). All actuated valves are to be 100% individually tested prior to shipment. As manufactured by Plast-O-Matic Valves, Inc.

Series ABRs with Ball Valve
All thermoplastic (valve material) ball valves (size) are to be supplied with pneumatically (or hydraulically) powered fail-safe spring return actuators, pre-set for normally closed (or specify normally open) operation. Actuator housing shall be of thermoplastic design, water and dust-tight to eliminate atmospheric corrosion. It shall include position indicator. Valves are to have trunnion design, spherically machined ball, PTFE thrust bearing on actuating shaft, mounting lugs on outer body, PTFE seats pre-loaded with O-rings, and (FKM or EPDM) seals. Fittings shall be true-union type (threaded, socket, metric, etc.). All actuated valves are to be 100% individually tested prior to shipment. As manufactured by Plast-O-Matic Valves, Inc.

Series TMBV
Thermoplastic (Geon PVC or Corzan CPVC) 3-way ball valves (size) are to have trunnion design, spherically machined ball, PTFE thrust bearing on actuating shaft, mounting lugs on outer body, PTFE seats pre-loaded with O-rings, and (FKM or EPDM) seals. Fittings shall be true-union type (threaded, socket, metric, etc.). All valves are to be 100% individually tested prior to shipment. As manufactured by Plast-O-Matic Valves, Inc.

Series LMBV
Thermoplastic (Geon PVC, Corzan CPVC, Kynar PVDF, Natural Polypropylene) ball valves (size) are to have trunnion design, spherically machined ball, PTFE thrust bearing on actuating shaft, mounting lugs on outer body, PTFE seats pre-loaded with O-rings, and (FKM or EPDM) seals. One fitting shall be true-union type (threaded, socket, metric, etc.) and the other fitting shall be an adapter that threads directly to the ball valve and is (cemented, fused, butt-fused) directly to (size) piping component (tee, cross tee, etc.) so that ball valve is an intrinsic part of piping component. All valves are to be 100% individually tested prior to shipment. As manufactured by Plast-O-Matic Valves, Inc.

3-Way Actuated Valves
Use appropriate actuator listed above, and change first sentence to read: “All thermoplastic (Geon PVC or Corzan CPVC) 3-way ball valves (size) are to be supplied with...”

Hydraulically Actuated Valves
Use appropriate pneumactic actuator above, and change all “pneumatic” references to “hydraulic.”

Limit Stop
Use appropriate pneumactic actuator above, and add “with pre-installed limit stop” to first sentence.

Limit Switch
Use appropriate pneumactic actuator above, and add the following: “Actuated valve includes a pre-wired Limit Switch with a thermoplastic NEMA 4X type housing, adjustable to any open position.”

Corzan® is a trademark of Noveon. Geon® is a trademark of Geon. Kynar® is a trademark of Atofina.

---

CONTENTS:

Sample Specifications............................................. 2

2-WAY BALL VALVES
Manual .................................................. 4
Electrically Actuated .......... See Catalog EBVA
Air Actuated ............................................ 8

3-WAY BALL VALVES
Manual .................................................. 10
Electrically Actuated .......... See Catalog EBVA
Air Actuated ............................................ 14

ACCESSORIES
Limit Switches............................................. 15
Limit Stops ............................................. 15
Lateral Reducing Ball Valve ...................... 16
Engineering Excellence...

Large diameter shaft eliminates breakage
Dual shaft seals eliminate stem leaks
PTFE bearing eliminates shaft wear
PTFE seats backed with O-rings
Mirror polished ball assures smooth operation
True union ends for easy installation
Trunnion design permits downstream piping disconnect; multi-direction flow

Built Into Every Ball Valve

SERIES MBV
Geon® PVC
Corzan® CPVC
Kynar® PVDF
Natural Polypropylene
FKM or EPDM Seals

Standard Connections:
- Threaded - NPT or BSP
- Socket - Schedule 80 or Metric

Custom Connections:
- Spiget
- SAE Flanges
- Sanitary
- JIS (Consult Factory)

Vented Ball Option:
For Sodium Hypochlorite

SERIES TMBV
Geon® PVC,
Corzan® CPVC,
FKM or EPDM Seals

Three Hole Ball:
Prevents dead heading and water hammer in 3-Way valves
(Design required with air actuators)

Two Hole Ball:
Prevents unwanted mixing in 3-Way valves
(Manual & Electric Only)

SERIES LMBV
Geon® PVC
Corzan® CPVC
Kynar® PVDF
Natural Polypropylene
FKM or EPDM Seals

Adapter:
- Simplifies lateral connections
- Replaces zero dead-leg valves

Tee or Other Piping Component:
(supplied by Distributor)

All 2-Way and 3-Way Manual Ball Valves accept identical actuation packages...
with no need for bulky adapter kits or replacement parts

SERIES EBV
Electric Actuators for ⅛” – 2” Valves

SERIES ABV
Air Actuators for ⅛”, ⅜”, 1” Valves

SERIES ABR
Air Actuators for 1¼”, 1½”, 2” Valves

SEE NEW CATALOG EBVA

1384 Pompton Ave., Cedar Grove, NJ 07009 • (973) 256-3000 • Fax (973) 256-4745 • www.plastomatic.com • info@plastomatic.com
An engineered true union ball valve for manual and actuated valve applications

Features:
- Heavy-duty, large diameter shaft to eliminate flexing and breakage.
- Dual shaft seals eliminate leakage.
- PTFE bearing on shaft eliminates friction and wear; stem design is "blow-out" proof.
- PTFE seats energized with O-rings eliminate wear and improve cycle life.
- Trunnion design eliminates lateral ball stress and allows downstream piping to be disconnected under full line pressure.
- Fully concentric and mirror polished ball assures smooth, leakproof operation.
- Multi-direction flow means valve cannot be piped in backwards.
- Smooth flow path eliminates pressure loss.
- True-union ends for ease of piping installation and removal.
- Mounting lugs on body for piping support or easy attachment of True Blue Actuators.

Design:
Known as “The Engineered Ball Valve”, Series MBV provides more safety and design features than any other thermoplastic ball valve. With its mirror-polished ball, perfectly machined sealing surfaces, Trunnion centering design, PTFE thrust bearing and O-ring loaded floating PTFE seats, the True Blue manual ball valve offers smooth turning even in difficult applications. The floating seats automatically compensate for seat wear, and after long-term cycling, the carriers can easily be returned to their original position simply by tightening the union nuts.

The top and bottom “Trunnion” design permits flow and pressure in either direction, and eliminates the stresses inherent to a ball secured only at the top. Sizes 1/2” through 1 1/2” have a full port; size 2” has a tapered port; the ultra smooth flow path virtually eliminates turbulence and pressure loss and permits flow rates that far exceed pipe manufacturers specifications.

Mounting lugs are integrally molded on the sides of each valve. These provide convenient piping support, and allow you to add an actuator in the field with no bulky adapter kits or change-overs. Even after many years, a True Blue Actuator can be added without removing the valve from the piping system.

Materials of Construction:
Series MBV is molded of Type 1 Grade 1 Geon® PVC, Corzan® CPVC, Natural Polypropylene, and Kynar® PVDF. Standard O-ring seals are FKM or EPDM. Seats and shaft bearings are PTFE. Standard connections are threaded (NPT or BSP) or socket (Schedule 80 or Metric). For optional materials and connections, please consult factory.

Each valve is 100% individually inspected and tested prior to shipment.
APPROXIMATE FLOW RATES at 1.0 PSI (0.07 Bar) Pressure Drop

<table>
<thead>
<tr>
<th>Valve Sizes</th>
<th>Cv Factor</th>
<th>1/2</th>
<th>3/4</th>
<th>1</th>
<th>1 1/4</th>
<th>1 1/2</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10</td>
<td>20</td>
<td>40</td>
<td>80</td>
<td>100</td>
<td>120</td>
</tr>
<tr>
<td>Torque in-lbs.</td>
<td></td>
<td>25</td>
<td>35</td>
<td>45</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
</tbody>
</table>

Note: True Blue Valves are rated for full vacuum.

Material Guideline For Pressure and Temperature

This graph provides temperature and pressure guidelines for various materials of construction. Final selection should consider suitability of product and application.

AVERAGE FLOW RATES at 1.0 PSI (0.07 Bar) Pressure Drop

Characteristics of Natural Polypropylene:
- Homopolymer resin.
- Compatible with all popular homopolymer and copolymer piping.
- Meets all requirements of the U.S. Food and Drug Administration as specified in the Code of Federal Regulations, Title 21, Section 177.1520, covering safe use of articles intended for food-contact use.
- Underwriters Laboratories yellow card index rating (in a minimum thickness of 0.120 in.) 115°C, UL94 Flammability Class 94HB in 0.58 inch thickness.
- NSF-listed for possible water uses, non-pressure applications. Also, NSF-listed for DWV pipe and fittings, continuous waste.
- CAS# 9003-07-0.

Natural Polypropylene Ball Valves

Our Polypropylene True Blue Ball Valves provide a cost-effective option for ultra-pure water handling applications. They are manufactured from natural, unpigmented virgin polypropylene, containing no plasticizers or fillers. In addition, our valves are assembled dry, eliminating contamination via any lubricants. Following is additional information which may be found useful in your evaluation process.

TYPICAL RESIN PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>(a)</th>
<th>(b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melt Flow Rate, dg/min</td>
<td></td>
<td>ASTM Method</td>
</tr>
<tr>
<td>Density, g/cm³</td>
<td>12</td>
<td>D 1238</td>
</tr>
<tr>
<td>Notched Izod Compact Strength, ft.-lbs/in.</td>
<td>0.7</td>
<td>(37.3) D 792A-2</td>
</tr>
<tr>
<td>Elastic Modulus, PSI (MPa)</td>
<td>5,000 (34.5)</td>
<td>D 638</td>
</tr>
<tr>
<td>Elongation at Yield, %</td>
<td>11</td>
<td>D 638</td>
</tr>
<tr>
<td>Flexural Modulus, PSI (MPa)</td>
<td>240,000 (1,655)</td>
<td>D 790B</td>
</tr>
<tr>
<td>Rockwell Hardness, R Scale</td>
<td>100</td>
<td>D 785A</td>
</tr>
<tr>
<td>Deflection Temperature at 66°F (455kPa), °F (°C)</td>
<td>198° (92°)</td>
<td>D 648</td>
</tr>
<tr>
<td>Water Absorption after 24 Hrs., %</td>
<td>0.02</td>
<td>D 570</td>
</tr>
<tr>
<td>Environmental Stress-Cracking, hrs.</td>
<td>500, No Failure</td>
<td>D1693</td>
</tr>
<tr>
<td>Coefficient of Linear Thermal Expansion, cm/cm°C:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-30 °C</td>
<td>6.4 x 10⁻⁴</td>
<td></td>
</tr>
<tr>
<td>0 °C</td>
<td>8.6 x 10⁻⁴</td>
<td></td>
</tr>
<tr>
<td>30 °C</td>
<td>9.4 x 10⁻⁴</td>
<td></td>
</tr>
</tbody>
</table>

(a) Values shown are averages and are not to be considered specifications.
(b) ASTM test methods are latest under Society’s current procedures.

All molded specimens prepared by injection (ASTM D 2146).
Series ABVA – Air pressure to open and air pressure to close
Series ABVS – Spring kit easily converts ABVA to “Fail-Safe” operation

Features:
- All plastic construction ideal for corrosive atmosphere.
- Direct manual override standard on ABVA & ABVS.
- Easy field attachment to ball valve.
- Long cycle life – extensively tested & proven.
- ABVS converts easily between normally-open and normally-closed operation.
- Lightweight assembly – less piping stress and lower shipping weight.
- Can be hydraulically actuated.

   Each valve and actuator is 100% individually inspected and tested prior to shipment.

Installation:
The ABVA requires a 4-way air solenoid valve (Part # 8345G1), and ABVS requires a 3-way air solenoid valve (Part # 8320G13) to control actuation. Compressed air should be filtered and lubricated. The hex nuts used to mount the actuator are tapped to facilitate piping support.

Manual Override:
Series ABVA and ABVS have direct override to the ball valve shaft. Series ABVS requires simple loosening of the spring prior to manual override.

Materials of Construction:
Actuator is constructed of corrosion resistant thermoplastics. Seals are Buna-N. For optional materials, please consult factory.

<table>
<thead>
<tr>
<th>Valve Size NPT or BSP</th>
<th>Air x Air Part Number</th>
<th>Weight Lbs.</th>
<th>Air x Air Air Pressure Required</th>
<th>Spring Kit Part Number</th>
<th>Weight Lbs.</th>
<th>Air Pressure Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>ABVA 1.2</td>
<td>0.9</td>
<td>20 - 50 PSI</td>
<td>ABVS 1.2</td>
<td>.3</td>
<td>50 - 80 PSI</td>
</tr>
<tr>
<td>3/4</td>
<td>ABVA 1.6</td>
<td>1.8</td>
<td>20 - 50 PSI</td>
<td>ABVS 1.6</td>
<td>.6</td>
<td>50 - 80 PSI</td>
</tr>
<tr>
<td>1</td>
<td>ABVA 1.6</td>
<td>1.8</td>
<td>20 - 50 PSI</td>
<td>ABVS 1.6</td>
<td>.6</td>
<td>50 - 80 PSI</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pipe Size</th>
<th>Air x Air ** Actuator w/Valve Part Number</th>
<th>A MM</th>
<th>B MM</th>
<th>C MM</th>
<th>D MM</th>
<th>E MM</th>
<th>F MM</th>
<th>G MM</th>
<th>H MM</th>
<th>I MM</th>
<th>J MM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>ABVA 050</td>
<td>5.75</td>
<td>146</td>
<td>0.6</td>
<td>15</td>
<td>5.6</td>
<td>142</td>
<td>3.90</td>
<td>99</td>
<td>1.25</td>
<td>32</td>
</tr>
<tr>
<td>3/4</td>
<td>ABVA 075</td>
<td>7.30</td>
<td>185</td>
<td>0.6</td>
<td>15</td>
<td>7.1</td>
<td>180</td>
<td>5.00</td>
<td>127</td>
<td>1.50</td>
<td>38</td>
</tr>
<tr>
<td>1</td>
<td>ABVA 100</td>
<td>7.30</td>
<td>185</td>
<td>0.6</td>
<td>15</td>
<td>7.8</td>
<td>198</td>
<td>5.55</td>
<td>144</td>
<td>1.90</td>
<td>48</td>
</tr>
</tbody>
</table>

* For spring return simply change ABVA to ABVS and refer to Dimension H.
** To complete part numbers refer to the Order Information section on page 5, the Manual Ball Valve.
The letters MBV are simply replaced by ABVA or ABVS as indicated in the above chart.

TYPICAL AIR CONNECTIONS, ABVA

TYPICAL AIR CONNECTIONS, ABVS

<table>
<thead>
<tr>
<th>K Thread Size</th>
<th>K Thread Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABVA 1.2</td>
<td>.44 in. 11.2 mm</td>
</tr>
<tr>
<td>ABVA 1.6</td>
<td>.44 in. 11.2 mm</td>
</tr>
</tbody>
</table>
Series ABRA – Air pressure to open and air pressure to close
Series ABRs – Spring return model for normally-closed or normally-open operation
Series ABMS – Spring return model with manual override

Features:
- All plastic construction ideal for corrosive atmosphere.
- Manual override standard on ABRA & ABMS.
- Easy field attachment to ball valve.
- Long cycle life – extensively tested & proven.
- ABRs and ABMS can be converted between normally-closed and normally-open.
- Lightweight assembly – less piping stress and lower shipping weight.
- Can be hydraulically actuated.

Each valve and actuator is 100% individually inspected and tested prior to shipment.

### ACTUATOR ONLY – PART NUMBERS, WEIGHTS AND AIR PRESSURE REQUIREMENTS

<table>
<thead>
<tr>
<th>Valve Size NPT or BSP</th>
<th>Actuator Type</th>
<th>Part Number</th>
<th>Weight</th>
<th>Pressure Requirement</th>
<th>Maximum Pressure @ 75°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL 11/4&quot;, 1 1/2&quot;, &amp; 2&quot; BALL VALVES</td>
<td>Air x Air with Manual Override</td>
<td>ABRA</td>
<td>1.5</td>
<td>30 - 50 PSI</td>
<td>2.1 - 3.5 BAR</td>
</tr>
<tr>
<td></td>
<td>Air x Spring without Manual Override</td>
<td>ABRS</td>
<td>2.5</td>
<td>60 - 80 PSI</td>
<td>4.1 - 5.5 BAR</td>
</tr>
<tr>
<td></td>
<td>Air x Spring with Manual Override</td>
<td>ABMS</td>
<td>3.5</td>
<td>60 - 80 PSI</td>
<td>4.1 - 5.5 BAR</td>
</tr>
</tbody>
</table>

Maximum Ambient Temperature 120°F (49°C) ABRS/ABMS shipped “normally-closed”. They can be ordered “normally-open”.

Installation:
The ABRA requires a 4-way air solenoid valve (Part # 8345G1); and ABRs and ABMS require a 3-way air solenoid valve (Part # 8320G13) to control actuation. Compressed air should be filtered and lubricated. The hex nuts used to mount the actuator are tapped to facilitate piping support.

Manual Override:
Series ABRA has direct override to the ball valve shaft. Series ABRs has no manual override. Series ABMS is a spring-return model with direct override to the ball valve shaft.

Materials of Construction:
Actuator is constructed of corrosion resistant thermoplastics. Seals are Buna-N. For optional materials, please consult factory.

### TYPICAL AIR CONNECTIONS

**ABRA**
- AIR TO OPEN
- AIR TO CLOSE
- EXHAUST
- 4-WAY SOLENOID VALVE

**ABRS/ABMS**
- VENT
- SPRING TO CLOSE
- AIR TO OPEN
- SPRING TO CLOSE
- EXHAUST
- 3-WAY SOLENOID VALVE

Part Numbers to order Air x Air Actuator with Valve:
For 1 1/4" pipe size the part # is ABRA125…; 1 1/2" is ABRA150…; 2" is ABRA200…; to complete the part numbers refer to the “Order Information” section on page 5, Manual Ball Valves. The letters MBV are simply replaced by ABRA (Air x Air), ABRS (Air x Spring) or ABMS (Air x Spring with manual override) as indicated.

---

**TYPICAL AIR CONNECTIONS**

**ABRA**
- AIR TO OPEN
- AIR TO CLOSE
- EXHAUST
- 4-WAY SOLENOID VALVE

**ABRS/ABMS**
- VENT
- SPRING TO CLOSE
- AIR TO OPEN
- SPRING TO CLOSE
- EXHAUST
- 3-WAY SOLENOID VALVE

---

1384 Pompton Ave., Cedar Grove, NJ 07009 • (973) 256-3000 • Fax (973) 256-4745 • www.plastomatic.com • info@plastomatic.com
An engineered multiple union ball valve for applications requiring two inlets, two outlets, sampling or diverting

**Features:**
- Heavy-duty, large diameter shaft to eliminate flexing and breakage.
- Dual shaft seals eliminate leakage.
- PTFE bearing on shaft eliminates friction and wear; stem design is “blow-out” proof.
- PTFE seats energized with O-rings eliminate wear and improve cycle life.
- Trunnion design eliminates lateral ball stress and allows downstream piping to be disconnected under full line pressure.
- Smooth flow path minimizes pressure loss.
- Fully concentric and mirror polished ball assures smooth, leakproof operation.
- Three true-union ends for ease of piping installation and removal; helps lower costs and reduce footprint.
- Choice of 2-hole or 3-hole ball.

Each valve is 100% individually inspected and tested prior to shipment.

**Design:**
Known as “The Engineered Ball Valve”, Series TMBV provides more safety and design features than any other thermoplastic ball valve. With its mirror-polished ball, perfectly machined sealing surfaces, Trunnion centering design, PTFE thrust bearing and O-ring loaded floating PTFE seats, the True Blue three-way ball valve offers smooth turning even in difficult applications. The floating seats automatically compensate for seat wear, and after long-term cycling, the carriers can easily be returned to their original position simply by tightening the union nuts.

The 2-hole ball design is standard; it is ideal for applications where flow cannot be mixed. To prevent a momentary no-flow (“dead-head”) condition, an optional 3-hole ball is available. Please specify when ordering.

The top to bottom “Trunnion” design permits flow and pressure in either direction, and eliminates the stresses inherent to a ball secured only at the top. An ultra smooth flow path virtually eliminates turbulence and pressure loss and permits flow rates that far exceed pipe manufacturers specifications.

**Manual Override:**
Series TMBV is molded of Type 1 Grade 1 Geon® PVC and Corzan® CPVC. Standard O-ring seals are FKM or EPDM. Seats and shaft bearings are PTFE. Standard connections are threaded (NPT or BSP) or socket (Schedule 80 or Metric). For optional materials and connections, please consult factory.

**Material Guideline For Pressure and Temperature**

This graph provides temperature and pressure guidelines for various materials of construction. Final selection should consider suitability of product and application.

*Note:* True Blue Valves are rated for full vacuum.

**FLOW CHARACTERISTICS DURING CYCLING**

**BALL STYLE**

**TOP VIEW**

Flow from bottom, center

**2-HOLE STANDARD**

During cycling, the standard 2-hole ball has a momentary dead-head when the ball outlet is between ports.

**3-HOLE OPTION**

During cycling, the optional 3-hole ball has a momentary mixing of streams when the ball outlet is between ports. This option should be specified if a brief interruption of flow will be detrimental to your process.

Add “–A” to Part Number
### APPROXIMATE FLOW RATES at 1.0 PSI (0.07 Bar) Pressure Drop

<table>
<thead>
<tr>
<th>Valve Sizes</th>
<th>1/2</th>
<th>3/4</th>
<th>1</th>
<th>11/2</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cv Factor</td>
<td>4.0</td>
<td>8.0</td>
<td>13.0</td>
<td>38.0</td>
<td>39.0</td>
</tr>
</tbody>
</table>

### TORQUE SPECIFICATIONS

| Torque, in-lbs | 25 | 35 | 45 | 70 | 70 |

### ORDERING INFORMATION

#### Two Hole Design

<table>
<thead>
<tr>
<th>Sizes</th>
<th>Seal</th>
<th>PVC</th>
<th>CPVC (Corzan™)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>EPDM</td>
<td>TMBV050EPT-PV</td>
<td>TMBV050EPT-CP</td>
</tr>
<tr>
<td></td>
<td>FKM</td>
<td>TMBV050VT-PV</td>
<td>TMBV050VT-CP</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>EPDM</td>
<td>TMBV075EPT-PV</td>
<td>TMBV075EPT-CP</td>
</tr>
<tr>
<td></td>
<td>FKM</td>
<td>TMBV075VT-PV</td>
<td>TMBV075VT-CP</td>
</tr>
<tr>
<td>1&quot;</td>
<td>EPDM</td>
<td>TMBV100EPT-PV</td>
<td>TMBV100EPT-CP</td>
</tr>
<tr>
<td></td>
<td>FKM</td>
<td>TMBV100VT-PV</td>
<td>TMBV100VT-CP</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>EPDM</td>
<td>TMBV150EPT-PV</td>
<td>TMBV150EPT-CP</td>
</tr>
<tr>
<td></td>
<td>FKM</td>
<td>TMBV150VT-PV</td>
<td>TMBV150VT-CP</td>
</tr>
<tr>
<td>2&quot;</td>
<td>EPDM</td>
<td>TMBV200EPT-PV</td>
<td>TMBV200EPT-CP</td>
</tr>
<tr>
<td></td>
<td>FKM</td>
<td>TMBV200VT-PV</td>
<td>TMBV200VT-CP</td>
</tr>
</tbody>
</table>

#### Three Hole Design

<table>
<thead>
<tr>
<th>Sizes</th>
<th>Seal</th>
<th>PVC</th>
<th>CPVC (Corzan™)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>EPDM</td>
<td>TMBV050EPT-PV-A</td>
<td>TMBV050EPT-CP-A</td>
</tr>
<tr>
<td></td>
<td>FKM</td>
<td>TMBV050VT-PV-A</td>
<td>TMBV050VT-CP-A</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>EPDM</td>
<td>TMBV075EPT-PV-A</td>
<td>TMBV075EPT-CP-A</td>
</tr>
<tr>
<td></td>
<td>FKM</td>
<td>TMBV075VT-PV-A</td>
<td>TMBV075VT-CP-A</td>
</tr>
<tr>
<td>1&quot;</td>
<td>EPDM</td>
<td>TMBV100EPT-PV-A</td>
<td>TMBV100EPT-CP-A</td>
</tr>
<tr>
<td></td>
<td>FKM</td>
<td>TMBV100VT-PV-A</td>
<td>TMBV100VT-CP-A</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>EPDM</td>
<td>TMBV150EPT-PV-A</td>
<td>TMBV150EPT-CP-A</td>
</tr>
<tr>
<td></td>
<td>FKM</td>
<td>TMBV150VT-PV-A</td>
<td>TMBV150VT-CP-A</td>
</tr>
<tr>
<td>2&quot;</td>
<td>EPDM</td>
<td>TMBV200EPT-PV-A</td>
<td>TMBV200EPT-CP-A</td>
</tr>
<tr>
<td></td>
<td>FKM</td>
<td>TMBV200VT-PV-A</td>
<td>TMBV200VT-CP-A</td>
</tr>
</tbody>
</table>

**NOTE #1:** A two (2) holed ball is standard with 180° uni-directional rotation. To prevent a momentary no-flow (dead-heading) condition during cycling, a three (3) holed ball is available. **NOTE #2:** End connections must be specified. **NOTE #3:** Model numbers listed are for “threaded” end connectors. For “socket” change the the “T” in the model number to “S”.

### DIMENSIONS

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F Ø</th>
<th>G</th>
<th>H Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>4.125</td>
<td>104.8</td>
<td>3.0</td>
<td>76.2</td>
<td>3.125</td>
<td>79.4</td>
<td>2.0</td>
<td>50.8</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>4.625</td>
<td>117.5</td>
<td>3.75</td>
<td>95.3</td>
<td>3.75</td>
<td>95.3</td>
<td>2.5</td>
<td>63.5</td>
</tr>
<tr>
<td>1&quot;</td>
<td>5.50</td>
<td>139.7</td>
<td>4.312</td>
<td>111.1</td>
<td>3.75</td>
<td>95.3</td>
<td>3.0</td>
<td>76.2</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>6.75</td>
<td>171.5</td>
<td>6.125</td>
<td>155.6</td>
<td>4.50</td>
<td>114.3</td>
<td>4.0</td>
<td>101.6</td>
</tr>
<tr>
<td>2&quot;</td>
<td>8.00</td>
<td>203.2</td>
<td>6.125</td>
<td>155.6</td>
<td>4.50</td>
<td>114.3</td>
<td>4.0</td>
<td>101.6</td>
</tr>
</tbody>
</table>
SERIES TABV & TABR • 3-Way Air Actuated Ball Valves

Series TABVA & TABRA – Air x Air Actuation
Series TABVS & TABRS – Air x Spring Fail-Safe Operation

Features:
- Rugged thermoplastic construction ideal for corrosive atmospheres.
- Long cycle life – extensively tested and proven.
- Lightweight assembly – less piping stress and lower shipping weight.
- Pre-assembled to 3-way ball valve; can also be added in the field
- Can be hydraulically actuated.
- Manual override standard on air x air models and TABVS.

Each valve and actuator is 100% individually inspected and tested prior to shipment.

Installation:
Air x Air models require a 4-way air solenoid valve (Part # 8345G1); Air x Spring models require a 3-way air solenoid valve (Part # 8320G13) to control actuation. Compressed air should be filtered and lubricated.

Manual Override:
All 3-way Air x Air models have direct override to the ball valve shaft. Series TABVS (Air x Spring 1/2", 3/4", and 1") requires simple loosening of the spring prior to manual override. Series TABRS (Air x Spring 1 1/2" and 2") should be specified as TABMS if manual override is critical to the application.

Materials of Construction:
Ball valves are available in Geon PVC and Corzan CPVC, with PTFE seats. A 3-hole ball design is standard and prevents a momentary no-flow ("dead head") condition by briefly allowing flow from two ports. If liquids cannot be mixed, please consult factory for 3-way air actuated isolation valve. Seals are available in EPDM or FKM. For complete specifications on the 3-way ball element, please refer to Series TMBV.

Actuator is constructed of corrosion resistant thermoplastics. Seals are Buna-N. For optional materials, please consult factory.

NOTES:
- For spring return simply change TABVA to TABVS or TABRA to TABRS and refer to "H" dimension. Manual override is standard on all but TABRS.
- For optional manual override on 1 1/2" and 2" Air x Spring, change "P" to "M".
- ** TO COMPLETE THE MODEL NUMBER: 1) Add "V" for FKM seal or "EP" for EPDM seals 2) Followed by "T" for NPT threads or "S" for Schedule 80 Socket. 3) Followed by "PV" for PVC or "CP" for CPVC ball valve material.

Dimensions:

<table>
<thead>
<tr>
<th>Pipe Size</th>
<th>Air x Air ** Actuator w/Valve Part Number</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2 TABVA 050 –</td>
<td>5.75</td>
<td>.6</td>
<td>5.6</td>
<td>3.9</td>
<td>1.5</td>
<td>4.13</td>
<td>6.5</td>
<td>2.8</td>
<td>1.75</td>
<td>2.6</td>
<td>5/8</td>
<td>2.75</td>
<td>3.75</td>
<td>1/4-20</td>
<td></td>
</tr>
<tr>
<td>3/4 TABVA 075 –</td>
<td>7.3</td>
<td>.6</td>
<td>7.1</td>
<td>5.0</td>
<td>1.5</td>
<td>4.63</td>
<td>7.1</td>
<td>2.8</td>
<td>2.25</td>
<td>3.25</td>
<td>7/8</td>
<td>3.12</td>
<td>4.24</td>
<td>1/4-20</td>
<td></td>
</tr>
<tr>
<td>1 TABRA 100 –</td>
<td>7.3</td>
<td>.6</td>
<td>7.8</td>
<td>5.55</td>
<td>1.9</td>
<td>5.60</td>
<td>8.0</td>
<td>2.8</td>
<td>2.5</td>
<td>3.3</td>
<td>7/8</td>
<td>3.87</td>
<td>5.12</td>
<td>1/4-20</td>
<td></td>
</tr>
<tr>
<td>1 1/2 TABRA 150 – See Above</td>
<td>.6</td>
<td>9.5</td>
<td>6.5</td>
<td>2.5</td>
<td>6.80</td>
<td>9.9</td>
<td>See Above</td>
<td>3.37</td>
<td>4.2</td>
<td>1</td>
<td>5.00</td>
<td>6.50</td>
<td>3/8-16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 TABRA 200 – See Above</td>
<td>.6</td>
<td>9.5</td>
<td>6.5</td>
<td>2.5</td>
<td>8.00</td>
<td>11.2</td>
<td>See Above</td>
<td>3.37</td>
<td>4.2</td>
<td>1</td>
<td>5.56</td>
<td>7.18</td>
<td>3/8-16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** For spring return simply change TABVA to TABVS or TABRA to TABRS and refer to "H" dimension. Manual override is standard on all but TABRS.

Specifications:

**Includes 3-Way PVC Ball Valve.
Series SW Limit Switches

Features:
- NEMA 4 type housing.
- Plastic construction eliminates atmospheric corrosion.
- Adjustable to any limited open position.
- Manual override valve.

Series SW signals the open or closed valve position for computer verification or to actuate other equipment based on the valve position. Body material is PVC, seals are Buna-N, and the assembly fasteners are stainless steel. The lightweight housing is water and dust-tight with NEMA 4 type design.

The Limit Switch has a camshaft and two single-pole double throw switches. A signal line is wired “through” the switch to the equipment or computer being signaled. A 1/2” NPT conduit fitting seals the wiring connection. AC resistive load rating is 10 amps for each contact. DC loads are rated for 60W (5A at 12 VDC, 2.5A at 24 VDC).

The switches make contact when the valve is either open or closed. The open position of the True Blue Ball Valve is adjustable for throttling by using the optional Series LS Limit Stop.

Mounting:
The Limit Switch is simply mounted to the actuator by two (2) screws. These screws are sealed inside the unit.

Series SW Limit Switch is also adjustable to accommodate the throttle open position.

Components:
- O-RING SEAL (Buna nitrile)
- BALL VALVE
- CLOSE SWITCH
- 1/2” NPT CONDUIT FITTING
- SWITCH ADJUSTMENT SCREW
- MOUNTING SCREW
- CAM BUTTON

Series LS • Limit Stops

Limit Stops maintain desired flow capacity for air actuated ball valves.

A True-Blue air actuated ball valve with a limit stop can be set to maintain any desired flow from virtually closed, up to full capacity of the valve. Two (2) types are available, one for air x air actuators (ABVA & ABRA) and one for air x spring “fail-safe” actuators (ABVS & ABRS).

A simple stainless steel adjusting screw is used to limit the stroke of the air actuator piston. Turning the adjusting screw clockwise limits the opening of the ball valve. A Limit Stop can also be used with a Limit Switch for throttling.

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Ball Valve Size</th>
<th>A (IN)</th>
<th>A (MM)</th>
<th>B (max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALS-1.2</td>
<td>1/2”</td>
<td>6.55</td>
<td>166.4</td>
<td>1.70</td>
</tr>
<tr>
<td>ALS-1.6</td>
<td>3/4” &amp; 1”</td>
<td>8.35</td>
<td>212.1</td>
<td>2.50</td>
</tr>
<tr>
<td>ABRA-2.5-LS*</td>
<td>11/4”, 11/2” &amp; 2”</td>
<td>6.75</td>
<td>171.0</td>
<td>2.00</td>
</tr>
</tbody>
</table>

*Limit Stop for ABR-2.5 must be ordered with Actuator.

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Ball Valve Size</th>
<th>A (IN)</th>
<th>A (MM)</th>
<th>B (max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALS-1.2</td>
<td>1/2”</td>
<td>8.45</td>
<td>214.6</td>
<td>1.80</td>
</tr>
<tr>
<td>ALS-1.6</td>
<td>3/4” &amp; 1”</td>
<td>10.25</td>
<td>260.4</td>
<td>2.25</td>
</tr>
<tr>
<td>ABRA-2.5-LS*</td>
<td>11/4”, 11/2” &amp; 2”</td>
<td>9.87</td>
<td>250.0</td>
<td>2.13</td>
</tr>
</tbody>
</table>

*Limit Stop for ABR-2.5 must be ordered with Actuator.
**ORDERING INFORMATION**

Order by part number and specify exact chemical, temperature and pressures. To arrive at the proper part number, please consult chart. *(The letters and numbers used in this part number are for example only!)*

### LMBV 075

<table>
<thead>
<tr>
<th>LMBV</th>
<th>075</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lateral Reducing Ball Valve</td>
<td></td>
</tr>
<tr>
<td>Valve Pipe Size</td>
<td></td>
</tr>
<tr>
<td>050</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>075</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>100</td>
<td>1&quot;</td>
</tr>
<tr>
<td>125</td>
<td>1 1/4&quot;</td>
</tr>
<tr>
<td>150</td>
<td>1 1/2&quot;</td>
</tr>
<tr>
<td>200</td>
<td>2&quot;</td>
</tr>
</tbody>
</table>

**V**

- Seal Material: V FKM
- EP EPDM

**T**

- Connections: S Socket Ends
- T Threaded Ends
- F Flanges

**PV**

- Body Material: PV PVC
- CF Corzan CPVC
- PP Virgin Polypro
- PF Kynar PVDF

**200**

- Adapter Size: 050 1/2" 20 20 mm
- 075 3/4" 25 25 mm
- 100 1" 32 32 mm
- 125 1 1/4" 40 40 mm
- 150 1 1/2" 50 50 mm
- 200 2" 63 63 mm
- 300 3" 90 90 mm

**X**

- Special Designation: When "X" appears in this spot, it designates BSP threads.

For actuation options, please consult factory.

_*Note:* Standard unit includes ball valve, adapter and tee. Consult factory._

---

**Plast-O-Matic Trunnion Ball Valves** are available with an adapter for easy and compact connection to standard plumbing tees, resulting in substantially stronger and more compact valve connection to lateral piping. This design eliminates the need for a reducer, additional length of pipe, and one of the end connections on the ball valve.

**Advantages over traditional ball valve tee connections:**

- Faster plumbing – reduces labor.
- The overall length is shorter; valve body is partly inside the plumbing tee.
- Design enables removal of valve access to internals.
- Resists piping stresses better than traditional “reducer” connections.
- Eliminates potential variations in pipefitting.
- Assembly is substantially stronger than pipe + reducer + fittings.

**Use in place of zero dead-leg valves:**

- Lower costs.
- Virgin, non-pigmented Kynar PVDF and Natural Polypro compatible with all butt fusion piping systems.
- Zero-static area is similar in size to diaphragm valve; uses same concept of turbulence /flushing action to prevent dead-leg.
- Valve is threaded into adapter – true union – easier maintenance, easier changes in piping system.

Each Adapter fits spigot and socket connectors

Note the two illustrations (at right). Each adapter meets O.D. specifications for socket connectors; the same adapter meets O.D. and I.D. specifications for butt fusion connectors. No need for different type connectors.

---

**SUPERIOR LATERAL CONNECTIONS**

- **Improvess Biping Safety**
- **Replaces “Zero Dead-Leg” Valves**

---

**DISTRIBUTED BY**

PLAST-O-MATIC VALVES, INC.

1384 Pompton Avenue, Cedar Grove, New Jersey 07009

(973) 256-3000 • Fax: (973) 256-4745

www.plastomatic.com • info@plastomatic.com

11/09