Product Overview

Valves, Valve Automation & Accessories
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<th>1-Piece</th>
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<td>2-piece general purpose full port, locking handle</td>
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# 3-Piece

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<th>Automated Pneumatic</th>
<th>Automated Electric</th>
<th>Sizes</th>
<th>Port</th>
<th>Direct Mount</th>
<th>Pyramidal Stem Packing</th>
<th>Body Materials</th>
<th>Trim Material</th>
<th>Available Seats</th>
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<td>3-piece standard service exposed bolt &quot;swing-out&quot; design, locking handle</td>
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<td>No</td>
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<td>SERIES 77</td>
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<td>Direct mount 150# flanged 2-piece, full port with pyramidal stem packing</td>
<td>Firesafe, Unibody, Double Seal design, 150# flanged regular port direct mount</td>
<td>Firesafe direct mount 150# and 300# flanged 2-piece, full port with pyramidal stem packing</td>
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### Automated Pneumatic

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<th>1/2” – 6”</th>
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</tr>
<tr>
<td>SERIES FD9-F6</td>
<td>2-piece split body, 600# flanged, full port with pyramidal stem seal</td>
<td></td>
<td></td>
<td>1/2&quot; – 2&quot;</td>
<td>Full</td>
</tr>
<tr>
<td>SERIES M (FMU, FMB, FMS)</td>
<td>150#, 300#, 600#, Split Body Unidirectional &amp; Bidirectional</td>
<td></td>
<td></td>
<td>150#/300#: 1/2&quot; - 8&quot; 600#: 1/2&quot; - 6&quot;</td>
<td>Full</td>
</tr>
<tr>
<td>SERIES M (FMX)</td>
<td>NPT, Socket Weld, Butt Weld, 3-Piece Class 600 Bidirectional</td>
<td></td>
<td></td>
<td>600#: 1/2&quot; – 2&quot;</td>
<td>Full</td>
</tr>
<tr>
<td>V SERIES</td>
<td>V-Port Control Valves (V7/V8/V9/FVD9)</td>
<td></td>
<td></td>
<td>1/2&quot; – 6&quot;</td>
<td>30º, 60º, 90º, others on request</td>
</tr>
<tr>
<td>VS/VV/VM SERIES</td>
<td>Unibody V-Port Segmented</td>
<td></td>
<td></td>
<td>1” – 16”</td>
<td>Segmented</td>
</tr>
</tbody>
</table>

**Series: 600# Flanged, Metal Seat Flanged, Metal Seat 3-Piece, V-Port Control Valves, Segmented Valves**
<table>
<thead>
<tr>
<th>Series</th>
<th>General Description &amp; Features</th>
<th>Automated Pneumatic</th>
<th>Automated Electric</th>
<th>Sizes</th>
<th>Port</th>
<th>Direct Mount</th>
<th>Pyramidal Stem Packing</th>
<th>Body Materials</th>
<th>Trim Material</th>
<th>Available Seats</th>
<th>End Connections</th>
<th>Max Pressure</th>
<th>Options</th>
<th>Fugitive Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS/PF/PM/PH SERIES, P1S/P1F/P1M/P1H SERIES</td>
<td>High Performance Butterfly Valves</td>
<td>Resilient Butterfly Valves</td>
<td>PFA Lined Butterfly Valves</td>
<td>2&quot; - 36&quot; Stock, larger available</td>
<td>1-1/2&quot; - 36&quot; Stock (up to 126&quot; available)</td>
<td>2&quot; - 12&quot; Stock, (CF for 14&quot; - 24&quot;)</td>
<td>2&quot; - 24&quot; Stock</td>
<td>1/4&quot; - 4&quot;</td>
<td>1/2&quot; - 6&quot;</td>
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<tr>
<td>OC/OS SERIES</td>
<td>NS SERIES</td>
<td>NS20 / NS22 &amp; NS55 SERIES</td>
<td>NS90 / NSD9 &amp; NSV9 SERIES</td>
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<tr>
<td>PS/PF/PM/PH SERIES, P1S/P1F/P1M/P1H SERIES</td>
<td>Resilient Butterfly Valves</td>
<td>PFA Lined Butterfly Valves</td>
<td>NSF 61 &amp; 372 Certified / Dead-end Service Butterfly Valves</td>
<td>1 to 3 pc ball valves, Certified to NSF 61 &amp; 372 for use in water applications</td>
<td>2 pc Flanged ball valves, Certified to NSF 61 &amp; 372 for use in water applications</td>
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<td>P1S/P1F/P1M/P1H SERIES</td>
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<tr>
<td>PS/PF/PM/PH SERIES, P1S/P1F/P1M/P1H SERIES</td>
<td>Resilient Butterfly Valves</td>
<td>PFA Lined Butterfly Valves</td>
<td>NSF 61 &amp; 372 Certified / Dead-end Service Butterfly Valves</td>
<td>1 to 3 pc ball valves, Certified to NSF 61 &amp; 372 for use in water applications</td>
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<td>P1S/P1F/P1M/P1H SERIES</td>
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</tbody>
</table>

Viton® is a registered trademark of E.I. DuPont de Nemours.
# Trunnion Mounted Ball Valves

<table>
<thead>
<tr>
<th>TS SERIES</th>
<th>TM SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Description &amp; Features</strong></td>
<td><strong>General Description &amp; Features</strong></td>
</tr>
<tr>
<td>Trunnion Mounted Soft Seat Ball Valves TS2 - 2 pc cast TS3 - 3 pc forged</td>
<td>Trunnion Mounted Metal Seat Ball Valves TM3 - 3 pc cast</td>
</tr>
<tr>
<td><strong>Automated Pneumatic</strong></td>
<td><strong>Automated Pneumatic</strong></td>
</tr>
<tr>
<td>Call factory for Rack &amp; Pinion or THD automation options</td>
<td>Call factory for Rack &amp; Pinion or THD automation options</td>
</tr>
<tr>
<td>Call factory for Electric automation options</td>
<td>Call factory for Electric automation options</td>
</tr>
<tr>
<td><strong>Sizes</strong></td>
<td><strong>Sizes</strong></td>
</tr>
<tr>
<td>2&quot; - 48&quot;</td>
<td>2&quot; - 24&quot;</td>
</tr>
<tr>
<td><strong>Port</strong></td>
<td><strong>Port</strong></td>
</tr>
<tr>
<td>Full/Regular</td>
<td>Full</td>
</tr>
<tr>
<td><strong>Direct Mount</strong></td>
<td><strong>Direct Mount</strong></td>
</tr>
<tr>
<td>ISO 5211</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td><strong>Pyramidal Stem Packing</strong></td>
<td><strong>Pyramidal Stem Packing</strong></td>
</tr>
<tr>
<td><strong>Body Materials</strong></td>
<td><strong>Body Materials</strong></td>
</tr>
<tr>
<td>A105N, WCB, LF2, LCC, F316, CF8M &amp; others</td>
<td>WCB, CF8M &amp; others</td>
</tr>
<tr>
<td><strong>Trim Material</strong></td>
<td><strong>Trim Material</strong></td>
</tr>
<tr>
<td>See spec sheet</td>
<td>See spec sheet</td>
</tr>
<tr>
<td><strong>Available Seats</strong></td>
<td><strong>Available Seats</strong></td>
</tr>
<tr>
<td>RPTFE, Devlon®, PEEK (See spec sheet)</td>
<td>Tungsten Carbide, Chrome Carbide, Hard Chrome (See spec sheet)</td>
</tr>
<tr>
<td><strong>End Connections</strong></td>
<td><strong>End Connections</strong></td>
</tr>
<tr>
<td>Raised Face, Weld End, RTJ</td>
<td>Raised Face, RTJ</td>
</tr>
<tr>
<td><strong>Max Pressure</strong> (varies by size)</td>
<td><strong>Max Pressure</strong> (varies by size)</td>
</tr>
<tr>
<td>See spec sheet</td>
<td>See spec sheet</td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td><strong>Options</strong></td>
</tr>
<tr>
<td>Call factory</td>
<td>Call factory</td>
</tr>
<tr>
<td>Series</td>
<td>Pig Valve</td>
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<tr>
<td>P1 SERIES</td>
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<tr>
<td>WB SERIES</td>
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<tr>
<td>W6 SERIES</td>
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<tr>
<td>C8/CR SERIES</td>
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<tr>
<td>LB SERIES</td>
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<tr>
<td>TB SERIES</td>
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</tbody>
</table>

**General Description & Features**

- **Valves**
- **Additional options and specials available on request**

**Pig Valve**
- Full schedule 10 pipe diameter for pigging applications
- Dual Valve Isolation Block and Bleed valves, 2000 psi, Firesafe API-607 6th Ed.
- Dual Valve Isolation Block and Bleed valves, 6000 psi, Firesafe API-607 5th Ed.
- 3-Piece Extended Bonnet
- PFA Lined, split body, 150# flanged ball valve
- 3-piece tank bottom valve

**Automated Pneumatic**
- N/A
- N/A

**Automated Electric**
- N/A
- N/A

**Sizes**
- 2", 3", 4"
- 3/8" - 2"
- 1/2"-2"
- 1/4" - 2"
- 1/2" - 8"
- 2", 3", 4"

**Port**
- SCH 10 Pipe Diameter
  - Full
  - Full & Regular
  - Full (C8)
  - Regular (CR)

**Direct Mount**
- Yes
- No
- No
- Yes
- No
- No

**Pyramidal Stem Packing**
- Yes
- No
- No
- Yes
- No
- No

**Body Materials**
- 316SST
- 316SST
- 316SST
- 316SST
- 316SST & WCB
- 316SST

**Trim Material**
- 316SST
- 316SST
- 316SST
- 316SST
- PFA + 316SST
- 316SST

**Available Seats**
- PTFE & RTFE
- CTFE
- PEEK
- PCTFE
- PTFE
- RTFE, PTFE, 50/50 STFE, CTFE, others on request

**End Connections**
- 150# Flanged or Socket Weld
  - NPT
  - NPT, Female x Male Block Valve, Female End Bleed Valve
  - NPT & Socket Weld
  - 150# Flanged
  - Tank weld pad + NPT, Socket Weld, Butt Weld, or Flanged

**Max Pressure (varies by size)**
- 400/285 psi
- 2000 psi
- 6000 psi
- 1000 psi
- 232 psi
- 1000 psi

**Options**
- See spec. sheet
- NACE MR0175
- NACE MR0175
- See spec. sheet
- Oxygen Cleaned, Gear Operator
- Vented Ball, Oxygen Cleaned, Gear Operator, & others
<table>
<thead>
<tr>
<th>Series</th>
<th>THD SERIES</th>
<th>SY SERIES</th>
<th>2R, 2K, 2CI SERIES</th>
<th>180-AL SERIES</th>
<th>S2 SERIES</th>
<th>2RDGO, 2CDGO, and 2KDGO SERIES</th>
<th>Q SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Description &amp; Features</td>
<td>Pneumatic and hydraulic scotch yoke design, Symmetrical and Canted yoke</td>
<td>Pneumatic Scotch Yoke design</td>
<td>Pneumatic Actuators designed to direct mount on ball &amp; butterfly valves</td>
<td>180° Rack &amp; Pinion pneumatic actuators</td>
<td>Corrosion Resistant Stainless steel Rack &amp; Pinion design</td>
<td>&quot;Sandwich&quot; mount, gear overrides</td>
<td>Manual gear operators for quarter-turn valves</td>
</tr>
<tr>
<td>Models</td>
<td>Full range of torques to 1,600,000 in-lbs</td>
<td>Five pressure group models 1,465-12,191 in-lbs, Twenty spring cartridge models 537-10,900 in-lbs</td>
<td>Thirteen models 60-35,550 in-lbs (Double Acting) 96-24,500 in-lbs (Spring Return)</td>
<td>Five models 740 –6200 in-lbs (Double Acting only)</td>
<td>Eight models 88-18,033 in-lbs (Double Acting) 147-9,899 in-lbs (Spring Return)</td>
<td>Six models</td>
<td>Eight standard sizes, Larger sizes available to 410,000 in-lbs</td>
</tr>
<tr>
<td>Variations</td>
<td>Double Acting, Spring Return</td>
<td>Double Acting, Spring Return</td>
<td>ISO 5211, Keystone®, and Centerline® patterns stock, others on request</td>
<td>180° Dribble and batch control</td>
<td>Double Acting, Spring Return</td>
<td>ISO 5211, Keystone®, and Centerline® patterns stock, others on request</td>
<td>ISO 5211 mounting in inventory, others on request</td>
</tr>
<tr>
<td>Types</td>
<td>Pneumatic and hydraulic</td>
<td>Pneumatic</td>
<td>Eleven sizes rack &amp; pinion, two sizes scotch yoke</td>
<td>Pneumatic</td>
<td>Pneumatic</td>
<td>Declutchable</td>
<td>Quarter-turn</td>
</tr>
<tr>
<td>Materials</td>
<td>Ductile iron center body</td>
<td>Ductile iron center body</td>
<td>Hard anodized aluminum body</td>
<td>Hard anodized aluminum body</td>
<td>316SST</td>
<td>Ductile iron</td>
<td>Cast iron (others available)</td>
</tr>
<tr>
<td>Torque stabilizer bar, Dual travel stops, female drive</td>
<td>Identical mounting configuration on both sides, Flip 180° to change rotation of actuator, Dual travel stops</td>
<td>Dual travel stops</td>
<td>Excellent for multi-port valve automation</td>
<td>Dual travel stops, Direct mount, ISO 5211 mounting</td>
<td>Easy declutch mechanism, low profile</td>
<td>Dual travel stops</td>
<td></td>
</tr>
<tr>
<td>Features</td>
<td>Manual overrides, various controls, high/low temp, accumulator tanks, Dribble control, 3-position control &amp; others</td>
<td>Dribble control, 3-position control, Various control accessories</td>
<td>High &amp; low temp seals, Extended travel stops, Reduced cycle times available, Marine epoxy coating on end caps, Dribble control, 3-position control, Various accessories</td>
<td>Dribble control, 3-position control</td>
<td>Dribble control, 3-position control, Various control accessories</td>
<td>Dump valves, NAMUR adaptor plates</td>
<td>Top-mounted limit switches, others</td>
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<tr>
<td>WE/XE/SE SERIES</td>
<td>XC SERIES</td>
<td>KE SERIES</td>
<td>SRX SERIES</td>
<td>FSE SERIES</td>
<td>BFS SERIES</td>
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<tr>
<td>General Description &amp; Features</td>
<td>Weather-Proof, Explosion-Proof, or Submersible electric actuators</td>
<td>CSA Explosion-Proof electric actuators</td>
<td>Weather-Proof &amp; Weather-Proof Spring Return electric actuators</td>
<td>Weather-Proof Spring Return electric actuators</td>
<td>Weather-Proof Battery backup electric actuators</td>
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<tr>
<td>Models/ Sizes</td>
<td>Fourteen sizes, WE-350 to WE-80000, XE-690 to XE-25900, SE-690 to SE-25900</td>
<td>Ten sizes, XC-00690 to XC-25900</td>
<td>Four sizes, KE-440 to KE-3500</td>
<td>Four sizes, SRX-0300 to SRX-1800</td>
<td>Four sizes, FSE-440 to FSE-2300</td>
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<tr>
<td>Variations</td>
<td>On-off &amp; modulating, 12VAC/DC, 24VAC/DC, 110VAC, 220VAC/1PH &amp; other voltages on request</td>
<td>On-off &amp; modulating, 12VAC/DC, 24VAC/DC, 110VAC, 220VAC/1PH</td>
<td>On-Off &amp; Modulating, 110VAC/1PH, 24VAC/VDC, 24VDC, 110VAC, 220VAC/1PH</td>
<td>On-Off &amp; Modulating, 24VDC, 110VAC, 220VAC/1PH</td>
<td>On-Off &amp; Modulating, 110VAC, 220VAC/1PH</td>
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<tr>
<td>Types</td>
<td>Type 4, 4X, 7, Explosion-proof ATEX, submersible, IP68 10M 72HR</td>
<td>CSA Type 4, 4X, 6 &amp; 7, Explosion-proof</td>
<td>IP67 Weather-Proof</td>
<td>IP67 &amp; Type 4,4X Weather-Proof</td>
<td>IP67 &amp; Type 4,4X Weather-Proof</td>
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<tr>
<td>Materials</td>
<td>Die cast aluminum Epoxy coated enclosure</td>
<td>Die cast aluminum Epoxy coated enclosure</td>
<td>Die cast aluminum Epoxy coated enclosure</td>
<td>Die cast aluminum Epoxy coated enclosure</td>
<td>Die cast aluminum Epoxy coated enclosure</td>
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<tr>
<td>Options</td>
<td>Vibration and shock resistant, Fireproof coated enclosure, Intelligent and integral control unit, Analog &amp; digital modulating control cards</td>
<td>Analog Modulating Control Module</td>
<td>Manual override, Analog Modulating Control Module</td>
<td>Manual override, Analog Modulating Control Module</td>
<td>Analog Modulating Control Module</td>
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<tr>
<td>General Description &amp; Features</td>
<td>Limit Switches</td>
<td>Solenoids</td>
<td>Positioners</td>
<td>FM Approved Assemblies</td>
<td>Mighty Controllers</td>
<td>Control Options &amp; Other Accessories</td>
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<tr>
<td><strong>Series</strong></td>
<td>APL SERIES</td>
<td>EX, EC, ES, &amp; others</td>
<td>TVCS, TVC5, &amp; others</td>
<td>PPR, EPR, SS2, SS3 &amp; SS5</td>
<td>FM Assemblies</td>
<td>MVC SERIES</td>
<td></td>
</tr>
<tr>
<td><strong>Models</strong></td>
<td>APL-2, APL-3, APL-4, APL-5, APL-9</td>
<td>EX, EC, ES, &amp; others</td>
<td>TVCS, TVC5, &amp; others</td>
<td>EPR1200, PPR1200, 760, PS2, TZIDC, SS2, SS3, SS5</td>
<td>Speed controls, flow controls, lock-up valves, filter regulators, dribble controls, &amp; others</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Variations</strong></td>
<td>Weatherproof, Explosion-Proof Materials, switch types</td>
<td>Weatherproof, Explosion-Proof Materials, switch types</td>
<td>Weatherproof, Explosion-Proof, 3, 4 or 5-way</td>
<td>Pneumatic, electro-pneumatic, digital or “smart”</td>
<td>Functionality configurable via software</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Types</strong></td>
<td>CSA Type 4, 4X, 7, SPDT, proximity, low voltage, high amp. &amp; others</td>
<td>SPDT, proximity, low voltage, high amp. AS-i &amp; others</td>
<td>2-position, 3-position, single or dual coil</td>
<td>Rotary or linear</td>
<td>Safe areas, Explosion Proof</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Materials</strong></td>
<td>Aluminum or Stainless Steel</td>
<td>Aluminum or Stainless Steel</td>
<td>Aluminum or Stainless Steel</td>
<td>Aluminum body</td>
<td>Polycarbonate, Aluminum, or Stainless Steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Features</strong></td>
<td>2-way &amp; 3-way position indicators</td>
<td>2-way &amp; 3-way position indicators</td>
<td>Direct-mount</td>
<td>Easy to calibrate, repeatable</td>
<td>Full Port, Direct-mount, Pyramidal Stem Packing</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td>Several types of communication options</td>
<td>Several types of communication options</td>
<td>Various voltages &amp; configurations</td>
<td>See spec. Sheet</td>
<td>Factory installed apps, local hand controls</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*HART, Fieldbus, FM Approved, Pneumatic, electro-pneumatic, digital “smart”*
**Additional Ball Valve Options and Variations**

**Oval Handle**
The oval shaped handle allows for operation without the chance of dislodging a standard design handle that clothing or other equipment may catch in passing by a valve.

**Spring Return Fail-Safe Handle**
This handle is designed for use in critical services where the open or closed position must be maintained by manual positioning. Manual release of the handle will result in spring-to-close or spring-to-open as the application requires. Sizes ¼” to 1½” available on direct mount valves.

**Side Vented Ball Option**
Vents pressure to the upstream side. Equalizes pressure in the valve caused by thermal expansion of liquid. Maintains seat seal and prevents blowout of the seats. (Stem slot is vented as standard.)

**Ball Valve Seat Materials**

We offer a variety of seat materials to cover numerous flow and service applications. Below is a brief description of the seat materials. Some are stock and others are available upon special request. Temperatures are for reference only. Refer to pressure-temperature charts on individual valve sheets.

<table>
<thead>
<tr>
<th>Name</th>
<th>Material Composition</th>
<th>Max. Temp.</th>
<th>Application &amp; Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTFE</td>
<td>Reinforced Teflon® 15% Glass Fiber/ 85% PTFE</td>
<td>450°F</td>
<td>Glass fiber reinforced PTFE is our standard seat material. Has chemical resistance of PTFE with the improved wear and abrasion resistance. Versatile temperature characteristics.</td>
</tr>
<tr>
<td>50/50 STFE</td>
<td>50% SST Powder/ 50% PTFE</td>
<td>550°F</td>
<td>The 50/50 composition gives this seat material good sealing and temperature resistant properties. Good for steam and abrasive applications. Better cold flow properties than RTFE.</td>
</tr>
<tr>
<td>PTFE</td>
<td>Virgin Teflon®</td>
<td>400°F</td>
<td>Good chemical resistance and lower torque values. Used for many general applications. Good for low cycle life applications</td>
</tr>
<tr>
<td>TFM™-1600</td>
<td>Modified Teflon®</td>
<td>500°F</td>
<td>Second generation PTFE. Offers better creep resistance. Lower coefficient of friction provides lower torque values and resists deformation. Ideal for applications requiring higher purity such as semi-conductor. Resists “popcorning” in monomer service, like Butadine.</td>
</tr>
<tr>
<td>CTFE</td>
<td>25% Carbon Graphite/ 75% PTFE</td>
<td>480°F</td>
<td>Good for low pressure steam applications and abrasive and slurry services.</td>
</tr>
<tr>
<td>PCTFE</td>
<td>Polychlorotrifluorethene</td>
<td>212°F</td>
<td>Ideal for applications with low or cryogenic temperatures.</td>
</tr>
<tr>
<td>PEEK</td>
<td>Polyether Ether Ketone</td>
<td>550°F</td>
<td>Good chemical resistance with higher temperature tolerance.</td>
</tr>
<tr>
<td>Delrin®</td>
<td>DuPont™ Polyoxyethylene</td>
<td>180°F</td>
<td>Good for high pressure applications.</td>
</tr>
<tr>
<td>UHMWPE</td>
<td>Ultra High Molecular Weight Polyethylene</td>
<td>180°F</td>
<td>UHMWPE has good abrasion resistance, good for abrasive and slurry services. Torques are significantly higher than RTFE. Good for tobacco and nuclear services.</td>
</tr>
<tr>
<td>MG1241</td>
<td>5% Graphite/ 20% Glass Fiber/ 75% PTFE</td>
<td>480°F</td>
<td>Good for high cycle applications and abrasive service.</td>
</tr>
<tr>
<td>Stellite®/ 316SST</td>
<td>Stellite® Inlay/ 316SST*</td>
<td>661°F</td>
<td>Unidirectional or Bidirectional shut-off. *Other base material available.</td>
</tr>
<tr>
<td>TC/316SST</td>
<td>Tungsten Carbide Coated 316SST*</td>
<td>842°F</td>
<td>Unidirectional or Bidirectional shut-off. *Other base material available.</td>
</tr>
<tr>
<td>CrC/316SST</td>
<td>Chrome Carbide Coated 316SST*</td>
<td>932°F</td>
<td>Unidirectional or Bidirectional shut-off. *Other base material available.</td>
</tr>
</tbody>
</table>

*See individual product specification brochures for additional seat options and applications.*
About A-T Controls

A-T Controls is a global leader in the design, manufacturing and sale of manual & automated process valves for all types of industries. We are known for our extensive inventory and highly experienced staff that enable us to provide the customer solutions needed to fulfill most valve and actuator requirements, while offering both a competitive price and the fastest turnaround in the industry.

Our mission at A-T Controls is to provide quality valve and automation products through solutions-oriented selling and manufacturing with responsive communication.

Our products are used in virtually every industry including: Oil & Gas, Refining, Petrochemical, Chemical Processing, Pulp & Paper, Mining, Transportation, Food and Beverage, Pharmaceuticals, Marine, HVAC, Power and more.

Founded in 1994, A-T Controls currently operates out of the primary facility in Cincinnati, Ohio and another in Stafford, Texas with several sales offices throughout North America. Our Products are sold and serviced through a network of distributors throughout the U.S. and Canada, parts of Central and South America, South Africa, and Asia-Pacific.

A-T Controls is proud to be a member of the PON family with shared core values.

- Passion to Perform
- Trust to Act
- Act Responsibly
- Make it Fun
A-T Product Literature: Offering, Policy, and How to Order

Printed Copies
To request copies of printed literature, please visit our website to submit the online form from the Literature Request button on the home page (http://www.a-tcontrols.com/literature-request.aspx).

For your reference, a date code and item number (LIT00XX) is printed on each brochure, typically on the lower left of back cover. Please reference the item code, brochure title and quantity when ordering.

Electronic Documents
ATControls.com contains a wealth of resources, including PDF downloads of all A-T product catalogs, application-specific white papers and more.

A-T Literature Policy:
Our printed literature and price books are available to you free of charge, but we do ask that you pay shipping costs. Please be sure to provide a collect shipping code with your request.
We do our printing in-house from our Cincinnati facility, and aim to print-on-demand so that printed copies remain as up to date as possible. Please plan your requests to allow a few days time for processing prior to shipment.

Quality & Certifications
At A-T Controls, we are committed to quality and it is our mission to supply the highest value and best quality valve and valve automation products available in the industry. Our objective is to provide these quality products in a timely manner to our valued customers and distribution partners. We will strive to attain continuous improvement and innovation in product design, performance, value and quality management system, which we will measure based on internal and customer driven feedback. The goal of A-T Controls is to operate at the highest level of integrity in our relations with customers, vendors and personnel. For quality documentation not linked here, please call the office to request from our quality manager.
## Manual Ball Valve Part Number Matrix

**1 Prefix**
- F Firesafe Tested (see valve series for details & testing)
- NS NSF 61 & 372 Certified Series

**2 Valve Series**
- 10 1pc. Regular Port 2000 WOG
- 20 2pc. Full Port 1000 WOG
- 21 2pc. Regular Port 2000/1500 WOG
- 22 2pc. Direct Mount 1000 WOG, Full Port
- 23 2pc. 3000 WOG, Seal-Welded
- 24 2pc. 3000 WOG
- 26 2pc. 6000 WOG, Seal-Welded
- 30 3-way Flanged, Full Port
- 31 3-way Flanged, Direct, Full Port
- 33 3, 4, 5-way Full Port, Multiport
- 3B 3-way NPT, Regular Port
- 55 3pc. 1000/800 WOG, Full Port
- 77 3pc. 1000/800 WOG, Full Port, Sanitary
- 7S Series 7S, EC 1935/2004 Compliant
- HP 3pc. Forged High Purity
- H78 3pc. Cast High Purity, Encapsulated Bolts
- 83 3pc. 2000/1500 WOG, Full Port
- 8R 3pc. 2000/1500 WOG, Regular Port
- 88 3pc. Direct Mount 2000/1500/1000 WOG, Regular Port
- 90 2pc. Flanged Full Port (Investment Cast)
- 91 Unibody Regular Port Flanged
- 9R Unibody Regular Port Flanged
- 93 2pc. Flanged Full Port (Sand Cast)
- V7 3pc. Sanitary, V-port
- V7S Series V7S, EC 1935/2004 Compliant

**4 End Connection**
- TH NPT Ends
- SW Socket Weld Ends
- BW Butt Weld Ends
- EW Extended Butt Weld Ends
- F1 150# Flanged Ends
- F3 300# Flanged Ends
- F6 600# Flanged Ends
- FR 600# RTJ Flanged Ends
- SA Sanitary Clamp Ends
- SF Sanitary Clamp Ends w/ Cavity Filler
- DA Tube O.D. Ends
- DF Tube O.D. Ends w/ Cavity Filler
- DS Sanitary Clamp x Tube O.D. Ends
- TE NPT x Extended Butt Weld
- TS NPT x Socket Weld
- MF Male NPT x Female NPT
- QQ Tube Socket Weld
- W1 150# Wafer
- W3 300# Wafer
- W6 600# Wafer

**5 Valve Size**
- 0025 1/4"  
- 0038 3/8"  
- 0050 1/2"  
- 0075 3/4"  
- 0100 1"  
- 0125 1-1/4"  
- 0150 1-1/2"  
- 0200 2"  
- 0250 2-1/2"  
- 0300 3"  
- 0400 4"  
- 0600 6"  
- 0800 8"  
- 1000 10"  
- 1200 12"  

**6 Seat, Lining & Trim Materials**
- X Reinforced TFE Seats (RTFE)  
- P Virgin TFE Seats (PTFE)  
- U UHMWPE Seats  
- D Delrin® Seats  
- S 50/50 STFE Seats  
- C 25% CS Powder/75% TFE Seats (CTFE)  
- T TFM™-1600 Seats  
- E All TFM™-1600 Seats, Seals & Packing  
- A 50% SS Powder/50% TFM™-1600 Seats (STFM)  
- F PTFE Cavity Filler Seats  
- K PCTFE Seats (Cryogenic)  
- L PFA Lined w/ PTFE Seats  
- M MG1241 Seats  
- Z PEEK Seats  
- G TFE Seats w/ Non-Standard Graphite Packing & Gaskets  
- H HCR Coated Ball/Stellite® Inlay Seats  
- I Chrome Carbide Coated 316 SST Seats & Ball  
- J Chrome Carbide Coated 316 SST Seats & Ball  
- B Chrome Carbide Inconel® 718 Seats & Ball  
- A 17-4 PH® Stem  
- M Marine Epoxy Coating  
- 9 Chemraz 564  
- 7 Perlast® G75M  
- 6 Kalrez® 6375  
- 4 Kalrez® 4079  
- 93 Duplex 2205 Stem  
- 100 Chemraz 564  
- 107 17-4 PH® Stem  
- 90 Elastomer for Ball & Seat  
- 91 Elastomer for Ball & Seat  
- 92 Elastomer for Ball & Seat  
- 93 Elastomer for Ball & Seat  
- 94 Elastomer for Ball & Seat  
- 95 Elastomer for Ball & Seat  
- 96 Elastomer for Ball & Seat  
- 97 Elastomer for Ball & Seat  
- 98 Elastomer for Ball & Seat  
- 99 Elastomer for Ball & Seat  
- B3137 Gasket Material  
- C Duplex 2205 Stem  
- K PEEK Seats  
- L PFA Lined w/ PTFE Seats  
- M MG1241 Seats  
- Z PEEK Seats  
- G TFE Seats w/ Non-Standard Graphite Packing & Gaskets  
- H HCR Coated Ball/Stellite® Inlay Seats  
- I Chrome Carbide Coated 316 SST Seats & Ball  
- J Chrome Carbide Coated 316 SST Seats & Ball  
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- 9 Chemraz 564  
- 7 Perlast® G75M  
- 6 Kalrez® 6375  
- 4 Kalrez® 4079  
- 93 Duplex 2205 Stem  
- 100 Chemraz 564  
- 107 17-4 PH® Stem  
- 90 Elastomer for Ball & Seat  
- 91 Elastomer for Ball & Seat  
- 92 Elastomer for Ball & Seat  
- 93 Elastomer for Ball & Seat  
- 94 Elastomer for Ball & Seat  
- 95 Elastomer for Ball & Seat  
- 96 Elastomer for Ball & Seat  
- 97 Elastomer for Ball & Seat  
- 98 Elastomer for Ball & Seat  
- 99 Elastomer for Ball & Seat  
- B3137 Gasket Material  
- C Duplex 2205 Stem  
- K PEEK Seats  
- L PFA Lined w/ PTFE Seats  
- M MG1241 Seats  
- Z PEEK Seats  
- G TFE Seats w/ Non-Standard Graphite Packing & Gaskets  
- H HCR Coated Ball/Stellite® Inlay Seats  
- I Chrome Carbide Coated 316 SST Seats & Ball  
- J Chrome Carbide Coated 316 SST Seats & Ball  
- B Chrome Carbide Inconel® 718 Seats & Ball  

**7 Special Designations**
- X No Specials, Series Standard  
- G Gear Operator  
- H Gear Operator with Lockout Plate  
- L Lockable Handle  
- O Oval Handle (available on some)  
- S Spring Return Handle (Direct Mount only)  
- 4" Lockable Stem Extension

**8 Additional Specials**
- X No Specials, Series Standard  
- O Oxygen Cleaned  
- Z Special End Configuration  
- V Vented Ball  
- B Bonnet Extension Lockable Handle  
- F Fugitive Emissions Bonnet  
- D Degreased & Bagged  
- A Vented Ball, Degreased & Bagged  
- B Vented Ball, Oxygen Cleaned  
- C Attenuator (Segment V-port only)

**9 Special Designation**
- Blank No Designation, Valve Series Standard  
- X Multiple Option Designation  
- 3 30° V-port (v-ball)  
- 6 60° V-port (v-ball)  
- 9 60° V-port (v-ball)  
- A 17-4 PH® Stem  
- B XM-19 (Nitrilo 50) Stem  
- C Duplex 2205 Stem  
- D Inconel® 718 Stem  
- E A286 Stem  
- L L-Port 3-way arrangement  
- T T-Port 3-way arrangement  
- X No Specials, Standard (HP/H78 Series)  
- S Anti-Static Option (HP/H78 Series)

**10 O-Ring**
- Blank Standard  
- X Multiple Option Designation  
- 2 Marked Z1028  
- 4 Kalrez® 4079  
- 5 Chemraz 505  
- 6 Kalrez® 6375  
- 7 Perlast® G75M  
- 9 Chemraz 564  
- B Low Temp Buna  
- E EPDM  
- S Silicone

**11 Additional Specials**
- Blank Standard  
- X Multiple Option Designation  
- B B7M Bolting  
- M Marine Epoxy Coating

---

**HOW TO ORDER MANUAL VALVES**

### Standard:

<table>
<thead>
<tr>
<th>Valve</th>
<th>Code</th>
<th>Actuator Options</th>
<th>Size</th>
<th>Special Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3</td>
<td>4 5 6 7</td>
<td>8 9 10 11</td>
<td>F 88 C</td>
<td>TH</td>
</tr>
</tbody>
</table>

### With Options Added:

<table>
<thead>
<tr>
<th>Valve</th>
<th>Code</th>
<th>Actuator Options</th>
<th>Size</th>
<th>Special Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3</td>
<td>4 5 6 7</td>
<td>8 9 10 11</td>
<td>F 88 C</td>
<td>TH</td>
</tr>
</tbody>
</table>

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*TFM™ is a trademark of Dyneon™, a 3M Company. Stellite® is a trademark of the Deloro Stellite Company, Inc. Inconel® is a registered trademark of Inco Alloys/Special Metals Corporation.*
### Automated Ball Valve Part Number Matrix

| 1 | Prefix | 2 | Valve Series | 3 | Body/Ball/Stem Material | 4 | End Connection | 5 | Seat, Lining & Trim Materials | 6 | Valve Size | 7 | Actuator - Pneumatic (DA) | 8 | Accessories/Options |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10c | Regular Port 2000 WOG | 3pc | Cast High Purity, Encapsulated Bolts | 025 | 1/4” | TR15 TR05SR | X | No Specials |
| 20c | Full Port 1000 WOG | 3pc | 1000/800 WOG, Full Port | 038 | 3/8” | TR25 TR04SR | A | TYPE 4 Limit Switch |
| 21c | Regular Port 2000/1500 WOG | 3pc | 1000/800 WOG, Full Port, Sanitary | 050 | 1/2” | TR20 TR03SR | B | TYPE 7 Limit Switch |
| 22c | Direct Mount 1000 WOG, Full Port | 3pc | Series 77, EC 1935/2004 Compliant | 075 | 3/4” | TR15 TR02SR | C | Intrinsically Safe Limit Switch |
| 24c | 2pc 3000 WOG | 2pc | Forged High Purity | 100 | 1” | TR15 TR01SR | Q | TYPE 4 SST Limit Switch |
| 30c | 3-Way Flanged, Full Port | 2pc | Flanged Ends | 105 | 1 1/4” | TR15 TR00SR | R | TYPE 7 SST Limit Switch |
| 31c | 3-Way Flanged, Direct Mount, Full Port | 2pc | Regular Port 2000/1500 WOG, Regular Port | 125 | 1 1/2” | TR15 TR05SR | Z | 180° Operation |
| 32c | 3, 5-Way Full Port, Multiport | 2pc | Unibody Regular Port Flanged | 150 | 1 1/4” | TR15 TR04SR | H | HS1 High Speed Electric |
| 33c | 3-Way NPT, Regular Port | 2pc | Unibody Regular Port Flanged | 200 | 2” | TR15 TR03SR | S | HS2 High Speed Electric |
| 34c | 2pc Flanged Full Port (Investment Cast) | 2pc | Unibody Regular Port Flanged | 250 | 2 1/2” | TR15 TR02SR | T | 30° V-Port (v-ball) |
| 35c | 3pc. Cast High Purity, Encapsulated Bolts | 2pc | Unibody Regular Port Flanged | 300 | 3” | TR15 TR01SR | 6 | 60° V-Port (v-ball) |
| 36c | 3pc. 1000/800 WOG, Full Port | 2pc | Unibody Regular Port Flanged | 400 | 4” | TR15 TR00SR | 9 | 90° V-Port (v-ball) |
| 37c | 3pc. 1000/800 WOG, Full Port, Sanitary | 2pc | Unibody Regular Port Flanged | 600 | 6” | TR15 TR05SR | Blank | No Designation, SST Stem |
| 38c | Series 77, EC 1935/2004 Compliant | 2pc | Unibody Regular Port Flanged | 800 | 8” | TR15 TR04SR | A | 17-4 PH® Stem |
| 39c | 2pc. Forged High Purity | 2pc | Unibody Regular Port Flanged | 1000 | 10” | TR15 TR03SR | B | XM-19 (Nitronic 50) Stem |
| 40c | 1pc. Regular Port 2000 WOG | 2pc | Flanged Ends | 1200 | 12” | TR15 TR02SR | C | Duplex 2205 Stem |
| 41c | 2pc. Full Port 1000 WOG | 2pc | Flanged Ends | 1400 | 14” | TR15 TR02SR | D | Inconel® 718 Stem |
| 42c | 2pc. Full Port 2000/1500 WOG | 2pc | Flanged Ends | 1600 | 16” | TR15 TR02SR | L | L-Port 3-Way arrangement |
| 43c | 2pc. Direct Mount 2000/1500 WOG, Full Port | 2pc | Flanged Ends | 1800 | 18” | TR15 TR02SR | T | T-Port 3-Way arrangement |
| 44c | 2pc. Direct Mount 2000/1500 WOG, Regular Port | 2pc | Flanged Ends | 2000 | 20” | TR15 TR02SR | 2 | 2 Position, 180° control for Wine Industry |
| 45c | 2pc. Flanged Full Port | 2pc | Flanged Ends | 2500 | 25” | TR15 TR02SR | P | 3 Position, 180° control for Wine Industry |
| 46c | 1pc. Regular Port 2000 WOG | 2pc | Flanged Ends | 3000 | 30” | TR15 TR02SR | X | No Specials, Standard (HHH/HH78 Series) |
| 47c | 2pc. Full Port 1000 WOG | 2pc | Flanged Ends | 5000 | 50” | TR15 TR02SR | S | Anti-Static Option (HHH/HH78 Series) |
| 48c | 2pc. Full Port 2000/1500 WOG | 2pc | Flanged Ends | 10000 | 100” | TR15 TR02SR | Blank | No Specials, Standard (HHH/HH78 Series) |
| 49c | 2pc. Direct Mount 2000/1500 WOG, Full Port | 2pc | Flanged Ends | 20000 | 200” | TR15 TR02SR | X | No Specials, Standard (HHH/HH78 Series) |
| 50c | 2pc. Direct Mount 2000/1500 WOG, Regular Port | 2pc | Flanged Ends | 50000 | 500” | TR15 TR02SR | S | Anti-Static Option (HHH/HH78 Series) |

### HOW TO ORDER AUTOMATED VALVES

1 2 3 - 4 5 - 6 / 7 - 8 9 - 10

↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓

F 88 C - T X - 025 /2R2D - X X
# Resilient Seated Butterfly Valve Part Number Matrix

**A-T Controls OC/OS Series Resilient Seated Butterfly Valves**

<table>
<thead>
<tr>
<th>1 Valve Series</th>
<th>AS Series Lined Resilient Seated Butterfly Valves</th>
</tr>
</thead>
<tbody>
<tr>
<td>OC</td>
<td>A-T Split Body Lined Butterfly Valve</td>
</tr>
<tr>
<td>OS</td>
<td>A-T BFV with Square Stem (2-12”) (Standard)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2 Body Material</th>
<th>(No Designation) = SST Body</th>
</tr>
</thead>
<tbody>
<tr>
<td>blank</td>
<td>B Ductile Iron (Standard)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3 End Connection</th>
<th>L1 125/150# Lug</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1 125/150# Wafer with Guide Holes</td>
<td></td>
</tr>
<tr>
<td>W2 125/150# Wafer (no Guide Holes)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4 Valve Size</th>
<th>0150 1-1/2” 1400 14” 3000 30”</th>
</tr>
</thead>
<tbody>
<tr>
<td>0200 2” 1600 16” 3200 32”</td>
<td></td>
</tr>
<tr>
<td>0250 2-1/2” 1800 18” 3600 36”</td>
<td></td>
</tr>
<tr>
<td>0300 3” 2000 20” 4000 40”</td>
<td></td>
</tr>
<tr>
<td>0400 4” 2400 24” 4200 42”</td>
<td></td>
</tr>
<tr>
<td>0500 5” 3000 30” 4800 48”</td>
<td></td>
</tr>
<tr>
<td>0600 6” 3600 36”</td>
<td></td>
</tr>
<tr>
<td>0800 8” 4200 42”</td>
<td></td>
</tr>
<tr>
<td>1000 10”</td>
<td></td>
</tr>
<tr>
<td>1200 12”</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5 Seat Material/Style</th>
<th>B Buna P PTFE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPDM V Viton®</td>
<td></td>
</tr>
<tr>
<td>H High Temp EPDM</td>
<td></td>
</tr>
<tr>
<td>F Food Grade EPDM (FDA compliant) (up to 12”)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6 Disc Material/Style</th>
<th>B Aluminum Bronze</th>
</tr>
</thead>
<tbody>
<tr>
<td>D Ductile Iron (Nickel Plated)</td>
<td></td>
</tr>
<tr>
<td>N Nylon Coated Ductile Iron</td>
<td></td>
</tr>
<tr>
<td>S 316 SST</td>
<td></td>
</tr>
<tr>
<td>U Undercut Aluminum Bronze (6” and larger only)</td>
<td></td>
</tr>
<tr>
<td>W Polished 316 SST</td>
<td></td>
</tr>
<tr>
<td>Y Undercut Polished 316 SST (6” and larger only)</td>
<td></td>
</tr>
<tr>
<td>Z Undercut 316 SST (6” and larger only)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7 Stem Bushing</th>
<th>R PTFE</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Lubricated Bronze</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8 Operator Designation</th>
<th>X Bare Stem</th>
</tr>
</thead>
<tbody>
<tr>
<td>H Standard 10 point Handle</td>
<td></td>
</tr>
<tr>
<td>S Stainless Steel 10 point Handle</td>
<td></td>
</tr>
<tr>
<td>G Gear Operator</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9 Stem</th>
<th>A 17-4 PH® Stem</th>
</tr>
</thead>
</table>

**HOW TO ORDER MANUAL AS SERIES BUTTERFLY VALVES**

```
12  3  4  5 6 7  8 9
↓↓↓  ↓↓↓  ↓↓↓  ↓↓↓
OSB - W1 - 0200 - EDR - X E
```

**HOW TO ORDER MANUAL NS SERIES BUTTERFLY VALVES**

```
12  3  4  5 6 7  8 9
↓↓↓  ↓↓↓  ↓↓↓  ↓↓↓
NS - L1 - 0400 - NBR - X A
```

**HOW TO ORDER AUTOMATED RESILIENT SEATED BUTTERFLY VALVES**

```
12  3  4  5 6 7  8 9
↓↓↓  ↓↓↓  ↓↓↓  ↓↓↓
OSB - W1 - 0200 - EDR - X E
```

**EXAMPLE:**

```
ASC-L1-0600-PFR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**NOTE:** In order for a complete valve to be NSF 61 & 372 rated, it must have a NSF 61 & 372 rated seat and a NSF 61 & 372 disc.

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```

**EXAMPLE:**

```
NS-L1-0400-NBR-XA
```
# High Performance Butterfly Valve Part Number Matrix

## A-T Controls POWER-SEAL High Performance Butterfly Valves

### 1 Valve Series
- **PS**: Power-Seal Soft Seat
- **PF**: Power-Seal Firesafe Seat
- **PM**: Power-Seal Metal Seat
- **PH**: Power-Seal Metal Seat High Temp
- **P1S**: Power-Seal P1S Soft Seat
- **P1F**: Power-Seal P1F Firesafe Seat
- **P1M**: Power-Seal P1M Metal Seat
- **P1H**: Power-Seal P1H Metal Seat High Temp

### 2 Body Material
- **blank**: (No Designation) = CF8M (316 SST)
- **C**: Carbon Steel  J  CF3 (304L SST)
- **A**: Alloy 20  S  LCB
- **M**: Monel  N  Inconel® 625
- **D**: CD3MN Duplex SST  B  Aluminum-Bronze
- **T**: Hastelloy C-276

### 3 End Connection
- **L1**: Class 150 Lug
- **L3**: Class 300 Lug
- **W1**: Class 150 Wafer with Guide Holes
- **W3**: Class 300 Wafer with Guide Holes

### 4 Valve Size
- **0200**: 2”
- **0250**: 2-1/2”
- **0300**: 3”
- **0400**: 4”
- **0500**: 5”
- **0600**: 6”
- **0800**: 8”
- **1000**: 10”
- **1200**: 12”
- **1400**: 14”
- **1600**: 16”
- **1800**: 18”

### 5 Seat Material
- **P**: PTFE*  6  316L SST (Standard on PM & P1M)
- **R**: RTFE (Standard on PS)  7  Inconel® 625 (Standard on PH & P1H)
- **G**: G2TFE (Standard on P1S)  F  RTFE/316L SST (Standard on PF)
- **S**: 50/50 STFE*  G2TFE/316L SST (Standard on P1F)
- **T**: TFM™-1600*  W  Hastelloy C-276

*When used in P1F valves the soft seat is backed up with a 316L SST secondary seat.

### 6 Disc Material/Style
- **S**: CF8M (316 SST) (Standard on CS and SST body PS & P1S)
- **X**: Same as Body Material
- **7**: CF8M (316 SST)/Stellite® (Standard on PH & P1H)
- **6**: CF8M (316 SST)/HCE (Standard on PM, P1M, PF & P1F)

### 7 Stem Bearing
- **R**: PTFE Composite (Standard with Soft Seat)
- **C**: Carbon Graphite (Standard with Firesafe & Metal Seat) or Metaloplast (Standard on P1F)
- **B**: Bronze
- **+**: Other

### 8 Operator Designation
- **X**: Bare Stem
- **H**: Standard 10 point Handle
- **S**: Stainless Steel 10 point Handle
- **G**: Gear Operator

### 9 Stem
- **A**: 17-4 PH® Stem (Standard)
- **N**: 17-4 PH® Stem (NACE MR0175/MR0103 Compliant)
- **B**: XM-19
- **C**: Duplex 2205
- **T**: Hastelloy C-276
- **+**: Other

### 10 Packing (Live Loaded)
- **G**: Graphite (Standard)
- **P**: PTFE V-Ring (Standard for P1S)
- **V**: PTFE Inverted V-Ring
- **D**: PTFE Double V-Ring

### 11 Additional Options
- **blank**: (No designation) = Valves Series Standard
- **X**: Multiple Option Designation
- **N**: NACE MR0175/MR0103 Compliant
  - (No weld repair, NACE compliant bolting)

## How to Order POWER-SEAL High Performance Butterfly Valves

### How To Order Manual

**POWER-SEAL HIGH PERFORMANCE BUTTERFLY VALVES**

```
1 2  3  -  4  -  5  6  7  -  8  9  10
PSC - W1 - 0300 - RS R - X A G
```

```
1 2  3  -  4  -  5  6  7  -  8  9  10 - 11
P1SC - W1 - 0300 - GS R - X A P - _
```

### How To Order Automated

**Power-Seal High Performance Butterfly Valves**

```
1 2  3  -  4  -  5  6  7  -  8  9  10 / actuator size - options
P1SC - W1 - 0300 - GS R - X AP/ 2R5S - XX
```

(see Actuator Size Legend & Automated Accessories)
How to Order
Triac Pneumatic Actuators

TRIAC® Model Number Matrix for Pneumatic Rack & Pinion Actuators

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>TRIAC® Rack &amp; Pinion Actuator with double travel stops</td>
</tr>
<tr>
<td>T</td>
<td>TRIAC® Rack &amp; Pinion Actuator with single travel stop (TR10DA, TR20DA, TR20SR only)</td>
</tr>
<tr>
<td>R</td>
<td>ISO / DIN mounting configuration</td>
</tr>
<tr>
<td>CI</td>
<td>Direct mount to Center Line® BFV**</td>
</tr>
<tr>
<td>K</td>
<td>Direct mount to Keystone® / ABZ / Ultraflow® BFV</td>
</tr>
<tr>
<td>N</td>
<td>Direct mount to Nibco® BFV (special order: CF)</td>
</tr>
<tr>
<td>D</td>
<td>Direct mount to Demco® BFV (special order: CF)</td>
</tr>
<tr>
<td></td>
<td>Note: Others available, call for details</td>
</tr>
<tr>
<td>0000</td>
<td>Actuator size (10, 20, 40, 80, 130, 200, 300, 500, 850, 1200, 1750, 2500, 3500)</td>
</tr>
<tr>
<td>DA</td>
<td>Double acting configuration</td>
</tr>
<tr>
<td>DAR</td>
<td>Double acting (reverse acting) configuration</td>
</tr>
<tr>
<td>SR</td>
<td>Spring return fail clockwise configuration</td>
</tr>
<tr>
<td>SO</td>
<td>Spring return fail counter-clockwise configuration</td>
</tr>
<tr>
<td>Blank</td>
<td>Standard Buna seals (-5°F to 175°F)</td>
</tr>
<tr>
<td>V</td>
<td>Viton® seals (0°F to 300°F)</td>
</tr>
<tr>
<td>LT</td>
<td>Low temperature Buna seals (-45°F to 175°F)</td>
</tr>
<tr>
<td>Blank</td>
<td>5 springs per side (SR &amp; SO only) (See brochure for 2CI model numbers)</td>
</tr>
<tr>
<td>0</td>
<td>Specify number of springs per side (1-6) (SR &amp; SO only) (See brochure for 2CI model numbers)</td>
</tr>
<tr>
<td>E</td>
<td>Extra long travel stops</td>
</tr>
</tbody>
</table>

Example: 2R80SRE (TRIAC Model 80 Rack & Pinion Actuator with Travel Stop in both directions, Spring Return fail clockwise, with Extra long travel stops)

**Note: When ordering a 2CI actuator, please specify the valve size per the 2CI model numbers on page 9 of our Rack & Pinion brochure (LIT0004).
TRIAC® WE / WE Series Part Number Reference

1. Model
WE Weather Proof, CSA TYPE 4, 4X, IP67
XE Explosion Proof Design, ATEX & IECEx Ex d IIB T4 Gb, IP67
SE Submersible unit (IP68, 10 meters for 72 Hours)

2. Main Control
Blank 2-Position Control (Open / Close)
M Standard Modulating Control Card with 4-20mA transmitter
D High Resolution Modulating Card See 6 Misc. Options 1
T Ethernet On/Off
F Ethernet Proportional Control/Position Feedback
P Profibus DP On/Off
Q Profibus DP Proportional Control/Position Feedback
R Modbus RTU (RS485) On/Off
Z Modbus RTU (RS485) Proportional Control/Position Feedback
L Boiler Feed (4-20mA)
S Boiler Feed (0-135ohm)

3. Actuator Size
Size
350 350 In-lbs
350HS 270 In-lbs
500 500 In-lbs
690 690 In-lbs
1350 1350 In-lbs
1700 1700 In-lbs
2640 2640 In-lbs
4400 4400 In-lbs
5200 5200 In-lbs
6900 6900 In-lbs
10500 10500 In-lbs
17500 17500 In-lbs
25900 25900 In-lbs
53000 53000 In-lbs
80000 80000 In-lbs

4. Motor
Applicable Models
X 110VAC/1PH Standard (omit when at end of part number)
A 24VDC/VAC - On/Off 500 - 2640
B 12VDC 690
C 24VDC 500 - 2640
D 24VAC/1PH WED/XED/SED models only 500 - 2640
E 220VAC/1PH 500 - 80000
F 220VAC/3PH 500 - 80000
G 380VAC/3PH 1350 - 80000
H 480VAC/3PH 1350 - 80000
K 440VAC/3PH 1350 - 80000
N 12VDC/VAC - On/Off 690

5. Secondary Control Options
Applicable Models
X No options, Standard (omit when at end of part number)
B Semi-integral Control Unit (1PH/3PH) WE/XE 1350 - 25900
C Intelligent Digital Control Unit (3PH) WE/XE 1350 - 80000
D Local / Remote Control Switches WE 500 - 25900
E Electronic Speed Control Module+ (24V, 110VAC, 220VAC only) (both directions standard) 500 - 25900
F AMI AC Motor Interface (24V, 110VAC, 220VAC only)
G Speed Control 500 - 25900
H AST Sequence Timer 500 - 25900
I 2-Wire Control+ 110VAC control voltage
J 2-Wire Control+ 24VAC control voltage
K 2-Wire Control+ 24VDC control voltage

6. Miscellaneous Options 1
Applicable Models
Blank No options, Standard (omit when at end of part number)
X Multiple Option Designation
T 0-10VDC or 4-20mA Transmitter (specify) (On/Off or modulating control "D")
N 1000 Ohm Potentiometer
O 5000 Ohm Potentiometer
P 10K Ohm Potentiometer
Y 180º Operation 500 - 10500
Z 270º Operation 690 - 10500
3 180º Operation, 3-Position Control 500 - 10500
4 270º Operation, 4-Position Control+ 690 - 10500
8 180º Operation, 3-Position Control Board For WE-500 Wine Application 500 - 25900
9 90º Operation, 3-Position Control Board 500 - 25900
L -40ºF Low Temp Kit 500 - 25900
I Visual LED Indicator (Open/Close/Power) 690 - 10500
T (Auxiliary limit switches (6 total)) 690 - 25900

7. Conduit Thread Options
Blank Standard
X Multiple Option Designation
M M20
A M25

8. Drive Bushing
Blank Standard
X Multiple Option Designation
N No Standard Drive Bushing Size
6 316 Stainless Steel Standard Drive Size

9. Miscellaneous Options 2
Applicable Models
Blank Standard
X Multiple Option Designation
F 110VAC/1PH
A 24V AC/DC 500 - 2640
B 12VDC (Sizes 00690 & 00860)
C 24VDC (Sizes 01350 - 01700)
D 220VAC/3PH 6900-10500
E 480VAC/3PH 4400-80000
H 380VAC/3PH 1350-80000
P No Standard Coating Color

TRIAC® XC Series CSA Approved Explosion Proof Actuators

Model
XC Explosion Proof, CSA Class I, Division 1, Groups C, D; T4
Ex d IIB T4 Gb
Type 4, 4X, & 6, 7 IP66/IP67
Ex d IIB T4 Gb
Class I, Zone 1, AEx d IIB T4 Gb

Part Number Reference

Control
Blank (2) Position Control (Open / Close)
D Modulating Controller* (Sizes 01350 - 01700), motor options C & E only

Actuator

Output Torque

110 VAC
220 VAC
24V AC/DC
12 VDC
-0860 860 790 700 440
-01350 1350 1350 690 -
-01700 1700 1590 1410 -
-02640 2640 2500 2120 -
-04400 3980 3980 - -
-06900 6900 6900 - -
-10500 9600 8300 - -
-17500 17500 17500 - -
-25900 25900 25900 - -

Motor

X 110VAC/1PH
A 24V AC/DC 3-wire on/off (Sizes 00690 - 02640)
B 12VDC (Sizes 00690 & 00860)
C 24VDC (Sizes 01350 - 01700)
E 220VAC/1PH
N 12V AC/DC 3-wire on/off (Sizes 00690-00860)

M misc. Options
Note: Add all miscellaneous options to end of part number
Blank No options
XT 0-10VDC/4-20mA Transmitter (XCD models only)

Note: Class 1, Division 2 areas require a certified seal-off fitting during installation

A-T Controls reserves the right to change product designs and technical/dimensional specifications without notice. See website for updates.
### TRIAC® THD Model Number Matrix

#### THD Series

<table>
<thead>
<tr>
<th>Model (Center Body)</th>
<th>Natural Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Symmetrical Scotch Yoke</td>
</tr>
<tr>
<td>C</td>
<td>Canted Scotch Yoke (N/A in S09 model)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model (Center Body)</th>
<th>Natural Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>09</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td></td>
</tr>
</tbody>
</table>

#### Actuator Action

<table>
<thead>
<tr>
<th>Natural Selection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA</td>
<td>Double Acting</td>
</tr>
<tr>
<td>SC</td>
<td>Spring Return Fail Clockwise</td>
</tr>
<tr>
<td>SO</td>
<td>Spring Return Fail Counter-Clockwise</td>
</tr>
</tbody>
</table>

#### Pressure Group

<table>
<thead>
<tr>
<th>Natural Selection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>735</td>
</tr>
<tr>
<td>280</td>
<td>785</td>
</tr>
<tr>
<td>335</td>
<td>835</td>
</tr>
<tr>
<td>385</td>
<td>935</td>
</tr>
<tr>
<td>435</td>
<td>985</td>
</tr>
<tr>
<td>485</td>
<td>1020</td>
</tr>
<tr>
<td>535</td>
<td></td>
</tr>
<tr>
<td>585</td>
<td></td>
</tr>
<tr>
<td>685</td>
<td></td>
</tr>
</tbody>
</table>

#### Spring Cartridge

<table>
<thead>
<tr>
<th>Natural Selection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>Double Acting</td>
</tr>
<tr>
<td></td>
<td>- Select spring code from spring return torque charts for specific actuator</td>
</tr>
</tbody>
</table>

#### Manual Override

<table>
<thead>
<tr>
<th>Natural Selection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>No Override</td>
</tr>
<tr>
<td>D</td>
<td>Declutchable Gear (S09 only)</td>
</tr>
<tr>
<td>J</td>
<td>Jackscrew</td>
</tr>
<tr>
<td>H</td>
<td>Hydraulic (N/A on S09)</td>
</tr>
</tbody>
</table>

#### Seals & Grease

<table>
<thead>
<tr>
<th>Natural Selection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>Standard Buna Seals (-29°C to 93°C) (-20°F to 200°F)</td>
</tr>
<tr>
<td>V</td>
<td>High Temperature Seals (-18°C to 177°C) (0°F to 350°F)</td>
</tr>
<tr>
<td>L</td>
<td>Low Temperature Seals (-40°C to 82°C) (-40°F to 180°F)</td>
</tr>
<tr>
<td>L1</td>
<td>Low/High Temperature Seals (-50°C to 177°C) (-58°F to 350°F)</td>
</tr>
</tbody>
</table>

#### Example:

S13SC435CBH-L: Triac S13 435 Pressure Group Heavy Duty Spring Return, Spring Cartridge SCS13CE, Spring Clockwise, Symmetrical Scotch Yoke Actuator with Travel Stop Adjustment in Both Directons, 11.73” Bolt Circle ISO 5211 Valve Mounting, 1/2” NPT Air Supply Connection Complete with Hydraulic Override and Low Temperature Seals
# How To Order

## TRUNNION MOUNTED BALL VALVES

### PART NUMBER MATRIX

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>0200</th>
<th>2&quot;</th>
<th>1600</th>
<th>16&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0300</td>
<td>3&quot;</td>
<td>1800</td>
<td>18&quot;</td>
</tr>
<tr>
<td></td>
<td>0400</td>
<td>4&quot;</td>
<td>2000</td>
<td>20&quot;</td>
</tr>
<tr>
<td></td>
<td>0600</td>
<td>6&quot;</td>
<td>2400</td>
<td>24&quot;</td>
</tr>
<tr>
<td></td>
<td>0800</td>
<td>8&quot;</td>
<td>3000</td>
<td>30&quot;</td>
</tr>
<tr>
<td></td>
<td>1000</td>
<td>10&quot;</td>
<td>3600</td>
<td>36&quot;</td>
</tr>
<tr>
<td></td>
<td>1200</td>
<td>12&quot;</td>
<td>4200</td>
<td>42&quot;</td>
</tr>
<tr>
<td></td>
<td>1400</td>
<td>14&quot;</td>
<td>4800</td>
<td>48&quot;</td>
</tr>
</tbody>
</table>

### Body Material

| C | A216 WCB (-20°F to 800°F) |
| 5 | A352 LCB (-50°F to 800°F) |
| 8 | A352 LCC (-50°F to 650°F) |
| X | CF8M 316 SST (-450°F to 1200°F) |
| L | CF3M 316L SST (-450°F to 800°F) |
| 7 | A105N Forged Steel (-20°F to 800°F) |
| D | CD3MN Duplex SST (-50°F to 550°F) |
| G | CE3MN Super Duplex SST (-50°F to 550°F) |
| 6 | WC6, A217 (-20°F to 1100°F) |
| 9 | WC9, A217 (-20°F to 1100°F) |
| F | A350 LF2 (-50°F to 800°F) |
| 4 | A182 F316 (-450°F to 1200°F) |

### End Connection

| FF | FTJ |
| 150 | RF |
| 300 | RF |
| 600 | RF |
| 900 | RF |
| 1500 | RF |
| 2500 | RF |
| WE | Weld End |
| X | Special Configuration |

### Configurable End Connection

| LB | MC |
| 150 | MA |
| 300 | MB |
| 600 | MC |
| 900 | ME |
| 1500 | MF |
| 2500 | MG |

### Packing

| G | Graphite packing (standard) |
| P | TFE packing |

### Seals

| E | EPDM |
| B | HNBR |
| N | HNBR AED |
| W | FKM |
| V | FKM AED |
| L | Low Temp FKM (-40°F to 400°F) |
| F | Low Temp FKM AED (-40°F to 400°F) |
| A | Aflas |
| X | Custom Material/Compound |

### Paint

| X | Standard |
| S | Special (Customer Specified Coating) |

### Options

| H | Wrench Operated to 4" |
| G | Gear Operator |
| L | Gear Operator w/ Locking Plate |
| X | Bare Stem |
| E | Extended Bonnet (specify extension length required) |
| B | Bypass Piping w/ 2-way valve |
| F | Factory Acceptance Test |
| C | Customer to specify custom testing |
| S | Spool Piece Mounting Kit for Automation |
| M | Channel Design Mounting Kit for Automation |
| A | API 641 Certified (Fugitive Emissions) |

### HOW TO ORDER

**TRUNNION MOUNTED BALL VALVES**

**PART NUMBER MATRIX**

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</table>

**HOW TO ORDER**

A-T Trunnion Mounted Ball Valves:

**FFTS37-F1XX-0600-7HR1GWX-GBF**

4", 3-Piece, Full Port Trunnion Forged Ball Valve, ANSI Class 150 RF, PTFE packing, A105N Body, A105N/3mil ENP Ball, 4140/1mil ENP Stem, RTFE (Single Piston) Seat, Graphite Packing, Seal welded, FKM Seals, NACE MR-0175, Gear Operator with Locking Plate.
While you have come to know A-T Controls for superior service in automated valves and day-to-day automation and controls, we specialize in offering solutions to your more unique and difficult applications. Listed below are some of the specials and solutions oriented products and services we offer.

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- Virtually any Control Accessories
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- Speed Controls
- Solenoids
- Pneumatic Positioners
- Electro-pneumatic Positioners
- Dribble and “Batch” Controls
- Complete Mounting and Assembly
- Lockup Valves
- Declutchable Gear Operators
- Dump Valves
- Flow Controls
- Mounting Kits
- Various Metallurgy
- Special Coatings and Treatments
- Special Tubing and Fittings
- Alloy Trim

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