



# **Premium Actuated Valve Package Overview**



## **ENGINEERING GUIDE**

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# Premium Actuated Valve Package Overview



Typical Illustration



Typical Illustration

### Electric True Union Ball Valve

### Pneumatic True Union Ball Valve



Typical Illustration



Typical Illustration

### Electric Actuated Butterfly Valve

### Pneumatic Actuated Butterfly Valve



Typical Illustration



Typical Illustration

### Electric Actuated Diaphragm Valve

### Pneumatic Actuated Diaphragm Valve



Actuated Valves Technical  
**Electric Actuated True Union Ball Valves**

**Spears® True Union 2000 Ball Valve Premium Electric Actuation Package**

The compact design of True Union 2000 Ball Valves provides maximum versatility with minimum space requirements. Fully serviceable valve cartridge also mates with Spears® Union 2000 Schedule 80 pipe unions. Both valves and unions utilize Buttress Thread union nuts for superior strength. All ball valves feature Spears® self adjusting Floating Seat design for extended service, and Spears® Safe-T-Shear® Stem with double O-ring stem seals for assurance of fluid containment in case of inadvertent valve damage. Available in chemical and corrosion resistant PVC or CPVC with socket, flanged or Spears® Patented Special Reinforced (SR) threaded.

Actuated package includes polypropylene valve mounting bracket for accurate valve/actuator alignment and support in any position. Premium electric actuator utilizes a reversing type motor with UL approved, built in thermal overload protection. Gear train is permanently lubricated. All hardware is stainless steel. Standard 115 VAC, 60 HZ, with voltage options available.



Typical Illustration

**True Union 2000 Ball Valve Specifications**

<b>Style</b>	Double union <ul style="list-style-type: none"> <li>• 1/4 turn shut off</li> <li>• Double O-ring stem seals</li> <li>• Safe-T-Shear® Stem</li> <li>• Blocked seal carrier</li> </ul>
<b>Material</b>	PVC or CPVC
<b>Size Range</b>	1/2" - 6" & 8" Venturied*
<b>Pressure Rating</b>	1/2" - 4" = 235 psi @ 73°F valves = 150 psi @ 73°F 6" - 8" & all flanged
<b>Vacuum Service Seats</b>	To 26 in-Hg PTFE
<b>O-rings</b>	EPDM or FKM
<b>End Connector</b>	Socket, SR Threaded, or Flanged
<b>Certifications</b>	EPDM Valves NSF® Certified for potable water use.

**Standard Actuator Specifications**

- Reversing Motor
- Permanent Lubrication
- Thermal Overload Protection
- 2-Position Operation with 2-SPDT Limit Switches
- Additional set dry contacts SPDT limit Switches
- NEMA 4 Enclosure, Powder Coated
- Basic Manual Override 1/2" through 3" (Declutchable Available)
- Declutchable Manual Override 4" through 6"
- 115 VAC 60 Hz standard, optional voltages available
- Illuminated Position Indicator
- Heater

**Custom Electric Actuation Options & Accessories**

- Modulating (variable positioning)
- Thermostat
- Additional Limit Switch sets
- Feedback Potentiometer
- Transmitter
- LED Indicator lights
- Torque Sensor
- Declutchable Manual Override
- Duty Cycle Upgrades (75% & 100%)
- NEMA 4x, 7, & 9 Enclosures
- Spring Return Operation (Fail Safe)
- Voltage Options: 24 VAC, 230 VAC, 12 VDC, 24 VDC (additional options available by request)
- Custom ID Tags

\*8" Venturied is 6" valve fitted with 8 x 6 adapters

**Sample Engineering Specification**

All ball valves shall be electrically actuated True Union 2000 type constructed from PVC Type I Cell Classification 12454 or CPVC Type IV Cell Classification 23447. All O-rings shall be EPDM or FKM. All valves shall have Safe-T-Shear® stem and double O-ring stem seals. All valve union nuts shall have Buttress threads. All seal carriers shall be Safe-T-Blocked®. All valve components shall be replaceable. All EPDM valves shall be certified by NSF international for use in potable water service. All 1/2" through 4" valves shall be pressure rated at 235 psi and all 6" through 8" & all flanged valves shall be pressure rated at 150 psi for water at 73°F. Electric Actuators shall be factory installed, 115 VAC with thermally protected, reversing motor. All mounting fasteners shall be stainless steel. Actuator shall be equipped with [selected options list], as manufactured by Spears® Manufacturing Company.

**Actuated Valves Technical**  
**Pneumatic Actuated True Union Ball Valves**



**Spears® True Union 2000 Ball Valve Premium Pneumatic Actuation Package**

The compact design of True Union 2000 Ball Valves provides maximum versatility with minimum space requirements. Fully serviceable valve cartridge also mates with Spears® Union 2000 Schedule 80 pipe unions. Both valves and unions utilize Buttress Thread union nuts for superior strength. All ball valves feature Spears® self adjusting Floating Seat design for extended service, and Spears® Safe-T-Shear® Stem with double O-ring stem seals for assurance of fluid containment in case of inadvertent valve damage. Available in chemical and corrosion resistant PVC or CPVC with socket, flanged or Spears® Patented Special Reinforced (SR) threaded.

Actuated package includes polypropylene valve mounting bracket for accurate valve/actuator alignment and support in any position. Premium pneumatic actuator is an Air-to-Air (Double Acting; optional Spring Return) featuring twin piston rack and pinion operation with adjustable stops, and permanent lubrication. Manual override is standard. Housing is hard anodized aluminum with epoxy coated aluminum end caps.



Typical Illustration

**True Union 2000 Ball Valve Specifications**

<b>Style</b>	Double union <ul style="list-style-type: none"> <li>• 1/4 turn shut off</li> <li>• Blocked seal carrier</li> <li>• Double O-ring stem seals</li> <li>• Safe-T-Shear® Stem</li> </ul>
<b>Material</b>	PVC or CPVC
<b>Size Range</b>	1/2" - 6" & 8" Venturied*
<b>Pressure Rating</b>	1/2" - 4" = 235 psi @ 73°F 6" - 8" & all flanged valves = 150 psi @ 73°F
<b>Vacuum Service</b>	To 26 in-Hg
<b>Seats</b>	PTFE
<b>O-rings</b>	EPDM or FKM
<b>End Connector</b>	Socket, SR Threaded, or Flanged
<b>Certifications</b>	EPDM Valves NSF® Certified for potable water use.

\*8" Venturied is 6" valve fitted with 8 x 6 adapters

**Standard 2-Position Actuator Specifications**

<b>Type</b>	Dual piston <ul style="list-style-type: none"> <li>• rack &amp; pinion</li> <li>• adjustable stop</li> </ul>
<b>Standard Operation</b>	Air-to-Air (double acting)
<b>Supply Pressure</b>	80 psi
<b>Air Connection</b>	1/4" - 1/8"

**Custom Pneumatic Actuation Options & Accessories**

- Spring Return Operation (Fail Safe)
- 60 psi or 40 psi Operating Pressure
- Declutchable Manual Override
- Pneumatic & Electro Pneumatic Positioners
- 3 & 4 Way Solenoid Valve  
12VDC, 24VDC, 24VAC, 115VAC, 230VAC  
NEMA 4/4x & 7/9 rating
- Dual Power Solenoids
- Output Signal Limit Switches
- Standard Limit Switches
- Dome Position Indicator
- Stainless Steel Gauge Sets
- Customized ID Tags

**Sample Engineering Specification**

All ball valves shall be pneumatically actuated True Union 2000 type constructed from PVC Type I Cell Classification 12454 or CPVC Type IV Cell Classification 23447. All O-rings shall be EPDM or FKM. All valves shall have Safe-T-Shear® stem and double O-ring stem seals. All valve union nuts shall have Buttress threads. All seal carriers shall be Safe-T-Blocked®. All valve components shall be replaceable. All EPDM valves shall be Certified by NSF International for use in potable water service. All 1/2" through 4" valves shall be pressure rated at 235 psi and all 6" through 8" and all flanged valves shall be pressure rated at 150 psi for water at 73°F. Pneumatic Actuators shall be factory installed, dual piston, rack & pinion design with adjustable stops. Operation shall be Air-to-Air (double acting) for 80 psi supply pressure. All mounting fasteners shall be stainless steel. Actuator shall be equipped with [selected options list], as manufactured by Spears® Manufacturing Company.



## Actuated Valves Technical Electric Actuated Butterfly Valves

### Spears® Butterfly Valve Premium Electric Actuation Package

Spears® innovative patented seat design departs from traditional liner-seat type valves to eliminate seat creep, reduce operating torque and provide positive seal off. Ideally suited for flow control or throttling, this high performance valve offers a full variety of options for greater application versatility. Fully isolated (Dry Stem), solid type 316 stainless steel with optional PTFE coated stems available for extra protection assurance. PVC and CPVC valves are available in Standard or True Lug style for sizes 1-1/2" through 14". Polypropylene valves are available in Standard valve style for sizes 1-1/2" through 24", plus sizes 30" through 60" produced to order. Premium electric actuator utilizes a reversing type motor with UL approved, built in thermal overload protection. Gear train is permanently lubricated 1/2" NPT conduit outlet. Standard 115 VAC connection.



Typical Illustration

#### Butterfly Valve Specifications

Style	Flanged
Material	PVC, CPVC, UV Stabilized PP
Size Range	PVC/CPVC = 1-1/2" - 12" PP = 1-1/2" - 24" (custom 30" - 60")
Pressure Rating	1-1/2" - 12" = 150 psi @ 73°F 14" = 100 psi @ 73°F 16" = 85 psi @ 73°F 18" = 70 psi @ 73°F 20" - 24" = 50 psi @ 73°F
Seats & Seals	Buna-N, EPDM or FKM on PVC/CPVC valves; EPDM or FKM on Polypropylene valves
Bolt Pattern	ANSI Class 125/150

#### Special Valve Options & Accessories

- PVC & CPVC True-Lug valves w/ factory installed lugs
- PTFE coated stainless steel stem
- Titanium & Hastaloy Stems
- PTFE encased valve seat
- Field installable Lug Insert sets for PVC/ CPVC valves through 12"
- Stem Extensions
- Seat & Seal Replacement Kits
- 30"- 60" Polypropylene valves (contact Spears® for details)

#### Standard 2-Position Actuator Specifications

- Reversing Motor
- Permanent Lubrication
- Thermal Overload Protection
- 2-Position Operation with 2-SPDT Limit Switches
- Additional set dry contacts SPDT limit Switches
- NEMA 4 Enclosure, Powder Coated
- Basic Manual Override 1-1/2 through 4" (Declutchable Available)
- Declutchable Override 6" through 12"
- 115 VAC 60 Hz standard, optional voltages available
- Illuminated Position Indicator
- Heater

**Note:** Contact Spears® for information on valve sizes 14" and larger.

#### Electric Actuation Options & Accessories

- Modulating (variable positioning)
- Thermostat
- Additional limit switch sets
- Feedback Potentiometer
- Transmitter
- LED Indicator lights
- Torque sensor
- Declutchable Manual Override
- Duty Cycle Upgrades (75% & 100%)
- NEMA 4x, 7, & 9 Enclosures
- Voltage Options: 24 VAC, 230 VAC, 12 VDC, 24 VDC (additional VOLTAGE options available by request)
- Custom ID Tag

#### Sample Engineering Specification

All electrically actuated Butterfly valves shall be constructed from PVC Type I Cell Classification 12454 or CPVC Type IV Cell Classification 23447 or UV stabilized Polypropylene. All valve seats and O-rings shall be Buna-N, EPDM or FKM. Seat shall be a non-liner type interlocked to valve body. Bolt hole pattern shall conform to ANSI/ASME B16.5 CL 125/150. Disc shall be offset design with Type 316 stainless steel stem. Valves shall be pressure rated at [select from specification] for water at 73°F. Electric Actuators shall be factory installed, 115 VAC with thermally protected, reversing motor. Actuator shall be equipped with [selected options list] as manufactured by Spears® Manufacturing Company.

Actuated Valves Technical  
**Pneumatic Actuated Butterfly Valves**



**Spears® Butterfly Valve Premium Pneumatic Actuation Package**

Spears® innovative patented seat design departs from traditional liner-seat type valves to eliminate seat creep, reduce operating torque and provide positive seal off. Ideally suited for flow control or throttling, this high performance valve offers a full variety of options for greater application versatility. Fully isolated (Dry Stem), solid type 316 stainless steel stems with optional PTFE coated stems available for extra assurance. PVC and CPVC valves are available in Standard or True Lug style for sizes 1-1/2" through 14". Polypropylene valves are available in Standard valve style for sizes 1-1/2" through 24", plus sizes 30" through 60" produced to order. Premium pneumatic actuator is an Air-to-Air (Double Acting; optional Spring Return) featuring twin piston rack and pinion operation with adjustable stops and permanent lubrication. Manual override is standard. Housing is hard anodized aluminum with epoxy coated aluminum end caps.



Typical Illustration

**Butterfly Valve Specifications**

Style	Flanged
Material	PVC, CPVC, PP
Size Range	PVC/CPVC = 1-1/2" - 12" PP = 1-1/2"- 24" (custom 30" - 60")
Pressure Rating	1-1/2" - 12" = 150 psi @ 73°F 14" = 100 psi @ 73°F 16" = 85 psi @ 73°F 18" = 70 psi @ 73°F 20" - 24" = 50 psi @ 73°F
Seats & Seals	Buna-N, EPDM or FKM on PVC/CPVC valves; EPDM or FKM on Polypropylene valves
Bolt Pattern	ANSI Class 125/150

**Special Valve Options & Accessories**

- "True-Lug" style factory installed lugs (PVC & CPVC valves only)
- PTFE coated stainless steel stem
- Titanium & Hastaloy Stems
- PTFE encased valve seat
- Field installable Lug Insert sets for PVC/CPVC valves through 12"
- Stem Extensions
- Seat & Seal Replacement Kits
- 30" - 60" Polypropylene valves (contact Spears® for details)

**Standard 2-Position Actuator Specifications**

Type	Dual piston <ul style="list-style-type: none"> <li>• rack &amp; pinion</li> <li>• adjustable stop</li> </ul>
Standard Operation	Air-to-Air (double acting)
Supply Pressure	80 psi
Air Connection	1/4" - 1/8"

**Note:** Contact Spears® for information on valve sizes 14" and larger.

**Custom Pneumatic Actuation Options & Accessories**

- Spring Return Operation (Fail Safe)
- 60 psi or 40 psi Operating Pressure
- Declutchable Manual Override
- Pneumatic & Electro Pneumatic Positioners
- 3 & 4 Way Solenoid Valve  
12VDC, 24VDC, 24VAC, 115VAC, 230VAC  
NEMA 4/4x & 7/9 rating
- Dual Power Solenoids
- Output Signal Limit Switches
- Standard Limit Switches
- Dome Position Indicator
- Stainless Steel Gauge Sets
- Customized ID Tags

**Sample Engineering Specification**

All pneumatically actuated Butterfly valves shall be constructed from PVC Type I Cell Classification 12454 or CPVC Type IV Cell Classification 23447 or UV stabilized Polypropylene. All valve seats and O-rings shall be Buna-N, EPDM or FKM. Seat shall be a nonliner type interlocked to valve body. Bolt hole pattern shall conform to ANSI/ASME B16.5 CL 125/150. Disc shall be offset design with Type 316 stainless steel stem and hardware. Valves shall be pressure rated at [select from specifications] for water at 73°F. Pneumatic Actuators shall be factory installed, dual piston, rack & pinion design with adjustable stops. Operation shall be Air-to-Air (double acting) for 80 psi supply pressure. Actuator shall be equipped with [selected options list], as manufactured by Spears® Manufacturing Company.



Actuated Valves Technical  
**Electric Actuated Diaphragm Valves**

**Spears® Diaphragm Valve Premium Electric Actuation Package**

This full-featured industrial grade valve is engineered to provide accurate throttling and shut off for chemical processing, industrial, and water treatment applications. Weir type design eliminates entrapped fluids in valve. Excellent for handling of liquids with suspended solids, viscous materials and slurries. Premium electric actuator utilizes a multi-turn reversing motor with UL approved, built in thermal overload protection and permanently lubricated gear train. 1/2" NPT conduit outlet. Standard 115 VAC, 60 Hz.



Typical Illustration

**Butterfly Valve Specifications**

Style	Diaphragm • Weir Type • fully repairable
Material	PVC, CPVC, UV Stabilized PP
Size Range	1/2" - 8"
Pressure Rating	PVC & CPVC 1/2" - 2" = 235 psi @ 73°F 1/2" - 4" Flanged = 150 psi @ 73°F 6" = 100 psi @ 73°F 8" = 75 psi @ 73°F PP: 1/2" - 4" = 150 psi @ 73°F 6" = 100 psi @ 73°F 8" = 75 psi @ 73°F With PTFE Diaphragm: 1/2" - 4" = 150 psi @ 73°F
Diaphragm	EPDM, FKM, or elastomer backed PTFE
End Connector	PVC & CPVC = True Union socket/threaded, or Spigot Body (1/2" - 2") Flanged Body (1/2" - 8") PP: True Union threaded (1/2" - 2"), Flanged Body (sizes 2-1/2" - 8")

**Standard 2-Position Actuator Specifications**

Motor	Multi-turn reversing
Thermal Overload Protection	
Voltage	115 VAC, 60 Hz
Lubrication	Permanent

**Special Valve Options & Accessories**

- Diaphragm & O-ring Replacement Kits
- Hypalon® (CSM) Diaphragms
- EPDM backed PTFE Diaphragms
- FKM backed PTFE Diaphragms

**Custom Electric Actuation Options & Accessories**

- Declutchable Manual Override
  - Auxiliary Limit Switches
  - NEMA 7, 9 & NEMA 4X Enclosures
  - Position Indicator Lights (red/green)
  - Voltage Options: 12 VDC, 24 VDC, 24 VAC, 230 VAC
- (see Accessories & Options section for limitations)
- Custom ID Tags

**Sample Engineering Specification**

All electrically actuated diaphragm valves shall be True Union Socket/Thread or Flanged or Spigot type constructed from PVC Type I Cell Classification 12454 or CPVC Type IV Cell Classification 23447 or UV Stabilized PP. All valve diaphragms shall be EPDM or FKM or Hypalon® or elastomer backed PTFE. All True Union valve union nuts shall have Buttress threads. All valve components shall be replaceable. All 1/2" through 2" valves shall be pressure rated to 235 psi, all 2-1/2" through 4" valves, 1/2" - 4" flanged valves and 1/2" - 4" PTFE diaphragm valves to 150 psi, all 6" valves to 100 psi, and all 8" valves to 75 psi for water at 73°F. Electric Actuators shall be factory installed, 115 VAC with thermally protected, reversing motor. Actuator shall be equipped with [selected options list] as manufactured by Spears® Manufacturing Company.



**Spears® Unitized Pneumatic Actuated Diaphragm Valve Package**

Industrial grade Weir-type design, excellent for throttling and use with viscous fluids or slurries.

- Compact, Light Weight Design
- True Union Socket/Thread, SR Thread, or Spigot End Connections - sizes 1/2"-2"
- Pressure Rated to 235 psi @ 73°F (23°C)
- Flanged Ends (& PTFE diaphragms) - sizes 1/2" - 2" Pressure Rated to 150 psi @ 73°F (23°C)
- Corrosion Resistant Plastic Housing
- Stainless Steel Hardware
- 90 psi Operating Pressure
- Linear Action Operation with Preset Stops
- Air-Air, Air-Spring Closed, or Optional Air-Spring Open



Typical Illustration

**NOTE:** "Socket" valves include standard plastic thread end connectors.

**Diaphragm Valve Specifications**

<b>Style</b>	Diaphragm <ul style="list-style-type: none"> <li>• Weir type</li> <li>• fully repairable</li> </ul>
<b>Material</b>	PVC, CPVC, PP
<b>Size Range</b>	1/2" - 2"
<b>Pressure Rating</b>	PVC & CPVC 1/2" - 2" = 235 psi @ 73°F Flanged and PTFE Diaphragm 1/2" - 2" = 150 psi @ 73°F PP: 1/2" - 2" = 150 psi @ 73°F
<b>Diaphragm</b>	EPDM, FKM, or elastomer backed PTFE
<b>End Connector</b>	PVC & CPVC = True Union socket/threaded/SR threaded, or Spigot Body (1/2" - 2") Flanged Body (1/2" - 2") PP: True Union SR threaded (1/2" - 2")

**Standard 2-Position Actuator Specifications**

<b>Valve Sizes 1/2" -2"</b>	
<b>Type</b>	Linear action
<b>Standard Operation</b>	Air-to-Air (double acting), Air-to-Spring Closed or Air-to-Spring Open
<b>Supply Pressure</b>	90 psi
<b>Air Connection</b>	1/8"
<b>Body</b>	Polypropylene
<b>Visual Position Indicator</b>	

**Special Valve Options & Accessories**

- Diaphragm & O-ring Replacement Kits
- Hypalon® (CSM) Diaphragms
- EPDM backed PTFE Diaphragms
- FKM backed PTFE Diaphragms

**Custom Pneumatic Actuation Options & Accessories**

- Pneumatic & Electro Pneumatic Positioners
- 3 & 4 Way Solenoid Valves
- Customized ID Tags

**Sample Engineering Specification**

All pneumatically actuated diaphragm valves shall be True Union Socket/Thread or Flanged or Spigot type constructed from PVC Type I Cell Classification 12454 or CPVC Type IV Cell Classification 23447 or UV Stabilized PP. All valve diaphragms shall be EPDM, FKM or Hypalon® or elastomer backed PTFE. All True Union valve union nuts shall have Buttress threads. All valve components shall be replaceable. All 1/2" through 2" valves shall be pressure rated to 235 psi, 1/2" - 2" flanged valves and 1/2" - 2" PTFE diaphragm valves to 150 psi. Pneumatic Actuators shall be factory installed, linear type with preset stops. Operation shall be Air-to-Air (double acting), Air-to-Spring Closed or Air-to-Spring Open for 90 psi supply pressure range as selected. Actuator shall be equipped with [selected options list], as manufactured by Spears® Manufacturing Company.





Actuated Valves Technical  
**Pneumatic Actuated Diaphragm Valves**

**Spears® Diaphragm Valve Premium Pneumatic Actuation Package**

This full-featured industrial grade valve is engineered to provide accurate throttling and shut off for chemical processing, industrial, and water treatment applications. Weir type design eliminates entrapped fluids in valve. Excellent for handling of liquids with suspended solids, viscous materials and slurries. Premium pneumatic actuators are Air-to-Air (double acting) or Air-to-Spring Closed (optional spring open) Actuator for 1/2" - 2" valves features a packless/glandless linear piston design and one-piece actuator/bonnet constructed from high integrity PES (Polyethersulphone), chemically resistant to virtually all acids, caustics, and solvents. Actuator for 2-1/2" - 4" valves features a linear diaphragm design and chemical resistant Polyester coated housing.



Typical Illustration

**Diaphragm Valve Specifications**

style	Diaphragm • Weir type • fully repairable
Material	PVC, CPVC, PP
Size Range	1/2" - 6"
Pressure Rating	PVC & CPVC 1/2" - 2" = 235 psi @ 73°F 1/2" - 4" Flanged = 150 psi @ 73°F 6" = 100 psi @ 73°F 8" = 75 psi @ 73°F PP: 1/2" - 4" = 150 psi @ 73°F 6" = 100 psi @ 73°F 8" = 75 psi @ 73°F With PTFE Diaphragm 1/2" - 4" = 150 psi @ 73°F
Diaphragm	EPDM, FKM, or elastomer backed PTFE
End Connector	PVC & CPVC = True Union socket/threaded, or Spigot Body (1/2" - 2") Flanged Body (1/2" - 6") PP: True Union threaded (1/2" - 2"), Flanged Body (2-1/2" - 6")

**Standard 2-Position Actuator Specifications**

Valve Sizes 1/2" - 2"	
Type	Linear action
Standard Operation	Air-to-Air (double acting) or Air-to-Spring Closed (optional spring open)
Supply Pressure	80 psi
Air Connection	1/8"
Body	PES (Polyethersulphone)
Valve Sizes 2-1/2" - 4":	
Type	Linear action
Standard Operation	Air-to-Spring and Air to Air
Standard Operation Pressure	80 psi
Air Connection	1/4" (3" & 4" valves)
Body	Polyester coated

**Special Valve Options & Accessories**

- Diaphragm & O-ring Replacement Kits
- Hypalon® (CSM) Diaphragms
- EPDM backed PTFE Diaphragms
- FKM backed PTFE Diaphragms

**Custom Pneumatic Actuation Options & Accessories**

- Spring Return Operation (Fail Safe)
- Visual Position Indicator
- Pneumatic & Electro Pneumatic Positioners
- 3 & 4 Way Solenoid Valves
- Micro Limit Switches
- Custom ID Tags

**Sample Engineering Specification**

All pneumatically actuated diaphragm valves shall be True Union Socket/Thread or Flanged or Spigot type constructed from PVC Type I Cell Classification 12454 or CPVC Type IV Cell Classification 23447 or UV Stabilized PP. All valve diaphragms shall be EPDM, FKM or Hypalon® or elastomer backed PTFE. All True Union valve union nuts shall have Buttress threads. All valve components shall be replaceable. All 1/2" through 2" valves shall be pressure rated to 235 psi, all 2-1/2" through 4" valves, 1/2" - 4" flanged valves and 1/2" - 4" PTFE diaphragm valves to 150 psi, all 6" valves to 100 psi. Pneumatic Actuators shall be factory installed, linear type with preset stops. Operation shall be Air-to-Air (double acting) or Air-to-Spring Closed (optional spring open) for 80 psi supply pressure range. Actuator shall be equipped with [selected options list], as manufactured by Spears® Manufacturing Company.