



Premium Actuated Valve Part Number Selection



ENGINEERING GUIDE

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Actuated Valves Technical Premium Actuated Valve Part Number Selection



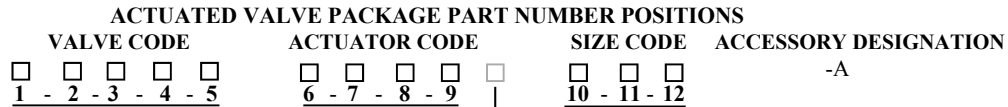
The section is provided for formulation of part numbers on custom actuated valve packages. A 3-step process is used to build custom actuated valve part numbers:

Step 1 - Select the desired type, style, options and material of valve from appropriate Valve Selection Table. Specify nominal valve size from Size Code available.

Step 2 - Select the desired actuator style options from the Actuator Selection Tables

Step 3 - Select desired actuator accessories (if any) from the Accessories Selection Tables.

IMPORTANT: Custom accessories are ordered under a separate part number from the actuated Valve Package. Accessory part numbers are ordered individually and factory assembled with selected Actuated Valve Package. If any accessories are being ordered, add the suffix, "- A" to the end of the Actuated Valve Package part number. This suffix is added only if an Accessory(s) is being selected for add on to the initial Actuated Valve Package.



Optional Control Number
(not used on basic packages)

Step 1: Valve & Size Code Selection

Spears actuated valve selection table include Ball Valves (Selection Table 1) Butterfly Valves (Selection Table 2), Diaphragm Valves (Selection Table 3) and Gate Valves(Selection Table 3A). Use the table information to complete the Valve Code in the package part number.

Table 1: BALL VALVES

(Valve Type - End Connector - O-ring - Special Options - Material - Size Selection)

VALVE CODE	Reserved for Actuator	SIZE CODE
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 - 2 - 3 - 4 - 5	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 6 - 7 - 8 - 9	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 10 - 11 - 12

<p>Valve Type</p> <ul style="list-style-type: none"> 0 = Compact Ball P = Compact 2000 1 = True Union Ball 2 = TU 2000 Ind. Ball Z = TU 2000 Std Ball 3 = Utility (Special) S = Single Entry (Special) T= TU 2000 Ind Tandem U = Hor 3 way L Tandem V = Hor 3-way T Tandem W = Ver 3-way T Tandem X= Ver 3-way 2L Tandem Y= Ver 3-way 3L Tandem R = Ver 3-Way T Tandem A= Hor 3-way L-port B= Hor 3-Way T-port C= Ver 3-Way L-port D= Ver 3-Way 2L-port E = Ver 3-Way 3L-port F= Ver 3-Way T-port M= T-Style TU2000 Ind Ball ("Zero Dead-Leg") 	<p>Material</p> <ul style="list-style-type: none"> 1 = PVC 2 = CPVC 3 = PP 4 = LE PVC <p>Special Options</p> <ul style="list-style-type: none"> 0 = None 1 = Lubricant Free (see note 2) 2 = Vented Ball 3 = Low Profile AMB-5 Kit (TU2000 Industrial) 4= Low Profile AMB-6 Kit (TU2000 Standard & Compact 66) 5 = Low Profile AMB-5 Kit (TU2000 Industrial - Vented Ball) F = 3-way Full Port Valve Type (use reg 3-wy code and this option) 	<p>Size</p> <ul style="list-style-type: none"> 005 =1/2" 007 =3/4" 010 = 1" 012 = 1-1/4" 015 = 1-1/2" 020 = 2" 025 = 2-1/2" 030 = 3" 040 = 4" 060 = 6"
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<p>End Connector (see note 1)</p> <ul style="list-style-type: none"> 1 = Socket 2 = Thread 3 = SR Thread 4 = Flanged 5 = BSP Thread 6 = DIN Plain (socket) 7 = JIS Plain (socket) 8 = Flange CL300 Drilling 9 = Flange PN 16/10 Drilling (to 160mm) A = Cartridge B = Spigot 	<p>O-ring</p> <ul style="list-style-type: none"> 0 = Buna-N. 1 = EPDM 2 = FKM 3 = PTFE Encapsulated EPDM. 4 = Silicone 5 = Viton® ETP 6 = AFLAS® TFE/P(FEPM) 7 = PTFE Encapsulated FKM 8 = Perfluoroelastomer 	<p>Notes:</p> <ul style="list-style-type: none"> 1 - PP valves available in regular True Union style sizes 1/2"-4" only, with threaded or SR threaded end connectors only. 1/2"-2" PVC & CPVC True Union valves ordered as "socket" come with both socket and regular threaded end connectors. 2-1/2"-6" valves come with socket only. 2 - All Ball Valves are assembled with non-silicone lubricant. 3 - Tandem (Diverting) part number includes two valves operated from one actuator with one opening while the other closes.
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Actuated Valves Technical Butterfly Valve Selection

Table 2: BUTTERFLY VALVES
(Valve Type - Stem - Seat & O-ring - Special Options - Material-Size Selection)

	VALVE CODE	Reserved for Actuator	SIZE CODE
	<input type="checkbox"/> 1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5	<input type="checkbox"/> 6 - <input type="checkbox"/> 7 - <input type="checkbox"/> 8 - <input type="checkbox"/> 9	<input type="checkbox"/> 10 - <input type="checkbox"/> 11 - <input type="checkbox"/> 12
<p>Valve type</p> <p>4 = Std. Butterfly</p> <p>5 = True Lug Butterfly</p> <p>6 = Tandem 3- Way (see note 6)</p> <p>7 = Tandem Diverting (see note 7)</p> <p>8 = High Purity TFM</p> <p>J = Pool Butterfly - white (see note 8)</p> <p>K = Wafer Butterfly</p> <p>L = Shaved Std. Butterfly</p> <p>Stem Material</p> <p>1 = SS 316</p> <p>2 = PTFE Coated SS 316</p> <p>3 = Titanium</p> <p>4 = Hastaloy</p>	<p>Material</p> <p>1 = PVC (see note 1)</p> <p>2 = CPVC</p> <p>3 = PP (see note 2)</p> <p>Special Options (see note 3)</p> <p>0 = None</p> <p>1 = Zinc plated Lugs (for True Lug)</p> <p>2 = SS 316 Lugs (for True Lug)</p> <p>3 = non lubricated</p> <p>4 = Zinc lug/ non lubricated</p> <p>5 = SS 316 lug/ non lubricated</p> <p>6 = No Seat (duct application)</p> <p>7 = Zinc plated Lug Insert (for Std. Butterfly; see note 9)</p> <p>8 = SS Lug Insert (for Std. Butterfly; see note 9)</p> <p>Seat & O-ring (see note 4)</p> <p>1 = Buna-N</p> <p>2 = EPDM</p> <p>3 = FKM®</p> <p>4 = PTFE Sleeved Viton®</p> <p>5 = TFM</p> <p>6 = PTFE Sleeved EPDM</p>	<p>Size (see note 5)</p> <p>015 = 1-1/2"</p> <p>020 = 2"</p> <p>025 = 2-1/2"</p> <p>030 = 3"</p> <p>040 = 4"</p> <p>060 = 6"</p> <p>080 = 8"</p> <p>100 = 10"</p> <p>120 = 12"</p> <p>140 = 14"</p> <p>160 = 16"</p> <p>180 = 18"</p> <p>200 = 20"</p> <p>240 = 24"</p>	

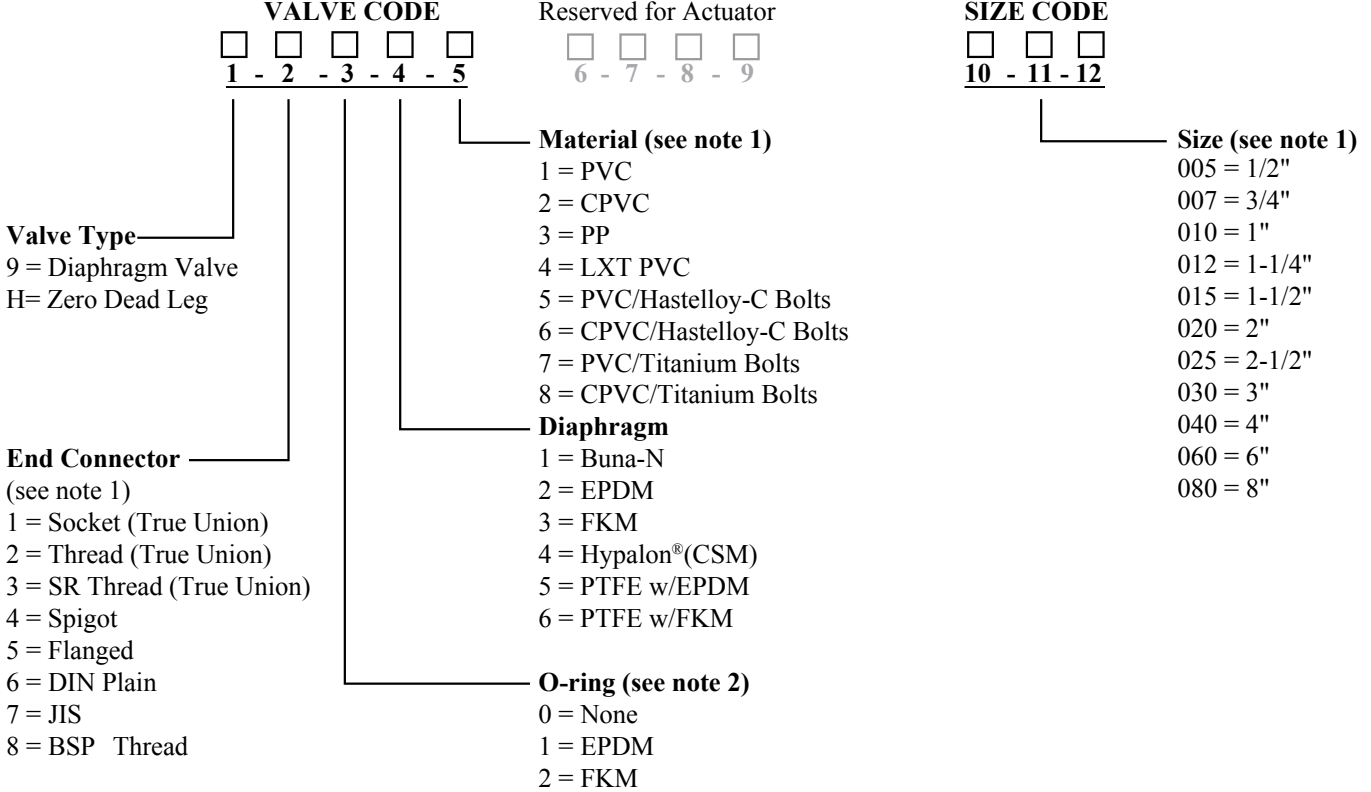
Notes:

- 1 - PVC and CPVC valves available through 16" only.
- 2 - All PP and 16" PVC/CPVC valves available in Standard Butterfly style only.
- 3 - Lugs specified with True Lug and Lug Insert styles only.
- 4 - PP valves are standard with EPDM or FKM.
- 5 - Actuated valve sizes 14" and larger are custom produced to order, contact Spears® Technical Services.
- 6 - Tandem 3-Way part number includes two valves operated from one actuator, both closing or both opening at the same time.
- 7 - Tandem Diverting part number includes two valves operated from one actuator with one opening while the other closes.
- 8 - Pool Butterfly Valves available in sizes 1-1/2" to 12" with SS316 Stem, EPDM Seats, PVC White only. No other options are available.
- 9 - Lug Inserts are used when Lug Style valve is ordered for Tandem Diverting valve type.

Actuated Valves Technical
Diaphragm Valve Selection



Table 3: DIAPHRAGM VALVES
(Valve Type - End Connector - O-ring - Diaphragm -Material - Size Selection)



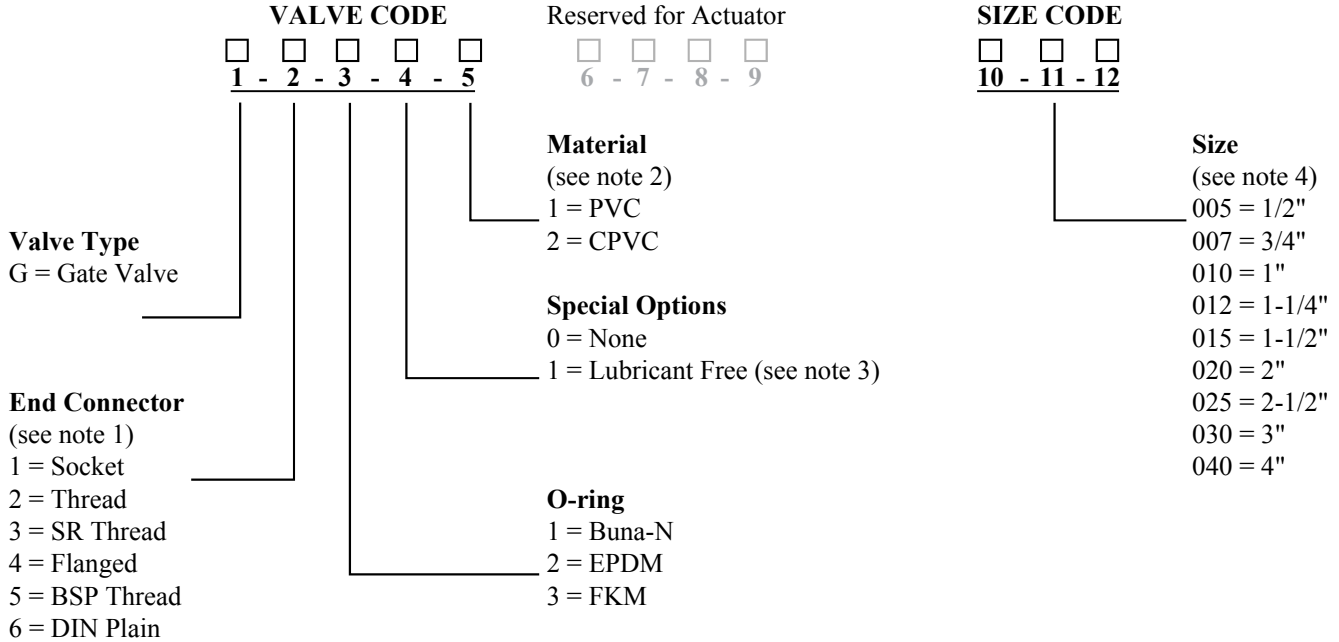
Notes:

- 1 - All valves with socket, thread, or SR thread end connectors are True Union style only.
 Socket end connectors available on PVC and CPVC valve sizes 1/2" - 2" only.
 Thread and SR thread end connectors available on PVC, CPVC, and PP valve sizes 1/2" - 2" only.
 DIN, JIS, and BSP end connectors available on PVC and CPVC valve sizes 1/2" - 2" only.
 Flanged end connectors available on all sizes of PVC and CPVC valves.
 Flanged end connectors available on PP valve sizes 3" and larger only.
 Zero Dead Leg valves are Socket Tee x selected End Connector code.
- 2 - O-rings are use on True Union style valves sizes 1/2" - 2" with socket, thread, or SR thread end connectors only.
 Enter "0" for all other end connector selections.



Gate Valves Selection (special order)

Table 3A: GATE VALVES (Special Order Only - Contact Spears® for Availability)
(Valve Type - End Connector - O-ring - Special Options - Material - Size Selection)



Notes:

- 1 - SR thread style available on 3" & 4" size only.
 Din Plain metric available in 20 mm - 63 mm only.
- 2 - PVC valves have polypropylene gate wedge, CPVC valves have CPVC gate wedge
- 3 - Standard valves are assembled with non-silicone lubricant.
- 4 - Valve size 2-1/2" is 3" valve with 2-1/2" reducer bushings.

Actuated Valves Technical Electric Actuator Selection



Step 2: Actuator Code Selection

Spears® actuated valves are available with either electric or pneumatic motors. Actuators are pre matched to each type and size of valve with proper operating torque and cycle time. Additional actuator accessories are selected and are factory installed on the Actuated Valve Package in Step 3 instructions

Select the applicable options from either the Electric Actuators (Selection Table 4) or Pneumatic Actuators (Selection Table 5) and enter the designated **Actuator Code** portion of the package part number.

Table 4: ELECTRIC ACTUATORS (Voltage-Enclosure Rating-Manual Override-Duty Cycle)

ACTUATOR CODE					Optional Control Number (not used on basic packages)						
1	2	3	4	5	6	7	8	9	10	11	12
Reserved for Valve								Reserved for Size			
Voltage (see note 1)								Duty Cycle (see note 3)			
A = 115 VAC 60 Hz								1 = 25% 7 = 40%			
B = 230 VAC 60 Hz								2 = 75% 8 = 60%			
C = 230 VAC 3-phase 50 Hz (EU)								3 = 100% 9 = 20%			
D = 230 VAC 3-phase 60 Hz								4 = 50%			
E = 24 VAC								5 = 70% (custom only)			
F = 12 VDC								6 = 80% (custom only)			
G = 24 VDC											
L = 460 VAC 3-Phase 50 Hz (EU)								Manual Override (see note 4)			
M = 460 VAC 3-Phase 60 Hz								0 = None			
R = 415 VAC 3-Phase 50 Hz								1 = Basic Manual Override			
S = 230 VAC 50 Hz (EU)								2 = Declutchable Manual Override			
T = 575 VAC 3-Phase 60Hz (EU)								3 = Spring Return Open with Declutchable Manual Override (see note 5)			
U = 115 VAC 50 Hz (EU)								4 = Spring Return Close with Declutchable Manual Override (see note 5)			
V = 208 VAC 3-Phase 60 Hz								5 = Spring Return Open no override (see note 5)			
X = Single Indicator Switch Only (see note 2)								6 = Spring Return Close no override (see note 5)			
Y = Double Indicator Switch Only (see note 2)								7 = RCE Battery Backup Actuator			
Z = Actuator Bracket Only (see note 2)								8 = Spring Return Open with Basic Manual Override (see note 5)			
1 = 480 VAC 50 Hz								9 = Spring Return Close with Basic Manual Override (see note 5)			
2 = 480 VAC 60 Hz											
3 = 480 VAC 3-Phase 50 Hz											
4 = 480 VAC 3-Phase 60 Hz											
5 = 380 VAC 3-Phase 60 Hz											
Enclosure											
1 = NEMA4		5 = NEMA		4 Double Powder Coated		9 = AWWA		C=NEMA 6P,prolonged			
2 = NEMA4x		6 = NEMA		4x Double Powder Coated		A = NEMA 7 Modulation enclosure		submersion at a limited depth.			
3 = NEMA 7		7 = NEMA		7 Double Powder Coated		(for 1/2"-2" modulated Ball /Butterfly)		D=NEMA 8			
4 = NEMA 9		8 = NEMA		9 Double Powder Coated		B = NEMA 6					

Notes:

- 1 - 460 VAC available on Butterfly Valves only.
- 2 - Bracket & Indicator Switch Only part numbers do not allow any other options(must be Z000, Y000, or X000).
- 3 - **Standard Duty Cycles** vary according to valve type and size as indicated in chart below. Standard Duty Cycles can be *upgraded* only.
Note: 50% duty cycle available on non-standard, special order actuators only.

Valve Type	Size Range	25% Duty Cycle	75% Duty Cycle	100% Duty Cycle
Ball Valve	1/2" - 2"		X	
Ball Valve	2-1/2" - 4"	X		
Butterfly Valve	1-1/2" - 10"	X		
Butterfly Valve	12" - 24"			X
Diaphragm Valve	1/2" - 8"	X		

- 4 - Basic Manual Override is standard on Ball Valve sizes 1/2" - 3" with Declutchable Manual Override as an option.
Declutchable Manual Override is standard on Ball Valve sizes 4" & larger and all Butterfly Valves.
Standard Gate Valve and Diaphragm Valve packages have no override with Declutchable Manual Override as an option. Spring return not available on electric Diaphragm valves.
- 5 - Electric Spring Return Actuators come standard with no type of override. Need to verify if either Declutchable Manual Override or Basic Manual Overrides are available in all applications.



Actuated Valves Technical Actuator Only Selection

Actuator Only Part Numbers

Individual Premium Electric actuators can be ordered for specific Spears® valve types and sizes. Includes actuator and mounting hardware for specified valve type and size. To specify valve type for actuator only, enter the first digit valve type code followed by zeros ("0") for remaining 4-digits of the valve code section of the part number plus the applicable 3-digit valve size code (see valve selection Tables 1, 2, or 3). Complete the actuator code selection as described in this section. See Step 3 for any desired actuator accessories.

Example: A 115 VAC electric actuator only with NEMA 4 enclosure, basic manual override and 75% duty cycle for 2" standard True Union Ball Valve would have the following part number: 10000A112-020.

Optional Control Numbers (custom use) - Electric Actuators

5 = Oversize Housing

8 = AUMA SA07.1-26B Actuator

H = AUMA SA07.5-38A 115 VAC Single Phase Actuator, (2) Gear Train Limit Switches, Open / Close Torque Switches, Space Heater, Plug & Socket type terminals, Side Mounted hand wheel, Nema 4x enclosure, Reversing starters, Power Supply board, Interface Board - 110 VAC, 3 Push buttons O/S/C, Selector Switch L/O/R, 3 Lights open / fault / close

9 = Actuator Upsize (one size to accommodate accessories)

K = Custom 2-position Actuator on 3-Way Ball Valve

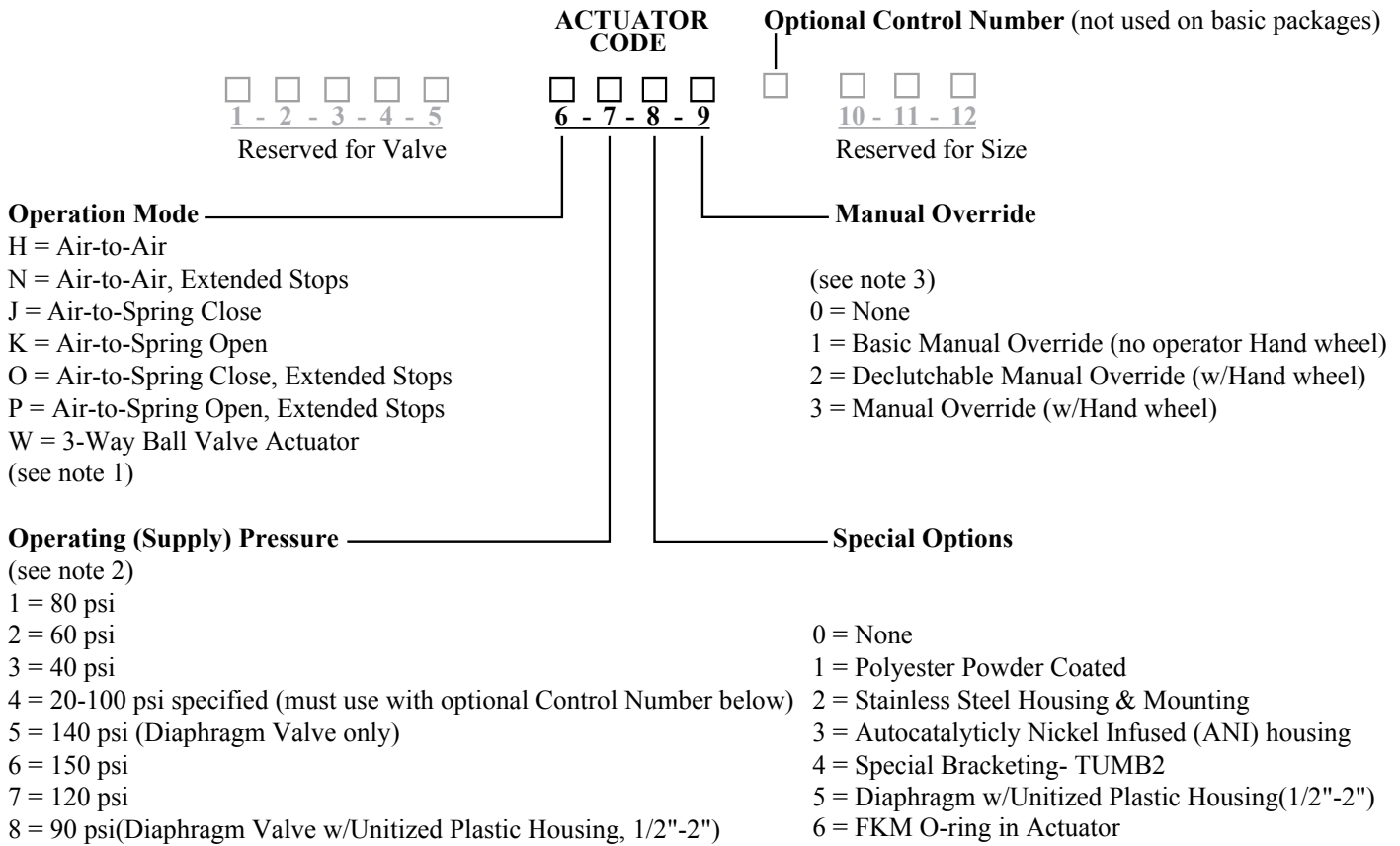
X = Actuator assembled with Double Containment Valve & Valve Box (for use in "actuator only" part number)

Note: When control number is used on a package with accessories, the dash (-) is dropped before the "A" due to part number limitations.

Actuated Valves Technical
Pneumatic Actuator Selection



Table 5: PNEUMATIC ACTUATOR
(Operation - Operating Pressure - Manual Override)



Notes:

- 1 - Bracket only part numbers do not allow any other options (must be Z000); available for Ball Valves only.
- 2 - Operating pressures (1-2-3) apply to Ball valve actuators.
- 3 - Basic Manual Override is standard on all Ball Valves and Butterfly Valves with Declutchable Manual Override as an option. Standard Diaphragm Valve package has no override. No manual override option sizes 1/2" -2". Declutchable Manual Override is an option on valve sizes 2-1/2" & larger.

Actuator Only Part Numbers

Individual Premium Pneumatic actuators can be ordered for specific Spears® valve types and sizes. Includes actuator and mounting hardware for specified valve type and size. To specify valve type for actuator only, enter the first digit valve type code followed by zeros ("0") for remaining 4-digits of the valve code section of the part number plus the applicable 3-digit valve size code (see valve selection Tables 1, 2, or 3). Complete the actuator code selection as described in this section. See Step 3 for any desired actuator accessories.

Example: An 80 psi, air-to-air pneumatic actuator only with declutchable manual override for 2" standard Butterfly Valve would have the following part number: 40000H102-020.

Optional Control Numbers (custom use) - Pneumatic Actuators

- X = Actuator assembled with Double Containment Valve & Valve Box (for use in "actuator only" part number)
 Control Numbers for user specified pressure. Must be used with Operating (Supply) Pressure code 7, #4:
- | | | |
|------------|------------|-------------|
| A = 20 psi | D = 50 psi | G = 80 psi |
| B = 30 psi | E = 60 psi | H = 90 psi |
| C = 40 psi | F = 70 psi | J = 100 psi |
- K = Custom 2-position Actuator 3-Way Ball Valve

Note: When control number is used on a package with accessories, the dash (-) is dropped before the "A" due to part number limitations.



Step 3: Actuator Accessory Selection

Premium actuator accessories are available for both Electric actuators (Selection Table 7) and Pneumatic actuators (Selection Table 8 and 9). Actuator accessory options are selected and ordered separately as individual Accessory part numbers for the actuated valve. If accessory options are to be ordered, be sure the suffix, "-A", was added to the end of the selected Actuated Valve Package part number configured in Step 1 & 2 to designate that the accessories are assembled with the valve package.

A separate part number is used for each accessory ordered. Select the desired Accessory Part Number from the selection tables for each accessory.

Example: An electric actuated valve is desired with a heater and thermostat, an SPDT limit switch set and a 0-5 VDC signal positioner board. From Table 7, the following Accessory part numbers should be ordered with the actuated valve package: Heater & Thermostat = **A-H1**, Limit Switch Set = **A-LS1**, Positioner Board = **A-PB2**

Contact Spears® for any desired accessories or functions not specified in the Accessory Selection Tables.

Selection Table 7: Diaphragm Valve Premium Electric Actuator Accessories

Accessory	Description	Accessory Part Number
Heater	Heater & Thermostat - On @ 41° F, Off @ 60.8°F	A-H1
	Heater & Thermostat - On @ 62.6°F, Off @ 80.6°F	A-H2
Auxiliary Limit Switches	2-SPDT Limit Switch Set (1/2" shaft cam)	A-LS1
	2-SPDT Limit Switch Set (3/8" shaft cam3)	A-LS2
	2-SPDT Limit Switch Set for Electric Spring Return	A-LS3
Position Indicators	LED Indicator Lights	A-P2
Modulating Positioner Boards	115 VAC 4-20 mA	A-PB1
	115 VAC 0-5 VDC	A-PB2
	115 VAC 0-10 VDC	A-PB3
	230 VAC 4-20 mA	A-PB4
	230 VAC 0-5 VDC	A-PB5
	230 VAC 0-10 VDC	A-PB6
	24 VAC 4-20 mA	A-PB7
	24 VAC 0-5 VDC	A-PB8
	24 VAC 0-10 VDC	A-PB9
	24 VDC 4-20 mA	A-PB10
	24 VDC 0-5 VDC	A-PB11
	24 VDC 0-10 VDC	A-PB12
	115 VAC 4-20MA For Electric Spring Return Actuator	A-PB13
Transmitter	4-20mA	A-T1
Torque Sensors	Adjustable Electronic Torque Sensor	A-TS1
Speed Controller	Variable Speed Controller	A-SC1
"2-Wire" Control ¹ (operates as solenoid valve)	Control Relay Switch Setup 115 VAC- Normally Closed	A-CR1
	Control Relay Switch Setup 115 VAC- Normally Open	A-CR2
	Control Relay Switch Setup 24 VAC- Normally Closed	A-CR3
	Control Relay Switch Setup 24 VAC- Normally Open	A-CR4
	Control Relay Switch Setup 230 VAC- Normally Closed	A-CR5
	Control Relay Switch Setup 230 VAC- Normally Open	A-CR6
	Control Relay Switch Setup 12 VDC- Normally Closed	A-CR7
	Control Relay Switch Setup 12 VDC- Normally Open	A-CR8
	Control Relay Switch Setup 24 VDC- Normally Closed	A-CR9
	Control Relay Switch Setup 24 VDC- Normally Open	A-CR10
Friction Brake ²	Mechanical Brake	A-FB1
Lockout Switch	Power disconnect switch activated when manual override is in use	A-LK1

Note:

- 1 - "2-Wire" Control is not applicable to Diaphragm Valves
- 2 - Friction Brake are standard on Butterfly Valve and not applicable to Diaphragm Valves
- 3 - The A-LS2 is used on 1/2" - 2" basic Ball Valve packages; A-LS1 used on all other.

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Actuated Valves Technical
Actuator Accessories Selection- Call for Application Detail



(Selection Table 7: Premium Electric Actuator Accessories - continued)

Accessory	Description	Accessory Part Number
Remote/Off/Local Control Switch	Remote/off/local, open/close momentary contact push buttons, red (close) and green (open) position indicating lights	A-RS1
Special Hardware	Titanium Bolts	A-B1
ID TAG	Type 316 Stainless Steel ID Tag 1/2" x 3" (3-lines, 12-characters & spaces)	TAG3-015
Stem Extension	Ball Valve Stem Extension ⁴	A-BVSE-xxx-000
	True Union 2000 Ball Valve Stem Extension	A-BVSE2-xxx-000
	Butterfly Valve Stem Extension	A-BFSE-xxx-000
	Diaphragm Valve Stem Extension	A-DESE-xxx-000

4 - Stem Extension Part Numbers: Enter size code for "xxx" in part number. Replace "000" with desired length code in part number; length is from top of valve to bottom of actuator.

(Selection Table 8: Ball Valve & Butterfly Valve Premium Pneumatic Actuator Accessories)

Accessory	Description	Accessory Part Number
PNEUMATIC POSITIONERS	3-15 psi NEMA 4 Flat-Top Indicator	A-PP1
	3-15 psi NEMA 4 Dome Indicator	A-PP2
	3-15 psi NEMA 4 Dome Indicator Integrated 2-SPDT Mech. Switches	A-PP3
ELECTRO PNEUMATIC POSITIONERS WITH INDICATOR	4-20mA NEMA 4 Flat-Top Indicator	A-EP1
	4-20mA NEMA 4 Dome Indicator	A-EP2
	4-20 mA NEMA 4 Dome Indicator Integrated 2-SPDT Mech. Switches	A-EP3
	4-20mA NEMA 7 Flat-Top Indicator	A-EP4
	4-20mA Intrinsically Safe (CSA/UL) Flat-Top Indicator	A-EP5
	4-20mA NEMA 7 Dome Indicator	A-EP6
	4-20mA Intrinsically Safe w/2-SPST Proximity Switches	A-EP22
SOLENOID VALVES	3 & 4-way 115 VAC NEMA 4/4x	A-SV1
	3 & 4-way 230 VAC NEMA 4/4x	A-SV2
	3 & 4-way 24 VAC NEMA 4/4x	A-SV3
	3 & 4-way 12 VDC NEMA 4/4x	A-SV4
	3 & 4-way 24 VDC NEMA 4/4x	A-SV5
	3 & 4-way 115 VAC NEMA 4/4x/7/9	A-SV6
	3 & 4-way 230 VAC NEMA 4/4x/7/9	A-SV7
	3 & 4-way 24 VAC NEMA 4/4x/7/9	A-SV8
	3 & 4-way 12 VDC NEMA 4/4x/7/9	A-SV9
	3 & 4-way 24 VDC NEMA 4/4x/7/9	A-SV10
	Dual Coil 3 & 4-way 115 VAC NEMA 4/4x	A-SV11
	Dual Coil 3 & 4-way 230 VAC NEMA 4/4x	A-SV12
	Dual Coil 3 & 4-way 24 VAC NEMA 4/4x	A-SV13
	Dual Coil 3 & 4-way 12 VDC NEMA 4/4x	A-SV14
	Dual Coil 3 & 4-way 24 VDC NEMA 4/4x	A-SV15
	Dual Coil 3 & 4-way 115 VAC NEMA 7/9	A-SV16
	Dual Coil 3 & 4-way 230 VAC NEMA 7/9	A-SV17
	Dual Coil 3 & 4-way 24 VAC NEMA 7/9	A-SV18
	Dual Coil 3 & 4-way 12 VDC NEMA 7/9	A-SV19
	Dual Coil 3 & 4-way 24 VDC NEMA 7/9	A-SV20
	Stainless Steel 3 & 4-way 115VAC NEMA 4/4x	A-SV21
	3-Way 24 VDC Hi Temperature (Class H) NEMA 4x	A-SV22
3 & 4-way 230 VAC NEMA 4/4x 1/2" NPT Din Connector	A-SV23	
LIMIT SWITCH & TRANSMITTER COMBINATION	4-20mA 2-SPDT NEMA 4/4x/7/9	A-LS20
	4-20mA 2-SPDT NEMA 4/4x/7/9 w/ Visual Indicator	A-LS21
	4-20mA 2-DPDT NEMA 4/4x/7/9	A-LS22
	4-20mA 2-DPDT NEMA 4/4x/7/9 w/ Visual Indicator	A-LS23
	4-20mA 2-Proximity NEMA 4/4x/7/9	A-LS24
	4-20mA 2-Proximity NEMA 4/4x/7/9 w/ Visual Indicator	A-LS25

Note: Pneumatic and Electro-Pneumatic positioners include brass gauges: 1 input gauge @ 0-30 psi and 2 output gauges @ 0-160 psi. Stainless steel gauges may be ordered separately.

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Actuator Accessories Selection- Call for Application Detail

(Table 8: Ball Valve & Butterfly Valve Premium Pneumatic Actuator Accessories - continued)

Accessory	Description	Accessory Part Number
LIMIT SWITCHES	2-SPDT NEMA 4/4x	A-LS40
	2-SPDT NEMA 4/4x w/ Visual Indicator	A-LS41
	2-SPDT NEMA 4/4x w/ Green/Red Dome Indicator	A-LS41D
	2-SPDT NEMA 4/4x w/ Low Profile Indicator	A-LS41L
	2-DPDT NEMA 4/4x	A-LS42
	2-DPDT NEMA 4/4x w/ Visual Indicator	A-LS43
	2-Proximity NEMA 4/4x	A-LS44
	2-Proximity NEMA 4/4x w/Low Profile Indicator NOTE - Requires user supplied intrinsic barrier	A-LS44L
	2-Proximity NEMA 4/4x w/ Visual Indicator	A-LS45
	2-Proximity NEMA 7/9	A-LS46
	2-Proximity NEMA 7/9 w/ Visual Indicator	A-LS47
	2-Proximity NEMA 7/9 w/ Low Profile Indicator	A-LS47L
	2-SPDT NEMA 4/4x/7/9	A-LS48
	2-SPDT NEMA 4/4x 7/9 w/ Visual Indicator	A-LS49
	2-DPDT NEMA 4/4x/7/9	A-LS50
	2-DPDT NEMA 4/4x/7/9 w/ Visual Indicator	A-LS51
	4-SPDT NEMA 4/4x w/ 180° Indicator	A-LS52
INDICATORS	Dome Indicator	A-V2
TRANSMITTER	4-20mA Output Transmitter	A-PT1
PRESSURE GAUGE SET	Stainless steel case, 3-gauge set for use with positioners: 1 - input pressure gauge 0-30 psi, 2- output gauges 0-160 psi	A-G1
	Plastic case, 3-gauge set for use with positioners: 1 - input pressure gauge 0-30 psi, 2- output gauges 0-160 psi	A-G2
AIR MUFFLERS	Standard Sintered Bronze, 40 micron, 1/8" NPT	A-M18
	Standard Sintered Bronze, 40 micron, 1/4" NPT	A-M14
	Speed Control Muffler (Adjustable Air Flow) 1/8" NPT	A-M2V18
	Speed Control Muffler (Adjustable Air Flow) 1/4" NPT	A-M2V14
ID TAG	Type 316 Stainless Steel ID Tag 1/2" x 3" (3-lines, 12-characters & spaces)	TAG3-015
Stem Extension	Ball Valve Stem Extension ¹	A-BVSE-xxx-000
	True Union 2000 Ball Valve Stem Extension ¹	A-BVSE2-xxx-000
	Butterfly Valve Stem Extension ¹	A-BFSE-xxx-000

Note:1 - Stem Extension Part Numbers: Enter size code for "xxx" in part number. Replace "000" with desired length code in part number; length is from top of valve to bottom of actuator.

Table 9: Diaphragm Valve Premium Pneumatic Actuator Accessories (Not applicable to Diaphragm Valves with Plastic Actuator Housing)

Accessory	Description	Accessory Part Number
PNEUMATIC POSITIONERS	3-15 psi NEMA 4x w/ Visual Indicator Top Loading (no gauge)	A-DPP1
	3-15 psi NEMA 4x w/ Visual Indicator Top Loading w/ gauges (3)	A-DPP2
	3-15 psi NEMA 4x w/ Visual Indicator Bottom Loading (no gauge)	A-DPP3
	3-15 psi NEMA 4x w/ Visual Indicator Bottom Loading w/ gauges (3)	A-DPP4
ELECTRO PNEUMATIC POSITIONERS	4-20mA (3-15 psi) NEMA 4 x w/Visual Indicator (up to 2")	A-DEP1
	4-20mA (3-15 psi) NEMA 4 x w/ Visual Indicator w/SS Gauges (up to 2")	A-DEP2
	4-20mA (3-15 psi) NEMA 4 x w/Visual Indicator (2-1/2" & up)	A-DEP3
	4-20mA (3-15 psi) NEMA 4 x w/ Visual Indicator w/SS Gauges (2-1/2" & up)	A-DEP4
	4-20mA (3-15 psi) NEMA 4 x w/ Dome Indicator w/2-SPDT Limit Switches (2-1/2"& up)	A-DEP5
3-WAY SOLENOID VALVES	115 VAC NEMA 4/4x	A-DSV1
	230 VAC NEMA 4/4x	A-DSV2
	24 VAC NEMA 4/4x	A-DSV3
	12 VDC NEMA 4/4x	A-DSV4
	24 VDC NEMA 4/4x	A-DSV5
	115 VAC NEMA 7/9	A-DSV6
	230 VAC NEMA 7/9	A-DSV7
	24 VAC NEMA 7/9	A-DSV8
	12 VDC NEMA 7/9	A-DSV9
	24 VDC NEMA 7/9	A-DSV10

(CONTINUED NEXT PAGE)

Actuated Valves Technical
Actuator Accessories Selection- Call for Application Detail



Table 9: Diaphragm Valve Premium Pneumatic Actuator Accessories (Not applicable to Diaphragm Valves with Plastic Actuator Housing)

Accessory	Description		Accessory Part Number
4-WAY SOLENOID VALVES	115 VAC	NEMA 4/4x	A-DSV11
	230 VAC	NEMA 4/4x	A-DSV12
	24 VAC	NEMA 4/4x	A-DSV13
	12 VDC	NEMA 4/4x	A-DSV14
	24 VDC	NEMA 4/4x	A-DSV15
	115 VAC	NEMA 7/9	A-DSV16
	230 VAC	NEMA 7/9	A-DSV17
	24 VAC	NEMA 7/9	A-DSV18
	12 VDC	NEMA 7/9	A-DSV19
	24 VDC	NEMA 7/9	A-DSV20
MICRO ² LIMIT SWITCHES	2-SPDT	NEMA 4 w/ 180° Visual Indicator	A-DLS20
	2-SPDT	NEMA 7/9 w/ 180° Visual Indicator	A-DLS25
PROXIMITY LIMIT SWITCHES	2-SPDT	NEMA 4/4x	A-DLS23
LIMIT SWITCHES ³	2-SPDT	NEMA 4	A-DLS24
SPEED CONTROLLER	Variable Speed Controller		A-DPSC1
ID TAG	Type 316 Stainless Steel ID Tag 1/2" x 3" (3-lines, 12-characters & spaces)		TAG3-015
Stem Extensions	Diaphragm Valve Stem Extension ¹		A-DPSE-xxx-000
HANDWHEEL OVERRIDE	Handwheel override for 1/2" to 2" Linear Diaphragm Actuators		A-DHW1
	Handwheel override for 2-1/2" to 6" Linear Diaphragm Actuators		A-DHW2

- Note:**
- 1 - Stem Extension Part Numbers: Enter size code for "xxx" in part number. Replace "000" with desired length code in part number; length is from top of valve to bottom of actuator.
 - 2 - Micro Limit Switches used on valve sizes 1/2" through 2".
 - 3 - Limit Switches used on valve sizes 2-1/2" & larger.