Premium Actuated Valve Part Number Selection

ENGINEERING GUIDE

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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.

ACTUATED VALVE PACKAGE PART NUMBER POSITIONS

VALVE CODE	ACTUATOR CODE	SIZE CODE	ACCESSORY DESIGNATION
☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐	-A
1 - 2 - 3 - 4 - 5	6 - 7 - 8 - 9	10 - 11 - 12	

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), Diaphram 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
☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☐ ☐ ☐
1 - 2 - 3 - 4 - 5	6 - 7 - 8 - 9	10 - 11 - 12

Valve Type
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")

End Connector
(see note 1)
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

O-ring
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

Special Options
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 Industrail - Vented Ball)

Material
1 = PVC
2 = CPVC
3 = PP
4 = LE PVC

Size
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"

Notes:

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.

Table 1: BALL VALVES (Continued)

VALVE CODE For 3-Way Full Port Ball Valves Only

Valve Type-2-Digits. Use same selections for End Connector, O-ring, Special Option, & Material moved over one digit space.

□ □

1 - 2

UF = Hor 3-way Full Port L Tandem
VF= Hor 3-way Full Port T Tandem
WF = Ver 3-way Full Port L Tandem
XF = Ver 3-way Full Port 2L Tandem
YF = Ver 3-way Full Port 3L Tandem
RF = Ver 3-way Full Port T Tandem
AF = Hor 3-way Full Port L-port
BF = Hor 3-way Full Port T-port
CF = Ver 3-way Full Port L-port
DF = Ver 3-way Full Port 2L-port
EF = Ver 3-way Full Port 3L-port
FF = Ver 3-way Full Port T-port

Table 2: BUTTERFLY VALVES

(Valve Type - Stem - Seat & O-ring - Special Options - Material-Size Selection)

VALVE CODE

□ □ □ □ □
1 - 2 - 3 - 4 - 5

Reserved for Actuator

□ □ □ □
6 - 7 - 8 - 9

SIZE CODE

□ □ □
10 - 11 - 12

Valve type

4 = Std. Butterfly
5 = True Lug Butterfly
6 = Tandem 3- Way (see note 6)
7 = Tandem Diverting (see note 7)
8 = High Purity TFM
J = Pool Butterfly - white (see note 8)
K = Wafer Butterfly
L = Shaved Std. Butterfly

Stem Material

1 = SS 316
2 = PTFE Coated SS 316
3 = Titanium
4 = Hastaloy

Seat & O-ring (see note 4)

1 = Buna-N
2 = EPDM
3 = FKM®
4 = PTFE Sleeved Viton®
5 = TFM
6 = PTFE Sleeved EPDM

Special Options (see note 3)

0 = None
1 = Zinc plated Lugs (for True Lug)
2 = SS 316 Lugs (for True Lug)
3 = non lubricated
4 = Zinc lug/ non lubricated
5 = SS 316 lug/ non lubricated
6 = No Seat (duct application)
7 = Zinc plated Lug Insert (for Std. Butterfly; see note 9)
8 = SS Lug Insert (for Std. Butterfly; see note 9)

Material

1 = PVC (see note 1)
2 = CPVC
3 = PP (see note 2)

Size (see note 5)

015 = 1-1/2"
020 = 2"
025 = 2-1/2"
030 = 3"
040 = 4"
060 = 6"
080 = 8"
100 = 10"
120 = 12"
140 = 14"
160 = 16"
180 = 18"
200 = 20"
240 = 24"

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.

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

VALVE CODE

☐ ☐ ☐ ☐ ☐
1 - 2 - 3 - 4 - 5

Reserved for Actuator

☐ ☐ ☐ ☐
6 - 7 - 8 - 9

SIZE CODE

☐ ☐ ☐
10 - 11 - 12

Material (see note 1)
1 = PVC
2 = CPVC
3 = PP
4 = LXT PVC
5 = PVC/Hastelloy-C Bolts
6 = CPVC/Hastelloy-C Bolts
7 = PVC/Titanium Bolts
8 = CPVC/Titanium Bolts

Size (see note 1)
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"
080 = 8"

Valve Type
9 = Diaphragm Valve
H= Zero Dead Leg

Diaphragm
1 = Buna-N
2 = EPDM
3 = FKM
4 = Hypalon®(CSM)
5 = PTFE w/EPDM
6 = PTFE w/FKM

End Connector
(see note 1)
1 = Socket (True Union)
2 = Thread (True Union)
3 = SR Thread (True Union)
4 = Spigot
5 = Flanged
6 = DIN Plain
7 = JIS
8 = BSP Thread

O-ring (see note 2)
0 = None
1 = EPDM
2 = FKM

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

VALVE CODE

☐ ☐ ☐ ☐ ☐
1 - 2 - 3 - 4 - 5

Reserved for Actuator

☐ ☐ ☐ ☐
6 - 7 - 8 - 9

SIZE CODE

☐ ☐ ☐
10 - 11 - 12

Valve Type
G = Gate Valve

End Connector
(see note 1)
1 = Socket
2 = Thread
3 = SR Thread
4 = Flanged
5 = BSP Thread
6 = DIN Plain

O-ring
1 = Buna-N
2 = EPDM
3 = FKM

Special Options
0 = None
1 = Lubricant Free (see note 3)

Material
(see note 2)
1 = PVC
2 = CPVC

Size
(see note 4)
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"

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.

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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 — Reserved for Valve

☐ ☐ ☐ ☐ — 6 - 7 - 8 - 9

☐ — ☐ ☐ ☐ — 10 - 11 - 12 — Reserved for Size

Voltage (see note 1)
- A = 115 VAC 60 Hz
- B = 230 VAC 60 Hz
- C = 230 VAC 3-phase 50 Hz (EU)
- D = 230 VAC 3-phase 60 Hz
- E = 24 VAC
- F = 12 VDC
- G = 24 VDC
- L = 460 VAC 3-Phase 50 Hz (EU)
- M = 460 VAC 3-Phase 60 Hz
- R = 415 VAC 3-Phase 50 Hz
- S = 230 VAC 50 Hz (EU)
- T= 575 VAC 3-Phase 60Hz (EU)
- U = 115 VAC 50 Hz (EU)
- V = 208 VAC 3-Phase 60 Hz
- X = Single Indicator Switch Only (see note 2)
- Y = Double Indicator Switch Only (see note 2)
- Z = Actuator Bracket Only (see note 2)
- 1 = 480 VAC 50 Hz
- 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

Duty Cycle (see note 3)
- 1 = 25%
- 2 = 75%
- 3 = 100%
- 4 = 50%
- 5 = 70% (custom only)
- 6 = 80% (custom only)
- 7 = 40%
- 8 = 60%
- 9 = 20%

Manual Override (see note 4)
- 0 = None
- 1 = Basic Manual Override
- 2 = Declutchable Manual Override
- 3 = Spring Return Open with Declutchable Manual Override (see not 5)
- 4 = Spring Return Close with Declutchable Manual Override (see note 5)
- 5 = Spring Return Open no override (see note 5)
- 6 = Spring Return Close no override (see note 5)
- 7 = RCE Battery Backup Actuator
- 8 = Spring Return Open with Basic Manual Override (see note 5)
- 9 = Spring Return Close with Basic Manual Override (see note 5)

Enclosure
- 1 = NEMA4
- 2 = NEMA4x
- 3 = NEMA 7
- 4 = NEMA 9
- 5 = NEMA 4 Double Powder Coated
- 6 = NEMA 4x Double Powder Coated
- 7 = NEMA 7 Double Powder Coated
- 8 = NEMA 9 Double Powder Coated
- 9 = AWWA
- A = NEMA 7 Modulation enclosure (for 1/2"-2" modulated Ball /Butterfly)
- B = NEMA 6
- C=NEMA 6P,prolonged submersion at a limited depth.
- D=NEMA 8

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.

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 SAO7.5-38A 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.

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

ACTUATOR CODE

Optional Control Number (not used on basic packages)

1 - 2 - 3 - 4 - 5
Reserved for Valve

6 - 7 - 8 - 9

10 - 11 - 12
Reserved for Size

Operation Mode
H = Air-to-Air
N = Air-to-Air, Extended Stops
J = Air-to-Spring Close
K = Air-to-Spring Open
O = Air-to-Spring Close, Extended Stops
P = Air-to-Spring Open, Extended Stops
W = 3-Way Ball Valve Actuator
(see note 1)

Manual Override
(see note 3)
0 = None
1 = Basic Manual Override (no operator Hand wheel)
2 = Declutchable Manual Override (w/Hand wheel)
3 = Manual Override (w/Hand wheel)

Operating (Supply) Pressure
(see note 2)
1 = 80 psi
2 = 60 psi
3 = 40 psi
4 = 20-100 psi specified (must use with optional Control Number below)
5 = 140 psi (Diaphragm Valve only)
6 = 150 psi
7 = 120 psi
8 = 90 psi(Diaphragm Valve w/Unitized Plastic Housing, 1/2"-2")

Special Options
0 = None
1 = Polyester Powder Coated
2 = Stainless Steel Housing & Mounting
3 = Autocatalyticly Nickel Infused (ANI) housing
4 = Special Bracketing- TUMB2
5 = Diaphragm w/Unitized Plastic Housing(1/2"-2")
6 = FKM O-ring in Actuator

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.

(CONTINUED NEXT PAGE)

(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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(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**

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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.