

# VALVE TECHNICAL INFORMATION

## TERMINOLOGY

- **Pressure Drop** – The difference in upstream and downstream pressures of the fluid flowing through the valve.
- **Critical Flow** – The flow has reached the point of being choked. At the choked condition the flow rate has hit a maximum limit and does not increase with further increase in pressure drop across the valve.
- **Cv or Valve Flow Coefficient** – The number of U. S. gallons per minute of water at 60°F that will pass through the valve with a pressure drop of 1 psi. For example, a Hi-Flow™ valve with a maximum Cv of 10.75 has an effective port area in the full open position such that it passes 10.75 GPM of water with a pressure drop of 1 psi.
- **Full Port** – The port diameter of the valve is the same diameter as the piping connections.
- **Rangeability** – The ratio of maximum controllable flow to minimum controllable flow of a valve. For example, a valve with a 50 to 1 rangeability and a total flow capacity of 100 GPM at full open controls flow accurately to as low as 2 GPM.
- **Valve Flow Characteristic** – The relationship between the stem travel or rotation of a valve, expressed in percent travel, and the fluid flow through the valve, expressed in percent of full flow.

## CONTROL VALVE SIZING



The Cv method is an accepted way to size control valves. Basic equations are provided as a guide to use in sizing a control valve, and the results of the equations will only be as accurate as the information provided of the flowing conditions. The equations are broken down into the type of media - liquid, gas or steam, and whether or not the flow is critical. The critical flow equations are to be used for vapor flow when the pressure drop across the valve is greater than half of the upstream pressure. As a general guide to avoid cavitation do not size a valve for liquid service where the pressure drop is greater than 50% of the upstream pressure.

## CONTROL VALVE ACTUATOR SIZING



## CONTROL VALVE FLOW



## NOMENCLATURE

- Cv = Valve flow coefficient
- g = Specific gravity of liquid at flowing conditions
- G = Specific gravity of gas at flowing conditions
- P1 = Upstream pressure, psia
- P2 = Downstream pressure, psia
- ΔP = Actual pressure drop (P1-P2), psi
- q = Liquid volumetric flow rate, U.S. GPM
- Q = Gas volumetric flow rate, SCFH
- W = Steam weight (mass) flow rate, LB/HR
- T = Flowing Temperature, °R (460 + °F)

Once the required Cv is determined, selection of the proper size control valve can be obtained by comparing the required Cv to the Cv values for the valve. As a general rule the maximum capacity of a control valve should be 15 to 50% above the maximum process flow, and the minimum required Cv must be within the available rangeability of the valve for proper control. If only the maximum process flow rate was used to calculate Cv, then the percent travel of the valve should be checked and should fall in the range of 65 to 80% of total travel.

## SUB-CRITICAL FLOW

$$\text{Liquid } C_v = q \left( \frac{g}{\Delta P} \right)^{1/2}$$

$$\text{Gas } C_v = \frac{Q}{963} \left( \frac{G \times T}{\Delta P (P_1 + P_2)} \right)^{1/2}$$

$$\text{Steam } C_v = \frac{W}{2.1 [\Delta P (P_1 + P_2)]^{1/2}}$$

## CRITICAL FLOW

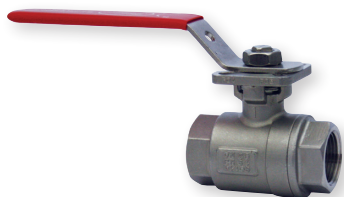
$$\text{Gas or steam where } \Delta P > \frac{P_1}{2}$$

$$C_v = \frac{Q (G \times T)^{1/2}}{750 \times P_1}$$

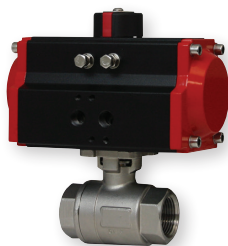
$$C_v = \frac{W}{1.65 \times P_1}$$

# 2-PIECE NPT STAINLESS STEEL BALL VALVE

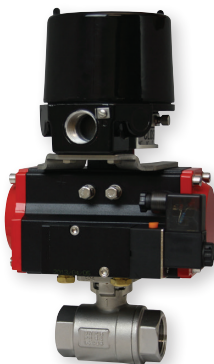
Full Port, Vented Ball, Electric or Pneumatic Actuators



WE01-EHD00



WE01-EDA02



WE01-EDA02-AA01



WE01-ETD01-A



WE01-ETI02-A



The **SERIES WE01** incorporates a full port 2-piece SS ball valve for great flow rates with minimal pressure drop. The valve features a blowout proof stem for added safety, reinforced PTFE seats and seals for longer life, and a 316 SS (ASTM CF8M) ball for better performance. Actuators are direct mounted creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valves allowing for remote position indication.

The Series WE01 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve and internally loaded springs return the valve to the closed position. Also available is the SN solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve. Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion free service.

## FEATURES/BENEFITS

- Capable of being configured to fit any application
- Limit switches can be mounted to manual valves for remote monitoring
- Vented ball to reduce operating torque
- Weatherproof or explosion-proof electric actuators
- Double acting or spring return anodized aluminum pneumatic actuators
- Full port design reduces the pressure drop across the valve

## APPLICATIONS

- Gas or liquid flow control
- Ideal for quick bubble tight shut-off

## SPECIFICATIONS

### VALVE

**Service:** Compatible liquids and gases.

**Body:** 2-piece.

**Line Sizes:** 1/2 to 3".

**End Connections:** Female NPT.

**Pressure Limits:** 28" Hg to 1000 psi (-0.7 to 69 bar) up to 250°F.

**Wetted Materials:** Body and Ball: 316 SS (CF8M); Stem: 316SS; Seat: RTFE/PTFE; Seal, Washer and Packing: PTFE.

**Temperature Limits:** -20 to 392°F (-29 to 200°C).

**Other Materials:** O-ring: Fluoroelastomer; Handle: 304 SS; Washer: 301 SS; Stem Nut, Locking Device, Gland Ring: 304SS; Handle Sleeve: PVC.

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/ EU (RoHS II).

### ACTUATORS

#### Pneumatic "DA" and "SR" Series

**Type:** DA series is double acting and SR series is spring return (rack and pinion).

**Normal Supply Pressure:** DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 80 psi (5.5 bar).

**Maximum Supply Pressure:** 120 psi (8.6 bar).

**Air Connections:** DA01: 1/8" female NPT; DA02 to DA05: 1/4" female NPT; SR02 to SR07: 1/4" female NPT.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limits:** -40 to 176°F (-40 to 80°C).

**Accessory Mounting:** NAMUR standard.

#### Electric "TD" and "MD" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC).

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** TD01 4 s; MD01: 10 s; TD02 and MD02: 20 s; TD03 and MD03: 30 s.

**Duty Rating:** 85%.

**Enclosure Rating:** NEMA 4X (IP67).

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override, position indicator, and TD models come with two limit switches.

#### Electric "TI" and "MI" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** See instruction manual.

**Duty Rating:** See instruction manual.

**Enclosure Rating:** NEMA 7, designed to meet hazardous locations: Class I, Group C & D; Class II, Group E, F & G; Division I & II.

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Position indicator and two limit switches.

# 2-PIECE NPT STAINLESS STEEL BALL VALVE

Full Port, Vented Ball, Electric or Pneumatic Actuators

MODEL CHART						
Size	Cv (gal/min)	Popular Hand Operated Model	Popular Double Acting Pneumatic Model	Popular Spring Return Pneumatic Model	Popular NEMA 4X Two Position Electric (110 VAC) Model	Popular NEMA 4X Modulating Electric (110 VAC) Model
1/2"	36.64	WE01-CHD00	WE01-CDA01	WE01-CSR02	WE01-CTD01-A	WE01-CMD01-A
3/4"	67.69	WE01-DHD00	WE01-DDA01	WE01-DSR02	WE01-DTD01-A	WE01-DMD01-A
1"	110.27	WE01-EHD00	WE01-EDA02	WE01-ESR03	WE01-ETD01-A	WE01-EMD01-A
1-1/4"	184.73	WE01-FHD00	WE01-FDA02	WE01-FSR03	WE01-FTD01-A	WE01-FMD01-A
1-1/2"	266.62	WE01-GHD00	WE01-GDA03	WE01-GSR04	WE01-GTD02-A	WE01-GMD01-A
2"	485.3	WE01-HHD00	WE01-HDA03	WE01-HSR05	WE01-HTD02-A	WE01-HMD02-A
2-1/2"	791.57	WE01-IHD00	WE01-IDA04	WE01-ISR07	WE01-ITD03-A	WE01-IMD03-A
3"	1151.95	WE01-JHD00	WE01-JDA05	WE01-JSR07	WE01-JTD03-A	WE01-JMD03-A

MODEL CHART - HAND OPERATED & PNEUMATIC ACTUATOR						
Example	WE01	-EDA02	-A	A	01	WE01-EDA02-AA01
Series	WE01					316 SS 2-piece NPT
Size and Actuator		CHD00 DHD00 EHD00 FHD00 GHD00 HHD00 IHD00 JHD00 CDA01 DDA01 EDA02 FDA02 GDA03 HDA03 IDA04 JDA05 CSR02 DSR02 ESR03 FSR03 GSR04 HSR05 ISR07 JSR07				1/2" hand operated 3/4" hand operated 1" hand operated 1-1/4" hand operated 1-1/2" hand operated 2" hand operated 2-1/2" hand operated 3" hand operated 1/2" double acting 3/4" double acting 1" double acting 1-1/4" double acting 1-1/2" double acting 2" double acting 2-1/2" double acting 3" double acting 1/2" spring return 3/4" spring return 1" spring return 1-1/4" spring return 1-1/2" spring return 2" spring return 2-1/2" spring return 3" spring return
Solenoid			N A			No solenoid NEMA 4X NAMUR solenoid
Solenoid Voltage				N A B C D E		No solenoid 110 VAC 220 VAC 24 VAC 24 VDC 12 VDC
Positioner and Switches					00 01 02 03 04 06 07 08 09	None 42AD0 exp limit switch 45VD0 exp position transmitter 42AD0-B ATEX limit switch 42AD0-IE IECEx limit switch QV-210101 poly limit switch VPS and P1 prox switch 265ER-D5 positioner 285ER-D5 smart positioner
Options					NO	Fail open spring return actuator

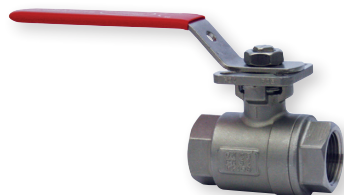
ACCESSORIES	
Model	Description
AFR4	Air filter regulator 0 to 120 psi
VB-01	Volume booster

MODEL CHART - ELECTRIC ACTUATOR				
Example	WE01	-GMD01	-A	WE01-GMD01-A
Series	WE01			316 SS 2-piece NPT
Size and Actuator		CTD01		1/2" NEMA 4X two-position
		DTD01		3/4" NEMA 4X two-position
		ETD01		1" NEMA 4X two-position
		FTD01		1-1/4" NEMA 4X two-position
		GTD02		1-1/2" NEMA 4X two-position
		HTD02		2" NEMA 4X two-position
		ITD03		2-1/2" NEMA 4X two-position
		JTD03		3" NEMA 4X two-position
		CMD01		1/2" NEMA 4X modulating
		DMD01		3/4" NEMA 4X modulating
		EMD01		1" NEMA 4X modulating
		FMD01		1-1/4" NEMA 4X modulating
		GMD01		1-1/2" NEMA 4X modulating
		HMD02		2" NEMA 4X modulating
		IMD03		2-1/2" NEMA 4X modulating
		JMD03		3" NEMA 4X modulating
		CTI01		1/2" exp two-position
		DTI01		3/4" exp two-position
		ETI02		1" exp two-position
		FTI02		1-1/4" exp two-position
		GTI02		1-1/2" exp two-position
		HTI04		2" exp two-position
		ITI05		2-1/2" exp two-position
		JTI06		3" exp two-position
		CMI01		1/2" exp electric modulating
		DMI01		3/4" exp electric modulating
		EMI02		1" exp electric modulating
		FMI02		1-1/4" exp electric modulating
	GMI02		1-1/2" exp electric modulating	
	HMI04		2" exp electric modulating	
	IMI05		2-1/2" exp electric modulating	
	JMI06		3" exp electric modulating	
Actuator Voltage			A	110 VAC
			B	220 VAC
			C	24 VAC
			D	24 VDC

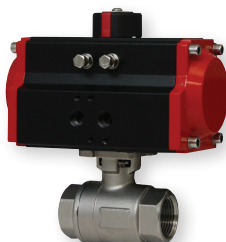
REPAIR KIT	
Model	Valve Series and Size
VRK-02	WE01-1/2"
VRK-03	WE01-3/4"
VRK-04	WE01-1"
VRK-06	WE01-1-1/2"
VRK-07	WE01-2"
VRK-08	WE01-2-1/2"
VRK-09	WE01-3"
Parts List - Included in Kit	
1 PTFE thrust washer	
1 FKM O-ring	
2 PTFE stem packing	
2 PTFE seals	
2 RTFE seats	

# 2-PIECE NPT BRASS BALL VALVE

Full Port, Vented Ball, Electric or Pneumatic Actuators



WE08-EHD00



WE08-EDA02



WE08-ETD01-A



WE08-ETI02-A

The **SERIES WE08** incorporates a full port 2-piece brass ball valve for great flow rates with minimal pressure drop. The valve features a blowout proof stem for added safety, reinforced PTFE seats and seals for longer life, and a brass ball for better performance. Actuators are direct mounted creating a compact assembly for tight spaces.

The Series WE08 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages, and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve and internally loaded springs return the valve to the closed position. Also, between the air supply ports for opening and closing the valve, actuators are constructed of anodized and epoxy coated aluminum for years of corrosion free service.

## FEATURES/BENEFITS

- Capable of being configured to fit any application
- Limit switches can be mounted to manual valves for remote monitoring
- Vented ball to reduce operating torque
- Weatherproof or explosion-proof electric actuators
- Double acting or spring return anodized aluminum pneumatic actuators
- Full port design reduces the pressure drop across the valve

## APPLICATIONS

- Gas or liquid flow control
- Ideal for quick bubble tight shut-off

## SPECIFICATIONS

### VALVE

**Service:** Compatible liquids and gases.

**Body:** 2-piece.

**Line Sizes:** 1/2 to 2".

**End Connections:** Female NPT.

**Pressure Limits:** 600 psi (41 bar) WOG.

**Wetted Materials:** Body, ball, and stem: Brass; Seat, seal, and packing: PTFE.

**Temperature Limits:** -20 to 425°F (-30 to 220°C).

**Other Materials:** O-ring: NBR; Handle, stem nut, ferrule: SS; Handle Sleeve: Vinyl; Body and cap: Nickel plated.

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/ EU (RoHS II).

### ACTUATORS

#### Pneumatic "DA" and "SR" Series

**Type:** DA series is a double acting and SR series is a spring return (rack and pinion).

**Normal Supply Pressure:** DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 80 psi (5.5 bar)

**Maximum Supply Pressure:** 120 psi (8.6 bar).

**Air Connections:** DA02 to DA03: 1/4" female NPT; SR02 to SR04: 1/4" female NPT.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limits:** -40 to 176°F (-40 to 80°C).

**Accessory Mounting:** NAMUR standard.

#### Electric "TD" and "MD" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC, or 24 VDC (MD models not available in 24 VDC).

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** TD01 4 s; MD01: 10 s; TD02: 20 s).

**Duty Rating:** 85%.

**Enclosure Rating:** NEMA 4X (IP67).

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override, position indicator, and TD models come with two limit switches.

#### Electric "TI" and "MI" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC, 24 VDC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** See instruction manual.

**Duty Rating:** See instruction manual.

**Enclosure Rating:** NEMA 7, designed to meet hazardous locations: Class I, Group C & D; Class II, Group E, F & G; Division I & II.

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Position indicator and two limit switches.



# 2-PIECE NPT BRASS BALL VALVE

Full Port, Vented Ball, Electric or Pneumatic Actuators

MODEL CHART						
Size	Cv (gal/min)	Popular Hand Operated Model	Popular Double Acting Pneumatic Model	Popular Spring Return Pneumatic Model	Popular NEMA 4X Two Position Electric (110 VAC) Model	Popular NEMA 4X Modulating Electric (110 VAC) Model
1/2"	16	WE08-CHD00	WE08-CDA02	WE08-CSR02	WE08-CTD01-A	WE08-CMD01-A
3/4"	40	WE08-DHD00	WE08-DDA02	WE08-DSR03	WE08-DTD01-A	WE08-DMD01-A
1"	65	WE08-EHD00	WE08-EDA02	WE08-ESR03	WE08-ETD01-A	WE08-EMD01-A
1-1/4"	90	WE08-FHD00	WE08-FDA03	WE08-FSR03	WE08-FTD01-A	WE08-FMD01-A
1-1/2"	135	WE08-GHD00	WE08-GDA03	WE08-GSR03	WE08-GTD01-A	WE08-GMD01-A
2"	251	WE08-HHD00	WE08-HDA03	WE08-HSR04	WE08-HTD02-A	WE08-HMD01-A

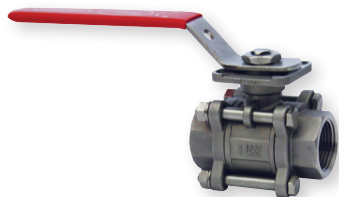
MODEL CHART - HAND OPERATED & PNEUMATIC ACTUATOR						
Example	WE08	-EDA02	-A	A	01	WE08-EDA02-AA01
Series	WE08					Brass 2-piece NPT
Size and Actuator		CHD00 DHD00 EHD00 FHD00 GHD00 HHD00 CDA02 DDA02 EDA02 FDA03 GDA03 HDA03 CSR02 DSR03 ESR03 FSR03 GSR03 HSR04				1/2" hand operated 3/4" hand operated 1" hand operated 1-1/4" hand operated 1-1/2" hand operated 2" hand operated 1/2" double acting 3/4" double acting 1" double acting 1-1/4" double acting 1-1/2" double acting 2" double acting 1/2" spring return 3/4" spring return 1" spring return 1-1/4" spring return 1-1/2" spring return 2" spring return
Solenoid			N A			No solenoid NEMA 4X NAMUR solenoid
Solenoid Voltage				N A B C D E		No solenoid 110 VAC 220 VAC 24 VAC 24 VDC 12 VDC
Positioner and Switches					00 01 02 03 06 07 08 09	None 42AD0 exp limit switch 45VD0 exp position transmitter 42AD0-B ATEX limit switch QV-210101 poly limit switch VPS and P1 prox switch 265ER-D5 positioner 285ER-D5 smart positioner
Options					NO	Fail open spring return actuator

MODEL CHART - ELECTRIC ACTUATOR				
Example	WE08	-GMD01	-A	WE08-GMD01-A
Series	WE08			Brass 2-piece NPT
Size and Actuator		CTD01 DTD01 ETD01 FTD01 GTD01 HTD02 CMD01 DMD01 EMD01 FMD01 GMD01 HMD01 CTI01 DTI01 ETI02 FTI02 GTI02 HTI03 CMI01 DMI01 EMI02 FMI02 GMI02 HMI03		1/2" electric two-position 3/4" electric two-position 1" electric two-position 1-1/4" electric two-position 1-1/2" electric two-position 2" electric two-position 1/2" electric modulating 3/4" electric modulating 1" electric modulating 1-1/4" electric modulating 1-1/2" electric modulating 2" electric modulating 1/2" exp electric two-position 3/4" exp electric two-position 1" exp electric two-position 1-1/4" exp electric two-position 1-1/2" exp electric two-position 2" exp electric two-position 1/2" exp electric two-position 3/4" exp electric two-position 1" exp electric two-position 1-1/4" exp electric two-position 1-1/2" exp electric two-position 2" exp electric two-position
Actuator Voltage			A B C D	110 VAC 220 VAC 24 VAC 24 VDC

ACCESSORIES	
Model	Description
AFR4	Air filter regulator, 0 to 120 psi

# 3-PIECE NPT STAINLESS STEEL BALL VALVE

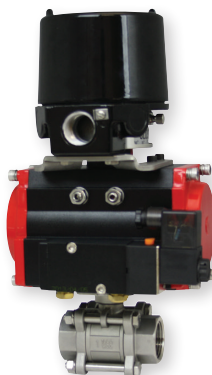
Full Port, Vented Ball, Electric or Pneumatic Actuators



WE02-DHD00



WE02-DDA01



WE02-DDA01-AA01



WE02-DTD01-A



WE02-CTI01-A



The **SERIES WE02** incorporates a full port 3-piece SS ball valve for great flow rates with minimal pressure drop. The valve features a blowout proof stem for added safety, reinforced PTFE seats and seals for longer life, and a 316 SS (ASTM CF8M) ball for better performance. Actuators are direct mounted creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valves allowing for remote position indication.

The Series WE02 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve, and internally loaded springs return the valve to the closed position. Also available is the SN solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve. Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion free service.

## FEATURES/BENEFITS

- Capable of being configured to fit any application
- Limit switches can be mounted to manual valves for remote monitoring
- Vented ball to reduce operating torque
- Weatherproof or explosion-proof electric actuators
- Double acting or spring return anodized aluminum pneumatic actuators
- 3-piece design for each replacement of seals
- Full port design reduces the pressure drop across the valve

## APPLICATIONS

- Gas or liquid flow control
- Ideal for quick bubble tight shut-off

## SPECIFICATIONS

### VALVE

**Service:** Compatible liquids and gases.

**Body:** 3-piece.

**Line Sizes:** 1/2 to 3" .

**End Connections:** Female NPT.

**Pressure Limits:** 28" Hg to 1000 psi (-0.7 to 69 bar) up to 250°F.

**Wetted Materials:** Body and ball: 316 SS (CF8M); Stem: 316 SS; Seat: RTFE/PTFE; Seal, Washer, and Packing: PTFE.

**Temperature Limits:** -20 to 392°F (-29 to 200°C).

**Other Materials:** O-ring:

Fluoroelastomer; Handle: 304 SS; Washer: 301 SS; Stem Nut, Locking Device, Gland Ring: 304 SS; Handle Sleeve: PVC.

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/ EU (RoHS II).

### ACTUATORS

#### Pneumatic "DA" and "SR" Series

**Type:** DA series is double acting and SR series is spring return (rack and pinion).

**Normal Supply Pressure:** DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 80 psi (5.5 bar).

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**Air Connections:** DA01: 1/8" female NPT; DA02 to DA05: 1/4" female NPT; SR02 to SR07: 1/4" female NPT.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limits:** -40 to 176°F (-40 to 80°C).

**Accessory Mounting:** NAMUR standard.

#### Electric "TD" and "MD" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC

(MD models not available in 24 VDC). **Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** TD01: 4 s; MD01: 10 s; TD02 and MD02: 20 s; TD03 and MD03: 30 s.

**Duty Rating:** 85%.

**Enclosure Rating:** NEMA 4X (IP67).

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override, position indicator, and TD models come with two limit switches.

#### Electric "TI" and "MI" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** See instruction manual.

**Duty Rating:** See instruction manual.

**Enclosure Rating:** NEMA 7, designed to meet hazardous locations: Class I, Group C & D; Class II, Group E, F & G; Division I & II.

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Position indicator and two limit switches.

# 3-PIECE NPT STAINLESS STEEL BALL VALVE

Full Port, Vented Ball, Electric or Pneumatic Actuators

MODEL CHART						
Size	Cv (gal/min)	Popular Hand Operated Model	Popular Double Acting Pneumatic Model	Popular Spring Return Pneumatic Model	Popular NEMA 4X Two Position Electric (110 VAC) Model	Popular NEMA 4X Modulating Electric (110 VAC) Model
1/2"	36.64	WE02-CHD00	WE02-CDA01	WE02-CSR02	WE02-CTD01-A	WE02-CMD01-A
3/4"	67.69	WE02-DHD00	WE02-DDA01	WE02-DSR02	WE02-DTD01-A	WE02-DMD01-A
1"	110.27	WE02-EHD00	WE02-EDA02	WE02-ESR03	WE02-ETD01-A	WE02-EMD01-A
1-1/4"	184.73	WE02-FHD00	WE02-FDA02	WE02-FSR03	WE02-FTD01-A	WE02-FMD01-A
1-1/2"	266.62	WE02-GHD00	WE02-GDA03	WE02-GSR04	WE02-GTD02-A	WE02-GMD01-A
2"	485.3	WE02-HHD00	WE02-HDA03	WE02-HSR05	WE02-HTD02-A	WE02-HMD02-A
2-1/2"	791.57	WE02-IHD00	WE02-IDA04	WE02-ISR07	WE02-ITD03-A	WE02-IMD03-A
3"	1151.95	WE02-JHD00	WE02-JDA05	WE02-JSR07	WE02-JTD03-A	WE02-JMD03-A

MODEL CHART - HAND OPERATED & PNEUMATIC ACTUATOR						
Example	WE02	-CSR02	-N	N	09	WE02-CSR02-NN09
Series	WE02					316 SS 3-piece NPT
Size and Actuator		CHD00				1/2" hand operated
		DHD00				3/4" hand operated
		EHD00				1" hand operated
		FHD00				1-1/4" hand operated
		GHD00				1-1/2" hand operated
		HHD00				2" hand operated
		IHD00				2-1/2" hand operated
		JHD00				3" hand operated
		CDA01				1/2" double acting
		DDA01				3/4" double acting
		EDA02				1" double acting
		FDA02				1-1/4" double acting
		GDA03				1-1/2" double acting
		HDA03				2" double acting
		IDA04				2-1/2" double acting
		JDA05				3" double acting
		CSR02				1/2" spring return
		DSR02				3/4" spring return
		ESR03				1" spring return
		FSR03				1-1/4" spring return
		GSR04				1-1/2" spring return
Solenoid			N			No solenoid
			A			NEMA 4X NAMUR solenoid
Solenoid Voltage			N			No solenoid
			A			110 VAC
			B			220 VAC
			C			24 VAC
			D			24 VDC
			E			12 VDC
Positioner and Switches					00	None
					01	42AD0 exp limit switch
					02	45VD0 exp position transmitter
					03	42AD0-B ATEX limit switch
					04	42AD0-IE IECEx limit switch
					06	QV-210101 poly limit switch
					07	VPS and P1 prox switch
					08	265ER-D5 positioner
					09	285ER-D5 smart positioner
Options					NO	Fail open spring return actuator

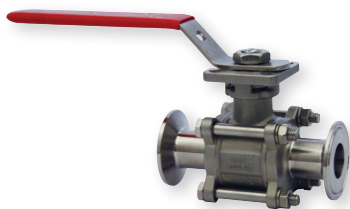
ACCESSORIES	
Model	Description
AFR4	Air filter regulator 0 to 120 psi
VB-01	Volume booster

MODEL CHART - ELECTRIC ACTUATOR			
Example	WE02	-ETD01	-B
Series	WE02		
Size and Actuator		CTD01	1/2" NEMA 4X two-position
		DTD01	3/4" NEMA 4X two-position
		ETD01	1" NEMA 4X two-position
		FTD01	1-1/4" NEMA 4X two-position
		GTD02	1-1/2" NEMA 4X two-position
		HTD02	2" NEMA 4X two-position
		ITD03	2-1/2" NEMA 4X two-position
		JTD03	3" NEMA 4X two-position
		CMD01	1/2" NEMA 4X modulating
		DMD01	3/4" NEMA 4X modulating
		EMD01	1" NEMA 4X modulating
		FMD01	1-1/4" NEMA 4X modulating
		GMD01	1-1/2" NEMA 4X modulating
		HMD02	2" NEMA 4X modulating
		IMD03	2-1/2" NEMA 4X modulating
		JMD03	3" NEMA 4X modulating
		CTI01	1/2" exp two-position
		DTI01	3/4" exp two-position
		ETI02	1" exp two-position
		FTI02	1-1/4" exp two-position
Actuator Voltage		GTI03	1-1/2" exp two-position
		HTI04	2" exp two-position
		ITI05	2-1/2" exp two-position
		JTI05	3" exp two-position
		CMI01	1/2" exp electric modulating
		DMI01	3/4" exp electric modulating
		EMI02	1" exp electric modulating
		FMI02	1-1/4" exp electric modulating
		GMI03	1-1/2" exp electric modulating
		HMI04	2" exp electric modulating
		IMI05	2-1/2" exp electric modulating
		JMI05	3" exp electric modulating
		A	110 VAC
		B	220 VAC
		C	24 VAC
		D	24 VDC

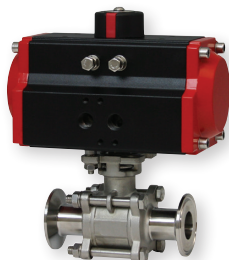
REPAIR KIT	
Model	Valve Series and Size
VRK-10	WE02-1/2"
VRK-11	WE02-3/4"
VRK-12	WE02-1"
VRK-14	WE02-1-1/2"
VRK-15	WE02-2"
VRK-16	WE02-2-1/2"
VRK-17	WE02-3"
Parts List - Included in Kit	
1 PTFE thrust washer	
1 FKM O-ring	
2 PTFE stem packing	
2 PTFE seals	
2 RTFE seats	

# 3-PIECE TRI-CLAMP STAINLESS STEEL BALL VALVE

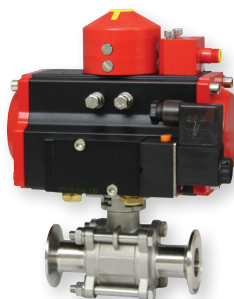
Cavity Filled, Full Port, Electric or Pneumatic Actuators



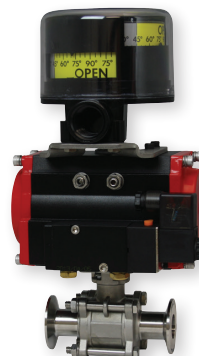
WE03-DHD00



WE03-DDA01



WE03-DDA01-AA07



WE03-DDA01-AA06



WE03-DTD01-A



The **SERIES WE03** incorporates a full port 3-piece tri-clamp SS ball valve for great flow rates with minimal pressure drop. The valve features a blowout proof stem for added safety, reinforced PTFE seats and seals for longer life, and a 316 SS (ASTM CF8M) ball for better performance. Actuators are direct mounted creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valves allowing for remote position indication.

The Series WE03 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve and internally loaded springs return the valve to the closed position. Also available is the SN solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve. Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion free service.

## FEATURES/BENEFITS

- Capable of being configured to fit any application
- Limit switches can be mounted to manual valves for remote monitoring
- Cavity filled valve for sanitary applications
- Weatherproof or explosion-proof electric actuators
- Double acting or spring return anodized aluminum pneumatic actuators
- Full port design reduces the pressure drop across the valve

## APPLICATIONS

- Gas or liquid flow control
- Ideal for quick bubble tight shut-off
- Designed for food and beverage applications

## SPECIFICATIONS

### VALVE

**Service:** Compatible liquids and gases.

**Body:** 3-piece.

**Line Sizes:** 1/2 to 2" .

**End Connections:** Tri-clamp ends.

**Pressure Limits:** 28" Hg to 1000 psi (-0.7 to 69 bar) up to 250°F.

**Wetted Materials:** Body and ball: 316 SS (CF8M); Stem: 316 SS; Seat: RTFE/PTFE; Seal, Washer, and Packing: PTFE.

**Temperature Limits:** -20 to 392°F (-29 to 200°C).

**Other Materials:** O-ring:

Fluoroelastomer; Handle: 304 SS; Washer: 301 SS; Stem Nut, Locking Device, Gland Ring: 304 SS; Handle Sleeve: PVC.

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/ EU (RoHS II).

### ACTUATORS

#### Pneumatic "DA" and "SR" Series

**Type:** DA series is double acting and SR series is spring return (rack and pinion).

**Normal Supply Pressure:** DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 80 psi (5.5 bar).

**Maximum Supply Pressure:** 120 psi (8.6 bar).

**Air Connections:** DA01: 1/8" female NPT; DA02: 1/4" female NPT; SR02 to SR04: 1/4" female NPT.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limits:** -40 to 176°F (-40 to 80°C).

**Accessory Mounting:** NAMUR standard.

#### Electric "TD" and "MD" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC).

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** TD01: 4 s; MD01: 10 s; TD02 and MD02: 20 s.

**Duty Rating:** 85%.

**Enclosure Rating:** NEMA 4X (IP67).

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override, position indicator, and TD models come with two limit switches.

#### Electric "TI" and "MI" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** See instruction manual.

**Duty Rating:** See instruction manual.

**Enclosure Rating:** NEMA 7, designed to meet hazardous locations: Class I, Group C & D; Class II, Group E, F & G; Division I & II.

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Position indicator and two limit switches.

# 3-PIECE TRI-CLAMP STAINLESS STEEL BALL VALVE

Cavity Filled, Full Port, Electric or Pneumatic Actuators

MODEL CHART						
Size	Cv (gal/min)	Popular Hand Operated Model	Popular Double Acting Pneumatic Model	Popular Spring Return Pneumatic Model	Popular NEMA 4X Two Position Electric (110 VAC) Model	Popular NEMA 4X Modulating Electric (110 VAC) Model
1/2"	14.39	WE03-CHD00	WE03-CDA01	WE03-CSR02	WE03-CTD01-A	WE03-CMD01-A
3/4"	42.25	WE03-DHD00	WE03-DDA01	WE03-DSR02	WE03-DTD01-A	WE03-DMD01-A
1"	86.17	WE03-EHD00	WE03-EDA02	WE03-ESR03	WE03-ETD01-A	WE03-EMD01-A
1-1/2"	223.61	WE03-GHD00	WE03-GDA02	WE03-GSR04	WE03-GTD01-A	WE03-GMD01-A
2"	437.98	WE03-HHD00	WE03-HDA02	WE03-HSR04	WE03-HTD02-A	WE03-HMD02-A

MODEL CHART - HAND OPERATED & PNEUMATIC ACTUATOR						
Example	WE03	-EDA02	-A	A	06	WE03-EDA02-AA06
Series	WE03					316 SS 3-piece tri-clamp
Size and Actuator		CHD00				1/2" hand operated
		DHD00				3/4" hand operated
		EHD00				1" hand operated
		GHD00				1-1/2" hand operated
		HHD00				2" hand operated
		CDA01				1/2" double acting
		DDA01				3/4" double acting
		EDA02				1" double acting
		GDA02				1-1/2" double acting
		HDA02				2" double acting
		CSR02				1/2" spring return
		DSR02				3/4" spring return
		ESR03				1" spring return
		GSR04				1-1/2" spring return
		HSR04				2" spring return
Solenoid			N			No solenoid
			A			NEMA 4X NAMUR solenoid
Solenoid Voltage			N			No solenoid
			A			110 VAC
			B			220 VAC
			C			24 VAC
			D			24 VDC
			E			12 VDC
Positioner and Switches				00		None
				01		42AD0 exp limit switch
				02		45VD0 exp position transmitter
				03		42AD0-B ATEX limit switch
				04		42AD0-IE IECEX limit switch
				06		QV-210101 poly limit switch
				07		VPS and P1 prox switch
				08		265ER-D5 positioner
				09		285ER-D5 smart positioner
Options					NO	Fail open spring return actuator

ACCESSORIES	
Model	Description
AFR4	Air filter regulator 0 to 120 psi
VB-01	Volume booster

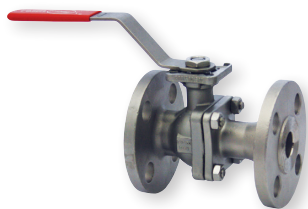
MODEL CHART - ELECTRIC ACTUATOR			
Example	WE03	-CMD01	-A WE03-CMD01-A
Series	WE03		316 SS 3-piece tri-clamp
Size and Actuator		CTD01	1/2" NEMA 4X two-position
		DTD01	3/4" NEMA 4X two-position
		ETD01	1" NEMA 4X two-position
		GTD01	1-1/2" NEMA 4X two-position
		HTD02	2" NEMA 4X two-position
		CMD01	1/2" NEMA 4X modulating
		DMD01	3/4" NEMA 4X modulating
		EMD01	1" NEMA 4X modulating
		GMD01	1-1/2" NEMA 4X modulating
		HMD02	2" NEMA 4X modulating
		CTI01	1/2" exp two-position
		DTI01	3/4" exp two-position
		ETI02	1" exp two-position
		GTI02	1-1/2" exp two-position
		HTI02	2" exp two-position
		CMI01	1/2" exp electric modulating
		DMI01	3/4" exp electric modulating
		EMI02	1" exp electric modulating
		GMI02	1-1/2" exp electric modulating
		HMI02	2" exp electric modulating
Actuator Voltage		A	110 VAC
		B	220 VAC
		C	24 VAC
		D	24 VDC

REPAIR KIT	
Model	Valve Series and Size
VRK-19	WE03-1/2"
VRK-20	WE03-3/4"
VRK-21	WE03-1"
VRK-22	WE03-1-1/2"
VRK-23	WE03-2"
Parts List - Included in Kit	
1 PTFE thrust washer	
1 FKM O-ring	
2 PTFE stem packing	
2 PTFE seats	



# 2-PIECE FLANGED STAINLESS STEEL BALL VALVE

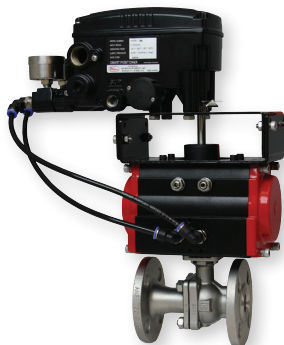
## 150# ANSI Flange, Vented Ball, Electric or Pneumatic Actuators



WE04-DHD00



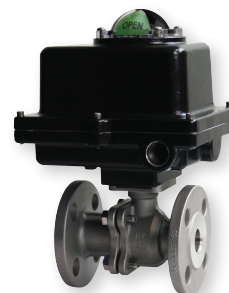
WE04-DDA02-AA03



WE04-DDA02-NN09



WE04-DTD01-A



WE04-CTI01-A



The **SERIES WE04** incorporates a full port 2-piece flanged SS ball valve for great flow rates with minimal pressure drop. The valve features a blowout proof stem for added safety, reinforced PTFE seats and seals for longer life, and a 316 SS (ASTM CF8M) ball for better performance. Actuators are direct mounted creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valves allowing for remote position indication.

The Series WE04 can be configured with either a pneumatic or electric actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages, and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, with one driving the valve open, and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve, and internally loaded springs return the valve to the closed position. Also available is the SN solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve. Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion free service.

### FEATURES/BENEFITS

- Capable of being configured to fit any application
- Limit switches can be mounted to manual valves for remote monitoring
- Vented ball to reduce operating torque
- Weatherproof or explosion-proof electric actuators
- Double acting or spring return anodized aluminum pneumatic actuators
- Eliminates threads and reduces installation and maintenance time
- Full port design reduces the pressure drop across the valve

### APPLICATIONS

- Gas or liquid flow control
- Ideal for quick bubble tight shut-off

### SPECIFICATIONS

#### VALVE

**Service:** Compatible liquids and gases.

**Body:** 2-piece.

**Line Sizes:** 1/2 to 3" .

**End Connections:** 150# ANSI flange.

**Pressure Limits:** 28" Hg to 275 psi (-0.7 to 19 bar) up to 392°F.

**Wetted Materials:** Body and ball: 316 SS (CF8M); Stem: 316 SS; Seat: RTFE/PTFE; Seal, Washer, and Packing: PTFE.

**Temperature Limits:** -20 to 392°F (-29 to 200°C).

**Other Materials:** O-ring:

Fluoroelastomer; Handle: 304 SS; Washer: 301 SS; Stem Nut, Locking Device, Gland Ring: 304 SS; Handle Sleeve: PVC.

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/ EU (RoHS II).

#### ACTUATORS

##### Pneumatic "DA" and "SR" Series

**Type:** DA series is double acting and SR series is spring return (rack and pinion).

**Normal Supply Pressure:** DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 80 psi (5.5 bar).

**Maximum Supply Pressure:** 120 psi (8.6 bar).

**Air Connections:** DA01: 1/8" female NPT; DA02 to DA04: 1/4" female NPT; SR02 to SR06: 1/4" female NPT.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limits:** -40 to 176°F (-40 to 80°C).

**Accessory Mounting:** NAMUR standard.

##### Electric "TD" and "MD" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC OR 240 VDC (MD models not available in 24 VDC) .

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** TD01: 4 s; MD01: 10 s; TD02 and MD02: 20 s; TD03 and MD03: 30 s.

**Duty Rating:** 85%.

**Enclosure Rating:** NEMA 4X (IP67).

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override, position indicator, and TD models come with two limit switches.

##### Electric "TI" and "MI" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** See instruction manual.

**Duty Rating:** See instruction manual.

**Enclosure Rating:** NEMA 7, designed to meet hazardous locations: Class I, Group C & D; Class II, Group E, F & G; Division I & II.

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Electrical Connection:** 1/2" NPT female.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Position indicator and two limit switches.

## 2-PIECE FLANGED STAINLESS STEEL BALL VALVE

150# ANSI Flange, Vented Ball, Electric or Pneumatic Actuators

MODEL CHART						
Size	Cv (gal/min)	Popular Hand Operated Model	Popular Double Acting Pneumatic Model	Popular Spring Return Pneumatic Model	Popular NEMA 4X Two Position Electric (110 VAC) Model	Popular NEMA 4X Modulating Electric (110 VAC) Model
1/2"	36.64	WE04-CHD00	WE04-CDA01	WE04-CSR02	WE04-CTD01-A	WE04-CMD01-A
3/4"	67.69	WE04-DHD00	WE04-DDA01	WE04-DSR02	WE04-DTD01-A	WE04-DMD01-A
1"	101.63	WE04-EHD00	WE04-EDA03	WE04-ESR03	WE04-ETD01-A	WE04-EMD01-A
1-1/2"	266.62	WE04-GHD00	WE04-GDA03	WE04-GSR04	WE04-GTD02-A	WE04-GMD01-A
2"	485.3	WE04-HHD00	WE04-HDA03	WE04-HSR05	WE04-HTD02-A	WE04-HMD02-A
2-1/2"	816.9	WE04-IHD00	WE04-IDA04	WE04-ISR06	WE04-ITD03-A	WE04-IMD03-A
3"	1121.84	WE04-JHD00	WE04-JDA04	WE04-JSR06	WE04-JTD03-A	WE04-JMD03-A

MODEL CHART - HAND OPERATED & PNEUMATIC ACTUATOR						
Example	WE04	-GDA03	-A	B	05	WE04-GDA03-AB05
Series	WE04					316 SS 2-piece flanged
Size and Actuator		CHD00 DHD00 EHD00 GHD00 HHD00 IHD00 JHD00 CDA01 DDA01 EDA03 GDA03 HDA03 IDA04 JDA04 CSR02 DSR02 ESR03 GSR04 HSR05 ISR06 JSR06				1/2" hand operated 3/4" hand operated 1" hand operated 1-1/2" hand operated 2" hand operated 2-1/2" hand operated 3" hand operated 1/2" double acting 3/4" double acting 1" double acting 1-1/2" double acting 2" double acting 2-1/2" double acting 3" double acting 1/2" spring return 3/4" spring return 1" spring return 1-1/2" spring return 2" spring return 2-1/2" spring return 3" spring return
Solenoid			N A			No solenoid NEMA 4X NAMUR solenoid
Solenoid Voltage			N A B C D E			No solenoid 110 VAC 220 VAC 24 VAC 24 VDC 12 VDC
Positioner and Switches					00 01 02 03 04 06 07 08 09	None 42AD0 exp limit switch 45VD0 exp position transmitter 42AD0-B ATEX limit switch 42AD0-IE IECEX limit switch QV-210101 poly limit switch VPS and P1 prox switch 265ER-D5 positioner 285ER-D5 smart positioner
Options					NO	Fail open spring return actuator

ACCESSORIES	
Model	Description
AFR4	Air filter regulator 0 to 120 psi
VB-01	Volume booster

MODEL CHART - ELECTRIC ACTUATOR				
Example	WE04	-ITD03	-B	WE04-ITD03-B
Series	WE04			316 SS 2-piece flanged
Size and Actuator		CTD01		1/2" NEMA 4X two-position
		DTD01		3/4" NEMA 4X two-position
		ETD01		1" NEMA 4X two-position
		GTD02		1-1/2" NEMA 4X two-position
		HTD02		2" NEMA 4X two-position
		ITD03		2-1/2" NEMA 4X two-position
		JTD03		3" NEMA 4X two-position
		CMD01		1/2" NEMA 4X modulating
		DMD01		3/4" NEMA 4X modulating
		EMD01		1" NEMA 4X modulating
		GMD01		1-1/2" NEMA 4X modulating
		HMD02		2" NEMA 4X modulating
		IMD03		2-1/2" NEMA 4X modulating
		JMD03		3" NEMA 4X modulating
		CTI01		1/2" exp two-position
		DTI01		3/4" exp two-position
		ETI02		1" exp two-position
		GTI03		1-1/2" exp two-position
		HTI04		2" exp two-position
		ITI04		2-1/2" exp two-position
		JTI05		3" exp two-position
		CMI01		1/2" exp electric modulating
		DMI01		3/4" exp electric modulating
		EMI02		1" exp electric modulating
		GMI03		1-1/2" exp electric modulating
		HMI04		2" exp electric modulating
	IMI04		2-1/2" exp electric modulating	
	JMI05		3" exp electric modulating	
Actuator Voltage			A	110 VAC
			B	220 VAC
			C	24 VAC
			D	24 VDC

REPAIR KIT	
Model	Valve Series and Size
VRK-27	WE04-1/2"
VRK-28	WE04-3/4"
VRK-29	WE04-1"
VRK-31	WE04-1-1/2"
VRK-32	WE04-2"
VRK-33	WE04-2-1/2"
VRK-34	WE04-3"
Parts List - Included in Kit	
1 PTFE thrust washer	
1 FKM O-ring	
2 PTFE stem packing	
2 PTFE seals	
2 RTFE seats	

# 3-PIECE SOCKET WELD STAINLESS STEEL BALL VALVE

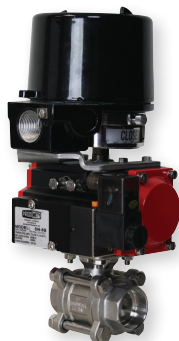
Full Port, Vented Ball, Electric or Pneumatic Actuators



WE05-EHD00



WE05-FDA02



WE05-DDA01-AA01



WE05-JTD03-A



WE05-TI05-B



The **SERIES WE05** offers the best possible design for socket weld ball valves. The swing out body feature and seat arrangement allow for trouble-free welding installation. The Series WE05 incorporates a full port 3-piece SS ball valve for ideal flow rates with minimal pressure drop. The valve features a blowout proof stem for added safety, reinforced PTFE seats and seals for longer life, and a 316 SS (ASTM CF8M) ball for better performance.

Actuators are directly mounted creating a compact assembly for tight spaces. Limit switches can be mounted directly to the valves, allowing for remote position indication. The Series WE05 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position modulating control. Two-position actuators use the supply voltage to drive the valve open or close, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and a permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve and internally loaded springs return the valve to the closed position. Also available is the SV3 solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve. Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion free service.

## FEATURES/BENEFITS

- Socket weld ends
- Capable of being configured to fit any application
- Limit switches can be mounted to manual valves for remote monitoring

## SPECIFICATIONS

### VALVE

**Service:** Compatible liquids and gases.

**Body:** 3-piece.

**Line Sizes:** 1/2 to 3".

**End Connections:** Socket weld.

**Pressure Limits:** 20" Hg to 1000 psi (-0.7 to 69 bar) up to 250°F.

**Wetted Materials:** Body and ball: 316 SS (CF8M); Stem: 316 SS; Seat: RTFE/PTFE; Seal, Washer, and Packing: PTFE.

**Temperature Limits:** -20 to 392°F (-29 to 200°C).

**Other Materials:** O-ring:

Fluoroelastomer; Handle: 304 SS; Washer: 301 SS; Stem Nut, Locking Device, Gland Ring: 304 SS; Handle Sleeve: PVC.

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/ EU (RoHS II).

### ACTUATORS

**Pneumatic "DA" and "SR" Series**

**Type:** DA series is double acting and SR series is spring return (rack and pinion).

**Normal Supply Pressure:** DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 80 psi (5.5 bar).

**Maximum Supply Pressure:** 120 psi (8.6 bar).

**Air Connections:** DA01: 1/8" female NPT; DA02 to DA05: 1/4" female NPT; SR02 to SR07: 1/4" female NPT.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limits:** -40 to 176°F (-40 to 80°C).

**Accessory Mounting:** NAMUR standard.

**Electric "TD" and "MD" Series**

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC).

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** TD01: 4 s; MD01: 10 s; TD02 and MD02: 20 s; TD03 and MD03: 30 s.

**Duty Rating:** 85%.

**Enclosure Rating:** NEMA 4X (IP67).

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override, position indicator, and TD models come with two limit switches.

**Electric "TI" and "MI" Series**

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** See instruction manual.

**Duty Rating:** See instruction manual.

**Enclosure Rating:** NEMA 7, designed to meet hazardous locations: Class I, Group C & D; Class II, Group E, F & G; Division I & II.

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Position indicator and two limit switches.

# 3-PIECE SOCKET WELD STAINLESS STEEL BALL VALVE

Full Port, Vented Ball, Electric or Pneumatic Actuators

MODEL CHART

	Cv	Popular Hand Operated	Popular Double Acting	Popular Spring Return	Popular NEMA 4X Two Position Electric	Popular NEMA 4X Modulating Electric
Size	(gal/min)	Model	Pneumatic Model	Pneumatic Model	(110 VAC) Model	(110 VAC) Model
1/2"	36.64	WE05-CHD00	WE05-CDA01	WE05-CSR02	WE05-CTD01-A	WE05-CMD01-A
3/4"	67.69	WE05-DHD00	WE05-DDA01	WE05-DSR02	WE05-DTD01-A	WE05-DMD01-A
1"	110.27	WE05-EHD00	WE05-EDA02	WE05-ESR03	WE05-ETD01-A	WE05-EMD01-A
1-1/4"	184.73	WE05-FHD00	WE05-FDA02	WE05-FSR03	WE05-FTD01-A	WE05-FMD01-A
1-1/2"	266.62	WE05-GHD00	WE05-GDA03	WE05-GSR04	WE05-GTD02-A	WE05-GMD01-A
2"	485.3	WE05-HHD00	WE05-HDA03	WE05-HSR05	WE05-HTD02-A	WE05-HMD02-A
2-1/2"	791.57	WE05-IHD00	WE05-IDA04	WE05-ISR07	WE05-ITD03-A	WE05-IMD03-A
3"	1151.95	WE05-JHD00	WE05-JDA05	WE05-JSR07	WE05-JTD03-A	WE05-JMD03-A

MODEL CHART - HAND OPERATED & PNEUMATIC ACTUATOR

Example	WE05	-CSR02	-N	N	09	WE05-CSR02-NN09
Series	WE05					316 SS 3-piece socket weld
Size and Actuator		CHD00 DHD00 EHD00 FHD00 GHD00 HHD00 IHD00 JHD00 CDA01 DDA01 EDA02 FDA02 GDA03 HDA03 IDA04 JDA05 CSR02 DSR02 ESR03 FSR03 GSR04 HSR05 ISR07 JSR07				1/2" hand operated 3/4" hand operated 1" hand operated 1-1/4" hand operated 1-1/2" hand operated 2" hand operated 2-1/2" hand operated 3" hand operated 1/2" double acting 3/4" double acting 1" double acting 1-1/4" double acting 1-1/2" double acting 2" double acting 2-1/2" double acting 3" double acting 1/2" spring return 3/4" spring return 1" spring return 1-1/4" spring return 1-1/2" spring return 2" spring return 2-1/2" spring return 3" spring return
Solenoid			N A			No solenoid NEMA 4X NAMUR solenoid
Solenoid Voltage				N A B C D E		No solenoid 120 VAC 220 VAC 24 VAC 24 VDC 12 VDC
Positioner and Switches					00 01 02 03 04 06 07 08 09	None 42AD0 exp limit switch 45VD0 exp position transmitter 42AD0-B ATEX limit switch 42AD0-IE IECEx limit switch QV-210101 poly limit switch VPS and P1 prox switch 265ER-D5 positioner 285ER-D5 smart positioner
Options					NO	Fail open spring return actuator

ACCESSORIES

Model	Description
AFR4	Air filter regulator 0 to 120 psi
VB-01	Volume booster

MODEL CHART - ELECTRIC ACTUATOR

Example	WE05	-ETD01	-B	WE05-ETD01-B
Series	WE05			316 SS 3-piece socket weld
Size and Actuator		CTD01 DTD01 ETD01 FTD01 GTD02 HTD02 ITD03 JTD03 CMD01 DMD01 EMD01 FMD01 GMD01 HMD02 IMD03 JMD03 CTI01 DTI01 ETI02 FTI02 GTI03 HTI04 ITI05 JTI05 CMI01 DMI01 EMI02 FMI02 GMI03 HMI04 IMI05 JMI05		1/2" NEMA 4X two-position 3/4" NEMA 4X two-position 1" NEMA 4X two-position 1-1/4" NEMA 4X two-position 1-1/2" NEMA 4X two-position 2" NEMA 4X two-position 2-1/2" NEMA 4X two-position 3" NEMA 4X two-position 1/2" NEMA 4X modulating 3/4" NEMA 4X modulating 1" NEMA 4X modulating 1-1/4" NEMA 4X modulating 1-1/2" NEMA 4X modulating 2" NEMA 4X modulating 2-1/2" NEMA 4X modulating 3" NEMA 4X modulating 1/2" exp two-position 3/4" exp two-position 1" exp two-position 1-1/4" exp two-position 1-1/2" exp two-position 2" exp two-position 2-1/2" exp two-position 3" exp two-position 1/2" exp electric modulating 3/4" exp electric modulating 1" exp electric modulating 1-1/4" exp electric modulating 1-1/2" exp electric modulating 2" exp electric modulating 2-1/2" exp electric modulating 3" exp electric modulating
Actuator Voltage			A B C D	110 VAC 220 VAC 24 VAC 24 VDC

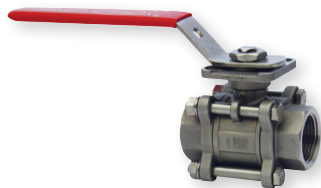
REPAIR KIT

Model	Valve Series and Size
VRK-10	WE05-1/2"
VRK-11	WE05-3/4"
VRK-12	WE05-1"
VRK-14	WE05-1-1/2"
VRK-15	WE05-2"
VRK-16	WE05-2-1/2"
VRK-17	WE05-3"
Parts List - Included in Kit	
1 PTFE thrust washer	
1 FKM O-ring	
2 PTFE stem packing	
2 PTFE seals	
2 RTFE seats	



# 3-PIECE NPT STAINLESS STEEL V-BALL VALVE

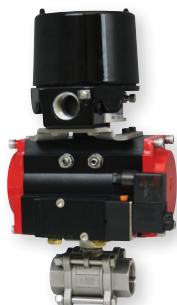
V-Port, Vented Ball, Electric or Pneumatic Actuators



WE06-DHD00-T



WE06-DDA01-T



WE06-DDA01-T-AA01



WE06-DTD01-T-A



WE06-CTI01-T-A



The **SERIES WE06** incorporates a V-port ball valve for impressive flow rates with minimal pressure drop. Quarter turn control ball valves are compact, lighter weight and much less expensive than comparable sized globe valves and segmented control valves. They also offer bubble tight shut off with zero leakage and can withstand high pressure drops. The 60° and 90° balls offer an equal percentage flow characteristic. W.E. Anderson's V-port ball valves have been designed to offer maximum flow characteristics that are substantially higher than comparably sized globe valves. The natural flow pattern of ball valves increases flow rates and in many applications valves smaller than pipeline size can be used.

Limit switches can be mounted directly to the valves allowing for remote position indication.

The Series WE06 can be configured with an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control.

Two-position actuators use the supply voltage to drive the valve open or close, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and a permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve and internally loaded springs return the valve to the closed position. Also available is the SV3 solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve.

## FEATURES/BENEFITS

- The 60° and 90° balls offer an equal percentage flow characteristic
- Bubble tight shut off at high pressure drops
- Limit switches can be mounted to manual valves for remote monitoring
- Available with a variety of electric and pneumatic actuators

## SPECIFICATIONS

### VALVE

**Service:** Compatible liquids and gases.

**Body:** 3-piece.

**Line Sizes:** 1/2 to 3".

**End Connections:** Female NPT.

**Pressure Limits:** 20" Hg to 1000 psi (-0.7 to 69 bar) up to 250°F.

**Wetted Materials:** Body and ball: 316 SS (CF8M); Stem: 316 SS; Seat: RTFE/PTFE; Seal, Washer, and Packing: PTFE.

**Temperature Limits:** -20 to 392°F (-29 to 200°C).

**Other Materials:** O-ring: Fluoroelastomer; Handle: 304 SS; Washer: 301 SS; Stem Nut, Locking Device, Gland Ring: 304 SS; Handle Sleeve: PVC.

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/EU (RoHS II).

### ACTUATORS

#### Pneumatic "DA" and "SR" Series

**Type:** DA series is double acting and SR series is spring return (rack and pinion).

**Normal Supply Pressure:** DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 80 psi (5.5 bar).

**Maximum Supply Pressure:** 120 psi (8.6 bar).

**Air Connections:** DA01: 1/8" female NPT; DA02 to DA05: 1/4" female NPT; SR02 to SR07: 1/4" female NPT.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limits:** -40 to 176°F (-40 to 80°C).

**Accessory Mounting:** NAMUR standard.

#### Electric "TD" and "MD" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC).

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** TD01: 4 s; MD01: 10 s; TD02 and MD02: 20 s; TD03 and MD03: 30 s.

**Duty Rating:** 85%.

**Enclosure Rating:** NEMA 4X (IP67).

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override, position indicator, and TD models come with two limit switches.

#### Electric "TI" and "MI" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** See instruction manual.

**Duty Rating:** See instruction manual.

**Enclosure Rating:** NEMA 7, designed to meet hazardous locations: Class I, Group C & D; Class II, Group E, F & G; Division I & II.

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Position indicator and two limit switches.



# 3-PIECE NPT STAINLESS STEEL V-BALL VALVE

V-Port, Vented Ball, Electric or Pneumatic Actuators

MODEL CHART							
Size	Cv (gal/min)		Popular Hand Operated Model	Popular Double Acting Pneumatic Model	Popular Spring Return Pneumatic Model	Popular NEMA 4X Two Position Electric (110 VAC) Model	Popular NEMA 4X Modulating Electric (110 VAC) Model
1/2"	7.9	9.1	WE06-CHD00-T	WE06-CDA01-T	WE06-CSR02-T	WE06-CTD01-T-A	WE06-CMD01-T-A
3/4"	13.6	14.2	WE06-DHD00-T	WE06-DDA01-T	WE06-DSR02-T	WE06-DTD01-T-A	WE06-DMD01-T-A
1"	22.3	29.1	WE06-EHD00-T	WE06-EDA02-T	WE06-ESR03-T	WE06-ETD01-T-A	WE06-EMD01-T-A
1-1/4"	31.5	53.7	WE06-FHD00-T	WE06-FDA02-T	WE06-FSR03-T	WE06-FTD01-T-A	WE06-FMD01-T-A
1-1/2"	46.2	75.5	WE06-GHD00-T	WE06-GDA03-T	WE06-GSR04-T	WE06-GTD02-T-A	WE06-GMD01-T-A
2"	104.7	138.4	WE06-HHD00-T	WE06-HDA03-T	WE06-HSR05-T	WE06-HTD02-T-A	WE06-HMD02-T-A
2-1/2"	147.5	220.3	WE06-IHD00-T	WE06-IDA04-T	WE06-ISR07-T	WE06-ITD03-T-A	WE06-IMD03-T-A
3"	209.1	308.3	WE06-JHD00-T	WE06-JDA05-T	WE06-JSR07-T	WE06-JTD03-T-A	WE06-JMD03-T-A

MODEL CHART - HAND OPERATED & PNEUMATIC ACTUATOR									
Example	WE06	-CSR02	-T	-N	N	09	WE06-CSR02-T-NN09		
Series	WE06						316 SS 3-piece NPT		
Size and Actuator		CHD00					1/2" hand operated		
		DHD00					3/4" hand operated		
		EHD00					1" hand operated		
		FHD00					1-1/4" hand operated		
		GHD00					1-1/2" hand operated		
		IHD00					2" hand operated		
		JHD00					2-1/2" hand operated		
		CDA01					3" hand operated		
		DDA01					1/2" double acting		
		EDA02					3/4" double acting		
		FDA02					1" double acting		
		GDA03					1-1/4" double acting		
		HDA03					1-1/2" double acting		
		IDA04					2" double acting		
		JDA05					2-1/2" double acting		
		CSR02					3" double acting		
		DSR02					1/2" spring return		
		ESR03					3/4" spring return		
		FSR03					1" spring return		
V-Ball Angle		GSR04					1-1/4" spring return		
		HSR05					1-1/2" spring return		
		ISR07					2" spring return		
		JSR07					2-1/2" spring return		
		JSR07					3" spring return		
Solenoid			T				60° v-ball		
			N				90° v-ball		
Solenoid Voltage				N			No solenoid		
				A			NEMA 4X NAMUR solenoid		
					N		No solenoid		
					A		120 VAC		
					B		220 VAC		
					C		24 VAC		
Positioner and Switches					D		24 VDC		
					E		12 VDC		
					00		None		
					01		42AD0 exp limit switch		
					02		45VD0 exp position transmitter		
					03		42AD0-B ATEX limit switch		
Options					04		42AD0-IE IECEx limit switch		
					06		QV-210101 poly limit switch		
					07		VPS and P1 prox switch		
					08		265ER-D5 positioner		
					09		285ER-D5 smart positioner		
							NO	Fail open spring return actuator	

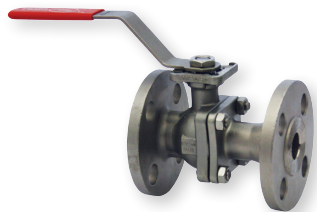
ACCESSORIES	
Model	Description
AFR4	Air filter regulator 0 to 120 psi
VB-01	Volume booster

MODEL CHART - ELECTRIC ACTUATOR				
Example	WE06	-ETD01	-T	-B
Series	WE06			
Size and Actuator		CTD01		1/2" NEMA 4X two-position
		DTD01		3/4" NEMA 4X two-position
		ETD01		1" NEMA 4X two-position
		FTD01		1-1/4" NEMA 4X two-position
		GTD02		1-1/2" NEMA 4X two-position
		HTD02		2" NEMA 4X two-position
		ITD03		2-1/2" NEMA 4X two-position
		JTD03		3" NEMA 4X two-position
		CMD01		1/2" NEMA 4X modulating
		DMD01		3/4" NEMA 4X modulating
		EMD01		1" NEMA 4X modulating
		FMD01		1-1/4" NEMA 4X modulating
		GMD01		1-1/2" NEMA 4X modulating
		HMD02		2" NEMA 4X modulating
		IMD03		2-1/2" NEMA 4X modulating
		JMD03		3" NEMA 4X modulating
		CTI01		1/2" exp two-position
		DTI01		3/4" exp two-position
		ETI02		1" exp two-position
		FTI02		1-1/4" exp two-position
		GTI03		1-1/2" exp two-position
		HTI04		2" exp two-position
		ITI05		2-1/2" exp two-position
		JTI05		3" exp two-position
		CMI01		1/2" exp electric modulating
		DMI01		3/4" exp electric modulating
		EMI02		1" exp electric modulating
		FMI02		1-1/4" exp electric modulating
		GMI03		1-1/2" exp electric modulating
		HMI04		2" exp electric modulating
		IMI05		2-1/2" exp electric modulating
		JMI05		3" exp electric modulating
V-Ball Angle			T	60° v-ball
			N	90° v-ball
Actuator Voltage			A	110 VAC
			B	220 VAC
			C	24 VAC
			D	24 VDC

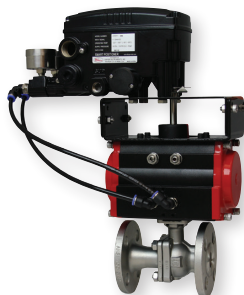
REPAIR KIT	
Model	Valve Series and Size
VRK-10	WE06-1/2"
VRK-11	WE06-3/4"
VRK-12	WE06-1"
VRK-14	WE06-1-1/2"
VRK-15	WE06-2"
VRK-16	WE06-2-1/2"
VRK-17	WE06-3"
Parts List - Included in Kit	
1 PTFE thrust washer	
1 FKM O-ring	
2 PTFE stem packing	
2 PTFE seals	
2 RTFE seats	

# 2-PIECE FLANGED STAINLESS STEEL V-BALL VALVE

## 150# ANSI Flange, V-Ball, Electric or Pneumatic Actuators



WE07-DHD00-T



WE07-DDA01-T-NN09



WE07-CTI01-T-A



WE07-DDA01-T-AA03



WE07-DTD01-T-A



The **SERIES WE07** incorporates a V-port ball valve for impressive flow rates with minimal pressure drop. Quarter turn control ball valves are compact, lighter weight and much less expensive than comparable sized globe valves and segmented control valves. They also offer bubble tight shut off with zero leakage and can withstand high pressure drops. The 60° and 90° balls offer an equal percentage flow characteristic. W. E. Anderson's V-port ball valves have been designed to offer maximum flow characteristics that are substantially higher than comparably sized globe valves. The natural flow pattern of ball valves increases flow rates and in many applications valves smaller than pipeline size can be used.

The Series WE07 can be configured with an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control.

Two-position actuators use the supply voltage to drive the valve open or close, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and a permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve and internally loaded springs return the valve to the closed position. Also available is the SV3 solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve.

### FEATURES/BENEFITS

- The 60° and 90° balls offer an equal percentage flow characteristic
- Bubble tight shut off at high pressure drops
- Limit switches can be mounted to manual valves for remote monitoring
- Available with a variety of electric and pneumatic actuators

### SPECIFICATIONS

#### VALVE

**Service:** Compatible liquids and gases.

**Body:** 2-piece.

**Line Sizes:** 1/2 to 3".

**End Connections:** 150# ANSI flange.

**Pressure Limits:** 20" Hg to 275 psi (-0.7 to 19 bar) up to 392°F.

**Wetted Materials:** Body and ball: 316 SS (CF8M); Stem: 316 SS; Seat: RTFE/PTFE; Seal, Washer, and Packing: PTFE.

**Temperature Limits:** -20 to 392°F (-29 to 200°C).

**Other Materials:** O-ring: Fluoroelastomer; Handle: 304 SS; Washer: 301 SS; Stem Nut, Locking Device, Gland Ring: 304 SS; Handle Sleeve: PVC.

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/EU (RoHS II).

#### ACTUATORS

##### Pneumatic "DA" and "SR" Series

**Type:** DA series is double acting and SR series is spring return (rack and pinion).

**Normal Supply Pressure:** DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 80 psi (5.5 bar).

**Maximum Supply Pressure:** 120 psi (8.6 bar).

**Air Connections:** DA01: 1/8" female NPT; DA02 to DA04: 1/4" female NPT; SR02 to SR06: 1/4" female NPT.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limits:** -40 to 176°F (-40 to 80°C).

**Accessory Mounting:** NAMUR standard.

##### Electric "TD" and "MD" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC).

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** TD01: 4 s; MD01: 10 s; TD02 and MD02: 20 s; TD03 and MD03: 30 s.

**Duty Rating:** 85%.

**Enclosure Rating:** NEMA 4X (IP67).

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override, position indicator, and TD models come with two limit switches.

##### Electric "TI" and "MI" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** See instruction manual.

**Duty Rating:** See instruction manual.

**Enclosure Rating:** NEMA 7, designed to meet hazardous locations: Class I, Group C & D; Class II, Group E, F & G; Division I & II.

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Position indicator and two limit switches.

# 2-PIECE FLANGED STAINLESS STEEL V-BALL VALVE

150# ANSI Flange, V-Ball, Electric or Pneumatic Actuators

MODEL CHART							
	Cv (gal/min)		Popular	Popular	Popular	Popular NEMA 4X	Popular NEMA 4X
Size	60°	90°	Hand Operated Model	Double Acting Pneumatic Model	Spring Return Pneumatic Model	Two Position Electric (110 VAC) Model	Modulating Electric (110 VAC) Model
1/2"	7.9	9.1	WE07-CHD00-T	WE07-CDA01-T	WE07-CSR02-T	WE07-CTD01-T-A	WE07-CMD01-T-A
3/4"	13.6	14.2	WE07-DHD00-T	WE07-DDA01-T	WE07-DSR02-T	WE07-DTD01-T-A	WE07-DMD01-T-A
1"	22.3	29.1	WE07-EHD00-T	WE07-EDA03-T	WE07-ESR03-T	WE07-ETD01-T-A	WE07-EMD01-T-A
1-1/2"	46.2	75.5	WE07-GHD00-T	WE07-GDA03-T	WE07-GSR04-T	WE07-GTD02-T-A	WE07-GMD01-T-A
2"	104.7	138.4	WE07-HHD00-T	WE07-HDA03-T	WE07-HSR05-T	WE07-HTD02-T-A	WE07-HMD02-T-A
2-1/2"	147.5	220.3	WE07-IHD00-T	WE07-IDA04-T	WE07-ISR06-T	WE07-ITD03-T-A	WE07-IMD03-T-A
3"	209.1	308.3	WE07-JHD00-T	WE07-JDA04-T	WE07-JSR06-T	WE07-JTD03-T-A	WE07-JMD03-T-A

MODEL CHART - HAND OPERATED & PNEUMATIC ACTUATOR									
Example	WE07	-CSR02	-T	-N	N	09	WE07-CSR02-T-NN09		
Series	WE07						316 SS 2-piece 150# ANSI flange		
Size and Actuator		CHD00					1/2" hand operated		
		DHD00					3/4" hand operated		
		EHD00					1" hand operated		
		GHD00					1-1/2" hand operated		
		HH00					2" hand operated		
		IHD00					2-1/2" hand operated		
		JHD00					3" hand operated		
		CDA01					1/2" double acting		
		DDA01					3/4" double acting		
		EDA03					1" double acting		
		GDA03					1-1/2" double acting		
		HDA03					2" double acting		
		IDA04					2-1/2" double acting		
		JDA04					3" double acting		
		CSR02					1/2" spring return		
		DSR02					3/4" spring return		
		ESR03					1" spring return		
		GSR04					1-1/2" spring return		
		HSR05					2" spring return		
		ISR06					2-1/2" spring return		
		JSR06					3" spring return		
V-Ball Angle			T	N			60° v-ball		
							90° v-ball		
Solenoid				N	A		No solenoid		
							NEMA 4X NAMUR solenoid		
Solenoid Voltage					N		No solenoid		
					A		120 VAC		
					B		220 VAC		
					C		24 VAC		
					D		24 VDC		
					E		12 VDC		
Positioner and Switches						00	None		
						01	42AD0 exp limit switch		
						02	45VD0 exp position transmitter		
						03	42AD0-B ATEX limit switch		
						04	42AD0-IE IECEX limit switch		
						06	QV-210101 poly limit switch		
						07	VPS and P1 prox switch		
						08	265ER-D5 positioner		
						09	285ER-D5 smart positioner		
Options						NO	Fail open spring return actuator		

ACCESSORIES	
Model	Description
AFR4	Air filter regulator 0 to 120 psi
VB-01	Volume booster

MODEL CHART - ELECTRIC ACTUATOR					
Example	WE07	-ETD01	-T	-B	WE07-ETD01-T-B
Series	WE07				316 SS 2-piece 150# ANSI flange
Size and Actuator		CTD01			1/2" NEMA 4X two-position
		DTD01			3/4" NEMA 4X two-position
		ETD01			1" NEMA 4X two-position
		GTD02			1-1/2" NEMA 4X two-position
		HTD02			2" NEMA 4X two-position
		ITD03			2-1/2" NEMA 4X two-position
		JTD03			3" NEMA 4X two-position
		CMD01			1/2" NEMA 4X modulating
		DMD01			3/4" NEMA 4X modulating
		EMD01			1" NEMA 4X modulating
		GMD01			1-1/2" NEMA 4X modulating
		HMD02			2" NEMA 4X modulating
		IMD03			2-1/2" NEMA 4X modulating
		JMD03			3" NEMA 4X modulating
		CTI01			1/2" exp two-position
		DTI01			3/4" exp two-position
		ETI02			1" exp two-position
		GTI03			1-1/2" exp two-position
		HTI04			2" exp two-position
		ITI04			2-1/2" exp two-position
		JTI05			3" exp two-position
		CMI01			1/2" exp electric modulating
		DMI01			3/4" exp electric modulating
		EMI02			1" exp electric modulating
		GMI03			1-1/2" exp electric modulating
		HMI04			2" exp electric modulating
		IMI04			2-1/2" exp electric modulating
		JMI05			3" exp electric modulating
V-Ball Angle			T	N	60° v-ball
					90° v-ball
Actuator Voltage				A	110 VAC
				B	220 VAC
				C	24 VAC
				D	24 VDC

REPAIR KIT	
Model	Valve Series and Size
VRK-27	WE07-1/2"
VRK-28	WE07-3/4"
VRK-29	WE07-1"
VRK-31	WE07-1-1/2"
VRK-32	WE07-2"
VRK-33	WE07-2-1/2"
VRK-34	WE07-3"
Parts List - Included in Kit	
1 PTFE thrust washer	
1 FKM O-ring	
2 PTFE stem packing	
2 PTFE seals	
2 RTFE seats	

# PLASTIC AUTOMATED BALL VALVE

## Electric and Pneumatic Actuators



PVC Body

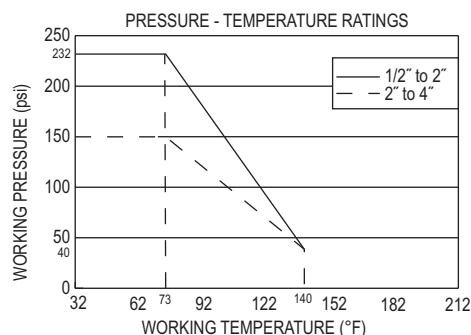


CPVC Body

The **SERIES PBV** is ideal for services in industrial, chemical, turf and irrigation, and pool and spa applications, as well as for use with potable water. The valve features a shear-proof stem designed to prevent leakage in the event of damage, reinforced TFE seats and EPDM seals for longer life, and an all-plastic construction (PVC or CPVC) for heavyweight durability at a lightweight cost. Valves also come standard with selectable NPT or socket process connections.

The PBV is an economical automated valve package with either an electric or pneumatic actuator. Electrically actuated models are weatherproof, NEMA 4 (IP56), powered by standard 115 VAC supply, and are available in either two-position or proportional control. Two-position actuators use the 115 VAC input to drive each of the valve ports open or closed, while the modulating actuator accepts a 4 to 20 mA input for infinite valve positioning. Actuator features include thermal overload protection to withstand stall conditions, visual position indication and a permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive each of the actuator ports. Spring return pneumatic actuators use the air supply to drive the valve stem one direction, and internally loaded springs return the valve to its original position. Also available is the SV3 solenoid valve to electrically switch the supply pressure between the air supply ports. Actuators are constructed of anodized aluminum and are epoxy coated for years of corrosion free service.



### SPECIFICATIONS

**Service:** Compatible liquids or gases.

**Body:** 2-way.

**Line Size:** 1/2" to 4".

**End Connections:** Female NPT or socket (field selectable).

**Pressure Limit:** 1/2" to 2": 232 psi (16.0 bar) @ 73°F (23°C); 2-1/2" to 4": 150 psi (10.3 bar) @ 73°F (23°C) WOG. Vacuum: 29" Hg.

**Wetted Materials:** Body, end connectors: PVC or CPVC; Ball, stem: PVC or CPVC; Seat: TFE; Stem seal: EPDM.

**Temperature Limit:** 32 to 140°F (0 to 60°C).

**Other Materials:** Stem bearing: Polypropylene (1-1/4" and up).

**Housing Material:** Aluminum with thermal bonding polyester powder finish.

**Temperature Limit:** 0 to 150°F (-18 to 65°C).

**Conduit Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override and visual position indicator except modulating units.

**Pneumatic "DA" and "SR" Series Type:** DA series is double acting and SR series is spring return (rack and pinion).

**Normal Supply Pressure:** 80 psi (5.5 bar).

**Maximum Supply Pressure:** 120 psig (8 bar).

**Air Connections:** DA/SR1 to 5: 1/8" female NPT, all other sizes: 1/4" female NPT.

**Air Consumption:** (per stroke) DA1: 2.32 in3; DA2: 9.34 in3; DA3: 17.21 in3; DA4: 20.5 in3; SR2: 9.34 in3; SR3: 17.21 in3; SR6: 54.34 in3; SR7: 85.43 in3.

**Cycle Time:** (per 90°) DA1: .03 s; DA2: .04 s; DA3: .08 s; DA4: .12 s; SR2: .09 s; SR3: .14 s; SR6: .46 s; SR7: .83 s.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limit:** -4 to 180°F (-20 to 82°C).

**Accessory Mounting:** NAMUR standard.

**Standard Features:** Visual position indicator.

OPTIONS		
To order add suffix:	Description	Actuator Size*
-EX	Explosion proof electric actuators	XX1-XX6
*Example: Third digit in U12 or V12 is the size		
Note: For optional electric actuator supply voltages, contact factory for model number change		

MODEL CHART - PVC					
		Double Acting Pneumatic	Spring Return Pneumatic	Two Position Electric	Modulating Electric
Size	CV	Model	Model	Model	Model
1/2"	25	PBVPDA102	PBVPSR202	PBVPU1102	PBVPV1202
3/4"	51	PBVPDA103	PBVPSR203	PBVPU1103	PBVPV1203
1"	97	PBVPDA104	PBVPSR204	PBVPU1104	PBVPV1204
1-1/4"	204	PBVPDA105	PBVPSR205	PBVPU1105	PBVPV1205
1-1/2"	285	PBVPDA206	PBVPSR306	PBVPU1106	PBVPV1206
2"	540	PBVPDA207	PBVPSR307	PBVPU1207	PBVPV1207
2-1/2"	712	PBVPDA308	PBVPSR608	PBVPU1308	PBVPV1308
3"	1294	PBVPDA309	PBVPSR609	PBVPU1509	PBVPV1509
4"	2629	PBVPDA410	PBVPSR710	PBVPU1510	PBVPV1510

Note: All spring return actuators are factory standard as spring (fail) close. For spring (fail) open valves, add suffix "-FO" to the model number.

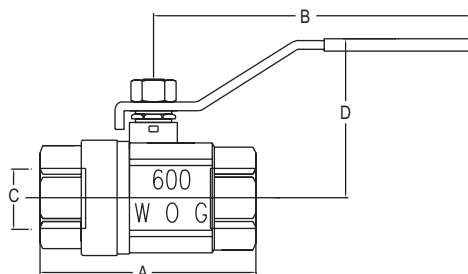
MODEL CHART - CPVC					
		Double Acting Pneumatic	Spring Return Pneumatic	Two Position Electric	Modulating Electric
Size	CV	Model	Model	Model	Model
1/2"	25	PBVCDA102	PBVCSR202	PBVUCV1102	PBVCV1202
3/4"	51	PBVCDA103	PBVCSR203	PBVUCV1103	PBVCV1203
1"	97	PBVCDA104	PBVCSR204	PBVUCV1104	PBVCV1204
1-1/4"	204	PBVCDA105	PBVCSR205	PBVUCV1105	PBVCV1205
1-1/2"	285	PBVCDA206	PBVCSR306	PBVUCV1106	PBVCV1206
2"	540	PBVCDA207	PBVCSR307	PBVUCV1207	PBVCV1207
2-1/2"	712	PBVCDA308	PBVCSR608	PBVUCV1308	PBVCV1308
3"	1294	PBVCDA309	PBVCSR609	PBVUCV1509	PBVCV1509
4"	2629	PBVCDA410	PBVCSR710	PBVUCV1510	PBVCV1510

Note: All spring return actuators are factory standard as spring (fail) close. For spring (fail) open valves, add suffix "-FO" to the model number.



# BRASS BALL VALVE

Full Port, Economical, 600 psi (41 bar)



NPT Size	A in [mm]	B in [mm]	C in [mm]	D in [mm]
1/4"	1-39/64 [40.89]	3-5/32 [80.01]	5/16 [7.87]	1-47/64 [43.94]
3/8"	1-45/64 [43.18]	3-5/32 [80.01]	25/64 [9.91]	1-13/16 [45.97]
1/2"	2-3/16 [55.63]	3-55/64 [98.04]	19/32 [15.24]	2-11/64 [55.12]
3/4"	2-23/64 [59.94]	3-55/64 [98.04]	3/4 [19.05]	2-9/32 [57.91]
1"	2-7/8 [72.90]	4-13/32 [112.01]	63/64 [24.89]	2-11/16 [68.07]
1-1/4"	3-5/16 [84.07]	4-51/64 [121.92]	1-17/64 [32.00]	3-5/32 [80.01]
1-1/2"	3-47/64 [95.00]	5-7/16 [137.92]	1-9/16 [39.88]	3-55/64 [98.04]
2"	4-13/32 [112.01]	5-7/16 [137.92]	1-31/32 [50.04]	4-13/64 [106.93]
2-1/2"	5-53/64 [148.08]	8-1/2 [215.90]	2-31/64 [62.99]	4-61/64 [125.98]
3"	6-29/64 [163.83]	8-1/2 [215.90]	2-61/64 [74.93]	5-1/8 [130.05]

The **SERIES DBV** Brass Ball Valve is an economical hand lever ball valve ideal for commercial or general industrial use. The Series DBV is the ideal choice for a manual shut off valve, along with many other applications. Valve body, body cap and ball are made of a quality brass for great durability. Seats and stem packing are constructed of PTFE for long lasting service as well. Blowout-proof stem provides safety in the event of overpressure. Full port design allows for maximum Cv while still retaining minimal pressure drop.

MODEL CHART			
Model	Pipe Size	Model	Pipe Size
DBV-00	1/4"	DBV-05	1-1/4"
DBV-01	3/8"	DBV-06	1-1/2"
DBV-02	1/2"	DBV-07	2"
DBV-03	3/4"	DBV-08	2-1/2"
DBV-04	1"	DBV-09	3"

## SPECIFICATIONS

**Service:** Gases and liquids compatible with wetted materials.

**End Connections:** 1/4 to 3" female NPT.

**Pressure Limits:** -29" Hg to 600 psi (-736 mm Hg to 41 bar) WOG.

**Temperature limit:** -40 to 365°F (-40 to 185°C).

**Wetted Materials:** Body and Body Cap: Brass; Ball: Chrome plated brass; Stem: Brass; Seat and Packing: PTFE.

**Other Materials:** Body Gland and Stem Nut: Brass; Handle Cover: Rubber; Handle: Steel.

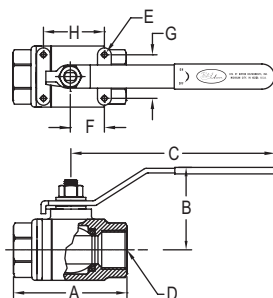
USA: California Proposition 65

⚠ WARNING: Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

## SERIES BV2 | W.E. ANDERSON™ BY DWYER

# TWO-PIECE STAINLESS STEEL BALL VALVE

Full Port, 1000 psig (69 bar)



DIMENSIONS (IN)							
A (Ref)	B (Ref)	C (Ref)	D (NPT)	E (UNC)	F (+.015)	G (+.015)	H (+.015)
1/4"	2.165	4.055	1/4"	(2) 3/16-24	0.500	1.102	N/A
3/8"	2.165	4.055	3/8"	(2) 3/16-24	0.500	1.102	N/A
1/2"	2.559	5.236	1/2"	(2) 3/16-24	0.500	1.102	N/A
3/4"	2.992	5.236	3/4"	(2) 3/16-24	0.882	1.378	N/A
1"	3.465	6.024	1"	(2) 3/16-24	0.882	1.378	N/A
1-1/4"	3.976	6.024	1-1/4"	(2) 1/4-20	1.000	1.500	N/A
1-1/2"	4.331	7.520	1-1/2"	(2) 1/4-20	1.000	1.500	N/A
2"	4.882	7.520	2"	(4) 1/4-20	1.000	1.500	2.000
2-1/2"	6.299	9.724	2-1/2"	(4) 1/4-20	1.382	2.165	2.764
3"	6.929	9.724	3"	(4) 1/4-20	1.382	2.165	2.764

The **SERIES BV2** is the economical choice for high quality, SS ball valves for use in chemical, petrochemical, pulp and paper and general applications. The Series BV2 body and endcaps are constructed of investment cast SS, while stem is 316 SS. Seats and body seals are 15% glass reinforced PTFE providing broad media compatibility and bubble tight shutoff to 1000 psig (69 bar). Internally loaded, blowout-proof stem provides safety in the event of overpressure. Full port design allows for maximum Cv with minimal pressure drop. Integral actuator mounting pads allows for ease of automation.

MODEL CHART			
Model	Size	Model	Size
BV2M100	1/4"	BV2M105	1-1/4"
BV2M101	3/8"	BV2M106	1-1/2"
BV2M102	1/2"	BV2M107	2"
BV2M103	3/4"	BV2M108	2-1/2"
BV2M104	1"	BV2M109	3"

## SPECIFICATIONS

**End Connections:** Female NPT.

**Pressure Limits:** 1000 psi (69 bar) WOG, 150 psi (10.3 bar) SWP.

**Wetted Materials:** Body, ball, end cap: CF8M SS; Stem: 316 SS; Seat, thrust washer: RTFE; End gasket, stem packing: PTFE.

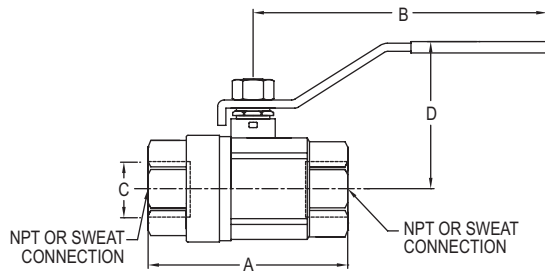
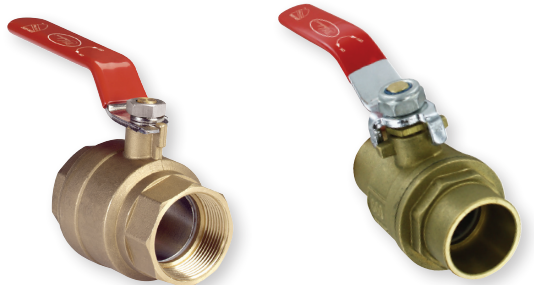
**Temperature Limits:** -20 to 450°F (-29 to 232°C).

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/EU (RoHS II).



# LOW LEAD NPT BRASS BALL VALVE

IAPMO Certified to Meet NSF/ANSI 372-2010, Economical, Easy to Install



The **SERIES DBVL & SWBV** Low Lead Brass Ball Valves are economical hand lever ball valves ideal for commercial or industrial use where lead content is regulated. The valve body, body cap, and stem are made of a quality low lead brass for great durability and compatibility. The seats and stem packing are constructed of PTFE for long lasting service. A blowout-proof stem provides safety in the event of overpressure, and the full port design allows for the maximum flow coefficient while still retaining minimal pressure drop.

## MODEL CHART

Model	Pipe Size (in)	Model	Pipe Size (in)
DBVL-00	1/4	SWBV-00	1/4
DBVL-01	3/8	SWBV-01	3/8
DBVL-02	1/2	SWBV-02	1/2
DBVL-03	3/4	SWBV-03	3/4
DBVL-04	1	SWBV-04	1
DBVL-05	1-1/4	SWBV-05	1-1/4
DBVL-06	1-1/2	SWBV-06	1-1/2
DBVL-07	2	SWBV-07	2
DBVL-08	2-1/2	SWBV-08	2-1/2
DBVL-09	3	SWBV-09	3

## DBVL DIMENSIONS

NPT Size	A in [mm]	B in [mm]	C in [mm]	D in [mm]
1/4"	1-3/4 [44.6]	3-5/32 [80]	25/64 [10]	1-47/64 [44.2]
3/8"	1-3/4 [44.6]	3-5/32 [80]	25/64 [10]	1-47/64 [44.2]
1/2"	2-3/64 [52]	4-1/64 [102]	19/32 [15]	1-7/8 [47.5]
3/4"	2-23/64 [60]	4-1/64 [102]	3/4 [19]	2-1/64 [51]
1"	2-3/4 [70]	4-17/32 [115]	63/64 [25]	2-23/32 [69]
1-1/4"	3-5/16 [84]	5 [127]	1-17/64 [32]	3-1/32 [77]
1-1/2"	3-21/32 [93]	5-19/32 [142]	1-37/64 [40]	3-1/32 [94]
2"	4-3/16 [106.2]	5-19/32 [142]	1-31/32 [50]	4 [101]
2-1/2"	5-3/8 [136.6]	8-21/32 [220]	2-33/64 [64]	1-49/64 [121]
3"	6-1/32 [153.4]	8-21/32 [220]	2-29/32 [74]	5-5/64 [129]

## SWBV DIMENSIONS

Sweat Size	A in [mm]	B in [mm]	C in [mm]	D in [mm]
1/4"	1-55/64 [47.24]	3-5/32 [80.01]	23/64 [9.14]	1-47/64 [43.94]
3/8"	1-55/64 [47.24]	3-5/32 [80.01]	1/2 [12.70]	1-47/64 [43.94]
1/2"	2-15/64 [56.90]	3-55/64 [98.04]	5/8 [15.75]	2-15/64 [56.90]
3/4"	2-51/64 [70.87]	3-55/64 [98.04]	7/8 [22.35]	2-23/64 [59.94]
1"	3-35/64 [89.92]	4-13/32 [112.01]	1-1/8 [28.70]	2-45/64 [68.58]
1-1/4"	4-1/8 [104.90]	4-51/64 [121.92]	1-3/8 [35.05]	3-3/64 [77.22]
1-1/2"	4-11/16 [119.13]	5-7/16 [137.92]	1-5/8 [41.40]	3-51/64 [96.27]
2"	5-35/64 [140.97]	5-7/16 [137.92]	2-1/8 [54.10]	4-5/32 [105.41]
2-1/2"	6-39/64 [167.89]	8-3/16 [207.77]	2-41/64 [67.06]	4-63/64 [126.49]
3"	6-57/64 [175.01]	9-11/16 [245.87]	3-13/32 [86.61]	5-1/16 [128.52]

## SPECIFICATIONS

**Service:** Gases and liquids compatible with wetted materials.

**End Connections:** DBVL: 1/4" to 3" female NPT; SWBV: 1/4" to 3" sweat connections.

**Pressure Limits:** 1/4" to 2": -29" Hg to 600 psi (-736 mm Hg to 41 bar) WOG; DBVL: 2-1/2" to 3": -29" Hg to 250 psi (-736 mm Hg to 17 bar) WOG; SWBV: 2-1/2" to 3": -29" Hg to 400 psi (-736 mm Hg to 27 psi) WOG.

**Temperature Limits:** -40° to 365°F (-40° to 185°C).

**Wetted Materials:** Body, Body Cap, and Stem: Brass; Seat and Packing: PTFE; Ball: DBVL: 1/4" to 1": Chrome Plated Brass; 1-1/4" to 3": Stainless Steel; SWBV: Stainless Steel.

**Other Materials:** Body Gland and Stem Nut: Brass; Handle and Handle Nut: Steel; Handle Cover: Rubber.

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/EU (RoHS II); IAPMO Certified to meet NSF/ANSI 372-2010.

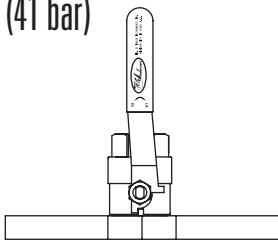
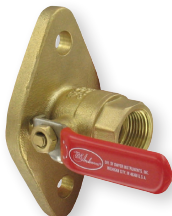
USA: California Proposition 65

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

## SERIES UBV | W.E. ANDERSON™ BY DWYER

# UNI-FLANGED BALL VALVE

Forged Brass Construction, Economical, 600 psi (41 bar)



NPT Size	A in [mm]	B in [mm]	C in [mm]
1/2"	1-63/43 [50.29]	2-7/8 [72.90]	35/64 [13.97]
3/4"	2-3/16 [55.37]	2-7/8 [72.90]	49/64 [19.30]
1"	2-31/64 [62.99]	2-7/8 [72.90]	61/64 [24.38]
1-1/4"	2-27/32 [72.14]	4 [101.60]	1-3/16 [29.97]
1-1/2"	3-15/64 [82.04]	4-5/32 [105.41]	1-31/64 [37.85]
2"	3-9/16 [90.42]	4-5/32 [105.41]	1-37/32 [46.99]

The **SERIES UBV** Uni-Flanged Ball Valve is an economical yet durable ball valve great for residential or industrial use. The forged brass body provides the strength and versatility needed for any application. The ball valve is constructed of quality brass in conjunction with PTFE ball seats to work with up to 600 psi (41 bar) of working pressure. Full port construction helps to reduce flow resistance while still maintaining great durability with its uni-body construction. Available in a wide variety of sizes for versatile application.

## MODEL CHART

Model	Pipe Size	Model	Pipe Size
UBV-00	1/2"	UBV-03	1-1/4"
UBV-01	3/4"	UBV-04	1-1/2"
UBV-02	1"	UBV-05	2"

## SPECIFICATIONS

**Service:** Gases and liquids compatible with wetted materials.

**End Connections:** Female NPT.

**Pressure Limits:** -29" Hg to 600 psi (-736 mm Hg to 41.3 bar).

**Temperature Limit:** -40 to 365°F (-40 to 185°C).

**Wetted Materials:** Body and cap: Brass; Ball: Chrome plated brass; Stem: Brass; Stem packing and ball seat: PTFE.

**Other Materials:** Gland and stem nut: Brass; Handle: Steel; Grip: Rubber.

USA: California Proposition 65

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

# MINI BRASS BALL VALVE

Economical, Compact Design



Lever Handle



Screwdriver Slot



Tee Handle



Wedge Handle

**SERIES MV** Mini Brass Ball Valves are ideal for use in small, confined spaces, where larger valves are of no use. Installation is made easy with a choice of FxF or MxF process connections. Pure PTFE ball seats provide broad media compatibility and bubble tight shutoff. Double seal system allows valve to be operated in both directions.

## SPECIFICATIONS

**Service:** Gases and liquid compatible with wetted materials. Not rated for steam use.

**End Connections:** NPT, see model chart.

**Pressure Limits:** -29" Hg to 450 psi (-736 mm Hg to 31 bar).

**Temperature Limits:** -4 to 250°F (-20 to 121°C).

**Wetted Materials:** Valve Body: Chrome-plated brass; Valve Ball: Chrome-plated brass; O-ring Stem Seal: Fluoroelastomer; Ball Seats: PTFE.

## MODEL CHART

Female x Female			Male x Female		
Model	Handle Style	Pipe Size	Model	Handle Style	Pipe Size
MVB-LF1	Lever handle	1/8"	MVB-LM1	Lever handle	1/8"
MVB-LF2	Lever handle	1/4"	MVB-LM2	Lever handle	1/4"
MVB-LF3	Lever handle	3/8"	MVB-LM3	Lever handle	3/8"
MVB-LF4	Lever handle	1/2"	MVB-LM4	Lever handle	1/2"
MVB-TF1	Tee handle	1/8"	MVB-TM1	Tee handle	1/8"
MVB-TF2	Tee handle	1/4"	MVB-TM2	Tee handle	1/4"
MVB-TF3	Tee handle	3/8"	MVB-TM3	Tee handle	3/8"
MVB-TF4	Tee handle	1/2"	MVB-TM4	Tee handle	1/2"
MVB-WF1	Wedge handle	1/8"	MVB-WM1	Wedge handle	1/8"
MVB-WF2	Wedge handle	1/4"	MVB-WM2	Wedge handle	1/4"
MVB-WF3	Wedge handle	3/8"	MVB-WM3	Wedge handle	3/8"
MVB-WF4	Wedge handle	1/2"	MVB-WM4	Wedge handle	1/2"
MV5-SF1	Screwdriver slot	1/8"	MV5-SM1	Screwdriver slot	1/8"
MV5-SF2	Screwdriver slot	1/4"	MV5-SM2	Screwdriver slot	1/4"
MV5-SF3	Screwdriver slot	3/8"	MV5-SM3	Screwdriver slot	3/8"
MV5-SF4	Screwdriver slot	1/2"	MV5-SM4	Screwdriver slot	1/2"

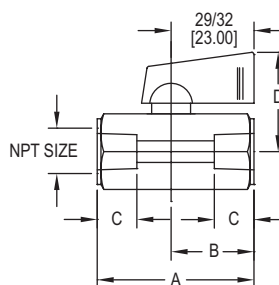
USA: California Proposition 65

⚠ WARNING: Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

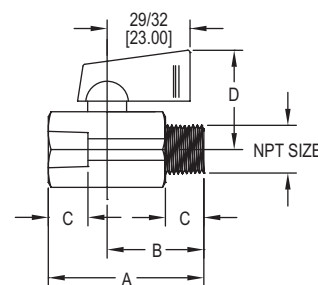
## SERIES SMV2 | W.E. ANDERSON™ BY DWYER

# MINI STAINLESS STEEL BALL VALVE

Economical, Wide Chemical Compatibility, Compact



Female X Female Connection  
SMV2-WFX



Male X Female Connection  
SMV2-WMX

The **SERIES SMV2** Mini Stainless Steel Ball Valves are ideal for small, confined spaces, where larger valves are unsuitable. The 316SS and PTFE wetted materials are excellent for applications with corrosive media. The handles are made of a rigid nylon for extended durability. Installation is made easy with a choice of FxF or MxF process connections. PTFE ball seats provide broad media compatibility and bubble tight shutoff.

## FEATURES/BENEFITS

- High working pressure
- Abrasion resistant
- Easy to install
- Economical
- Wide chemical compatibility

## MODEL CHART

Pipe Size	Female x Female Model	Male x Female Model
1/8"	SMV2-WF1	SMV2-WM1
1/4"	SMV2-WF2	SMV2-WM2
3/8"	SMV2-WF3	SMV2-WM3
1/2"	SMV2-WF4	SMV2-WM4

## SPECIFICATIONS

**Service:** Gases and liquids compatible with wetted materials. Not rated for steam use.

**End Connections:** NPT, see model chart.

**Pressure Limits:** 1/8" to 3/8", 1000 psi (68.9 bar) WOG; 1/2", 800 psi (51.1 bar) WOG.

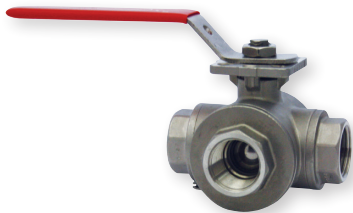
**Temperature Limits:** 212°F (100°C) maximum.

**Wetted Materials:** Valve Body: Cast 316 SS (CF8M); Valve Ball, Insert and Stem: 316 SS; Ball Seat: PTFE.

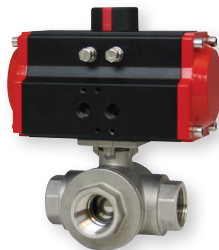
**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/EU (RoHS II).

# 3-WAY NPT STAINLESS STEEL BALL VALVE

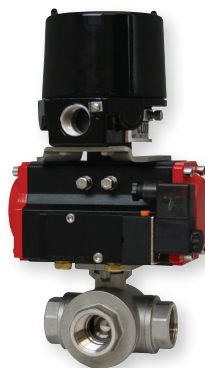
Full Port, Vented Ball, Electric or Pneumatic Actuators



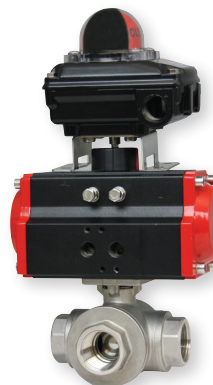
WE31-DHD00-T1



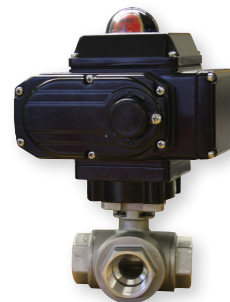
WE31-DDA02-L1



WE31-DDA02-T1-AA01



WE31-DDA02-T3-NN05



WE31-DTD01-T3-A



The **SERIES WE31** incorporates a full port 3-way SS ball valve for great flow rates with minimal pressure drop. The valve features a blowout-proof stem for added safety, reinforced PTFE seats and seals for longer life, and a 316 SS (ASTM CF8M) ball for better performance. Actuators are direct mounted creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valves allowing for remote position indication.

The Series WE31 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve, and internally loaded springs return the valve to the closed position. Also available is the SN solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve. Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion free service.

## FEATURES/BENEFITS

- Capable of being configured to fit any application
- Limit switches can be mounted to manual valves for remote monitoring
- Vented ball to reduce operating torque
- Weatherproof or explosion-proof electric actuators
- Double acting or spring return anodized aluminum pneumatic actuators
- Full port design reduces the pressure drop across the valve

## APPLICATIONS

- Gas or liquid flow control
- Ideal for quick bubble tight shut-off
- Mixing or diverting liquids and gases

## SPECIFICATIONS

### VALVE

**Service:** Compatible liquids and gases.

**Body:** 3-way.

**Line Sizes:** 1/2 to 2".

**End Connections:** Female NPT.

**Pressure Limits:** 28" Hg to 1000 psi (-0.7 to 69 bar) up to 250°F.

**Wetted Materials:** Body and ball: 316 SS (CF8M); Stem: 316 SS; Seat: RTFE/PTFE; Seal, Washer, and Packing: PTFE.

**Temperature Limits:** -20 to 392°F (-29 to 200°C).

**Other Materials:** O-ring: Fluoroelastomer; Handle: 304 SS; Washer: 301 SS; Stem Nut, Locking Device, Gland Ring: 304 SS; Handle Sleeve: PVC.

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/ EU (RoHS II).

### ACTUATORS

#### Pneumatic "DA" and "SR" Series

**Type:** DA series is double acting and SR series is spring return (rack and pinion).

**Normal Supply Pressure:** DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 80 psi (5.5 bar).

**Maximum Supply Pressure:** 120 psi (8.6 bar).

**Air Connections:** DA01: 1/8" female NPT; DA02 to DA04: 1/4" female NPT; SR03 to SR07: 1/4" female NPT.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limits:** -40 to 176°F (-40 to 80°C).

**Accessory Mounting:** NAMUR standard.

#### Electric "TD" and "MD" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC

(MD models not available in 24 VDC). **Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** TD01: 4 s; MD01: 10 s; TD02 and MD02: 20 s; TD03 and MD03: 30 s.

**Duty Rating:** 85%.

**Enclosure Rating:** NEMA 4X (IP67).

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override, position indicator, and TD models come with two limit switches.

#### Electric "TI" and "MI" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** See instruction manual.

**Duty Rating:** See instruction manual.

**Enclosure Rating:** NEMA 7, designed to meet hazardous locations: Class I, Group C & D; Class II, Group E, F & G; Division I & II.

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Position indicator and two limit switches.

# 3-WAY NPT STAINLESS STEEL BALL VALVE

Full Port, Vented Ball, Electric or Pneumatic Actuators

MODEL CHART						
Size	Cv (gal/ min)	Popular Hand Operated Model	Popular Double Acting Pneumatic Model	Popular Spring Return Pneumatic Model	Popular NEMA 4X Two Position Electric (110 VAC) Model	Popular NEMA 4X Modulating Electric (110 VAC) Model
1/2"	11	WE31-CHD00-T1	WE31-CDA02-T2	WE31-CSR02-T2	WE31-CTD01-T2-A	WE31-CMD01-T2-A
3/4"	14	WE31-DHD00-T1	WE31-DDA02-T2	WE31-DSR02-T2	WE31-DTD01-T2-A	WE31-DMD01-T2-A
1"	18	WE31-EHD00-T1	WE31-EDA03-T2	WE31-ESR04-T2	WE31-ETD02-T2-A	WE31-EMD02-T2-A
1-1/4"	43	WE31-FHD00-T1	WE31-FDA03-T2	WE31-FSR05-T2	WE31-FTD02-T2-A	WE31-FMD02-T2-A
1-1/2"	84	WE31-GHD00-T1	WE31-GDA04-T2	WE31-GSR06-T2	WE31-GTD03-T2-A	WE31-GMD03-T2-A
2"	90	WE31-HHD00-T1	WE31-HDA04-T2	WE31-HSR07-T2	WE31-HTD03-T2-A	WE31-HMD03-T2-A

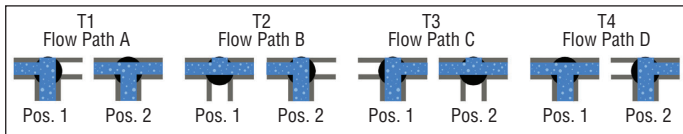
MODEL CHART - HAND OPERATED & PNEUMATIC ACTUATOR						
Example	WE31	-CSR02	-T1	-A	A	00 WE31-CSR02-T1-AA00
Series	WE31					316 SS 3-way NPT
Size and Range		CHD00 DHD00 EHD00 FHD00 GHD00 HHD00 CDA02 DDA02 EDA03 FDA03 GDA04 HDA04 CSR02 DSR02 ESR04 FSR05 GSR06 HSR07				1/2" hand operated 3/4" hand operated 1" hand operated 1-1/4" hand operated 1-1/2" hand operated 2" hand operated 1/2" double acting 3/4" double acting 1" double acting 1-1/4" double acting 1-1/2" double acting 2" double acting 1/2" spring return 3/4" spring return 1" spring return 1-1/4" spring return 1-1/2" spring return 2" spring return
Valve Position			T1 T2 T3 T4 L1			Flow path A Flow path B Flow path C Flow path D Flow path E
Solenoid				N A		No solenoid NEMA 4X NAMUR solenoid
Solenoid Voltage				N A B C D E		No solenoid 110 VAC 220 VAC 24 VAC 24 VDC 12 VDC
Positioner and Switches					00 01 02 03 04 06 07 08 09	None 42AD0 exp limit switch 45VD0 exp position transmitter 42AD0-B ATEX limit switch 42AD0-IE IECEx limit switch QV-210101 poly limit switch VPS and P1 prox switch 265ER-D5 positioner 285ER-D5 smart positioner

MODEL CHART - ELECTRIC ACTUATOR					
Example	WE31	-DMI02	-T2	-A	WE31-DMI02-T2-A
Series	WE31				316 SS 3-way NPT
Size and Range		CTD01 DTD01 ETD02 FTD02 GTD03 HTD03 CMD01 DMD01 EMD02 FMD02 GMD03 HMD03 CTI01 DTI02 ETI02 FTI04 GTI05 HTI06 CMI01 DMI02 EMI02 FMI04 GMI05 HMI06			1/2" NEMA 4X two-position 3/4" NEMA 4X two-position 1" NEMA 4X two-position 1-1/4" NEMA 4X two-position 1-1/2" NEMA 4X two-position 2" NEMA 4X two-position 1/2" NEMA 4X modulating 3/4" NEMA 4X modulating 1" NEMA 4X modulating 1-1/4" NEMA 4X modulating 1-1/2" NEMA 4X modulating 2" NEMA 4X modulating 1/2" exp two-position 3/4" exp two-position 1" exp two-position 1-1/4" exp two-position 1-1/2" exp two-position 2" exp two-position 1/2" exp electric modulating 3/4" exp electric modulating 1" exp electric modulating 1-1/4" exp electric modulating 1-1/2" exp electric modulating 2" exp electric modulating
Valve Position			T1 T2 T3 T4 L1		Flow path A Flow path B Flow path C Flow path D Flow path E
Actuator Voltage				A B C D	110 VAC 220 VAC 24 VAC 24 VDC

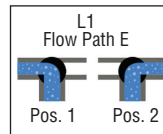
ACCESSORIES	
Model	Description
AFR4	Air filter regulator 0 to 120 psi
VB-01	Volume booster

REPAIR KIT	
Model	Valve Series and Size
VRK-36	WE31-1/2"
VRK-37	WE31-3/4"
VRK-38	WE31-1"
VRK-40	WE31-1-1/2"
VRK-41	WE31-2"
Parts List - Included in Kit	
1 PTFE thrust washer	
1 FKM O-ring	
2 PTFE stem packing	
2 PTFE seals	
2 RTFE seats	

"T" Port Ball



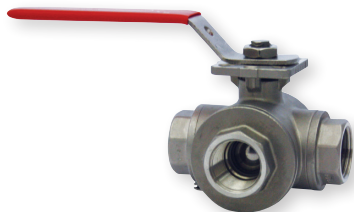
"L" Port Ball



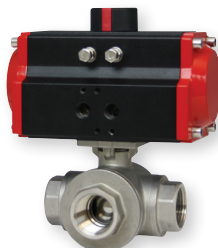


# 3-WAY NPT BRASS BALL VALVE

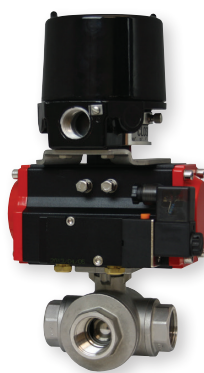
Full Port, Electric or Pneumatic Actuators



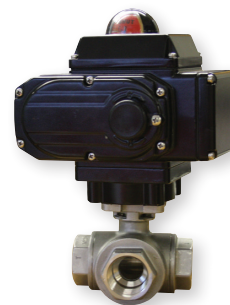
WE35-DHD00-T1



WE35-DDA02-L1



WE35-DDA02-T1-AA01



WE35-DTD01-T3-A

The **SERIES WE35** incorporates a full port 3-way brass ball valve for great flow rates with minimal pressure drop. The valve features a blowout proof stem for added safety, reinforced PTFE seats and seals for longer life, and a brass ball for better performance. Actuators are direct mounted creating a compact assembly for tight spaces.

The Series WE35 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages, and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve and internally loaded springs return the valve to the closed position. Also available is the SN solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve. Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion free service.

## FEATURES/BENEFITS

- Capable of being configured to fit any application
- Limit switches can be mounted to manual valves for remote monitoring
- Weatherproof or explosion-proof electric actuators
- Double acting or spring return anodized aluminum pneumatic actuators
- Full port design reduces the pressure drop across the valve

## APPLICATIONS

- Gas or liquid flow control
- Ideal for quick bubble tight shut-off
- Mixing or diverting liquids and gases

## SPECIFICATIONS

### VALVE

**Service:** Compatible liquids and gases.

**Body:** 3-way.

**Line Sizes:** 1/2 to 2".

**End Connections:** Female NPT.

**Pressure Limits:** 600 psi (41 bar) WOG.

**Wetted Materials:** Body, ball, and stem: Brass; Seat, seal, and packing: PTFE.

**Temperature Limits:** -20 to 425°F (-30 to 220°C).

**Other Materials:** O-ring: NBR; Handle, stem nut, ferrule: SS; Handle Sleeve: Vinyl; Body and cap: Nickel plated.

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/ EU (RoHS II).

### ACTUATORS

#### Pneumatic "DA" and "SR" Series

**Type:** DA series is a double acting and SR series is a spring return (rack and pinion).

**Normal Supply Pressure:** DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 80 psi (5.5 bar)

**Maximum Supply Pressure:** 120 psi (8.6 bar).

**Air Connections:** DA02 to DA03: 1/4" female NPT; SR02 to SR04: 1/4" female NPT.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limits:** -40 to 176°F (-40 to 80°C).

**Accessory Mounting:** NAMUR standard.

#### Electric "TD" and "MD" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC, or 24 VDC (MD models not available in 24 VDC).

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** TD01: 4 s; MD01: 10 s; TD02: 20 s).

**Duty Rating:** 85%.

**Enclosure Rating:** NEMA 4X (IP67).

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override, position indicator, and TD models come with two limit switches.

#### Electric "TI" and "MI" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC, 24 VDC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** See instruction manual.

**Duty Rating:** See instruction manual.

**Enclosure Rating:** NEMA 7, designed to meet hazardous locations: Class I, Group C & D; Class II, Group E, F & G; Division I & II.

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Position indicator and two limit switches.



# 3-WAY NPT BRASS BALL VALVE

Full Port, Electric or Pneumatic Actuators

MODEL CHART						
Size	Cv (gal/min)	Popular Hand Operated Model	Popular Double Acting Pneumatic Model	Popular Spring Return Pneumatic Model	Popular NEMA 4X Two Position Electric (110 VAC) Model	Popular NEMA 4X Modulating Electric (110 VAC) Model
1/2"	13	WE35-CHD00-T1	WE35-CDA02-T2	WE35-CSR02-T2	WE35-CTD01-T2-A	WE35-CMD01-T2-A
3/4"	37	WE35-DHD00-T1	WE35-DDA02-T2	WE35-DSR02-T2	WE35-DTD01-T2-A	WE35-DMD01-T2-A
1"	49	WE35-EHD00-T1	WE35-EDA02-T2	WE35-ESR03-T2	WE35-ETD01-T2-A	WE35-EMD01-T2-A
1-1/4"	59	WE35-FHD00-T1	WE35-FDA03-T2	WE35-FSR03-T2	WE35-FTD01-T2-A	WE35-FMD01-T2-A
1-1/2"	100	WE35-GHD00-T1	WE35-GDA03-T2	WE35-GSR03-T2	WE35-GTD01-T2-A	WE35-GMD01-T2-A
2"	115	WE35-HHD00-T1	WE35-HDA03-T2	WE35-HSR04-T2	WE35-HTD02-T2-A	WE35-HMD02-T2-A

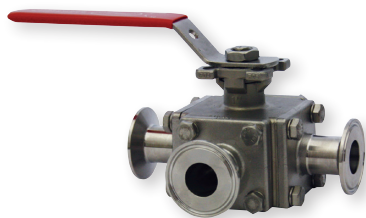
MODEL CHART - HAND OPERATED & PNEUMATIC ACTUATOR						
Example	WE35	-CSR02	-T1	-A	A	00 WE35-CSR02-AA00
Series	WE35					Brass 2-piece NPT
Size and Range		CHD00 DHD00 EHD00 FHD00 GHD00 HHD00 CDA02 DDA02 EDA02 FDA03 GDA03 HDA03 CSR02 DSR02 ESR03 FSR03 GSR03 HSR04				1/2" hand operated 3/4" hand operated 1" hand operated 1-1/4" hand operated 1-1/2" hand operated 2" hand operated 1/2" double acting 3/4" double acting 1" double acting 1-1/4" double acting 1-1/2" double acting 2" double acting 1/2" spring return 3/4" spring return 1" spring return 1-1/4" spring return 1-1/2" spring return 2" spring return
Valve Position			T1 T2 T3 T4 L1			Flow path A Flow path B Flow path C Flow path D Flow path E
Solenoid				N A		No solenoid NEMA 4X NAMUR solenoid
Solenoid Voltage					N A B C D E	No solenoid 110 VAC 220 VAC 24 VAC 24 VDC 12 VDC
Positioner and Switches						00 None 01 42AD0 exp limit switch 02 45VD0 exp position transmitter 03 42AD0-B ATEX limit switch 04 42AD0-IE IECEX limit switch 06 QV-210101 poly limit switch 07 VPS and P1 prox switch 08 265ER-D5 positioner 09 285ER-D5 smart positioner

MODEL CHART - ELECTRIC ACTUATOR				
Example	WE35	-GMD01	-T2	-A WE35-GMD01-A
Series	WE35			Brass 2-piece NPT
Size and Range		CTD01 DTD01 ETD01 FTD01 GTD01 HTD02 CMD01 DMD01 EMD01 FMD01 GMD01 HMD02 CTI01 DTI01 ETI02 FTI02 GTI02 HTI03 CMI01 DMI01 EMI02 FMI02 GMI02 HMI03		1/2" electric two-position 3/4" electric two-position 1" electric two-position 1-1/4" electric two-position 1-1/2" electric two-position 2" electric two-position 1/2" electric modulating 3/4" electric modulating 1" electric modulating 1-1/4" electric modulating 1-1/2" electric modulating 2" electric modulating 1/2" exp electric two-position 3/4" exp electric two-position 1" exp electric two-position 1-1/4" exp electric two-position 1-1/2" exp electric two-position 2" exp electric two-position 1/2" exp electric two-position 3/4" exp electric two-position 1" exp electric two-position 1-1/4" exp electric two-position 1-1/2" exp electric two-position 2" exp electric two-position
Valve Position			T1 T2 T3 T4 L1	Flow path A Flow path B Flow path C Flow path D Flow path E
Actuator Voltage				A 110 VAC B 220 VAC C 24 VAC D 24 VDC

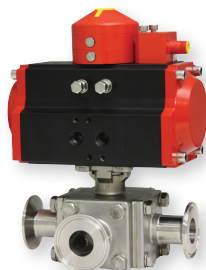
ACCESSORIES	
Model	Description
AFR4	Air filter regulator, 0 to 120 psi

# 3-WAY TRI-CLAMP STAINLESS STEEL BALL VALVE

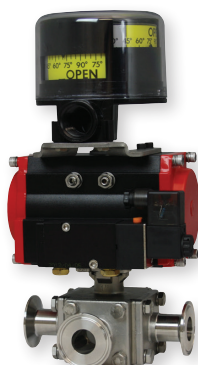
Cavity Filled, Electric and Pneumatic Actuators



WE33-DHD00-T2



WE33-ESR03-T1-NN07



WE33-DDA01-L1-AA06



WE33-DTD01-T3-A



WE33-DT101-T2-A



The **SERIES WE33** incorporates a full port 3-way tri-clamp SS ball valve for great flow rates with minimal pressure drop. The valve features a blowout-proof stem for added safety, reinforced PTFE seats and seals for longer life, and a 316 SS (ASTM CF8M) ball for better performance. Actuators are direct mounted creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valves allowing for remote position indication.

The Series WE33 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or close, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve, and internally loaded springs return the valve to the closed position. Also available is the SN solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve. Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion free service.

## FEATURES/BENEFITS

- Capable of being configured to fit any application
- Limit switches can be mounted to manual valves for remote monitoring
- Cavity filled valve for sanitary applications
- Weatherproof or explosion-proof electric actuators
- Double acting or spring return anodized aluminum pneumatic actuators
- Full port design reduces the pressure drop across the valve

## APPLICATIONS

- Gas or liquid flow control
- Ideal for quick bubble tight shut-off
- Mixing or diverting liquids and gases

## SPECIFICATIONS

### VALVE

**Service:** Compatible liquids and gases.

**Body:** 3-way.

**Line Sizes:** 1/2 to 2".

**End Connections:** Tri-clamp ends.

**Pressure Limits:** 20" Hg to 1000 psi (-0.7 to 69 bar) up to 250°F.

**Wetted Materials:** Body and ball: 316 SS (CF8M); Stem: 316 SS; Seat: RTFE/PTFE; Seal, Washer, and Packing: PTFE.

**Temperature Limits:** -20 to 392°F (-29 to 200°C).

**Other Materials:** O-ring:

Fluoroelastomer; Handle: 304 SS; Washer: 301 SS; Stem Nut, Locking Device, Gland Ring: 304 SS; Handle Sleeve: PVC.

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/ EU (RoHS II).

### ACTUATORS

#### Pneumatic "DA" and "SR" Series

**Type:** DA series is double acting and SR series is spring return (rack and pinion).

**Normal Supply Pressure:** DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 80 psi (5.5 bar).

**Maximum Supply Pressure:** 120 psi (8.6 bar).

**Air Connections:** DA01: 1/8" female NPT; DA02 to DA03: 1/4" female NPT; SR02 to SR04: 1/4" female NPT.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limits:** -40 to 176°F (-40 to 80°C).

**Accessory Mounting:** NAMUR standard.

#### Electric "TD" and "MD" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC).

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** TD01: 4 s; MD01: 10 s; TD02 and MD02: 20 s.

**Duty Rating:** 85%.

**Enclosure Rating:** NEMA 4X (IP67).

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override, position indicator, and TD models come with two limit switches.

#### Electric "TI" and "MI" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** See instruction manual.

**Duty Rating:** See instruction manual.

**Enclosure Rating:** NEMA 7, designed to meet hazardous locations: Class I, Group C & D; Class II, Group E, F & G; Division I & II.

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Position indicator and two limit switches.

# 3-WAY TRI-CLAMP STAINLESS STEEL BALL VALVE

Cavity Filled, Electric and Pneumatic Actuators

MODEL CHART						
Size	Cv (gal/min)	Popular Hand Operated Model	Popular Double Acting Pneumatic Model	Popular Spring Return Pneumatic Model	Popular NEMA 4X Two Position Electric (110 VAC) Model	Popular NEMA 4X Modulating Electric (110 VAC) Model
1/2"	14.39	WE33-CHD00-T2	WE33-CDA01-T2	WE33-CSR02-T2	WE33-CTD01-T2-A	WE33-CMD01-T2-A
3/4"	42.25	WE33-DHD00-T2	WE33-DDA01-T2	WE33-DSR02-T2	WE33-DTD01-T2-A	WE33-DMD01-T2-A
1"	86.17	WE33-EHD00-T2	WE33-EDA02-T2	WE33-ESR03-T2	WE33-ETD01-T2-A	WE33-EMD01-T2-A
1-1/2"	223.61	WE33-GHD00-T2	WE33-GDA02-T2	WE33-GSR04-T2	WE33-GTD02-T2-A	WE33-GMD02-T2-A
2"	437.98	WE33-HHD00-T2	WE33-HDA03-T2	WE33-HSR04-T2	WE33-HTD02-T2-A	WE33-HMD02-T2-A

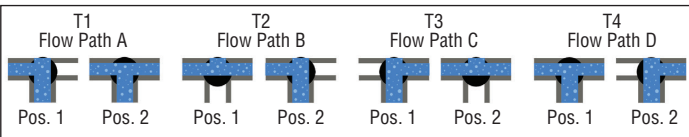
MODEL CHART - HAND OPERATED & PNEUMATIC ACTUATOR						
Example	WE33	-CSR02	-T4	-N	N	07
Series	WE33					316 SS 3-way tri-clamp
Size and Actuator		CHD00 DHD00 EHD00 GHD00 HHD00 CDA01 DDA01 EDA02 GDA02 HDA03 CSR02 DSR02 ESR03 GSR04 HSR04				1/2" hand operated 3/4" hand operated 1" hand operated 1-1/2" hand operated 2" hand operated 1/2" double acting 3/4" double acting 1" double acting 1-1/2" double acting 2" double acting 1/2" spring return 3/4" spring return 1" spring return 1-1/2" spring return 2" spring return
Valve Position			T1 T2 T3 T4 L1			Flow path A Flow path B Flow path C Flow path D Flow path E
Solenoid				N A		No solenoid NEMA 4X NAMUR solenoid
Solenoid Voltage				N A B C D E		No solenoid 110 VAC 220 VAC 24 VAC 24 VDC 12 VDC
Positioner and Switches					00 01 02 03 04 06 07 08 09	None 42AD0 exp limit switch 45VD0 exp position transmitter 42AD0-B ATEX limit switch 42AD0-IE IECEX limit switch QV-210101 poly limit switch VPS and P1 prox switch 265ER-D5 positioner 285ER-D5 smart positioner

MODEL CHART - ELECTRIC ACTUATOR				
Example	WE33	-DMD01	-T2	-B
Series	WE33			
Size and Actuator		CTD01 DTD01 ETD01 GTD02 HTD02 CMD01 DMD01 EMD01 GMD02 HMD02 CTI01 DTI01 ETI02 GTI02 HTI03 CMI01 DMI01 EMI02 GMI02 HMI03		1/2" NEMA 4X two-position 3/4" NEMA 4X two-position 1" NEMA 4X two-position 1-1/2" NEMA 4X two-position 2" NEMA 4X two-position 1/2" NEMA 4X modulating 3/4" NEMA 4X modulating 1" NEMA 4X modulating 1-1/2" NEMA 4X modulating 2" NEMA 4X modulating 1/2" exp two-position 3/4" exp two-position 1" exp two-position 1-1/2" exp two-position 2" exp two-position 1/2" exp electric modulating 3/4" exp electric modulating 1" exp electric modulating 1-1/2" exp electric modulating 2" exp electric modulating
Valve Position			T1 T2 T3 T4 L1	Flow path A Flow path B Flow path C Flow path D Flow path E
Actuator Voltage				A 110 VAC B 220 VAC C 24 VAC D 24 VDC

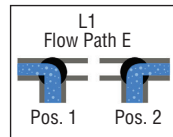
ACCESSORIES	
Model	Description
AFR4	Air filter regulator 0 to 120 psi
VB-01	Volume booster

REPAIR KIT	
Model	Valve Series and Size
VRK-42	WE33-1/2"
VRK-43	WE33-3/4"
VRK-44	WE33-1"
VRK-45	WE33-1-1/2"
VRK-46	WE33-2"
Parts List - Included in Kit	
1 PTFE thrust washer	
1 FKM O-ring	
2 PTFE stem packing	
2 PTFE seals	
2 RTFE seats	

"T" Port Ball

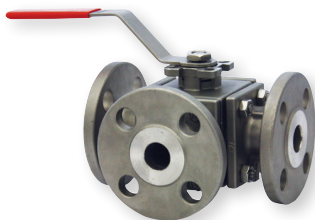


"L" Port Ball

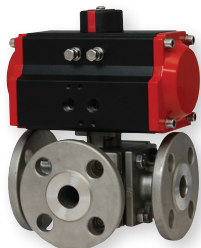


# 3-WAY FLANGED STAINLESS STEEL BALL VALVE

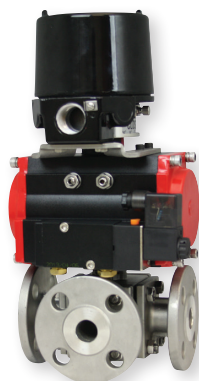
## 150# ANSI Flange, Vented Ball, Electric or Pneumatic Actuators



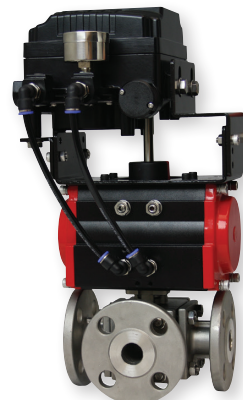
WE34-DHD00-L1



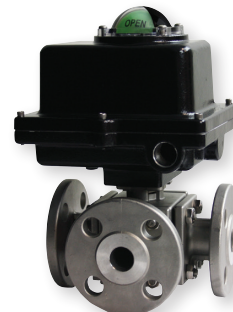
WE34-DDA03-T2



WE34-DDA03-T1-AA01



WE34-DDA03-T2-NN08



WE34-DT103-T3-A



The **SERIES WE34** incorporates a full port 3-way flanged SS ball valve for great flow rates with minimal pressure drop. The valve features a blowout-proof stem for added safety, reinforced PTFE seats and seals for longer life, and a 316 SS (ASTM CF8M) ball for better performance. Actuators are direct mounted creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valves allowing for remote position indication.

The Series WE34 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve and internally loaded springs return the valve to the closed position. Also available is the SN solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve. Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion free service.

### FEATURES/BENEFITS

- Capable of being configured to fit any application
- Limit switches can be mounted to manual valves for remote monitoring
- Vented ball to reduce operating torque
- Weatherproof or explosion-proof electric actuators
- Double acting or spring return anodized aluminum pneumatic actuators
- Full port design reduces the pressure drop across the valve
- Eliminates threads and reduces installation and maintenance time

### APPLICATIONS

- Gas or liquid flow control
- Ideal for quick bubble tight shut-off
- Mixing or diverting liquids and gases

### SPECIFICATIONS

#### VALVE

**Service:** Compatible liquids and gases.

**Body:** 3-way.

**Line Sizes:** 1/2 to 3".

**End Connections:** 150# ANSI flange.

**Pressure Limits:** 28" Hg to 275 psi (-0.7 to 19 bar) up to 392°F.

**Wetted Materials:** Body and ball: 316 SS (CF8M); Stem: 316 SS; Seat: RTFE/PTFE; Seal, Washer, and Packing: PTFE.

**Temperature Limits:** -20 to 392°F (-29 to 200°C).

**Other Materials:** O-ring:

Fluoroelastomer; Handle: 304 SS; Washer: 301 SS; Stem Nut, Locking Device, Gland Ring: 304 SS; Handle Sleeve: PVC.

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/EU (RoHS II).

#### ACTUATORS

##### Pneumatic "DA" and "SR" Series

**Type:** DA series is double acting and SR series is spring return (rack and pinion).

**Normal Supply Pressure:** DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 80 psi (5.5 bar).

**Maximum Supply Pressure:** 120 psi (8.6 bar).

**Air Connections:** DA01: 1/8" female NPT; DA02 to DA08: 1/4" female NPT; SR03 to SR09: 1/4" female NPT.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limits:** -40 to 176°F (-40 to 80°C).

**Accessory Mounting:** NAMUR standard.

##### Electric "TD" and "MD" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC).

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** TD01: 4 s; MD01: 10 s; TD02 and MD02: 20 s; TD03 and MD03: 30 s; TD04 and MD04: 30 s.

**Duty Rating:** 85%.

**Enclosure Rating:** NEMA 4X (IP67).

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override, position indicator, and TD models come with two limit switches.

##### Electric "TI" and "MI" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** See instruction manual.

**Duty Rating:** See instruction manual.

**Enclosure Rating:** NEMA 7, designed to meet hazardous locations: Class I, Group C & D; Class II, Group E, F & G; Division I & II.

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Position indicator and two limit switches.



## 3-WAY FLANGED STAINLESS STEEL BALL VALVE

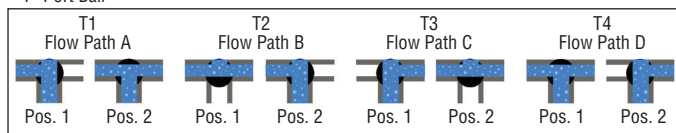
150# ANSI Flange, Vented Ball, Electric or Pneumatic Actuators

MODEL CHART						
Size	Cv (gal/min)	Popular Hand Operated Model	Popular Double Acting Pneumatic Model	Popular Spring Return Pneumatic Model	Popular NEMA 4X Two Position Electric (110 VAC) Model	Popular NEMA 4X Modulating Electric (110 VAC) Model
1/2"	26	WE34-CHD00-T2	WE34-CDA02-T2	WE34-CSR03-T2	WE34-CTD02-T2-A	WE34-CMD01-T2-A
3/4"	50	WE34-DHD00-T2	WE34-DDA02-T2	WE34-DSR03-T2	WE34-DTD02-T2-A	WE34-DMD01-T2-A
1"	94	WE34-EHD00-T2	WE34-EDA03-T2	WE34-ESR05-T2	WE34-ETD02-T2-A	WE34-EMD02-T2-A
1-1/2"	260	WE34-GHD00-T2	WE34-GDA05-T2	WE34-GSR06-T2	WE34-GTD03-T2-A	WE34-GMD03-T2-A
2"	380	WE34-HHD00-T2	WE34-HDA06-T2	WE34-HSR07-T2	WE34-HTD03-T2-A	WE34-HMD03-T2-A
2-1/2"	650	WE34-IHD00-T2	WE34-IDA07-T2	WE34-ISR08-T2	WE34-ITD04-T2-A	WE34-IMD04-T2-A
3"	1000	WE34-JHD00-T2	WE34-JDA08-T2	WE34-JSR09-T2	WE34-JTD04-T2-A	WE34-JMD04-T2-A

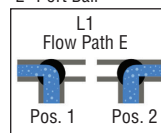
MODEL CHART - HAND OPERATED & PNEUMATIC ACTUATOR						
Example	WE34	-JDA08	-T1	-A	B	00 WE34-JDA08-T1-AB00
Series	WE34					316 SS 3-way 150# ANSI flange
Size and Actuator		CHD00 DHD00 EHD00 GHD00 HHD00 IHD00 JHD00 CDA02 DDA02 EDA03 GDA05 HDA06 IDA07 JDA08 CSR03 DSR03 ESR05 GSR06 HSR07 ISR08 JSR09				1/2" hand operated 3/4" hand operated 1" hand operated 1-1/2" hand operated 2" hand operated 2-1/2" hand operated 3" hand operated 1/2" double acting 3/4" double acting 1" double acting 1-1/2" double acting 2" double acting 2-1/2" double acting 3" double acting 1/2" spring return 3/4" spring return 1" spring return 1-1/2" spring return 2" spring return 2-1/2" spring return 3" spring return
Valve Position			T1 T2 T3 T4 L1			Flow path A Flow path B Flow path C Flow path D Flow path E
Solenoid				N A		No solenoid NEMA 4X NAMUR solenoid
Solenoid Voltage				N A B C D E		No solenoid 110 VAC 220 VAC 24 VAC 24 VDC 12 VDC
Positioner and Switches					00 01 02 03 04 06 07 08 09	None 42AD0 exp limit switch 45VD0 exp position transmitter 42AD0-B ATEX limit switch 42AD0-IE IECEX limit switch QV-210101 poly limit switch VPS and P1 prox switch 265ER-D5 positioner 285ER-D5 smart positioner

ACCESSORIES	
Model	Description
AFR4	Air filter regulator 0 to 120 psi
VB-01	Volume booster

"T" Port Ball



"L" Port Ball



MODEL CHART - ELECTRIC ACTUATOR					
Example	WE34	-HMD03	-T3	-A	WE34-HMD03-T3-A
Series	WE34				316 SS 3-way 150# ANSI flange
Size and Actuator		CTD02 DTD02 ETD02 GTD03 HTD03 ITD04 JTD04 CMD01 DMD01 EMD02 GMD03 HMD03 IMD04 JMD04 CTI02 DTI02 ETI03 GTI05 HTI06 ITI06 JTI08 CMI02 DMI02 EMI03 GMI05 HMI06 IMI06 JMI08			1/2" NEMA 4X two-position 3/4" NEMA 4X two-position 1" NEMA 4X two-position 1-1/2" NEMA 4X two-position 2" NEMA 4X two-position 2-1/2" NEMA 4X two-position 3" NEMA 4X two-position 1/2" NEMA 4X modulating 3/4" NEMA 4X modulating 1" NEMA 4X modulating 1-1/2" NEMA 4X modulating 2" NEMA 4X modulating 2-1/2" NEMA 4X modulating 3" NEMA 4X modulating 1/2" exp two-position 3/4" exp two-position 1" exp two-position 1-1/2" exp two-position 2" exp two-position 2-1/2" exp two-position 3" exp two-position 1/2" exp electric modulating 3/4" exp electric modulating 1" exp electric modulating 1-1/2" exp electric modulating 2" exp electric modulating 2-1/2" exp electric modulating 3" exp electric modulating
Valve Position			T1 T2 T3 T4 L1		Flow path A Flow path B Flow path C Flow path D Flow path E
Actuator Voltage				A B C D	110 VAC 220 VAC 24 VAC 24 VDC

REPAIR KIT	
Model	Valve Series and Size
VRK-50	WE34-1/2"
VRK-51	WE34-3/4"
VRK-52	WE34-1"
VRK-54	WE34-1-1/2"
VRK-55	WE34-2"
VRK-56	WE34-2-1/2"
VRK-57	WE34-3"
Parts List - Included in Kit	
1 PTFE thrust washer	
1 FKM O-ring	
2 PTFE stem packing	
2 PTFE seals	
2 RTFE seats	



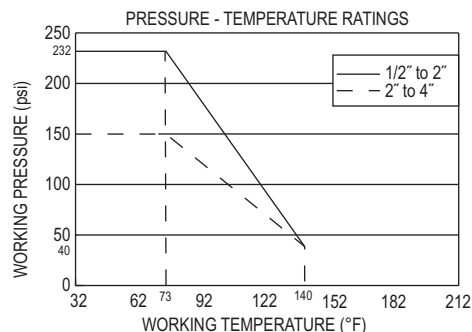
# 3-WAY PLASTIC AUTOMATED BALL VALVE

## Electric and Pneumatic Actuators



Size	Position				
	A	B	C	D	E
1/2"	3.85	2.45	4.55	13.7	5.11
3/4"	9.50	6.65	10.2	26.6	10.5
1"	14.4	9.80	17.2	53.2	18.6
1-1/4"	27.3	18.9	32.2	73.5	33.3
1-1/2"	33.3	23.1	42.0	119	43.4
2"	63.0	43.4	84.0	224	85.4

Cv Values



The **SERIES 3PBV** is ideal for mixing or diverting services in industrial, chemical, turf and irrigation, and pool and spa applications, as well as for use with potable water. The valve features a 3-seat design for efficient automation, reinforced TFE seats and EPDM seals for longer life, and an all PVC construction for heavyweight durability at a lightweight cost. Valves also come standard with field selectable NPT or socket process connections.

The 3PBV is an economical automated valve package with either an electric or pneumatic actuator. Electrically actuated models are weatherproof, NEMA 4 (IP56), powered by standard 115 VAC supply, and are available in either two-position or proportional control. Two-position actuators use the 115 VAC input to drive each of the valve ports open or closed, while the modulating actuator accepts a 4 to 20 mA input for infinite valve positioning. Actuator features include thermal overload protection to withstand stall conditions, visual position indication and a permanently lubricated gear train.

The pneumatic double acting actuator uses an air supply to drive each of the actuator ports. Spring return pneumatic actuators use the air supply to drive the valve stem one direction, and internally loaded springs return the valve to its original position. Also available is the SV3 solenoid valve to electrically switch the supply pressure between the air supply ports. Actuators are constructed of anodized aluminum and are epoxy coated for years of corrosion free service.

### HOW TO ORDER:

1. Select **Model Number** to specify pipe size and actuator.
2. Choose a **Port Configuration** to determine valve flow path.

**Example:** 3PBVPSR204-L1

### SPECIFICATIONS

**Service:** Compatible liquids or gases.

**Body:** 3-way.

**Line Size:** 1/2" to 2".

**End Connections:** Female NPT or socket (field-selectable).

**Pressure Limit:** 1/2" to 1": 232 psi (16.0 bar) @ 73°F (23°C); 1-1/4" to 2": 150 psi (10.3 bar) @ 73°F (23°C) WOG; Vacuum: 29" Hg. See chart for curve.

**Wetted Materials:** Body, end connectors: PVC; Ball, stem: PVC; Seat: TFE; Stem seal: EPDM.

**Temperature Limit:** 32 to 140°F (0 to 60°C).

### ACTUATORS

#### Electric

**Power Requirements:** 120 VAC, 50/60 Hz, single phase. Optional 220 VAC, 24 VAC, 12 VDC, and 24 VDC.

**Power Consumption (Locked Rotor Current):** Two position: 1/2" to 1-1/2": .55 A, 2": 0.75 A; Modulating: 0.75 A.

**Cycle Time:** (per 90°): Two position: 1/2" to 1-1/2": 2.5 s, 2": 5 s; Modulating: 5 s.

**Duty Cycle:** Two position: 1/2" to 1-1/2": 75%, 2": 25%; Modulating: 75%.

**Enclosure Rating:** NEMA 4. Optional NEMA 7 (Class 1, Div. II groups A, B, C, D).

**Housing Material:** Aluminum with thermal bonding polyester powder finish.

**Temperature Limit:** 0 to 150°F (-18 to 65°C).

**Conduit Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override and visual position indicator except modulating units.

#### Pneumatic "DA" and "SR" Series

**Type:** DA series is double acting and SR series is spring return (rack and pinion).

**Normal Supply Pressure:** 80 psi (5.5 bar).

**Maximum Supply Pressure:** 120 psig (8 bar).

**Air Connections:** DA/SR1 to 5: 1/8" female NPT, all other sizes: 1/4" female NPT.

**Air Consumption (per stroke):** DA1: 2.32 in<sup>3</sup>; DA2, SR2: 9.34 in<sup>3</sup>; SR3: 17.21 in<sup>3</sup>.

**Cycle Time (per 90°):** DA1: .03 s; DA2: .04 s; SR2: .09 s; SR3: .14 s.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limit:** -4 to 180°F (-20 to 82°C).

**Accessory Mounting:** NAMUR standard.

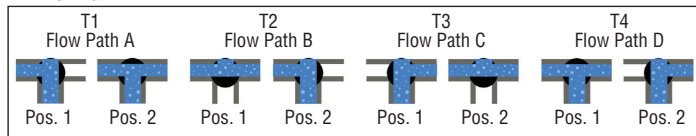
**Standard Features:** Visual position indicator.

### MODEL CHART

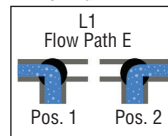
Size	Cv	Double Acting Pneumatic	Spring Return Pneumatic	Two Position Electric	Modulating Electric
		Model*	Model*	Model*	Model*
1/2"	See Chart Below	3PBVPDA102	3PBVPSR202	3PBVPU1102	3PBVPV1202
3/4"		3PBVPDA103	3PBVPSR203	3PBVPU1103	3PBVPV1203
1"		3PBVPDA104	3PBVPSR204	3PBVPU1104	3PBVPV1204
1-1/4"		3PBVPDA105	3PBVPSR205	3PBVPU1105	3PBVPV1205
1-1/2"		3PBVPDA206	3PBVPSR306	3PBVPU1206	3PBVPV1206
2"		3PBVPDA207	3PBVPSR307	3PBVPU1207	3PBVPV1207

\*Complete model includes **Port Configuration** - see "How to Order".

#### "T" Port Ball



#### "L" Port Ball

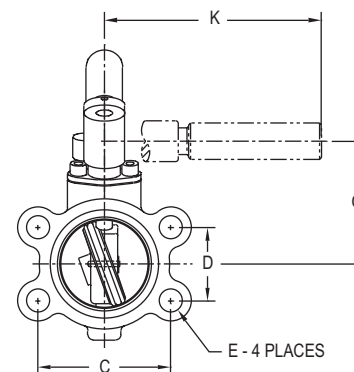
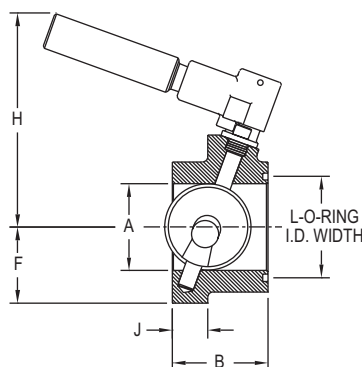


### OPTIONS

To order add suffix:	Description	Actuator Size*
-EX	Explosion proof electric actuators	XX1-XX6
*Example: Third digit in U12 or V12 is the size		
Note: For optional electric actuator supply voltages, contact factory for model number change		

# BUTTERFLY VALVE

Low Cost, S.A.E. Flange, Hydraulic Reservoir Shut Off Valve



Size	A in [mm]	B in [mm]	C in [mm]	D in [mm]	E in [mm]	F in [mm]	G in [mm]	H in [mm]	J in [mm]	K in [mm]	L in [mm]	I.D. X W.D.
2"	2 [50.80]	2 [50.80]	3-1/16 [77.79]	1-11/16 [42.86]	1/2 [12.70]	1-3/4 [44.45]	2-13/16 [71.44]	5-1/8 [130.18]	13/16 [20.64]	5 [127.00]	2-1/4 [57.15]	1/8 [3.18]
2-1/2"	2-1/2 [63.50]	2 [50.80]	3-1/2 [88.90]	2 [50.80]	1/2 [12.70]	2-1/16 [52.39]	3-1/8 [79.38]	5-1/8 [130.18]	13/16 [20.64]	5 [127.00]	2-3/4 [69.85]	1/8 [3.18]
3"	3 [76.20]	2-1/2 [63.50]	4-3/16 [106.36]	2-7/16 [61.91]	5/8 [15.88]	2-5/16 [58.74]	3-3/8 [85.73]	5-1/8 [130.18]	1-1/16 [26.99]	5 [127.00]	3-3/8 [85.73]	1/8 [3.18]
4"	4 [101.60]	3-1/4 [82.55]	5-1/8 [130.18]	3-1/16 [77.79]	5/8 [15.88]	2-3/4 [69.85]	4 [101.60]	5-5/8 [142.88]	1-1/4 [31.75]	5 [127.00]	4-3/8 [111.13]	1/8 [3.18]
5"	5 [127.00]	4 [101.60]	6 [152.40]	3-5/8 [92.08]	5/8 [15.88]	3-5/16 [84.14]	4-3/8 [111.13]	6 [152.40]	1-1/2 [38.10]	5 [127.00]	5-3/8 [136.53]	1/8 [3.18]

The **SERIES SAE** Butterfly Valves are an ideal low cost hydraulic reservoir shut off valve. These valves are designed to meet the demanding needs of the fluid power industry. Unique features include an O-ring flange face seal complying with S.A.E. J518 dimensional requirements. This design provides for bubble tight reservoir shut off up to 25 psi (1.72 bar) and a max temperature of 180°F (82.2°C). The compact envelope dimension reduces space requirements. Unit allows for adjustment by incorporating an open/close detent position lock which can be infinitely positioned to achieve a desired flow rate. The unique design resists the vibrations associated with hydraulic pumps and pumping systems. Optional fluoroelastomer seals and locking handle are available.

## FEATURES/BENEFITS

- Flange face complies with S.A.E. J518 dimensional requirements
- Bubble tight shut-off
- Locking handles are available

## APPLICATIONS

- Hydraulic reservoir isolation on injection molding or earth moving equipment
- Used to isolate the hydraulic reservoir during maintenance

MODEL CHART	
Model	Flange Size
SAE-20	2"
SAE-25	2-1/2"
SAE-30	3"
SAE-40	4"
SAE-50	5"

OPTIONS	
To order add suffix:	Description
-VIT	Fluoroelastomer O-ring seals
Example: SAE-30-VIT	
-LHR	Locking handle
Example: SAE-30-LHR	

## SPECIFICATIONS

**Service:** Compatible liquids and gases.

**Line Size:** 2" to 5".

**Body Style:** 2-way, lug butterfly.

**End Connections:** O-ring flange face seal (S.A.E. J518).

**Pressure Limit:** Shut-off: 25 psi (1.72 bar) bubble tight; Body shell: 500 psi (34.5 bar).

**Wetted Materials:** Body and disc/vane: Cast iron; O-rings: Buna-N or fluoroelastomer; Stem: Steel.

**Temperature Limits:** Buna-N: 180°F (82°C); Fluoroelastomer: 300°F (149°C).

**Agency Approvals:** Meets the technical requirements of EU Directive 2011/65/EU (RoHS II).

## BUTTERFLY VALVE

Lug or Wafer, EPDM or PTFE, Electric or Pneumatic Actuators



WE20-CHD00-LE



WE20-EDA06-LE



WE20-ETD04-LE-A



WE20-CDA04-WP-AA07



WE20-CDA04-WP-NN08



The **SERIES WE20** is offered in lug or wafer body styles and is equipped with a PTFE or EPDM liner. The most critical aspect of the Series WE20 Butterfly Valves is the cartridge seat design, which alleviates installation problems associated with common "dove tail design" seats. Valve torques are lower and more consistent as the seat dynamics are not dependent on being coupled between two flanges. Precision machining of the disc and body allow the cartridge design to maintain a tighter disc to seat tolerance, providing a perfect low torque seal each and every time the valve is cycled. The seat to disc seal is independent of flange support and capable of full rated dead end service.

Actuators are directly mounted creating a compact assembly for tight spaces. Limit switches are able to be mounted directly to the valves allowing for remote position indication.

The Series WE20 can be configured with either an electric or pneumatic actuator. Electric actuators are available in weatherproof or explosion-proof, a variety of supply voltages and two-position or modulating control. Two-position actuators use the supply voltage to drive the valve open or closed, while the modulating actuator accepts a 4-20 mA input for valve positioning. Actuators feature thermal overload protection and permanently lubricated gear train. The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports, with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve, and internally loaded springs return the valve to the closed position.

The pneumatic double acting actuator uses an air supply to drive the valve open and closed. The actuator has two supply ports with one driving the valve open and the other driving the valve closed. Spring return pneumatic actuators use the air supply to open the valve and internally loaded springs return the valve to the closed position. Also available is the SV3 solenoid valve to electrically switch the air supply pressure between the air supply ports for opening and closing the valve. Actuators are constructed of anodized and epoxy coated aluminum for years of corrosion free service.

## FEATURES/BENEFITS

- Machined flats attach disc/stem - no pins
- Phenolic backed cartridge seat design for extended service and ease of replacement
- Extended neck for insulation - no fabricated extensions required
- Capable of being configured to fit any application
- Limit switches can be mounted to manual valves for remote monitoring

## SPECIFICATIONS

## VALVE

**Service:** Compatible liquids, gases, and steam.

**Body:** 2-way, wafer or lug butterfly.

**Line Sizes:** 2 to 12".

**End Connections:** Lug and wafer pattern designed for flanges that are ANSI Class 125 (B16.1) and ANSI Class 150 (B16.5) dimension.

**Pressure Limits:** 225 psi (15.5 bar).

**Wetted Materials:** Body Material: Ductile iron; Disc: 316 SS; Seat: EPDM or PTFE; O-ring: EPDM; Stem: 410 SS.

**Temperature Limits:** Disc: EPDM: -50 to 250°F (-46 to 121°C); PTFE: 0 to 300°F (-18 to 149°C).

**Bearings:** Nylatron.

**Operator:** 2 to 6" 10-position locking hand lever; 8 to 12": manual gear.

## ACTUATORS

## Pneumatic "DA" and "SR" Series

**Type:** DA series is double acting and SR series is spring return (rack and pinion).

**Normal Supply Pressure:** DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 70 to 115 psi (4.8 to 7.9 bar).

**Maximum Supply Pressure:** 120 psi (8.6 bar).

**Air Connections:** DA03 thru DA11: 1/4" FNPT; SR03 thru SR11: 1/4" FNPT.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limits:** -40 to 176°F (-40 to 80°C).

**Accessory Mounting:** NAMUR standard.

## Electric "TD" and "MD" Series

**Power Requirements:** 110 VAC, 220 VAC or 24 VAC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** TD01 and MD01: 4 s; TD02 and MD02: 20 s; TD03 and MD03: 30 s; TD04 and MD04: 30 s; TD05 and MD05: 30 s; TD06 and MD06: 45 s; TD07 and MD07: 30 s.

**Duty Rating:** 85%.

**Enclosure Rating:** NEMA 4X (IP67).

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override, position indicator, and TD models come with two limit switches.

## Electric "TH and MH Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** See instruction manual.

**Duty Rating:** See instruction manual.

**Enclosure Rating:** NEMA 7, designed to meet hazardous locations: Class I, Group C & D; Class II, Group E, F & G; Division I & II.

**Housing Material:** Powder Coated Aluminum

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Position indicator and two limit switches.

# BUTTERFLY VALVE

Lug or Wafer, EPDM or PTFE, Electric or Pneumatic Actuators

MODEL CHART						
Size	Cv (gal/min)	Popular Hand Operated Model	Popular Double Acting Pneumatic Model	Popular Spring Return Pneumatic Model	NEMA 4X Two-Position Electric (110 VAC) Model	NEMA 4X Modulating Electric (110 VAC) Model
2"	135	WE20-AHD00-WE	WE20-ADA03-WE	WE20-ASR04-WE	WE20-ATD02-WE-A	WE20-AMD02-WE-A
2-1/2"	220	WE20-BHD00-WE	WE20-BDA03-WE	WE20-BSR04-WE	WE20-BTD02-WE-A	WE20-BMD02-WE-A
3"	302	WE20-CHD00-WE	WE20-CDA04-WE	WE20-CSR06-WE	WE20-CTD02-WE-A	WE20-CMD02-WE-A
4"	600	WE20-DHD00-WE	WE20-DDA05-WE	WE20-DSR07-WE	WE20-DTD03-WE-A	WE20-DMD03-WE-A
5"	1022	WE20-EHD00-WE	WE20-EDA06-WE	WE20-ESR08-WE	WE20-ETD04-WE-A	WE20-EMD04-WE-A
6"	1579	WE20-FHD00-WE	WE20-FDA07-WE	WE20-FSR09-WE	WE20-FTD04-WE-A	WE20-FMD04-WE-A
8"	3136	WE20-GHD00-WE	WE20-GDA08-WE	WE20-GSR10-WE	WE20-GTD05-WE-A	WE20-GMD05-WE-A
10"	5340	WE20-HHD00-WE	WE20-HDA09-WE	WE20-HSR11-WE	WE20-HTD06-WE-A	WE20-HMD06-WE-A
12"	8250	WE20-IHD00-WE	WE20-IDA11-WE	WE20-ISR11-WE	WE20-ITD07-WE-A	WE20-IMD07-WE-A

MODEL CHART - HAND OPERATED & PNEUMATIC ACTUATOR									
Example	WE20	-BSR04	-WE	-A	A	00	WE20-BSR04-WE-AA00		
Series	WE20						Butterfly valve		
Size and Actuator		AHD00 BHD00 CHD00 DHD00 EHD00 FHD00 GHD00 HHD00 IHD00 ADA03 BDA03 CDA04 DDA05 EDA06 FDA07 GDA08 HDA09 IDA11 ASR04 BSR04 CSR06 DSR07 ESR08 FSR09 GSR10 HSR11 ISR11					2" hand operated 2-1/2" hand operated 3" hand operated 4" hand operated 5" hand operated 6" hand operated 8" hand operated 10" hand operated 12" hand operated 2" double acting 2-1/2" double acting 3" double acting 4" double acting 5" double acting 6" double acting 8" double acting 10" double acting 12" double acting 2" spring return 2-1/2" spring return 3" spring return 4" spring return 5" spring return 6" spring return 8" spring return 10" spring return 12" spring return		
Body Type /Liner			WE WP LE LP				Wafer-EPDM Wafer-PTFE Lug-EPDM Lug-PTFE		
Solenoid				N A			No solenoid NEMA 4X NAMUR solenoid		
Solenoid Voltage				N A B C D E			No solenoid 120 VAC 220 VAC 24 VAC 24 VDC 12 VDC		
Positioner and Switches						00 01 02 03 04 06 07 08 09	None 42AD0 exp limit switch 45VD0 exp position transmitter 42AD0-B ATEX limit switch 42AD0-IE IECEx limit switch QV-210101 poly limit switch VPS and P1 prox switch 265ER-D5 positioner 285ER-D5 smart positioner		
Options							NO	Fail open spring return actuator	

MODEL CHART - ELECTRIC ACTUATOR					
Example	WE20	-DMH05	-WE	-A	WE20-DMH05-WE-A
Series	WE20				Butterfly valve
Size and Actuator		ATD02 BTD02 CTD02 DTD03 ETD04 FTD04 GTD05 HTD06 ITD07 AMD02 BMD02 CMD02 DMD03 EMD04 FMD04 GMD05 HMD06 IMD07 ATH03 BTH03 CTH05 DTH05 ETH06 FTH08 GTH09 HTH10 ITH11 AMH03 BMH03 CMH05 DMH05 EMH06 FMH08 GMH09 HMH10 IMH11			2" NEMA 4X two-position 2-1/2" NEMA 4X two-position 3" NEMA 4X two-position 4" NEMA 4X two-position 5" NEMA 4X two-position 6" NEMA 4X two-position 8" NEMA 4X two-position 10" NEMA 4X two-position 12" NEMA 4X two-position 2" NEMA 4X modulating 2-1/2" NEMA 4X modulating 3" NEMA 4X modulating 4" NEMA 4X modulating 5" NEMA 4X modulating 6" NEMA 4X modulating 8" NEMA 4X modulating 10" NEMA 4X modulating 12" NEMA 4X modulating 2" exp two-position 2-1/2" exp two-position 3" exp two-position 4" exp two-position 5" exp two-position 6" exp two-position 8" exp two-position 10" exp two-position 12" exp two-position 2" exp electric modulating 2-1/2" exp electric modulating 3" exp electric modulating 4" exp electric modulating 5" exp electric modulating 6" exp electric modulating 8" exp electric modulating 10" exp electric modulating 12" exp electric modulating
Material/ Liner			WE WP LE LP		Wafer-EPDM Wafer-PTFE Lug-EPDM Lug-PTFE
Actuator Voltage				A B C D	110 VAC 220 VAC 24 VAC 24 VDC

ACCESSORIES	
Model	Description
AFR4	Air filter regulator 0 to 120 psi
VB-01	Volume booster



# PNEUMATIC AND ELECTRIC ACTUATORS

## Actuators for Valve and Damper Automation



ACT-SR03



ACT-TD01-110VAC



ACT-MI02-110VAC

The W.E. Anderson **SERIES ACT** Actuators are available in either pneumatic or electric models. The wide range of torques and voltages means there is an actuator for almost any application. The standard ISO 5211 mounting configuration makes installation to any valve or damper quick and simple.

W.E. Anderson pneumatic ACT models are a compact rack-and-pinion design with a symmetrical structure that ensures fast and steady action, high precision and high output power. The corrosion resistant anodized aluminum body is designed to withstand the harsh and abusive industrial environments and provide reliable service. We offer double acting and spring return models in a variety of sizes to fit any application.

W.E. Anderson electric ACT models are available in two-position or modulating configurations and NEMA 4X or NEMA 7 rated enclosures. All electric actuators utilize a high grade powder coated aluminum enclosure with visual indicators. The two-position models come standard with two auxiliary switches, and modulating models offer an output for position monitoring. Certain models are equipped with manual overrides allowing the operator to cycle the valve manually for installation or maintenance checks.

### FEATURES/BENEFITS

- ISO 5211 Mounting configuration for easy installation
- Pneumatic actuators offer corrosion resistance anodized finish
- NAMUR mounting configuration on pneumatic actuators
- Two-position electric actuators include auxiliary limit switches
- Modulating electric actuators offer an output for position monitoring

### APPLICATIONS

- Designed for quarter turn valve or damper control

### SPECIFICATIONS

#### Pneumatic "DA" and "SR" Series

**Type:** DA series is double-acting and SR series is spring return (rack and pinion).

**Normal Supply Pressure:** DA: 40 to 115 psi (2.7 to 7.9 bar); SR: 80 psi (5.5 bar).

**Maximum Supply Pressure:** 120 psi (8.6 bar).

**Air Connections:** DA01: 1/8" female NPT; DA02 to DA14: 1/4" female NPT; SR02 to SR14: 1/4" female NPT.

**Housing Material:** Anodized aluminum body and epoxy coated aluminum end caps.

**Temperature Limits:** -40 to 176°F (-40 to 80°C).

**Accessory Mounting:** NAMUR standard.

#### Electric "TD" and "MD" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC (MD models not available in 24 VDC).

**Power Consumption:** See manual.

**Cycle Time (per 90°):** TD01: 4 s; MD01: 10 s; TD02 and MD02: 20 s; TD03 and MD03: 30 s; TD04 and MD04: 30 s; TD05 and MD05: 30 s; TD06 and MD06: 45 s; TD07 and MD07: 45 s.

**Duty Rating:** 85%.

**Enclosure Rating:** NEMA 4X (IP67).

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -22 to 140°F (-30 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Manual override, position indicator, and TD models come with two limit switches.

#### Electric "TI" and "MI" Series

**Power Requirements:** 110 VAC, 220 VAC, 24 VAC or 24 VDC.

**Power Consumption:** See instruction manual.

**Cycle Time (per 90°):** See instruction manual.

**Duty Rating:** See instruction manual.

**Enclosure Rating:** NEMA 7.

**Housing Material:** Powder coated aluminum.

**Temperature Limits:** -40 to 140°F (-40 to 60°C).

**Electrical Connection:** 1/2" female NPT.

**Modulating Input:** 4 to 20 mA.

**Standard Features:** Position indicator and two limit switches.

### MODEL CHART

Pneumatic Model	Description	Electric Model	Description
ACT-DA01	Double acting pneumatic actuator, 98 in-lb	ACT-TD01-110VAC	Electric two-position, 177 in-lb, 110 VAC
ACT-DA02	Double acting pneumatic actuator, 207 in-lb	ACT-TD02-110VAC	Electric two-position, 442 in-lb, 110 VAC
ACT-DA03	Double acting pneumatic actuator, 365 in-lb	ACT-TD03-110VAC	Electric two-position, 885 in-lb, 110 VAC
ACT-DA04	Double acting pneumatic actuator, 603 in-lb	ACT-TD04-110VAC	Electric two-position, 1770 in-lb, 110 VAC
ACT-DA05	Double acting pneumatic actuator, 792 in-lb	ACT-TD05-110VAC	Electric two-position, 3540 in-lb, 110 VAC
ACT-DA06	Double acting pneumatic actuator, 1135 in-lb	ACT-TD06-110VAC	Electric two-position, 8850 in-lb, 110 VAC
ACT-DA07	Double acting pneumatic actuator, 1690 in-lb	ACT-MD01-110VAC	Electric modulating, 265 in-lb, 110 VAC
ACT-DA08	Double acting pneumatic actuator, 2993 in-lb	ACT-MD02-110VAC	Electric modulating, 442 in-lb, 110 VAC
ACT-DA09	Double acting pneumatic actuator, 4506 in-lb	ACT-MD03-110VAC	Electric modulating, 885 in-lb, 110 VAC
ACT-DA10	Double acting pneumatic actuator, 6866 in-lb	ACT-MD04-110VAC	Electric modulating, 1770 in-lb, 110 VAC
ACT-DA11	Double acting pneumatic actuator, 11065 in-lb	ACT-MD05-110VAC	Electric modulating, 3540 in-lb, 110 VAC
ACT-DA12	Double acting pneumatic actuator, 15207 in-lb	ACT-MD06-110VAC	Electric modulating, 8850 in-lb, 110 VAC
ACT-DA13	Double acting pneumatic actuator, 23834 in-lb	ACT-TI01-110VAC	EXP electric two-position, 100 in-lb, 110 VAC
ACT-DA14	Double acting pneumatic actuator, 33516 in-lb	ACT-TI02-110VAC	EXP electric two-position, 200 in-lb, 110 VAC
ACT-SR02	Spring return pneumatic actuator, 95 in-lb	ACT-TI03-110VAC	EXP electric two-position, 300 in-lb, 110 VAC
ACT-SR03	Spring return pneumatic actuator, 176 in-lb	ACT-TI04-110VAC	EXP electric two-position, 400 in-lb, 110 VAC
ACT-SR04	Spring return pneumatic actuator, 274 in-lb	ACT-TI05-110VAC	EXP electric two-position, 675 in-lb, 110 VAC
ACT-SR05	Spring return pneumatic actuator, 381 in-lb	ACT-TI06-110VAC	EXP electric two-position, 1000 in-lb, 110 VAC
ACT-SR06	Spring return pneumatic actuator, 536 in-lb	ACT-TI07-110VAC	EXP electric two-position, 1500 in-lb, 110 VAC
ACT-SR07	Spring return pneumatic actuator, 815 in-lb	ACT-TI08-110VAC	EXP electric two-position, 2000 in-lb, 110 VAC
ACT-SR08	Spring return pneumatic actuator, 1411 in-lb	ACT-TI09-110VAC	EXP electric two-position, 3840 in-lb, 110 VAC
ACT-SR09	Spring return pneumatic actuator, 2460 in-lb	ACT-TI10-110VAC	EXP electric two-position, 5000 in-lb, 110 VAC
ACT-SR10	Spring return pneumatic actuator, 3733 in-lb	ACT-TI11-110VAC	EXP electric two-position, 7020 in-lb, 110 VAC
ACT-SR11	Spring return pneumatic actuator, 6166 in-lb	ACT-MI01-110VAC	EXP electric modulating, 100 in-lb, 110 VAC
ACT-SR12	Spring return pneumatic actuator, 5253 in-lb	ACT-MI02-110VAC	EXP electric modulating, 200 in-lb, 110 VAC
ACT-SR13	Spring return pneumatic actuator, 7923 in-lb	ACT-MI03-110VAC	EXP electric modulating, 300 in-lb, 110 VAC
ACT-SR14	Spring return pneumatic actuator, 9546 in-lb	ACT-MI04-110VAC	EXP electric modulating, 400 in-lb, 110 VAC
		ACT-MI05-110VAC	EXP electric modulating, 675 in-lb, 110 VAC
		ACT-MI06-110VAC	EXP electric modulating, 1000 in-lb, 110 VAC
		ACT-MI07-110VAC	EXP electric modulating, 1500 in-lb, 110 VAC
		ACT-MI08-110VAC	EXP electric modulating, 2000 in-lb, 110 VAC
		ACT-MI09-110VAC	EXP electric modulating, 3840 in-lb, 110 VAC
		ACT-MI10-110VAC	EXP electric modulating, 5000 in-lb, 110 VAC
		ACT-MI11-110VAC	EXP electric modulating, 7020 in-lb, 110 VAC

**Note:** Optional voltages available for the electric actuators. Change the -110 VAC to -220 VAC, 24 VDC or 24 VAC. The ACT-TD and ACT-MD are not available with 24 VAC.



# PNEUMATIC AND ELECTRIC ACTUATORS

Actuators for Valve and Damper Automation

MODEL CHART - DOUBLE ACTING ACTUATOR TORQUE									
Model	Double Acting Pneumatic Actuator Output Torque (in-lb)								
	Air Pressure								
	40 psi	50 psi	60 psi	70 psi	80 psi	90 psi	100 psi	110 psi	115 psi
ACT-DA01	49	61	74	86	98	110	123	135	142
ACT-DA02	104	130	155	181	207	233	259	285	300
ACT-DA03	182	228	274	319	365	411	456	502	529
ACT-DA04	302	377	453	528	603	679	754	830	875
ACT-DA05	396	495	594	693	792	891	990	1089	1148
ACT-DA06	567	709	851	993	1135	1277	1419	1561	1646
ACT-DA07	845	1056	1267	1478	1690	1901	2112	2323	2450
ACT-DA08	1497	1871	2245	2619	2993	3367	3742	4116	4340
ACT-DA09	2253	2816	3379	3942	4506	5069	5632	6195	6533
ACT-DA10	3433	4291	5149	6008	6866	7724	8582	9440	9955
ACT-DA11	5532	6916	8299	9682	11065	12448	13831	15214	16044
ACT-DA12	7603	9504	11405	13306	15207	17107	19008	20909	22050
ACT-DA13	11917	14896	17875	20855	23834	26813	29792	32772	34559
ACT-DA14	16758	20948	25137	29327	33516	37706	41896	46085	48599

ACCESSORIES	
Models	Description
AFR4	Air filter regulator 0 to 120 psi
VB-01	Volume booster
SN-5A	5/2 NAMUR 110 VAC solenoid
SN-3A	3/2 NAMUR 110 VAC solenoid

MODEL CHART - SPRING RETURN ACTUATOR TORQUE															
Model	Spring Sets	Torque List of Spring Return Pneumatic Actuator (in-lb)													
		Spring Torque		Air Pressure											
				70 psi		80 psi		90 psi		100 psi		110 psi		115 psi	
				0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
ACT-SR02	10	69.9	95.5	111.4	85.8	137.3	111.7	163.2	137.6	189.1	163.5	215	189.4	230.6	204.9
ACT-SR03	10	120	176	199	143	245	189	291	235	336	280	382	326	409	353
ACT-SR04	10	180	274	348	254	424	330	499	405	575	481	650	556	695	601
ACT-SR05	10	263	381	430	312	529	411	628	510	727	609	826	708	885	767
ACT-SR06	10	385	536	608	458	750	599	891	741	1033	883	1175	1025	1260	1110
ACT-SR07	10	695	815	783	663	994	874	1206	1085	1417	1297	1628	1508	1755	1635
ACT-SR08	10	937	1411	1682	1208	2056	1583	2430	1957	2804	2331	3178	2705	3403	2930
ACT-SR09	10	1640	2460	2303	1483	2866	2046	3429	2609	3992	3173	4556	3736	4894	4074
ACT-SR10	10	2529	3733	3479	2274	4337	3133	5195	3991	6053	4849	6911	5707	7426	6222
ACT-SR11	10	4104	6166	5578	3516	6961	4899	8344	6282	9727	7665	11111	9048	11940	9878
ACT-SR12	10	5253	8258	8052	5048	9953	6948	11854	8849	13755	10750	15656	12651	16796	13791
ACT-SR13	10	7923	14103	12932	6752	15911	9731	18890	12710	21869	15690	24849	18669	26636	20456
ACT-SR14	10	9546	18350	19781	10977	23970	15167	28160	19357	32349	23546	36539	27736	39053	30249

## SERIES ARK

# PNEUMATIC ACTUATOR REPAIR KIT

Springs, Gaskets, and O-rings for Series ACT-DA/SR



ARK-14

The **SERIES ARK** repair kit includes a complete set of O-rings for the Series ACT-DA and ACT-SR pneumatic actuators.

SPECIFICATIONS
<b>Agency Approvals:</b> Meets the technical requirements of EU Directive 2011/65/EU (RoHS II).

MODEL CHART			
Model	Dwyer Actuator (Model)	Model	Dwyer Actuator (Model)
ARK-00	ACT-DA01	ARK-14	ACT-SR02
ARK-01	ACT-DA02	ARK-15	ACT-SR03
ARK-02	ACT-DA03	ARK-16	ACT-SR04
ARK-03	ACT-DA04	ARK-17	ACT-SR05
ARK-04	ACT-DA05	ARK-18	ACT-SR06
ARK-05	ACT-DA06	ARK-19	ACT-SR07
ARK-06	ACT-DA07	ARK-20	ACT-SR08
ARK-07	ACT-DA08	ARK-21	ACT-SR09
ARK-08	ACT-DA09	ARK-22	ACT-SR10
ARK-09	ACT-DA10	ARK-23	ACT-SR11
ARK-10	ACT-DA11	ARK-24	ACT-SR12

ACTUATOR REPAIR KIT FOR:



Series ACT-SR/DA

PARTS LIST - INCLUDED IN KIT
(2) FVMQ O-rings for end caps
(2) FVMQ O-rings for piston
(2) FVMQ O-rings for stem
(2) FVMQ O-rings for adjusting bolt
(10) Stainless steel springs (ACT-SR kits only)

# SELF-ACTING TEMPERATURE CONTROL VALVE

Requires No External Power



**SERIES 38R** Self-Acting Temperature Control Valves require no external power sources and are ideal for regulating the temperature of tanks, process streams and various types of industrial equipment. The actuators are made with a rugged die-cast aluminum housing with a fully enclosed bellow assembly and internal over-range protection. Valves are offered in 1/2" through 6" connection sizes and 1/8" through 6" port sizes. The valve bodies are available in single-seated direct or reverse-acting, double-seated direct or reverse-acting, and 3-way designs with four choices of body material: bronze, cast-iron, cast-steel, and 316 SS. Actuators are available with or without indicating dials or in Fail-Safe. Non-indicating actuators feature a lower profile and should be implemented where space constraints may be an issue while the indicating actuator allows the operator to verify the process temperature and aid in temperature adjustment. Fail-Safe actuators are designed to cause the valve to fail in the safe control position (open in cooling application, closed in a heating application) should some accidental damage occur to the terminal system, resulting in loss of pressure charge. Also available with the Series 38R are a wide range of capillaries, bulbs, and thermowells.

Please request a copy of our Valve Catalog, CT-VC, or visit our website at [www.dwyer-inst.com](http://www.dwyer-inst.com) to see full model information and ordering details for the Series 38R.

## FEATURES/BENEFITS

- Self-operated design
- Internal over range protection
- Heavy duty die cast aluminum actuator

## APPLICATIONS

- Temperature control without external power or control inputs

## SPECIFICATIONS

### VALVE BODY

**Service:** Compatible liquids, gases, and steam.

**Line Size:** 1/2" to 2".

**Body Style:** 2-way or 3-way.

**End Connections:** 1/2" to 2" female NPT.

**Pressure Limit:** 250 psi (17.2 bar).

**Wetted Materials:** Body material: Bronze or 316 SS; Trim: 316 SS; Packing: PTFE.

**Temperature Limits:** 410°F (210°C) @ 250 psi (17.24 bar).

### ACTUATOR

**Power Requirements:** Fully self-contained, no external power required.

**Indicator:** 3-1/2" dial thermometer, SS case, swivel and angle adjustable (available for indicating actuator only).

**Housing:** Die cast aluminum, epoxy powder coated blue finish.

**Set Point Scale:** Integral to housing.

**Bellows:** High-pressure brass, corrosion resistant, tinplated finish.

**Adjustment Screws:** Brass.

**Range Adjustment Spring:** Cadmium plated.

**Overrange Protection:** 100°F over upper range limit for temporary situations.

**Note:** See website for additional options.



SERIES 38R | W.E. ANDERSON™ BY DWYER

# SELF-ACTING TEMPERATURE CONTROL VALVE

Requires No External Power

MODEL CHART									
Example	38R	-D00VA32	-1	01	36	2	-R09	38R-D00VA32-101362-R09	
Series	38R							Self-acting temperature control valve	
Valve		D00VA32						1/2" NPT single seat two-way bronze valve, direct acting	
		D01VA32						3/4" NPT single seat two-way bronze valve, direct acting	
		D02VA32						1" NPT single seat two-way bronze valve, direct acting	
		D03VA32						1-1/4" NPT single seat two-way bronze valve, direct acting	
		D04VA32						1-1/2" NPT single seat two-way bronze valve, direct acting	
		D05VA32						2" NPT single seat two-way bronze valve, direct acting	
		R00VA32						1/2" NPT single seat two-way bronze valve, reverse acting	
		R01VA32						3/4" NPT single seat two-way bronze valve, reverse acting	
		R02VA32						1" NPT single seat two-way bronze valve, reverse acting	
		R03VA32						1-1/4" NPT single seat two-way bronze valve, reverse acting	
		R04VA32						1-1/2" NPT single seat two-way bronze valve, reverse acting	
		R05VA32						2" NPT single seat two-way bronze valve, reverse acting	
		D00VA42						1/2" NPT single seat two-way 316 SS valve, direct acting	
		D01VA42						3/4" NPT single seat two-way 316 SS valve, direct acting	
		D02VA42						1" NPT single seat two-way 316 SS valve, direct acting	
		D03VA42						1-1/4" NPT single seat two-way 316 SS valve, direct acting	
		D04VA42						1-1/2" NPT single seat two-way 316 SS valve, direct acting	
		D05VA42						2" NPT single seat two-way 316 SS valve, direct acting	
		R00VA42						1/2" NPT single seat two-way 316 SS valve, reverse acting	
		R01VA42						3/4" NPT single seat two-way 316 SS valve, reverse acting	
		R02VA42						1" NPT single seat two-way 316 SS valve, reverse acting	
		R03VA42						1-1/4" NPT single seat two-way 316 SS valve, reverse acting	
		R04VA42						1-1/2" NPT single seat two-way 316 SS valve, reverse acting	
		R05VA42						2" NPT single seat two-way 316 SS valve, reverse acting	
		300WA31						1/2" NPT three-way bronze valve	
		301WA31						3/4" NPT three-way bronze valve	
		302WA31						1" NPT three-way bronze valve	
		303WA31						1-1/4" NPT three-way bronze valve	
		304WA31						1-1/2" NPT three-way bronze valve	
		305WA31						2" NPT three-way bronze valve	
		300WA41						1/2" NPT three-way 316 SS valve	
		301WA41						3/4" NPT three-way 316 SS valve	
	302WA41						1" NPT three-way 316 SS valve		
	303WA41						1-1/4" NPT three-way 316 SS valve		
	304WA41						1-1/2" NPT three-way 316 SS valve		
	305WA41						2" NPT three-way 316 SS valve		
Actuator			1					Non-indicating actuator	
			2					Indicating actuator	
Bulb and Capillary				01				Brass union connection	
				02				316 SS union connection	
				03				Brass adjustable union connection	
				04				316SS adjustable union connection	
				05				Brass plain bulb	
				06				316 SS plain bulb	
				07				FEP Covered brass bulb	
				08				FEP Covered 316 SS bulb	
				09				Brass union with stainless steel spiral armor	
				10				316 SS union with stainless steel spiral armor	
Capillary Length					36			Capillary length in feet. Example 36 is 36' length	
Thermowell						0		No thermowell	
						1		316 SS thermowell, 1-1/4" external connection	
						2		Brass thermowell, 1-1/4" external connection	
Temperature Range							R03	30 to 115°F (-1 to 46°C)	
							R04	50 to 140°F (10 to 60°C)	
							R05	75 to 165°F (24 to 74°C)	
							R06	105 to 195°F (41 to 91°C)	
							R07	125 to 215°F (52 to 102°C)	
							R09	155 to 250°F (68 to 121°C)	
							R10	200 to 280°F (93 to 138°C)	
							R11	225 to 315°F (107 to 157°C)	
							R12	255 to 370°F (124 to 188°C)	
							R13	295 to 420°F (146 to 216°C)	
						R14	310 to 440°F (154 to 227°C)		

# HI-FLOW™ CONTROL VALVES

Globe Valves, Ideal for Steam and Water Flow Control, 1/2" to 2-1/2" Sizes, 2-Way or 3-Way



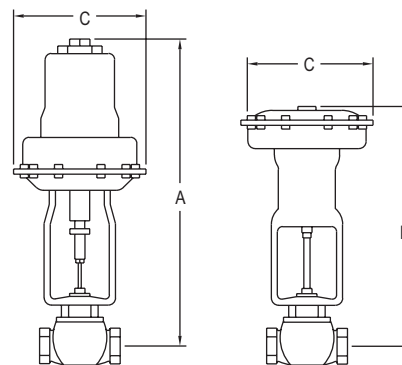
2-way with positioner



2-way with air-to-close actuator



2-way with air-to-open actuator



**HI-FLOW™** control valves are single seated, top or cage guided globe valves - probably the simplest, from a construction standpoint, yet most versatile control valve in use. The Hi-Flow™ valve can fit applications with a smaller size valve since the valve has a greater flow capacity than most conventional valves of the same size. Coupled with the high flow capacity, the Hi-Flow™ valve maintains a wide rangeability of 50:1 to insure precise control. Heavy duty Hi-Flow™ valves are ruggedly constructed of the highest quality materials, precision machined, and performance tested to assure years of trouble free service. Standard packing consists of PTFE V-rings and wiper to minimize friction without leakage at high operating pressures. Available in brass, iron, or 316 SS body, trim is 316 SS with all welded plug construction to provide superior durability and corrosion resistance.

## FEATURES/BENEFITS

- Wide rangeability of 50:1
- Exceptional shut-off and leak rate that meets ANSI/FCI 70-2 Class IV (0.01% of Cv in the closed position)
- Selectable fail safe condition with Air-to-Raise or Air-to-Lower actuators and Push-to-Open or Push-to-Close valve bodies
- Linear or equal percentage flow characteristics
- Low flow options of restricted trim or needle plug
- Removable and replaceable seat ring

## APPLICATIONS

- Flow control, mixing, or diverting service
- Perfect for steam, water or compatible glycol solutions

## HOW TO ORDER

Select model number from model chart or standard product chart and supply maximum upstream pressure, USP.

## SPECIFICATIONS

### VALVE BODY

**Service:** Compatible liquids, gases, and steam.

**Line Size:** 1/2" to 2".

**Body Style:** 2-way or 3-way globe.

**End Connections:** 1/2" to 2" female NPT.

**Pressure Limit:** Iron and bronze body: 250 psi (17.2 bar); 316 SS body: 300 psi (20.7 bar).

**Wetted Materials:** Body material: Iron, bronze, or 316 SS; Trim: 316 SS.

**Packing:** PTFE.

**Temperature Limits:** 20 to 400°F (-7 to 204.4°C).

### ACTUATOR

**Type:** Pneumatic spring/diaphragm.

**Control Signal:** 3 to 15 psi (0.21 to 1.0 bar) standard. Custom ranges available.

**Maximum Supply Pressure:** 220, 222, and 230: 100 psi (6.89 bar). 221, 223, 231, and 233: 50 psi (3.45 bar).

**Air Connection:** 1/4" female NPT.

**Temperature Limit:** 150°F (66°C).

**Note:** Positioners and current-to-pressure transducers available factory mounted.



**Caution:** Use of an actuator supply gas other than air can create a hazardous environment because a small amount of gas continuously vents to atmosphere.

USA: California Proposition 65

⚠ WARNING: Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

● Positioners: See page 478 (Series 165)

⊗ Transducers: See page 476 (Series 2800)

See page 477 (Series 2900)



# HI-FLOW™ CONTROL VALVES

Globe Valves, Ideal for Steam and Water Flow Control, 1/2" to 2-1/2" Sizes, 2-Way or 3-Way

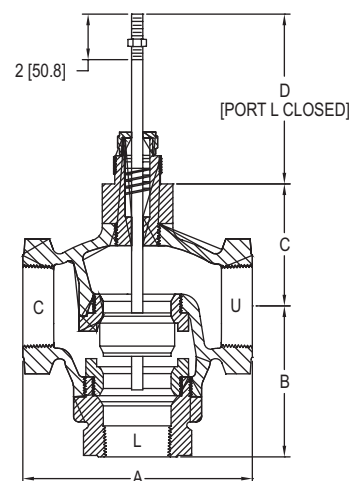
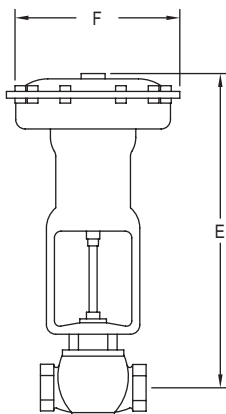
Use the chart below to aid in the selection of Hi-Flow™ Control Valve. As long as the maximum upstream pressure (USP) is less than, or equal to, the value listed, the model shown can be manufactured and calibrated to your specific requirements. Specify maximum upstream pressure, USP, when ordering.

MODEL CHART - 2-WAY SIMPLIFIED SELECTION GUIDE WITH STANDARD PRODUCTS										
Pipe Size	Cv 100%	Body Material	Air-To-Open Model	Max USP psi [bar] 3-15 [.21-1.0]	A in [mm]	C in [mm]	Air-To-Close Model	Max USP psi [bar] 3-15 [.21-1.0]	B in [mm]	C in [mm]
1/2"	6.45	Bronze	2000VA32-230	250 [17.2]	19-3/4 [501.7]	7-3/4 [196.9]	2000VA32-220	250 [17.2]	18-7/16 [468.3]	7-3/4 [196.9]
1/2"	6.45	316SS	2000VA42-230	300 [20.7]	19-3/4 [501.7]	7-3/4 [196.9]	2000VA42-220	300 [20.7]	18-7/16 [468.3]	7-3/4 [196.9]
3/4"	10.75	Bronze	2001VA32-230	250 [17.2]	19-3/4 [501.7]	7-3/4 [196.9]	2001VA32-220	250 [17.2]	18-7/16 [468.3]	7-3/4 [196.9]
3/4"	10.75	Bronze	2001VA32-231	250 [17.2]	20-3/8 [517.5]	10-5/8 [269.9]	2001VA32-221	250 [17.2]	19-1/8 [485.8]	10-5/8 [269.9]
3/4"	10.75	316SS	2001VA42-230	285 [19.7]	19-3/4 [501.7]	7-3/4 [196.9]	2001VA42-220	300 [20.7]	18-7/16 [468.3]	7-3/4 [196.9]
3/4"	10.75	316SS	2001VA42-231	300 [20.7]	20-3/8 [517.5]	10-5/8 [269.9]	2001VA42-221	300 [20.7]	19-1/8 [485.8]	10-5/8 [269.9]
1"	17.42	Bronze	2002VA32-230	166 [11.4]	20-3/16 [512.8]	7-3/4 [196.9]	2002VA32-220	192 [13.2]	18-7/8 [479.4]	7-3/4 [196.9]
1"	17.42	Bronze	2002VA32-231	250 [17.2]	20-13/16 [528.6]	10-5/8 [269.9]	2002VA32-221	250 [17.2]	19-9/16 [496.9]	10-5/8 [269.9]
1"	17.42	316SS	2002VA42-230	166 [11.4]	20-3/16 [512.8]	7-3/4 [196.9]	2002VA42-220	192 [13.2]	18-7/8 [479.4]	7-3/4 [196.9]
1"	17.42	316SS	2002VA42-231	300 [20.7]	20-13/16 [528.6]	10-5/8 [269.9]	2002VA42-221	300 [20.7]	19-9/16 [496.9]	10-5/8 [269.9]
1-1/4"	25.30	Bronze	2003VA32-230	98 [6.8]	20-5/16 [515.9]	7-3/4 [196.9]	2003VA32-220	115 [7.9]	19 [482.6]	7-3/4 [196.9]
1-1/4"	25.30	Bronze	2003VA32-231	245 [16.9]	20-15/16 [531.8]	10-5/8 [269.9]	2003VA32-221	250 [17.2]	19-11/16 [500.1]	10-5/8 [269.9]
1-1/4"	25.30	Bronze	2003VA32-233	250 [17.2]	25-13/32 [645.3]	13-3/8 [339.7]	2003VA32-223	250 [17.2]	23-1/8 [587.4]	13-3/8 [339.7]
1-1/4"	25.30	316SS	2003VA42-230	98 [6.8]	20-5/16 [515.9]	7-3/4 [196.9]	2003VA42-220	115 [7.9]	19 [482.6]	7-3/4 [196.9]
1-1/4"	25.30	316SS	2003VA42-231	245 [17.0]	20-15/16 [531.8]	10-5/8 [269.9]	2003VA42-221	300 [20.7]	19-11/16 [500.1]	10-5/8 [269.9]
1-1/4"	25.30	316SS	2003VA42-233	300 [20.7]	25-13/32 [645.3]	13-3/8 [339.7]	2003VA42-223	300 [20.7]	23-1/8 [587.4]	13-3/8 [339.7]
1-1/2"	32.10	Bronze	2004VA32-230	65 [4.5]	20-11/16 [525.5]	7-3/4 [196.9]	2004VA32-220	80 [5.5]	19-3/8 [492.1]	7-3/4 [196.9]
1-1/2"	32.10	Bronze	2004VA32-231	168 [11.6]	21-5/16 [541.3]	10-5/8 [269.9]	2004VA32-221	235 [16.2]	20-1/16 [509.6]	10-5/8 [269.9]
1-1/2"	32.10	Bronze	2004VA32-233	250 [17.2]	25-25/32 [654.8]	13-3/8 [339.7]	2004VA32-223	250 [17.2]	23-1/2 [596.9]	13-3/8 [339.7]
1-1/2"	32.10	316SS	2004VA42-230	65 [4.5]	20-11/16 [525.5]	7-3/4 [196.9]	2004VA42-220	80 [5.5]	19-3/8 [492.1]	7-3/4 [196.9]
1-1/2"	32.10	316SS	2004VA42-231	168 [11.6]	21-5/16 [541.3]	10-5/8 [269.9]	2004VA42-221	235 [16.2]	20-1/16 [509.6]	10-5/8 [269.9]
1-1/2"	32.10	316SS	2004VA42-233	300 [20.7]	25-25/32 [654.8]	13-3/8 [339.7]	2004VA42-223	300 [20.7]	23-1/2 [596.9]	13-3/8 [339.7]
2"	50.30	Bronze	2005VA32-230	31 [2.1]	20-15/16 [531.8]	7-3/4 [196.9]	2005VA32-220	44 [3.0]	19-5/8 [498.5]	7-3/4 [196.9]
2"	50.30	Bronze	2005VA32-231	88 [6.1]	21-9/16 [547.7]	10-5/8 [269.9]	2005VA32-221	140 [9.7]	20-5/16 [515.9]	10-5/8 [269.9]
2"	50.30	Bronze	2005VA32-233	175 [12.1]	26-1/32 [661.2]	13-3/8 [339.7]	2005VA32-223	250 [17.2]	23-3/4 [603.3]	13-3/8 [339.7]
2"	50.30	316SS	2005VA42-230	31 [2.1]	20-15/16 [531.8]	7-3/4 [196.9]	2005VA42-220	44 [3.0]	19-5/8 [498.5]	7-3/4 [196.9]
2"	50.30	316SS	2005VA42-231	88 [6.1]	21-9/16 [547.7]	10-5/8 [269.9]	2005VA42-221	140 [9.7]	20-5/16 [515.9]	10-5/8 [269.9]
2"	50.30	316SS	2005VA42-233	175 [12.1]	26-1/32 [661.2]	13-3/8 [339.7]	2005VA42-223	272 [18.8]	23-3/4 [606.3]	13-3/8 [339.7]

MODEL CHART - CONTROL VALVES - HI-FLOW™ SERIES, 2-WAY, STOCKED MODELS					
Pipe Size	Cv 100%	Body Material	Air-To-Open Model	Set at USP psig [bar]	Adjustable USP Range psig [bar]
1/2"	6.45	Bronze	2000VA32-230-QS	125 [8.6]	96-200 [6.8-13.8]
3/4"	10.75	Bronze	2001VA32-230-QS	125 [8.6]	81-155 [5.6-10.7]
1"	17.42	Bronze	2002VA32-230-QS	125 [8.6]	123-166 [8.5-11.5]
1"	17.42	Bronze	2002VA32-231-QS	125 [8.6]	71-155 [4.9-10.7]
1-1/4"	25.30	Bronze	2003VA32-230-QS	98 [6.8]	66-98 [4.6-6.8]
1-1/4"	25.30	Bronze	2003VA32-231-QS	125 [8.6]	121-165 [8.3-11.4]
1-1/2"	32.10	Bronze	2004VA32-231-QS	125 [8.6]	104-137 [7.2-9.5]
2"	50.30	Bronze	2005VA32-231-QS	88 [6.1]	68-88 [4.7-6.1]
2"	50.30	Bronze	2005VA32-233-QS	125 [8.6]	116-145 [8.0-10.0]

# HI-FLOW™ CONTROL VALVES

## 3-Way Standard Products for Mixing or Diverting



DIMENSIONS			
Pipe Size	B in [mm]	C in [mm]	D in [mm]
1/2"	2-9/16 [65.1]	2-3/16 [55.6]	4-1/8 [104.8]
3/4"	2-9/16 [65.1]	2-3/16 [55.6]	4-1/8 [104.8]
1"	3 [76.2]	2-7/16 [61.9]	4 [101.6]
1-1/4"	3-3/16 [81.0]	2-1/2 [63.5]	3-3/4 [95.3]
1-1/2"	3-3/4 [95.3]	2-3/4 [69.9]	3-11/16 [93.7]
2"	3-15/16 [100.0]	3-3/16 [81.0]	3-11/16 [93.7]

Use the standard models chart to aid in the selection of the most economical Hi-Flow™ 3-Way Control Valve for your application.  
Standard models include: LIN-E-AIRE® Air-To-Lower Actuator (port L opens on loss of air)

### Mixing Service

FLOW IN - ports U&L; FLOW OUT - port C

Specify maximum upstream pressures [USP's]: USP<sub>U</sub> and USP<sub>L</sub>

To determine shutoff pressure: (USP<sub>U</sub> - USP<sub>C</sub>) + (USP<sub>L</sub> - USP<sub>C</sub>)

### Diverting Service

FLOW IN - port C; FLOW OUT - ports U&L

Specify maximum upstream pressures [USP's]: USP<sub>C</sub>; based on standard 3-15 psi [.21-1.0 bar] pneumatic control signal

To determine shutoff pressure: USP<sub>U</sub> + USP<sub>C</sub>

**MODEL CHART - HI-FLOW™ CONTROL VALVES, 3-WAY SIMPLIFIED SELECTION GUIDE WITH STANDARD PRODUCTS**

Pipe Size	Cv 100%	Body Material	Model	USP [S] psi [bar]	E in [mm]	F in [mm]
1/2"	6.45	Bronze	3000WA32-220	250 [17.2]	18-1/16 [458.8]	7-3/4 [196.9]
1/2"	6.45	316SS	3000WA42-220	300 [20.7]	18-1/16 [458.8]	7-3/4 [196.9]
3/4"	10.75	Bronze	3001WA32-220	250 [17.2]	18-1/16 [458.8]	7-3/4 [196.9]
3/4"	10.75	316SS	3001WA42-220	300 [20.7]	18-1/16 [458.8]	7-3/4 [196.9]
1"	17.42	Bronze	3002WA32-220	200 [13.8]	18-5/16 [465.1]	7-3/4 [196.9]
1"	17.42	Bronze	3002WA32-221	250 [17.2]	19 [482.6]	10-5/8 [269.9]
1"	17.42	316SS	3002WA42-220	200 [13.8]	18-5/16 [465.1]	7-3/4 [196.9]
1"	17.42	316SS	3002WA42-221	300 [20.7]	19 [482.6]	10-5/8 [269.9]
1-1/4"	25.30	Bronze	3003WA32-220	120 [8.4]	18-3/8 [466.7]	7-3/4 [196.9]
1-1/4"	25.30	Bronze	3003WA32-221	250 [17.2]	19-1/16 [484.2]	10-5/8 [269.9]
1-1/4"	25.30	316SS	3003WA42-220	120 [8.3]	18-3/8 [466.7]	7-3/4 [196.9]
1-1/4"	25.30	316SS	3003WA42-221	300 [20.7]	19-1/16 [484.2]	10-5/8 [269.9]
1-1/2"	32.10	Bronze	3004WA32-220	80 [5.6]	18-5/8 [473.1]	7-3/4 [196.9]
1-1/2"	32.10	Bronze	3004WA32-221	200 [13.8]	19-5/16 [490.5]	10-5/8 [269.9]
1-1/2"	32.10	Bronze	3004WA32-223	250 [17.2]	21-3/8 [542.9]	13-3/8 [339.7]
1-1/2"	32.10	316SS	3004WA42-220	80 [5.5]	18-5/8 [473.1]	7-3/4 [196.9]
1-1/2"	32.10	316SS	3004WA42-221	200 [13.8]	19-5/16 [490.5]	10-5/8 [269.9]
1-1/2"	32.10	316SS	3004WA42-223	300 [20.7]	21-3/8 [542.9]	13-3/8 [339.7]
2"	50.30	Bronze	3005WA32-220	45 [3.1]	19-1/16 [484.2]	7-3/4 [196.9]
2"	50.30	Bronze	3005WA32-221	100 [6.9]	19-3/4 [501.7]	10-5/8 [269.9]
2"	50.30	Bronze	3005WA32-223	175 [12.1]	21-13/16 [554.0]	13-3/8 [339.7]
2"	50.30	316SS	3005WA42-220	45 [3.1]	19-1/16 [484.2]	7-3/4 [196.9]
2"	50.30	316SS	3005WA42-221	100 [6.9]	19-3/4 [501.7]	10-5/8 [269.9]
2"	50.30	316SS	3005WA42-223	175 [12.1]	21-12/16 [554.0]	13-3/8 [339.7]

**Caution:** Use of an actuator supply gas other than air can create a hazardous environment because a small amount of gas continuously vents to atmosphere.

USA: California Proposition 65  
⚠ WARNING: Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

# ANGLE SEAT VALVE - BRONZE & STAINLESS STEEL NPT

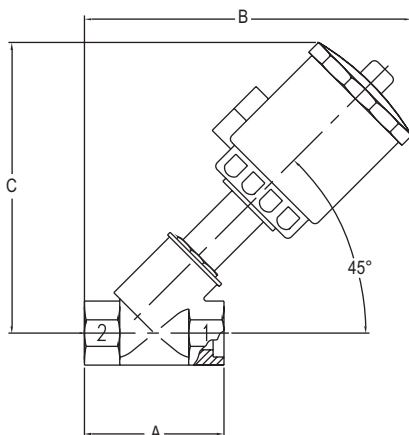
Low Cost, Compact Design, For Use with Gases and Liquids



SAV-BT



SAV-ST



SERIES SAV-BT						
Port Connection	A	B	C	Actuator Diameter	NO Cv	NC Cv
1/2"	2.56"	6.42"	5.51"	2.76"	6.61	6.61
3/4"	2.95"	6.81"	5.79"	2.76"	12.18	12.18
1"	3.54"	8.11"	6.93"	3.32"	23.2	23.2
1-1/4"	4.33"	10.04"	8.66"	3.32"	33.06	33.64
1-1/2"	4.72"	10.63"	9.25"	4.58"	33.3	53.36
1-1/2"	4.72"	12.05"	10.67"	4.58"	-	53.94
2"	5.91"	11.02"	9.45"	4.58"	-	68.44
2"	5.91"	12.44"	10.87"	5.54"	53.94	77.72

SERIES SAV-ST						
Port Connection	A	B	C	Actuator Diameter	NO Cv	NC Cv
1/2"	3.35"	7.48"	6.14"	2.76"	6.61	6.61
3/4"	3.74"	7.68"	6.3"	2.76"	12.18	12.18
1"	4.13"	8.62"	7.17"	3.32"	23.2	23.2
1-1/4"	4.72"	10.47"	8.9"	3.32"	33.06	33.64
1-1/2"	5.12"	10.67"	9.06"	4.58"	33.3	53.36
1-1/2"	5.12"	12.09"	10.47"	4.58"	-	53.94
2"	5.91"	11.22"	9.45"	4.58"	-	68.44
2"	5.91"	12.64"	10.87"	5.54"	53.94	77.72

Save space while maintaining flow rates with the compact **SERIES SAV-BT & SAV-ST** Angle Seat Valves. The pneumatic, externally piloted angle seat valve is operated by a single acting actuator with a mechanical spring for failsafe operation. Select from either normally closed (NC) or normally open (NO) configurations. NO valves can be used to prevent waterhammer on valve closure in liquid applications.

## FEATURES/BENEFITS

- Can be used in most gas, liquid and steam applications
- Integral heat sink protects Polyamide actuator
- Can be mounted in any position
- Actuator can be rotated 360° for positioning pressure ports

## SPECIFICATIONS

### VALVE BODY

**Service:** Gases and liquids compatible with wetted materials.

**Wetted Materials:** Valve body: SAV-BT: Bronze; SAV-ST: AISI 316L SS; Plug and stem: AISI 316L SS; Stem O-ring: Fluoroelastomers; Seat and seal: PTFE.

**Line Sizes:** 1/2" to 2" NPT.

**Pressure Limits:** See table.

**Flow Leakage:** Meets ANSI Class VI.

**Temperature Limits:** 14 to 358°F (-25 to 180°C).

### ACTUATOR

**Type:** Piston/pneumatic spring.

**Pilot Connections:** NAMUR solenoid mounting pad.

**Pilot Media:** Air, water, inert gas.

**Pressure Limits:** See table.

**Temperature Limit:** 185°F (85°C).

## MODEL CHART

Port Connection	Actuator Diameter	Normally Closed Model	Normally Open Model	Normally Closed Model	Normally Open Model
1/2 NPT	2.76"	SAV-BTA1-NC	SAV-BTA2-NO	SAV-STA1-NC	SAV-STA2-NO
3/4 NPT	2.76"	SAV-BTB1-NC	SAV-BTB2-NO	SAV-STB1-NC	SAV-STB2-NO
1 NPT	3.32"	SAV-BTC1-NC	SAV-BTC3-NO	SAV-STC2-NC	SAV-STC3-NO
1-1/4 NPT	3.32"	SAV-BTD3-NC	SAV-BTD3-NO	SAV-STD3-NC	SAV-STD3-NO
1-1/2 NPT	4.58"	SAV-BTE2-NC	-	SAV-STE2-NC	-
1-1/2 NPT	5.54"	SAV-BTE3-NC	SAV-BTE3-NO	SAV-STE3-NC	SAV-STE3-NO
2 NPT	4.58"	SAV-BTF2-NC	-	SAV-STF2-NC	-
2 NPT	5.54"	SAV-BTF3-NC	SAV-BTF3-NO	SAV-STF3-NC	SAV-STF3-NO

## LINE AND PILOT PRESSURE CHART (PSI)

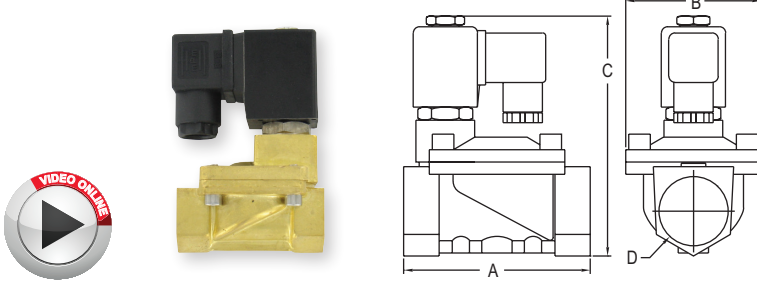
Port Connection	Actuator Diameter	Normally Closed					Normally Open				
		Max. Line Pressure	Max. Steam Pressure	Flow Direction	Min. Pilot Pressure	Max. Pilot Pressure	Max. Line Pressure	Max. Steam Pressure	Flow Direction	Min. Pilot Pressure	Max. Pilot Pressure
1/2 NPT	2.76"	230	150	Overseat	60	143	230	150	Underseat	60	143
3/4 NPT	2.76"	230	150	Overseat	60	143	230	150	Underseat	60	143
1 NPT	3.32"	290	150	Overseat	60	143	230	150	Underseat	60	143
1-1/4 NPT	3.32"	230	150	Overseat	60	114	230	150	Underseat	60	114
1-1/2 NPT	4.58"	230	150	Overseat	60	114	230	150	Underseat	60	114
1-1/2 NPT	5.54"	230	150	Overseat	60	114	230	150	Underseat	60	114
2 NPT	4.58"	143	150	Overseat	60	114	230	150	Underseat	60	114
2 NPT	5.54"	232	150	Overseat	60	114	230	150	Underseat	60	114

USA: California Proposition 65

⚠ WARNING: Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

# BRASS SOLENOID VALVES, 2-WAY GUIDED NC

Compact Design, Immune to Mounting Orientation



Model	A in [mm]	B in [mm]	C in [mm]	D NPT	Weight lb [kg]
SBSV-B1NX	1-5/8 [41]	1-5/32 [29]	3-9/32 [83]	1/8"	0.82 [0.37]
SBSV-B2NX	1-5/8 [41]	1-5/32 [29]	3-9/32 [83]	1/4"	0.79 [0.36]
SBSV-B3NX	2-5/8 [66]	1-57/64 [48]	4-7/16 [112]	3/8"	1.54 [0.7]
SBSV-B4NX	2-5/8 [66]	1-57/64 [48]	4-7/16 [112]	1/2"	1.98 [0.9]
SBSV-B5NX	2-61/64 [75]	2-19/64 [58]	4-21/32 [118]	3/4"	1.98 [0.9]
SBSV-B6NX	3-25/32 [96]	2-49/64 [70]	5-11/64 [131]	1"	3.09 [1.4]
SBSV-B7NX	5-11/64 [131]	3-25/32 [96]	3-3/4 [146]	1-1/4"	6.17 [2.8]
SBSV-B8NX	5-11/64 [131]	3-25/32 [96]	5-3/4 [146]	1-1/2"	5.95 [2.7]
SBSV-B9NX	6-1/2 [165]	4-47/64 [120]	6-37/64 [167]	2"	10.58 [4.8]

The **SERIES SBSV-B** Solenoid Valves are compact, general-service, two-way guide type solenoid valves for air, gas, water and other liquid applications. They are available in brass with a normally closed design and can be oriented in any position. The solenoid enclosure provides protection against dust, while also protecting against seepage of oil and non-corrosive coolants. The Series SBSV-B valves come assembled with an NBR seal, having a maximum process temperature of 176°F (80°C). The series offers a wide range of valve sizes and flow ranges, with connection sizes from 1/8" to 2" NPT and orifices from 3 mm to 50 mm.

## MODEL CHART

Model	Connection, NPT	Orifice in [mm]	Cv Value	Voltage
SBSV-B1N1	1/8"	0.12 [3]	0.23	110 VAC
SBSV-B2N1	1/4"	0.12 [3]	0.23	110 VAC
SBSV-B3N1	3/8"	0.51 [13]	4.5	110 VAC
SBSV-B4N1	1/2"	0.51 [13]	4.5	110 VAC
SBSV-B5N1	3/4"	0.79 [20]	7.6	110 VAC
SBSV-B6N1	1"	0.98 [25]	12	110 VAC
SBSV-B7N1	1-1/4"	1.38 [35]	22	110 VAC
SBSV-B8N1	1-1/2"	1.57 [40]	30	110 VAC
SBSV-B9N1	2"	1.97 [50]	48	110 VAC

Note: Consult factory for 220 VAC, 24 VAC and 24 VDC.

## SPECIFICATIONS

**Service:** Compatible gases and liquids.

**Line Size:** 1/8 to 2" NPT.

**End Connections:** Female NPT.

**Operating Pressure:** 1/8 to 1/4": 0 psi

(0 bar) to 188.5 psi (13 bar); 3/8 to 2": 7.3 psi (0.5 bar) to 188.5 psi (13 bar).

**Pressure Limit:** 246.6 psi (17 bar).

**Wetted Material:** Body: Brass; Spring:

304 SS; Seal: NBR.

**Temperature Limits:** Process: 176°F

(80°C); Ambient: 32 to 149°F (0 to 65°C).

**Power Requirements:** Standard: 110

VAC; Optional: 220 VAC, 24 VDC, 24

VAC consult factory. **Power Consumption:** See table.

**Enclosure Rating:** NEMA 13 (IP54).

**Electrical Connection:** DIN connection.

**Other Materials:** Nylon.

**Mounting Orientation:** Any position,

best if solenoid vertically above valve.

**Weight:** See table.

**Type of Operation:** NC.

**Agency Approvals:** CE.

Voltage	50 Hz (VA)		60 Hz (VA)		DC (W)
	Inrush	Holding	Inrush	Holding	
220 VAC	55	22	55	18	-
110 VAC	55	22	55	18	-
24 VAC	45	18	45	15	-
24 VDC	-	-	-	-	13

USA: California Proposition 65

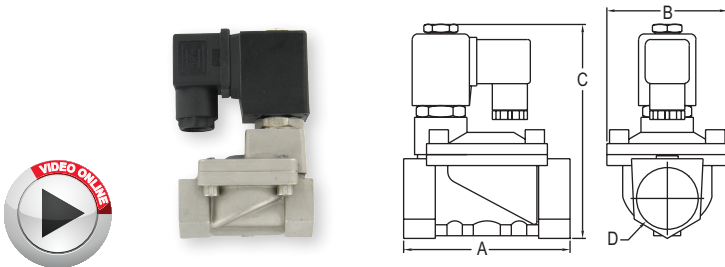
⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

●Solenoid Coils: See page 460 (Series SRC)

## SERIES SBSV-S | W.E. ANDERSON™ BY DWYER

# SS SOLENOID VALVES, 2-WAY GUIDED NC

Compact Design, Immune to Mounting Orientation



Model	A in [mm]	B in [mm]	C in [mm]	D NPT	Weight lb [kg]
SBSV-S1FX	1-5/8 [41]	1-5/32 [29]	3-9/32 [83]	1/8"	0.82 [0.37]
SBSV-S2FX	1-5/8 [41]	1-5/32 [29]	3-9/32 [83]	1/4"	0.79 [0.36]
SBSV-S3FX	2-5/8 [66]	1-57/64 [48]	4-7/16 [112]	3/8"	1.65 [0.75]
SBSV-S4FX	2-5/8 [66]	1-57/64 [48]	4-7/16 [112]	1/2"	1.54 [0.7]
SBSV-S5FX	2-61/64 [75]	2-19/64 [58]	4-21/32 [118]	3/4"	1.98 [0.9]
SBSV-S6FX	3-25/32 [96]	2-49/64 [70]	5-11/64 [131]	1"	2.87 [1.3]
SBSV-S7FX	5-11/64 [131]	3-25/32 [96]	3-3/4 [146]	1-1/4"	5.73 [2.6]
SBSV-S8FX	5-11/64 [131]	3-25/32 [96]	3-3/4 [146]	1-1/2"	5.51 [2.5]
SBSV-S9FX	6-1/2 [165]	3-47/64 [120]	6-37/64 [167]	2"	9.7 [4.4]

**SERIES SBSV-S** Solenoid Valves are compact, general-service, two-way guide type solenoid valves for air, gas, water and other liquid applications. They are available in brass with a normally closed design and can be oriented in any position. The solenoid enclosure provides protection against dust, while also protecting against seepage of oil and non-corrosive coolants. The Series SBSV-S valves come assembled with an NBR seal, having a maximum process temperature of 176°F (80°C). The series offers a wide range of valve sizes and flow ranges, with connection sizes from 1/8" to 2" NPT and orifices from 3 mm to 50 mm.

## MODEL CHART

Model	Connection, NPT	Orifice in [mm]	Cv Value	Voltage
SBSV-S1F1	1/8"	0.12 [3]	0.23	110 VAC
SBSV-S2F1	1/4"	0.12 [3]	0.23	110 VAC
SBSV-S3F1	3/8"	0.51 [13]	4.5	110 VAC
SBSV-S4F1	1/2"	0.51 [13]	4.5	110 VAC
SBSV-S5F1	3/4"	0.79 [20]	7.6	110 VAC
SBSV-S6F1	1"	0.98 [25]	12	110 VAC
SBSV-S7F1	1-1/4"	1.38 [35]	22	110 VAC
SBSV-S8F1	1-1/2"	1.57 [40]	30	110 VAC
SBSV-S9F1	2"	1.97 [50]	48	110 VAC

Note: Consult factory for 220 VAC, 24 VAC and 24 VDC.

## SPECIFICATIONS

**Service:** Compatible gases and liquids.

**Line Size:** 1/8 to 2" NPT.

**End Connections:** Female NPT.

**Operating Pressure:** 1/8 to 1/4": 0 psi (0

bar) to 188.5 psi (13 bar); 3/8 to 2": 7.3 psi (0.5 bar) to 188.5 psi (13 bar).

**Pressure Limit:** 246.6 psi (17 bar).

**Wetted Material:** Body: 316 SS; Spring:

304 SS; Seal: Fluoroelastomer.

**Temperature Limits:** Process: 176°F

(80°C); Ambient: 32 to 149°F (0 to 65°C).

**Power Requirements:** Standard: 110

VAC; Optional: 220 VAC, 24 VDC, 24

VAC consult factory. **Power Consumption:** See table.

**Enclosure Rating:** NEMA 13 (IP54).

**Electrical Connection:** DIN connection.

**Other Materials:** Nylon.

**Mounting Orientation:** Any position,

best if solenoid vertically above valve.

**Weight:** See table.

**Type of Operation:** NC.

**Agency Approvals:** CE.

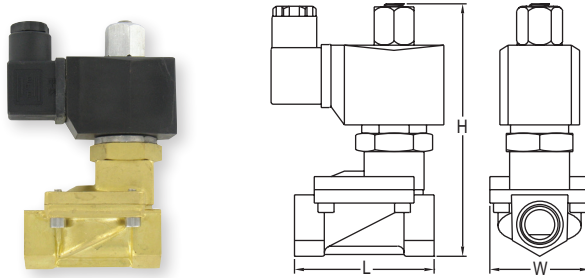
Voltage	50 Hz (VA)		60 Hz (VA)		DC (W)
	Inrush	Holding	Inrush	Holding	
220 VAC	55	22	55	18	-
110 VAC	55	22	55	18	-
24 VAC	45	18	45	15	-
24 VDC	-	-	-	-	13

●Solenoid Coils: See page 460 (Series SRC)



# BRASS SOLENOID VALVES, 2-WAY GUIDED NO

Compact Design, Immune to Mounting Orientation



Model	L in [mm]	H in [mm]	W in [mm]	Weight lb [kg]
SSV-B1NX	1-5/8 [41]	3-15/32 [88]	1-9/64 [29]	0.88 [0.40]
SSV-B2NX	1-5/8 [41]	3-17/64 [83]	1-9/64 [29]	0.86 [0.39]
SSV-B3NX	2-19/32 [66]	4-57/64 [124]	1-57/64 [48]	1.98 [0.90]
SSV-B4NX	2-19/32 [66]	4-57/64 [124]	1-57/64 [48]	1.98 [0.90]
SSV-B5NX	2-61/64 [75]	5-1/8 [130]	2-9/32 [58]	2.42 [1.10]
SSV-B6NX	3-25/32 [96]	5-5/8 [143]	2-3/4 [70]	3.52 [1.60]
SSV-B7NX	5-5/32 [131]	6-7/32 [158]	3-25/32 [96]	6.60 [3.00]
SSV-B8NX	5-5/32 [131]	6-7/32 [158]	3-25/32 [96]	6.16 [2.80]
SSV-B9NX	6-1/2 [165]	7-3/64 [179]	4-47/64 [120]	5.00 [11.0]

**SERIES SSV-B** Solenoid Valves are compact, general-service, two-way guide type solenoid valves for air, gas, water, and other liquid applications. They are available in brass with a normally open design and can be oriented in any position. The solenoid enclosure provides protection against dust while also protecting against seepage of oil and non-corrosive coolants. The Series SSV-B valves come assembled with an NBR seal having a maximum process temperature of 176°F (80°C). The series offers a wide range of valve sizes and flow ranges with connection sizes from 1/8" to 2" NPT and orifices from 3 mm to 50 mm.

MODEL CHART				
Model	Connection, NPT	Orifice in [mm]	Cv Value	Voltage
SSV-B1N1	1/8"	0.12 [3]	0.25	110 VAC
SSV-B2N1	1/4"	0.12 [3]	0.25	110 VAC
SSV-B3N1	3/8"	0.51 [13]	4.5	110 VAC
SSV-B4N1	1/2"	0.51 [13]	4.5	110 VAC
SSV-B5N1	3/4"	0.79 [20]	7.6	110 VAC
SSV-B6N1	1"	0.98 [25]	12	110 VAC
SSV-B7N1	1-1/4"	1.38 [35]	22	110 VAC
SSV-B8N1	1-1/2"	1.57 [40]	30	110 VAC
SSV-B9N1	2"	1.97 [50]	48	110 VAC

Note: Consult factory for 220 VAC, 24 VAC and 24 VDC.

## SPECIFICATIONS

**Service:** Compatible gases and liquids.  
**Line Size:** 1/8 to 2" NPT.  
**End Connections:** Female NPT.  
**Operating Pressure:** 1/8 to 1/4": 0 psi (0 bar) to 87 psi (6 bar); 3/8 to 2": 7.3 psi (0.5 bar) to 116 psi (8 bar).  
**Pressure Limit:** 174 psi (12 bar).  
**Wetted Material:** Body: Brass; Spring: 304 SS; Seal: NBR.  
**Temperature Limits:** Process: 176°F (80°C); Ambient: 32 to 149°F (0 to 65°C).

**Power Requirements:** Standard: 110 VAC; Optional: 220 VAC, 24 VDC consult factory. **Power Consumption:** See table.  
**Enclosure Rating:** NEMA 13 (IP54).  
**Electrical Connection:** DIN connection.  
**Other Materials:** Nylon.  
**Mounting Orientation:** Any position, best if solenoid vertically above valve.  
**Weight:** See table.  
**Type of Operation:** NO.  
**Agency Approvals:** CE.

Voltage	50 Hz (VA)		60 Hz (VA)		DC (W)
	Inrush	Holding	Inrush	Holding	
220 VAC	82	33	82	28	-
110 VAC	82	33	82	28	-
24 VDC	-	-	-	-	32

USA: California Proposition 65

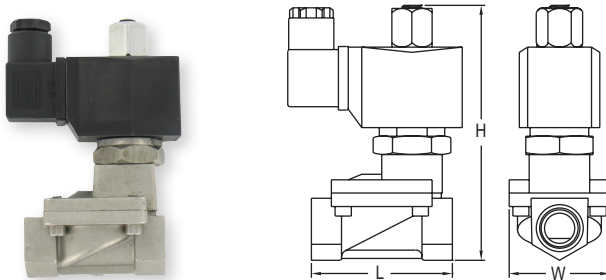
⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

● Solenoid Coils: See page 460 (Series SRC)

## SERIES SSV-S | W.E. ANDERSON™ BY DWYER

# SS SOLENOID VALVES, 2-WAY GUIDED NO

Compact Design, Immune to Mounting Orientation



Model	L in [mm]	H in [mm]	W in [mm]	Weight lb [kg]
SSV-S1FX	1-5/8 [41]	3-15/32 [88]	1-9/64 [29]	0.88 [0.40]
SSV-S2FX	1-5/8 [41]	3-17/64 [83]	1-9/64 [29]	0.86 [0.39]
SSV-S3FX	2-19/32 [66]	4-57/64 [124]	1-57/64 [48]	2.09 [0.95]
SSV-S4FX	2-19/32 [66]	4-57/64 [124]	1-57/64 [48]	1.98 [0.90]
SSV-S5FX	2-61/64 [75]	5-1/8 [130]	2-9/32 [58]	2.42 [1.10]
SSV-S6FX	3-25/32 [96]	5-5/8 [143]	2-3/4 [70]	3.30 [1.50]
SSV-S7FX	5-5/32 [131]	6-7/32 [158]	3-25/32 [96]	6.16 [2.80]
SSV-S8FX	5-5/32 [131]	6-7/32 [158]	3-25/32 [96]	5.94 [2.70]
SSV-S9FX	6-1/2 [165]	7-3/64 [179]	4-47/64 [120]	10.1 [4.60]

The **SERIES SSV-S** Solenoid Valves are compact, general-service, two-way guide type solenoid valves for air, gas, water, and other liquid applications. They are available in stainless steel with a normally open design and can be oriented in any position. The solenoid enclosure provides protection against dust, while also protecting against seepage of oil and non-corrosive coolants. The Series SSV-S valves come assembled with a fluorocarbon seal, having a maximum process temperature of 248°F (120°C). The series offers a wide range of valve sizes and flow ranges, with connection sizes from 1/8" to 2" NPT and orifices from 3 mm to 50 mm.

MODEL CHART				
Model	Connection, NPT	Orifice in [mm]	Cv Value	Voltage
SSV-S1F1	1/8"	0.12 [3]	0.25	110 VAC
SSV-S2F1	1/4"	0.12 [3]	0.25	110 VAC
SSV-S3F1	3/8"	0.51 [13]	4.5	110 VAC
SSV-S4F1	1/2"	0.51 [13]	4.5	110 VAC
SSV-S5F1	3/4"	0.79 [20]	7.6	110 VAC
SSV-S6F1	1"	0.98 [25]	12	110 VAC
SSV-S7F1	1-1/4"	1.38 [35]	22	110 VAC
SSV-S8F1	1-1/2"	1.57 [40]	30	110 VAC
SSV-S9F1	2"	1.97 [50]	48	110 VAC

Note: Consult factory for 220 VAC, 24 VAC and 24 VDC.

## SPECIFICATIONS

**Service:** Compatible gases and liquids.  
**Line Size:** 1/8 to 2" NPT.  
**End Connections:** Female NPT.  
**Operating Pressure:** 1/8 to 1/4": 0 psi (0 bar) to 87 psi (6 bar); 3/8 to 2": 7.3 psi (0.5 bar) to 116 psi (8 bar).  
**Pressure Limit:** 174 psi (12 bar).  
**Wetted Material:** Body: 316 SS; Spring: 304 SS; Seal: Fluorocarbon.  
**Temperature Limits:** Process: 248°F (120°C); Ambient: 32 to 149°F (0 to 65°C).

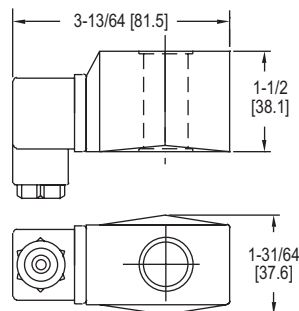
**Power Requirements:** Standard: 110 VAC; Optional: 220 VAC, 24 VDC consult factory. **Power Consumption:** See table.  
**Enclosure Rating:** NEMA 13 (IP54).  
**Electrical Connection:** DIN connection.  
**Other Materials:** Nylon.  
**Mounting Orientation:** Any position, best if solenoid vertically above valve.  
**Weight:** See table.  
**Type of Operation:** NO.  
**Agency Approvals:** CE.

Voltage	50 Hz (VA)		60 Hz (VA)		DC (W)
	Inrush	Holding	Inrush	Holding	
220 VAC	82	33	82	28	-
110 VAC	82	33	82	28	-
24 VDC	-	-	-	-	32

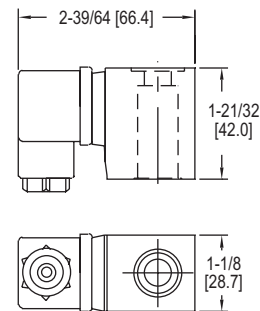
● Solenoid Coils: See page 460 (Series SRC)

## SOLENOID REPLACEMENT COILS

For the Series SSV and SBSV Solenoid Valves



Models SRC-X180X &amp; SRC-X280X



Models SRC-XXS0X

The **SERIES SRC** Solenoid Coils electrically operate the SSV and SBSV solenoid valves. When the solenoid coil receives an electrical input signal it acts upon the valve, changing its state. These coils are field replaceable with their compatible solenoid valves and come in a wide range of voltages.

## SPECIFICATIONS

**Compatible Valves:** SSV or SBSV.

**Power Requirements:** 220 VAC, 110 VAC, 24 VAC or 24 VDC.

**Electrical Connections:** DIN connection.

**Enclosure Rating:** NEMA 13 (IP54).

**Power Consumption:** See table.

**Agency Approvals:** CE.

## SSV COMPATIBLE COILS

Model	Voltage	50 Hz (VA)		60 Hz (VA)		DC (W)
		Inrush	Holding	Inrush	Holding	
SRC-D1B0P	220 VAC	82	33	82	28	-
SRC-D2B0P	110 VAC	82	33	82	28	-
SRC-D3B0P	24 VAC	72	29	72	25	-
SRC-D4B0P	24 VDC	-	-	-	-	32

Note: Consult factory for 220 VAC, 24 VAC and 24 VDC.

## SBSV COMPATIBLE COILS

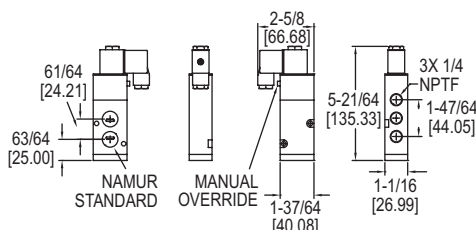
Model	Voltage	50 Hz (VA)		60 Hz (VA)		DC (W)
		Inrush	Holding	Inrush	Holding	
SRC-D1S0C	220 VAC	55	22	55	18	-
SRC-D2S0C	110 VAC	55	22	55	18	-
SRC-D3S0C	24 VAC	45	18	45	15	-
SRC-D4S0C	24 VDC	-	-	-	-	13

Note: Consult factory for 220 VAC, 24 VAC and 24 VDC.

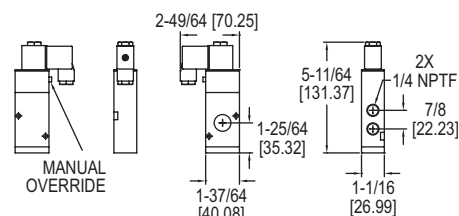
## SERIES SN | PROXIMITY® BY DWYER

## NAMUR MOUNT SOLENOID VALVE

Manual Override, 100% Duty Rating



SN-5X Models



SN-3X Models

The **SERIES SN** Solenoid Valves are designed to easily mount directly to pneumatic valve actuators reducing the need for tubing, fittings or brackets, thereby reducing assembly cost. The SN solenoid comes with nitrile o-rings and offers a manual override as a standard feature. The 3/2 solenoids are designed for spring return actuators and 5/2 solenoids are designed to be used with double acting actuators. The SN series is available in a variety of voltages for any application.

## FEATURES/BENEFITS

- NAMUR mount means the solenoid can be mounted directly to valve actuators
- Designed for double acting or spring return actuators
- 100% continuous duty rating
- Manual override

## SPECIFICATIONS

**Service:** Air only.

**Power Requirements:** 24 VAC, 110 VAC, 220 VAC, 12 VDC, or 24 VDC.

**Supply Pressure:** 22 to 116 psi (1.5 to 7.9 bar).

**Air Connections:** 1/4" female NPT.

**Temperature Limits:** 23 to 140°F (-5 to 60°C).

**Electrical Connection:** DIN 43650 form A.

**Enclosure Rating:** IP65.

**Mounting:** NAMUR.

**Standard Features:** Manual override.

**Weight:** 1.0 lb (.45 kg).

**Agency Approvals:** CE.

## MODEL CHART

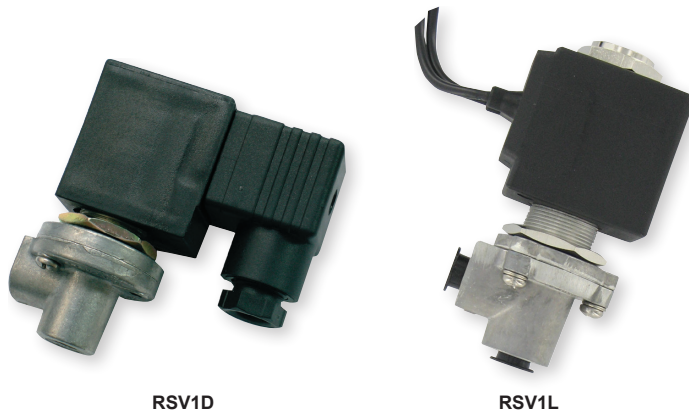
Model	Power	Action	Actuator Type	Model	Power	Action	Actuator Type
SN-5A	110 VAC	5/2	Double acting	SN-3A	110 VAC	3/2	Spring return
SN-5B	220 VAC	5/2	Double acting	SN-3B	220 VAC	3/2	Spring return
SN-5C	24 VAC	5/2	Double acting	SN-3C	24 VAC	3/2	Spring return
SN-5E	24 VDC	5/2	Double acting	SN-3E	24 VDC	3/2	Spring return
SN-5D	12 VDC	5/2	Double acting	SN-3D	12 VDC	3/2	Spring return



Model SN mounted to an actuator

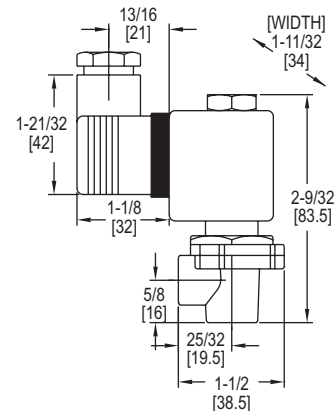
# PILOT SOLENOID VALVE

For Use with Remote Valves



RSV1D

RSV1L



The **SERIES RSV** Pilot Solenoid Valve is used to operate the Series RDCV remote type diaphragm valve to air pulse clean filters in dust collectors. Consult factory for mounting of RSV valves with our DCT timer boards together in one enclosure all pre-wired.

MODEL CHART			
Model	Voltage	Electrical Connections	Cv Value
RSV1D	110 VAC	DIN	.33
RSV2D	220 VAC	DIN	.33
RSV3D	24 VDC	DIN	.33
RSV1L	110 VAC	Wire leads	.33
RSV2L	220 VAC	Wire leads	.33
RSV3L	24 VDC	Wire leads	.33

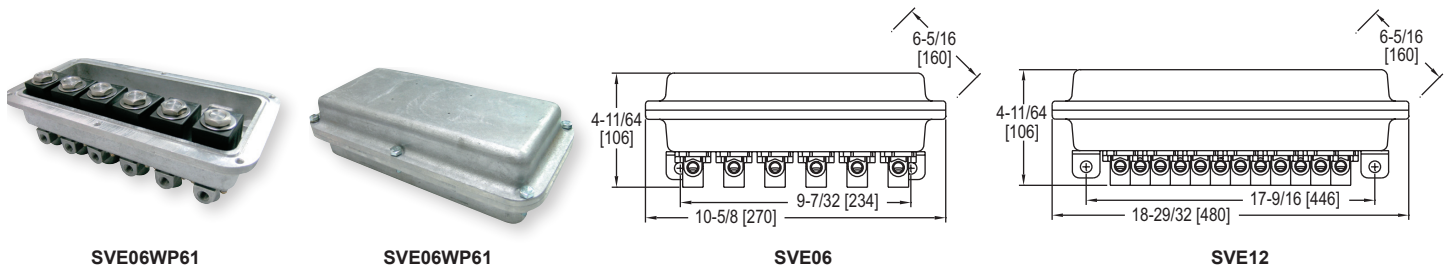
## SPECIFICATIONS

**Service:** Compatible gases, filtered and oil free.  
**Wetted Materials:** Body: Aluminum; Core and spring: 304 SS; Seals: NBR.  
**Pressure Limits:** Min of 4.4 psi (0.3 bar), max of 124.7 psi (8.6 bar).  
**Temperature Limits:** Ambient: -4 to 122°F (-20 to 50°C); Operating: -4 to 185°F (-20 to 85°C).  
**Power Requirements:** 110 VAC, 220 VAC, or 24 VDC.  
**Power Consumption:** 12 W, inrush: 17 VA, holding: 14.5 VA.  
**Enclosure Rating:** NEMA 4X (IP66).  
**Electrical Connection:** DIN connection or wire leads, 18 AWG, 22" (55 cm) long.  
**Process Connection:** 1/8" female NPT.  
**Mounting Orientation:** Any position.  
**Weight:** 0.60 lb (0.27 kg).  
**Pneumatic Tube Length:** Maximum of 9.8' (3 m).  
**Agency Approvals:** CE.

## SERIES SVE

# SOLENOID VALVE ENCLOSURE

For the Series RSV Remote Solenoid Valves



SVE06WP61

SVE06WP61

SVE06

SVE12

The **SERIES SVE** are multi-valve enclosures for the RSV pilot valve. The SVE offers a convenient weatherproof enclosure package with all solenoids pre-wired to a terminal block. Enclosures are available in 6 or 12 valve size with choice of pilot valve voltage.

MODEL CHART			
Model	Quantity of Solenoid	Enclosure Type	Voltage
SVE06WP61	6	Weatherproof	110 VAC
SVE06WP62	6	Weatherproof	220 VAC
SVE06WP63	6	Weatherproof	24 VDC
SVE12WP121	12	Weatherproof	110 VAC
SVE12WP122	12	Weatherproof	220 VAC
SVE12WP123	12	Weatherproof	24 VDC

## SPECIFICATIONS

**Service:** (For RSV) Compatible gases, filtered and oil free.  
**Wetted Materials:** (For RSV) Body: Aluminum; Core and spring: 304 SS; Seals: NBR.  
**Pressure Limits:** (For RSV) Min of 4.4 psi (0.3 bar), max of 124.7 psi (8.6 bar).  
**Temperature Limits:** Ambient: -4 to 122°F (-20 to 50°C); Operating: -4 to 185°F (-20 to 85°C).  
**Power Requirement:** (For RSV) 110 VAC, 220 VAC, or 24 VDC.  
**Power Consumption:** (For RSV) 12 W, inrush: 17 VA, holding: 14.5 VA.  
**Enclosure Rating:** NEMA 4X (IP66).  
**Enclosure Material:** Anodized aluminum with NBR gasket.  
**Electrical Connection:** All RSV are pre-wired to a terminal strip.  
**Process Connection:** (For RSV) 1/8" female NPT.  
**Conduit Connection:** 3/4" female NPT.  
**Mounting Orientation:** Any position.  
**Pneumatic Tube Length:** Max of 9.8' (3 m).

# DIAPHRAGM VALVES

Pulse Valves, Ideal for Dust Collection Systems and Bag Houses



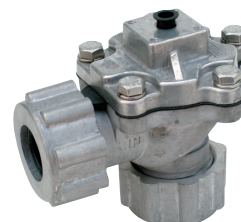
DCV62T1D



DCV20C1D



RDCV62T



RDCV20C

The **SERIES DCV/RDCV** Dust Collection Valves are ideal for use with the Series DCT1000 and Series DCT500 duct collection timer boards for controlling the air pulse in jet pulse type dust collectors to clean the filters. Both the Series DCV and RDCV have the option for either coupling or NPT connections. The coupling connection allows for a quick and simple installation. Only the stub pipe and blowtube need to be cleaned and deburred before the valve is fit into position. The "T" Series DCV has female threaded connections. Both the "C" and "T" versions have a 90° angle between the inlet and outlet the most suitable configuration for pulse valve applications. The design offers not only ease of installation, but also minimal airflow restriction for an exceptional cleaning pulse. The valves are offered in both integrated and remote coil configurations.

## FEATURES/BENEFITS

- Thermoplastic polyurethane diaphragm for longer life
- High flow factor for effective cleaning
- Valve can be mounted in any position
- Quick on & off response time

MODEL CHART					
Model	Size	Solenoid	Connection	Number of Diaphragms	Cv Factor (gal/min)
RDCV20T	3/4"	Remote	NPT	1	114
RDCV20C	3/4"	Remote	Coupling	1	114
DCV20T1D	3/4"	Integral*	NPT	1	114
DCV20C1D	3/4"	Integral*	Coupling	1	114
RDCV25T	1"	Remote	NPT	1	23
RDCV25C	1"	Remote	Coupling	1	23
DCV25T1D	1"	Integral*	NPT	1	23
DCV25C1D	1"	Integral*	Coupling	1	23
RDCV35T	1-1/2"	Remote	NPT	1	42
RDCV35C	1-1/2"	Remote	Coupling	1	42
DCV35T1D	1-1/2"	Integral*	NPT	1	42
DCV35C1D	1-1/2"	Integral*	Coupling	1	42
RDCV45T	1-1/2"	Remote	NPT	2	51
RDCV45C	1-1/2"	Remote	Coupling	2	51
DCV45T1D	1-1/2"	Integral*	NPT	2	51
DCV45C1D	1-1/2"	Integral*	Coupling	2	51
RDCV50T	2"	Remote	NPT	2	106
DCV50T1D	2"	Integral*	NPT	2	106
RDCV62T	2-1/2"	Remote	NPT	2	136
DCV62T1D	2-1/2"	Integral*	NPT	2	136
RDCV76T	3"	Remote	NPT	2	167
DCV76T1D	3"	Integral*	NPT	2	167

\*110 VAC with DIN Connector

## SPECIFICATIONS

**Service:** Compatible gases, filtered and oil free.

**Wetted Materials:** Body: aluminum; Trim: 304 SS; Diaphragm and Seals: NBR; Diaphragm Disc: polyamide.

**Other Materials:** Cover: aluminum; Body Bolts and Spring: 304 SS.

**Pressure Limits:** Minimum of 4.4 psi (0.3 bar), maximum of 124.7 psi (8.6 bar).

**Temperature Limits:** Ambient: -4 to 140°F (-20 to 60°C) for RDCV models; -4 to 122°F (-20 to 50°C) for DCV models; Operating: -4 to 185°F (-20 to 85°C).

**Power Requirements:** 110 VAC, 220 VAC, or 24 VDC for DCV models.

**Power Consumption:** 12 W, inrush: 17 VA; holding: 14.5 VA for DCV models.

**Electrical Connection:** DIN connection for DCV models.

**Enclosure Rating:** NEMA 4X (IP65) for DCV models.

**Process Connection:** See Catalog page.

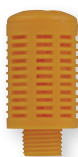
**Mounting Orientation:** Any position.

**Agency Approval:** CE.

MODEL CHART					
Example	DCV	20	T	ID	DCV20T1D
Construction	DCV RDVC				Integrated Coil Remote Coil
Size		20 25 35 45 50 62 76			3/4" 1" 1-1/2" 1-1/2" (2 Diaphragms) 2" 2-1/2" 3"
Connection			T C		NPT Coupling
Voltage				1D 2D 3D	110 VAC (for integrated coil only) 220 VAC (for integrated coil only) 24 VDC (for integrated coil only)

## ACCESSORIES

Model	Description	Fits Valve Sizes
A-237	1/8" NPT	3/4", 1", 1-1/2", RSV
A-238	3/8" NPT	1-1/2", 2", 2-1/2", 3"



A-238



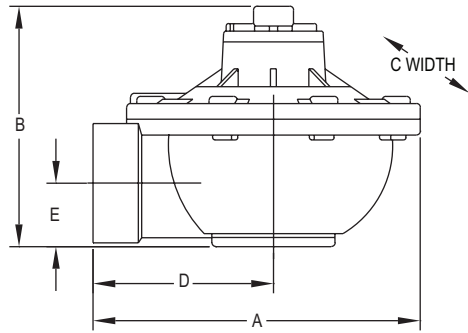
A-237

The Muffler Accessory can be easily field installed to any diaphragm valve with an exhaust. Pneumatic exhaust ports are on the diaphragm valves that have dual diaphragms and the units with the integral mounted solenoid. The muffler decreases the amount of noise when the air is exhausted from the valve. Valves with dual diaphragms and an integral solenoid have two exhaust ports and will require one A-237 and one A-238.

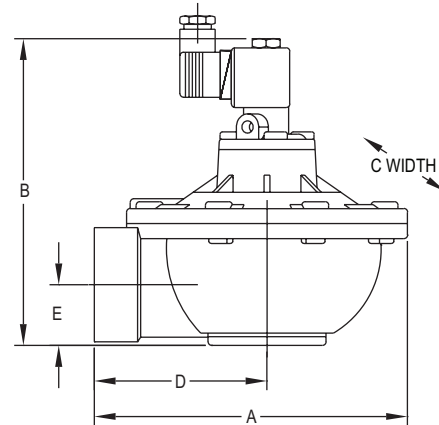


# DIAPHRAGM VALVES

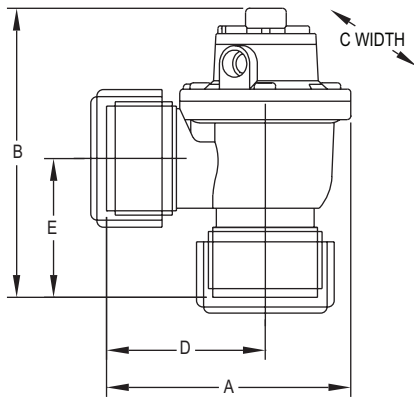
Pulse Valves, Ideal for Dust Collection Systems and Bag Houses



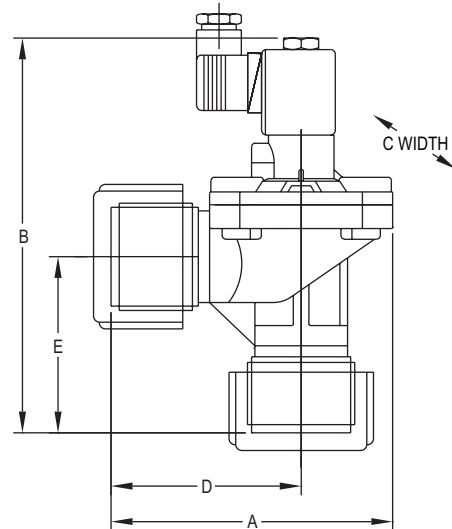
Remote NPT



Integrated NPT



Remote Coupling



Integrated Coupling

DIMENSIONAL CHART								
Solenoid	Connection	Model	A (mm)	B (mm)	C (mm)	Weight lb (kg)	D (mm)	E (mm)
Remote	NPT	RDCV20T	3-15/16" (100)	2-31/32" (75)	3-7/16" (87)	1.12 (.51)	2-3/16" (56)	25/32" (20)
		RDCV25T	4-1/8" (105)	3" (76)	3-1/4" (83)	1.15 (.52)	2-1/2" (64)	7/8" (22)
		RDCV35T	5-1/8" (130)	4-29/32" (125)	4-3/8" (111)	2.0 (.91)	4-1/2" (114)	1-9/32" (33)
		RDCV45T	5-25/32" (147)	5-5/32" (131)	4-3/8" (111)	2.2 (1.0)	3-5/8" (91)	3" (76)
		RDCV50T	8-1/16" (205)	5-7/8" (148)	7-1/4" (184)	4.2 (1.9)	4-15/32" (113)	1-9/16" (40)
		RDCV62T	8-9/32" (210)	6-11/16" (170)	7-1/4" (184)	5.5 (2.5)	4-21/32" (118)	1-29/32" (48)
		RDCV76T	8-19/32" (218)	7-27/32" (199)	7-7/8" (200)	6.6 (3.0)	4-21/32" (118)	2-1/2" (63)
	Coupling	RDCV20C	4-13/32" (112)	4" (102)	3-7/16" (87)	1.37 (.62)	2-5/8" (67)	1-25/32" (45)
		RDCV25C	4-5/8" (117)	5" (127)	3-1/4" (83)	2.1 (.96)	3" (76)	2-3/4" (70)
		RDCV35C	5-13/16" (147)	5-15/32" (139)	4-3/8" (111)	2.4 (1.1)	3-5/8" (91)	3" (76)
		RDCV45C	5-25/32" (147)	6-25/32" (172)	4-3/8" (111)	3.2 (1.45)	3-5/8" (91)	3" (76)
	NPT	DCV20T_D	3-15/16" (100)	2-31/32" (75)	3-7/16" (87)	1.31 (.59)	2-3/16" (56)	25/32" (20)
		DCV25T_D	4-1/8" (105)	3" (76)	3-1/4" (83)	1.33 (.60)	2-1/2" (64)	7/8" (22)
		DCV35T_D	5-1/8" (130)	4-29/32" (125)	4-3/8" (111)	2.2 (.99)	4-1/2" (114)	1-9/32" (33)
		DCV45T_D	5-25/32" (147)	5-5/32" (131)	4-3/8" (111)	2.4 (1.1)	3-5/8" (91)	3" (76)
		DCV50T_D	8-1/16" (205)	5-7/8" (148)	7-1/4" (184)	4.4 (2.0)	4-15/32" (113)	1-9/16" (40)
		DCV62T_D	8-9/32" (210)	6-11/16" (170)	7-1/4" (184)	5.7 (2.6)	4-21/32" (118)	1-29/32" (48)
		DCV76T_D	8-19/32" (218)	7-27/32" (199)	7-7/8" (200)	6.8 (3.1)	4-21/32" (118)	2-1/2" (63)
	Coupling	DCV20C_D	4-13/32" (112)	4" (102)	3-7/16" (87)	1.55 (.70)	2-5/8" (67)	1-25/32" (45)
		DCV25C_D	4-5/8" (117)	5" (127)	3-1/4" (83)	2.3 (1.0)	3" (76)	2-3/4" (70)
		DCV35C_D	5-13/16" (147)	5-15/32" (139)	4-3/8" (111)	2.6 (1.2)	3-5/8" (91)	3" (76)
		DCV45C_D	5-25/32" (147)	6-25/32" (172)	4-3/8" (111)	3.4 (1.5)	3-5/8" (91)	3" (76)

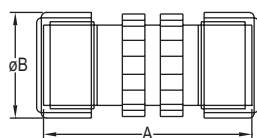
## SERIES BHC

# BULK HEAD CONNECTOR

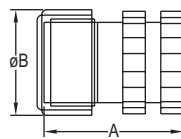
## Coupling Accessories



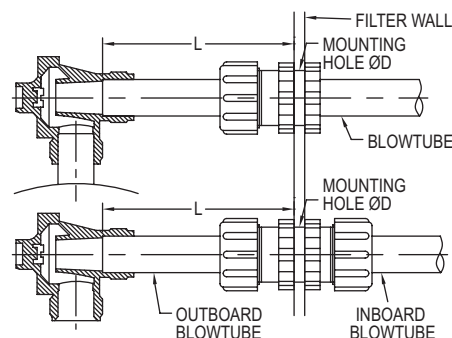
BHC35DD



BHC35D



Model	A in [mm]	B in [mm]	D in [mm]	Min L in [mm]
BHC20D	2-3/8" [60.5]	2-5/16" [58.5]	1-25/32" to 2" [45 to 51]	3-27/32" [97]
BHC20DD	3-19/32" [91]	2-5/16" [58.5]	1-25/32" to 2" [45 to 51]	3-27/32" [97]
BHC25D	2-23/32" [69]	2-3/4" [70]	2-7/32" to 2-7/16" [56 to 62]	4-21/32" [118]
BHC25DD	3-31/32" [101]	2-3/4" [70]	2-7/32" to 2-7/16" [56 to 62]	4-21/32" [118]
BHC35D	2-15/16" [75]	3-15/32" [88]	2-27/32" to 3-1/16" [72 to 78]	6-3/16" [157]
BHC35DD	4-11/32" [110]	3-15/32" [88]	2-27/32" to 3-1/16" [72 to 78]	6-3/16" [157]



The **SERIES BHC** Bulk Head Connectors allow for easy installation of blow tube through the dust collector wall and eliminate the need for welding or use of additional flanges. The fittings enable easy removal and reassembly of blow tubes for cleaning and maintenance. BHC models are available in single connection for through tube mounting or double connection for two piece tube mounting.

## SPECIFICATIONS

**Service:** Compatible gases.

**Wetted Material:** Body, ring nut, DIN nut: Aluminum; Washer: SS41; Gasket: NBR.

**Pressure Limits:** 124.7 psi (8.6 bar).

**Temperature Limits:** -4 to 185°F (-20 to 85°C).

## ACCESSORY

Model	Description
A-237	Muffler

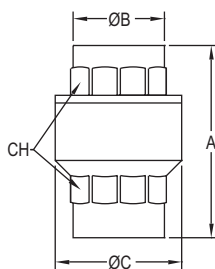
## MODEL CHART

Model	Size	Connections	Model	Size	Connections
BHC20D	3/4"	One	BHC25DD	1"	Two
BHC20DD	3/4"	Two	BHC35D	1-1/2"	One
BHC25D	1"	One	BHC35DD	1-1/2"	Two

## SERIES BICV | W.E. ANDERSON™ BY DWYER

# BRASS INLINE CHECK VALVE

## Economical, Spring-Loaded for Fast Seating



NPT Size	A in [mm]	B in [mm]	C in [mm]	CH in [mm]
1/4"	1-47/64 [44]	51/64 [20]	1-1/16 [27]	51/64 [20]
3/8"	1-47/64 [44]	51/64 [20]	1-1/16 [27]	51/64 [20]
1/2"	2-21/64 [59]	63/64 [25]	1-23/64 [34.5]	63/64 [25]
3/4"	2-9/16 [65]	1-13/64 [30.5]	1-21/32 [42]	1-7/32 [31]
1"	2-49/64 [70]	1-31/64 [37.5]	1-15/16 [49]	1-1/2 [38]
1-1/4"	2-15/16 [74.5]	1-7/8 [47.5]	2-13/32 [61]	1-57/64 [48]
1-1/2"	3-11/64 [80.5]	2-7/64 [53.5]	2-7/8 [73]	2-1/8 [54]
2"	3-3/8 [85.5]	2-11/16 [68]	3-15/32 [88]	2-41/64 [67]
2-1/2"	4-3/8 [111]	3-15/64 [82]	4-25/64 [111.5]	3-17/64 [83]
3"	4-55/64 [123.5]	3-27/32 [97.5]	5-15/64 [133]	3-55/64 [98]
4"	5-13/32 [137.5]	5 [127]	6-27/64 [163]	5-3/64 [128]

The **SERIES BICV** Brass Inline Check Valves are ideal for use with a broad array of service mediums including compatible oils, gases, fuels and hydrocarbons. They incorporate a soft seat for a bubble-tight shutoff and are spring-loaded for rapid reseating at high and low temperatures. The Series BICV was designed with a smooth flow profile to minimize head loss and accumulation of debris. The low 0.5 psi (0.04 bar) cracking pressure and patented guided-disc technology ensure reliability at low and high service pressure.

## SPECIFICATIONS

**Service:** Liquids and gases compatible with wetted material.

**Body:** 1-piece.

**Line Size:** See model chart.

**Process Connection:** Female NPT.

**Pressure Limits:** 1/4" to 2": 400 psi (27.6 bar) WOG; 2-1/2" to 4": 175 psi (12.1 bar) WOG; All sizes: 125 psi (8.6 bar) SWP.

**Wetted Materials:** Valve body: Brass (CW617N); Obstructor: Polyetherimide; Seat: 1/4": NBR rubber, 3/8" to 4": Fluoroelastomer; Spring: 302 SS.

**Temperature Limits:** 10 to 352°F (-12 to 178°C).

## MODEL CHART

Model	Connection Size	Cv Value	Weight
BICV-0N00	1/4"	4.55	3.5 oz (100 g)
BICV-0F01	3/8"	4.55	5.9 oz (168 g)
BICV-0F02	1/2"	6.0	5.1 oz (145 g)
BICV-0F03	3/4"	11.0	7.8 oz (222 g)
BICV-0F04	1"	16.9	10.9 oz (308 g)
BICV-0F05	1-1/4"	27.4	1.1 lb (.051 kg)
BICV-0F06	1-1/2"	39.1	1.6 lb (0.73 kg)
BICV-0F07	2"	60.7	2.3 lb (1.03 kg)
BICV-0F08	2-1/2"	98.4	4.8 lb (2.19 kg)
BICV-0F09	3"	158.0	6.7 lb (3.04 kg)
BICV-0F10	4"	225.4	12.4 lb (5.64 kg)

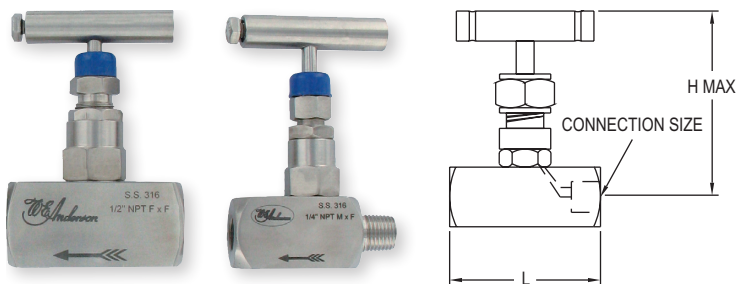
USA: California Proposition 65

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

SERIES HNV | W.E. ANDERSON™ BY DWYER

## NEEDLE VALVE 1-VALVE BLOCK MANIFOLD

For Use with Gas and Liquids, Pressures Up to 6000 psi



**SERIES HNV** Block Manifold is a barstock style needle valve that is designed for isolating instruments from liquids or gases. The valve series features fine threading and large seat area to ensure tight shutoff. Wetted materials are 316 SS and PTFE making these ideal for use with corrosives. The HNV has been tested to assure vibration and thermal stability.

Body includes a lock pin to prevent accidental bonnet disengagement. The HNV is available in male x female and female x female connections from 1/8" to 1". Tee handle is constructed of 316 SS and allows low torque operation.

MODEL CHART		
Pipe Size	Female x Female Model	Female x Male Model
1/8"	HNV-SSS31B	HNV-SSS21B
1/4"	HNV-SSS32B	HNV-SSS22B
3/8"	HNV-SSS33B	HNV-SSS23B
1/2"	HNV-SSS34B	HNV-SSS24B
3/4"	HNV-SSS35B	HNV-SSS25B
1"	HNV-SSS36B	HNV-SSS26B

Connection	A in [mm]	L in [mm]	H in [mm]
1/8" F x F	-	1-31/32 [50.01]	-
1/8" M x F	7/8 [22.3]	2-11/64 [55.17]	2-3/8 [60.33]
1/4" F x F	-	2-3/8 [60.33]	-
1/4" M x F	63/64 [25]	2-9/16 [65.09]	2-9/16 [65.09]
3/8" F x F	-	2-3/8 [60.33]	-
3/8" M x F	63/64 [25]	2-9/16 [65.09]	2-9/16 [65.09]
1/2" F x F	-	2-9/16 [65.09]	-
1/2" M x F	1-17/64 [32.15]	2-49/64 [70.25]	2-49/64 [70.25]
3/4" F x F	-	2-61/64 [59.13]	-
3/4" M x F	1-1/2 [38.10]	3-5/32 [80.17]	3-23/64 [85/33]
1" F x F	-	3-23/64 [85.33]	-
1" M x F	1-25/32 [45.24]	4-7/64 [104.38]	3-3/4 [95.25]

## SPECIFICATIONS

**Service:** Gases and liquids compatible with wetted materials.

**End Connections:** NPT.

**Wetted Materials:** 316 SS and PTFE packing.

**Pressure Limits:** 6000 psi (431 bar) @ 200°F (93°C). 4000 psi (276 bar) @ 464°F (240°C).

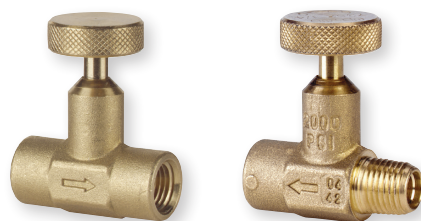
**Temperature Limits:** 464°F (240°C).

**Other Materials:** Handle: 316 SS.

MODEL NVII | W.E. ANDERSON™ BY DWYER

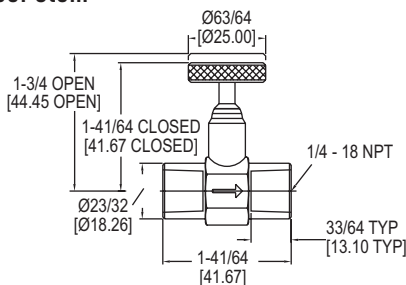
## NEEDLE VALVE

Economical, Pressures Up to 2000 psi, Blowout-Proof Stem

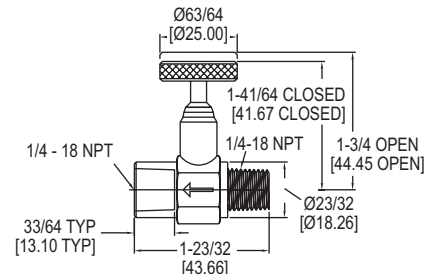


NVII-1B

NVII-2B

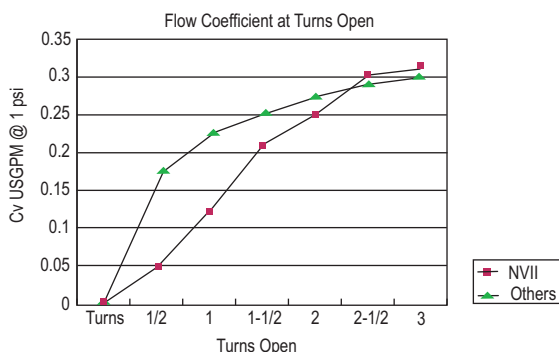


NVII-1B



NVII-2B

The **MODEL NVII** Needle Valve provides easy flow regulation in all applications, including shut off and throttling for pressure gages and instruments. With a one piece, hot forged brass body construction, years of maintenance-free service can be expected. The Model NVII, with its tamper-proof design and blowout-proof stem, provides excellent performance and reliability.



## SPECIFICATIONS

**Service:** Gases and liquids compatible with wetted materials. Not rated for steam use.

**End Connection Size:** 1/4" NPT.

**Pressure Limit:** 2000 psi (138 bar) (CWP).

**Wetted Materials:** Valve body: Brass (CW617N); Retainer, handwheel: Brass (CW614N); O-ring: Fluoroelastomer.

**Temperature Limits:** -40 to 350°F (-40 to 176.7°C). (Warning: freezing of the fluid in the installation may severely damage the valve.)

**Flow Coefficient:** 0.31.

**Weight:** 0.22 lb.

MODEL CHART	
Model	Description
NVII-1B	Needle valve (female x female)
NVII-2B	Needle valve (male x female)

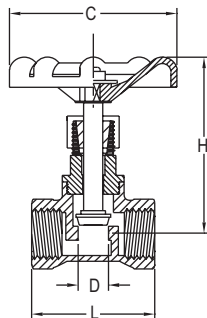
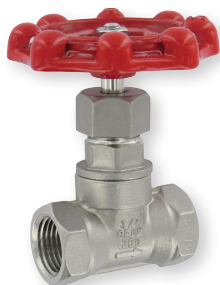
USA: California Proposition 65  
 ⚠ WARNING: Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



SERIES HGV | W.E. ANDERSON™ BY DWYER

# HAND OPERATED GLOBE VALVE

Low Cost, High Pressure Rating



Pipe Size	D in [mm]	L in [mm]	H (Open) in [mm]	C in [mm]
1/4"	13/32 [10]	2-3/64 [52]	4-1/64 [102]	2-3/8 [60]
3/8"	15/32 [12]	2-3/64 [52]	4-1/64 [102]	2-3/8 [60]
1/2"	19/32 [15]	2-3/64 [52]	4-1/64 [102]	2-3/8 [60]
3/4"	25/32 [20]	2-3/8 [60]	4-7/16 [113]	2-3/4 [70]
1"	63/64 [25]	2-53/64 [72]	4-27/32 [123]	2-3/4 [70]
1-1/4"	1-1/4 [32]	3-5/32 [80]	5-53/64 [148]	3-5/32 [80]
1-1/2"	1-37/64 [40]	3-35/64 [90]	6-19/64 [160]	3-17/32 [90]
2"	1-31/32 [50]	4-11/64 [106]	7-3/32 [180]	3-15/16 [100]

The **SERIES HGV** Hand Operated Globe Valves are an economical and functional alternative to large actuator/control valve packages. Metal-to-metal seating ensures excellent flow control and shut-off service. The body and bonnet are each constructed of CF8M (316) SS for superb corrosion resistance and chemical compatibility.

## FEATURES/BENEFITS

- Threaded ends conform to ANSI B 2.1, BS 21, DIN 259/2999, ISO 228
- SS inside screw, screwed bonnet, swivel disc integral seat, rising stem and hand wheel

MODEL CHART					
Model	Size	Cv Value	Model	Size	Cv Value
HGV00	1/4"	0.6	HGV04	1"	10.69
HGV01	3/8"	1.38	HGV05	1-1/4"	17.1
HGV02	1/2"	2.46	HGV06	1-1/2"	25.2
HGV03	3/4"	5.76	HGV07	2"	47.1

## SPECIFICATIONS

**Service:** Compatible liquids and gases.

**End Connections:** Female NPT.

**Pressure Limits:** 725 psi (50.0 bar) from -20 to 200°F (-28.9 to 93.3°C); 500 psi (34.5 bar) at 300°F (148.9°C); 450 psi (31.0 bar) at 325°F (162.8°C); 100 psi (6.9 bar) at 350°F (176.7°C).

**Wetted Materials:** Body, bonnet, packing nut: CF8M (316) SS. disc, stem, retainer ring; Gland: 316 SS; Packing: PTFE.

**Temperature Limits:** -20 to 356°F (-28.9 to 180°C).

**Other Materials:** Hand wheel: Cast iron; Plate: Aluminum; Wheel nut: 316 SS.

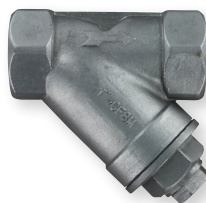
SERIES BYS & SYS | W.E. ANDERSON™ BY DWYER

# BRASS OR STAINLESS STEEL Y-STRAINER

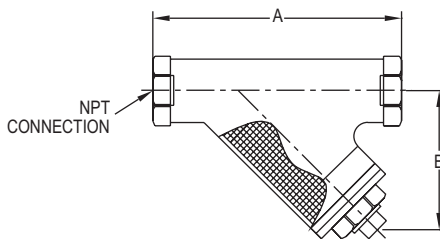
Cost Effective, Excellent Filtration, High Flow



BYS ++



SYS



BYS DIMENSIONS		
NPT Size	A in [mm]	B in [mm]
1/4"	1-31/32 [50.04]	2-11/16 [68.07]
3/8"	1-31/32 [50.04]	2-11/16 [68.07]
1/2"	1-31/32 [50.04]	2-11/16 [68.07]
3/4"	2-23/64 [59.94]	3-59/64 [99.57]
1"	2-41/64 [67.06]	4-17/32 [115.06]
1-1/4"	3-3/16 [81.03]	5-25/64 [136.91]
1-1/2"	3-7/16 [87.12]	6-17/64 [159.00]
2"	4-19/64 [108.97]	7-31/64 [189.99]

SYS DIMENSIONS		
NPT Size	A in [mm]	B in [mm]
1/4"	2-33/64 [64.00]	1-27/32 [46.99]
3/8"	2-33/64 [64.00]	1-27/32 [46.99]
1/2"	2-33/64 [64.00]	1-27/32 [46.99]
3/4"	3-1/16 [78.00]	2-15/64 [56.90]
1"	3-35/64 [90.00]	2-41/64 [67.06]
1-1/4"	4-11/64 [106.00]	2-53/64 [71.88]
1-1/2"	4-11/16 [119.00]	3-5/32 [80.01]
2"	5-33/64 [140.00]	3-21/32 [92.96]

The **SERIES BYS & SYS** Y-Strainers are a cost effective option for use in any type of industrial application. Versatile Y configuration and availability in a wide range of sizes allow for many different uses. Body, cap, and plug are made from either a high quality brass or stainless steel to ensure reliability. The seal is constructed of PTFE to ensure long service life. The stainless steel strainer provides excellent filtration to help prevent damage to valves, meters, etc. from rust and dirt, without sacrificing high flow characteristics.

## SPECIFICATIONS

**Service:** Gases, steam and liquids compatible with wetted materials.

**End Connections:** Female NPT.

**Pressure Limits:** See model chart.

**Temperature Limits:** -10 to 250°F (-23 to 121°C).

**Wetted Materials:** BYS: Valve Body: Cast Brass; Cap and Plug: Brass; Screen: SS; Seal: PTFE; SYS: Valve Body and Cap: Cast 316 SS (CF8M); Plug and Screen: 316 SS; Seal: PTFE.

MODEL CHART											
Model	Pipe Size	Max. Pressure	Model	Pipe Size	Max. Pressure	Model	Pipe Size	Max. Pressure	Model	Pipe Size	Max. Pressure
BYS-00	1/4"	400 psi (27.6 bar)	BYS-04	1"	300 psi (20.7 bar)	SYS-00	1/4"	800 psi (55.2 bar)	SYS-04	1"	800 psi (55.2 bar)
BYS-01	3/8"	400 psi (27.6 bar)	BYS-05	1-1/4"	300 psi (20.7 bar)	SYS-01	3/8"	800 psi (55.2 bar)	SYS-05	1-1/4"	800 psi (55.2 bar)
BYS-02	1/2"	400 psi (27.6 bar)	BYS-06	1-1/2"	300 psi (20.7 bar)	SYS-02	1/2"	800 psi (55.2 bar)	SYS-06	1-1/2"	800 psi (55.2 bar)
BYS-03	3/4"	400 psi (27.6 bar)	BYS-07	2"	300 psi (20.7 bar)	SYS-03	3/4"	800 psi (55.2 bar)	SYS-07	2"	800 psi (55.2 bar)

++USA: California Proposition 65

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

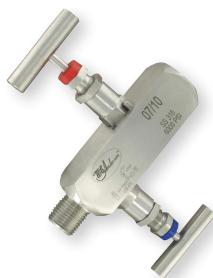


# 2-VALVE BLOCK MANIFOLD

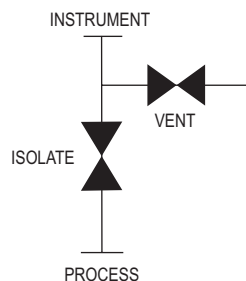
Stainless Steel Body, NPT Connections



BBV-0F



BBV-0N



The **SERIES BBV-0** 2-Valve Block Manifold is perfect for use over a broad range of industrial applications including oil refineries, nuclear power stations, petrochemical processing, and more. The Series BBV-0 is forged from 316 stainless steel bar stock and designed to withstand repeated open and close operations. Suited to control oil, water, toxic fluids, chemicals, air, and steam; the 2-valve block manifold has (1) isolate and (1) vent valves. Each valve stem is precision machined with hard seats to reduce operating torque.

## APPLICATIONS

- Industrial gage or transmitter isolation

## SPECIFICATIONS

**Service:** Compatible liquids, gases, or steam.

**End Connections:** Process connection: 1/2" male NPT; Instrument connection: No flange: 1/2" female NPT; Flange: 1/2" DIN 19213 flange; Vent/test: 1/4" female NPT.

**Wetted Materials:** Body, stem, valve assembly: 316 SS; Stem packing: PTFE.

**Pressure Limit:** 6000 psi (400 bar).

**Temperature Limit:** 464°F (240°C).

**Other Materials:** Handle: 304 SS.

## MODEL CHART

Model	Description
BBV-0F	Flanged 2-valve block manifold
BBV-0N	2-valve block manifold

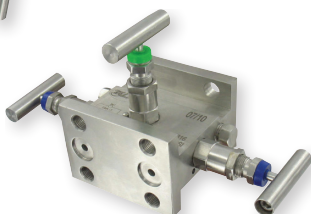
## SERIES BBV-1 | W.E. ANDERSON™ BY DWYER

# 3-VALVE BLOCK MANIFOLD

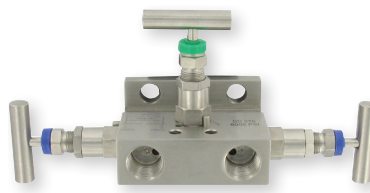
Stainless Steel Body, NPT Connections



BBV-1M



BBV-1D



BBV-1F

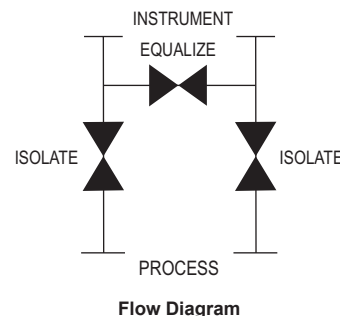


BBV-1

\*Please see website for dimensional drawing



BBV-1B



Flow Diagram

The **SERIES BBV-1** Block Manifold can be used over a broad range of industrial applications including oil refineries, nuclear power stations, petrochemical processing, and more. The Series BBV-1 body is forged from 316 stainless steel bar stock and designed to withstand repeated open and close operations. Suited to control oil, water, toxic fluids, chemicals, air, and steam.

## FEATURES/BENEFITS

- High pressure shut-off
- All stainless steel and PTFE wetted materials
- Precision machined hard seats to reduce operating torque

## APPLICATIONS

- Industrial gage or transmitter isolation

## SPECIFICATIONS

**Service:** Compatible liquids, gases, or steam.

**End Connections:** BBV-1B: 1/4" NPT x 1/4" NPT; BBV-1: 1/2" NPT x 1/2" NPT; BBV-1F: 1/2" NPT x DIN 19213 flange; BBV-1M: 1/2" NPT x DIN 19213 flange; BBV-1D: DIN 19213 flange x DIN 19213 flange.

**Wetted Materials:** Body, stem, valve assembly: 316 SS; Stem packing: PTFE.

**Pressure Limit:** 6000 psi (400 bar).

**Temperature Limit:** 464°F (240°C).

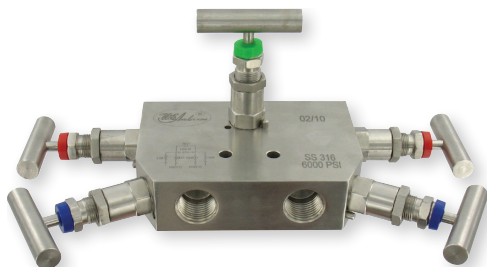
**Other Material:** Handle: 304 SS.

## MODEL CHART

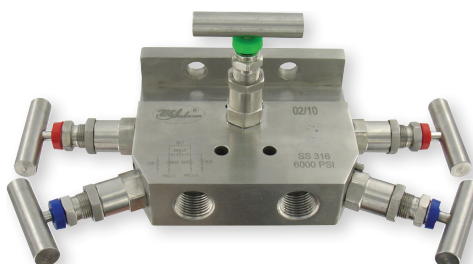
Model	Description
BBV-1B	Mini 3-valve block manifold
BBV-1	3-valve block manifold
BBV-1F	Flanged 3-valve block manifold
BBV-1M	Multiplanar 3-valve manifold
BBV-1D	Double flanged 3-valve block manifold

# 5-VALVE BLOCK AND BLEED MANIFOLD

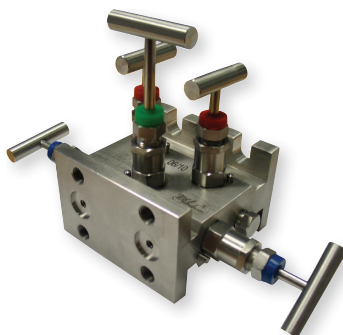
Stainless Steel Body, NPT Connections



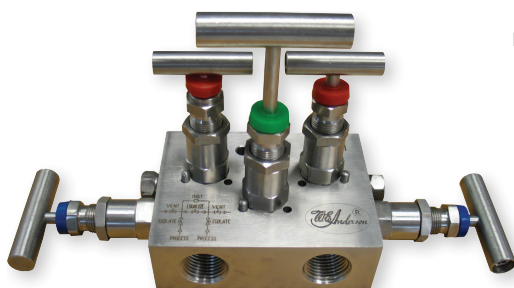
BBV-21



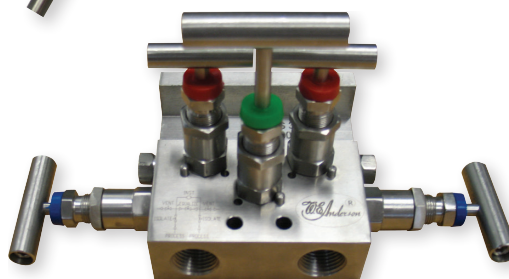
BBV-21F



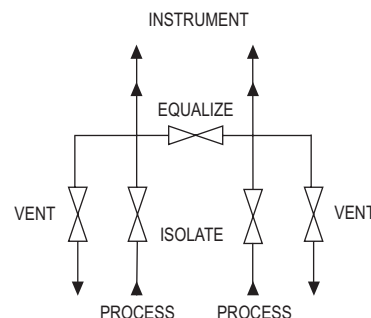
BBV-23F



BBV-22



BBV-22F



Flow Diagram

**SERIES BBV-2** Block and Bleed Manifold is ideal for use over a broad range of industrial applications including oil refineries, nuclear power stations, petrochemical processing, and more. The Series BBV-2 body is forged from 316 stainless steel bar stock and designed to withstand repeated open and close operations. Suited to control oil, water, toxic fluids, chemicals, air, and steam; the 5-Valve Block and Bleed Manifold has (2) isolate, (1) equalizing, and (2) vent valves. Each valve stem is precision machined with hard seats to reduce operating torque.

Flanged models are designed to mount to an industrial differential pressure transmitter. The BBV-21F and BBV-22F come with four 7/16-20 UNF mounting bolts and two PTFE gaskets. The BBV-23F comes with eight 7/16-20 UNF mounting bolts and two PTFE gaskets.

## FEATURES/BENEFITS

- High pressure shut-off
- All stainless steel and PTFE wetted materials
- Precision machined hard seats to reduce operating torque

## APPLICATIONS

- Industrial gage or transmitter isolation

## SPECIFICATIONS

**Service:** Compatible liquids, gases, or steam.

**End Connections:** Process connection: No flange: 1/2" female NPT; Flange: DIN 19213 flange; Instrument connection: No flange: 1/2" female NPT; Flange: DIN 19213 flange; Vent/test: 1/4" female NPT.

**Wetted Materials:** Body, stem, valve assembly: 316 SS; Stem packing: PTFE.

**Pressure Limit:** 6000 psi (400 bar).

**Temperature Limit:** 464°F (240°C).

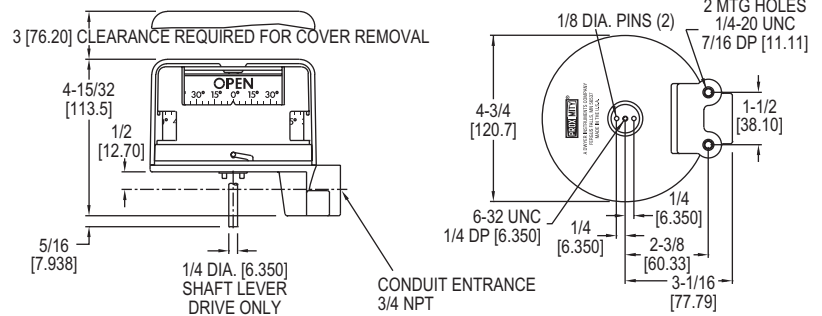
**Other Materials:** Handle: 304 SS.

## MODEL CHART

Model	Description
BBV-21	5-valve manifold with side mounted vent valves
BBV-21F	Flanged 5-valve manifold with side mounted vent valves
BBV-22	5-valve manifold with top mounted vent valves
BBV-22F	Flanged 5-valve manifold with top mounted vent valves
BBV-23F	Double flanged 5-valve manifold with top mounted vent valves

# QUICK-VIEW® VALVE POSITION INDICATOR/SWITCH

Ultra-Low Cost, Compact, Backlit, Corrosion Resistant



The **SERIES QV** Quick-View® Rotary Valve Position Indicators, now UL and CSA rated, are produced by Proximity with up to four individual mechanical or proximity switches. The Quick-View® indicator is also available with optional backlighting.

## FEATURES/BENEFITS

- The lowest cost position indication
- Extremely compact design
- Easily interchangeable with key competition
- Backlighting option available for maximum visibility
- Quick-View® Indicator and mounting kits, including NAMUR kits, are stocked for fast delivery
- Flame retardant
- UV protection
- Hazardous location option

## APPLICATIONS

- Rotary or linear valve indication
- Industrial damper position monitoring

## SPECIFICATIONS

**Minimum Rotation Travel (Switches only):** 5°.  
**Maximum Rotation Travel (Switches only):** 360°.  
**Temperature Limits:** -40 to 180°F (-40 to 82°C).  
**Switch Type:** SPDT.  
**Electrical SPDT Switch Ratings:** QV-X1XXXX: 10 A @ 125/250 VAC; 0.5 A 125 VDC; 10 A @ 24 VDC mech. switch; QV-X2XXXX: 1 A @ 125 VAC; 1A @ 24 VDC mech. switch; QV-X3XXXX: 2 A @ 125 VAC; 2A @ 30 VDC prox. switch; QV-X4XXXX: 5-25 VDC namur sensor; QV-X5XXXX: 10-30 VDC inductive sensor; QV-X6XXXX: 10 A @ 125/250 VAC mech. switch.  
**Lighting Supply Voltage:** 24-28 VDC.  
**Enclosure Material:** Polycarbonate housing and conduit.  
**Conduit Entrance:** One 3/4" NPT.  
**Enclosure Rating:** NEMA 4, 4X (IP66, IP56). Optional explosion-proof, rated: Class I, Groups A, B, C, D; Class II, Groups F & G; Div. 2.  
**Maximum Altitude:** 2000 m (6560 ft).  
**Agency Approvals:** CE, CSA, cULus.

MODEL CHART	
Model	Backlighting
QV-210101	No
QV-210111	Yes
<b>Note:</b> Stocked position indicators include two 10 amp SPDT mechanical snap switches, are direct drive type and include the standard quarter-turn OPEN/CLOSED visual indicator. Standard units are CSA & UL approved but not for hazardous locations. Specify "EX" for hazardous location option. Consult factory for optional VI colors	



Model QV mounted to an actuator

MODEL CHART						
Example	QV	-2	1	01	0	1
Series	QV					Quick-View® valve position indicator/switch
Number of Switches		0 1 2 3 4				None* One* Two* Three* Four*
Switch Type		0 1 2 3 4 5 6				No switches* 10A mechanical snap switch 1A mechanical gold contacts 2A Proximity reed switch* 5-25 VDC namur sensor 10-30 VDC inductive sensor 10A mechanical snap switch
Driving Style			01 02 03			Direct* Lever* Namur*
Lighting Option				0 1		None* 24 to 28 VDC bright white LED's
Visual Indication					0 1 2	None Standard (open closed)* Upside down (open closed)*
Additional Options					EX	Class I, Div. II, Groups A, B, C & D; Class II, Div. II Groups F & G.
*EX, Explosion-proof option available. <b>Note:</b> The 1st, 2nd, 3rd and 6th codes can not all be zero.						

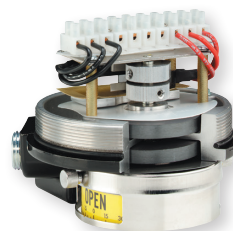
# POSITION INDICATORS/SWITCHES/TRANSMITTERS



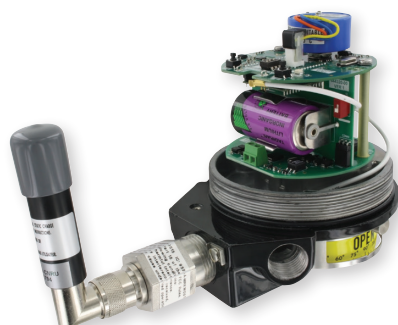
**Mark 1**  
Stainless Steel  
(Environmentally sealed  
for corrosive areas)



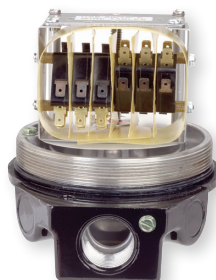
**Mark 1**  
Polyester Coated Aluminum  
(Environmentally sealed  
for corrosive areas)



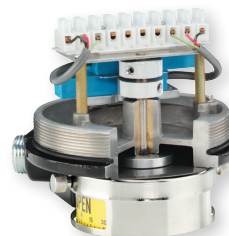
**Mark 1**  
Magnetic Coupling Cutaway  
Model 12VDOJ2



**Mark 1**  
with WirelessHART®  
Model 191OD0



**Mark 3**  
Multi Turn



**Mark 4**  
Thru-Shaft Cutaway  
Model 42RDOJ2



The Proximity™ **MARK SERIES** is a line of position indicators with a selection of various output options. Three model styles make up the Mark series to cover almost any application. Standard models in the Mark Series have visual position indicators and are weatherproof, explosion-proof, and submersible. A large variety of outputs are available to fit specific applications. There is a choice of 1 to 6 switch outputs of 14 varieties including inductive sensors, high temperature switches, gold contact switches, hermetically sealed switches, and high current switches. Besides the switch outputs the Series offers potentiometer outputs, transmitters, HART® and WirelessHART® Communications. The units are purchased for either direct drive applications, such as rotary valves, or lever drive applications, such as linear valves. Adjustable visual indicator is standard on direct drive units that displays OPEN / CLOSED status and degrees.

A magnetic drive that completely seals the switch compartment from the atmosphere for maximum leak protection is utilized in the Mark 1. The Mark 3 uses the same magnetic drive of the Mark 1, but it can be used for multi-turn applications with 1 to 25 revolutions, such as gate valves. A through shaft drive is incorporated in the Mark 4 making the unit a more cost effective alternative to the Mark 1 for applications that are not as demanding.

## MARK WITH WIRELESSHART® FEATURES/BENEFITS

- Available on Mark 1 and 4 model indicators
- WirelessHART® allows for adjustment of settings without needing to remove the device from a hazardous environment
- Wireless ability saves on installation costs associated with running conduit and wires

## MARK 1 FEATURES/BENEFITS

- Features a magnetic coupling that isolates the switch compartment, completely sealing the unit from the surrounding atmosphere for maximum hazard and leak protection
- EZ set cams on switch models provide simple set point adjustment
- Flexible design allows multiple switches and transmitter options
- Ideal for corrosive environments

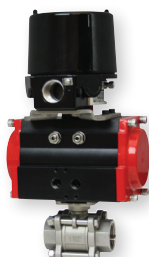
## MARK 3 FEATURES/BENEFITS

- Features a magnetic coupling that isolates the switch compartment, completely sealing the unit from the surrounding atmosphere for maximum hazard and leak protection
- Multi-Turn models that can provide switch signals between 1 and 25 revolutions, and transmitter models for up to 10 revolutions without gear reduction
- Flexible design allows multiple switches and transmitter options
- Ideal for corrosive environments

## MARK 4 FEATURES/BENEFITS

- Thru-Shaft design that features a 1" bushing for long life and O-rings to seal the switch compartment for hazard, corrosion, and leak protection
- EZ set cams on switch models provide simple set point adjustment
- Flexible design allows multiple switches and transmitter options
- A more cost effective alternative to the Mark 1 Series for less demanding applications

MODEL CHART					
Model	Function	Design	Model	Function	Design
12AD0	2 SPDT	Magnetic coupling	42AD0	2 SPDT	Thru-shaft drive
12AL0	2 SPDT (lever drive)	Magnetic coupling	44AD0	4 SPDT	Thru-shaft drive
14AD0	4 SPDT	Magnetic coupling	45VD0	2 SPDT & 4-20 mA position transmitter	Thru-shaft drive
15VD0	2 SPDT & 4-20 mA position transmitter	Magnetic coupling	42VD0-J1	2 SPDT	Thru-shaft drive
12AD1	2 SPDT	Magnetic coupling	44VD0-J1	4 SPDT	Thru-shaft drive
14AD1	4 SPDT	Magnetic coupling			
12VD0-J1	2 SPDT	Magnetic coupling			
14VD0-J1	4 SPDT	Magnetic coupling			



**Mark Series**  
mounted to an actuator

Mounting kits with drive yoke (see drawing), or slotted lever arm, bracket, fasteners and other zinc plated or stainless steel hardware fit over 2000 popular valves and actuators. A high strength spring tempered stainless steel drive yoke/coupling is tailored to fit securely to a specific valve or actuator stem. There is no slippage or binding. No special alignment fixtures are required due to switch offset design and yoke to stem engagement that makes installation a "snap". Each kit is specially designed for a particular valve or actuator, making field mounting simple with standard tools. Please specify make and model of valve or actuator on order. Mounting kits can be used interchangeably with all models since external mounting features are identical. Rotary valves utilize direct drive couplings and a slotted lever drive is used with linear valves. Lever drives convert linear motion to rotary. Stainless steel visual indicators are standard for direct drive, automated quarter-turn valve applications.



# POSITION INDICATORS/SWITCHES/TRANSMITTERS

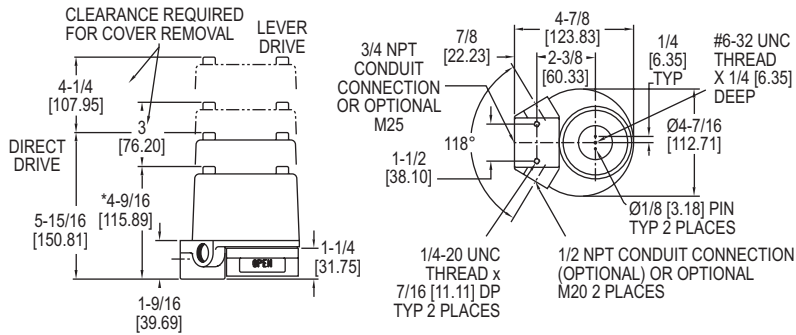
Construction	1 3 4				Mark 1, Magnetic Coupling Mark 3, Multi-Turn Mark 4, Thru-Shaft	Available Options "A" signifies available with corresponding construction style. Mark		
						1	3	4
Output Type	1				1 Switch	A	—	A
	2				2 Switches	A	A	A
	3				1 kΩ Potentiometer 1/2%. Available with switches, see note below.*	A	A	A
	31				1 kΩ Potentiometer 1/4%. Available with switches, see note below.*	A	A	A
	32				2 kΩ Potentiometer. Available with switches, see note below.*	A	A	A
	35				5 kΩ Potentiometer. Available with switches, see note below.*	A	A	A
	310				10 kΩ Potentiometer. Available with switches, see note below.*	A	A	A
	320				20 kΩ Potentiometer. Available with switches, see note below.*	A	A	A
	4				4 Switches	A	A	A
	5				Transmitter 1 kΩ Potentiometer 1/2%. 4 to 20mA. Available with switches, see note below.*	A	A	A
	51				Transmitter 1 kΩ Potentiometer 1/4%. Available with switches, see note below.*	A	A	A
	52				Transmitter 2 kΩ Potentiometer. Available with switches, see note below.*	A	A	A
	7				AS-interface and 1 Switch. Available with Switch Types B, I, R, W.	A	A	A
	8				AS-interface and 2 Switches. Available with Switch Types B, I, R, W.	A	—	A
	9				Transmitter with HART® communication. Available with switches, see note below.*	A	—	A
	91				Transmitter with WirelessHART® communication. Not available with switches.	A	—	A
Switch Type & Rating		A			SPDT Snap, Rated: 15 A @ 125/250/480 VAC (~) ; 1/8 hp @ 125 VAC (~), 1/4 hp @ 250 VAC (~), 1/2 A @ 125 VDC (---), 1/4 A @ 250 VDC (---).	A	A	A
		B			Inductive Sensor. 10 to 30 VDC (---). Load: 0.1 A.	A	—	A
		C			SPDT High Temperature Snap, 350 °F (176 °C) for 600 hours, Rated: 15.1 A @ 125/250/277 VAC (~).	A	A	A
		D			DPDT Snap, Rated: 10 A @ 125/250 VAC (~), 0.3 A @ 125 VDC (---), 0.15 A @ 250 VDC (---).	A	A	A
		G			SPDT Gold Contact Snap, Rated: 1 A @ 125 VAC (~).	A	A	A
		H			SPDT Hermetically Sealed Snap, Rated: 1 A @ 125 VAC (~).	A	—	A
		I			NAMUR Inductive Sensor. 15 mA max @ 5-25 VDC (---).	A	—	A
		M			SPDT Magnetic Blow-Out, Rated: 10 A @ 125 VAC (~)/VDC (---), 1/4 hp @ 125 VAC (~)/VDC (---).	A	A	A
		O			No Switches	A	A	A
		R			SPDT Hermetically Sealed Reed, Rated: 2 A @ 125 VAC (~), 2 A @ 24 VDC (---).	A	—	A
		S			SPDT Snap, Rated: 4 A @ 125/250 VAC (~).	A	—	A
		T			SPDT High Temperature Snap, 250 °F (121 °C) Continuous, Rated: 5 A @ 125/250/480 VAC (~).	A	A	A
		V			SPDT Snap, Rated: 10 A @ 125/250 VAC (~), 1/3 hp @ 125/250 VAC (~), 1/2 A @ 125 VDC (---), 1/4 A @ 250 VDC (---), 4 A @ 125 VAC (~) (tungsten).	A	A	A
		W			SPDT Gold Contact Snap, Rated 0.1 A @ 125 VAC (~).	A	A	A
Driving Method		A			A Direct or Yoke Drive without Visual Indicator.	A	A	A
		D			Direct Drive (or Yoke) with Visual Indicator.	A	A	A
		E			Direct or Yoke Drive with Visual Indicator, Single Window.	A	A	A
		L			Lever Drive (Shaft Projection) without Visual Indicator.	A	A	A
		M			Lever (Shaft Projection) with Visual Indicator.	A	A	A
Enclosure			0		Aluminum, Painted Black	A	A	A
			1		Aluminum, Painted White Epoxy with SS trim	A	A	A
			2		Aluminum, Painted Red	A	A	A
			5		Aluminum, Painted (color not yet specified)	A	A	A
			6		Cast 316 Stainless Steel	A	A	A
			7 thru 20		Aluminum, Painted (color not yet specified)	A	A	A
Options				C1	Long Dwell Cam (not on Mark 3)	A	—	A
				C2	Double Cam (not on Mark 3)	A	—	A
				FKM	FKM Seals	A	A	A
				J1	Junction Package with One 1/2" NPT Female Conduit Connection and Terminal Strip.	A	A	A
				J2	Junction Package with Two 1/2" NPT Female Conduit Connection and Terminal Strip.	A	A	A
				SV1	1 Attached Solenoid Valve (Must be ordered with J1 option).	A	—	A
				SV2	2 Attached Solenoid Valves (Must be ordered with J2 option).	A	—	A
				MT	Metric Threaded Conduit Connection, M25 X 1.5 (M20 X 1.5 for optional J1 and J2 connections).	A	A	A
				B	Any Output Type except 91: Directive 2014/34/EU, KEMA 03ATEX2391 X, CE 0518 Ex II 2G Ex db IIC T6 Gb (-25/-40/-50 °C ≤ Tamb ≤ 70 °C and T5 for -25 °C/-40 °C/-50 °C ≤ Tamb ≤ 80 °C). Depending on output switch type selected.	A	—	A
				B	Output Type 91: Directive 2014/34/EU, KEMA 03ATEX2391 X, CE 0518 Ex II 2G Ex db IIC T4 Gb (-40 °C ≤ Tamb ≤ 80 °C).	A	—	A
				IS	Any Output Type except 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, CE 0518 Ex II 1G Ex ia IIC T4 Ga.	A	A	A
				IS	Output Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, CE 0518 Ex II 1G Ex ia IIC T4 Ga for -40 °C ≤ Tamb ≤ 80 °C.	A	—	A
				IE	Any Output Type except 91: IECEx DEK 11.0056X Ex db IIC T6 Gb (-25/-40/-50 °C ≤ Tamb ≤ 70 °C and T5 for -25/-40/-50 °C ≤ Tamb ≤ 80 °C) optional wording depending on output and switch type selected.	A	A	A
				IE	Output Type 91: IECEx DEK 11.0056X, Ex db IIC T4 Gb.	A	—	A
				IE	Any Output Type except 91: IECEx DEK 11.0061X Ex ia IIC T4 Ga.	A	—	A
				II	Output Type 91: IECEx DEK 11.0061X Ex ia IIC T4 Ga.	A	A	A
				II	Certificate NCC 13.02339X; Marking: Ex d IIC T6 Gb or Ex d IIC T5 Gb	A	A	A
				EM	Certificate: NCC 13.02338X; Marking: Ex ia IIC T4 Ga	A	A	A
				IM	Output Type 91 with Suffix B Directive 2014/34/EU, KEMA 03ATEX2391 X, CE 0518 Ex II 2G Ex db IIC T4 Gb (-40 °C ≤ Tamb ≤ 80 °C). Battery not included.	A	A	A
				LB	Output Type 91 with Suffix IS Directive 2014/34/EU, KEMA 03ATEX1392 X, CE 0518 Ex II 2G Ex ia IIC T4 Ga for -40 °C ≤ Tamb ≤ 80 °C. Battery not included.	A	—	A
				LB	Output Type 91 with Suffix IE IECEx DEK 11.0056X, Ex db IIC T4 Gb. Battery not included.	A	—	A
				LB	Output Type 91 with Suffix II IECEx DEK 11.0061X Ex ia IIC T4 Ga. Battery not included.	A	—	A
				PP	Plug J1, J2 Ports	A	A	A
				PT	Paper Tag	A	A	A
				STR	Stainless Steel Tag Riveted	A	A	A
				STW	Stainless Steel Tag Wired	A	A	A

**\*Note:** Mark 1 and 4 potentiometer and transmitter outputs will have no switches when ordered with switch type O; 2 switches if ordered with switch types B, C, D, I, R, V, or W; and 4 switches if ordered with switch type S. Mark 3 potentiometer and transmitter outputs will have no switches when ordered with switch type O, and 2 switches if ordered with switch types A, D, G, M or T. WirelessHART® not available with switches.

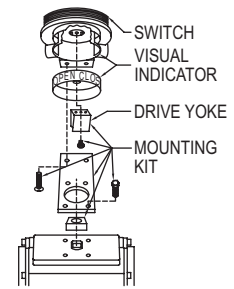
**Example:** 12VDO-J1. Mark 1, 2 Switches both Type V – SPDT, Direct Drive, Painted Aluminum Enclosure with Junction Package.

**Example:** 15VDO. Mark 1, 2 Switches both Type V – SPDT, 4 to 20 mA transmitter, Direct Drive, Painted Aluminum Enclosure.

# POSITION INDICATORS/SWITCHES/TRANSMITTERS



For Models 11, 12, 41 &amp; 42



## SPECIFICATIONS

### Mark 1, 3, and 4 with Potentiometer

**Accuracy:**  $\pm 0.5\%$  of full span. Optional  $\pm 0.25\%$  of full span.

**Temperature Limits:** -40 to 176°F (-40 to 80°C). (ATEX flameproof, -B suffix and IECEx flameproof, -IE suffix, rated -40 to 145°F (-40 to 63°C) for switch types A, G, M, O, R, S, T, V, or W, -13 to 145°F (-25 to 63°C) for switch types B, D, or I; ATEX intrinsically safe, -IS suffix and IECEx intrinsically safe, -II suffix, rated -13 to 104°F (-25 to 40°C) for switch type I, -40 to 104°F (-40 to 40°C) for switch types O, R, S, V, or W.

**Power Rating:** 1.5 Watt maximum.

**Output Signal:** 1000  $\Omega$  standard. Optional 2000, 5000, 10000, or 20000  $\Omega$ .

**Zero and Span Adjustments:** Span trim pot with 2000 $\Omega$  adjustment. No zero adjustment.

**Rotational Travel:** Mark 1 and 4: Minimum: 0°, Maximum: 340°. Mark 3: 0 to 10 revolutions.

### Mark 1, 3, and 4 with Transmitter

**Accuracy:**  $\pm 0.5\%$  of full span. Optional  $\pm 0.25\%$  of full span.

**Temperature Limits:** -40 to 176°F (-40 to 80°C). (ATEX flameproof, -B suffix and IECEx flameproof, -IE suffix, rated -40 to 145°F (-40 to 63°C) for switch types A, G, M, O, R, S, T, V, or W, -13 to 145°F (-25 to 63°C) for switch types B, D, or I; ATEX intrinsically safe, -IS suffix and IECEx intrinsically safe, -II suffix, rated -13 to 104°F (-25 to 40°C) for switch type I, -40 to 104°F (-40 to 40°C) for switch types O, R, S, V, or W.

**Power Requirements:** 5 to 30 VDC.

**Current Consumption:** 50 mA max.

**Output Signal:** 4 to 20 mA.

**Zero and Span Adjustments:** Trim pots for adjusting both. Mark 1 and 4: Span is adjustable from 50 to 300°. Mark 3: Span is adjustable from 1.5 to 8.5 revolutions.

**Conduit Connection:** 3/4" female NPT standard. Optional one or two 1/2" female NPT. M25 X 1.5 and M20 X 1.5 optional.

**Rotational Travel:** Mark 1 and 4: Minimum: 50°, Maximum: 300°. Mark 3: Minimum: 1.5 revolutions, Maximum: 8.5 revolutions.

### Mark 1 and 4 Transmitter with HART® communication

**Accuracy:**  $\pm 0.5\%$  of full span. Optional  $\pm 0.25\%$  of full span.

**Temperature Limits:** -40 to 176°F (-40 to 80°C). (ATEX flameproof, -B suffix and IECEx flameproof, -IE suffix, rated -40 to 145°F (-40 to 63°C) for switch types A, G, M, O, R, S, T, V, or W, -13 to 145°F (-25 to 63°C) for switch types B, D, or I; ATEX intrinsically safe, -IS suffix and IECEx intrinsically safe, -II suffix, rated -40 to 104°F (-40 to 40°C) for switch types O, R, S, V, or W; -13 to 104°F (-25 to 40°C) for switch type I.)

**Power Requirements:** 8 to 30 VDC.

**Current Consumption:** 21 mA.

**Output Signal:** 4 to 20 mA.

**HART® Receive Impedance:** Rx = 500 k $\Omega$ ; Cx = 2500 pF.

**Zero and Span Adjustments:** Pushbuttons or HART® communication master for setting both. Mark 1 and 4: Span is adjustable from 0 to 330°. Mark 3: Span is adjustable from 1.5 to 8.5 revolutions.

**Conduit Connection:** 3/4" female NPT standard. Optional one or two 1/2" female NPT. M25 X 1.5 and M20 X 1.5 optional.

**Rotational Travel:** Mark 1 and 4: Maximum: 330°.

### Mark 1 and 4 Transmitter with WirelessHART® communication

**Accuracy:**  $\pm 0.5\%$  of full span. Optional  $\pm 0.25\%$  of full span.

**Temperature Limits:** -40 to 158°F (-40 to 70°C). (ATEX flameproof, -B suffix and IECEx flameproof, -IE suffix, rated -40 to 145°F (-40 to 63°C). ATEX intrinsically safe, -IS suffix and IECEx intrinsically safe, -II suffix, rated -40 to 176°F (-40 to 80°C).

**Power Requirements:** 8 to 30 VDC.

**Current Consumption:** 50 mA max.

**Power Output:** +10 dBm (10 mW).

**Operating Frequency:** 2400 to 2483.5 MHz.

**Operating Channels:** 15.

**Sensitivity:** -85dB.

**Zero and Span Adjustments:** Pushbuttons or WirelessHART® communication master for setting both. Span is adjustable from -160 to 160°.

**Conduit Connection:** Two 1/2" female NPT, M20 X 1.5 optional.

**Rotational Travel:** Mark 1 and 4: Maximum: 320°.

## SPECIFICATIONS

### Product Ratings:

Weatherproof and flameproof. NEMA 1, 2, 3, 3R, 3S, 4, 4X, 6, 7, 9, 12, 13.

UL rated: Class I, Div. 1 & 2, Groups B, C, D (Some units available for Group A, consult factory); Class II, Div. 1 & 2, Groups E, F, and G.

CSA rated: Class I, Div. 1 & 2, Groups A, B, C, D; Class II, Div. 1 & 2, Groups E, F, and G. Submersible to 15 meters (IP68); It is up to the end user to source the proper fittings to ensure a watertight seal.

### ATEX Compliant:

-B suffix, any Output Type except 91: Directive 2014/34/EU, KEMA 03ATEX2391 X, **CE** 0518 **Ex** II 2G Ex db IIC T6 Gb for -25°C/-40°C/-50°C  $\leq$  Tamb  $\leq$  63°C and T5 for -25°C/-40°C/-50°C  $\leq$  Tamb  $\leq$  63°C, optional wording depending on output and switch type selected. Compliant per EN 60079-0:2012+A11:2013 and EN 60079-1:2014.

-B suffix, Output Type 91, with or without -LB suffix: Directive 2014/34/EU, KEMA 03ATEX2391 X, **CE** 0518 **Ex** II 2G Ex db IIC T4 Gb for -40°C  $\leq$  Tamb  $\leq$  63°C. Compliant per EN 60079-0:2012 + A11:2013, EN 60079-1:2014 and EN 60079-11:2012.

-IS suffix, any Output Type except 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, **CE** 0518 **Ex** II 1G Ex ia IIC T4 Ga. Compliant per EN 60079-0:2012 + A11: 2013 and EN 60079-11:2012.

-IS suffix, Output Type 91, with or without -LB suffix: Directive 2014/34/EU, KEMA 03ATEX1392 X, **CE** 0518 **Ex** II 2G Ex ia IIC T4 Ga. Compliant per EN 60079-0:2012+A11:2013 and EN 60079-11:2012.

### IECEx Compliant:

-IE suffix, any Output Type except 91: IECEx DEK 11.0056X Ex db IIC T6 Gb for -25°C/-40°C/-50°C  $\leq$  Tamb  $\leq$  63°C and T5 for -25°C/-40°C/-50°C  $\leq$  Tamb  $\leq$  63°C, optional wording depending on output and switch type selected. Compliant per IEC 60079-0:2011 and IEC 60079-1:2014.

-IE suffix, Output Type 91, with or without -LB suffix: IECEx DEK 11.0056X, Ex db IIC T4 Gb for -40°C  $\leq$  Tamb  $\leq$  63°C. Compliant per IEC 60079-0:2011, IEC 60079-1:2014 and IEC 60079-11: 2011.

-II suffix, any Output Type except 91: IECEx DEK 11.0061X Ex ia IIC T4 Ga.

Compliant per IEC 60079-0:2011, IEC 60079-11:2011, and IEC 60079-26:2014.

-II suffix, Output Type 91, with or without -LB suffix: DEK 11.0061X Ex ia IIC T4 Ga. Compliant per IEC 60079-0:2014, and IEC 60079-11:2011.

### INMETRO Compliant:

IM suffix, Certificate: NCC 13.02338 X; Marking: Ex ia IIC T4 Ga

EM suffix, Certificate: NCC 13.02338 X; Marking: Ex d IIC T6 Gb or Ex d IIC T5 Gb

**Electrical Connections:** Screw terminal. Optional factory sealed leads that are 36" (914.4 mm) of 16 AWG.

**Conduit Connection:** Standard: one 3/4" female NPT; optional one to two 1/2" female NPT; WirelessHART® models: two 1/2" female NPT; Optional: M25 X 1.5 or M20 X 1.5 connections may be supplied in lieu of 3/4" and 1/2" female NPT for all models.

**Mounting Orientation:** Not position sensitive.

**Weight:** 4 to 6 lb (1.5 to 3.0 kg).

**Operational Life:** Over 10,000,000 cycles.

**Maximum Altitude:** 2000 meters.

### Mark 1, 3 and 4 with Switch Outputs

**Temperature Limits:** -58 to 176°F (-50 to 80°C). Switch Type C rated to 350°F (176°C) for 600 hours, Switch Type T rated to 250°F (121°C) continuous. (ATEX flameproof, -B suffix and IECEx flameproof, -IE suffix, rated -58 to 145°F (-50 to 63°C) for switch types A, G, H, T, or M, -40 to 145°F (40 to 63°C) for switch type O, R, S, V, or W, -13 to 145°F (-25 to 63°C) for switch type B, D, I, or AS Interface; ATEX intrinsically safe, -IS suffix and IECEx intrinsically safe, -II suffix, rated -13 to 104°F (-25 to 40°C) for switch type D or I, -40 to 104°F (-40 to 40°C) for switch type R, V, or W, or -58 to 104°F (-50 to 40°C) for switch type A, G, or H.)

**Switch Type:** See page reference 1 below.

**Electrical Rating:** See page reference 2 below.

**Set Point Adjustment:** Mark 1 and 4: 5 to 360°.

● Switch Type: See page 471 (Series Mark)

● Electrical Rating: See page 471 (Series Mark)

## VALVE POSITION SENSOR

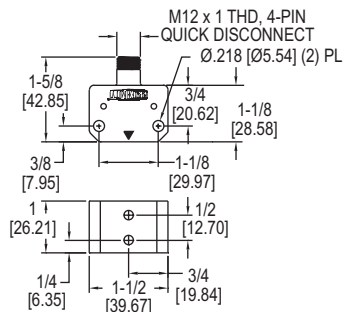
### Dual Inductive, 2-Wire AC/DC Sensor, Fully Adjustable Target in 2° Increments



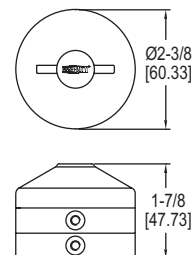
VPS2411



P1



VPS2411

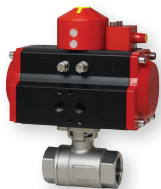


P1

The dual inductive, 2-wire AC/DC **SERIES VPS** Valve Position Sensor maintains VDI/VDE 3845 dimensions so positioners can be easily mounted on top of the sensor and target. The Model VPS2411 Sensor and Model P1 Target mount easily and directly to actuators with ISO NAMUR topworks (see picture below). Solid state components are fully embedded in an epoxy resin to prevent condensation build-up and to protect against vibration and shock. The rugged PBTP housing provides excellent corrosion resistance and moisture protection.

## FEATURES/BENEFITS

- Fully adjustable target in 2° increments
- LED indication for visual indication
- 4-pin quick disconnect electrical connection



**Model VPS and P1  
mounted on an actuator**

## SPECIFICATIONS

**Temperature Limits:** -13 to 176°F (-25 to 80°C).

**Power Requirements:** 20 to 140 VAC (50/60 Hz), 10 to 200 VDC.

**Enclosure Material:** Polybutylene terephthalate.

**Switch Type:** Dual NO.

**Electrical Rating:** 200 mA.

**Minimum Load Current: 5 mA.**

Leakage Current: 0.8 mA.

**Voltage Drop:** 5.0 V.

**Repeatability:** 0.01 mm.

**Switching Frequency:** 25 Hz.

**Mounting Holes:** NAMUR mounting - 3.15" x 1.18" (80 x 30 mm) or 5.118" x 1.18" (130 x 30 mm).

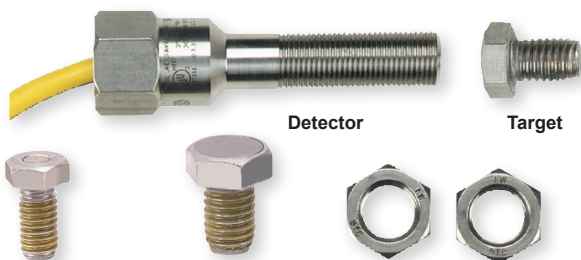
**Electrical Connection:** 4-pin quick disconnect.

## MODEL CHART

Model	Description
VPS2411	Valve position sensor
P1	Valve position target
VIP82	Quick disconnect cable

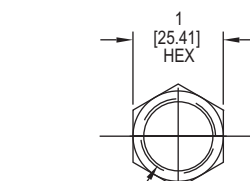
# DETECTOR POSITION SENSOR

Reliable Magnetic Point Sensor, Stainless Steel Housing, AC or DC

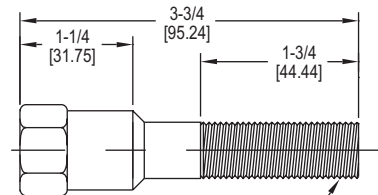


**Standard Target**  
with DT1060 H  
(3/8-16 UNC X 3/4")

**High Strength Target**  
with DT1160  
(1/2-13 UNC X 3/4")



1/2-14 NPT  
**Actuator**



5/8"-18 UNF  
**Detector**

The **SERIES DT** Detector Position Sensors are reliable, magnetically actuated, SS, completely interchangeable with competitive units. AC or DC for user friendly operation. They have no moving parts, eliminate costly seal fittings and offer enhanced reliability by eliminating arcing. Unintentional actuation by metals is not a problem. The sensor consists of a durable hermetically sealed reed switch potted in a SS housing and a separate 316 SS magnetic actuator bolt. As the actuator moves within the sensing range of the sensor, the magnet in the actuator changes the state of reed switch contacts inside the sensor. This either opens or closes a circuit depending on wiring configuration. Sensing distance is 0.1" (2.54 mm) for the standard target. Greater sensitivity of a larger magnetic target increases the sensing distance to 0.5" (12.7 mm).

## FEATURES/BENEFITS

- Excellent for hazardous and corrosive environments
- Can be mounted in any position
- Designed to NEMA 1, 3, 4, 4X, 6, 7, 9, 12 and 13

## APPLICATIONS

- Position monitoring and indication with devices such as linear valves – actuators & cylinders – rotary valves – dampers

## SPECIFICATIONS

**Temperature Limits:** -40 to 163°F (-40 to 73°C).

**Switch Type:** Tungsten, SPDT, Form C.

**Electrical Rating:** 3 A @ 125 VAC, 3 A @ 30 VDC.

**Enclosure Rating:** Weatherproof; Hermetically sealed; Explosion-proof UL & CSA listed for Class I, Groups A, B, C, & D; Class II, Groups E, F & G. Divisions 1 & 2.

**Intrinsically Safe:** Simple apparatus (w/barrier).

**Operating/Response Time:** 3.0 ms.

**Initial Contact Resistance:** 0.50 Ω (max).

**Repeatability:** 0.005" (.01 cm). **Hysteresis:** 0.030" (.08 cm).

**Electrical Connection:** Factory sealed leads with 18" min, 4 conductor, PVC insulated, 18 AWG – green/red/black/white (ground/NC/ NO/common).

**Housing:** 316 SS.

**Potting:** Epoxy resin.

**Conduit:** 1/2"-14" female NPT.

**Weight:** 0.32 lb (145 g); 0.45 lb (204 g) with actuator.

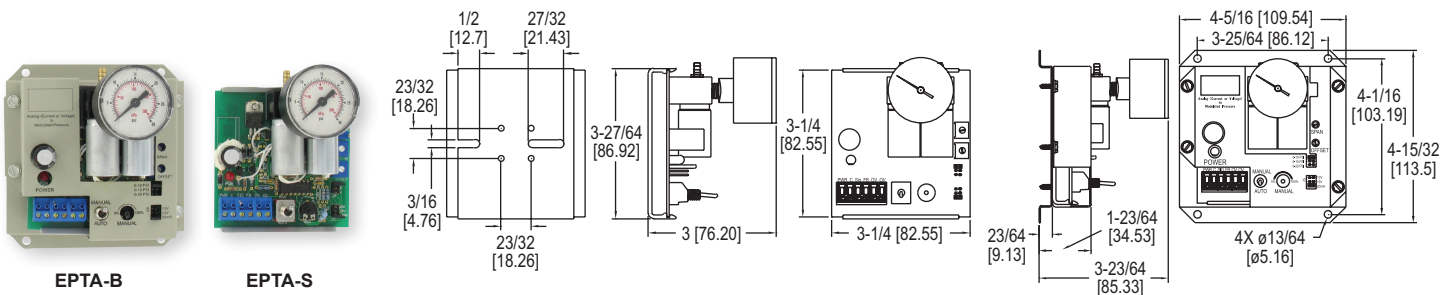
**Agency Approvals:** CSA, cULus.

MODEL CHART		
Model	Description	Sensing Distance
DT1060	Detector and standard actuator	0.1" (2.54 mm)
DT1160	Detector and high strength actuator	0.5" (12.7 mm)



# ELECTRO-PNEUMATIC TRANSDUCER

Low Cost, Selectable Input/Output, Manual Override



Shown with snap-track mounting

Shown with metal bracket mounting

The **SERIES EPTA** is an electric to pneumatic transducer that converts an analog input signal to a linearly proportionate pneumatic output by modulating its control valves to regulate branch line pressure to the set point determined by the input signal. All models incorporate two low voltage valves, an integral in-barb filter, a 0 to 30 psi analog gage, an anodized aluminum manifold, and brass barbed fittings. The EPTA offers adjustable span and offset as well as manual override. This unit has no air consumption and is immune to mounting orientation. Output pressure ranges include field-selectable 0 to 10, 0 to 15, and 0 to 20 psig. Also included is an analog 0 to 5 VDC feedback signal indicating the resultant branch line pressure. Universal 24 VAC/24 VDC supply voltage and field-selectable 4 to 20 mA, 0 to 5 VDC, 0 to 10 VDC, or 0 to 15 VDC inputs ensure single unit compatibility with most systems. The standard models maintain branch pressure on power loss while the Fail-Safe models will drop the branch pressure to 0 psi on power loss. Mounting configurations include a metal bracket mount in the EPTA-B models and a snap-track mount in the EPTA-S models. The A-400 accessory kit will allow the EPTA-S models to be mounted on a standard DIN rail.

MODEL CHART	
Model	Description
EPTA-S0	Standard snap-track mount transducer
EPTA-B0	Standard metal bracket mount transducer
EPTA-S1	Snap-track mount transducer with fail-safe
EPTA-B1	Metal bracket mount transducer with fail-safe

SPECIFICATIONS	
<b>Service:</b> Clean dry air or any inert gas. <b>Input Signal:</b> DC current (4 to 20 mA) or DC voltage (0-5/0-10/0-15). <b>Input Impedance:</b> Current: 250 Ω; Voltage: Infinite. <b>Output Signal:</b> Jumper selectable 0 to 10 psig (0 to 69 kPa), 0 to 15 psig (0 to 103 kPa), or 0 to 20 psig (0 to 138 kPa). <b>Feedback Output:</b> 0 to 5 VDC. <b>Air Supply:</b> 25 psig (172 kPa) max. <b>Air Flow:</b> 750 scfm. <b>Air Consumption:</b> 0 scfm normal operation, fail-safe model vents to 0 psi on power loss. <b>Accuracy:</b> ±1.0% FS @ room temperature; ±2.0% FS @ 32 to 120°F (0 to 48.8°C).	<b>Supply Voltage:</b> 24 VDC (+10%/-5%) or 24 VAC (±10%) 50/60 Hz. <b>Supply Current:</b> 180 mA max, 200 mA max on fail-safe model. <b>Temperature Limits:</b> Operating: 32 to 120°F (0 to 48.8°C); Storage: -20 to 150°F (-6.7 to 65.6°C). <b>Operating Humidity Range:</b> 5 to 95%, non-condensing. <b>Pressure Connections:</b> 1/4" OD (polyethylene tubing optimum). <b>Electrical Connections:</b> Plug-in block terminal type with 5 mm pin spacing. <b>Wire Size:</b> Up to one 14 AWG per terminal. <b>Weight:</b> EPTA-S0: 6.9 oz. (196 g); EPTA-S1: 9.2 oz. (261 g); EPTA-B: 14.5 oz. (411 g).

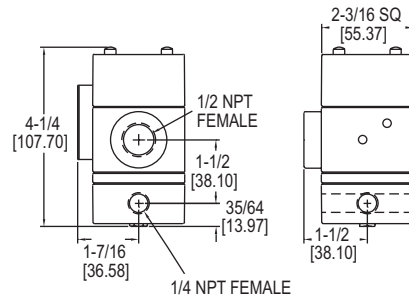
ACCESSORIES	
Model	Description
A-400	DIN mounting kit
A-403	Replacement integral barb filter

USA: California Proposition 65  
 ⚠WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

## SERIES IP | PROXIMITY® BY DWYER

# CURRENT TO PRESSURE TRANSDUCER

Intrinsically Safe, NEMA 4X Enclosure, Field Reversible, Low Cost



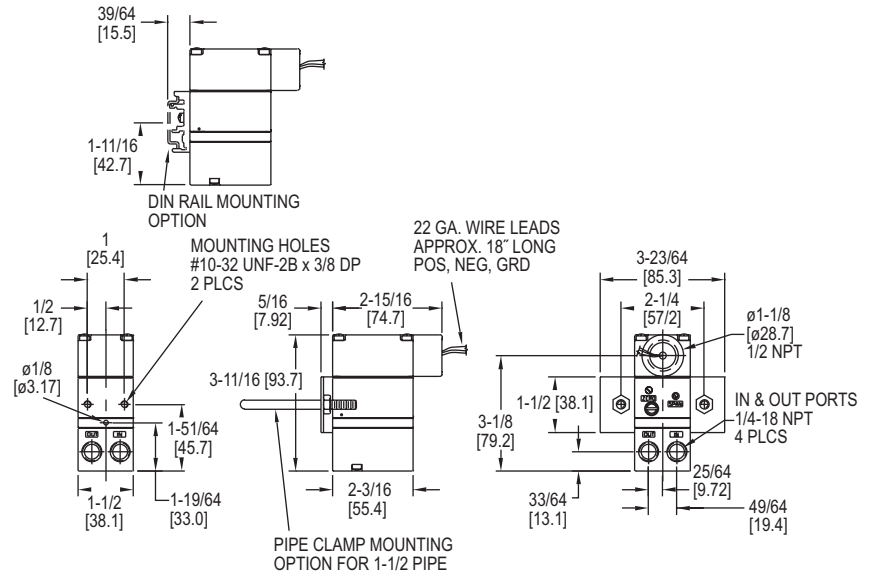
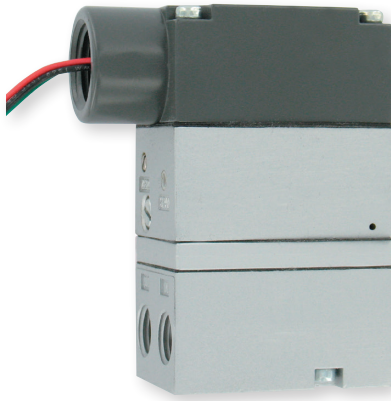
The **SERIES IP** Current to Pressure Transducer converts a current input signal to a linearly proportional pneumatic output pressure. The features include built-in volume booster, low air consumption, field reversible (provides output which is inversely proportional to input signal) and flexible zero and span adjustments. The rugged NEMA 4X enclosure allows splashdown and outdoor installation. The IP can be used for applications that require operation of valve actuators, pneumatic valve positioners, damper and louver actuators, final control elements and relays.

MODEL CHART			
Model	Input Ranges	Output Range	
		psi	kPa
IP-42	4 to 20 mA	3 to 15	20 to 100
IP-43	4 to 20 mA	3 to 27	20 to 185
IP-44	4 to 20 mA	6 to 30	40 to 200

SPECIFICATIONS	
<b>Service:</b> Oil free, clean dry air filtered to 40 microns. <b>Input Signal:</b> 4 to 20 mA. <b>Input Impedance:</b> IP-42: 180 ohms; IP-43 and IP-44: 220 Ω. <b>Air Pressure:</b> Min: 3 psig (21 kPa) above max output; Maximum: 100 psig (700 kPa). <b>Linearity:</b> < ±0.75% of span. <b>Hysteresis:</b> < 1% of span. <b>Repeatability:</b> < 0.5% of span. <b>Supply Pressure Sensitivity:</b> < ±0.1% of span per psig (< ±0.15% of span per 10 kPa). <b>Power Requirements:</b> Loop-powered. <b>Temperature Limits:</b> -20 to 140°F (-30 to 60°C).	<b>Pressure Connections:</b> 1/4" female NPT. <b>Electrical Connection:</b> 1/2" female NPT. <b>Air Consumption:</b> 0.03 SCFM (0.5 m³/h) typical. <b>Output Capacity:</b> 4.5 SCFM (7.6 m³/h ANR) at 25 psig (175 kPa) supply; 12 SCFM (20 m³/h) at 100 psig (700 kPa) supply. <b>Relief Capacity:</b> 2 SCFM (3.4 m³/h) at 5 psig (35 kPa) above 20 psig (140 kPa) setpoint. <b>Weight:</b> 2.1 lb (0.94 kg). <b>Agency Approvals:</b> CE, FM.

# CURRENT TO PRESSURE TRANSDUCER

## NEMA 4X Enclosure, Compact Size, Reliable



The **SERIES 2700** Current to Pressure Transducer combines economical startup cost, low air consumption, and reliable performance to make the 2700 a great investment. The unit converts a variable current signal to a proportional pneumatic output. It has input and output ports on both the front and back which allows for versatile plumbing. The NEMA 4X enclosure enables the unit to be installed indoors or outdoors; however, the unit is not vibration resistant. It is FM and CSA approved for intrinsically safe operation. The 2700 is designed for remote or panel mounting. An integral volume booster provides high flow capacity, increasing control speed in critical applications. Other features include external zero and span adjustments which are convenient for field calibration.

The **SERIES 2800** Current to Pressure Transducer utilizes a closed loop pressure feedback system that closely controls output and compensates for vibration, mounting angle, temperature, and supply pressure variations. These characteristics make this unit ideal for field mounting on a valve. The control mechanism is a piezoceramic actuator encapsulated in a protective skin, which provides a constant defense against humidity and contaminants. These features make this unit ideal for use in demanding applications. The 2800 also comes in a NEMA 4X enclosure and is field reversible. It is FM and CSA approved intrinsically safe, as well. For ease of installation, this model has input and output ports on both the front and back and can be easily panel mounted.

MODEL CHART		
Model	Input	Output
2713-WP	4 to 20 mA	3 to 15 psig (0.2 to 1.0 bar)
2716-WP	4 to 20 mA	6 to 30 psig (0.4 to 2.1 bar)
2813-WP	4 to 20 mA	3 to 15 psig (0.2 to 1.0 bar)
2816-WP	4 to 20 mA	6 to 30 psig (0.4 to 2.1 bar)

ACCESSORIES	
Model	Description
A-180	Valve mounting bracket, for Hi-Flow™ control valves (Series 2800 only)
A-181	DIN rail mounting kit, suitable for EN-50035, EN-50042, and EN-50022 rails
A-182	Pipe mounting kit, for 1-1/2 and 2" pipes

OPTIONS	
Description	
Valve mount, for factory mounting and calibration to Hi-Flow™ control valves, add current-to-pressure transducer model number as suffix (Series 2800 only)	

### SPECIFICATIONS

**Service:** Oil free, clean dry air filtered to 40 microns.  
**Input Signal:** 4 to 20 mA.  
**Air Supply:** Min: 5 psig (0.3 bar) above max output; Max: 100 psig (6.9 bar).  
**Output:** 3 to 15 psig (0.2 to 1.0 bar), 6 to 30 psig (0.4 to 2.1 bar).  
**Accuracy:** Series 2800:  $\pm 0.1\%$  of span.  
**Linearity:** Series 2700:  $< \pm 0.5\%$  of span.  
**Hysteresis:** Series 2700:  $< 0.5\%$  of span; Series 2800:  $\pm 0.1\%$  of span.  
**Repeatability:** Series 2700:  $< 0.5\%$  of span; Series 2800:  $\pm 0.1\%$  of span.  
**Deadband:** Series 2800: 0.02% of span.  
**Supply Pressure Sensitivity:** Series 2700:  $< 0.1\%$  of span per 1.0 psig (0.1 bar).  
**Power Requirement:** Loop powered.  
**Temperature Limits:** Series 2700: -20 to 150°F (-29 to 66°C); Series 2800: Operating: -40 to 160°F (-40 to 71°C); Storage: -40 to 200°F (-40 to 93°C).  
**Pressure Connections:** 1/4" female NPT.  
**Electrical Connection:** 1/2" female NPT.  
**Air Consumption:** Series 2700: 0.03 scfm (0.01 l/s) at midrange typical; Series 2800: 0.025 scfm (0.01 l/s) at midrange typical.  
**Output Capacity:** 4.5 scfm (2.1 l/s) at 25 psig (1.7 bar) supply; 12.0 scfm (5.7 l/s) at 100 psig (6.9 bar) supply.  
**Enclosure:** Chromate-treated aluminum with epoxy paint.  
**Enclosure Rating:** NEMA 4X (IP66) and intrinsically safe.  
**Weight:** Series 2700: 1.3 lb (0.59 kg); Series 2800: 0.8 lb (0.37 kg).  
**Agency Approvals:** CE, CSA, FM.

### SERIES 2700

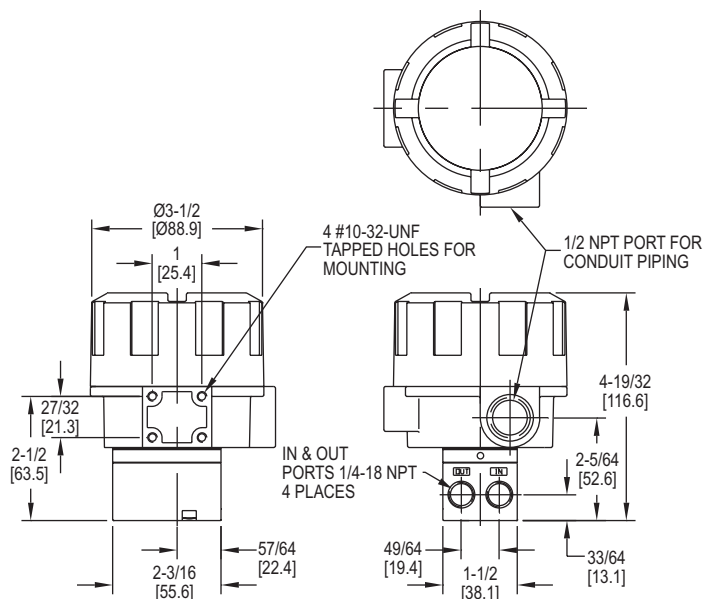
**FM Intrinsically Safe Ratings:** Class I, II, III, Division 1, Groups C, D, E, F and G; Class I, Division 2, Groups A, B, C and D; Class II and III, Division 2, Groups F and G.  
**CSA Intrinsically Safe Ratings:** Class I, Division 2, Groups C and D; Class II, Groups E, F and G; Class III.

### SERIES 2800

**FM Intrinsically Safe Ratings:** Class I, II, and III, Division 1, Groups C, D, E, F, and G; Class I, Zone 0, Group IIB; Class I, II, and III, Division 2, Groups A, B, C, D, F, and G.  
**CSA Intrinsically Safe Ratings:** Class I, Division 2, Groups A, B, C and D; Class II, Division 2, Groups F and G; Class III.

# CURRENT TO PRESSURE TRANSDUCER

Intrinsically Safe, Explosion-Proof, NEMA 4X Enclosure



The **SERIES 2900** Current to Pressure Transducer delivers reliable high performance for the toughest applications in the most hazardous environments. Its NEMA 4X housing is designed and FM and CSA approved for both intrinsically safe and explosion-proof operation. This unit has advanced circuitry which includes electronic feedback control for superior vibration protection and highly accurate output. The 2900 is not position sensitive and the easily accessible zero and span adjustments make field calibration quick and easy. For ease of installation, this model has input and output ports on both the front and back. It is also not vibration sensitive, which makes the 2900 ideal for field mounting on a valve. These features coupled with the unit's compact size help make set-up and installation simple.

## FEATURES/BENEFITS

- Designed for hazardous environments
- Vibration resistant
- Explosion-proof
- Weatherproof and intrinsically safe

MODEL CHART		
Model	Input	Output
2913-E	4 to 20 mA	3-15 psig (0.2-1.0 bar)
2916-E	4 to 20 mA	6-30 psig (0.4-2.1 bar)

ACCESSORIES	
Model	Description
A-180	Valve mounting bracket, for Hi-Flow™ control valves (Series 2800 only)

OPTIONS	
Description	
Valve mount, for factory mounting and calibration to Hi-Flow™ control valves, add current-to-pressure transducer model number as suffix (Series 2800 only)	

## SPECIFICATIONS

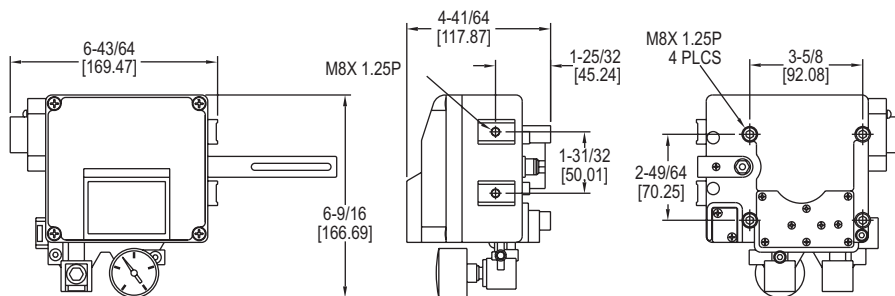
**Service:** Oil free, clean dry air filtered to 40 microns.  
**Input Signal:** 4 to 20 mA.  
**Air Supply:** Min: 5 psig (0.3 bar) above max output; Max: 100 psig (6.9 bar).  
**Output:** 3 to 15 psig (0.2 to 1.0 bar), 6 to 30 psig (0.4 to 2.1 bar).  
**Accuracy:** ±0.1% of span.  
**Hysteresis:** ±0.1% of span.  
**Repeatability:** ±0.1% of span.  
**Deadband:** 0.02% of span.  
**Power Requirement:** Loop powered.  
**Temperature Limits:** Operating: -40 to 160°F (-40 to 71°C); Storage: -40 to 200°F (-40 to 93°C).  
**Pressure Connections:** 1/4" female NPT.  
**Electrical Connection:** 1/2" female NPT.  
**Air Consumption:** 0.05 scfm (0.02 l/s) at midrange typical.  
**Output Capacity:** 4.5 scfm (2.1 l/s) at 25 psig (1.7 bar) supply; 12.0 scfm (5.7 l/s) at 100 psig (6.9 bar) supply.  
**Enclosure:** Chromate-treated aluminum with epoxy paint.  
**Enclosure Rating:** Weatherproof NEMA 4X (IP66), explosion-proof and intrinsically safe.  
**Weight:** 1.8 lb (0.82 kg).  
**Agency Approvals:** CE, CSA, FM.

**FM Ratings:** Explosion-proof for Class I Division 1, Groups B, C, and D, T6; Dust Ignitionproof for Class I, Division 1, Groups E, F, and G, T6; Intrinsically safe for Class I, II, and III, Division 1, Groups C, D, E, F, and G, T4 hazardous (classified) locations and intrinsically safe for Class I, Zone 0, Group IIB, T4 hazardous (classified) locations and suitable for Class I, Groups A, B, C, D, T4, and Class II and III, Division 2, Groups F and G, T6 hazardous (classified) locations.

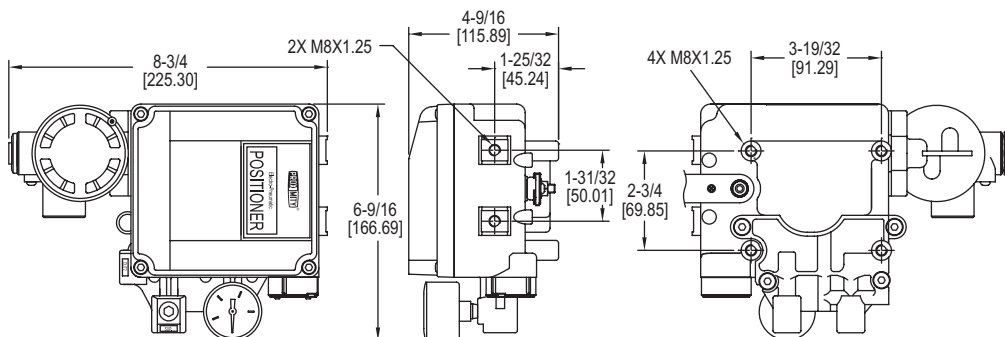
**CSA Ratings:** Class I Division 1, Groups B, C, and D; Class I, Division 2, Groups A, B, C and D; Class II, Division 1, Groups E, F, and G; Class II and III, Division 2, Groups F and G.

# PRECISOR® II PNEUMATIC AND ELECTRO-PNEUMATIC POSITIONER

Linear Operation, Field Selectable Cam Design, 316 SS Models



Series 165NL



Series 165EL

The **SERIES 165 PRECISOR® II** Pneumatic and Electro-Pneumatic Positioners deliver stable process control at an exceptionally low price. Its rugged, durable design makes it ideal for harsh environments while maintaining precise, accurate positioning of the control element. Units can be easily changed from direct to reverse action, or vice versa. Low air consumption keeps operating costs at a minimum, while still responding quickly and accurately. Excellent for use in chemical processing, food and beverage, pulp and paper, and pharmaceutical industries, as well as many others.

## FEATURES/BENEFITS

- Field selectable cam for direct or reverse acting

## APPLICATIONS

Series 165 PRECISOR® II Pneumatic and Electro-Pneumatic Positioners provide excellent modulating control when used between the Dwyer Temperature Controllers, Current to Pressure Transducer, and the Hi-Flow™ Valve in such industries as the food and beverage processing, chemical, pharmaceutical, and wood pulp and paper.

## HOW TO ORDER:

1. Select Model No. to specify input control signal.
2. For proper mounting hardware, order according to which actuator the positioner will be mounted to.

MODEL CHART		
Model	Input	Enclosure
165NL	3 to 15 psig	Aluminum
165EL	4 to 20 mA	Aluminum
165EL-SS	4 to 20 mA	Stainless steel

ACCESSORIES - MOUNTING KITS	
Model	For Actuator Models
A-233	220 and 221 air-to-lower
A-234	222 and 223 air-to-lower
A-235	230 and 231 air-to-raise
A-236	233 air-to-raise

## SPECIFICATIONS

**Input Signal:** Pneumatic: 3 to 15 psig (0.2 to 1 bar); Electro-pneumatic: 4 to 20 mA DC.  
**Input Impedance:** (165EL only): 250 ±15 Ω.  
**Enclosure Material:** Aluminum diecasting or 316 SS.  
**Air Supply:** 20 to 100 psig (1.4 to 6.9 bar).  
**Air Supply Connection:** 1/4" NPT.  
**Gage Connection:** 1/8" NPT.  
**Electrical Connection:** Screw terminal.  
**Conduit Connection:** 1/2" NPT (165EL only).  
**Linearity:** ±0.2% FS.  
**Hysteresis:** 1% FS.  
**Sensitivity:** ±0.2% FS.  
**Repeatability:** ±0.5% FS.  
**Air Consumption:** 0.10 scfm (3 LPM) at 20 psig (1.4 bar) supply.  
**Flow Capacity:** 28 scfm (80 LPM) at 20 psig (1.4 bar) supply.  
**Stroke:** 0.5 to 6" (10 to 150 mm).  
**Enclosure Rating:** IP66 (NEMA 4X).  
**Temperature Limits:** Aluminum: -4 to 158°F (-20 to 70°C); SS: -40 to 158°F (-40 to 70°C).  
**Weight:** 165NL: 3.1 lb (1.7 kg); 165EL: 6.1 lb (2.7 kg).  
**Agency Approvals:** CE (165EL only).

## OPTIONS

### Description

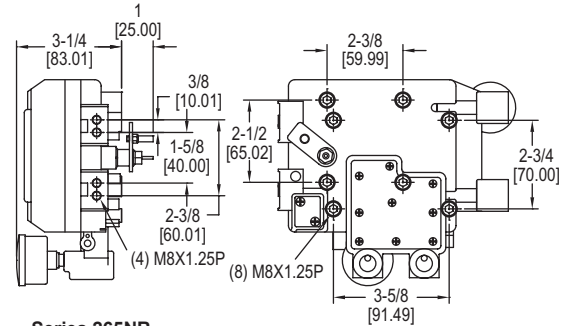
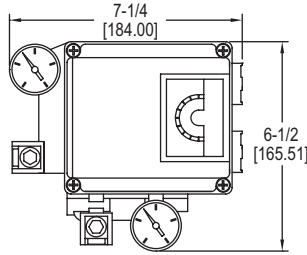
Valve mount, for factory mounting and calibration to Hi-Flow™ control valves, add suffix to valve model number of positioner. (Does not include valve or positioner price)

**Example:** 2004VA32-231-165EL

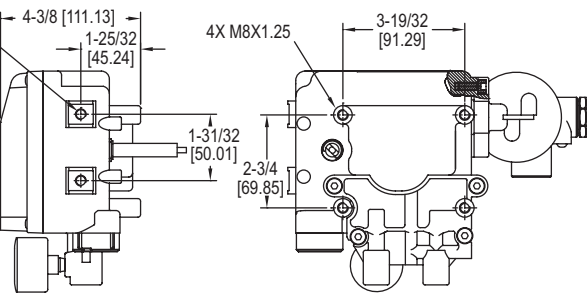
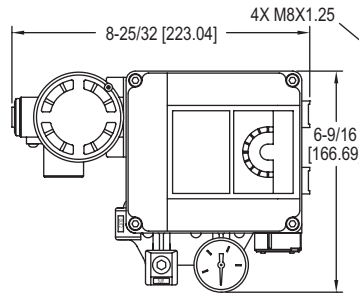


# PRECISOR® II PNEUMATIC AND ELECTRO-PNEUMATIC POSITIONER

Rotary Operation, Field Selectable Cam Design, 316 SS Models



Series 265NR



Series 265ER

Proximity **SERIES 265** PRECISOR® II Pneumatic and Electro-Pneumatic Positioners combine outstanding performance with an extremely low price, making it an exceptional value for industrial applications. Rotary valves with single or double acting pneumatic actuators can be precisely controlled, such as our ball and butterfly valves. The Precisor® II positioner proportionally modulates the valve from either an electric 4 to 20 mA or pneumatic 3 to 15 psig input signal, based on the model chosen and is user-selectable for single or double action. Its rugged, durable design makes it ideal for use in harsh environments, while maintaining precise, accurate positioning of the control elements. Includes a bracket for mounting onto actuators with NAMUR standard connections, and features a versatile linear cam for direct action, reverse action, or split ranges.

## FEATURES/BENEFITS

- Field selectable cam for direct or reverse acting
- User selectable single or double action
- Highly visible indicator for local indication

MODEL CHART			
Model	Input	Lever Type	Enclosure
265NR-D5	3 to 15 psig	NAMUR	Aluminum
265ER-D5	4 to 20 mA	NAMUR	Aluminum
265ER-D5SS	4 to 20 mA	NAMUR	Stainless steel

## SPECIFICATIONS

**Input Signal:** Pneumatic: 3 to 15 psig (0.2 to 1 bar); Electro-pneumatic: 4 to 20 mA DC.

**Input Impedance:** (265ER only): 250 ±15 Ω.

**Enclosure Material:** Aluminum diecasting or 316 SS.

**Air Supply:** 20 to 101 psig (1.4 to 7.0 bar).

**Air Supply Connection:** 1/4" NPT.

**Gage Connection:** 1/8" NPT.

**Electrical Connection:** Screw terminal.

**Conduit Connection:** 1/2" NPT (265ER only).

**Linearity:** ±2% FS.

**Hysteresis:** 1% FS.

**Sensitivity:** ±0.5% FS.

**Repeatability:** ±0.5% FS.

**Air Consumption:** 0.10 scfm (3 LPM) at 20 psig (1.4 bar) supply.

**Flow Capacity:** 28 scfm (80 LPM) at 20 psig (1.4 bar) supply.

**Stroke:** 0 to 90°.

**Enclosure Rating:** IP66.

**Temperature Limits:** -4 to 158°F (-20 to 70°C).

**Weight:** 265NR: 3.1 lb (1.7 kg); 265ER: 6.2 lb (2.8 kg).

**Agency Approvals:** CE (265ER only).

ACCESSORIES	
Model	Description
A-228	SS steel flex hose, 12" (30.48 cm) L, 1/8" male NPT connections
A-332	Brass adapter, 1/8" female NPT to 1/4" male NPT

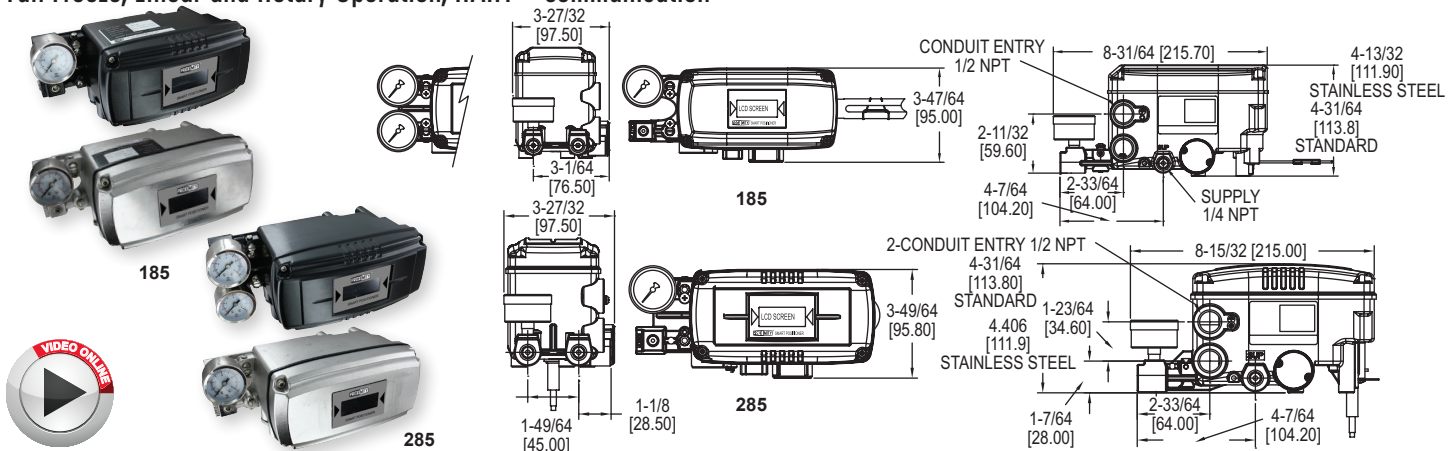


## Pneumatic Hosing and Fittings

Hosing and fittings for connecting positioners, current to pressure transducers, air filter gauges and other accessories to pneumatic actuated valves.

# LINEAR & ROTARY SMART POSITIONERS

Fail Freeze, Linear and Rotary Operation, HART<sup>®</sup> Communication



Proximity SERIES 185 & 285 Smart Positioners combine an easy to use, high performance unit with a low price. Series 185 models accurately control the valve stroke of linear motion valves and Series 285 models accurately control the valve stroke of rotary motion valves. An analog feedback signal is outputted to stabilize any valve system, and easy to use functions such as auto calibration ensure the accuracy of the unit. The compact design of this unit makes it easy to use with any size actuator. Smart Positioners feature a LCD screen attached to the outer surface of the unit, allowing for an easy inspection of the positioner condition while in the field. Available in user selectable single or double action, with HART<sup>®</sup> communication as standard. In the event that the 4-20 mA input signal is lost the 185 and 285 will fail in place.

MODEL CHART		
Model	Communication	Enclosure
185EL-D1	HART <sup>®</sup>	Aluminum
185EL-D1SS	HART <sup>®</sup>	Stainless steel
285ER-D5	HART <sup>®</sup>	Aluminum
285ER-D5SS	HART <sup>®</sup>	Stainless steel

## SPECIFICATIONS

**Input Signal:** 4 to 20 mA DC.  
**Input Impedance:** 460 Ω max @ 20 mA DC.  
**Enclosure Material:** Aluminum or 316 SS.  
**Air Supply:** 35 to 116 psi (2.4 to 8 bar).  
**Air Connection:** 1/4" NPT.  
**Gage Connection:** 1/8" NPT.  
**Conduit Connection:** 1/2" NPT.  
**Linearity:** ±0.5% FS.  
**Hysteresis:** ±0.5% FS.  
**Sensitivity:** ±0.2% FS.

**Repeatability:** ±0.3% FS.  
**Air Consumption:** .0004 scfm (.01 LPM) at 20 psig (1.4 bar) supply.  
**Flow Capacity:** 2.1 scfm (60 LPM) at 20 psig (1.4 bar) supply.  
**Stroke:** 0.5 to 6" (10 to 150 mm) or 0 to 90°.  
**Enclosure Rating:** NEMA 4X (IP66).  
**Temperature Limits:** -22 to 185°F (-30 to 85°C).  
**Weight:** 3.3 lb (1.5 kg); SS models: 6.4 lb (2.9 kg).

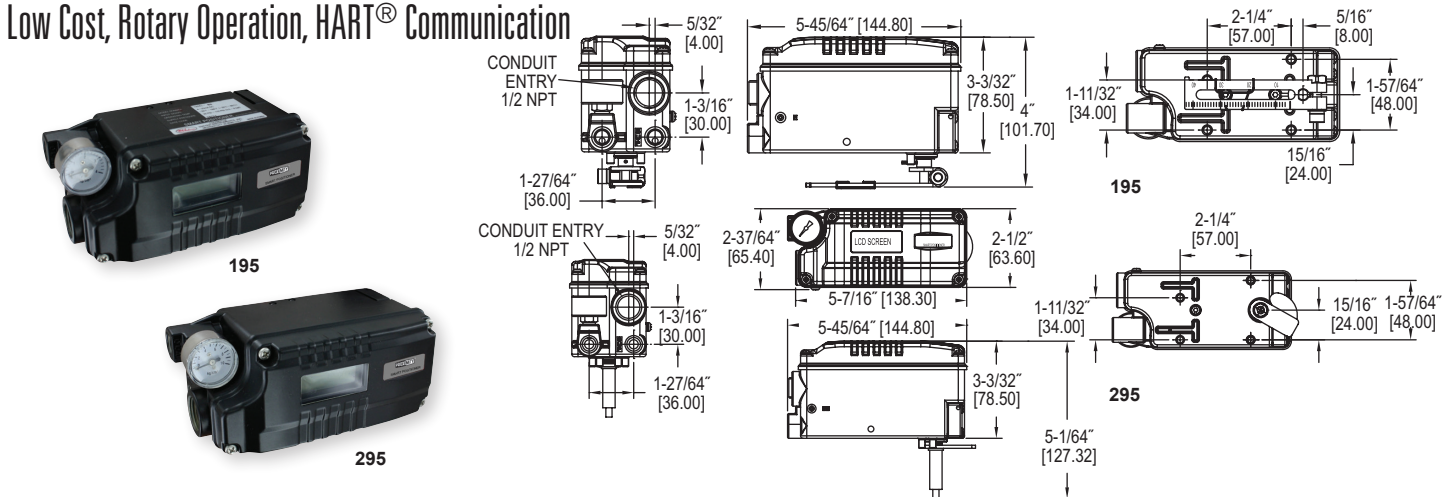
HART<sup>®</sup> is a registered trademark of Hart Communication Foundation

Filters and Regulators: See pages 481-482

## SERIES 195 & 295 | PROXIMITY® BY DWYER

# COMPACT LINEAR & ROTARY SMART POSITIONERS

Low Cost, Rotary Operation, HART<sup>®</sup> Communication



Proximity SERIES 195 & 295 Smart Positioners are a compact, high performance unit with a low price. Series 195 models accurately control the valve stroke of linear motion valves and Series 295 models accurately control the valve stroke of rotary motion valves. An analog feedback signal is outputted to stabilize any valve system, and easy to use functions such as auto calibration ensure the accuracy of the unit. The handheld size of this unit makes it easy to use with any size actuator, and can be used in applications where a larger positioner may not fit. Series 195 and 295 Smart Positioners feature a LCD screen attached to the outer surface of the unit, allowing for an easy inspection of the positioner condition while in the field. Available with HART<sup>®</sup> communication.

MODEL CHART		
Model	Action	Communication
195EL-S1	Single	None
195EL-S2	Single	HART <sup>®</sup>
295ER-S1	Single	None
295ER-S2	Single	HART <sup>®</sup>

## SPECIFICATIONS

**Input Signal:** 4 to 20 mA DC.  
**Input Impedance:** 460 Ω max @ 20 mA DC.  
**Enclosure Material:** Aluminum.  
**Air Supply:** 35 to 116 psi (2.4 to 8 bar).  
**Air Connection:** 1/4" NPT.  
**Gage Connection:** 1/8" NPT.  
**Conduit Connection:** 1/2" NPT.  
**Linearity:** ±0.5% FS.  
**Hysteresis:** ±0.5% FS.  
**Sensitivity:** ±0.2% FS.

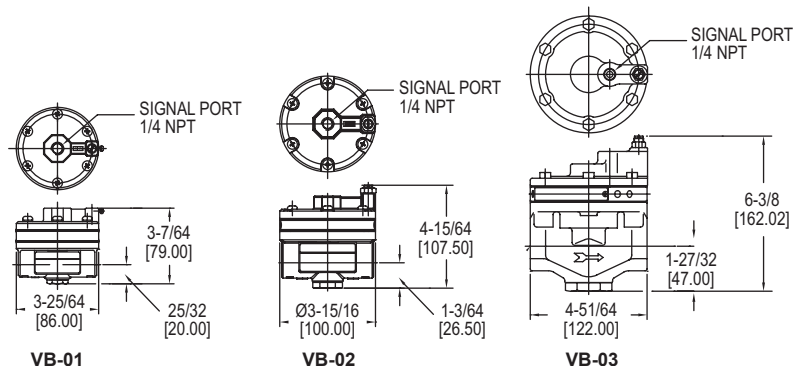
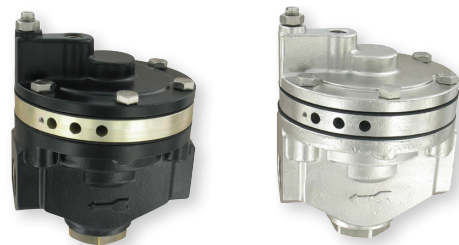
**Repeatability:** ±0.3% FS.  
**Air Consumption:** .0004 scfm (.01 LPM) at 20 psig (1.4 bar) supply.  
**Flow Capacity:** .32 scfm (9 LPM) at 20 psig (1.4 bar) supply.  
**Stroke:** 0.19 to 1.38" (5 to 35 mm) or 0 to 90°.  
**Enclosure Rating:** NEMA 4X (IP66).  
**Temperature Limits:** -22 to 185°F (-30 to 85°C).  
**Weight:** 1.8 lb (.82 kg).

HART<sup>®</sup> is a registered trademark of Hart Communication Foundation

Filters and Regulators: See pages 481-482

# VOLUME BOOSTER

Economical, 1:1 Ratio



The **SERIES VB** Volume Booster is a one to one signal to output relay and an ideal solution to increasing valve stroke speed. A large input signal change to the booster delivers high volume for quick throttling control. Volume booster responds to the slightest changes in input signal, which in turn increases accuracy of the output of air pressure to the actuator. This booster receives the positioner's signal output and supplies the proper air pressure to the actuator to reduce response and adjustment time. Available in aluminum or stainless steel.

MODEL CHART				
Model	Cv	Weight	In/Out Connection	Construction
VB-01	1.02	1.1 lb (0.5 kg)	1/4" NPT	Aluminum
VB-01SS	1.02	2.9 lb (1.3 kg)	1/4" NPT	SS
VB-02	2.32	1.7 lb (0.76 kg)	1/2" NPT	Aluminum
VB-02SS	2.32	4.2 lb (1.9 kg)	1/2" NPT	SS
VB-03	4.98	5.1 lb (2.3 kg)	3/4" NPT	Aluminum
VB-03SS	4.98	11 lb (5 kg)	3/4" NPT	SS

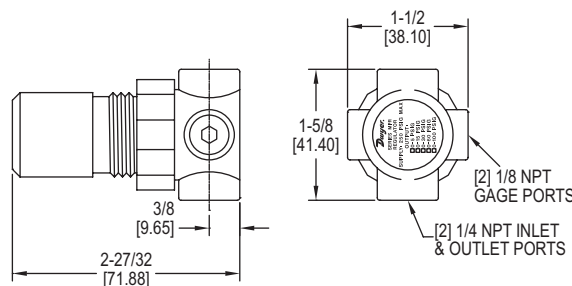
## SPECIFICATIONS

**Service:** Air only.  
**Wetted Materials:** Body: Aluminum or SS; Diaphragm: Nitrile elastomer.  
**Max Supply Pressure:** 145 psi (10 bar).  
**Max Signal/Output Pressure:** 101.5 psi (7 bar).  
**Signal Connection:** 1/4" NPT.  
**In/Output Pressure Ratio:** 1:1.  
**Temperature Limits:** -4 to 158°F (-20 to 70°C).  
**Linearity:** ±1% FS.  
**In/Output Connection:** See model chart.  
**Weight:** See model chart.

## SERIES MPR | PROXIMITY® BY DWYER

# MINIATURE PRESSURE REGULATOR

Air or Water Regulator, Compact and Lightweight, Low Cost



The **SERIES MPR** Miniature Pressure Regulators are compact units that provide low cost, high performance pressure regulation of compressed air or air/water. The low torque, non-rising adjustment knob with locking capability provides easy and precise adjustment. Models for use with air are self relieving. Models for air/water are non-relieving.

MODEL CHART		
Air Model	Air/Water Model	Range
MPR1-0	MPR2-0	0 to 5 psi
MPR1-1	MPR2-1	0 to 15 psi
MPR1-2	MPR2-2	0 to 30 psi
MPR1-3	MPR2-3	0 to 60 psi
MPR1-4	MPR2-4	0 to 100 psi

## ACCESSORIES

Model	Description
MPR-B	Mounting bracket
MPR-N	Panel mounting nut

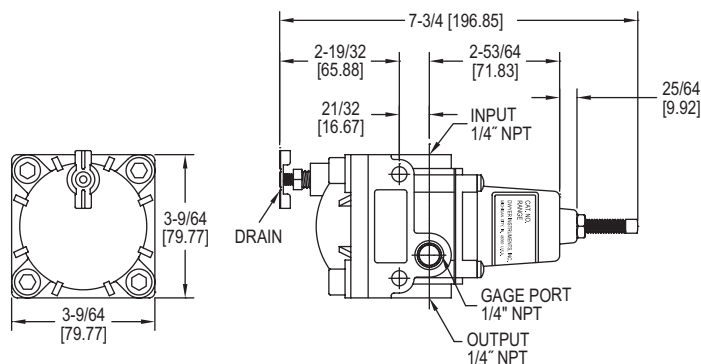
## SPECIFICATIONS

**Service:** Compressed air or water.  
**Wetted Materials:** Body: Zinc; Bonnet: Acetal; Diaphragm/seals: Nitrile; Internals: Aluminum, brass, acetal, steel, music wire (MPR2 is plated with electroless nickel for water use).  
**Maximum Supply Pressure:** 250 psig (17.2 bar).  
**Temperature Limits:** 0 to 150°F (-18 to 60°C).  
**Flow Capacity:** 24 SCFM (48 m3/hr) at 100 psig (6.9 bar) supply, 60 psig (4.1 bar) output.  
**Process Connection:** Inlet and outlet: Two 1/4" female NPT; Two 1/8" female NPT gage ports.  
**Weight:** 4 oz (113 g).

USA: California Proposition 65  
 ⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

**Dwyer**  
SERIES AFR

# AIR FILTER REGULATOR



**SERIES AFR** Air Filter Regulator provides clean air pressure to pneumatic controllers, valve positioners, air cylinders and other equipment. Self-relieving regulator is equipped with a 40 micron filter housed in a dripwell with gage port.

## MODEL CHART

Model	Range
AFR1	0 to 10 psi (0 to 65 kPa)
AFR2	0 to 30 psi (0 to 200 kPa)
AFR3	0 to 60 psi (0 to 400 kPa)
AFR4	0 to 120 psi (0 to 800 kPa)

## ACCESSORIES

Model	Description
AFR-BRKT	Mounting bracket

## SPECIFICATIONS

**Service:** Air only.

**Wetted Materials:** Body: Aluminum alloy, irridite, and lock epoxy finish; Filter: Phenolic impregnated cellulose; Diaphragm and valve seat plug: Nitrile elastomer.

**Max. Supply Pressure:** 250 psig (1700 kPa).

**Temperature Limits:** 0 to 160°F (-18 to 71°C).

**Sensitivity:** 1" (2.5 cm) of water.

**Consumption:** <6 SCFH (0.17 m<sup>3</sup>/hr).

**Flow Capacity:** 20 SCFM (33 m<sup>3</sup>/hr) @ 100 psig (700 kPa) supply.

**Exhaust Capacity:** 0.1 SCFM (0.17 m<sup>3</sup>/hr) with downstream pressure 5 psig (35 kPa) above set point.

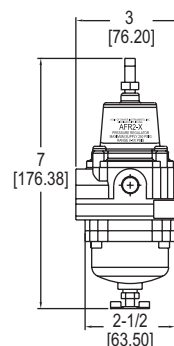
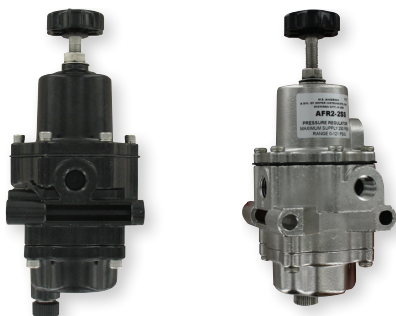
**Process Connection:** 1/4" female NPT.

**Weight:** 1.6 lb (725 g).

## SERIES AFR2 | PROXIMITY® BY DWYER

# INSTRUMENT AIR FILTER REGULATOR

Compact, Stainless Steel Models, Cost-Effective



**SERIES AFR2** Air Filter Regulator provides clean air pressure to pneumatic controllers, valve positioners, air cylinders and other equipment. Self-relieving regulator is equipped with a 5 micron filter housed in a dripwell with gage port.

## MODEL CHART

Model	Range	Body
AFR2-1	0 to 60 psi (0 to 4 bar)	Aluminum
AFR2-1SS	0 to 60 psi (0 to 4 bar)	Stainless steel
AFR2-2SS	0 to 121 psi (0 to 8 bar)	Stainless steel

## SPECIFICATIONS

**Service:** Air only.

**Wetted Materials:** Body: Aluminum or SS; Filter: Polyethylene; Diaphragm and valve seat plug: Nitrile elastomer.

**Max. Supply Pressure:** 250 psi (17.2 bar).

**Temperature Limits:** -4 to 158°F (-20 to 70°C).

**Minimum Filtering Size:** 5 micron.

**Process Connection:** 1/4" NPT.

**Weight:** 1.7 lb (0.6 kg), SS models: 3.0 lb (1.4 kg).