



Series
BV3

Automated Ball Valves — Three-Piece SS Sanitary

Electric and Pneumatic Actuators

CLEARANCE REQUIRED FOR COVER REMOVAL: 3.000"

| ELECTRIC | | | | | | | | |
|----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| A | 1/2" | 3/4" | 1" | 1-1/2" | 2" | 2-1/2" | 3" | 4" |
| B | 7.840 | 8.000 | 8.758 | 13.040* | 13.390* | 14.080* | 15.380* | 18.390* |
| C | 4.000 | 4.000 | 4.250 | 7.000 | 7.000 | 7.000 | 7.000 | 10.000 |
| D | 3.500 | 3.980 | 4.490 | 5.510 | 6.140 | 7.760 | 9.020 | 9.490 |
| E | 5.800 | 5.800 | 6.880 | 7.000 | 7.000 | 7.000 | 7.000 | 10.000 |
| F | 2.300 | 2.300 | 2.430 | 2.380 | 2.380 | 2.380 | 2.380 | 6.750 |
| ACT. | U11, V12 | U12, V12 | U12, V12 | U14, V14 | U15, V15 | U16, V16 | U18, V18 | U18, V18 |

*INCLUDES DECLUTCHABLE MANUAL OVERRIDE AND HANDWHEEL

| PNEUMATIC DOUBLE ACTING | | | | | | | | |
|-------------------------|-------|-------|-------|--------|-------|--------|--------|--------|
| A | 1/2" | 3/4" | 1" | 1-1/2" | 2" | 2-1/2" | 3" | 4" |
| B | 6.091 | 7.109 | 7.187 | 8.336 | 8.680 | 10.340 | 11.210 | 12.900 |
| C | 1.770 | 2.800 | 2.800 | 3.170 | 3.170 | 4.170 | 4.840 | 5.390 |
| D | 3.500 | 3.980 | 4.490 | 5.510 | 6.140 | 7.760 | 9.020 | 9.490 |
| E | 4.330 | 6.810 | 6.810 | 9.550 | 9.550 | 9.840 | 11.690 | 13.580 |
| ACT. | DA1 | DA2 | DA2 | DA4 | DA4 | DA5 | DA5 | DA7 |

| PNEUMATIC SPRING RETURN | | | | | | | | |
|-------------------------|-------|-------|-------|--------|--------|--------|--------|--------|
| A | 1/2" | 3/4" | 1" | 1-1/2" | 2" | 2-1/2" | 3" | 4" |
| B | 6.951 | 7.549 | 7.627 | 9.026 | 10.180 | 11.680 | 12.580 | 15.468 |
| C | 2.800 | 3.170 | 3.170 | 4.840 | 4.840 | 5.390 | 5.830 | 7.380 |
| D | 3.500 | 3.980 | 4.490 | 5.510 | 6.140 | 7.760 | 9.020 | 9.490 |
| E | 6.810 | 7.720 | 7.720 | 11.690 | 11.690 | 13.580 | 15.910 | 20.550 |
| ACT. | SR2 | SR3 | SR3 | SR6 | SR6 | SR7 | SR8 | SR9 |

BV3 Series Automated Ball Valves

- Ideal sanitary ball valve for high purity applications including food & beverage, pharmaceutical and biotech industries
- 3-piece stainless steel investment cast body
- 240 Grit Internal Polish
- Polished Clamp End to sanitary finish
- Cavity Filler to reduce the threat of product entrapment

Series BV3 ball valves feature tri-clamp ends for easy line removal. The sanitary polish is ideal for use in pharmaceutical, food & beverage, and chemical processing systems, while the cavity filler aids to reduce product entrapment, and the full bore design provides consistent flow characteristics. Best of all, Dwyer Instruments sanitary ball valves are economical and durable.

The BV3 Series is an economical automated valve package with either an electric or pneumatic actuator. Electrically actuated models are weather-proof, NEMA 4, 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 the valve open or closed, while the modulating actuator accepts a 4 to 20 mA input for infinite valve positioning. Actuator features 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.

SPECIFICATIONS

- Body:** 3 – piece.
- Line Size:** 1/2" to 4".
- End Connections:** Tri-Clamp.
- Pressure Limit:** 1/2" to 2" 1000 psi (69 bar) WOG. 2-1/2" to 4" 800 psi (55 bar) WOG.
- Wetted Materials:**
 - Body, End Cap, Stem: Stainless Steel.
 - Ball: Stainless Steel.
 - Seat, Stem Seal: PTFE.
- Temperature Limit:** -40 to 450°F (-40 to 232°C).
- Other Materials:** Body Seal, Thrust Washer: PTFE.

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": 0.55A, 3/4" to 2": 0.75A, 2-1/2" and 3": 1.1A, 4": 1.5A. Modulating: 1/4" to 3/4": 0.55A, 1" to 1-1/2": 0.75A, 2": 0.75A, 2-1/2": 0.75A; 3": 1.1A; 4": 1.5A.
 - Cycle Time (per 90°):** Two position: 1/2": 2.5 sec., 3/4" and 1": 5 sec., 1-1/2": 10 sec., 2" to 3": 15 sec., 4": 12 sec., Modulating: 1/2" to 1-1/2": 10 sec., 2": 20 sec., 2-1/2" to 4": 30 sec.
 - Duty Cycle:** Electric Two Position 1/2": 75%, All Others: 25%. Modulating: 75%.
 - Enclosure Rating:** NEMA 4. Optional NEMA 7.

- Housing Material:** Aluminum with thermal bonding polyester powder finish.
- Temperature Limit:** 0 to 150°F (-18 to 65°C).
- Electrical Connection:** 1/2" female NPT.
- Modulating Input:** 4 to 20 mA.
- Standard Features:** Manual override and 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:** 130 psig (8.0 bar).
 - Air Connections:** 1/4" female NPT.
 - Air Consumption (per stroke):** DA1: 2.32 cu. in.; DA2, SR2: 9.34 cu. in.; DA3, SR3: 17.21 cu. in.; DA4, SR4: 20.5 cu. in.; DA6, SR6: 66.75 cu. in.; DA7, SR7: 103.74 cu. in.; SR8: 122.05 cu. in.; SR9: 215.11 cu. in.
 - Cycle Time (per 90°):** DA1: .03 sec.; DA2: .05 sec.; DA3: .06 sec.; DA5: .08 sec.; DA6: .18 sec.; SR2: .09 sec.; SR3: .13 sec.; SR4: .17 sec.; SR5: .28 sec.; SR6: .39 sec.; SR7: .60 sec.; SR8: .90 sec.; SR9: 1.75 sec.
 - 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:** Position indicator.

MODELS

| Size | Cv | Double Acting Pneumatic | | Spring Return Pneumatic | | Two Position Electric | | Modulating Electric | |
|--------|------|-------------------------|--|-------------------------|--|-----------------------|--|---------------------|--|
| | | Model | | Model | | Model | | Model | |
| 1/2" | 12 | BV3DA102TC | | BV3SR202TC | | BV3U1102TC | | BV3V1202TC | |
| 3/4" | 30 | BV3DA203TC | | BV3SR303TC | | BV3U1203TC | | BV3V1203TC | |
| 1" | 65 | BV3DA204TC | | BV3SR304TC | | BV3U1204TC | | BV3V1204TC | |
| 1-1/2" | 205 | BV3DA406TC | | BV3SR606TC | | BV3U1406TC | | BV3V1406TC | |
| 2" | 380 | BV3DA407TC | | BV3SR607TC | | BV3U1507TC | | BV3V1507TC | |
| 2-1/2" | 430 | BV3DA508TC | | BV3SR708TC | | BV3U1608TC | | BV3V1608TC | |
| 3" | 675 | BV3DA509TC | | BV3SR809TC | | BV3U1609TC | | BV3V1609TC | |
| 4" | 1110 | BV3DA710TC | | BV3SR910TC | | BV3U1810TC | | BV3V1810TC | |

Options:
Explosion-proof Electric Actuator
-Add suffix "EX" to the model number

Optional Electric Actuator Supply Voltages
-Contact factory for model number change

Solenoid Valve - See Model SV3.

NOTE: All spring return actuators are factory standard as spring (fail) close.

Valves