



## Models BV10 & BV11 On/Off Solenoid Operated Valves

### Description

The Model BV10, normally closed, and BV11, normally open, solenoid operated Brodie Control Valves are designed for remote on-off flow control. They are externally piped with a needle valve (speed of response control) and strainer as standard equipment.

### Principle of Operation

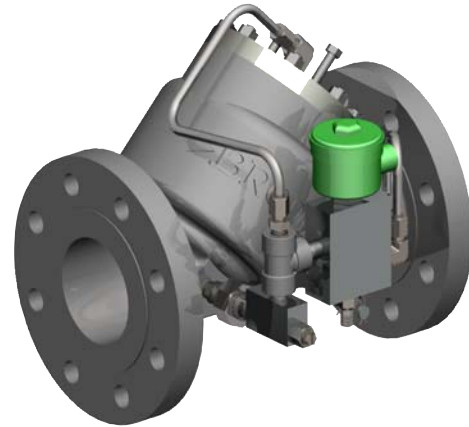
The valves are pilot operated and operate on a balanced piston principle, spring biased to a closed position. Pressure differential overcomes the force of the spring, causing the main valve to open and establish flow. The pilot varies the pressure on the spring side of the piston for position.

### Design Features

- Modular construction - All internal parts including seat ring can be removed with the cylinder assembly without disturbing line connections.
- No diaphragms or stuffing boxes
- 45° body design assures high capacity
- Positive shut-off
- Uniform speed of response
- Linear control characteristics
- Inherently checks reverse flow

### “AP” (Aggressive Products) Option

The “AP” option valve cylinder incorporates a combination of seals and O-ring materials to provide optimum performance in aggressive product applications. Specify “AP” Option at time of order when valve is to be used on products which may affect standard seals.



### WARNING

**Do NOT operate this instrument in excess of the specifications listed. Failure to heed this warning could result in serious injury and/or damage to the equipment.**

### Valve Capacity Data

| Valve Size | 2" | 3"  | 4"  | 6"  |
|------------|----|-----|-----|-----|
| *Cv-gpm    | 90 | 190 | 315 | 700 |

*\*Cv based on wide open valve utilizing water at 60F (15.6C).*

## Materials of Construction

**Main Valve Body:** Steel-ASTM-A216-GR-WCB

**Main Valve Cylinder:** 17-4 Stainless Steel

**Main Valve Piston:** Stainless Steel

**Seat Ring:** Stainless Steel

**O-Rings:** Viton Standard

(Other elastomers available)

**Other Internal Parts:** Stainless Steel

**Pilot Valve Strainer/Needle Valve Strainer:**

Standard: Steel

**Tubings and Fittings:** Standard: Steel

## Optional Equipment

- Valve Position Indicator
- Position Indicator Switches
- Independent Opening Speed Control
- Stainless Steel Tubing
- Thermal Relief
- Pilot Line Isolation Block Valves
- Manual Override (Opens Valve)

## Recommended Spare Parts

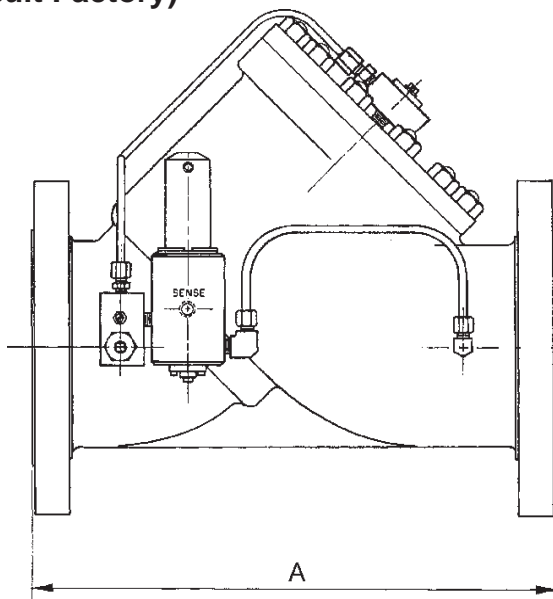
O-Rings

## Flange Connections

| Valve Size | Connections  | Max Working Pressure @100F | DIN Connections   | Max Working Pressure |
|------------|--------------|----------------------------|-------------------|----------------------|
| 3"-6"      | 150 lb. ANSI | 285 PSI                    | DN 80-DN150 PN 25 | 25 Bar               |
| 3"-6"      | 300 lb. ANSI | 740 PSI                    | DN 80-DN150 PN 64 | 51 Bar               |

**Temperature Range:** -20F to 150F (-29C to 66C) Optional 250F (121C)

## Dimensions (For Certified Dimensional Prints - Consult Factory) Pilot Spring Ranges



| Valve Size | Dimensions |         |         |
|------------|------------|---------|---------|
|            | mm         | 150 lb. | 300 lb. |
| 2"         | mm         | 260     | N/A     |
|            | Inches     | 10 1/4  |         |
| 3"         | mm         | 279     | 333     |
|            | Inches     | 11      |         |
| 4"         | mm         | 330     | 368     |
|            | Inches     | 13      |         |
| 6"         | mm         | 432     | 454     |
|            | Inches     | 17      |         |

| 150-300 lb. Valves |           |
|--------------------|-----------|
| (PSI)              | (kPa)     |
| 0-20               | 0-138     |
| *0-40              | 0-276     |
| 30-80              | 207-552   |
| 70-180             | 483-1241  |
| 150-350            | 1034-2413 |
| 350-650            | 2413-4482 |

\* Spring selection based on control pressure set point.

## Shipping Weight and Volume (Approximate)

|    |  |
|----|--|
| 2" | 69 lbs. @ 3 Cu. Feet<br>31.3 kgs. @ .085 Cu. Meters      |
| 3" | 105 lbs. @ 2.36 Cu. Feet<br>47.63 kgs. @ .067 Cu. Meters |
| 4" | 140 lbs. @ 2.51 Cu. Feet<br>63.5 kgs. @ .071 Cu. Meters  |
| 6" | 250 lbs. @ 4.84 Cu. Feet<br>113.4 kgs. @ .137 Cu. Meters |

## Ordering Information

In order to accurately process an order, such information as product to be controlled, product viscosity, product temperature range, ambient temperature range, rate of flow, operating pressure, units of registration, accessories required, and optional features needed must be specified by the customer.



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