

# BV250 & BV602

## Manual Ball Valves



### DESCRIPTION

Maxitrol's model BV250 and BV602 ball valves are used on a wide range of applications using gas, water, oil, and steam. These manual ball valves have a forged brass body, female NPT inlet and outlet, hard chrome plated ball, and anticorrosion Dacromet treated handle.

BV602 models are one-piece construction with seats made of Buna N. BV250 models are two-piece construction with seats made of PTFE (Teflon®). The two standard models are each equipped with lever style handles.

A self-locking nut improves reliability between the stem and lever by providing additional stability against vibration. In addition to the seal created by the O-ring, a PTFE anti-thrust washer seals against the shoulder of the valve.

The ball valves feature innovative designs of the ball and seat. The hollow ball design is based on research and development as well as years of experience in the field. Manufacture of the hollow ball requires a technical level not found in most competitors. Heavier is not necessarily better, and in fact, the lighter ball decreases wear associated with ON-OFF turning action. Typically, the greatest friction loss takes place at the point of highest gravitational force. The lighter hollow ball increases the life of the valve seats 10% to 20% more than with a solid ball.

The valves are manufactured with a unique new seat shape to reduce friction during opening and closing. Compared with other seat shapes the maneuver torque is reduced 20% to 40%.

### TECHNICAL DATA

#### CERTIFICATIONS

##### BV602 models (one-piece body)

- (½" and ¾") UL Listed 757X (water)
- (½" and ¾") Complies with CSA requirement 3.88 for 2 psig
- CSA Certified in compliance with Z21.15

##### BV250 models (two-piece body)

- CSA Certified Tamper Resistant construction
- CSA Verified for ambient temperature range from -40 °F to 300 °F
- (2 ½" and 3") CSA Certified in compliance with Z21.15
- (½", ¾", 1", 1 ¼", 1 ½", 2") CSA certified to requirement 3.88 for 2 and 5 psig
- (½", ¾", 1") CSA Certified under Certificate 633-3A, following Standard ANSI B.16.33-1981 for gas at 125 psi
- (¼", ⅜", ½", ¾", 1", 1 ¼", 1 ½", 2") NFPA 58-UL 250 psi
- (½", ¾", 1", 1 ¼", 1 ½", 2") UL 258 for 175 psi
- (¼", ⅜", ½", ¾", 1", 1 ¼", 1 ½", 2") UL Listed LP gas shut-off valves – Standard YSTD under Listing 44R8 for 400 psig



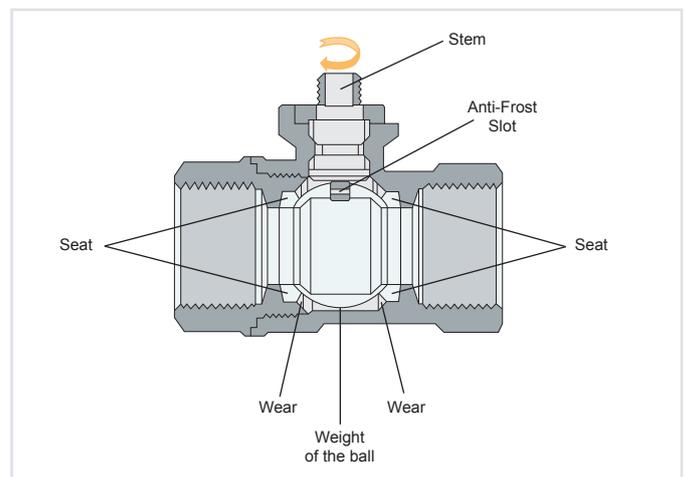
BV250 Ball Valve



BV602 Ball Valve

- UL Listed:
  - Gas shut-off valves (UL Standard YRPV)
  - Compressed gas shut-off valves (UL Standard YQNZ)
  - Manual valves (UL Standard MHKZ)for the following fluid service:
  - natural and manufactured gas
  - fuel oil No. 1-6 (260 °F)
  - air
  - acetylene
  - nitrogen
  - carbon dioxide
  - inert gases
- (½", ¾", 1", 1 ¼", 1 ½", 2") FM approved for sprinkler systems (Approval No. J.I. ON7A5.AH)
- (¾", ½", ¾", 1") CSA approved
- (All sizes) Rating of 150 WSP
  - (¼", ⅜", ½", ¾") 600 WOG
  - (1", 1 ¼", 1 ½", 2") 500 WOG
  - (2 ½", 3", 4") 400 WOG
- Other international approvals include WRC in the U.K., VA in Denmark, IAA in Korea, KFT in Hungary, SVGW in Switzerland, and conformity to the new proposed European standard prEN 331
- S model valve side tap is 1/8" NPT

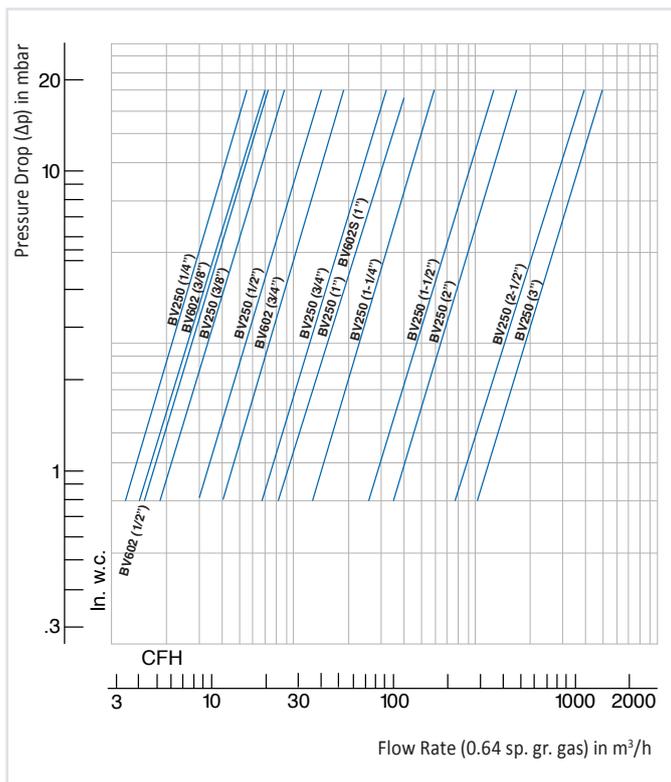
### COMPONENTS



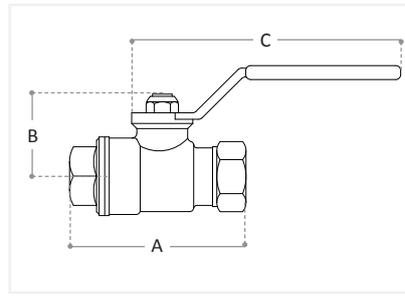
## CAPACITY

| Model                     | Size | Capacity<br>CFH (m <sup>3</sup> /h)<br>0.64 sp. gr. gas |                     |
|---------------------------|------|---|---------------------|
|                           |      | $\Delta P$  |                     |
|                           |      | 0.3" w.c.   | 1" w.c.             |
| BV250T-22                 | ¼"   | 117<br>(3.31)   | 214<br>(6.06)       |
| BV250-33                  | ⅜"   | 183.5<br>(5.20)   | 335<br>(9.49)       |
| BV602-33                  | ⅜"   | 136<br>(3.85)   | 249<br>(7.05)       |
| BV250-44                  | ½"   | 296.5<br>(8.40)   | 541.3<br>(15.33)    |
| BV602-44 or<br>BV602S-44* | ½"   | 151<br>(4.28)   | 275<br>(7.79)       |
| BV250-66                  | ¾"   | 682.4<br>(19.32)  | 1245.9<br>(35.28)   |
| BV602-66 or<br>BV602S-66* | ¾"   | 405<br>(11.47)  | 740<br>(20.95)      |
| BV250-88 or<br>BV602S-88* | 1"   | 834<br>(23.62)  | 1523<br>(43.13)     |
| BV250-1010                | 1 ¼" | 1278<br>(36.19)   | 2334<br>(66.09)     |
| BV250-1212                | 1 ½" | 2605<br>(73.77)   | 4756<br>(134.68)    |
| BV250-1616                | 2"   | 3562<br>(100.87)  | 6503.7<br>(184.17)  |
| BV250-2020                | 2 ½" | 7947<br>(225.04)  | 14508.7<br>(410.85) |
| BV250-2424                | 3"   | 10296<br>(291.56)                                       | 18797.5<br>(532.30) |
| BV250-2424                | 4"   | -   | -                   |

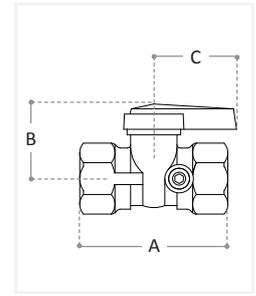
## PRESSURE DROP



## DIMENSIONS – PORT SIZE – FLOW COEFFICIENT (Cv)



BV250 Ball Valve



BV602 Ball Valve

| Model                     | Size | Port         | Cv    | A                 | B                 | C                 |
|---------------------------|------|--------------|-------|-------------------|-------------------|-------------------|
| BV250T-22**               | ¼"   | 0.3"<br>(8)  | 7.68  | 1.61"<br>(40.89)  | 0.99"<br>(25.15)  | *                 |
| BV250-33                  | ⅜"   | 0.4"<br>(10) | 7.79  | 1.77"<br>(44.96)  | 1.28"<br>(32.51)  | 3.07"<br>(77.98)  |
| BV250-44                  | ½"   | 0.5"<br>(13) | 11.9  | 2.08"<br>(52.83)  | 1.42"<br>(36.07)  | 3.07"<br>(77.98)  |
| BV250-66                  | ¾"   | 0.7"<br>(18) | 21.4  | 2.35"<br>(59.69)  | 1.87"<br>(47.50)  | 3.78"<br>(96.01)  |
| BV250-88 or<br>BV602S-88* | 1"   | 0.9"<br>(22) | 42.2  | 2.91"<br>(73.91)  | 2.02"<br>(51.31)  | 3.78"<br>(96.01)  |
| BV250-1010                | 1 ¼" | 1.1"<br>(28) | 85.5  | 3.28"<br>(83.31)  | 2.22"<br>(56.39)  | 3.78"<br>(96.01)  |
| BV250-1212                | 1 ½" | 1.4"<br>(35) | 122.2 | 3.72"<br>(94.49)  | 2.78"<br>(70.61)  | 5.43"<br>(137.92) |
| BV250-1616                | 2"   | 1.8"<br>(45) | 184   | 4.28"<br>(108.71) | 3.09"<br>(78.49)  | 4.43"<br>(112.52) |
| BV250-2020                | 2 ½" | 2.3"<br>(58) | 279.3 | 5.63"<br>(143.00) | 3.98"<br>(101.09) | 6.97"<br>(177.04) |
| BV250-2424                | 3"   | 2.7"<br>(68) | 313.1 | 6.30"<br>(160.02) | 4.29"<br>(108.97) | 6.77"<br>(171.96) |
| BV250-3232                | 4"   | 2.7"<br>(68) | 537   | 7.99"<br>(202.95) | 4.13"<br>(104.90) | 8.00"<br>(203.20) |

| Model                     | Size | Port         | Cv   | A               | B               | C               |
|---------------------------|------|--------------|------|-----------------|-----------------|-----------------|
| BV602-33                  | ⅜"   | 0.4"<br>(10) | 5.95 | 2.02"<br>(51.3) | 1.69"<br>(42.9) | 1.41"<br>(35.8) |
| BV602-44 or<br>BV602S-44* | ½"   | 0.4"<br>(10) | 6.26 | 2.35"<br>(59.7) | 1.69"<br>(42.9) | 1.41"<br>(35.8) |
| BV602-66 or<br>BV602S-66* | ¾"   | 0.6"<br>(15) | 14.1 | 2.59"<br>(65.8) | 1.69"<br>(42.9) | 1.41"<br>(35.8) |

**NOTE:** Dimensions, Port Size in inches (mm)

Valve flow coefficient (Cv) factor is flow rate in gallons per minute (GPM) when pressure drop ( $\Delta p$ ) is 1 psi;  $Cv = GPM/\Delta p$

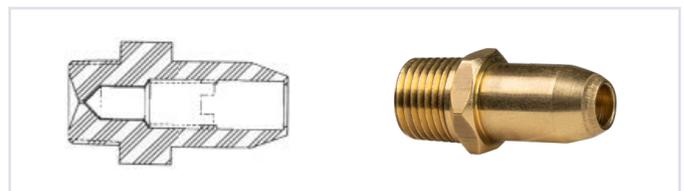
\* S-models have side pressure taps (602S-44 shown)

S-model widths: 602S-44 = 1.57", 602S-66 = 1.78", 602S-88 = 2.09"

\*\* Model BV250T-22 equipped with T-handle

## PRESSURE TAP CONNECTOR

Pressure tap connector installed as part of the control. It is a hose fitting incorporating a captured sealing means for testing inlet and outlet pressures. This eliminates the need for a special barb fitting.



PF10 Pressure Tap Connector