### 86A-200 Series

**3-Piece Full Port Stainless Steel 1500 CWP**

**Socket-Weld Ball Valve**


**FEATURES**

- 3-Piece construction w/ enclosed fasteners
- Full port
- Stainless steel trim & hardware
- Swing-out center section
- Pressure balanced solid ball
- Compression controlled RPTFE gaskets
- Anti-blowout one piece bottom entry stem
- Two-position locking
- Adjustable multi-piece PTFE “V” style packing
- Fully machined ISO 5211 mounting
- Cast bosses on the center-section and end caps for bleed & drain ports
- Vacuum service to 29 in of Hg.

**STANDARD MATERIAL LIST**

| Number | Size | A   | B   | C   | D   | E   | F   | G   | H   | J   | K   | L   | M   | N   | P   | WT  |
|--------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 86A-202-01 | 3/8" | .50 | .89 | .89 | 3.12 | 3.02 | .22 | .22 | 1.01 | 1.98 | 1.97 | .23 | .24 | .375 | 1.00 | 10-24 | 2.3 |
| 86A-203-01 | 1/2" | .50 | .89 | .89 | 3.12 | 3.02 | .22 | .22 | 1.01 | 1.98 | 1.97 | .23 | .24 | .375 | 1.00 | 10-24 | 2.3 |
| 86A-204-01 | 3/4" | .75 | 1.10 | 3.53 | 3.40 | 2.40 | 1.20 | 1.20 | 1.65 | 2.35 | .24 | .312 | .500 | 1.392 | 1/4-20 | 4.0 |
| 86A-205-01 | 1"  | 1.00 | 4.19 | 1.31 | 6.53 | 4.80 | 2.67 | 1.34 | 1.80 | 2.80 | .48 | .287 | .500 | 1.392 | 1/4-20 | 5.7 |
| 86A-206-01 | 1-1/4" | 1.50 | 4.50 | 1.97 | 6.65 | 4.70 | 3.84 | 1.92 | 2.49 | 3.89 | .72 | .412 | .625 | 1.949 | 5/16-18 | 14.2 |
| 86A-207-01 | 1-1/2" | 1.50 | 4.58 | 1.97 | 6.65 | 4.70 | 3.84 | 1.92 | 2.49 | 3.89 | .72 | .412 | .625 | 1.949 | 5/16-18 | 14.4 |
| 86A-208-01 | 2"  | 2.00 | 5.86 | 2.56 | 9.40 | 5.47 | 4.32 | 2.46 | 3.17 | 4.74 | .80 | .477 | .750 | 1.949 | 5/16-18 | 27.5 |

**OPTIONS AVAILABLE:**

- 04 - 2-1/4" Stem Extension
- 14 - Vented Ball (see page 4-2)
- 15 - Round Handle
- 49 - Assembled Dry
- 57 - Cleared for Oxygen Service
- 60 - Static Grounding
- 62 - Center Section Only
- 63 - Drilled & Tapped Fung & Drains
- 70 - Extended Bonnet
- 76 - Live Loaded (Lever Operated)
- 77 - Live Loaded (Actuated)
- 90 - Extended Bonnet w/Double Packing
- 88 - Spring Return Handle

For Pressure/Temperature Ratings, Refer to Page M-17, Graph No. 24
FLOW DATA

For Apollo® and Saturn® Ball Valves

The listed Cv “factors” are derived from actual flow testing, in the Apollo® Ball Valve Division, Conbraco Industries, Inc., Pageland, South Carolina. These tests were completed using standard “off the shelf” valves with no special preparation and utilizing standard schedule 40 pipe. It should be understood that these factors are for the valve only and also include the connection configuration. The flow testing is done utilizing water as a fluid media and is a direct statement of the gallons of water flowed per minute with a 1 psig pressure differential across the valve/connection unit. Line pressure is not a factor. Because the Cv is a factor, the formula can be used to estimate flow of most media for valve sizing.

Flow of Liquid

\[ Q = Cv \frac{\Delta P}{SpGr} \]

or \[ \Delta P = \frac{(Q)^2}{(Cv)^2} (SpGr) \]

Flow of Gas

\[ Q = 1360 Cv \sqrt{\frac{\Delta P}{(P_1) (SpGr) (T)}} \]

or \[ \Delta P = 5.4 \times 10^{-7} (SpGr) \]

Where:

- \( Q \) = flow in US gpm
- \( \Delta P \) = pressure drop (psig)
- \( SpGr \) = specific gravity at flowing temperature
- \( Cv \) = valve constant

\( P_1 \) = outlet pressure-psia

(Cbased on air = 1.0)

\( T \) = (temp. °F + 460)

**Cv FACTORS**

**SERIES:**

- 70-100, 71-100, 71A-100,
- 74-100, 76-100, 76A-100

81-100, 89-100

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**Cv FACTORS**

**SERIES:**

- 76F, 77, 77AR, 77C, 77D SERIES

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**Cv FACTORS**

**SERIES:**

- 82-100/200, 83R-100/200/700, 86R-100/200/700/83-500/600, 86-500/600/900 SERIES

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**Cv FACTORS**

**SERIES:**

- 83A/83B, 86A/86B SERIES

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