

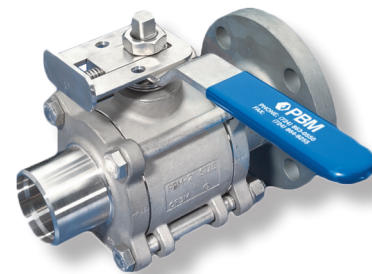
# PBM INDUSTRIAL 2-WAY BALL VALVES

## SP Series 5, 1/4" - 6"



### DESIGN FEATURES:

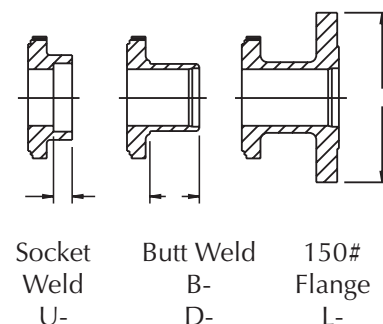
- Unique Adjust-O-Seal® feature allows in-line valve adjustment to compensate for normal wear on valve seats. Note: valves DO NOT have o-rings.
- Valve shall be a three-piece "swing-out" body design.
- Upstream and downstream bubble-tight sealing capability allows valve body cleaning, purging, and draining.
- Stem assembly accommodates PBM Direct Mount Actuation for accurate alignment and increased cycling life.
- Full port design
- Valves are full vacuum
- Valves shall be a non-firesafe design unless otherwise specified.
- Solder Joint and Sil-brazed ends are bronze only
- Socket weld ends for bronze valves must be 90/10 CuNi or 70/30 CuNi



| SPECIFICATIONS           | 2-Way Valves  |
|--------------------------|---|
| Sizes                    | 1/4" - 6" Series 5  |
| Material                 | 316/316L, Hastelloy™ C-276, Carbon Steel, Bronze Alloy 922, 89833 Bronze or other               |
| Temperatures             | Ambient for TFM™ to 400° F, S-TEF® to 450°F, PEEK to 500°F                                      |
| End Connections          | Flange, NPT, Buttweld for pipe, Sil-braze for pipe, Socket weld for pipe, Solder Joint for tube |
| Seats & Seals            | White TFM™ standard, others available   |
| Stem Packing Material    | TFM™ and S-TEF®   |
| Body Bolts & Nuts        | 18-8 Stainless Steel  |
| Maximum Working Pressure | up to 900 psig CWP depending on valve series, size and temperature                              |

| CV Values (gpm) |          |
|-----------------|----------|
| Size            | Series 5 |
| 1/4"            | 5*       |
| 3/8"            | 10*      |
| 1/2"            | 12       |
| 3/4"            | 42*      |
| 1"              | 73       |
| 1-1/2"          | 170      |
| 2"              | 360      |
| 2-1/2"          | 650      |
| 3"              | 935      |
| 4"              | 1,900    |
| 6"              | 4,800    |

| End Fitting Length or Diameter |      |      |       |
|--------------------------------|------|------|-------|
| Size                           | U-   | B-D- | L-    |
| 1/4", 3/8"                     | 0.41 | 1.50 | —     |
| 1/2"                           | 0.41 | 1.50 | 3.50  |
| 3/4"                           | 0.53 | 1.50 | 3.88  |
| 1"                             | 0.53 | 1.50 | 4.25  |
| 1-1/2"                         | 0.53 | 1.50 | 5.00  |
| 2"                             | 0.66 | 1.75 | 6.00  |
| 2-1/2"                         | 0.69 | 2.31 | 7.00  |
| 3"                             | 0.69 | 2.31 | 7.50  |
| 4"                             | 0.81 | 2.31 | 9.00  |
| 6"                             | NA   | 3.75 | 11.00 |



### How To Order:

| PRODUCT (1-2) |    | SIZE (5)          |   | END CONNECTIONS (7-8) |   | SEAT & SEAL (9) |                       | PURGES (10-11) |   | BALL & STEM (12) |   | OPERATOR (13-14) |                               | POLISH (15-16) |                                     |   |  |
|---------------|----|-------------------|---|-----------------------|---|-----------------|-----------------------|----------------|---|------------------|---|------------------|-------------------------------|----------------|-------------------------------------|---|--|
| SP            | H- | Cast 316/316L S/S | C | 1/2"                  | 5 | B-              | Sch. 40 Butt Weld     | G              | TFM™ Seats / Seals                          | --               | No Purge Port or Ball Option                        | -                | Standard Ball and Stem        | --             | W/ Standard Lever Handle            | - | 125 Ra ID Standard                     |
|               | HL | Cast 316L S/S     | D | 3/4"                  |   | D-              | Sch. 10 Butt Weld     | J              | TFM Seats / Seals<br>VTFE Cavity Fillers    | - 8              | Self Flushing Ball                                  | F                | Internal / External Grounding | 02             | W/O Handle<br>W/ Stem Actuator Prep | A | 20 Ra ID                               |
|               | C- | Hastelloy C-276   | E | 1"                    |   | J-              | Ext. Socket Weld      | H              | S-TEF® Seats / Seals                        | - V              | Slotted V-Ball                                      | G                | 17-4PH Stem                   | 04             | Locking Lever Handle                | C | 20 Ra ID /<br>32 Ra OD                 |
|               | Y- | Hastelloy C-22    | G | 1-1/2"                |   | L-              | 150# Flange*          | I              | S-TEF® Seats / Seals<br>VTFE Cavity Fillers | - W              | 30° V-Ball  |                  |                               | 08             | Gear Operator (Req'd for 6")        | F | 20 Ra ID after<br>Electro Polish       |
|               | P- | AL6XN             | H | 2"                    |   | M-              | 300# Flange*          |                |   | - X              | 45° V-Ball  |                  |                               | 18             | Extended Handle (1/2"- 4")          |   |  |
|               | N- | 922 Bronze        | J | 2-1/2"                |   | P-              | Male NPT              |                |   | - Y              | 60° V-Ball  |                  |                               | 20             | DA 80psig actuator                  |   |  |
|               | G- | 89833 Bronze      | K | 3"                    |   | Q-              | Female NPT            |                |   |                  |   |                  |                               | 27             | DA 60psig actuator                  |   | More polish available -<br>Contact PBM |
|               |    |                   | L | 4"                    |   | S-              | Sil-Braze for pipe    | K              | UHMWPE Seats / Seals                        |                  | Other Purge Port &<br>Ball Options -<br>Contact PBM |                  |                               | 34             | SR 80psig actuator                  |   |  |
|               |    |                   | M | 6"                    |   | T-              | Solder Joint for tube | L              | UHMWPE Seats / Seals<br>VTFE Cavity Fillers |                  |   |                  |                               | 41             | SR 60psig actuator                  |   |  |
|               |    |                   |   |                       |   | U-              | Socket Weld for pipe  |                |   |                  |   |                  |                               |                |                                     |   |  |

Other material options available - Contact PBM.

\* Flat faced for Bronze  
All others are raised face

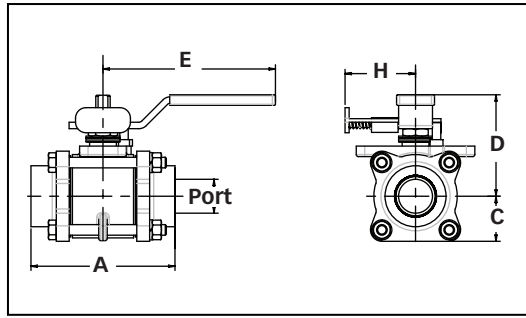
Other seat/seal options available - Contact PBM

Other operator options available - Contact PBM

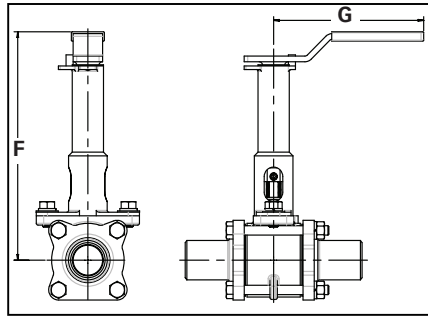
<http://pbmvalve.com/build-a-part-number>

# PBM Industrial 2-Way Ball Valves Manual

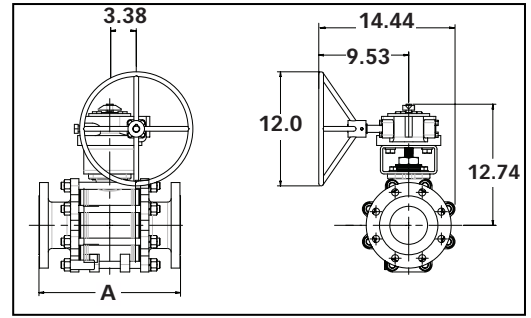
2-Way Valve with Locking Handle



2-Way Valve with Ext. Locking Handle



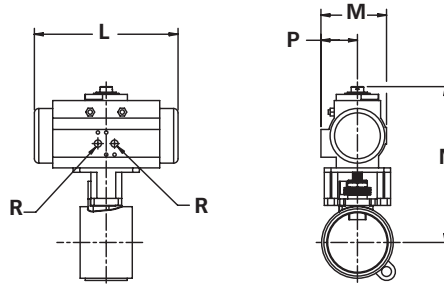
2-Way Valve with Gear Operator (6" only)



| Valve Size | Size Code | Port Dia. | A            |       |      | C<br>Q to Bottom<br>B- D- Q-<br>S- T- U | D<br>Q to Top<br>of Handle | E<br>Handle Length from Q | Ext. Locking Handle |       | Locking Handle |                    | Approx. Weights |           |
|------------|-----------|-----------|--------------|-------|------|---|----------------------------|---------------------------|---------------------|-------|----------------|--------------------|-----------------|-----------|
|            |           |           | Face to Face |       |      |   |                            |                           | F                   | G     | H              | Hole Dia. for Lock | B- D- Q- U-     | L-        |
|            |           |           | Q- U- S- T-  | B- D- | L-   |   |                            |                           |                     |       |                |                    |                 |           |
| 1/4", 3/8" | A,B       | 0.5       | 3.12         | 5.5   | NA   | 0.92                                    | 2.63                       | 4.15                      | 7.19                | 5.09  | 1.62           | .25                | 1.7 lbs.        | 4.0 lbs.  |
| 1/2"       | C         | 0.5       | 3.12         | 5.5   | 5.5  | 0.92                                    | 2.63                       | 4.15                      | 7.19                | 5.09  | 1.62           | .25                | 1.7 lbs.        | 4.0 lbs.  |
| 3/4"       | D         | 0.75      | 3.44         | 5.5   | 5.8  | 1                                       | 2.78                       | 4.15                      | 7.34                | 5.09  | 1.62           | .25                | 2.0 lbs.        | 5.2 lbs.  |
| 1"         | E         | 1         | 4.25         | 5.99  | 6.5  | 1.33                                    | 3.03                       | 5.09                      | 7.62                | 5.09  | 2.08           | .28                | 4.5 lbs.        | 8.7 lbs.  |
| 1-1/2"     | G         | 1.5       | 5.5          | 7.5   | 8    | 1.78                                    | 4.1                        | 8.68                      | 9.45                | 8.00  | 2.58           | .38                | 10.2 lbs.       | 17.4 lbs. |
| 2"         | H         | 2         | 6            | 8     | 9.8  | 2.15                                    | 4.41                       | 8.68                      | 9.76                | 8.00  | 2.58           | .38                | 15.4 lbs.       | 26.5 lbs. |
| 2-1/2"     | J         | 2.5       | 8            | 11.5  | 11.5 | 2.79                                    | 6.45                       | 12.44                     | 11.36               | 12.06 | 3.47           | .38                | 36.0 lbs.       | 53.5 lbs. |
| 3"         | K         | 3         | 9            | 13.5  | 12.8 | 3.14                                    | 6.78                       | 12.44                     | 11.69               | 12.06 | 3.47           | .38                | 48 lbs.         | 68 lbs.   |
| 4"         | L         | 4         | 12           | 16    | 15   | 4.91                                    | 7.34                       | 24.4                      | 13.97               | 24.06 | NA             | .44                | 109 lbs.        | 157 lbs.  |
| 6"*        | M         | 6         | NA           | 22    | 20   | 7.25                                    | NA                         | NA                        | NA                  | NA    | NA             | NA                 | 320 lbs.*       | 357 lbs.* |

\*Weight with gear operator.

Unit of Measure = inches  
Dimensions based on actuators used with TFM™ seats.



| Size   | 80 PSI Double Acting |      |       |      |     | 60 PSI Double Acting |      |       |      |     | 80 PSI Spring Return |      |       |      |     | 60 PSI Spring Return |       |       |      |     |
|--------|----------------------|------|-------|------|-----|----------------------|------|-------|------|-----|----------------------|------|-------|------|-----|----------------------|-------|-------|------|-----|
|        | L                    | M    | N     | P    | R   | L                    | M    | N     | P    | R   | L                    | M    | N     | P    | R   | L                    | M     | N     | P    | R   |
| 1/2"   | 5.55                 | 2.8  | 5.84  | 1.61 | 1/8 | 5.55                 | 2.8  | 5.84  | 1.61 | 1/8 | 5.55                 | 2.8  | 5.84  | 1.61 | 1/8 | 6.46                 | 3.17  | 6.29  | 1.77 | 1/8 |
| 3/4"   | 5.55                 | 2.8  | 5.99  | 1.61 | 1/8 | 5.55                 | 2.8  | 5.99  | 1.61 | 1/8 | 6.46                 | 3.17 | 6.44  | 1.77 | 1/8 | 6.46                 | 3.17  | 6.44  | 1.77 | 1/8 |
| 1"     | 5.55                 | 2.8  | 6.64  | 1.61 | 1/8 | 5.55                 | 2.8  | 6.64  | 1.61 | 1/8 | 8.27                 | 3.72 | 7.8   | 2.07 | 1/8 | 8.27                 | 3.72  | 7.80  | 2.07 | 1/8 |
| 1-1/2" | 6.46                 | 3.17 | 8.39  | 1.77 | 1/8 | 8.27                 | 3.72 | 9.1   | 2.07 | 1/8 | 10.83                | 4.84 | 10.15 | 2.68 | 1/4 | 10.83                | 4.84  | 10.15 | 2.68 | 1/4 |
| 2"     | 8.27                 | 3.72 | 9.41  | 2.07 | 1/8 | 8.27                 | 3.72 | 9.41  | 2.07 | 1/8 | 10.83                | 4.84 | 10.46 | 2.68 | 1/4 | 13.11                | 5.39  | 11.82 | 2.87 | 1/4 |
| 2-1/2" | 13.11                | 5.39 | 13.48 | 2.87 | 1/4 | 13.11                | 5.39 | 13.48 | 2.87 | 1/4 | 13.11                | 5.39 | 13.48 | 2.87 | 1/4 | 14.65                | 5.83  | 13.96 | 3.15 | 1/4 |
| 3"     | 13.11                | 5.39 | 13.81 | 2.87 | 1/4 | 13.11                | 5.39 | 13.81 | 2.87 | 1/4 | 14.65                | 5.83 | 14.29 | 3.15 | 1/4 | 17.15                | 6.46  | 15.18 | 3.44 | 1/4 |
| 4"     | 17.15                | 6.46 | 17.34 | 3.44 | 1/4 | 17.15                | 6.46 | 17.34 | 3.44 | 1/4 | 19.69                | 7.36 | 18.28 | 3.94 | 1/4 | 19.69                | 7.36  | 18.28 | 3.94 | 1/4 |
| 6"     | 22.78                | 8.58 | 24.13 | 4.29 | 1/4 | 22.78                | 8.58 | 24.13 | 4.29 | 1/4 | 22.78                | 8.58 | 24.13 | 4.29 | 1/4 | 26.46                | 11.42 | 28.89 | 5.71 | 1/4 |



<http://www.pbmvalve.com/valves/2-way-ball-valve-industrial>

<http://pbmvalve.com/maintenance-instructions>

[www.PBMValve.com](http://www.PBMValve.com)

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