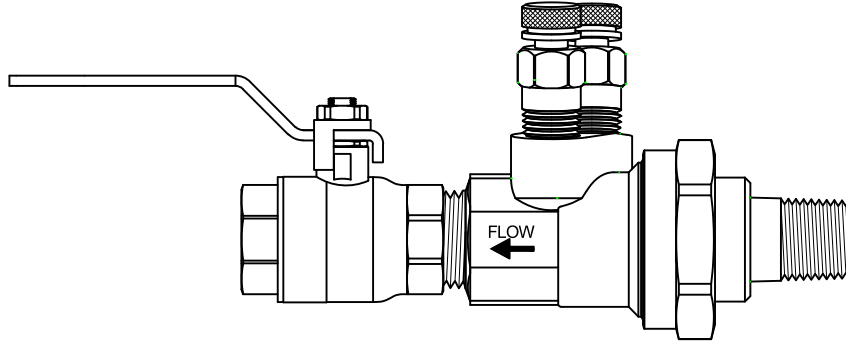






## CBV Series Specifications

### Combination Ball Valve/Venturi



**PRODUCT DESCRIPTION:** The CBV flow balancing brass venturi provides highly accurate flow measurement capabilities. The efficient low loss venturi design provides effective flow balancing with minimal system pressure loss. The CBV includes a brass ball valve with memory stop, and a venturi with an integral union. The CBV comes standard with two pressure/temperature ports for instrument readings. The union side incorporates an o-ring for maximum sealing protection. The union connection options include FNPT, MNPT, SWT, and a variety of reductions.

**NOTE:** If the same size male, female, sweat, or a reducing male tail piece is used, no extra pipe diameter is required.

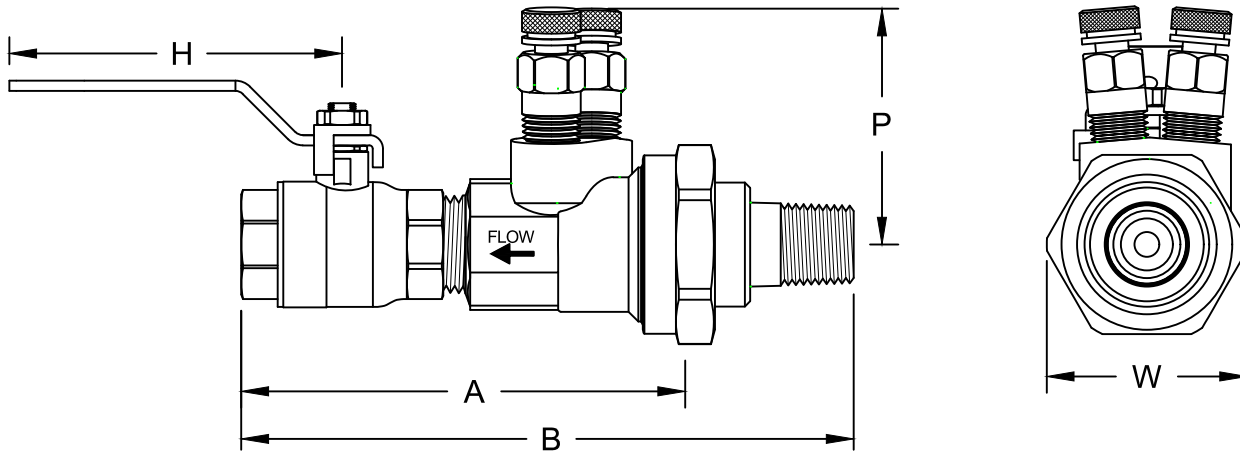
| RECOMMENDED FLOW RANGES (GPM)  |      |         |   |        | STANDARD MATERIAL SPECIFICATIONS |  |
|--|------|---------|---|--------|----------------------------------|--|
| Model  | Size | Minimum | @ 100"  | @ 200" |                                  |  |
| CBV050L  | ½"   | 0.3     | 1.2   | 1.8    | Venturi                          | Cast Brass ASTM B763-08A                 |
| CBV050H  | ½"   | 0.8     | 2.9   | 4.2    | Ball Valve                       | Forged Brass ASTM B283-06                |
| CBV075UL   | ¾"   | 0.3     | 1.2   | 1.8    | O-ring                           | EPDM                                     |
| CBV075L  | ¾"   | 0.8     | 2.9   | 4.2    | Tail Piece                       | Brass ASTM B124-09, B228-06, or B763-08A |
| CBV075H  | ¾"   | 1.8     | 6.1   | 8.9    | Union Nut                        | Brass ASTM B455                          |
| CBV100   | 1"   | 2.8     | 9.8   | 14.3   | PT Seal                          | EPDM Dual Durometer Core                 |
| CBV125   | 1¼"  | 4.8     | 16.4  | 24.0   | Handle                           | Chrome Plated Steel                      |
| CBV150   | 1½"  | 7.5     | 24.4  | 35.5   | Memory Stop                      | 302 Stainless Steel                      |
| CBV200   | 2"   | 12.0    | 40.8  | 69.3   | Stem                             | Brass ASTM B124-09 - Blow-Out Proof      |
|  |      |         |   |        | Ball                             | Chrome Plated Brass                      |
|  |      |         |   |        | Ball Seat                        | Teflon                                   |
|  |      |         |   |        | Packing Nut                      | Brass ASTM B124-09, B228-06, or B763-08A |
|  |      |         |   |        | Packing Gland                    | Teflon                                   |
| <b>STANDARD OPERATING SPECIFICATIONS</b>   |      |         |   |        |                                  |  |
| Maximum Working Pressure: 600 WOG / CWP  |      |         | Maximum Operating Temperature: -22° F to 325° F |        |                                  |  |
| Specification information is provided to assist and is given without obligation or warranty. The Company reserves the right to make changes in design, materials, and/or specifications without notice or liability. |      |         |   |        |                                  |  |

**PRODUCT SPECIFICATIONS:**

- Devices shall have a 15° regain chamber for optimal pressure regain and minimal permanent pressure drop
- Venturi tube shall be independent of the throttling valve
- Venturi tube shall include proper pipe diameters for optimal accuracy
- Valve shall be designed with memory stop to limit flow once balanced
- The Model CBV shall have an accuracy rating of:
  - ±1% between 10" W.C. and 70" W.C.
  - ±3% between 5" W.C. and 150" W.C.
  - ±5% less than 5" W.C. and over 150" W.C.



## CBV Series Dimensions Combination Ball Valve/Venturi



| Model     | Size | A   |     | H   | P   | W   | Cv ** |
|-----------|------|-----|-----|-----|-----|-----|-------|
|           |      | FPT | SWT |     |     |     |       |
| CBV050L   | ½"   | 4.5 | 4.8 | 3.7 | 2.1 | 1.6 | 1.1   |
| CBV050H   | ½"   | 4.5 | 4.8 | 3.7 | 2.1 | 1.6 | 3.8   |
| CBV075UL* | ¾"   | 4.7 | 5.2 | 3.8 | 2.1 | 1.6 | 1.1   |
| CBV075L   | ¾"   | 4.7 | 5.2 | 3.8 | 2.1 | 1.8 | 2.3   |
| CBV075H   | ¾"   | 4.7 | 5.2 | 3.8 | 2.1 | 1.8 | 8.0   |
| CBV100    | 1"   | 5.1 | 5.7 | 5.0 | 2.2 | 2.1 | 13.4  |
| CBV125    | 1¼"  | 5.8 | 6.5 | 5.0 | 2.4 | 2.8 | 25    |
| CBV150    | 1½"  | 7.0 | 8.0 | 6.3 | 2.7 | 3.1 | 31    |
| CBV200    | 2"   | 7.6 | 8.7 | 6.2 | 3.0 | 3.8 | 87    |

| Size    | Tail Piece | B    | Weight | Size    | Tail Piece | B    | Weight |
|---------|------------|------|--------|---------|------------|------|--------|
| ½" SWT  | - M        | 6.2  | 1.4    | ½" FPT  | - M        | 6.0  | 1.4    |
|         | ½" - F     | 5.5  | 1.3    |         | ½" - F     | 5.1  | 1.3    |
|         | - S        | 5.5  | 1.3    |         | - S        | 5.1  | 1.3    |
| ¾" SWT  | - M        | 6.7  | 1.8    | ¾" FPT  | - M        | 6.5  | 1.8    |
|         | ½" - F     | 6.3  | 1.8    |         | ½" - F     | 5.8  | 1.8    |
|         | - S        | 6.0  | 1.7    |         | - S        | 5.5  | 1.7    |
|         | - M        | 6.8  | 1.8    |         | - M        | 6.5  | 1.8    |
|         | ¾" - F     | 6.0  | 1.7    |         | ¾" - F     | 5.5  | 1.8    |
|         | - S        | 6.0  | 1.7    |         | - S        | 5.5  | 1.7    |
| 1" SWT  | ½" - M     | 7.7  | 2.7    | 1" FPT  | ½" - M     | 7.1  | 2.7    |
|         | ¾" - M     | 7.7  | 2.7    |         | ¾" - M     | 7.1  | 2.7    |
|         | - M        | 7.7  | 2.7    |         | - M        | 7.0  | 2.7    |
|         | 1" - F     | 6.7  | 2.5    |         | 1" - F     | 6.0  | 2.5    |
| - S     | 6.7        | 2.5  | - S    | 6.0     | 2.5        |      |        |
| 1¼" SWT | ½" - M     | 8.1  | 3.9    | 1¼" FPT | ½" - M     | 7.5  | 3.9    |
|         | ¾" - M     | 8.3  | 4.0    |         | ¾" - M     | 7.7  | 4.0    |
|         | 1" - M     | 8.3  | 4.1    |         | 1" - M     | 7.7  | 4.1    |
|         | - M        | 8.5  | 4.2    |         | - M        | 7.7  | 4.1    |
|         | 1¼" - F    | 7.5  | 3.9    |         | 1¼" - F    | 6.7  | 3.8    |
|         | - S        | 7.5  | 3.7    |         | - S        | 7.0  | 3.7    |
| 1½" SWT | ¾" - M     | 9.7  | 5.6    | 1½" FPT | ¾" - M     | 9.3  | 5.7    |
|         | 1" - M     | 10.7 | 6.1    |         | 1" - M     | 9.5  | 6.0    |
|         | 1¼" - M    | 10.7 | 6.2    |         | 1¼" - M    | 9.5  | 6.1    |
|         | - M        | 10.5 | 6.0    |         | - M        | 9.5  | 6.0    |
|         | 1½" - F    | 9.1  | 5.8    |         | 1½" - F    | 8.2  | 5.7    |
|         | - S        | 9.1  | 5.6    |         | - S        | 8.2  | 5.6    |
| 2" SWT  | 1" - M     | 11.7 | 9.3    | 2" FPT  | 1" - M     | 10.5 | 9.1    |
|         | 1¼" - M    | 11.7 | 8.9    |         | 1¼" - M    | 10.5 | 8.6    |
|         | 1½" - M    | 11.7 | 8.9    |         | 1½" - M    | 10.5 | 8.7    |
|         | - M        | 11.7 | 9.0    |         | - M        | 10.5 | 8.8    |
|         | 2" - F     | 9.8  | 8.3    |         | 2" - F     | 8.7  | 8.1    |
|         | - S        | 10.1 | 8.0    |         | - S        | 9.0  | 7.8    |

Note: Dimensions listed do not include ProPress or any other special fittings or adapters. All dimensions, weights, and materials are subject to minor variations. Consult with factory for confirmation of dimensions, weights, and material specifications.

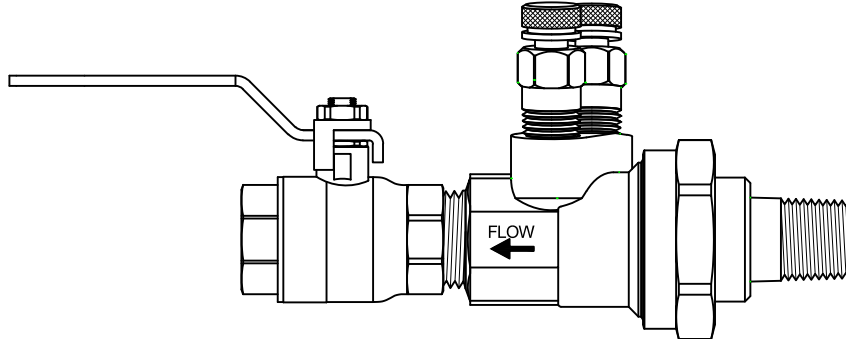
\* CBV075UL Tailpiece size is ½"

\*\* Cv = Estimated with Union connection same as inlet, no reductions.

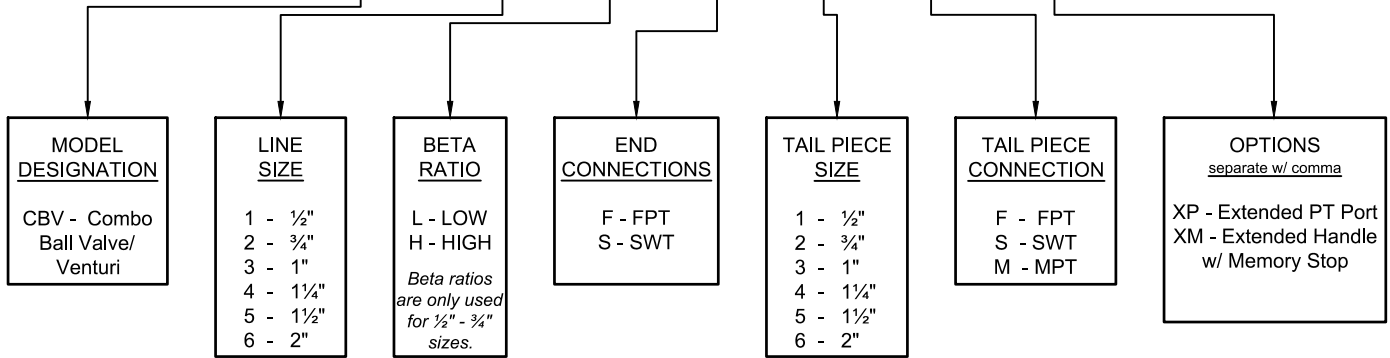
Note: Sweat size listed is nominal and will differ from the actual, measurable size. Not all available tailpiece connections are listed, please consult with factory for additional information.



**CBV Series Submittal**  
Combination Ball Valve/Venturi



**CBV - X - X - X - X - X - XX,**

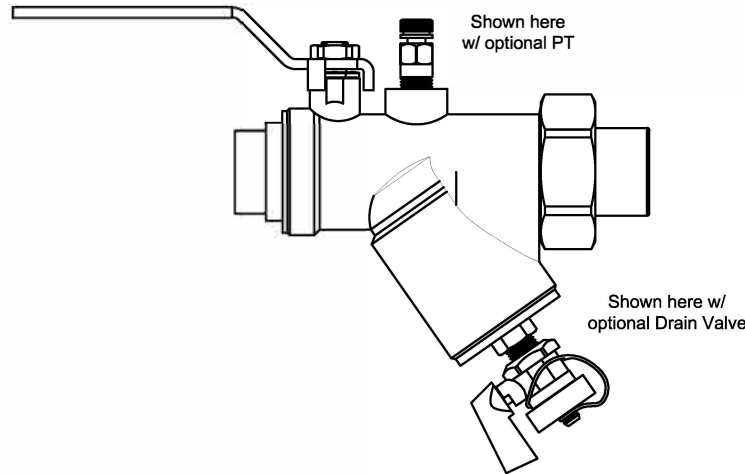


| JOB NAME:                |                         | REPRESENTATIVE: |          |
|--------------------------|-------------------------|-----------------|----------|
| ENGINEER:                |                         | REF/PO#:        | DATE:    |
| CONTRACTOR:              |                         | SUBMITTED BY:   | DATE:    |
| PART # (See table above) | TAGGING/JOB INFORMATION | GPM             | QUANTITY |
|                          |                         |                 |          |
|                          |                         |                 |          |
|                          |                         |                 |          |
|                          |                         |                 |          |
|                          |                         |                 |          |
|                          |                         |                 |          |



## IVS Series Specifications

### Integral Ball Valve/Wye Strainer/Union



**PRODUCT DESCRIPTION:** The IVS is an integral ball valve, wye-strainer and union. The IVS uses a full-port ball valve for positive shut-off and offers two (2) predrilled 1/4" taps for accessories to be installed. The strainer has a 20-mesh stainless steel screen to aid in debris removal. The strainer cap has a 1/4" tap for a hose-end drain valve. The ball valve has a PTFE packing gland, brass packing nut, and blow-out proof double o-ring stem seal. The fixed end connections may be FNPT or SWT. The union side connections include MNPT, FNPT, SWT, and a variety of reductions.

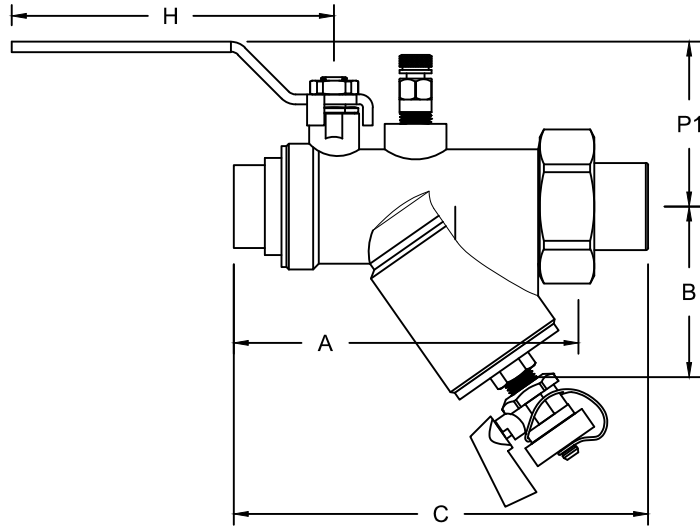
| STANDARD MATERIAL SPECIFICATIONS  |  | PORT LOCATIONS |
|---|--|----------------|
| Body  | Forged Brass ASTM B283-06, or cast Brass ASTM B763-08A |                |
| O-Ring  | EPDM   |                |
| Tail Piece  | Brass ASTM B124-09, B228-06, or B763-08a               |                |
| Union Nut   | Brass ASTM B455  |                |
| PT Seal   | EPDM Dual Durometer Core                               |                |
| Handle  | Chrome Plated Steel                                    |                |
| Stem  | Brass ASTM B124-09 - Blow-Out Proof                    |                |
| Ball  | Chrome Plated Brass - Full Port                        |                |
| Ball Seat   | Teflon   |                |
| Packing Gland   | Teflon   |                |
| Packing Nut   | Brass ASTM B124-09, B228-06, or B763-08a               |                |
| STANDARD OPERATING SPECIFICATIONS   |  |                |
| Maximum Working Pressure:   | 600 WOG / CWP  |                |
| Maximum Operating Temperature:  | 40° F to 250° F  |                |
| <p>Specification information is provided to assist and is given without obligation or warranty. The Company reserves the right to make changes in design, materials, and/or specifications without notice or liability.</p> |  |                |

**PRODUCT SPECIFICATIONS:**

- Device shall have a full port isolation valve
- Device shall have a 20 mesh accessible strainer sleeve
- Device shall have a blow down for debris removal
- Device shall have a functional by-pass
- The strainer screen shall have a minimum 8:1 ratio of total area against the internal pipe diameter



IVS Series Dimensions  
Integral Ball Valve/Wye Strainer/Union



| Model    | Size | A   | B   | H   | P1  | * R  |
|----------|------|-----|-----|-----|-----|------|
| IVS1-SWT | 1/2" | 4.0 | 2.0 | 4.2 | 2.0 | 21:1 |
| IVS2-SWT | 3/4" | 4.6 | 2.3 | 4.2 | 2.2 | 11:1 |
| IVS3-SWT | 1"   | 5.8 | 2.7 | 4.2 | 2.3 | 11:1 |
| IVS1-FPT | 1/2" | 3.7 | 2.0 | 4.2 | 2.0 | 21:1 |
| IVS2-FPT | 3/4" | 4.1 | 2.3 | 4.2 | 2.2 | 11:1 |
| IVS3-FPT | 1"   | 5.0 | 2.7 | 4.2 | 2.3 | 11:1 |

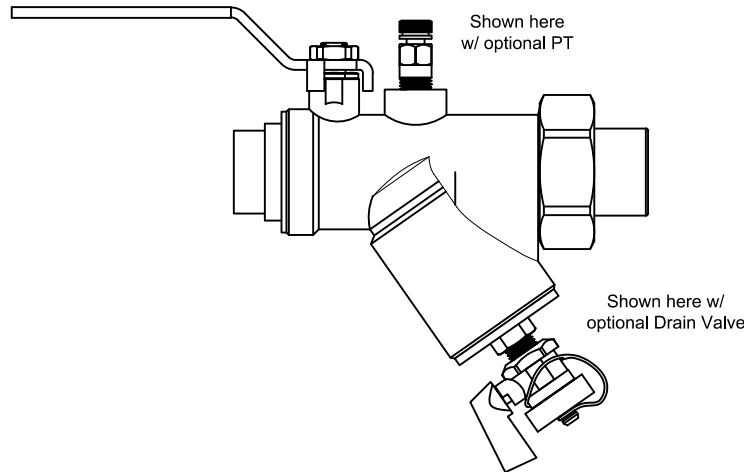
Note: Dimensions above do not include ProPress or any other special fittings or adapters. All dimensions, weights, and materials are subject to minor variations. Consult with factory for confirmation of dimensions, weights, and material specifications.

\* R = Ratio of screen surface area to cross-sectional pipe diameter

| Size     | Tail Piece | C   | Weight | Size     | Tail Piece | C   | Weight |
|----------|------------|-----|--------|----------|------------|-----|--------|
| 1/2" SWT | - M        | 5.5 | 1.8    | 1/2" FPT | - M        | 5.2 | 1.6    |
|          | - F        | 4.6 | 1.5    |          | - F        | 4.3 | 1.5    |
|          | - S        | 4.6 | 1.5    |          | - S        | 4.3 | 1.5    |
| 3/4" SWT | - M        | 6.1 | 2.0    | 3/4" FPT | - M        | 5.6 | 2.1    |
|          | - F        | 5.7 | 2.1    |          | - F        | 5.1 | 2.2    |
|          | - S        | 5.2 | 2.0    |          | - S        | 4.7 | 2.0    |
|          | - M        | 6.2 | 2.1    |          | - M        | 5.7 | 2.1    |
|          | - F        | 5.3 | 2.0    |          | - F        | 4.8 | 2.0    |
|          | - S        | 5.5 | 2.0    |          | - S        | 4.8 | 2.0    |
| 1" SWT   | 1/2" - M   | 7.8 | 3.0    | 1" FPT   | 1/2" - M   | 7.0 | 2.9    |
|          | 3/4" - M   | 7.8 | 3.0    |          | 3/4" - M   | 7.0 | 2.9    |
|          | - S        | 6.6 | 2.7    |          | - S        | 5.8 | 2.6    |
|          | - M        | 7.7 | 3.0    |          | - M        | 7.0 | 2.9    |
|          | 1" - F     | 6.7 | 2.8    |          | 1" - F     | 6.0 | 2.7    |
|          | - S        | 6.7 | 2.7    |          | - S        | 6.0 | 2.7    |



**IVS Series Submittal**  
**Integral Ball Valve/Wye Strainer/Union**



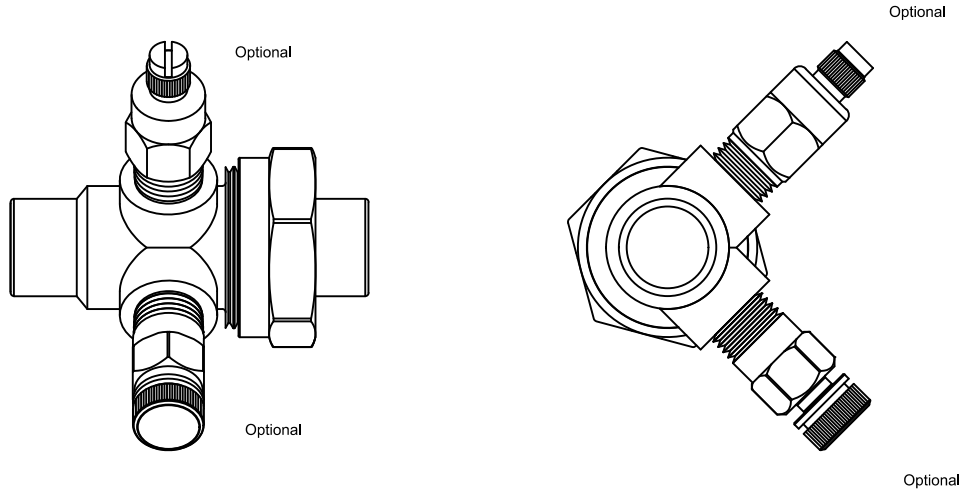
**IVS - X - X - X - X - XX - XX**

| MODEL DESIGNATION             | LINE SIZE                      | END CONNECTION     | TAIL PIECE SIZE                | TAIL PIECE CONNECTION         | FIRST ACCESSORY OPTION   | SECOND ACCESSORY OPTION  |
|-------------------------------|--------------------------------|--------------------|--------------------------------|-------------------------------|--|--|
| IVS - Integral Strainer Valve | 1 - 1/2"<br>2 - 3/4"<br>3 - 1" | F - FPT<br>S - SWT | 1 - 1/2"<br>2 - 3/4"<br>3 - 1" | F - FPT<br>S - SWT<br>M - MPT | XH - Extended Handle<br>PT - Press/Temp Port<br>XP - Extended PT<br>AV - Manual Air Vent<br>AX - Extended AV<br>H1 - 1/4" Hose-end Drain Valve<br>HX - 1/4" Extended Drain Valve | XH - Extended Handle<br>PT - Press/Temp Port<br>XP - Extended PT<br>AV - Manual Air Vent<br>AX - Extended AV<br>H1 - 1/4" Hose-end Drain Valve<br>HX - 1/4" Extended Drain Valve |

| JOB NAME:                |                         | CUSTOMER:     |          |
|--------------------------|-------------------------|---------------|----------|
| ENGINEER:                |                         | REF/PO#:      | DATE:    |
| CONTRACTOR:              |                         | SUBMITTED BY: | DATE:    |
| PART # (See table above) | TAGGING/JOB INFORMATION |               | QUANTITY |
|                          |                         |               |          |
|                          |                         |               |          |
|                          |                         |               |          |
|                          |                         |               |          |
|                          |                         |               |          |



## AU Series Specifications Accessory Union



Product Description: The AU brass accessory union provides for component isolation. Port section contains two 1/4" ports that come predrilled from the factory and are positioned 90° apart. The union side incorporates an o-ring for maximum sealing protection. Accessory union comes standard with 1/4" plugs installed in the ports. Union side and port side connections available in NPTM, NPTF, and SWT. Rated at 600 WOG @ -22°F to 325°F.

| STANDARD MATERIAL SPECIFICATIONS  |  |
|---|--|
| Accessory Union   | Forged Brass ASTM B283-06                |
| O-Ring  | EPDM                                     |
| Tail Piece  | Brass ASTM B124-09, B228-06, or B763-08A |
| <p>Specification information is provided to assist and is given without obligation or warranty. The Company reserves the right to make changes in design, materials, and/or specifications without notice or liability.</p> |  |

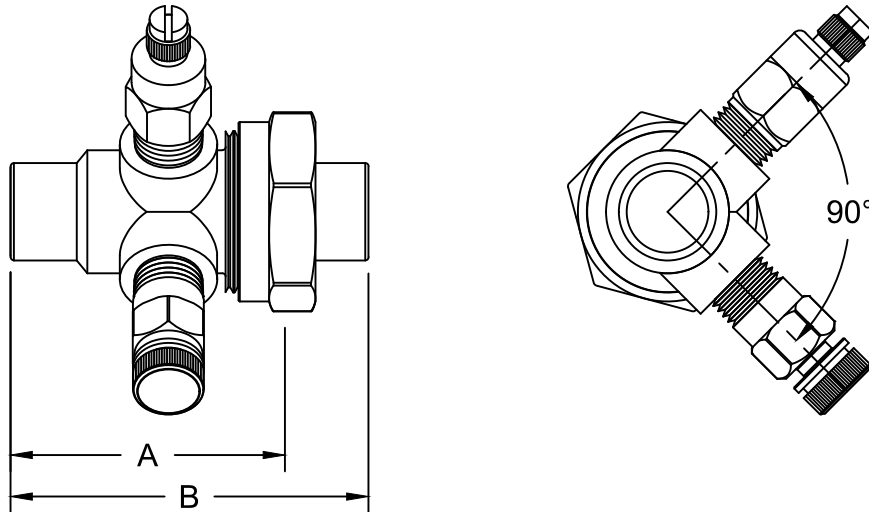
### PRODUCT SPECIFICATIONS:

- 1/4" ports shall be located 90° distal on a rotational axis
- Integrated ports shall provide functionality for numerous options





## AU Series Dimensions Accessory Union

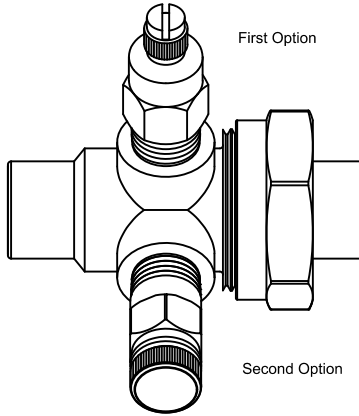


| MODEL | SIZE              | A   | LENGTH "B" / WEIGHT OF PRO-AU AND TAIL PIECE CONNECTION |     |                   |     |                   |     |     |     |     |     |     |     |
|-------|-------------------|-----|---|-----|-------------------|-----|-------------------|-----|-----|-----|-----|-----|-----|-----|
|       |                   |     | $\frac{1}{2}$ " M                                       | lbs | $\frac{1}{2}$ " S | lbs | $\frac{1}{2}$ " F | lbs |     |     |     |     |     |     |
| AU1M  | $\frac{1}{2}$ "   | 2.7 | 4.2   | 0.6 | 3.3               | 0.6 | 3.3               | 0.6 |     |     |     |     |     |     |
| AU1S  |                   | 2.1 | 3.7   | 0.5 | 2.8               | 0.4 | 2.8               | 0.5 |     |     |     |     |     |     |
| AU1F  |                   | 2.0 | 3.6   | 0.6 | 2.7               | 0.5 | 2.7               | 0.5 |     |     |     |     |     |     |
| AU2M  | $\frac{3}{4}$ "   | 2.5 | 4.0   | 0.7 | 3.2               | 0.6 | 3.6               | 0.8 | 4.2 | 0.7 | 3.2 | 0.6 | 3.3 | 0.7 |
| AU2S  |                   | 2.1 | 3.7   | 0.6 | 2.9               | 0.5 | 3.3               | 0.6 | 3.8 | 0.6 | 2.9 | 0.5 | 2.9 | 0.6 |
| AU2F  |                   | 2.1 | 3.6   | 0.7 | 2.8               | 0.6 | 3.2               | 0.8 | 3.8 | 0.7 | 2.8 | 0.6 | 2.9 | 0.7 |
| AU3M  | 1"                | 2.6 | 4.6   | 1.1 | 4.6               | 1.1 | 3.4               | 0.9 | 4.6 | 1.2 | 3.6 | 0.9 | 3.5 | 1.0 |
| AU3S  |                   | 2.4 | 4.5   | 1.0 | 4.5               | 1.0 | 3.3               | 0.7 | 4.5 | 1.0 | 3.5 | 0.8 | 3.4 | 0.8 |
| AU3F  |                   | 2.1 | 4.1   | 1.0 | 4.1               | 1.1 | 3.0               | 0.8 | 4.1 | 1.1 | 3.3 | 0.9 | 3.1 | 0.9 |
| AU4M  | 1 $\frac{1}{4}$ " | 3.0 | 4.7   | 1.7 | 5.0               | 1.8 | 5.0               | 1.9 | 5.0 | 1.9 | 4.1 | 1.5 | 4.0 | 1.6 |
| AU4S  |                   | 3.0 | 4.7   | 1.5 | 4.9               | 1.7 | 4.9               | 1.7 | 5.0 | 1.8 | 4.1 | 1.4 | 4.0 | 1.5 |
| AU4F  |                   | 2.3 | 4.1   | 1.6 | 4.3               | 1.8 | 4.3               | 1.8 | 4.4 | 1.9 | 3.4 | 1.5 | 3.3 | 1.6 |
| AU5M  | 1 $\frac{1}{2}$ " | 3.0 | 4.9   | 2.3 | 5.5               | 2.6 | 5.5               | 2.7 | 5.5 | 2.5 | 4.2 | 2.1 | 4.3 | 2.3 |
| AU5S  |                   | 3.0 | 4.9   | 2.2 | 5.5               | 2.6 | 5.5               | 2.6 | 5.5 | 2.5 | 4.2 | 2.0 | 4.2 | 2.2 |
| AU5F  |                   | 2.7 | 4.6   | 2.3 | 5.1               | 2.7 | 5.1               | 2.7 | 5.1 | 2.6 | 3.9 | 2.2 | 3.9 | 2.3 |
| AU6M  | 2"                | 3.4 | 6.2   | 4.3 | 6.2               | 4.0 | 6.2               | 4.0 | 6.2 | 4.1 | 4.8 | 3.1 | 4.6 | 3.4 |
| AU6S  |                   | 2.8 | 5.8   | 4.0 | 5.8               | 3.6 | 5.8               | 3.6 | 5.8 | 3.7 | 4.2 | 2.7 | 4.0 | 3.0 |
| AU6F  |                   | 2.8 | 5.8   | 4.5 | 5.7               | 4.2 | 5.7               | 4.1 | 5.8 | 4.2 | 4.2 | 3.2 | 3.9 | 3.5 |

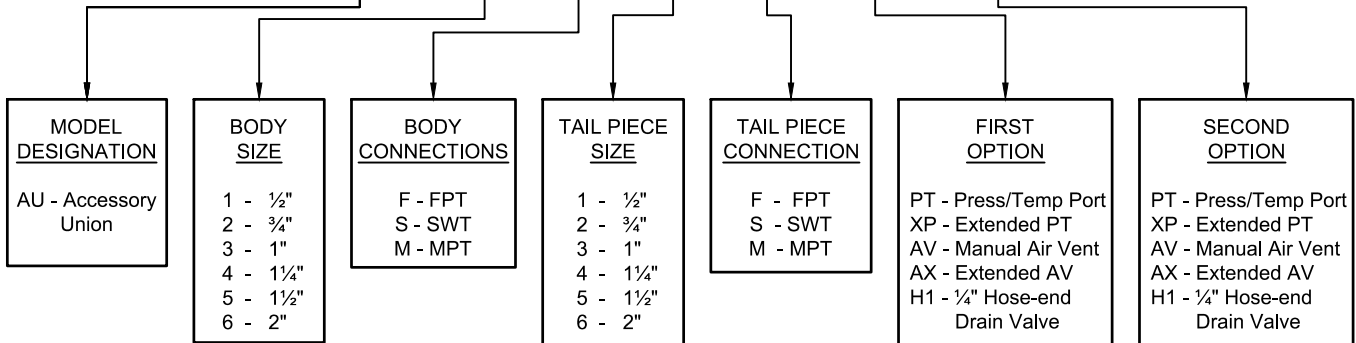
*Note: Dimensions listed above do not include ProPress or any other special fittings or adapters. All dimensions, weights, and materials are subject to minor variations. Consult with factory for confirmation of dimensions, weights, and material specifications. Sweat size listed is nominal and will differ from the actual, measurable size.*



**AU Series Submittal**  
**Accessory Union**



**AU - X - X - X - X - XX - XX**



|                                       |  |                 |
|---------------------------------------|--|-----------------|
| JOB NAME:<br>ENGINEER:<br>CONTRACTOR: | REPRESENTATIVE:<br>REF/PO#:<br>SUBMITTED BY: | DATE:<br>DATE:  |
| <b>PART # (See table above)</b>       | <b>TAGGING/JOB INFORMATION</b>               | <b>QUANTITY</b> |
|                                       |  |                 |
|                                       |  |                 |
|                                       |  |                 |
|                                       |  |                 |
|                                       |  |                 |