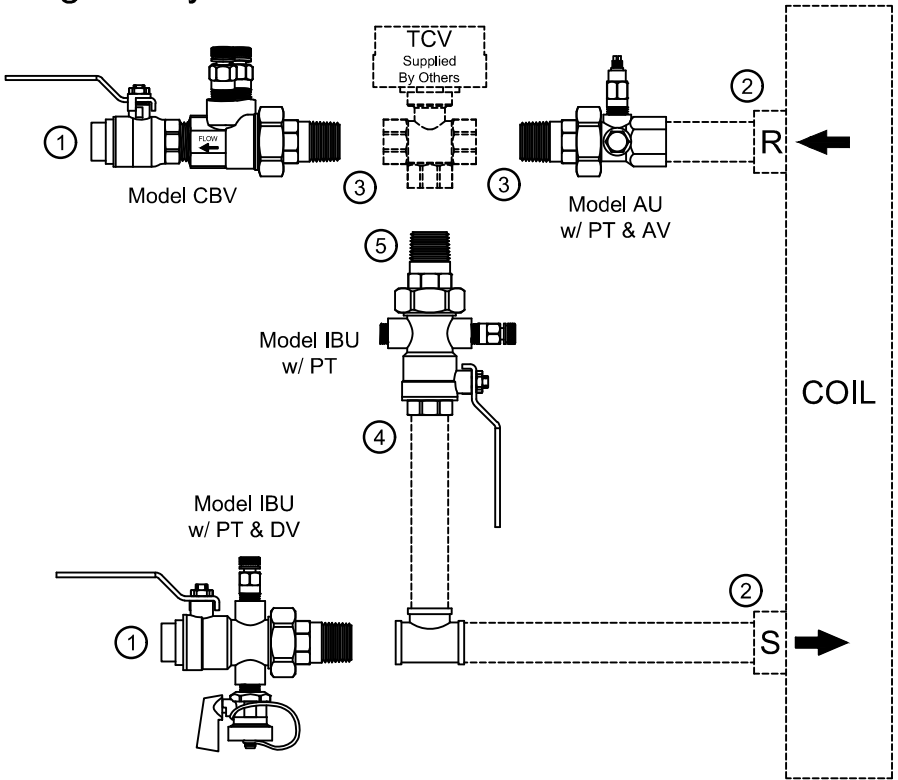


# PRO Hydronic Specialties

## Manual Balancing 3-Way Kit - V3BB Submittal

	#	Size	Connection Type
Runout	1		
Coil	2		
TCV	3		MPT
Bypass Out	4		
Bypass In	5		
<i>Services provided for additional fee:</i>			
Extended Components	<input type="checkbox"/>	Yes	<input type="checkbox"/> No
Factory Mounted TCV	<input type="checkbox"/>	Yes	<input type="checkbox"/> No
Stainless Steel Trim	<input type="checkbox"/>	Yes	<input type="checkbox"/> No
Bag N Tag	<input type="checkbox"/>	Yes	<input type="checkbox"/> No

\* 3/8" Coil Size available in SWT ONLY.  
 \*\* ProPress fittings supplied for additional fee.



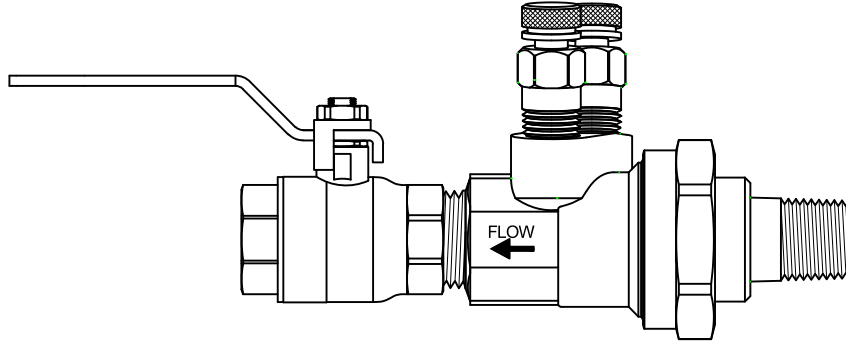
**PRODUCT DESCRIPTION:** The Manual Balancing Valve Kit is a packaged and partially preassembled grouping of components required to complete installation of a terminal unit. Temperature control valves, piping, and coils are supplied "by others". Mounting and testing of the customer supplied TCV is available at an additional charge.

QUANTITY	GPM	TAGGING INFORMATION			
JOB NAME		REPRESENTATIVE			
ENGINEER		REF/PO#		DATE	
CONTRACTOR		SUBMITTED BY		DATE	



## 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.

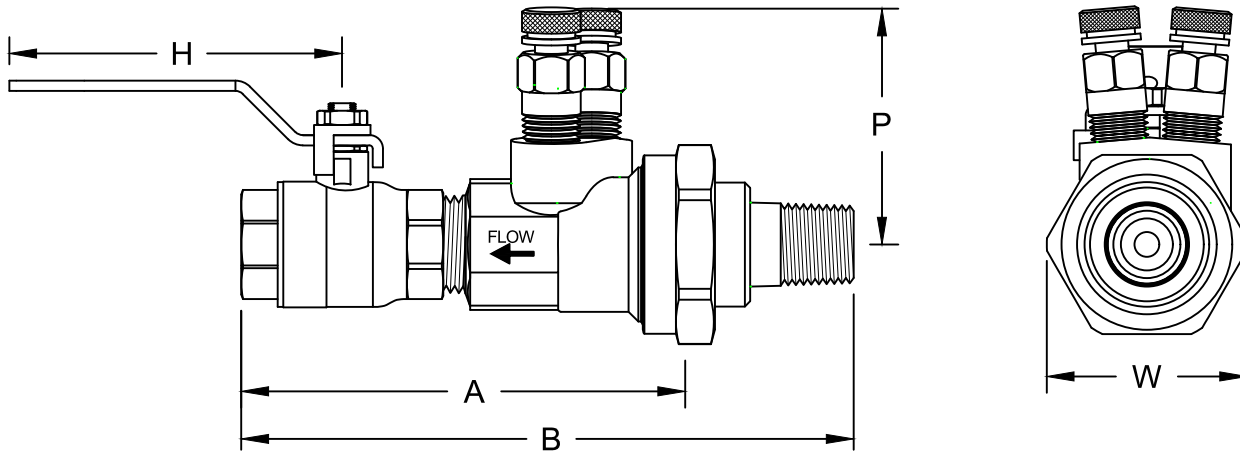
RECOMMENDED FLOW RANGES (GPM)					STANDARD MATERIAL SPECIFICATIONS	
Model	Size	Minimum	@ 100"	@ 200"		
CBV050L	½"	0.3	1.2	1.8	Venturi	Cast Brass ASTM B763-08A
CBV050H	½"	0.8	2.9	4.2	Ball Valve	Forged Brass ASTM B283-06
CBV075UL	¾"	0.3	1.2	1.8	O-ring	EPDM
CBV075L	¾"	0.8	2.9	4.2	Tail Piece	Brass ASTM B124-09, 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.

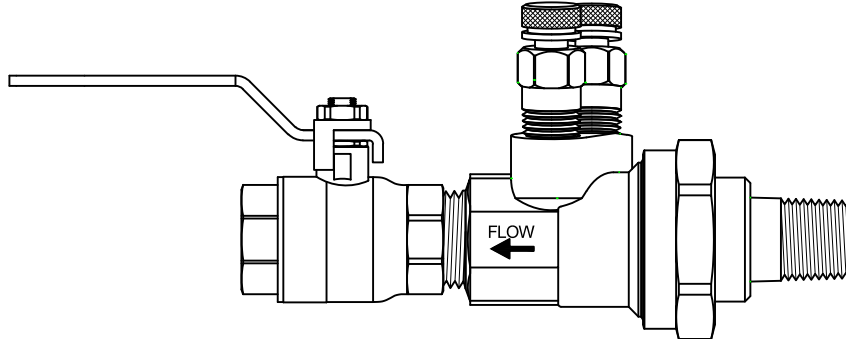
\* CBV075UL Tailpiece size is ½"

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

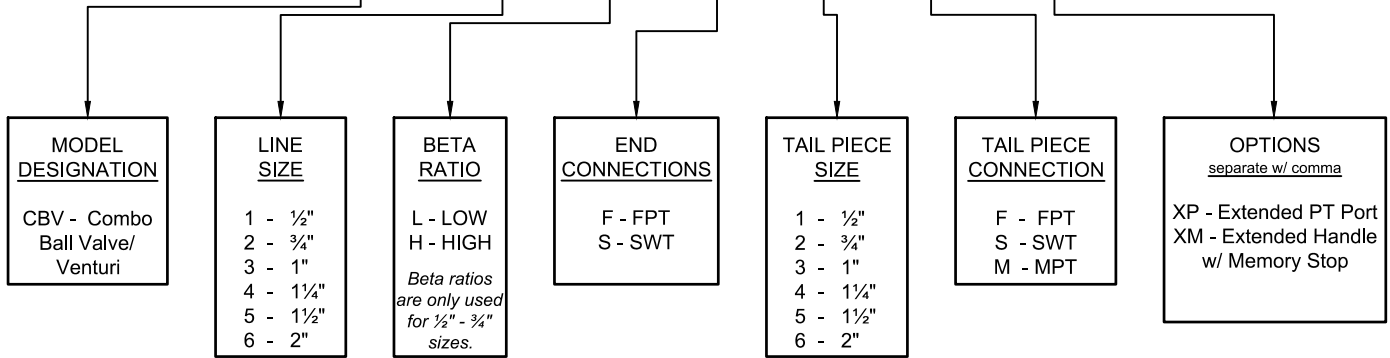
Note: Sweat size listed is nominal and will differ from the actual, measurable size. Not all available tailpiece connections are listed, please consult with factory for additional information.



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



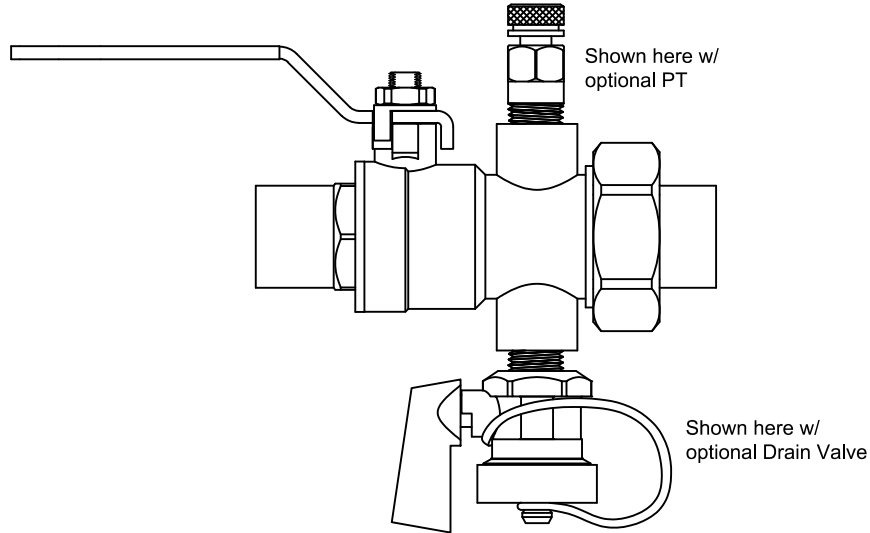
**CBV - X - X - X - X - X - XX,**



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



## IBU Series Specifications Integral Ball Valve/Union



**PRODUCT DESCRIPTION:** The IBU is an integral ball valve and union. The IBU uses a full-port ball valve with a union ended brass body that provides two (2) 1/4" taps for accessories to be installed. All taps are plugged unless otherwise specified. Memory stops are available upon request. Fixed end connections may be SWT or FNPT. Union side connections available include MNPT, FNPT, and SWT, and a variety of reductions.

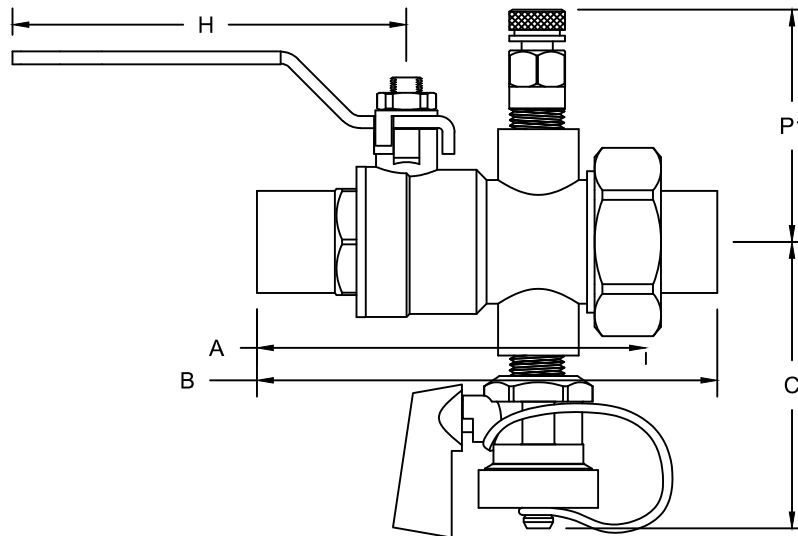
STANDARD MATERIAL SPECIFICATIONS	
Body	Forged Brass ASTM B283-06 or ASTM B763-08A
O-Ring	EPDM
Tail Piece	Brass ASTM B124-09, B228-06, or B763-08A
Union Nut	Brass ASTM B455
Handle	Chrome Plated Steel
Stem	Brass ASTM B124-09 - Blow-Out Proof
Ball	Chrome Plated Brass - Full Port
Ball Seat	Teflon
STANDARD OPERATING SPECIFICATIONS	
Maximum Working Pressure:	600 WOG / CWP
Maximum Operating Temperature:	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:**

- Devices shall have a full port isolation valve to provide unrestricted flow
- Devices shall be designed to accept a memory stop
- Devices shall have a union end which allows for quick and convenient connection



## IBU Series Dimensions Integral Ball Valve/Union



MODEL	SIZE	A	TAIL PIECE	B	Lbs	C	H	P1	* Cv
IBU1	½" - SWT	3.5	- M	5.1	1.2	2.5	3.8	2.0	19
			- F	4.2	1.2				
			- S	4.2	1.1				
	½" - FPT	3.2	- M	4.7	1.2				
- F			3.8	1.2					
- S			3.8	1.1					
IBU2	¾" - SWT	3.8	- M	5.3	1.5	2.7	3.8	2.2	35
			- F	4.9	1.6				
			- S	4.5	1.4				
			- M	5.5	1.5				
	¾" - FPT	3.3	- F	4.6	1.5				
			- S	4.6	1.4				
			- M	4.8	1.5				
			- F	4.4	1.6				
IBU3	1" - SWT	4.1	- S	4.1	1.4	2.7	5.0	2.2	49
			- M	5.0	1.6				
			- F	4.1	1.5				
			- S	4.1	1.4				
	1" - FPT	3.7	- M	6.5	2.1				
			- F	5.3	2.0				
			- S	5.4	1.9				
			- M	5.7	2.1				
1" - FPT	3.7	3.7	- F	4.6	2.0				
			- S	4.7	1.9				
			- M	5.7	2.1				
			- S	4.5	1.9				

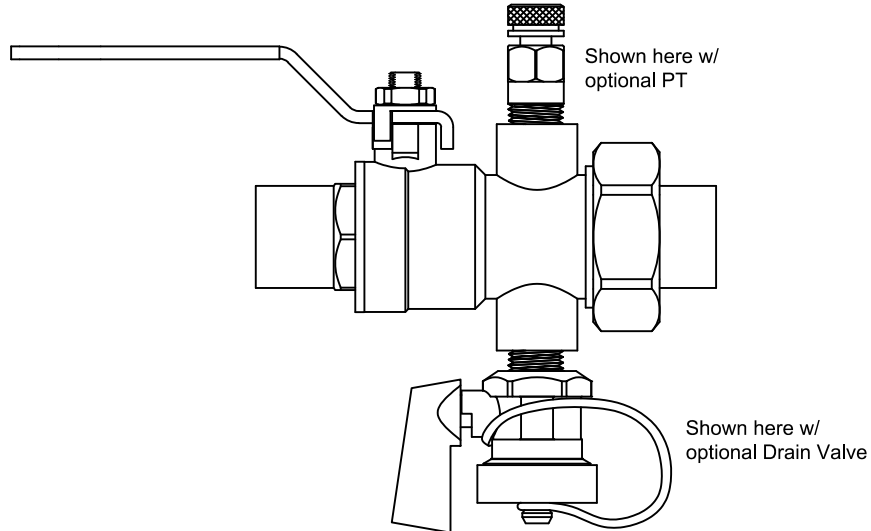
MODEL	SIZE	A	TAIL PIECE	B	Lbs	C	H	P1	* Cv
IBU4	1¼" - SWT	5.2	½" - M	7.0	3.6	3.2	4.6	2.5	102
			¾" - M	7.0	3.8				
			1" - M	7.0	3.8				
			- M	7.0	3.9				
	1¼" - FPT	4.5	1¼" - F	6.0	3.6				
			- S	6.2	3.4				
			½" - M	6.2	3.2				
			¾" - M	6.5	3.3				
IBU5	1½" - SWT	5.8	1" - M	6.5	3.4	3.5	5.5	2.7	266
			1¼" - F	5.6	3.1				
			- S	5.7	3.0				
			¾" - M	7.5	4.6				
	1½" - FPT	5.2	1" - M	8.0	4.9				
			1¼" - M	8.1	5.0				
			- M	8.1	4.9				
			1½" - F	7.0	4.6				
IBU6	2" - SWT	7.1	- S	7.0	4.4	3.5	6.3	3.0	297
			1" - M	7.5	4.8				
			1¼" - M	7.5	4.8				
			- M	7.5	4.7				
	2" - FPT	6.0	1½" - F	6.5	4.4				
			- S	6.3	4.2				
			1" - M	10.1	8.0				
			1¼" - M	10.0	7.7				
2" - FPT	6.0	1½" - M	10.0	7.7					
		- M	10.0	7.7					
		2" - F	8.2	7.1					
		- S	8.5	6.7					
2" - FPT	6.0	1" - M	8.9	7.8					
		1¼" - M	8.9	7.4					
		1½" - M	8.9	7.4					
		- M	8.9	7.4					
2" - FPT	6.0	2" - F	7.0	6.8					
		- S	7.2	6.4					

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

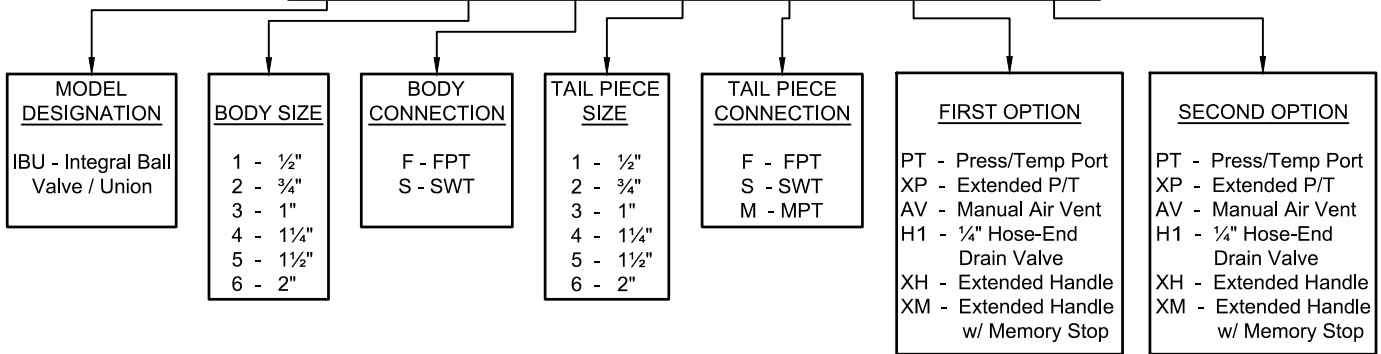
\* Cv = Estimated with union connection same as inlet, no reductions.



**IBU Series Submittal**  
**Integral Ball Valve/Union**



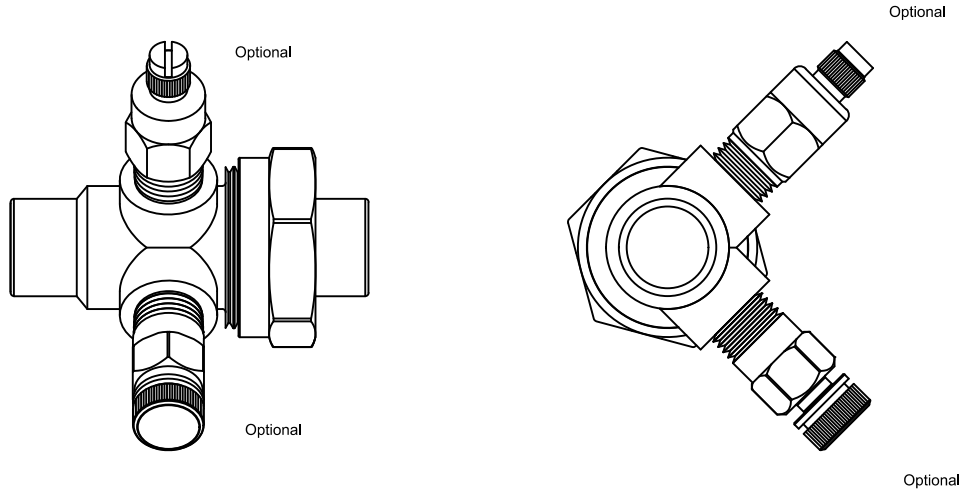
**IBU - X - X - X - X - XX - XX**



JOB NAME:	CUSTOMER:	DATE:
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 ¼" 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 ¼" 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>	

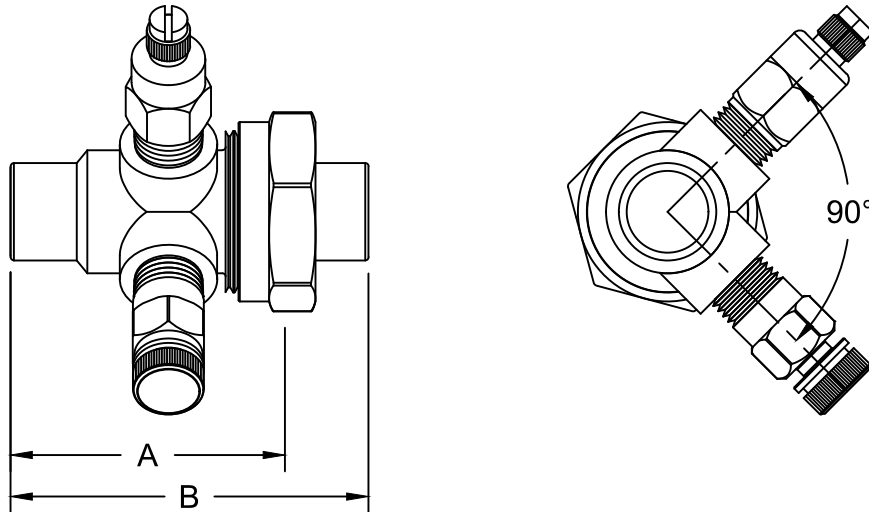
**PRODUCT SPECIFICATIONS:**

- ¼" ports shall be located 90° distal on a rotational axis
- Integrated ports shall provide functionality for numerous options





## AU Series Dimensions Accessory Union

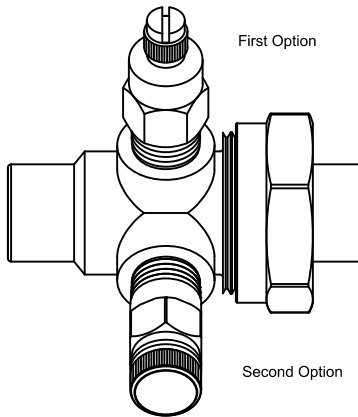


MODEL	SIZE	A	LENGTH "B" / WEIGHT OF PRO-AU AND TAIL PIECE CONNECTION											
			$\frac{1}{2}$ " M	lbs	$\frac{1}{2}$ " S	lbs	$\frac{1}{2}$ " F	lbs	$\frac{3}{4}$ " M	lbs	$\frac{3}{4}$ " S	lbs	$\frac{3}{4}$ " F	lbs
AU1M	1/2"	2.7	4.2	0.6	3.3	0.6	3.3	0.6						
AU1S		2.1	3.7	0.5	2.8	0.4	2.8	0.5						
AU1F		2.0	3.6	0.6	2.7	0.5	2.7	0.5						
AU2M	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 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 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

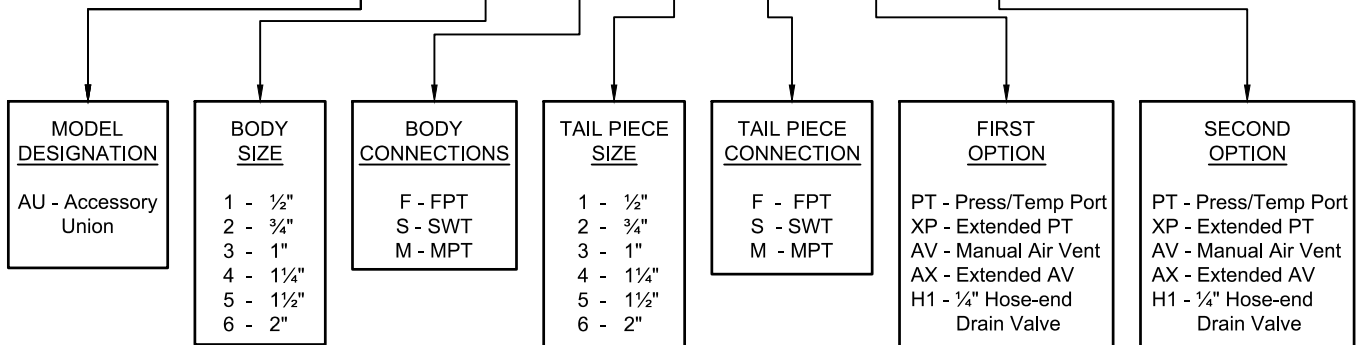
*Note: Dimensions listed above do not include ProPress or any other special fittings or adapters. All dimensions, weights, and materials are subject to minor variations. Consult with factory for confirmation of dimensions, weights, and material specifications. Sweat size listed is nominal and will differ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



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



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



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