

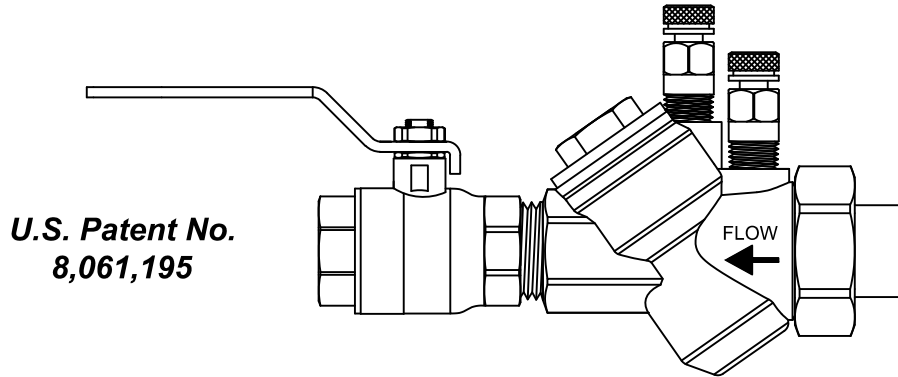




## AFLB Series Specifications

### Automatic Pressure Independent Flow Limiter w/ Ball Valve

- A: AFLB - ½" - 1" High
- B: AFLB - 1" High - 1½" Low
- C: AFLB - 1½" High - 2"



**PRODUCT DESCRIPTION:** The AFLB is an Automatic Pressure Independent Flow Limiting device, male ended by union with a brass ball valve attached, rated at 600 WOG / CWP @ 250° F. The AFLB is supplied with a stainless steel flow limiting cartridge that can be removed for cartridge exchange, if necessary. The AFLB comes standard with two pressure/temperature ports and a hanging identification tag. The ball valve end, or run-out side, is available in FNPT or SWT. The union side connections available include MNPT, FNPT, SWT, and a variety of reductions.

STANDARD MATERIAL SPECIFICATIONS		STANDARD OPERATING SPECIFICATIONS	
Body	Forged Brass ASTM B283-06 or Cast Brass ASTM B763-08A	Control Range:	2 psi - 60+ psi
O-Ring	EPDM	Accuracy:	±5%
Tail Piece, Packing Nut	Brass ASTM B124-09, B228-06, or B763-08A	Max Working Pressure:	600 WOG / CWP
Union Nut	Brass ASTM B455	Max Operating Temperature:	40°F to 250°F
Flow Cartridge	ASTM A582 Type 303 Stainless Steel	Start-Up Head Loss:	5 Feet of H <sub>2</sub> O
Diaphragm	EPDM	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.	
Spring	302 Stainless Steel		
PT Port	EPDM Dual Durometer Core		
Ball Valve	Forged Brass ASTM B283-06		
Stem	Brass ASTM B124-09 - Blow-Out Proof		
Ball	Chrome Plated Brass		
Ball Seat, Packing Gland	Teflon		
Handle	Chrome Plated Steel w/ Vinyl Cover		

Valve Size	FLOW RATES (GPM) * CONTROL RANGE 2 - 60+ PSID **																									
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
A ½" - 1" L	.33	.50	.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	9	10	11	12
B 1" H - 1½" L	5	5.5	6	6.5	7	8	9	10	12	13	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	42
C 1½" H - 2"	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	130	140	150	160	170	180

\* Custom flow rates can be calibrated at the factory for an additional charge.  
 Unless confirmed as special, flow rates will default to standard flow rate.

#### PRODUCT SPECIFICATIONS:

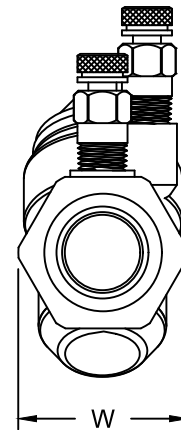
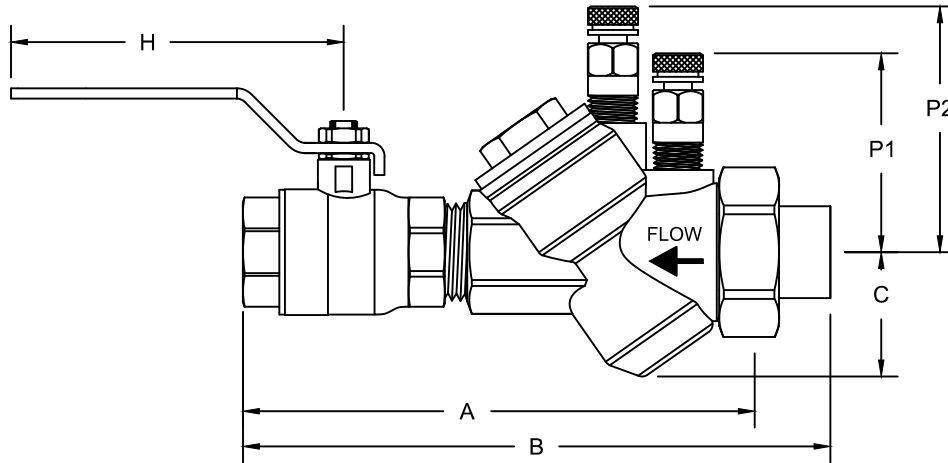
- The Automatic Flow Limiter with Ball Valve (AFLB) shall have flow measurement capability
- The AFLB shall have a static orifice to control flow
- The AFLB Cartridge shall be permanently marked with the letter that corresponds to the factory preset GPM
- All flow cartridge wear surfaces shall be stainless steel
- The AFLB shall have a 2 PSID start up rating
- The AFLB Cartridge shall have a large operational differential range
- The AFLB Cartridge shall provide continual flow at differential pressures above design limits
- The AFLB Cartridge shall be removable for cleaning or exchange if required



### AFLB Series Dimensions

### Automatic Pressure Independent Flow Limiter w/ Ball Valve

A: AFLB - 1/2" - 1" L



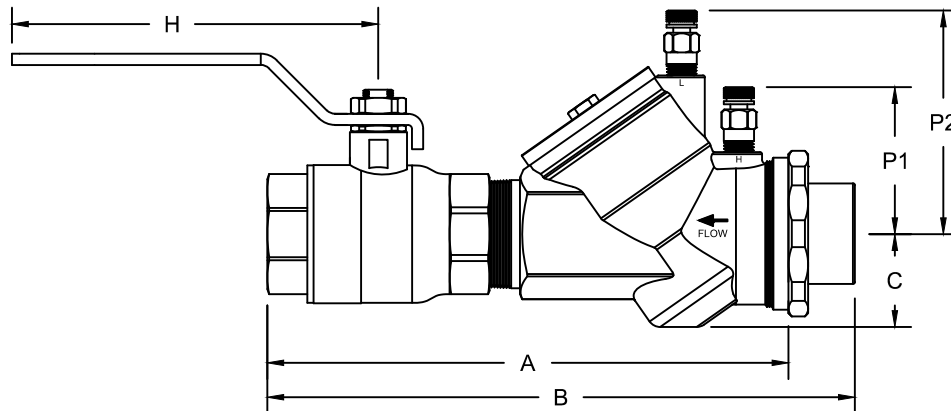
BALL VALVE SIZE AND TYPE	A	TAIL PIECE	B	WEIGHT (lbs)	C	H	P1	P2	W
1/2" SWT	5.7	- M	7.3	1.8	1.3	3.7	2.3	2.8	1.7
		- F	6.4	1.8					
		- S	6.4	1.7					
1/2" FPT	5.4	- M	7.0	1.8	1.3	3.7	2.3	2.8	1.7
		- F	6.0	1.8					
		- S	6.0	1.7					
3/4" SWT	6.6	- M	8.1	2.4	1.4	3.8	2.0	2.6	1.8
		1/2" - F	7.3	2.4					
		- S	7.3	2.4					
		- M	8.3	2.5					
		3/4" - F	7.2	2.4					
		- S	7.2	2.4					
3/4" FPT	6.1	- M	7.5	2.4	1.4	3.8	2.0	2.6	1.8
		1/2" - F	7.2	2.5					
		- S	6.8	2.4					
		- M	7.8	2.5					
		3/4" - F	7.0	2.4					
		- S	6.8	2.4					
1" SWT	7.3	1/2" - M	9.5	3.5	1.2	5.0	2.0	2.5	2.1
		3/4" - M	9.5	3.5					
		- S	8.2	3.3					
		- M	9.5	3.6					
		1" - F	8.5	3.4					
- S	8.5	3.3							
1" FPT	6.7	1/2" - M	8.7	3.5	1.2	5.0	2.0	2.5	2.1
		3/4" - M	8.7	3.5					
		- S	7.5	3.3					
		- M	8.7	3.6					
		1" - F	7.6	3.4					
- S	7.6	3.3							

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 and material specifications. Sweat size listed is nominal and will differ from the actual, measurable size.

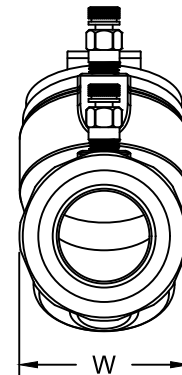


### AFLB Series Dimensions

## Automatic Pressure Independent Flow Limiter w/ Ball Valve B: AFLB - 1" H - 1½" L



BALL VALVE SIZE AND TYPE	A	TAIL PIECE	B	WEIGHT (lbs)	C	H	P1	P2	W
1" SWT	8.6	- M	10.6	5.3	1.4	5.0	2.3	2.6	3.9
		- F	9.5	5.2					
		- S	9.5	5.1					
1" FPT	8.0	- M	10.0	5.3	1.4	5.0	2.3	2.6	3.9
		- F	8.8	5.2					
		- S	9.0	5.1					
1¼" SWT	9.1	- M	11.0	6.2	1.4	5.0	2.3	2.6	3.9
		- F	11.1	6.3					
		- S	10.5	5.9					
		- M	11.1	6.3					
		- F	10.1	6.0					
		- S	10.2	5.9					
1¼" FPT	8.3	- M	10.3	6.2	1.4	5.0	2.3	2.6	3.9
		- F	9.3	6.0					
		- S	9.6	5.9					
		- M	10.3	6.3					
		- F	9.0	5.8					
		- S	9.5	5.9					
1½" SWT	9.4	- M	11.9	6.5	1.4	6.3	2.5	3.4	3.2
		- F	11.9	6.6					
		- S	10.9	5.9					
		- M	11.9	6.4					
		- F	10.6	6.1					
		- S	10.6	5.9					
1½" FPT	9.0	- M	11.0	6.4	1.4	6.3	2.5	3.4	3.2
		- F	11.0	6.5					
		- S	10.0	5.8					
		- M	11.0	6.3					
		- F	9.7	6.0					
		- S	9.7	5.8					



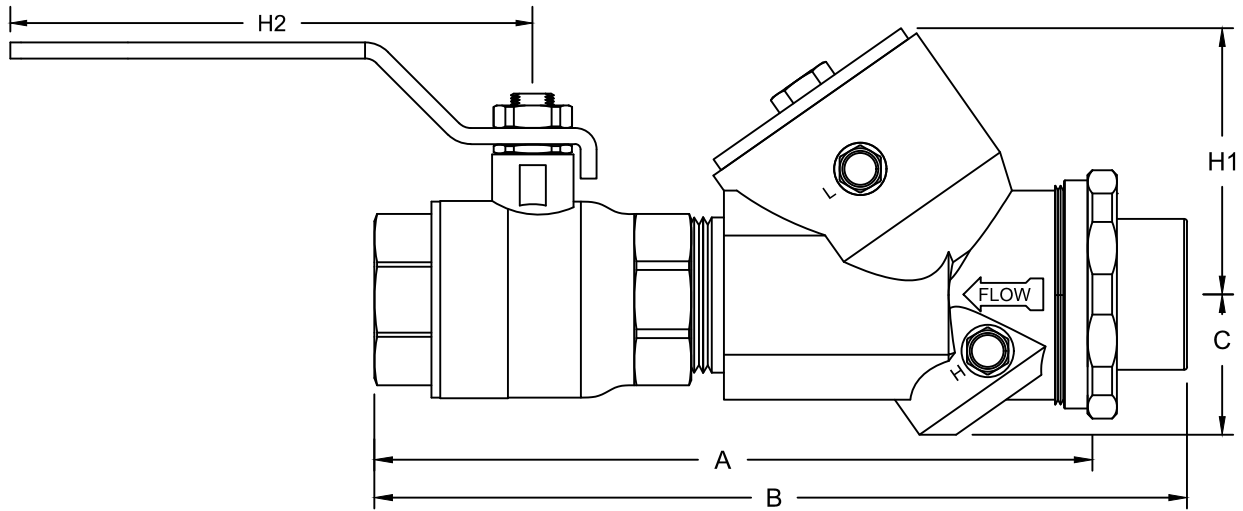
*Note: Dimensions listed above do not include ProPress or any other special fittings or adapters. All dimensions, weights, and materials are subject to minor variations. Consult with factory for confirmation of dimensions and material specifications. Sweat size listed is nominal and will differ from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



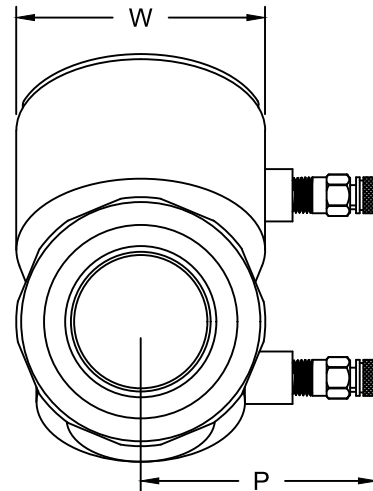
### AFLB Series Dimensions

### Automatic Pressure Independent Flow Limiter w/ Ball Valve

C: AFLB - 1½" H - 2"



BALL VALVE SIZE AND TYPE	A	TAIL PIECE	B	WEIGHT (lbs)	C	H1	H2	P	W
1½" SWT	12.3	- M	15.3	14.7	2.2	4.2	6.3	3.2	3.7
		1¼" - F	15.3	14.6					
		- S	14.0	13.8					
		- M	15.0	15.1					
		1½" - F	15.3	14.8					
		- S	13.8	13.8					
1½" FPT	11.5	- M	14.5	14.7	2.2	4.2	6.3	3.2	3.7
		1¼" - F	14.5	14.6					
		- S	13.0	13.8					
		- M	14.5	15.1					
		1½" - F	14.5	14.8					
		- S	13.1	13.8					
2" SWT	11.7	- M	14.7	15.5	2.2	4.2	6.2	3.2	3.7
		1½" - F	14.7	15.5					
		- S	13.3	14.6					
		- M	14.7	15.5					
		2" - F	12.8	14.9					
		- S	13.2	14.5					
2" FPT	10.6	- M	13.6	15.4	2.2	4.2	6.2	3.2	3.7
		1½" - F	13.6	15.4					
		- S	12.2	14.5					
		- M	13.6	15.4					
		2" - F	11.8	14.8					
		- S	12.0	14.4					



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 and material specifications. Sweat size listed is nominal and will differ from the actual, measurable size.

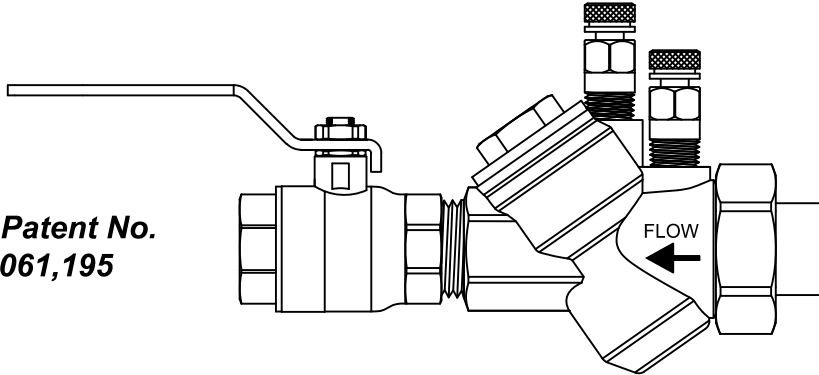
# PRO *Hydronic* *Specialties*

## AFLB Series Submittal

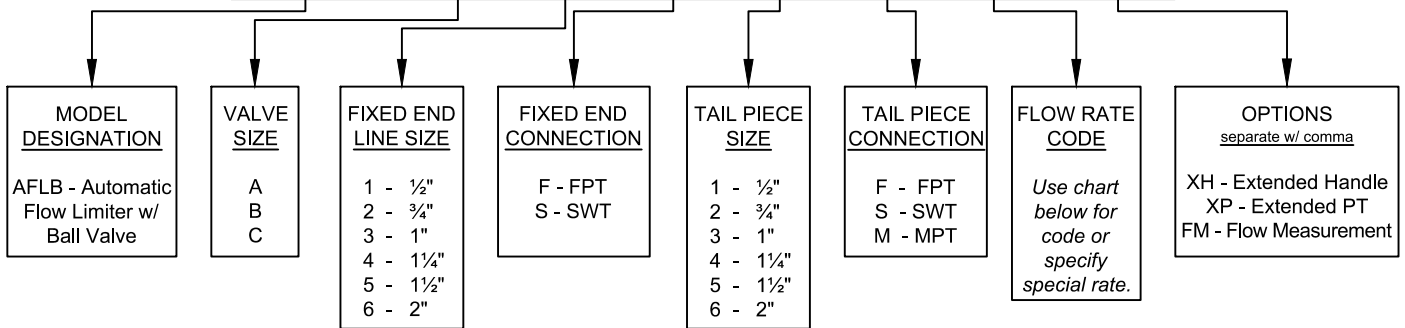
### Automatic Pressure Independent Flow Limiter w/ Ball Valve

- A: AFLB - 1/2" - 1" L
- B: AFLB - 1" H - 1 1/2" L
- C: AFLB - 1 1/2" H - 2"

U.S. Patent No.  
8,061,195



AFLB - X - X - X - X - X - X - XX,



Valve Size	FLOW RATE CODES (GPM)* CONTROL RANGE 2 - 60+ PSID **																									
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
A 1/2" - 1" L	.33	.50	.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	9	10	11	12
B 1" H - 1 1/2" L	5	5.5	6	6.5	7	8	9	10	12	13	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	42
C 1 1/2" H - 2"	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	130	140	150	160	170	180

\* Custom flow rates can be calibrated at the factory for an additional charge.  
 Unless confirmed as special, flow rates will default to standard flow rate.

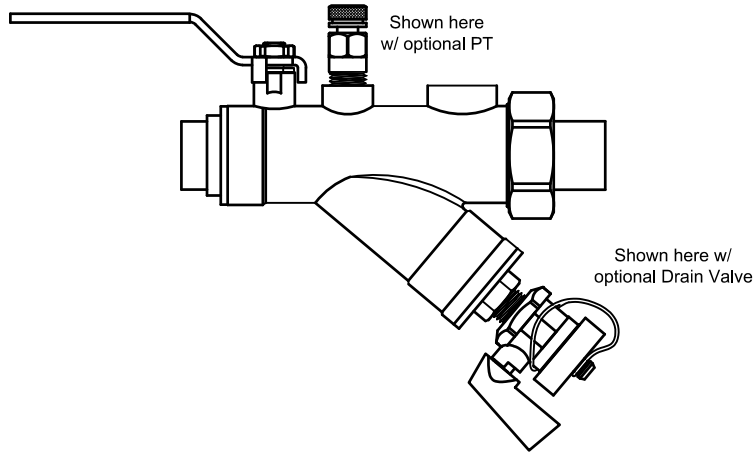
JOB NAME:		REPRESENTATIVE:	
ENGINEER:		REF/PO#:	
CONTRACTOR:		SUBMITTED BY:	
		DATE:	
		DATE:	

PART # (See table above)	TAGGING/JOB INFORMATION	GPM	QUANTITY



## IVY Series Specifications

### Integral Ball Valve/Wye Strainer/Union



**PRODUCT DESCRIPTION:** The IVY is an integral ball valve, wye-strainer and union. The IVY uses a full-port ball valve for positive shut-off and offers two (2) predrilled 1/4" taps for accessories to be installed. A 1/4" standard port and by-pass tap are provided at the forward 12:00 position. The bypass port comes tapped and plugged for 2-way control valve configurations. The bypass port remains open on 3-way control valve configurations to install a bypass valve. (See *IVY Series Dimensions* page for *bypass valve sizes*.) An additional side port is available for factory drilling and tapping a 1/4" port. 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.

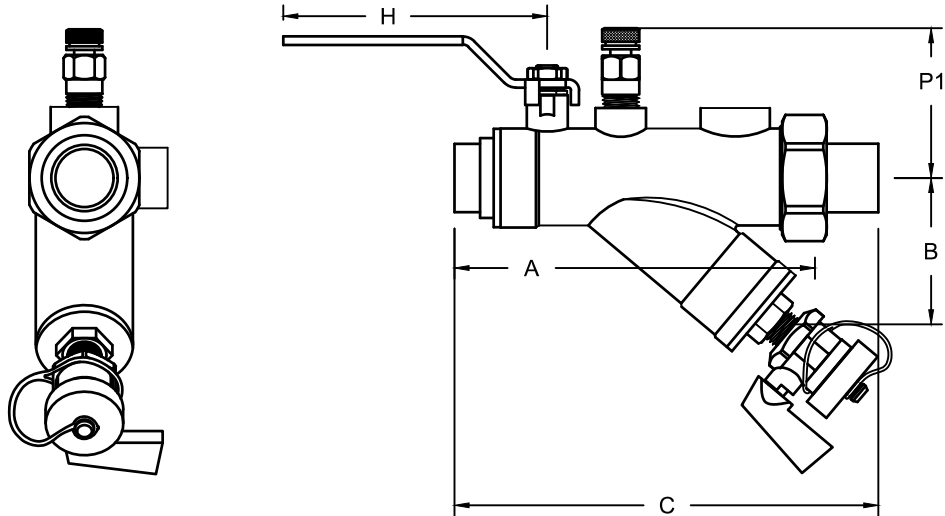
STANDARD MATERIAL SPECIFICATIONS		PORT LOCATIONS
Body	Forged Brass ASTM B283-06, or cast Brass ASTM B763-08A	
O-Ring	EPDM	
Tail Piece	Brass ASTM B124-09, B228-06, or B763-08a	
Union Nut	Brass ASTM B455	
PT Seal	EPDM Dual Durometer Core	
Handle	Chrome Plated Steel	
Stem	Brass ASTM B124-09 - Blow-Out Proof	
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:	-22° F to 325° 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 (standard) or a 40 mesh accessible strainer sleeve (optional)
- 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



## IVY Series Dimensions Integral Ball Valve/Wye Strainer/Union



Model	Size	Bypass Size	A	B	H	P1	* R	** Cv
IVY1-SWT	½"	½"	4.4	2.3	4.1	2.0	11 : 1	8
IVY2-SWT	¾"	½"	5.4	2.2	3.8	2.1	8 : 1	9
IVY3-SWT	1"	½"	6.1	2.7	3.9	2.3	11 : 1	20
IVY4-SWT	1 ¼"	¾"	7.0	3.2	3.8	2.7	9 : 1	23
IVY5-SWT	1 ½"	¾"	8.6	3.2	6.3	3.0	13 : 1	44
IVY6-SWT	2"	1"	9.2	3.5	6.5	3.1	9 : 1	46
IVY1-FPT	½"	½"	4.2	2.3	4.1	2.0	11 : 1	7
IVY2-FPT	¾"	½"	4.9	2.2	3.8	2.1	8 : 1	8
IVY3-FPT	1"	½"	5.4	2.7	3.9	2.3	11 : 1	19
IVY4-FPT	1 ¼"	¾"	6.3	3.2	3.8	2.7	9 : 1	21
IVY5-FPT	1 ½"	¾"	7.5	3.2	6.3	3.0	13 : 1	45
IVY6-FPT	2"	1"	8.1	3.5	6.5	3.1	9 : 1	47

Size	Tail Piece	C	Weight	Size	Tail Piece	C	Weight
½" SWT	- M	6.0	1.8	½" FPT	- M	6.5	1.8
	- F	5.1	1.8		- F	4.8	1.8
	- S	5.1	1.8		- S	4.8	1.8
¾" SWT	- M	7.0	2.2	¾" FPT	- M	6.5	2.5
	- F	6.3	2.3		- F	6.0	2.5
	- S	6.1	2.2		- S	5.7	2.1
	- M	7.0	2.3	¾" FPT	- M	6.5	2.3
	- F	6.1	2.2		- F	5.7	2.2
	- S	6.2	2.2		- S	5.7	2.2
1" SWT	- M	8.1	3.2	1" FPT	- M	7.2	3.2
	- F	8.1	3.7		- F	7.2	3.2
	- S	7.0	3.4		- S	6.1	3.0
	- M	8.1	3.5	1" FPT	- M	7.2	3.3
	- F	7.1	3.1		- F	6.2	3.1
	- S	7.1	3.0		- S	6.2	3.1
1 ¼" SWT	- M	9.0	5.0	1 ¼" FPT	- M	8.2	5.0
	- F	9.0	5.0		- F	8.2	5.1
	- S	8.2	4.6		- S	7.7	4.7
	- M	9.0	5.1	1 ¼" FPT	- M	8.2	5.1
	- F	8.0	4.8		- F	7.3	4.8
	- S	8.1	4.7		- S	7.5	4.7
1 ½" SWT	- M	11.0	7.6	1 ½" FPT	- M	10.1	7.4
	- F	11.0	7.7		- F	10.0	7.6
	- S	10.0	7.1		- S	9.0	7.0
	- M	11.0	7.6	1 ½" FPT	- M	10.1	7.4
	- F	9.8	7.3		- F	9.0	7.2
	- S	9.7	7.1		- S	8.8	7.0
2" SWT	- M	12.2	10.0	2" FPT	- M	11.1	9.7
	- F	12.2	8.6		- F	11.1	9.7
	- S	11.0	9.0		- S	9.7	8.8
	- M	12.2	10.0	2" FPT	- M	11.1	9.8
	- F	10.5	9.4		- F	9.2	9.1
	- S	10.7	9.0		- S	9.5	8.8

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

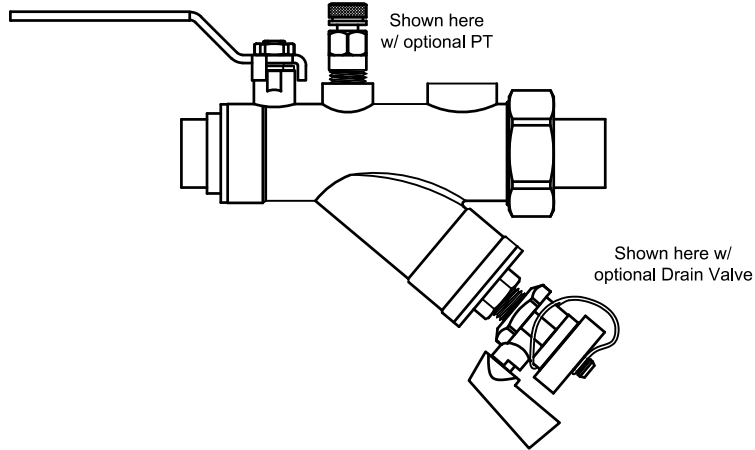
\*\* Cv = Estimated with Union Connection same as inlet, no reductions.

Note: Sweat size listed is nominal and will differ from the actual, measurable size.





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



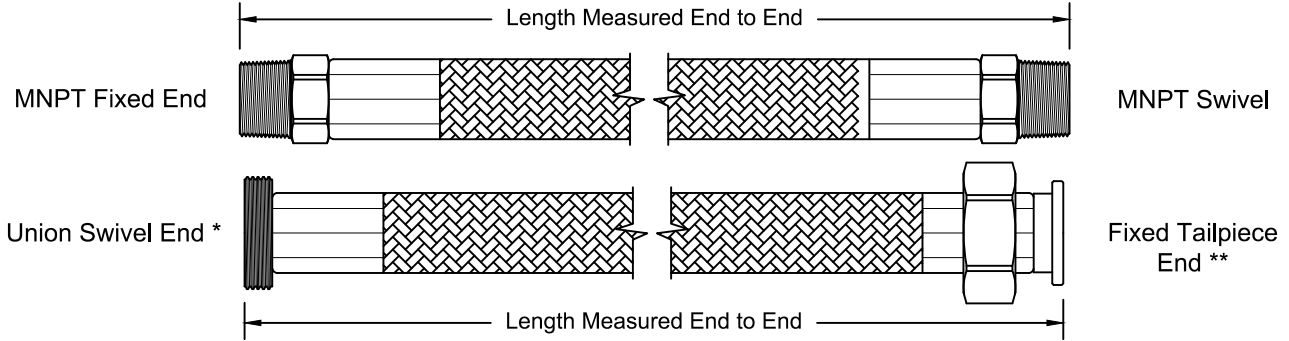
**IVY - X - X - X - X - XX - XX - X**

MODEL DESIGNATION	LINE SIZE	END CONNECTION	TAIL PIECE SIZE	TAIL PIECE CONNECTION	FIRST ACCESSORY OPTION	SECOND ACCESSORY OPTION	BYPASS OPTION
IVY - Integral Strainer Valve	1 - 1/2" 2 - 3/4" 3 - 1" 4 - 1 1/4" 5 - 1 1/2" 6 - 2"	F - FPT S - SWT	1 - 1/2" 2 - 3/4" 3 - 1" 4 - 1 1/4" 5 - 1 1/2" 6 - 2"	F - FPT S - SWT M - MPT	XH - Extended Handle PT - Press/Temp Port XP - Extended PT AV - Manual Air Vent AX - Extended AV H1 - 1/4" Hose-end Drain Valve	XH - Extended Handle PT - Press/Temp Port XP - Extended PT AV - Manual Air Vent AX - Extended AV H1 - 1/4" Hose-end Drain Valve	B = Bypass  <i>Bypass tap size provided on IVY Dimensions Form : SUBIVY2</i>

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



## HSS Series Specifications Stainless Steel Braided Hose



**PRODUCT DESCRIPTION:** The Model HSS is a stainless steel braided hose that is abrasion resistant. The HSS has a CPE inner tube with brass end connections and stainless steel ferrules for the ½" - 1" hose sizes, and an EPDM inner tube with stainless steel ferrules and plated steel end connections for the 1¼" - 2" hose sizes. The flexible hose eases installation and is designed to withstand high pressures and varying temperatures. The standard end connections are MNPT Fixed x MNPT Swivel for ½" to 2", and FNPT Swivel for ½" to 2". Other available end connection options are FNPT Swivel, Union Swivel \*, and Fixed Tailpiece\*\* and accessory union connections; available for the ½" to 2" hose sizes. The Model HSS is BUY AMERICAN COMPLIANT.

\* The Swivel Union comes standard with an EPDM O-ring, tailpiece, and union nut which must be specified at the time of order. The swivel union easily converts line connection types and offers line size reductions. The tailpieces are available in FNPT, MNPT, and Sweat ends.

\*\* The Fixed Tailpiece hose end connection is designed to connect directly to union ended coil kit components (AFLB, AFLD, AU, CBV, IBU, or IVY). The tailpiece end eliminates multiple connections.

PRODUCT SPECIFICATIONS	
Tube	CPE (Chlorinated Polyethylene) for ½" - 1" sizes - SAE J1019 EPDM (Ethylene Propylene Diene Monomer) for 1¼" - 2" sizes - SAE 20R1-D1
Reinforcement	304L Stainless Steel braid cover meets UL-94 requirements
Ferrules	Type 304L stainless Steel
End Fittings	½" - 1" I.D. - Brass 1¼" - 2" I.D. - Steel Plated
End Connections	Fixed MNPT, FNPT, Swivel MNPT, Swivel FNPT (½"-2"), Swivel Union (½" - 2"), Fixed Tailpiece (½"-2")
Temperature Ratings	-40°F to 257°F (-40°C to 125°C) NOTE HOSE IS NOT INTENDED FOR STEAM APPLICATIONS.
	Meets UL-94 Requirements Fire Retardant Material (CPE)

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.

Size	Length	Working PSI	Bend Radius	** Cv
½"	12, 18, 24, 30, 36	500	5"	7
¾"	12, 18, 24, 30, 36	500	7"	20
1"	12, 18, 24, 30, 36	500	10"	43
1¼"	12, 18, 24, 30, 36	200	12"	76
1½"	12, 18, 24, 30, 36	200	15"	130
2"	12, 18, 24, 30, 36	200	20"	280

Length is measured End to End on all hose connection types.

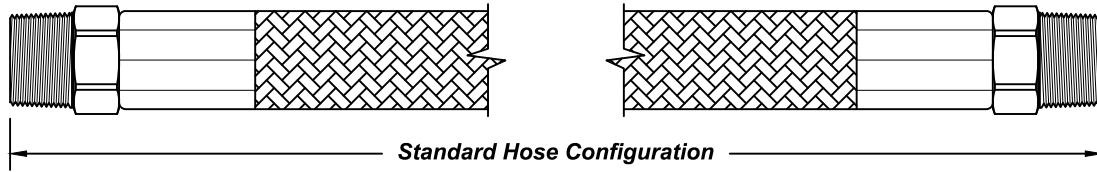
\*\* Cv listed in chart above is for a 24" length hose. The Cv is estimated and can vary according to installation.

# PRO *Hydronic Specialties*

## HSS Series Options Stainless Steel Braided Hose

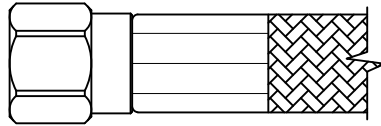
*Fixed MNPT*

*Swivel MNPT*

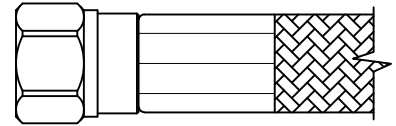


### Additional End Connections

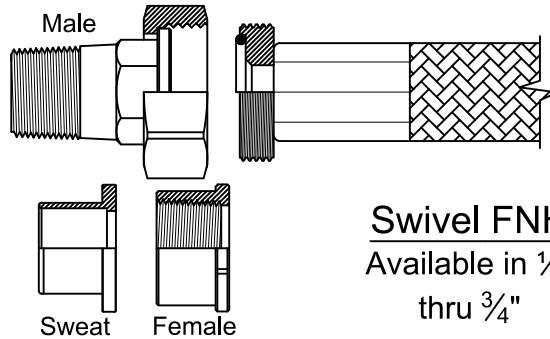
Swivel FNPT  
Available in 1/2" thru 2"



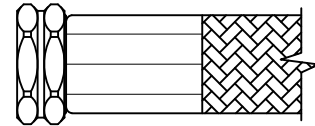
Swivel FJIC  
Available in 1/2" thru 1"



Swivel Union  
Available in 1/2" thru 1"  
The Swivel Union must have the tailpiece connection size and type specified at time of order. Tailpiece options include FPT, SWT, MPT, and a variety of reductions.

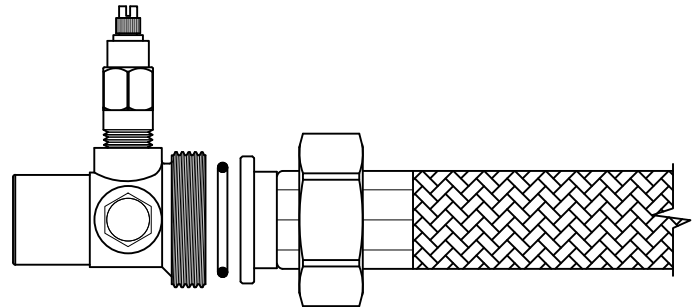


Swivel FNH  
Available in 1/2" thru 3/4"



Fixed Tailpiece  
Available in 1/2" thru 2"

The Fixed Tailpiece end connects directly to PRO Hydronic Specialties' union ended products.



Swivel Accessory Union  
Available in 1/2" thru 2"

The Swivel Accessory Union must have the tailpiece connection size and type specified at time of order.

Tailpiece options include FPT, SWT, MPT, and a variety of reductions.

