MACON® BALANCING
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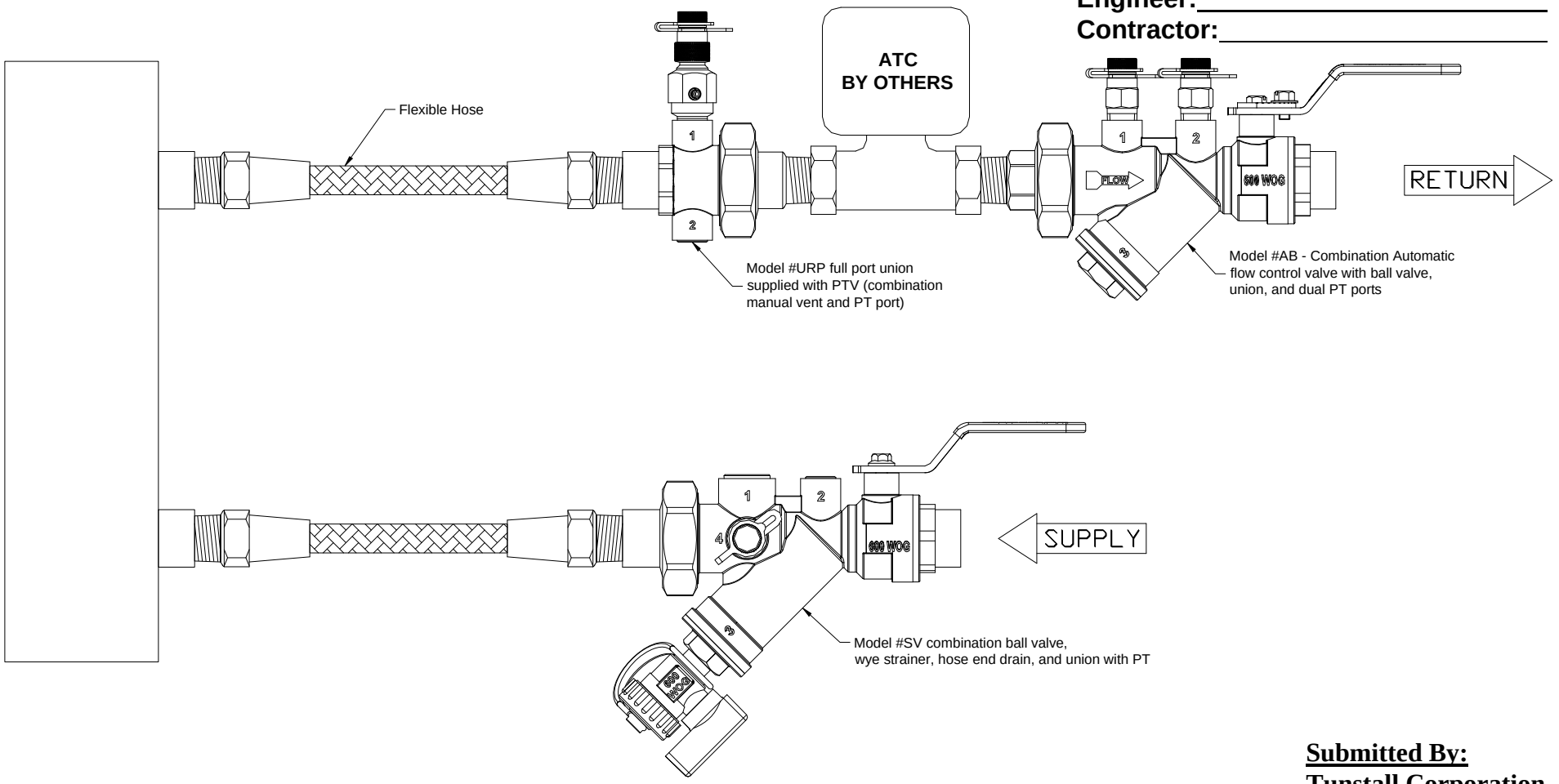
Valve Package (Model # 2RS-AB-FLEX)

Typical For:

Job Name:_____
Location:_____
Engineer:_____
Contractor:_____



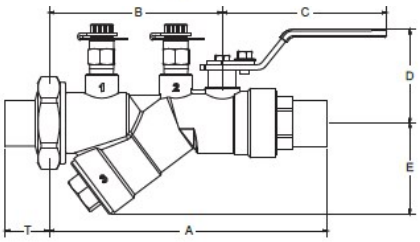
Submitted By:
Tunstall Corporation
118 Exchange Street
Chicopee, MA 01013
Phone: 413-594-8695
Fax: 413-598-8109

MACON® BALANCING

Model AB

0.50" to 2.00"
Submittal Data

Model AB Automatic Balancing Valve is a combination ball valve, automatic flow control device and union. The removable flow cartridge is factory set to automatically limit the GPM to within +5% of the specified flow. The ball valve has a chrome plated ball, Teflon seats and a blowout proof stem with double EPDM O-ring seals. The union has an EPDM O-ring seal and tailpiece available in MNPT, FNPT, and SWT end connections. Standard features include Memory Stop and Dual Pressure / Temperature Ports.



AUTOMATIC

SPECIFICATIONS	
Pressure Ratings:	600 PSI (4140 kPa)
Temperature Ratings:	250ºF (121ºC)
Accuracy:	± 5% of flow rate
Body Material:	Forged Brass
End Connections:	Brass - Fixed End: SWT, FNPT & Press-End Union End: SWT, FNPT, MNPT & Press-End
Flow Cartridge: 1/2" to 1-1/2" 2"	Ultrason® Composite Stainless Steel
Seals:	EPDM
Ball:	Chrome Plated Brass, full port, 100% positive shut off. *Optional 316 Stainless Steel.*
Stem:	Brass. *Optional 316 Stainless Steel.*
Handle:	Full size Zinc Plated lever w/Vinyl Grip
Available Options:	"PTV" combination PT & Air Vent, DV hose end Drain Valve & Extensions.

NOMINAL DIMENSIONS & WEIGHTS

MODEL	SIZE			A		B	C	D	E	*T	Flow	WEIGHT	
	in	mm		FNPT	SWT					SWT	Range	lbs	kg
AB1e-050	0.50"	15	in	5.28	5.64	3.59	1.97	1.61	1.91	0.83	0.35 to 5.0 GPM	1.78	0.81
			mm	134.10	143.30	91.20	50.10	40.90	48.50	21.08			
AB1e-075	0.75"	20	in	5.41	5.92	3.59	1.97	1.61	1.91	0.98		1.83	0.83
			mm	137.40	150.40	91.20	50.10	40.90	48.50	24.89			
AB1e-100	1.00"	25	in	5.75	6.21	3.59	1.97	1.61	1.91	0.92		1.97	0.89
			mm	146.10	157.70	91.20	50.10	40.90	48.50	23.37			
AB2e-050	0.50"	15	in	5.71	5.95	3.86	3.66	2.08	2.02	0.83	0.35 to 10.0 GPM	2.09	0.95
			mm	145.16	151.16	98.04	92.99	52.83	51.33	21.08			
AB2e-075	0.75"	20	in	5.74	6.20	3.86	3.66	2.08	2.02	0.88		2.09	0.95
			mm	146.02	157.48	98.04	92.99	52.83	51.33	22.35			
AB2e-100	1.00"	25	in	5.96	6.36	3.86	3.66	2.08	2.02	0.92		5.05	2.29
			mm	151.51	161.54	98.04	92.99	52.83	51.33	23.37			
AB2e-125	1.25"	32	in	6.14	6.69	3.86	3.66	2.08	2.02	1.43		5.05	2.29
			mm	155.96	169.93	98.04	92.99	52.83	51.33	36.32			
AB3-100	1.00"	25	in	6.98	7.18	5.38	5.03	2.44	3.61	1.41	5.0 to 21.0 GPM	5.05	2.29
			mm	177.29	182.37	136.65	127.76	61.98	91.69	35.81			
AB3-125	1.25"	32	in	7.06	7.24	5.38	5.03	2.44	3.61	1.43		5.17	2.35
			mm	179.32	183.90	136.65	127.76	61.98	91.69	36.32			
AB3-150	1.50"	40	in	7.06	7.37	5.38	5.03	2.44	3.61	1.17		5.17	2.35
			mm	179.32	187.20	136.65	127.76	61.98	91.69	29.72			
AB4-150	1.50"	40	in	9.59	9.91	7.44	5.66	2.83	3.91	1.17	11.0 to 70.0 GPM	8.63	3.91
			mm	249.60	251.70	189.00	143.60	71.90	99.50	29.72			
AB4-200	2.00"	50	in	9.59	10.35	7.44	5.66	2.83	3.92	1.50		8.65	3.92
			mm	249.60	262.89	189.00	143.60	71.90	99.57	38.10			

* Please reference the tailpiece data sheet #Bulletin-MB-TP for other sizes and connections.
Dimensions not for construction purposes unless certified by factory.

Optional features and accessories available for this Macon product are an extra charge, and not included in the standard model price.

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Selection Chart - *Model AB - 0.50" to 2.00"*

STANDARD COMPONENTS		
	**PT**	Pressure/Temperature test port with brass body, dual durometer EPDM core, threaded brass cap with O-ring seal and neoprene retainer strap. Accepts standard 1/8" (4mm) gauge adapter or thermometer stem. Rated to 500 PSI (3450 kPa) and 275°F (135°C)
	**MS**	Memory stop with position indicator, zinc coated steel.
Please reference data sheet #Bulletin-MB-Accessories for optional accessories.		

AUTOMATIC

Model AB Automatic Balancing Valve
0.50" - 2.00"

Flow GPM	2-32 PSID AB1e- 050 075 100	2-32 PSID AB2e- 050 075 100 125	2-32 PSID AB3- 100 125 150	2-32 PSID AB4- 150 200
0.35	x	x		
0.50	x	x		
0.66	x	x		
0.75	x	x		
0.88	x	x		
1.00	x	x		
1.10	x	x		
1.30	x	x		
1.50	x	x		
1.75	x	x		
2.00	x	x		
2.20	x	x		
2.50	x	x		
2.65	x	x		
3.00	x	x		
3.50	x	x		
4.00	x	x		
4.50	x	x		
5.00	x	x	x	
6.00		x	x	
7.00		x	x	
8.00		x	x	
9.00		x	x	
10.00		x	x	
11.00			x	x
12.00			x	x
13.00			x	x
14.00			x	x
15.00			x	x
16.00*			x	x

* AB3 and AB4 Flow GPM continues at top of last two columns.
NOTE: Lower flows can be used w/adaptor in larger sizes.

Flow GPM	2-32 PSID AB3- 100 125 150	2-32 PSID AB4- 150 200
16.00	x	x
17.00	x	x
18.00	x	x
19.00	x	x
20.00	x	x
21.00	x	x
22.00		x
24.00		x
26.00		x
28.00		x
30.00		x
32.00		x
34.00		x
36.00		x
38.00		x
40.00		x
42.00		x
44.00		x
45.00		x
48.00		x
50.00		x
52.00		x
5 - 60 PSID		
54.00		x
56.00		x
58.00		x
60.00		x
62.00		x
64.00		x
66.00		x
68.00		x
70.00		x

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MACON® BALANCING

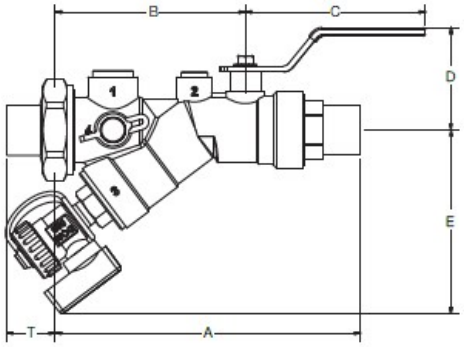
Model SV

0.50" to 2.00"

Submittal Data

Model SV is a combination ball valve, wye strainer and union. The 20 mesh stainless steel strainer is removable for cleaning and inspection. The ball valve has a chrome plated ball with Teflon seats, blowout proof stem with double EPDM O-ring seals. The union has an EPDM O-ring seal and tailpiece available in MNPT, FNPT and SWT end connections.
Standard features include Pressure/Temperature Port, Hose End Drain Valve and plugged Bypass Port.

SPECIFICATIONS	
Pressure Ratings:	600 PSI (4140 kPa)
Temperature Ratings:	250ºF (121ºC)
Body Material:	Forged Brass
End Connections:	Fixed End: DZR Brass - SWT & FNPT Brass - Press End Union End: Brass - SWT, FNPT, MNPT & Press End
Seals:	EPDM
Ball:	Chrome Plated Brass, full port, 100% positive shut off. *Optional 316 Stainless Steel.*
Stem:	Brass. *Optional 316 Stainless Steel.*
Handle:	Full size Zinc Plated lever w/Vinyl Grip
Available Options:	"PTV" combination PT & Air Vent, Automatic Air Vent, Handle and Port Extensions



STRAINERS

NOMINAL DIMENSIONS & WEIGHTS

MODEL	SIZE		Cv*		A		B	C	D	E	**T SWT	Bypass Port-In	Flow Range	WEIGHT	
	in	mm			FNPT	SWT								lbs	kg
SV1e-050	0.50"	15	5.5	in	4.74	4.88	2.99	2.33	1.73	3.53	0.83	.50	0.35 to 5.0 GPM	1.90	0.86
				mm	120.60	124.05	79.95	59.26	43.94	89.87	21.08				
SV1e-075	0.75"	20		in	4.77	5.22	2.99	2.33	1.73	3.53	0.98			2.67	1.21
				mm	121.36	132.66	79.95	59.26	43.94	89.87	24.89				
SV1e-100	1.00"	25		in	4.91	5.60	2.99	2.33	1.73	3.53	0.98			2.02	0.92
				mm	124.79	142.27	79.95	59.26	43.94	89.87	24.89				
SV2e-050	0.50"	15	7.0	in	5.71	5.95	3.86	3.66	2.08	3.72	0.92	.75	0.35 to 13.0 GPM	2.57	1.17
				mm	145.24	151.33	98.04	93.01	52.83	94.64	23.37				
SV2e-075	0.75"	20		in	5.75	6.20	3.86	3.66	2.08	3.72	1.43			2.61	1.18
				mm	146.10	157.56	98.04	93.01	52.83	94.64	36.32				
SV2e-100	1.00"	25		in	5.96	6.36	3.86	3.66	2.08	3.72	1.17			2.69	1.22
				mm	151.59	161.62	98.04	93.01	52.83	94.64	29.72				
SV2e-125	1.25"	32		in	6.14	6.69	3.86	3.66	2.08	3.72	1.50			2.92	1.32
				mm	156.03	170.00	98.04	93.01	52.83	94.64	38.10				
SV3-100	1.00"	25	25.0	in	8.60	9.44	5.62	5.03	2.26	4.78	1.41	.75	0.35 to 21.0 GPM	4.54	2.06
				mm	218.40	239.80	142.90	127.76	57.40	121.40	35.81				
SV3-125	1.25"	32		in	8.67	9.66	5.62	5.03	2.26	4.78	1.43			4.54	2.06
				mm	220.10	245.30	142.90	127.76	57.40	121.40	36.32				
SV3-150	1.50"	40		in	8.67	9.91	5.62	5.03	2.26	4.78	1.17			4.44	2.01
				mm	220.10	251.70	142.90	127.76	57.40	121.40	29.71				

Optional features and accessories available for this Macon product are an extra charge, and not included in the standard model price.

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NOMINAL DIMENSIONS & WEIGHTS (continued)

MODEL	SIZE		Cv*		A		B	C	D	E	**T SWT	Bypass Port-In	Flow Range	WEIGHT	
	in	mm			FNPT	SWT								lbs	kg
SV4-150	1.50"	40	68.0	in	9.37	9.91	7.44	5.66	2.83	5.31	1.59	1.25	22.0 to 70.0 GPM	8.72	3.96
				mm	238.00	251.71	188.98	143.76	71.88	134.87	40.38				
SV4-200	2.00"	50		in	9.56	10.35	7.44	5.66	2.83	5.31	1.50			9.42	4.27
				mm	232.16	262.89	188.98	143.76	71.88	134.87	38.10				

* Cv values are for the body only without the screen inside.
** Please reference the tailpiece data sheet #Bulletin-MB-TP for other sizes and connections.
Dimensions not for construction purposes unless certified by factory.

STANDARD COMPONENTS

	**PT**	Pressure/Temperature test port with brass body, dual durometer EPDM core, threaded brass cap with O-ring seal and neoprene retainer strap. Accepts standard 1/8" (4mm) gauge adapter or thermometer stem. Rated to 500 PSI (3450 kPa) and 275°F (135°C)
	**DV**	Drain valve with forged brass body, chrome plated ball, Teflon seats, double EPDM O-ring stem seals, aluminum handle, 3/4" hose connection with cap and plastic retainer strap. Rated to 600 PSI (4140 kPa) WOG and 250°F (121°C)

Please reference data sheet #Bulletin-MB-Accessories for optional accessories.

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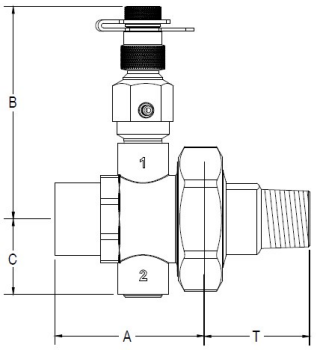
MACON® BALANCING

Model URP

0.375" to 2.00"
Submittal Data

Model URP Union offers numerous End Connections pressure/temperature measurement and vent. The union has an EPDM O-ring seal and tailpiece available in MNPT, FNPT, SWT and Press End connections.
Standard features include "PTV" Combination PT and Air Vent.



SPECIFICATIONS	
Pressure Ratings:	600 PSI (4140 kPa)
Temperature Ratings:	250ºF (121ºC)
Body Material:	Forged Brass
End Connections:	Brass - Fixed End: SWT, FNPT & Press End Union End: SWT, FNPT, MNPT & Press End
Seals:	EPDM
Available Options:	"DV" Drain Valve

NOMINAL DIMENSIONS & WEIGHTS

MODEL	SIZE			A			B	C	*T	WEIGHT	
	in	mm		FNPT	MNPT	SWT			MNPT	lbs	kg
URP-038	0.375"	10	in	N/A	N/A	1.88	2.78	0.84	N/A	0.76	035
			mm	N/A	N/A	47.68	70.61	21.34	N/A		
URP-050	0.50"	15	in	1.90	2.25	1.88	2.78	0.84	1.50	0.86	0.39
			mm	48.26	57.23	47.75	70.25	21.34	38.10		
URP-075	0.75" R	20	in	1.98	2.19	2.12	2.78	0.84	1.55	0.79	0.36
			mm	50.29	55.65	53.85	70.61	21.34	39.37		
URP-100	1.00"	25	in	2.15	N/A	2.28	3.02	1.08	1.75	1.16	0.53
			mm	54.61	N/A	57.91	76.65	27.43	44.72		
URP-125	1.25"	32	in	2.39	N/A	2.56	3.39	1.46	1.80	2.20	1.00
			mm	60.71	N/A	65.02	86.18	37.08	45.72		
URP-150	1.50"	40	in	2.39	N/A	2.69	3.39	1.46	1.80	2.42	1.10
			mm	60.71	N/A	68.32	86.18	37.08	45.72		
URP-200	2.00"	50	in	2.49	N/A	3.03	3.70	1.76	1.98	3.42	1.55
			mm	63.25	N/A	76.96	94.08	44.70	50.17		

* Please reference the tailpiece data sheet #Bulletin-MB-TP for other sizes and connections.
Dimensions not for construction purposes unless certified by factory.

STANDARD COMPONENTS

	**PTV**	Combination manual air vent and pressure/temperature test port with brass body, dual durometer EPDM core, blowout-proof stem, side discharge vent with 1/8" (4mm) hose barb, threaded brass cap with O-ring seal and neoprene retainer strap. Accepts standard 1/8" (4mm) gauge adapter or thermometer stem. Rated to 250 PSI (1725 kPa) and 250°F (121°C)

Please reference data sheet #Bulletin-MB-Accessories for optional accessories.

UNIONS

Optional features and accessories available for this Macon product are an extra charge, and not included in the standard model price.

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MACON® BALANCING

Flexible Hose Connectors

Submittal Data

These hoses have been specially designed for operating conditions in heating and air conditioning, the elastomer is not sensitive to Glycol or water treatment products.

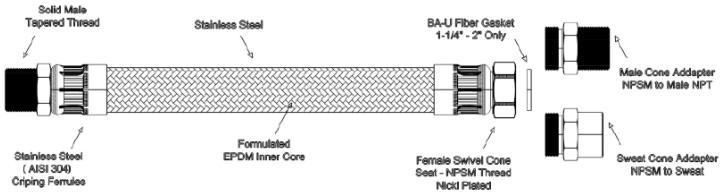
Each hose is made up of several quality components and the special crimping on the ferrule under strict quality control gives this hose security against any leakage.

The special EPDM core meets a fully defined specification: Shore hardness, resistance to ageing, mechanical resistance (elasticity, tensile fracture, stretching), ability to accept chemical agents in contact with the elastomer and non-toxic. ASTM Fire rated hoses meet 25/50 flammability and smoke development classification requirements of codes and specifications when tested by ASTM E 84 method.

HOSES ARE DESIGNED FOR HYDRONIC HEATING/COOLING, NOT FOR GAS.

SPECIFICATIONS

Temperature Ratings:	All Sizes: 5ºF to 230ºF Less than 41ºF with use of Glycol additive
External Braiding:	304 Stainless Steel
Crimping Ferrules:	304 Stainless Steel
Core:	EPDM
End Connections:	Brass - CW614N ▪ 1/2" - 1" MNPT x Male Cone x Hose Adaptor (Gasket Less Connection) ▪ 1-1/4" - 2" MNPT x BA-U Gasket & Hose Adaptor
Adaptor Connections:	Male NPT, Copper SWT
Union Nut:	Nickel Plated Brass - CW614N
Tailpiece:	Brass - CW614N
Gasket (1-1/4" & 2"):	BA-U Fiber



Specs for Application and Installation

• ON INSTALLATION : Avoid absolutely any tension due to stretching, twisting or torsion during the course of tightening the connectors.

A. Install and tighten the fixed male connector (if applicable)

B. Install and tighten the union adaptor (if applicable)

C. Install and tighten the swivel nut

• Use two spanners in order to screw in the union: One to hold the hexagon of the adaptor. The other to tighten the nut at the same time.

IMPORTANT - Do not re-screw the fixed connector or adaptor after tightening of the swivel nut; this will cause torsion on the flexible hose, with a risk of rapid deterioration. On removal, take the same precautions. If the flexible incorporates two fixed connectors, at least one must be installed on a counter-part fitted with a screw connector.

***BEFORE INSTALLING REFER TO THE INSTALLATION & OPERATION INSTRUCTIONS FOR COMPLETE DETAILS. WARNING: FAILURE TO FOLLOW THE INSTALLATION & OPERATION INSTRUCTIONS COULD RESULT IN IMPROPER INSTALLATION.**

NOMINAL DIMENSIONS

SIZE	MODEL #					
	HCA	HCB	HCC	HCD	HCE	HCF
12" LENGTH	1/2"	3/4"	1"	N/A	N/A	N/A
18" LENGTH	1/2"	3/4"	1"	1-1/4"	1-1/2"	N/A
24" LENGTH	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
36" LENGTH	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"

Cv *

SIZE	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
12" LENGTH	3.3	11.0	20.9	N/A	N/A	N/A
18" LENGTH	3.2	10.7	20.3	37.9	64.4	N/A
24" LENGTH	3.1	9.9	19.5	36.9	61.0	110.7
36" LENGTH	3.0	9.3	18.2	34.7	55.0	100.8

* Note the Cv factor is the flow rate, in GPM, through the hose at 1 PSID.

Max. Operating & Burst Pressure Rating

Size	Operating (PSI)	Burst (PSI)
1/2"	375	1500
3/1"	300	1200
1"	225	900
1-1/4"	200	800
1-1/2"	175	600
2"	150	500

Typical Specifications:

Furnish and install where indicated on plans **Flexible Connectors** as provided by **Macon Balancing**. Hoses shall be temperature rated: 5ºF to 230ºF. Pressure rated from 375 PSI to 150 PSI based on hose diameter. Constructed specifically for operating conditions in heating and air conditioning with solid brass connectors, stainless steel ferrules, AISI 304 stainless steel braid, and formulated EPDM inner core design to not be sensitive to Glycol or water treatment products. Hoses shall meet 25/50 flammability and smoke development classification requirements of codes and specifications when tested by ASTM E 84 method.

JOB: _____ ENGINEER: _____

REP: _____ CONTRACTOR: _____

ACCESSORIES

Optional features and accessories available for this Macon product are an extra charge, and not included in the standard model price.

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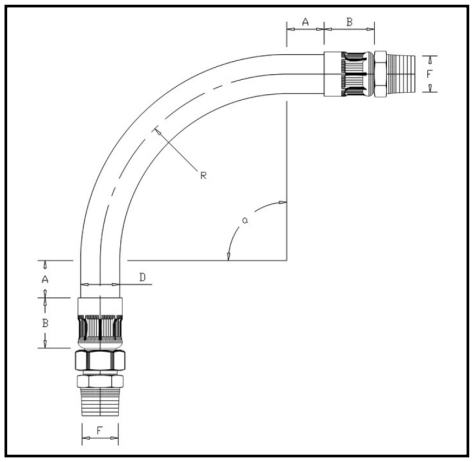

NOMINAL DIMENSIONS						
F	**LENGTH**	**R min**	**A min**	**B**	**D**	**CX max**
	in	**mm**	**mm**	**mm**	**mm**	
1/2”	12”	60	40	23	17	89º
	18”	60	40	23	17	180º
	24”	60	40	23	17	180º
	36”	60	40	23	17	180º
3/4”	12”	80	55	35	26	32º
	18”	80	55	35	26	126º
	24”	80	55	35	26	180º
	36”	80	55	35	26	180º
1”	12”	110	65	35	35	5º
	18”	110	65	35	35	75º
	24”	110	65	35	35	142º
	36”	110	65	35	35	180º
1-1/4”	18”	120	100	46	42	30º
	24”	120	100	46	42	92º
	36”	120	100	46	42	180º
1-1/2”	18”	200	140	62	53	5º
	24”	200	140	62	53	27º
	36”	200	140	62	53	104º
2”	24”	280	230	57	63	5º
	36”	280	203	57	63	42º

IMPORTANT: Do not re-tighten the fixed end or adaptor after tightening the swivel nut. This will cause tension or torsion and can result in rapid deterioration.

INSPECTION: We recommend a good maintenance practice and periodic inspections, typically when servicing other components at the unit or at the installation site. Check all hoses for small water leaks, residue, or discoloration on the exterior braid and fittings. If a leak is detected, stop service to the unit and replace hose immediately. Do not attempt to repair the hose.

Caution: Introduction of chemicals into the system or unit may cause damage of the inner core of the hose. Consult a water treatment specialist for chemical compatibility before using any chemical additives.

Warning: Hoses are designed for Hydronic heating and cooling service only; not for gas.