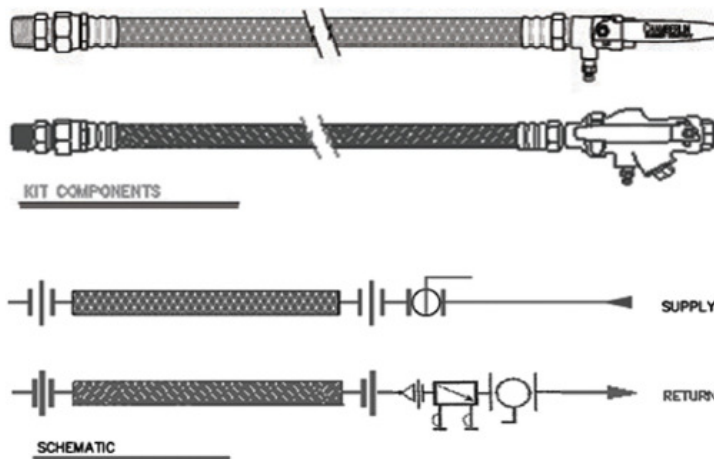


ChamFlex® Hose Kit #2

Job: _____	Representative: _____
Unit Tag: _____	Order No.: _____ Date: _____
Engineer: _____	Submitted By: _____ Date: _____
Contractor: _____	Approved By: _____ Date: _____

ChamFlex® Hose Kit #2 is made using ChamFlex® UL-94 VO rated hose for sizes 1/2" - 1 1/4". Assemblies are male pipe x male pipe swivel adapter. For 1 1/2" and 2" hose kits our All metal Stainless Steel Braided Hose is used. These assemblies are male pipe x male pipe union. Supply has 600 WOG brass bodied ball valve with one test port. Return has Bell & Gossett Circuit Sentry combination automatic flow limiting and shut off valve with two test ports. *All valves and adapters are attached hand tight only.*

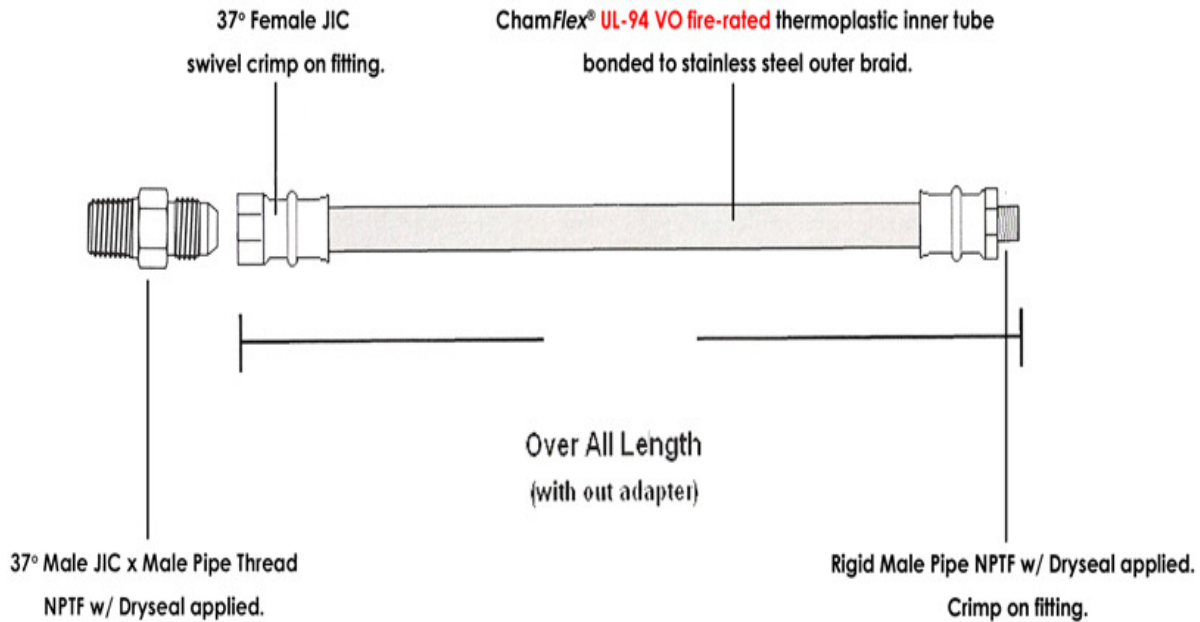


Supply: Hose, ball valve with pt. port.

Return: Hose, circuit sentry automatic flow limiting with shut-off valve and two pt. ports.

Assembly Specs.	ChamFlex® Hose 1/2"	ChamFlex® Hose 3/4"	ChamFlex® Hose 1"	ChamFlex® Hose 1 1/4"	S. S. All Metal Hose 1 1/2"	S. S. All Metal Hose 2"
Working Pressure	400 PSI	400 PSI	500 PSI	400 PSI	300 PSI	300 PSI
Minimum Burst at Ambient Temp. (70°)	1600 PSI	1600 PSI	2000 PSI	1600 PSI	1200 PSI (Hose Only)	1200 PSI (Hose Only)
Minimum Bend Radius	2.5"	4"	5.5"	10"	10"	14"
Hose OD (approximate)	.700	.975	1.245	1.58	1.95	2.53
Temperature Range	-40° F to 212° F	-40° F to 212° F	-40° F to 212° F	-40° F to 212° F	-40° F to 450° F	-40° F to 450° F

ChamFlex® Single Hose Assembly



Hoses can be cut to custom length requirements.

Minimum length for 1/2" and 3/4" hose is 6" with 1" increments.

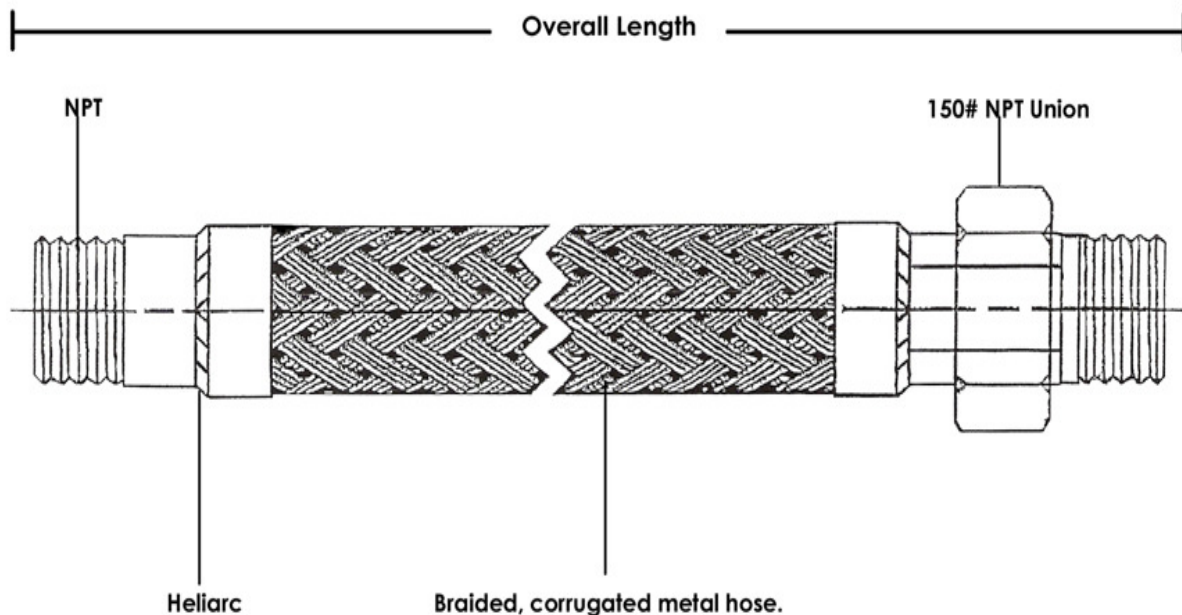
Minimum length for 1" and 1 1/4" hose is 9" with 1" increments.

WARNING: To insure proper installation, this hose assembly must be installed according to instructions included with shipment. Instructions are also available online at www.chamberlinrubber.com.

ChamFlex® Advantage

- ChamFlex® tube compound is UL-94 VO tested and approved. **Highest fire rating in the industry.*
- Superior abrasion resistant properties from our 302/304 stainless steel wire braid.
- The washer-less design of the swivel end provides you with ease of installation.
- Superior water flow capabilities, due to excellent flexibility of the hose, which also minimizes the possibility of kinking.
- All male pipe threads are shipped with thread sealant already applied (eliminating the need for Teflon® tape), capped and ready for installation.
- The permanently installed (crimped) end fittings eliminate the possibility of bands or clamps loosening and creating leaks.
- Plated steel fittings and adapters reduce the possibility of over-torquing, a common problem with brass and other soft metals.
- ChamFlex® hose assemblies and kits comply with requirements for both the "Buy American Act" and for fund appropriated under the "American Recovery and Reinvestment Act of 2009".

All Metal Stainless Steel Braided Hose Assembly



Hose can be cut to custom length requirements.

Minimum length 12" with 1" increments.

Please Note: All Metal Stainless Steel Braided hose is measured end to end with union.

WARNING: To insure proper installation, this hose assembly must be installed according to instructions included with shipment. Instructions are also available online at www.chamberlinrubber.com.

This all metal hose is a 321 stainless steel with a 304 stainless steel braid.

- All male pipe threads are shipped with thread sealant already applied (eliminating the need for Teflon® tape), capped and ready for installation.
- The permanently installed end fittings eliminate the possibility of ends or clamps loosening and creating leaks.
- Carbon steel fittings and union reduce the possibility of over-torquing, a common problem with brass and other soft metals.

ChamFlex® Hose Kit #2 Valve Information

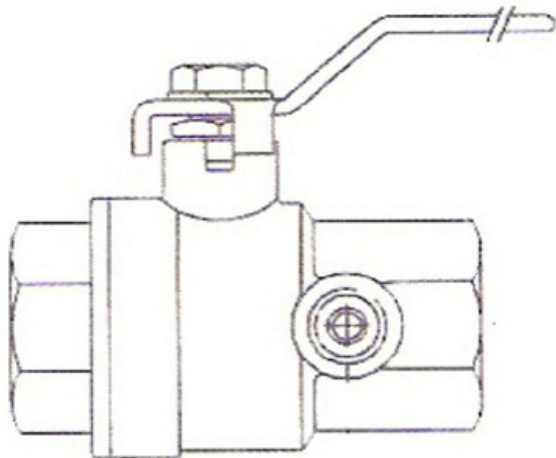
CR 1000 Series PT Port Brass Valve 600 PSI WOG

Description

A full port forged brass ball valve with a 1/4" NPT port for pressure or temperature taps. Ideal for heating system balancing.

Construction

Body:	Brass
Ball:	Brass, Hard Chrome Plate
Stem:	Brass
O-Rings:	Buna-N
Nut & Lock Washer:	Zinc Plated Steel
Stem Packing :	PTFE
Seat:	PTFE
Gland Nut:	Brass
Handle:	Zinc Plated Steel, Plastic coated
End Cap:	Brass



Supply: Hose, ball valve with pt. port,

Return: Hose, circuit sentry automatic flow limiting with shut-off valve and two pt. ports.

Circuit Sentry™ Model AC

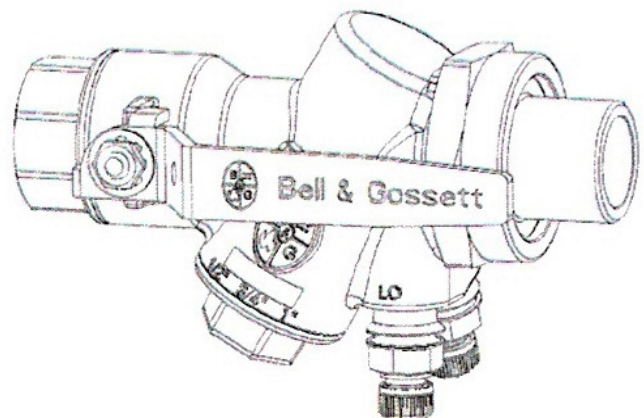
Description

The Bell & Gossett Circuit Sentry™ is a combination automatic flow limiting valve, commissioning valve, and shut-off valve for use in HVAC systems. Valves are furnished with a removable flow limiting diaphragm cartridge to allow easy access for inspection, cleaning, or flow rate changes without disturbing the piping. Two 1/4" pressure/temperature ports and a hanging ID tag for commissioning are standard.

Construction

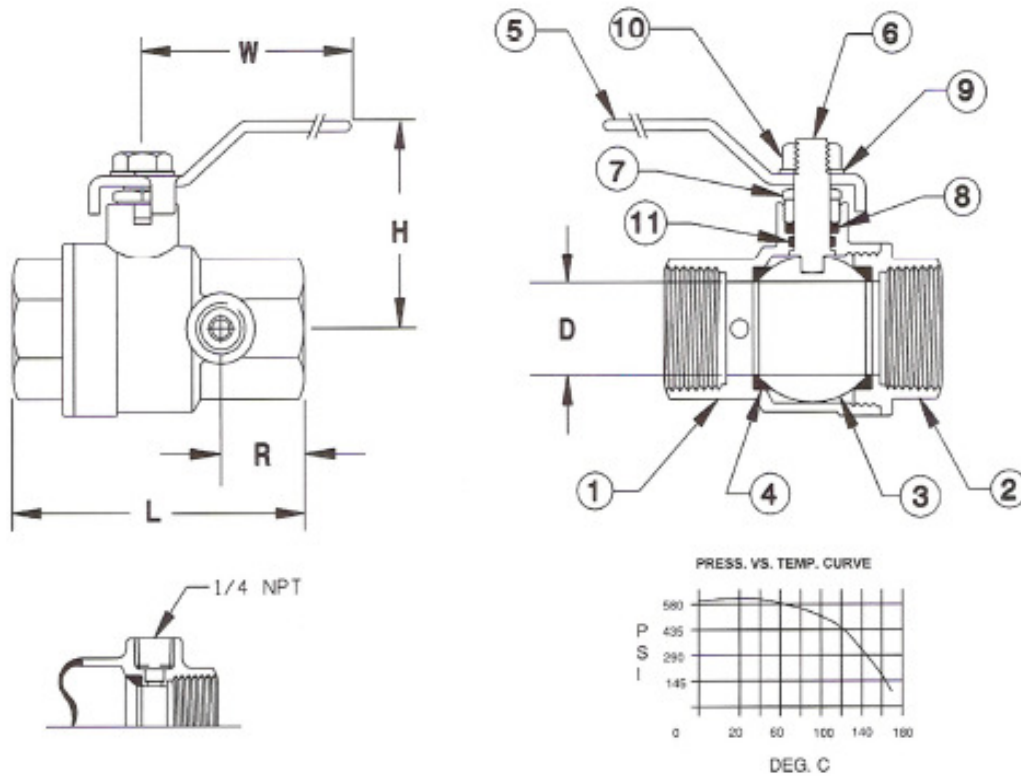
Body:	Brass C37710
Ball:	Chrome Plated Brass C37710
Ball Seal:	EPDM
Stem:	Blow-Out Proof
O-Rings:	EPDM
Cartridge:	Brass C36000
Diaphragm:	Reinforced EPDM
Spring:	Stainless Steel

Maximum Working Pressure:	400 psig
Maximum Operating Temp:	-4°F to 250°F
Control Range:	2 psi – 60 psi
Accuracy:	+/- 5%



WARNING: To insure proper installation this product must be installed in conformance with applicable building codes. Use of proper torque wrench is required.

CR 1000 Series PT Port Brass Ball Valve



DIMENSIONS

CAT. NO.	SIZE	L	D	H	R	W
CR0501000	1/2	2.48	.59	1.89	.76	3.65
CR0751000	3/4	2.69	.75	2.11	.77	4.85
CR1001000	1	3.15	1.00	2.45	.84	4.65
CR1251000	1 1/4	3.65	1.02	2.53	.92	5.62
CR1501000	1 1/2	4.09	1.57	2.80	.94	5.62
CR2001000	2	4.47	1.97	3.13	.95	5.62

MATERIAL LIST

NO.	PART NAME	MATERIALS
11	O-RING	BUNA-N
10	NUT	ZINC PLATED STEEL
9	LOCK WASHER	ZINC PLATED STEEL
8	STEM PACKING	PTFE
7	GLAND NUT	BRASS
6	STEM	BRASS
5	HANDLE	ZINC PLATED STEEL, PLASTICOATED
4	SEAT	PTFE
3	BALL	BRASS, HARD CHROME PLATE
2	END CAP	BRASS
1	BODY	BRASS

Circuit Sentry™

FLOW RATES

Fixed End Size In. (mm)	FLOW RATES* (GPM)																										
	0.33	0.5	1	1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	9	10	11						
½" (15)	0.33	0.5	1	1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	9	10	11						
¾" (20)	0.33	0.5	1	1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	9	10	11						
1" (25)	0.33	0.5	1	1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	9	10	11						
1"L (25L)	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	22	24	26	28	30	32	34	36	38	40	42
1½" (32)	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	22	24	26	28	30	32	34	36	38	40	42
1½" (40)	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	22	24	26	28	30	32	34	36	38	40	42
2"	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	22	24	26	28	30	32	34	36	38	40	42

*B&G recommends following ASHRAE's design criteria for hydronic system piping, flow rates, and friction loss.

NOTE: For ¾" valves 12-15 GPM 1"L valves (large bodies) are used with reducing adapters down to ¾" on both ends. GPMs are rounded up to the next available GPM unless otherwise specified.

Fixed End Size In. (mm)	FLOW RATES* (LPS)																										
	0.02	0.03	0.06	0.09	0.11	0.13	0.16	0.19	0.22	0.25	0.28	0.32	0.35	0.38	0.41	0.44	0.47	0.50	0.57	0.63	0.69						
½" (15)	0.02	0.03	0.06	0.09	0.11	0.13	0.16	0.19	0.22	0.25	0.28	0.32	0.35	0.38	0.41	0.44	0.47	0.50	0.57	0.63	0.69						
¾" (20)	0.02	0.03	0.06	0.09	0.11	0.13	0.16	0.19	0.22	0.25	0.28	0.32	0.35	0.38	0.41	0.44	0.47	0.50	0.57	0.63	0.69						
1" (25)	0.02	0.03	0.06	0.09	0.11	0.13	0.16	0.19	0.22	0.25	0.28	0.32	0.35	0.38	0.41	0.44	0.47	0.50	0.57	0.63	0.69						
1"L (25L)	0.32	0.38	0.44	0.50	0.57	0.63	0.69	0.76	0.82	0.88	0.95	1.01	1.07	1.14	1.20	1.26	1.39	1.51	1.64	1.77	1.89	2.02	2.14	2.27	2.40	2.52	2.65
1½" (32)	0.32	0.38	0.44	0.50	0.57	0.63	0.69	0.76	0.82	0.88	0.95	1.01	1.07	1.14	1.20	1.26	1.39	1.51	1.64	1.77	1.89	2.02	2.14	2.27	2.40	2.52	2.65
1½" (40)	0.32	0.38	0.44	0.50	0.57	0.63	0.69	0.76	0.82	0.88	0.95	1.01	1.07	1.14	1.20	1.26	1.39	1.51	1.64	1.77	1.89	2.02	2.14	2.27	2.40	2.52	2.65
2"	0.32	0.38	0.44	0.50	0.57	0.63	0.69	0.76	0.82	0.88	0.95	1.01	1.07	1.14	1.20	1.26	1.39	1.51	1.64	1.77	1.89	2.02	2.14	2.27	2.40	2.52	2.65

*B&G recommends following ASHRAE's design criteria for hydronic system piping, flow rates, and friction loss.

FLOW RATES - LARGE BODY

Fixed End Size In. (mm)	FLOW RATES* (GPM)																										
	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	130	140	150				
1½"L (40L)	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	130	140	150				
2" (50)	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	130	140	150				
2½" (65)	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	130	140	150				

*B&G recommends following ASHRAE's design criteria for hydronic system piping, flow rates, and friction loss.

Note: GPMs are rounded up to the next available GPM unless otherwise specified.

Fixed End Size In. (mm)	FLOW RATES* (LPS)																										
	0.95	1.26	1.58	1.89	2.21	2.52	2.84	3.15	3.47	3.79	4.10	4.42	4.73	5.05	5.36	5.68	5.99	6.31	6.94	7.57	8.20	8.83	9.46				
1½"L (40L)	0.95	1.26	1.58	1.89	2.21	2.52	2.84	3.15	3.47	3.79	4.10	4.42	4.73	5.05	5.36	5.68	5.99	6.31	6.94	7.57	8.20	8.83	9.46				
2" (50)	0.95	1.26	1.58	1.89	2.21	2.52	2.84	3.15	3.47	3.79	4.10	4.42	4.73	5.05	5.36	5.68	5.99	6.31	6.94	7.57	8.20	8.83	9.46				
2½" (65)	0.95	1.26	1.58	1.89	2.21	2.52	2.84	3.15	3.47	3.79	4.10	4.42	4.73	5.05	5.36	5.68	5.99	6.31	6.94	7.57	8.20	8.83	9.46				

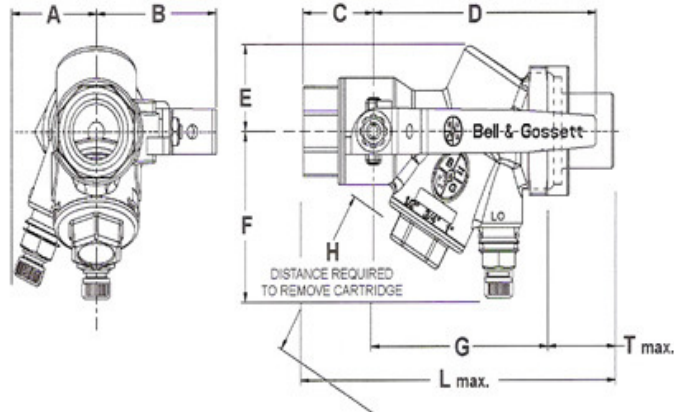
*B&G recommends following ASHRAE's design criteria for hydronic system piping, flow rates, and friction loss.



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Circuit Sentry™

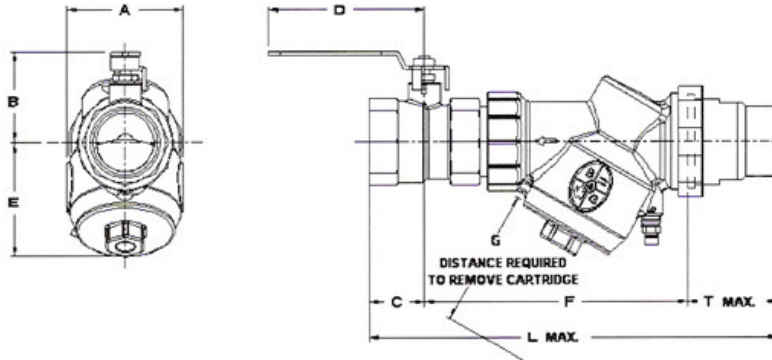


Valve Size Fixed End	Connection Fixed End	DIMENSIONS* INCH (mm)										Approx. Weight Lbs.(kg)
		A	B	C	D	E	F	G	H	T (Max)	L (Max)	
½"	Sweat Female	1.42 (36)	1.93 (49)	1.26 (32)	3.74 (95)	1.18 (30)	2.36 (60)	3.03 (77)	1.77 (45)	0.98 (25)	5.27 (134)	2.4 (1.1)
½"	NPT Female	1.42 (36)	1.93 (49)	1.18 (30)	3.74 (95)	1.18 (30)	2.36 (60)	3.03 (77)	1.77 (45)	0.98 (25)	5.19 (132)	2.4 (1.1)
¾"	Sweat Female	1.42 (36)	1.93 (49)	1.38 (35)	3.74 (95)	1.18 (30)	2.36 (60)	3.03 (77)	1.77 (45)	0.98 (25)	5.39 (137)	2.4 (1.1)
¾"	NPT Female	1.42 (36)	1.93 (49)	1.18 (30)	3.74 (95)	1.18 (30)	2.36 (60)	3.03 (77)	1.77 (45)	0.98 (25)	5.19 (132)	2.5 (1.1)
1"	Sweat Female	1.42 (36)	1.93 (49)	1.46 (37)	3.74 (95)	1.18 (30)	2.36 (60)	3.03 (77)	1.77 (45)	1.69 (43)	6.18 (157)	2.6 (1.2)
1"	NPT Female	1.42 (36)	1.93 (49)	1.38 (35)	3.74 (95)	1.18 (30)	2.36 (60)	3.03 (77)	1.77 (45)	1.69 (43)	6.10 (155)	2.6 (1.2)
1L"	Sweat Female	1.65 (42)	2.87 (73)	1.85 (47)	5.2 (132)	1.89 (48)	2.95 (75)	4.67 (118.5)	2.46 (62.5)	1.93 (49)	8.45 (214.5)	7.1 (3.2)
1L"	NPT Female	1.65 (42)	2.87 (73)	1.67 (42.5)	5.2 (132)	1.89 (48)	2.95 (75)	4.67 (118.5)	2.46 (62.5)	1.93 (49)	8.27 (210)	7.1 (3.2)
1¼"	Sweat Female	1.65 (42)	2.87 (73)	1.89 (48)	5.2 (132)	1.89 (48)	2.95 (75)	4.67 (118.5)	2.46 (62.5)	2.09 (53)	8.65 (219.5)	7.1 (3.2)
1¼"	NPT Female	1.65 (42)	2.87 (73)	1.65 (42)	5.2 (132)	1.89 (48)	2.95 (75)	4.67 (118.5)	2.46 (62.5)	2.09 (53)	8.41 (213.5)	7.2 (3.3)
1½"	Sweat Female	1.65 (42)	2.87 (73)	2.01 (51)	5.2 (132)	1.89 (48)	2.95 (75)	4.67 (118.5)	2.46 (62.5)	2.09 (53)	8.77 (222.5)	7.1 (3.2)
1½"	NPT Female	1.65 (42)	2.87 (73)	1.73 (44)	5.2 (132)	1.89 (48)	2.95 (75)	4.67 (118.5)	2.46 (62.5)	2.09 (53)	8.49 (215.5)	7.1 (3.2)
2" R **	Sweat Female	1.65 (42)	2.87 (73)	5.04 (128)	5.2 (132)	1.89 (48)	2.95 (75)	4.67 (118.5)	2.46 (62.5)	2.09 (53)	11.8 (299.5)	9.8 (4.4)
2" R **	NPT Female	1.65 (42)	2.87 (73)	3.36 (85)	5.2 (132)	1.89 (48)	2.95 (75)	4.67 (118.5)	2.46 (62.5)	2.09 (53)	10.12 (256.5)	9.0 (4.1)

*All dimensions +/- 0.125" (3.2 mm) tolerance. Dimensions are subject to change. Not to be used for construction purposes unless certified.

** 2" Reduced Port

Circuit Sentry™



LARGE BODY

Valve Size Fixed End	Connection Fixed End	DIMENSIONS* INCH (mm)									Approx. Weight Lbs.(kg)
		A	B	C	D	E	F	G	T (Max)	L (Max)	
1½" L	Sweat Female	4.0 (102)	3.07 (78)	3.15 (80)	5.35 (136)	3.85 (98)	9.0 (228)	4.33 (110)	3.12 (79)	15.27 (387)	16.62 (7.5)
1½" L	NPT Female	4.0 (102)	3.07 (78)	4.92 (125)	5.35 (136)	3.85 (98)	9.0 (228)	4.33 (110)	3.12 (79)	17.04 (432)	16.65 (7.6)
2"	Sweat Female	4.0 (102)	3.07 (78)	3.35 (86)	5.35 (136)	3.85 (98)	9.0 (228)	4.33 (110)	3.12 (79)	15.47 (392)	16.87 (7.7)
2"	NPT Female	4.0 (102)	3.07 (78)	1.96 (50)	5.35 (136)	3.85 (98)	9.0 (228)	4.33 (110)	3.12 (79)	14.08 (357)	17.39 (7.9)
2½"	Sweat Female	4.0 (102)	3.07 (78)	2.55 (65)	5.35 (136)	3.85 (98)	10.78 (274)	4.33 (110)	3.12 (79)	16.45 (418)	18.83 (8.5)
2½"	NPT Female	4.0 (102)	3.07 (78)	4.33 (110)	5.35 (136)	3.85 (98)	10.78 (274)	4.33 (110)	3.12 (79)	18.23 (463)	19.36 (8.8)

*All dimensions +/- 0.125 (3.2 mm) tolerance. Dimensions are subject to change. Not to be used for construction purposes unless certified.