

## CircuitSolver® Union Cold Water Assembly (CSUA-CW)

[Thermostatic balancing valve with integrated union body and ball valves]

### SUBMITTAL

<b>JOB:</b>	<b>ORDER NO:</b>	<b>DATE:</b>
	<b>SUBMITTED BY:</b>	<b>DATE:</b>
<b>UNIT TAG:</b>	<b>APPROVED BY:</b>	<b>DATE:</b>
<b>CITY:</b>	<b>ENGINEER:</b>	<b>BUILDING TYPE:</b>
<b>STATE:</b>	<b>CONTRACTOR:</b>	<b>CONSTRUCTION TYPE:</b>
<b>COMPLETION DATE:</b>		

#### DESCRIPTION

The CircuitSolver® Union Cold Water Assembly's primary component is the CircuitSolver® Cold Water valve which is a self-acting thermostatic recirculation valve that automatically and continuously adjusts flow to maintain the desired temperature in a domestic cold water supply line. Since the CircuitSolver® responds to water temperature to control the flow entering the recirculation line it eliminates the need to manually balance the system.

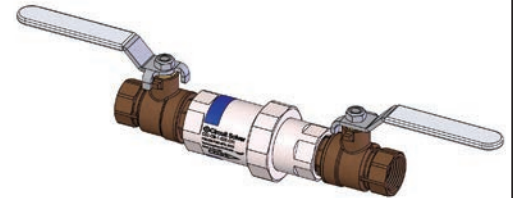
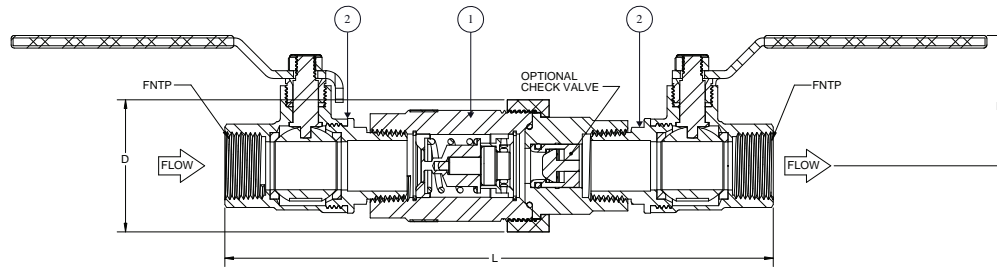
#### DIMENSIONS

Item No.	Part Number	Description	Qty.	Item No.	Part Number	Description	Qty.	Item No.	Part Number	Description	Qty.
1	263-20X100-XXX	½" CIRCUITSOLVER® COLD WATER THERMOSTATIC BALANCING VALVE W/ INTEGRATED UNION	1	1	263-30X100-XXX	¾" CIRCUITSOLVER® COLD WATER THERMOSTATIC BALANCING VALVE W/ INTEGRATED UNION	1	1	263-40X100-XXX	1" CIRCUITSOLVER® COLD WATER THERMOSTATIC BALANCING VALVE W/ INTEGRATED UNION	1
2	92-160	BALL VALVE, ½" MxF, LF	2	2	92-158	BALL VALVE, ¾" MxF, LF	2	2	92-170	BALL VALVE, 1" MxF, LF	2

\*ALL COMPONENTS ARE LEAD FREE

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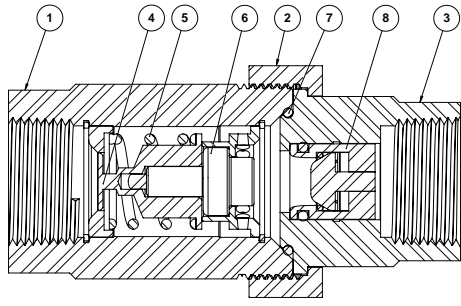
\*ALL COMPONENTS ARE LEAD FREE



Model No.	NPT	Diameter (D)		Length (L)		Height (H)		Weight		C <sub>v</sub>			Max. Pressure		Max. Temp.	
		IN	MM	IN	MM	IN	MM	LBS.	KG	OPEN	CLOSED	DESIGN	PSIG	BAR	°F	°C
CSUA-CW -½-XXX	1/2"	1.8	46	7.7	196	1.8	46	2.1	1.0	1.0	0.3	0.65	200	14	250	121
CSUA-CW -½-XXX-CV1																
CSUA-CW -¾-XXX	3/4"	2.0	51	8.9	226	2.0	51	3.4	1.5	1.4	0.3	0.85				
CSUA-CW -¾-XXX-CV1																
CSUA-CW -1-XXX	1"	2.5	64	10.5	267	2.3	59	5.4	2.5	2.7	0.3	1.5				
CSUA-CW -1-XXX-CV1																

#### Model Number Selection

XXX refers to the desired opening temperature. When the water temperature rises above this point the CircuitSolver® will begin to open, allowing water to easily enter the return line. For example, if you want 65°F desired return temperature and the CSUA-CW is to be installed on a 3/4" line, the model number would be CSUA-CW-3/4-65. To add optional check valve insert -CV1 directly after the temperature designation in the model number, Ex. CSUA-CW-3/4-65-CV1.

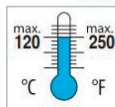
MATERIALS		
		
ITEM	DESCRIPTION	MATERIAL
1	Valve Body w/ Union Threads	303 stainless steel
2	Union Nut	303 stainless steel
3	Female Threaded Insert	303 stainless steel
4	Plug	303 stainless steel
5	Operating Spring	302 stainless steel
6	Thermal Actuator	303 stainless steel
7	O-Ring	Buna-N
8	Check Valve (optional)	GLASS FILLED NORLYL

FLOW RATE CALCULATION USING "Cv" FACTOR		
$GPM = C_v \sqrt{\Delta P}$	$C_v = \sqrt{\frac{GPM}{\Delta P}}$	$\Delta P = \left[ \frac{GPM}{C_v} \right]^2$

### TYPICAL SPECIFICATION

- I. Furnish and install CIRCUITSOLVER® UNION COLD WATER ASSEMBLY as indicated on the plans. CIRCUITSOLVER® UNION COLD WATER ASSEMBLY shall be self-contained and fully automatic without additional piping or control mechanisms. Thermostatic valve shall be a CIRCUITSOLVER® as manufactured by ThermOmegaTech®, Inc., or equivalent.
  - A. CIRCUITSOLVER® UNION COLD WATER shall regulate the flow of recirculated domestic cold water based on water temperature entering the CIRCUITSOLVER® UNION COLD WATER ASSEMBLY regardless of system operating pressure. As the water temperature increases, the valve proportionally opens, dynamically adjusting flow to meet the specified temperature.
    1. CIRCUITSOLVER® COLD WATER never fully closes. There is always sufficient bypass flow back to the recirculating pump to prevent overheating or "dead heading" of the pump.
    2. CIRCUITSOLVER® COLD WATER is set at the factory for the desired return temperature. No field adjustments needed. Several temperature set points are available.
    3. CIRCUITSOLVER® UNION COLD WATER ASSEMBLY shall be available in ½", ¾", & 1" with FNPT at both ends.
- II. All components in the CIRCUITSOLVER® UNION COLD WATER ASSEMBLY are made with lead-free materials. The major components that make up the CIRCUITSOLVER® are constructed of type 303 SS.
  - A. CIRCUITSOLVER® UNION COLD WATER ASSEMBLY shall be rated to 200 PSIG maximum working pressure.
    1. CIRCUITSOLVER® UNION COLD WATER ASSEMBLY shall be standard tapered female pipe thread, NPT.
  - B. CIRCUITSOLVER® UNION COLD WATER ASSEMBLY shall be rated to 250°F (121.1°C) maximum working temperature.
  - C. CIRCUITSOLVER® UNION COLD WATER ASSEMBLY shall have all lead-free components.
  - D. Thermal actuator shall be spring-loaded and self-cleaning, delivering closing thrust sufficient to keep orifice opening free of scale deposits.
- III. Installation of CIRCUITSOLVER® UNION COLD WATER ASSEMBLY shall be made by qualified tradesmen. Install CIRCUITSOLVER® UNION COLD WATER ASSEMBLY in each domestic cold water return piping branch beyond last cold water device in that branch.
  - A. Provide suitable strainer as indicated in piping detail shown on the drawings.
  - B. Provide suitable access panel as required in non-accessible ceilings and walls.
  - C. Pay close attention to flow arrow, especially with valves that have an integrated check valve.

OPTIONAL CHECK VALVE	
<b>Features and Benefits</b>	
-100% factory tested drip tight operation	
-Snap fit design, no retainer needed	
-Extra-low head loss and low cracking pressure	
-External O-ring in groove	
<b>Certifications</b>	
-ANSI/ NSF 61	
ITEM	MATERIAL
Cap	Glass filled Noryl
Guide	Glass filled Noryl
Plunger	Glass filled Noryl
Lip Spring	EPDM rubber
Spring	Stainless Steel AISI 301
O-ring	EPDM rubber

OPTIONAL CHECK VALVE TECHNICAL DATA	
Medium: Clear water only	
Approximate Cracking Pressure: 0.29 PSI	
Continuous 	Short-term (5 minutes max.) 