

**CircuitSolver® Union Cold Water Assembly with Thermometer (CSUA-CW-TW)**  
 [Thermostatic balancing valve with integrated union body, ball valves & thermometer]  
**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 with thermometer'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.

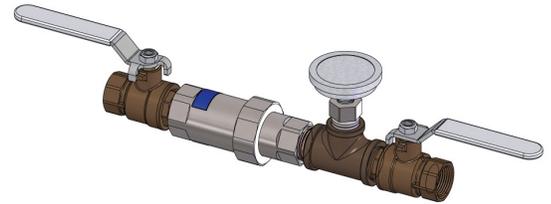
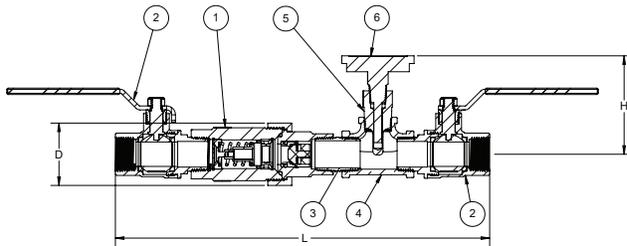
**DIMENSIONS**

Item No.	Part Number	Description	Qty.	Item No.	Part Number	Description	Qty.	Item No.	Part Number	Description	Qty.
1	262-201100-XXX	CSUA-CW-1/2-XXX-CV1	1	1	262-301100-XXX	CSUA-CW-3/4-XXX-CV1	1	1	262-401100-XXX	CSUA-CW-1-XXX-CV1	1
2	92-160	BALL VALVE, 1/2" Mx F, LF, LEAD FREE JOMAR JF-100GMXF	2	2	92-158	BALL VALVE, 3/4" Mx F, LF, LEAD FREE JOMAR JF-100GMXF	2	2	92-170	BALL VALVE, 1" Mx F, LF, LEAD FREE JOMAR JF-100GMXF	2
3	92-162	1/2" X CL NIPPLE BRASS LF	1	3	92-026	3/4" X CL NIPPLE BRS LF	1	3	92-044	NIPPLE, 1" NPT CLOSE, SCH 40, BRASS LF	1
4	93-172	1/2" TEE, BRASS LF	1	4	93-173	3/4" X 1/2" TEE, BRASS LF	1	4	93-174	1" x 1/2" TEE, BRASS LF	1
5	93-094	THERMOWELL, 1/2 NPT 303SS	1	5	93-094	THERMOWELL, 1/2 NPT 303SS	1	5	93-094	THERMOWELL, 1/2 NPT 303SS	1
6	94-287	THERMOMETER	1	6	94-287	THERMOMETER	1	6	94-287	THERMOMETER	1

\*ALL COMPONENTS ARE LEAD FREE

\*ALL COMPONENTS ARE LEAD FREE

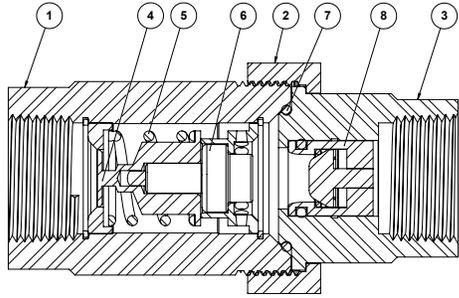
\*ALL COMPONENTS ARE LEAD FREE



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 - 1/2-XXX-TW	1/2"	1.8	46	9.9	251	2.9	74	3.1	1.4	1.0	0.3	0.65	200	14	250	121
CSUA-CW-1/2-XXX-CV1-TW																
CSUA-CW-3/4-XXX-TW	3/4"	2.0	51	11.4	290	3.0	76	4.1	1.9	1.4	0.3	0.85				
CSUA-CW-3/4-XXX-CV1-TW																
CSUA-CW-1-XXX-TW	1"	2.5	64	13.3	338	3.1	79	6.4	2.9	2.7	0.3	1.5				
CSUA-CW-1-XXX-CV1-TW																

**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-TW is to be installed on a 3/4" line, the model number would be CSUA-CW-3/4-65-TW. To add optional check valve insert -CV1 directly after the temperature designation in the model number, Ex. CSUA-CW-3/4-65-CV1-TW.

MATERIALS		
		
ITEM	DESCRIPTION	MATERIAL
1	Valve Body w/ Union Threads	300 series stainless steel
2	Union Nut	300 series stainless steel
3	Female Threaded Insert	300 series stainless steel
4	Plug	300 series stainless steel
5	Operating Spring	300 series stainless steel
6	Thermal Actuator	300 series stainless steel
7	O-Ring	Buna-N
8	Check Valve (optional)	GLASS FILLED NORYL

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 WITH THERMOMETER as indicated on the plans. CIRCUITSOLVER® UNION COLD WATER ASSEMBLY WITH THERMOMETER 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 300 series 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 be NSF/ANSI/CAN 61 & 372 certified for use in all domestic water systems.
  - 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/CAN 61 or 372	
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.)
