CircuitSolver®
A ThermOmegaTech® brand

All components are NSF/ANSI/ CAN 61 or 372 certified.

CircuitSolver® with Thermometer

[Thermostatic balancing valve with thermometer]

SUBMITTAL

JOB:	**ORDER NO:**	**DATE:**
	SUBMITTED BY:	**DATE:**
UNIT TAG:	**APPROVED BY:**	**DATE:**
CITY:	**ENGINEER:**	**BUILDING TYPE:**
STATE:	**CONTRACTOR:**	**CONSTRUCTION TYPE:**
COMPLETION DATE:		

DESCRIPTION

CircuitSolver® with thermometer is a self-acting thermostatic recirculation valve which automatically and continuously maintains the end of each domestic hot water supply line at the specified water temperature. Since the CircuitSolver® responds to water temperature and controls flow to the return, it eliminates the need to manually balance the system.

DIMENSIONS

Item No.	Part Number	Description	Qty.
1	258-200000-XXX	½" CIRCUITSOLVER® THERMOSTATIC BALANCING VALVE	1
2	92-162	½" X CL NIPPLE BRS LF	1
3	93-172	½" TEE	1
4	93-094	THERMOWELL	1
5	94-287	THERMOMETER	1

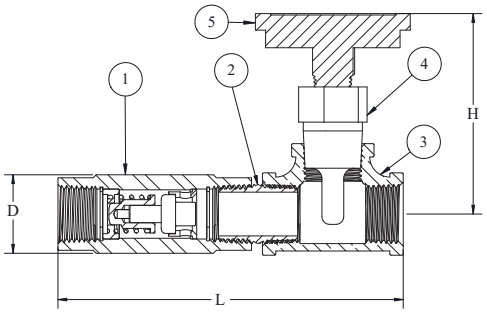
*ALL COMPONENTS ARE LEAD-FREE

Item No.	Part Number	Description	Qty.
1	258-300000-XXX	¾" CIRCUITSOLVER® THERMOSTATIC BALANCING VALVE	1
2	92-026	¾" X CL NIPPLE BRS LF	1
3	93-173	¾" X ½" TEE	1
4	93-094	THERMOWELL	1
5	94-287	THERMOMETER	1

*ALL COMPONENTS ARE LEAD-FREE

Item No.	Part Number	Description	Qty.
1	258-400000-XXX	1" CIRCUITSOLVER® THERMOSTATIC BALANCING VALVE	1
2	92-044	1" X CL NIPPLE BRS LF	1
3	93-174	1" X ½" TEE	1
4	93-094	THERMOWELL	1
5	94-287	THERMOMETER	1

*ALL COMPONENTS ARE LEAD-FREE





		Diameter (D)		Length (L)		Height (H)		Weight		C_v			Max. Pressure		Max. Temp.	
Model No.	NPT	IN	MM	IN	MM	IN	MM	LBS.	KG	OPEN	CLOSED	DESIGN	PSIG	BAR	°F	°C
CS- ½ -XXX-TW	1/2"	1.1	29	5	127	2.9	74	1.1	0.5	1.3	0.2	0.60	200	14	250	121
CS- ¾ -XXX-TW	3/4"	1.4	35	5.6	142	3.0	76	1.5	0.7	1.8	0.2	0.85				
CS-1-XXX-TW	1"	1.8	44	6.2	156	3.1	79	2.6	1.2	3.3	0.2	1.57				

Model Number Selection

XXX refers to the desired closing temperature. When the water temperature drops below this point the CircuitSolver® will begin to open, allowing water to easily enter the return line. For example, if you want 120°F desired return temperature and the CircuitSolver® is to be installed on a 3/4" line, the model number would be CS-3/4-120-TW.

ThermOmegaTech®
353 Ivyland Road, Warminster, PA 18974
1-877-379-8258 | CircuitSolver.com

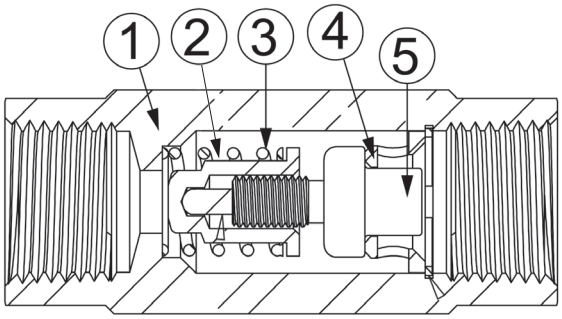
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FLOW RATE CALCULATION USING "Cv" FACTOR SHOWN IN TABLE ON FRONT

$$GPM = C_v\sqrt{\Delta P} \qquad C_v = \frac{GPM}{\sqrt{\Delta P}} \qquad \Delta P = \left[\frac{GPM}{C_v}\right]^2$$

DIMENSIONS



ITEM	DESCRIPTION	MATERIAL
1	Valve Body	300 series stainless steel
2	Valve Plug	300 series stainless steel
3	Spring	300 series stainless steel
4	Carrier	300 series stainless steel
5	Thermal Actuator	300 series stainless steel

TYPICAL SPECIFICATION

I. Furnish and install CIRCUITSOLVER® with THERMOMETER as indicated on the plans. CIRCUITSOLVER® with THERMOMETER shall be self contained and fully automatic without additional piping or control mechanisms. Valve shall be a CIRCUITSOLVER® as manufactured by ThermOmegaTech®, Inc., or equivalent.
   A. CIRCUITSOLVER® with THERMOMETER shall regulate the flow of recirculated domestic hot water based on water temperature entering the CIRCUITSOLVER® with THERMOMETER regardless of system operating pressure. As the water temperature increases the valve proportionally closes dynamically adjusting flow to meet the specified temperature.
      1. CIRCUITSOLVER® with THERMOMETER never fully closes, even at the desired set point. There is always sufficient bypass flow back to the recirculating pump to prevent overheating or "dead heading" of the pump.
      2. CIRCUITSOLVER® with THERMOMETER is set at the factory for the desired return temperature. No field adjustments needed. Several temperature set points are available.
      3. CIRCUITSOLVER® with THERMOMETER shall be available in sizes ranging from ½" NPT to 2" NPT.

II. CIRCUITSOLVER® with THERMOMETER body and all internal components shall be constructed of stainless steel with major components constructed of type 300 series SS.
   A. CIRCUITSOLVER® with THERMOMETER shall be rated to 200 PSIG maximum working pressure.
      1. The CIRCUITSOLVER® with THERMOMETER shall be standard tapered female pipe thread, NPT.
   B. The CIRCUITSOLVER® with THERMOMETER shall be rated to 250°F (121°C) maximum working temperature.
   C. The CIRCUITSOLVER® with THERMOMETER shall be NSF/ANSI/CAN 61 or 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® with THERMOMETER shall be made by qualified tradesmen. Install CIRCUITSOLVER® with THERMOMETER in each domestic hot water return piping branch beyond last hot water device in that branch.
   A. Provide suitable line size isolation valves, unions, and 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.

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