INSTALLATION INSTRUCTION - SUPPLEMENT SHEET

HEATING WITH THE SOLAR WATER HEATER WITH GAS BACKUP

POTABLE AND SOLAR HEATING CONNECTIONS

The heat exchanger interior has been designed for non-potable water, such as in a solar heating system. If replacing an existing water heating appliance, be sure to turn off electrical power, heating fluid and/or gas supply to the existing appliance.

The solar thermal system connections are identified on the side of the appliance. The use of shut off valves and unions are recommended for future service convenience. In solar heating systems that are non-drainback, a suitable expansion tank must be installed. Consult local codes for proper use, sizing and installation of an expansion tank. **DO NOT operate this water heater in a closed system without provisions for controlling thermal expansion.**

Due to the elevated operating temperature that may be obtained with the solar heating system, an ASSE approved thermostatic mixing valve has been provided and must be installed in the potable water piping diagram as shown in Figure 1. Directions for proper installation and adjustment are provided in the ASSE approved thermostatic mixing valve carton.

Warning: Failure to properly install and regulate the provided ASSE approved thermostatic mixing valve may increase the danger of scald injury and nullify the warranty.

⚠ DANGER

Hotter water increases the risk of scald injury. Scalding may occur within 5 seconds at a setting of 140°F. Water temperature over 125°F can cause severe burns or death from scalds. Children, disabled and the elderly are at the highest risk of being scalded. Please feel the water before bathing or showering.

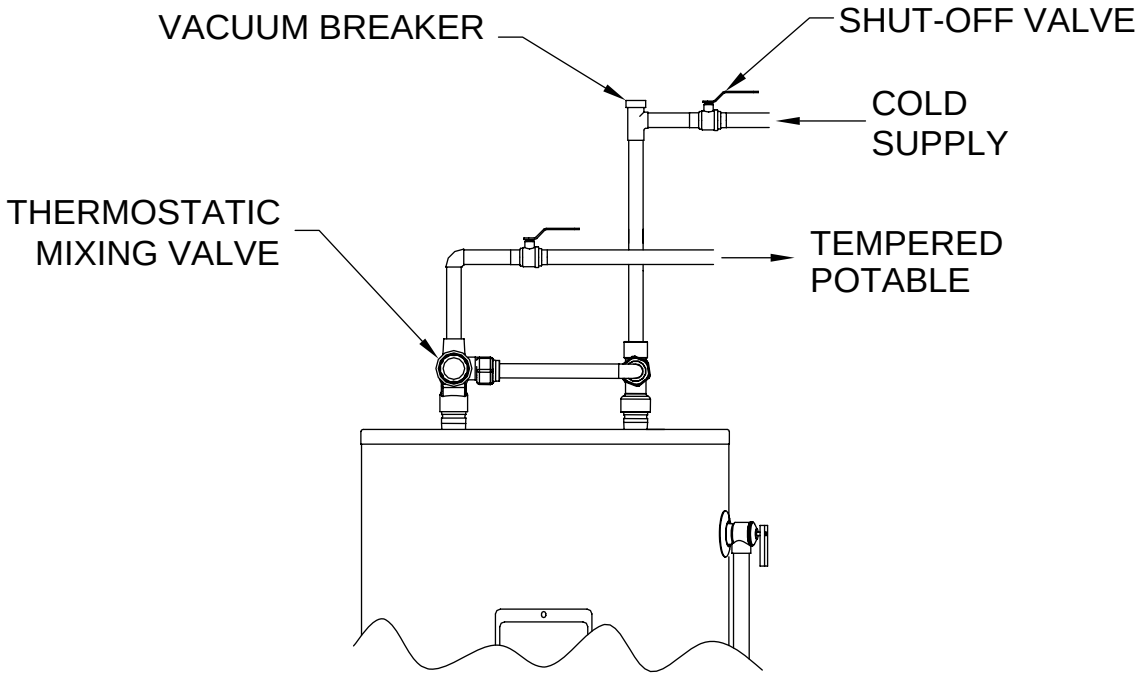


Figure 1 – Thermostatic Mixing Valve Piping Diagram for Tempered Water

SOLAR HEATING WITH A CLOSED, FILLED SYSTEM

1) Pipe the system as shown in figure 2.
2) Install a properly sized expansion tank. An air separator and vent is recommended to eliminate air in the system. The pressure relief valve should be piped to discharge within 6" from the floor.
3) A pressure reducing valve is recommended for installation to maintain appropriate pressure in the closed loop system.
4) The circulator should be installed to pump away from the expansion tank as shown.
5) Purge all air from the filled, closed system.

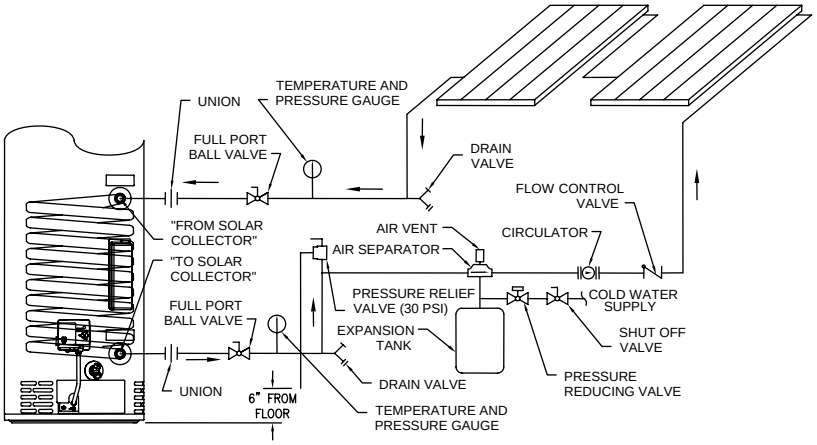


Figure 2 – Solar Heating with a Filled, Closed System

SOLAR HEATING WITH A DRAINBACK SYSTEM

1) Pipe the system as shown in Figure 3.
2) The pump should be installed to pump away from the lower heat exchanger connection.
3) Verify that all check valves are removed from the system and that all horizontal piping has at least a 1/4" per foot slope.
4) Fill the system until the water level is observed in the sight glass.

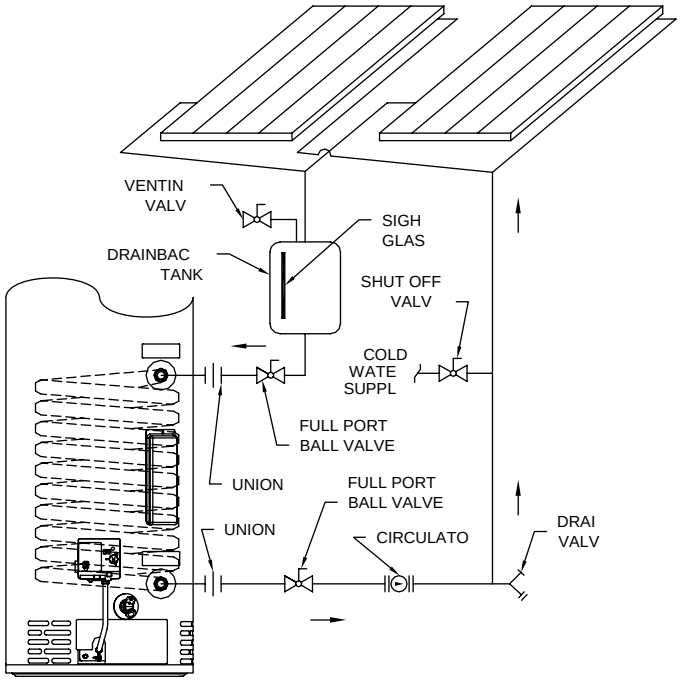
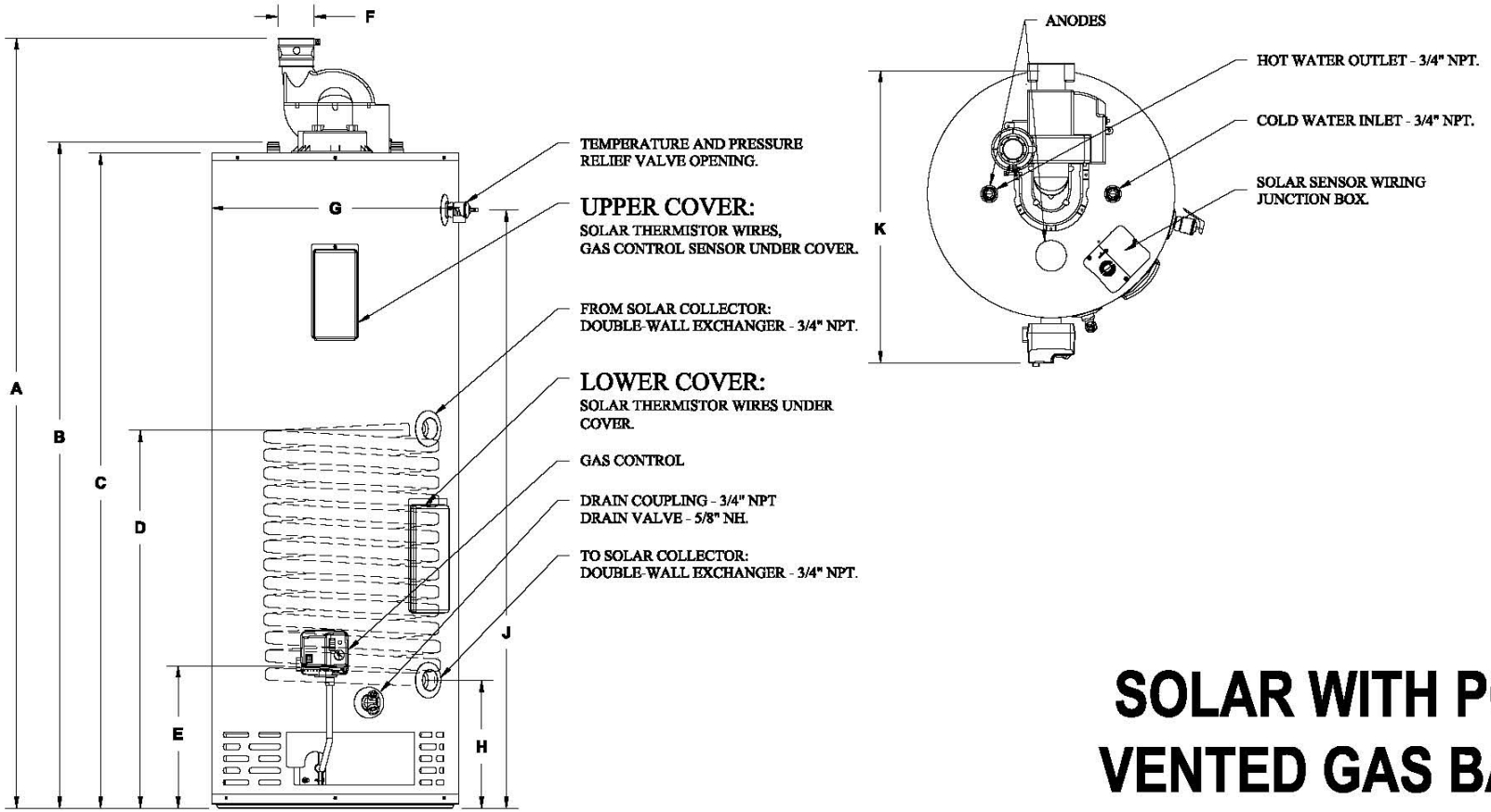
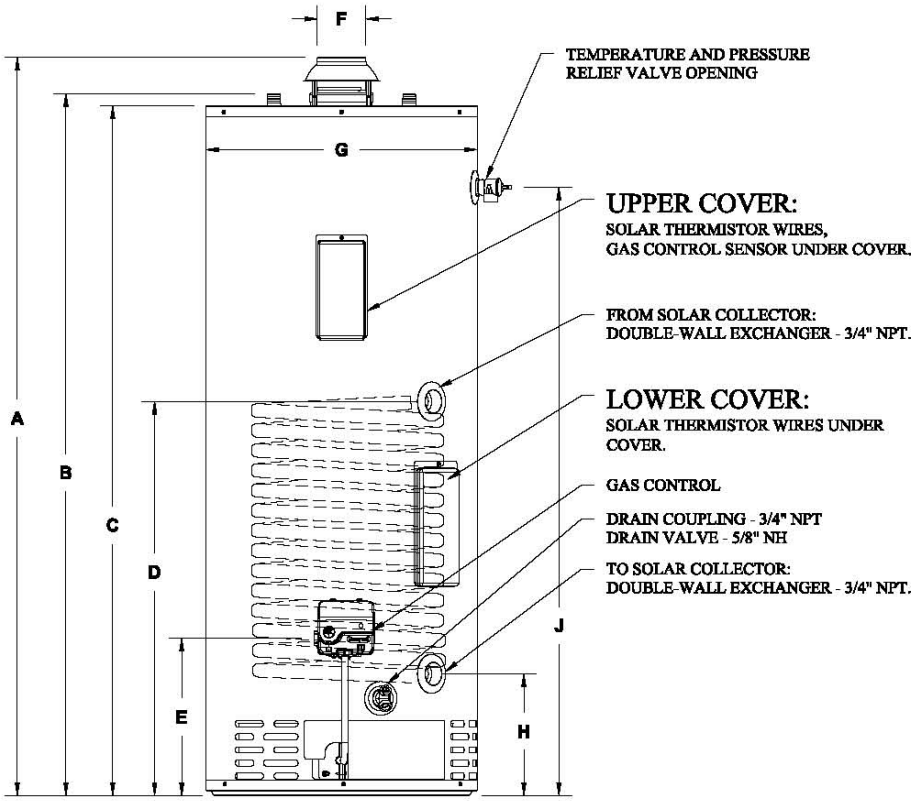


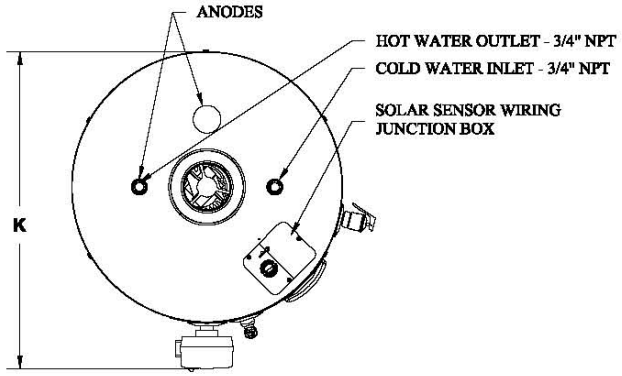
Figure 3 – Solar Heating with a Drainback System



SOLAR WITH POWER VENTED GAS BACKUP

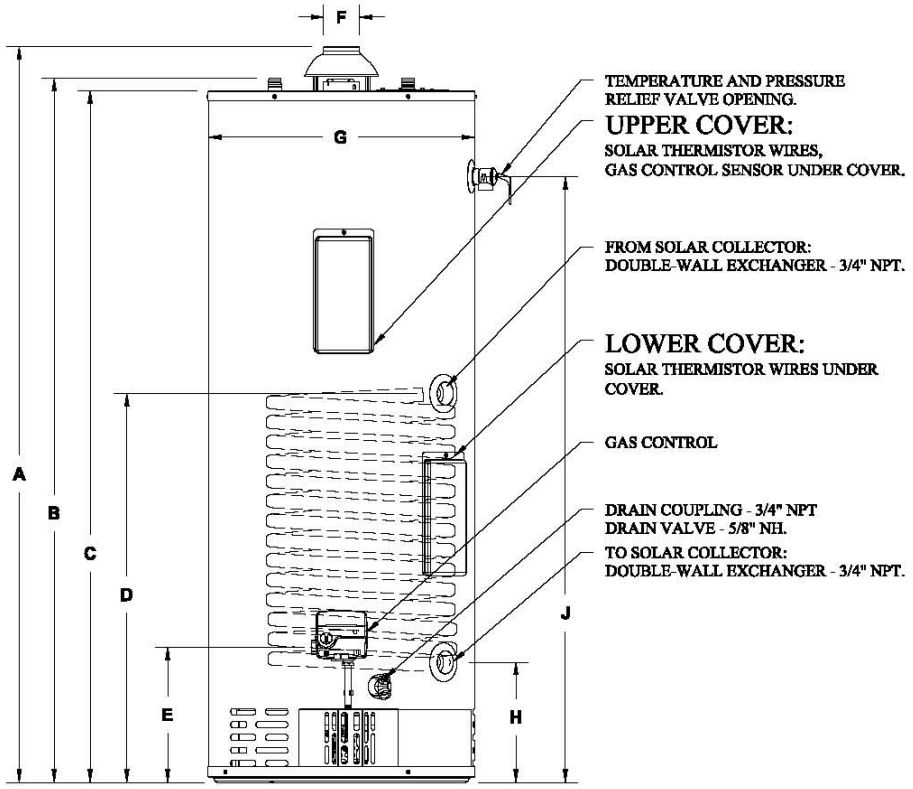
			RECOVERY 90°F RISE			A	B	C	D	E	F	G	H	J	K	
MODEL NUMBER	NAT. BTU/HR INPUT	LP BTU/HR INPUT	NAT. U.S. GPH	LP U.S. GPH	STORAGE CAPACITY	FLOOR TO VENT CONN.	FLOOR TO WATER CONN.	FLOOR TO HEATER TOP	FLOOR TO EXCHANGER INLET	FLOOR TO GAS CONN.	VENT SIZE	JACKET DIAMETER	FLOOR TO EXCHANGER OUTLET	FLOOR TO T&P CONN.	DEPTH	APPROX. SHIPPING WEIGHT (LBS.)
SDW2TW50T6F(BN,SX)	67,000	60,000	72	65	45 GAL.	59-1/4"	57"	56"	32-1/4"	11-3/8"	3"	22"	10-1/8"	50"	26"	247
SDW2TW65T6F(BN,SX)	70,000	63,000	75	68	60 GAL.	63"	60-1/4"	59-1/2"	32-1/4"	11-3/8"	3"	24"	10-1/8"	53-1/2"	28"	281
SDW2TW75T6(BN,SX)	76,000	75,500	82	81	70 GAL.	62-3/8"	59-3/4"	59"	34-5/8"	14-1/8"	3"	26"	12-1/2"	52"	30-3/8"	336

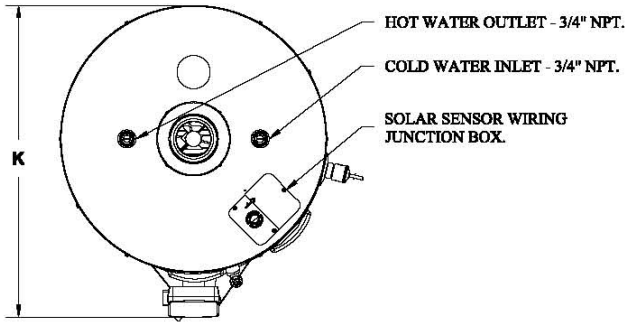




SOLAR WITH ATMOSPHERIC VENTED GAS BACKUP

			RECOVERY 90°F RISE			A	B	C	D	E	F	G	H	J	K	
MODEL NUMBER	NAT. BTU/HR INPUT	LP BTU/HR INPUT	NAT. U.S. GPH	LP U.S. GPH	STORAGE CAPACITY	FLOOR TO VENT CONN.	FLOOR TO WATER CONN.	FLOOR TO HEATER TOP	FLOOR TO EXCHANGER INLET	FLOOR TO GAS CONN.	VENT SIZE	JACKET DIAMETER	FLOOR TO EXCHANGER OUTLET	FLOOR TO T&P CONN.	DEPTH	APPROX. SHIPPING WEIGHT (LBS.)
SDW2504T6F(BN,SX)	65,000	61,000	69	65	45 GAL.	59-1/4"	57"	56"	32-1/4"	11-3/8"	4"	22"	10-1/8"	50"	26"	223
SDW265T6F(BN,SX)	65,000	63,000	69	67	60 GAL.	63"	60-1/4"	59-1/2"	32-1/4"	11-3/8"	4"	24"	10-1/8"	53-1/2"	28"	264
SDW275S6(BN,SX)	76,000	76,000	82	82	70 GAL.	62-3/8"	59-3/4"	59"	34-5/8"	14-1/8"	4"	26"	12-1/2"	52"	30-3/8"	306

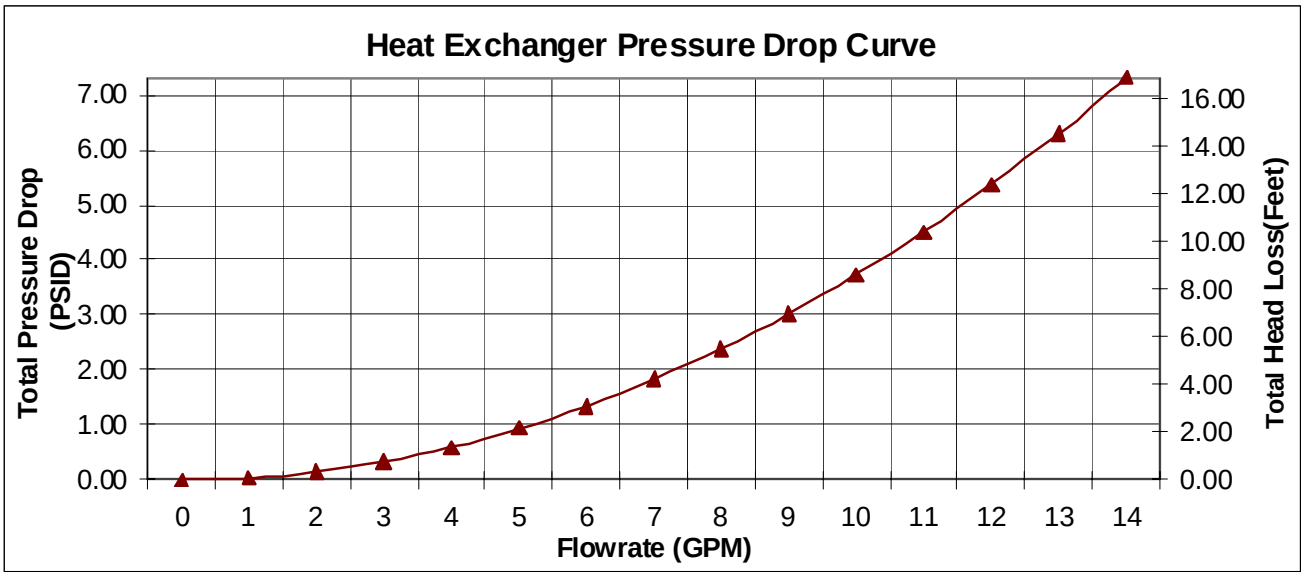




SOLAR WITH ULTRA-LOW NOx ATMOSPHERIC GAS BACKUP

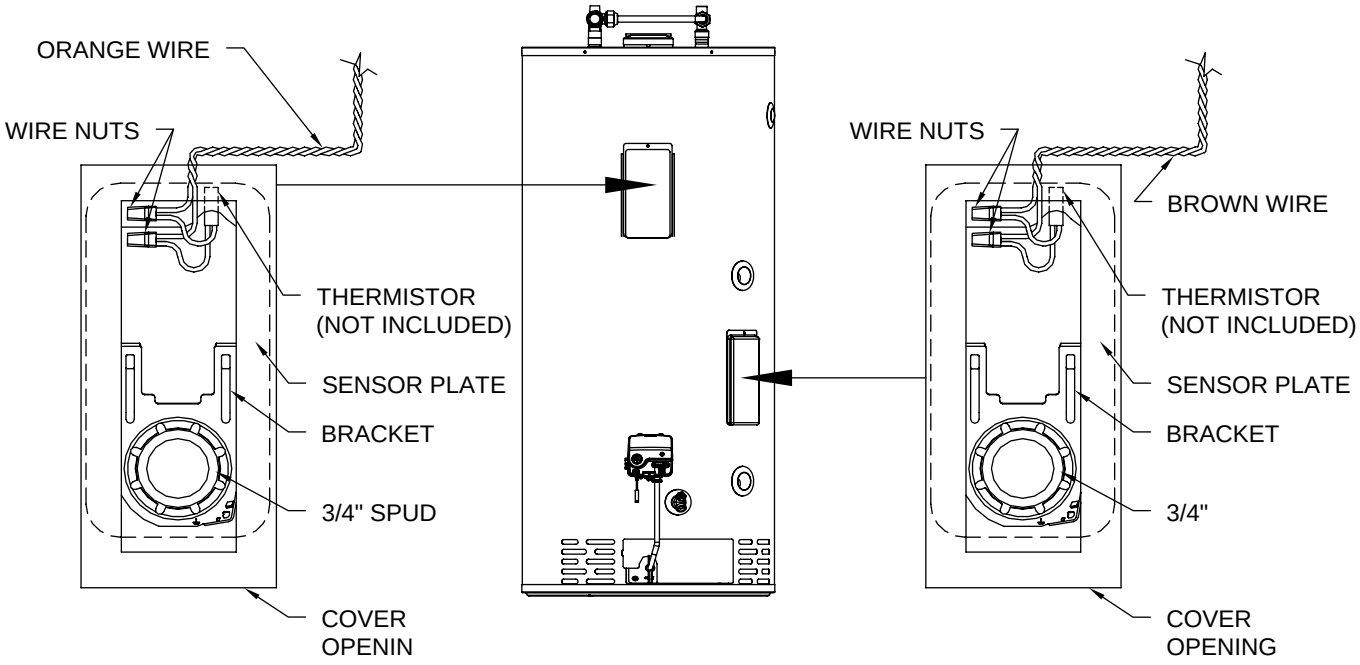
		RECOVERY 90°F RISE		A	B	C	D	E	F	G	H	J	K	
MODEL NUMBER	NAT. BTU/HR INPUT	NAT. U.S. GPH	STORAGE CAPACITY	FLOOR TO VENT CONN.	FLOOR TO WATER CONN.	FLOOR TO HEATER TOP	FLOOR TO EXCHANGER INLET	FLOOR TO GAS CONN.	VENT SIZE	JACKET DIAMETER	FLOOR TO EXCHANGER OUTLET	FLOOR TO T&P CONN.	DEPTH	APPROX. SHIPPING WEIGHT (LBS.)
SDW4U5036FRN	40,000	43	45 GAL.	59-1/4"	57"	56-1/4"	32-1/4"	11-5/8"	3"	22"	10-1/8"	50"	26"	233
SDW2U65T6FRN	55,000	57	60 GAL.	63"	60-1/4"	59-1/2"	32-1/4"	11-5/8"	4"	24"	10-1/8"	53-1/2"	28"	272

Heat Exchanger Specifications



DOUBLE-WALL HEAT EXCHANGER – The solar water heater has a double-wall heat exchanger with a slight gap between the two tubes that makes up the heat exchanger coil. The ¾" female fitting provides an atmospheric vent for any fluid that enters the gap between the tubes. The heat exchanger has 14.2 ft^2 of heat transfer surface area.

SENSOR WIRES FOR SOLAR THERMISTOR CONNECTIONS – Twisted wires are provided under the lower and upper covers. These wires have been provided as a means for connecting thermistors to a solar controller. **NOTICE: Neither the solar controller nor the thermistors are provided with the solar water heater and must be purchased separately.** The lower thermistor wires connect a thermistor for use in comparison to the solar collector temperature to determine if an appropriate temperature difference for heat transfer is available. A bracket to fix the thermistor against the tank wall is supplied. The upper thermistor wires are an optional second thermistor connection to monitor the upper tank temperature. Some solar controllers provide this option.



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