

# Solar Water Heater

## Meibes Solar Water Heater

Meibes solar water heaters are designed with a high-capacity 1.5" internal coil heat exchanger. Some models incorporate an optional 4500W electric heating element and/or second coil heat exchanger for backup heating. A heating medium is passed through the solar panels and internal coil as long as there is an adequate temperature difference between the heating medium and stored water in the tank. The internal coil is located as close to the bottom as possible to facilitate the transfer of heat even at lower solar panel temperatures.

During periods of water flow through the water heater, hot water is drawn from the top of the heater and cold water is delivered to the bottom of the tank (by a diptube or bottom inlet). If the hot water demand should exceed the solar heat output or there is an insufficient temperature difference between the heating medium and stored water, the heating element thermostat will activate the electrical heating element for backup heat. When an additional internal coil is used for backup heating, an aquastat should be used for flow control in the backup heating loop. An aquastat immersion well is supplied on some models. Solar heat output transferred to the internal coil will vary depending on outside conditions and the temperature of the stored water.

## Temperature Control

A solar controller (not provided) shall be used in conjunction with the solar water heater to run all solar components in the heating system. The solar controller will be connected to two thermistors that monitor lower and upper tank temperature. In some cases, only one thermistor (near the bottom of the tank) will be used. The proper temperature setting for domestic hot water use is 120°F/49°C.

The solar water heater may be equipped with an optional backup electrical heating element and adjustable thermostat. If the solar system cannot satisfy the user demand, the electric element will energize and heat the water until the thermostat is satisfied. An ECO (electrical cut-off) is included as part of the temperature control and is designed to cut off power to the heating element in the event the water in the tank reaches 180°F. The ECO is a safety feature on the water heater and cannot be adjusted.

The thermostat is factory set at 120°F. If hotter water is required a tempering or anti-scald device must be installed at the domestic hot water outlet of the heater or at the point of use.

**Caution:** The recommended maximum hot water temperature setting for normal residential use is 120°F. Manufacturer recommends a tempering valve or anti-scald valve be installed and used according to the manufacturer's directions to prevent scalding.



- High-capacity 1.5" internal coil heat exchanger with optional 4500W electric heating element & second coil heat exchanger for auxiliary heat source
- Porcelain enamel glass lined tank and coils which is highly resistant to aggressive water
- 2" Non-CFC, zero ozone depletion, foam insulation decreases standby heat loss
- Two magnesium anode rods inhibit corrosion and maximize tank life
- Factory installed, CSA listed T&P valve
- Storage capacity from 50 to 119 gallons

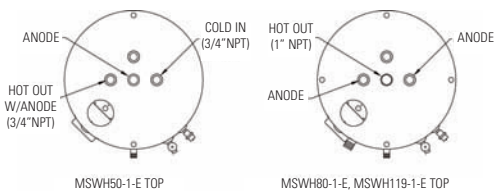


Figure 1: MSWGH0-1-E, MSWH80-1-E, MSHWH19-1-E

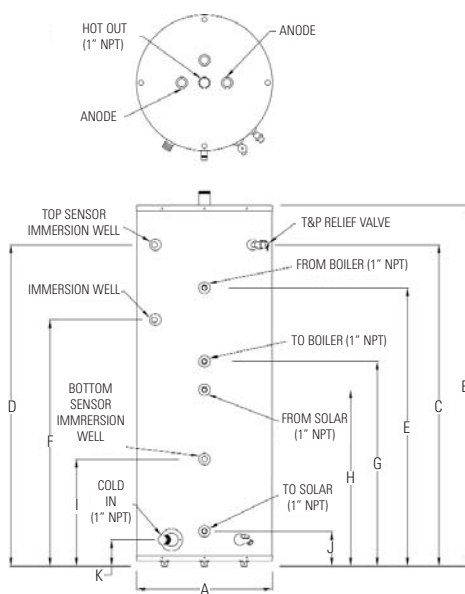


Figure 2: MSWH80-2-E, MSWH119-2-E

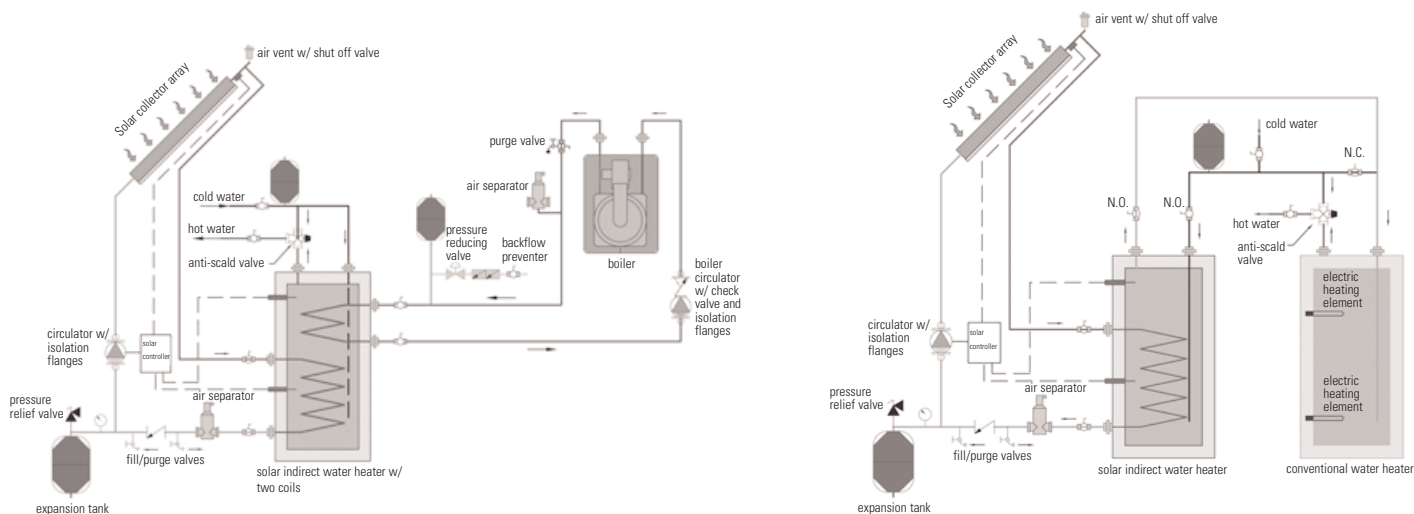
Model	Dual Coil	Electric Backup	A	B	C	D	E	F	G	H	I	J	K	Actual Tank Volume (gal)	Coil Volume Solar/Boiler (gal)	Coil Surface Area Solar/Boiler (ft <sup>2</sup> )	Coil Friction Loss Solar/Boiler (ft w.c.)	Electric Heating First Hour Rating (gal)	Standby Loss Rating (°F/hr)
MSWH50-1-E	-	yes	22"	48 1/4"	39 3/4"	39 3/4"	31 1/2"	16 3/4"	6 1/2"	n/a	n/a	n/a	n/a	45	2.30/-	11.78/-	0.50/-	36	1.1
MSWH80-1-E	-	yes	24"	64"	57 1/8"	57 1/8"	31 1/2"	19 1/4"	6 1/2"	5"	n/a	n/a	n/a	75	2.76/-	14.14/-	0.60/-	40	0.8
MSWH80-2	yes	-	24"	64"	57 1/8"	57 1/8"	49 1/2"	46 7/8"	36 1/2"	31 1/2"	19 1/4"	6 1/2"	5"	73	2.76/1.84	14.14/9.42	0.60/0.40	n/a	0.8
MSWH80-2-E	yes	yes	24"	64"	57 1/8"	57 1/8"	49 1/2"	46 7/8"	36 1/2"	31 1/2"	19 1/4"	6 1/2"	5"	73	2.76/1.84	14.14/9.42	0.60/0.40	40	0.8
MSWH119-1-E	-	yes	28"	65"	57 3/4"	57 3/4"	33 3/4"	16 1/4"	8 3/4"	6 1/2"	n/a	n/a	n/a	110	2.76/-	14.14/-	0.60/-	50	1.2
MSWH119-2	yes	-	28"	65"	57 3/4"	57 3/4"	51 3/4"	49 1/8"	38 3/4"	33 3/4"	16 1/4"	8 3/4"	6 1/2"	108	2.76/1.84	14.14/9.42	0.60/0.40	n/a	1.2
MSWH119-2-E	yes	yes	28"	65"	57 3/4"	57 3/4"	51 3/4"	49 1/8"	38 3/4"	33 3/4"	16 1/4"	8 3/4"	6 1/2"	108	2.76/1.84	14.14/9.42	0.60/0.40	50	1.2

**Pressure Rating (all models):**

- Test pressure = 300 PSI
- Working pressure = 150 PSI

**Electrical rating (where applicable): 4.5KW, 240V**

**Insulation:** 2" Non-CFC, zero ozone depletion foam insulation is standard



Two tank system with existing heater

Single tank system with boiler backup



**Meibes Incorporated**  
 North American Headquarters  
 68 Mazzeo Drive, Randolph, MA 02368 - USA  
 (877) 257-5473 Tel/Fax  
 www.meibes.us.com