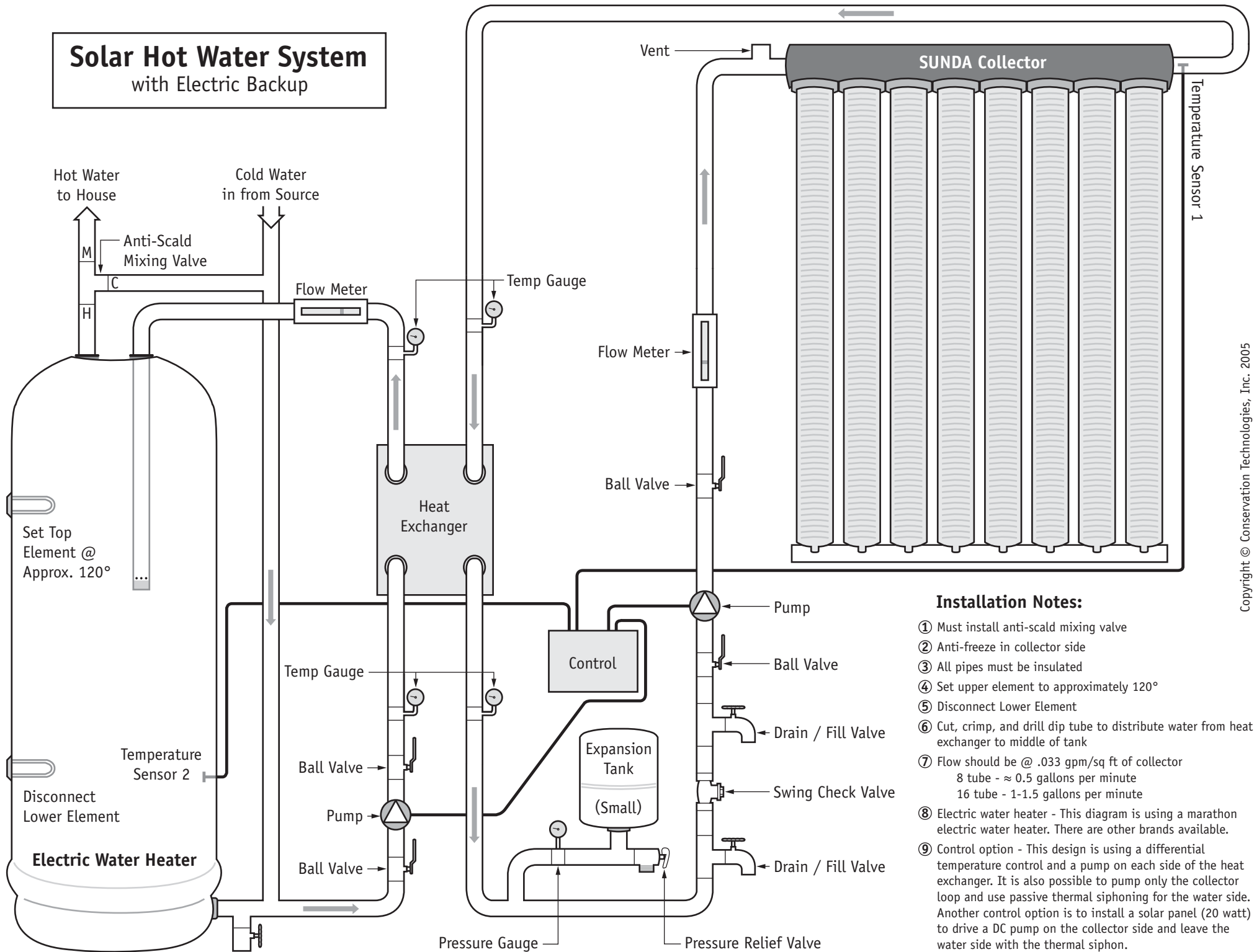


# Solar Hot Water System with Electric Backup



## Installation Notes:

- ① Must install anti-scald mixing valve
- ② Anti-freeze in collector side
- ③ All pipes must be insulated
- ④ Set upper element to approximately 120°
- ⑤ Disconnect Lower Element
- ⑥ Cut, crimp, and drill dip tube to distribute water from heat exchanger to middle of tank
- ⑦ Flow should be @ .033 gpm/sq ft of collector  
8 tube - ≈ 0.5 gallons per minute  
16 tube - 1-1.5 gallons per minute
- ⑧ Electric water heater - This diagram is using a marathon electric water heater. There are other brands available.
- ⑨ Control option - This design is using a differential temperature control and a pump on each side of the heat exchanger. It is also possible to pump only the collector loop and use passive thermal siphoning for the water side. Another control option is to install a solar panel (20 watt) to drive a DC pump on the collector side and leave the water side with the thermal siphon.