

# **SUNBATHER INTEGRAL SOLAR COLLECTOR AND STORAGE SYSTEM INSTALLATION GUIDE**

**SOLAR WATER  
HEATING  
MADE SIMPLE !**



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PIPING THE SUNBATHER

## **SYSTEM OPERATION**

The Sunbather ICS solar water heater is also known as a batch type solar water heater. The glass lined tank is coated with a highly absorbent, high temperature black paint. When the sun's rays pass through the glazing system and strike the tank, heat energy is transferred into the water. The Sunbather works best in moderate climates and can produce water temperatures in excess of 160 degrees F. in the summer. In climates like the southern states and coastal areas, the unit can produce 100 to 120 degree water in midwinter on a sunny day.

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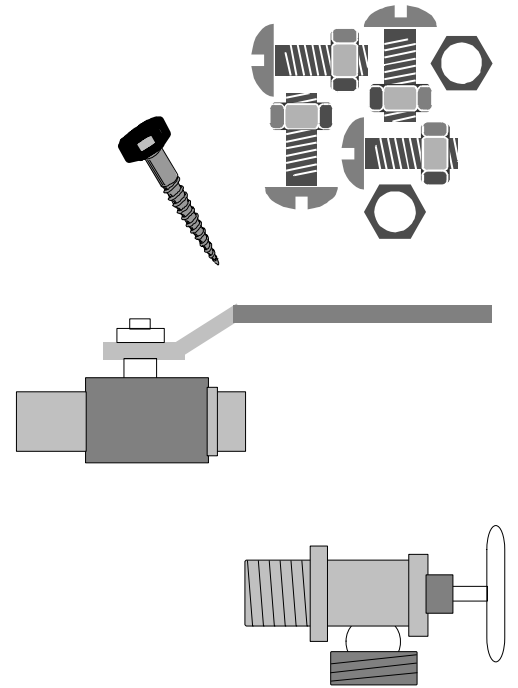
## EQUIPMENT

# SUNBATHER WATER HEATER MOUNTS WITH BOLTS



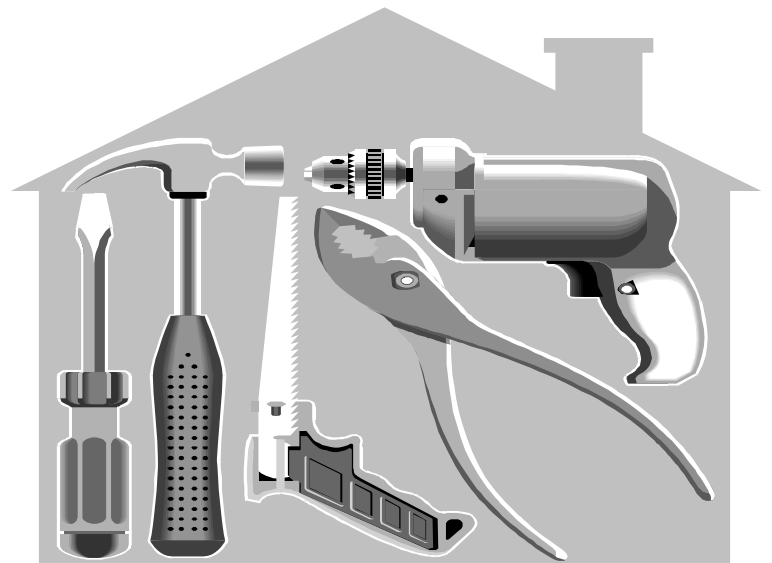
## MATERIALS

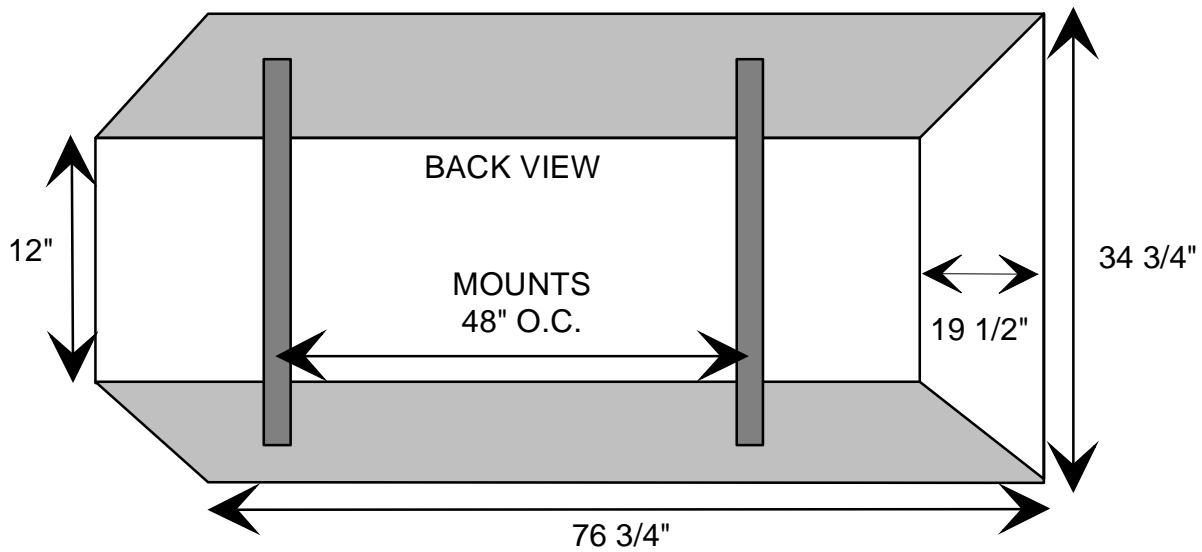
2 - ROOF JACKS  
3/4" TYPE M COPPER TUBING  
HALSTEAD TYPE PIPE INSULATION  
1/4" X 4 LAG SCREWS (6" FOR SHAKE OR FOAM ROOFS)  
3 - 3/4" BALL VALVES  
3/4" BOILER DRAIN  
3 - 2/3" COPPER TEES  
3/4" FEMALE ADAPTER  
3/4" 90 DEGREE ELLS AS NEEDED  
3/4" 45 DEGREE ELLS AS NEEDED  
3/4" COUPLINGS AS NEEDED  
TEFLON TAPE AND/OR PIPE DOPE  
SOLDER AND FLUX  
SAND CLOTH OR SANDPAPER  
PLASTIC ROOF CEMENT  
SILICONE SEALANT



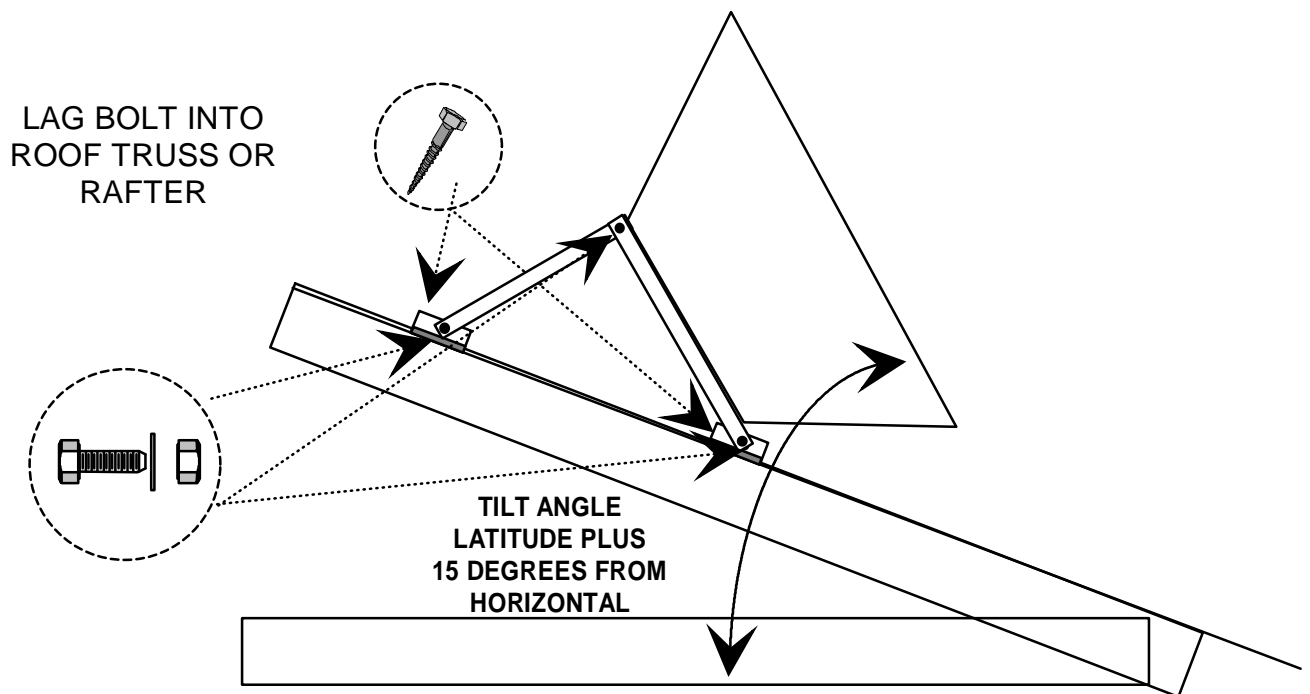
## TOOLS

1/4" OR LARGER ELECTRIC DRILL  
EXTENSION CORD  
EXTENSION LADDER  
STEP LADDER OR NBA BASKETBALL PLAYER  
1" OR LARGER WOOD DRILL BIT  
SAWZALL AND/OR KEYHOLE SAW  
SOCKET SET AND RACHET  
HAMMER  
SCREWDRIVERS  
PLUMBING WRENCHES  
PROPANE TORCH  
CAULKING GUN

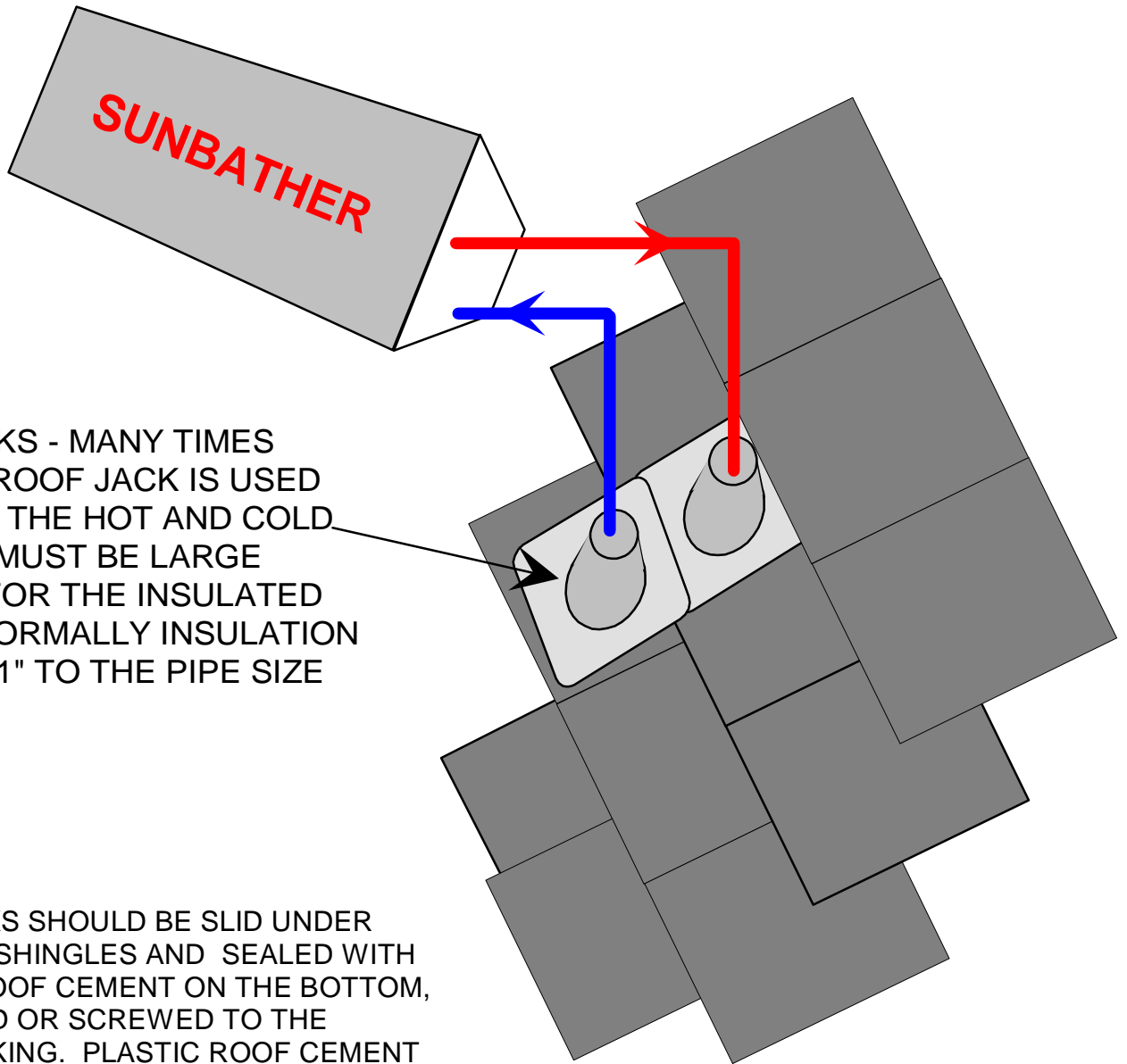




SIDE VIEW MOUNTING DETAIL



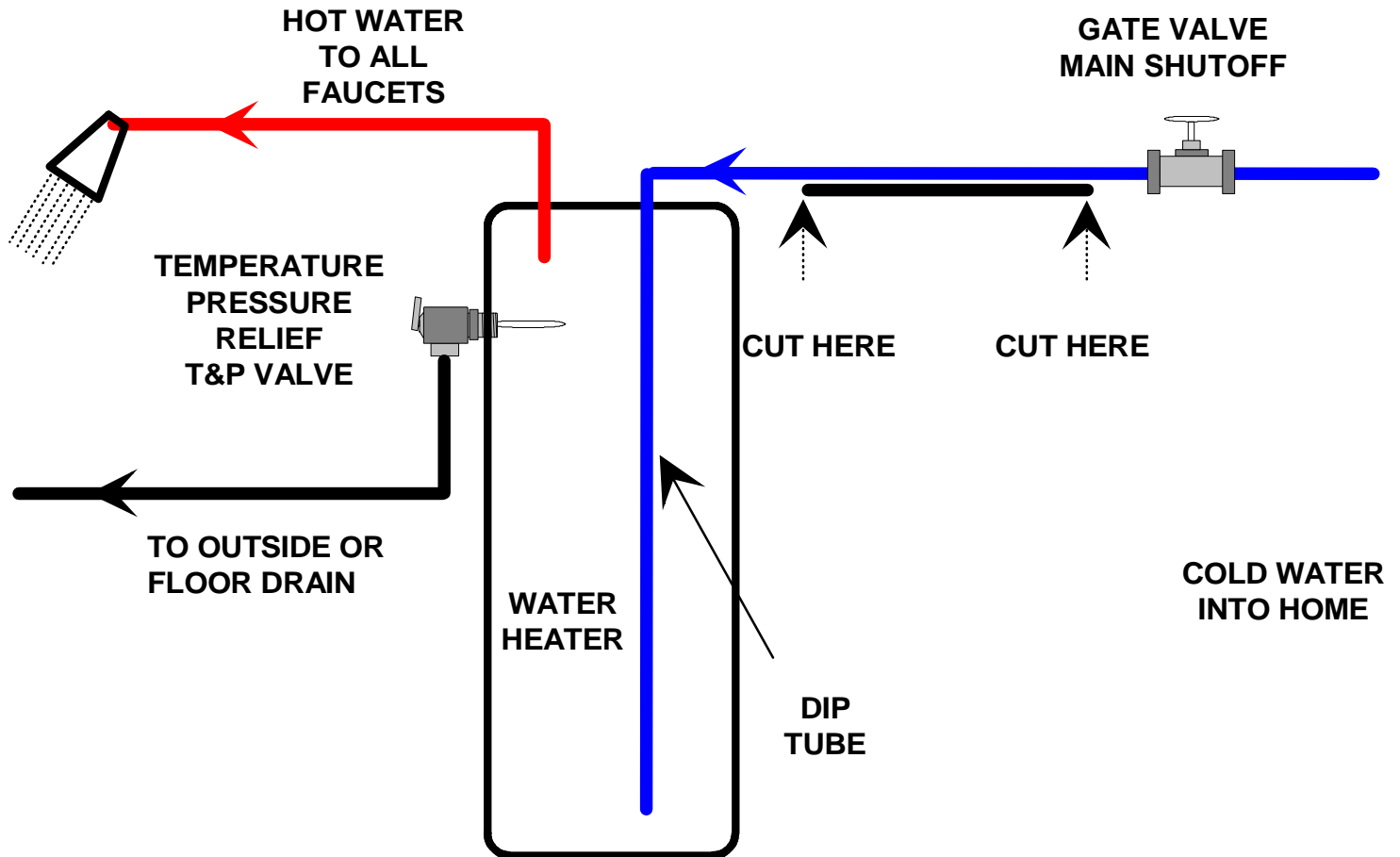
# ROOF PENETRATIONS



ROOF JACKS - MANY TIMES A SINGLE ROOF JACK IS USED FOR BOTH THE HOT AND COLD PIPES - IT MUST BE LARGE ENOUGH FOR THE INSULATED PIPING - NORMALLY INSULATION WILL ADD 1" TO THE PIPE SIZE

ROOF JACKS SHOULD BE SLID UNDER THE ROOF SHINGLES AND SEALED WITH PLASTIC ROOF CEMENT ON THE BOTTOM, AND NAILED OR SCREWED TO THE ROOF DECKING. PLASTIC ROOF CEMENT SHOULD THEN COVER THE ROOF JACK. ALL PIPING SHOULD BE INSULATED WITH HALSTEAD TYPE INSULATION (HIGH TEMP.) AND ALL EXTERIOR INSULATION SHOULD BE PAINTED WITH UV RESISTANT PAINT OR OTHERWISE PROTECTED. ALL PIPING SHOULD CONFORM TO THE NATIONAL PLUMBING CODE (UPC) AND LOCAL CODES

# MODIFICATION OF NORMAL PIPING OF A TYPICAL RESIDENTIAL WATER HEATER



THE COLD WATER PIPE TO THE HOT WATER HEATER IS CUT AND THE WATER IS PIPED TO THE BATCH WATER HEATER AS GIVEN ON THE NEXT PAGE. VALVES ARE INSTALLED TO ISOLATE THE BATCH WATER IF NECESSARY. THE HOT WATER FROM THE BATCH HEATER THEN GOES TO THE BOTTOM OF THE CONVENTIONAL WATER HEATER THROUGH THE DIP TUBE. THE WATER HEATER WILL NOT TURN ON UNLESS ITS THERMOSTAT SENSES COLD WATER..

# NORMAL PIPING OF THE SUNBATHER BATCH WATER HEATER WITH ISOLATION/DRAIN VALVES

