

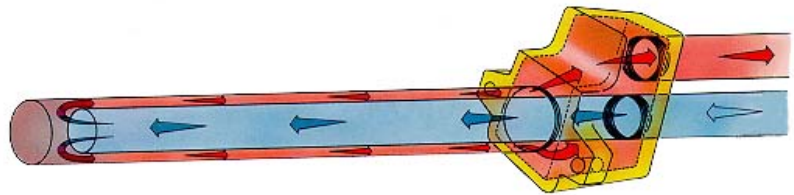
HOT ROD OWNERS MANUAL

- Installation
- Operation
- Maintenance



CAUTION:
Read Rules For
Safe Operation
And Instructions
Carefully

IMPORTANT:
Installation must be made in
accordance with State and Local
ordinances which may differ from
this installation manual



H₂OT ROD

DOMESTIC HOT WATER PROBE

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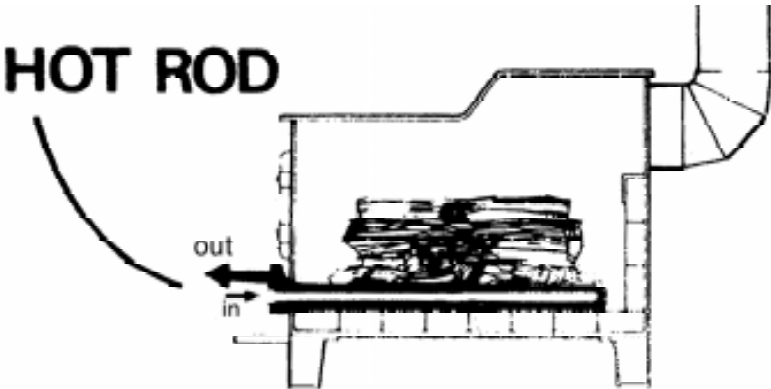
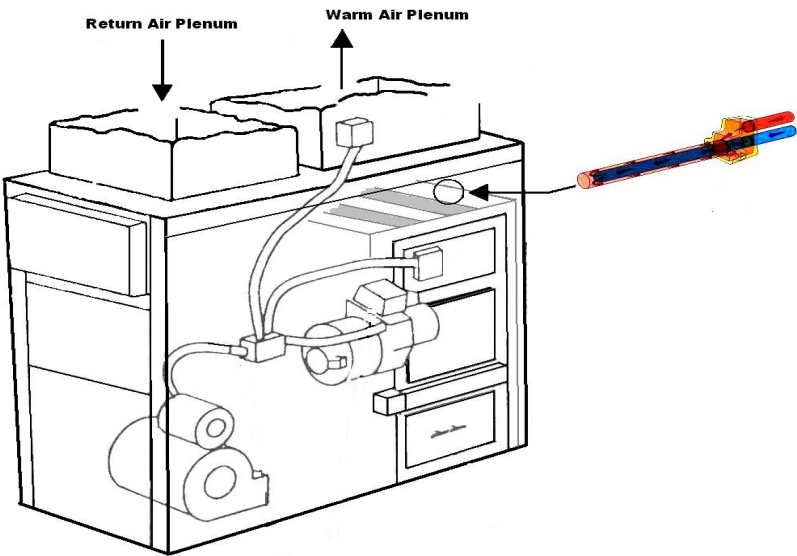
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Note:

The placement of the HotRod in the Yukon-Eagle Multi-Fuel and Wood furnaces will differ from the installation in a wood stove.

Please refer to our Recommended System on Page 12 (Fig. 2) when preparing for the installation of the HotRod in the Yukon-Eagle Multi-Fuel furnace. The drawing shows that the best placement for the HotRod to be placed in the Yukon-Eagle furnace is through the 22 gauge casing, mounted at least an inch from the top of the firebox in the warm air plenum opening.

If you have any questions regarding the placement or the installation of the HotRod please call Customer Service at 800-358-0060.



INTRODUCTION

The HotRod is a domestic hot water probe designed to be installed in a wood/coal stove or furnace and connected to an existing hot water system.

Read all instructions before starting the installation. To install the HotRod in a stove or furnace, carefully follow the steps in the order given to avoid mistakes.

All systems must be installed in compliance with all National, State and Local codes.

This system should be installed by a licensed plumber.

1. SAFETY



CAUTION



Heated water in an enclosed system can be very dangerous if the proper steps are not taken to ensure safety. The biggest danger is an explosion. There are two ways to cause an explosion:

1. Shutting off the supply pipes to the probe. Isolating the probe from its relief valve with even a small amount of water present will cause an almost instant explosion as soon as the probe is heated above the boiling point.
2. Interrupting the supply of water to the probe while a fire is going will cause the probe to overheat and exhaust all of its water through the relief valve. Once the probe is dry it will become super-heated. If water is then allowed to enter the system it will instantly vaporize, exceeding the capacity of the relief valve, and the system may explode.

To avoid these and other possible dangers, design and install the system according to these instructions. Keep the following safety rules in mind.

Use the safety rules below as a guideline to designing the system. Use it as a checklist for the completed installation.

A. Any part of the system that can heat water must have a pressure and temperature relief valve installed adjacent to and above the heat source with no valves of any kind between the heat source and the relief valve.

SAFETY (con't)

B. All relief valves must have a drain pipe on the outlet. This pipe must be the same size as the outlet. The pipe should terminate over a floor drain. The end of the pipe should not be threaded and there may be no valves in this discharge pipe.

C. The drain pipe to all relief valves must be installed with enough slope to insure that no water will stand in the pipe. The drain pipe must be protected from freezing.

D. All relief valves must be installed with their temperature sensing elements in the water tank of the heater or with the element in the flow path of the water in the circulating loop. They must not be installed at the end of a pipe extension where water is not flowing freely.

E. All solid fuel water heating systems should be equipped with a tempering valve to prevent scalding hot water from being delivered to any faucets.

F. No plastic pipe may be used in the system, except on the down- stream side of the tempering valve.

G. No copper sweat fittings should be used within two feet of the firebox. When changing from iron pipe to copper pipe, dielectric unions should be used.

H. All system components must be rated to withstand 150 P.S.I. pressure and 2100F. temperature minimum. This includes all pumps, valves, pipe and fittings.

I. The stove or furnace should never be fired unless there is water in the HotRod and the circulation system is functional.

J. If the system ever runs dry, make sure the Hot Rod has cooled down completely before the water supply is resumed.

2. SELECT LOCATION

A. The HotRod should be located so the probe rests in the coals of the fire or in or near the flames of the fire. Mounting the probe so that it will be surrounded by coals will give the maximum amount of hot water, approximately 18 gallons per hour at 80 F temperature rise. Mounting the probe in the smoke path above the flames will give the least amount of hot water, approximately 6 gallons per hour at 80F temperature rise.

When too much hot water is generated, the relief valve will be discharging hot water frequently. This can be reduced by adding a heat sink (hot water baseboard heater) into the line supplying water to the probe. If there is not enough hot water generated, two probes can be used.

B. If the probe must be mounted in an area where it can be hit by wood being thrown into the stove or furnace, the inner end of the probe must be supported by a bracket.

C. The probe should not block or interfere with any air inlets or smoke outlets.

D. The location should be selected to provide room for the length of the probe and a flat surface on which to mount the probe. The location must be clear of bricks, grates and moving parts.

E. The location should be selected with pipe routing in mind. The fewer elbows and fittings used, the better a gravity circulated system will work. The pipes should not interfere with filling or cleaning of the stove.

3. MOUNTING HOLES (FIG. 1)

Read these instructions and plan your system completely before beginning installation of the Hot Rod.

A. Mark the size and location of the mounting holes on the stove or furnace.

B. Saw or punch the 1 11/16" diameter hole for the probe.

C. Drill the two 3/8" diameter mounting holes. To accurately locate the two holes, use the probe as a drill guide. Hold the probe in place while drilling the first hole. After drilling the first hole, bolt the probe in place with one of the two bolts provided and drill the second hole.

4. PROBE INSTALLATION

- A. Determine what piping is to be used to connect the probe to the system. Often it is easier to install some of the piping to the probe before it is permanently mounted to the stove or furnace. Use 3/4" galvanized iron pipe. Do not use plastic or copper near the stove.
- B. To permanently mount the probe to the stove or furnace, use a 1/8" layer of furnace cement around the holes and the tube on the mounting face of the probe.
- C. Mount the probe to the stove or furnace and tighten the two mounting bolts and nuts.
- D. Remove excess furnace cement with a damp cloth before it has time to set.
- E. A bracket to support the inner end of the probe must be used if the probe can be hit by wood being thrown into the firebox.

5. PLUMBING CONNECTIONS

The two most common methods of installing the probe are:

A. GRAVITY CIRCULATING SYSTEM

B. CIRCULATING PUMP SYSTEM

A. GRAVITY CIRCULATING SYSTEM

A gravity circulated system with a tempering tank near the furnace or stove and above the probe is the safest, most efficient and most reliable system.

It is safe because there is a large amount of water above the probe to prevent the probe from ever running itself dry. The system will also operate for a longer period of time without electricity.

This system is more reliable because there are no switches, pumps or other controls.

The gravity circulating system is more efficient because it can contribute to preheating the water for an existing water heater, even when the output of the probe is at a lower temperature than the water in the existing water heater.

This system will allow the water to warm up toward room temperature even when the stove or furnace is not being fired. Hooking the probe to a tempering tank will not contribute to heat loss, which can happen when the probe is connected directly to the water heater.

INSTALLATION

To ensure that gravity circulation can take place, the horizontal distance from the probe to the tempering tank should be as short as possible. The horizontal distance must never be more than twice the vertical distance from the probe to the top connection at the tank. (Figure 2).

The system must be designed to prevent air locks from forming. To do this, have the hot water outlet from the system connected to the highest point of the system. This point should be at or near the top of the tempering tank. All horizontal runs should slope upward to the tank or outlet.

When it's not practical to have the outlet at the highest point of the gravity loop system, an air eliminator valve will have to be used anywhere air could be trapped and form an air lock.

A gravity system must include a pressure temperature relief valve above the probe, within 6" of the probe. Be sure to connect a discharge pipe to the relief valve to prevent steam or scalding hot water from being sprayed around the room. There can be no valves in the line between the probe and the relief valve.

A tempering tank/probe system can be installed one floor above or below the existing water heater.

A gravity circulated system can be connected directly to an existing hot water system (Figure 5). This system will not be as efficient as a tempering system. There will be some heat loss to the probe whenever the probe is cooler than the water in the heater. This system must have a shut-off valve in the loop to the probe to prevent heat loss when the stove is not being fired.

B. CIRCULATION PUMP SYSTEM (FIG. 3 & 4)

This system is not recommended because of cost, complexity and the reduced output of the system.

This system will cost as much or more than a tempering tank system because of the pump, aqua-stat, air eliminator, electrical wiring and check valve required.

The complexity of a pump system makes it less reliable and more prone to malfunction.

Because a circulating pump system can contribute nothing until the water in the probe is hotter than the water in the water heater, output is reduced.

Use the circulating pump system only when it is impractical to install a tempering tank system.

INSTALLATION

Since a power failure or loss of water system pressure could cause the probe to run dry, the probe must be mounted in the cooler upper part of the firebox. The probe may not be mounted in the coals of the fire for a pumped system, because of the danger of the probe becoming super-heated.

Extreme overheating of the probe can cause leaks and can contribute to other system component failure.

When a pump system is installed, the system must have an aqua-stat attached to the pipe above the probe to turn the pump on when the water is warm.

A system designed to supply hot water directly to the water heater should have a check valve in the supply line to the probe to prevent hot water from the water heater circulating backwards through the probe when the fire is out.

This system should also have an automatic air eliminator valve in the high point of the loop to prevent air locks.

This system should have a pressure/temperature relief valve at the top of the water heater and another pressure/temperature relief valve above the probe within 6". The pressure/temperature relief valve at the probe should have a capacity of 95,000 BTU/hr. minimum.

6. COMPONENT SPECIFICATIONS

A. RELIEF VALVE

Pressure—150 P.S.I. Maximum
Temperature—210 F. Maximum
95,000 BTU/Hr. Minimum

B. TEMPERING TANK

If the probe is mounted above the flames, a 15 to 20 gallon tank will hold the hot water. When the probe is mounted in the coals of the fire, a 50 gallon or larger storage tank should be used.

C. INSULATION

Adding insulation to the pipes and tanks will increase the amount of hot water available at any time.

D. OTHER COMPONENTS

All other system components must be rated to withstand 150 P.S.I. and 210F temperature minimum. This includes all pumps, valves, pipes and fittings. Circulators should be of brass, bronze or stainless construction designed for potable water system. Such pumps are made by Grundfos, Taco and others and are available at Graingers and other plumbing and industrial supply houses.

7. MAINTENANCE

A. PROBE

In areas where water has a high mineral content, it may be necessary to remove deposits from the probe to keep it from becoming blocked. Commercially available solvents from your hardware or plumbing supply store offer the most economical method. Check instructions furnished with the solvent to make sure it is compatible with the brass and stainless steel of the probe.

B. PUMP

The pump should be lubricated according to the manufacturer's instructions.

C. RELIEF

Relief valves that are equipped with a lever at the top should be tested by lifting the lever and releasing a small amount of water. This should be done at the start of every heating season or after any period of non-use to flush the valve seat and to ensure that the valve is not stuck.

15 Year Limited Warranty

ALPHA AMERICAN HOT ROD

Alpha American Co., 10 Industrial Blvd., Palisade, MN., 56469, extends this warranty to the original purchaser of Alpha American Co. Hot Rod, which is installed and used under normal conditions. (Please refer to Paragraph III entitled "Conditions of this Warranty").

I. WHAT THIS WARRANTY COVERS AND FOR HOW LONG

A. Alpha American will repair or replace, at its option, any Hot Rod which fails as a result of a defect in material or workmanship during the first year after purchase or 18 months after date of manufacture, whichever comes first. Thereafter, Alpha American Co. will repair or replace any Hot Rod which fails as a result of a defect in material or workmanship at a cost to the purchaser of a proportion of the existing manufactures suggested retail price as follows:

YEAR AFTER PURCHASE	% OF RETAIL COST TO PURCHASER	YEAR AFTER PURCHASE	% OF RETAIL COST TO PURCHASER
2	50%	6-10	80%
3	60%	11-15	90%
4-5	70%		

B. Alpha does not agree to pay the cost of service calls to the site of original installation, or the cost of labor to remove or install parts covered by this warranty, nor does Alpha agree to pay freight or other transportation expenses which may be incurred in connection with obtaining performance under this limited warranty.

C. Alpha is not responsible for any damage to or malfunction of this product unless caused by defect in material or workmanship. Damage caused by abuse or breach of the conditions of this will warranty will excuse Alpha performance of any part of this warranty.

D. Alpha is not responsible for any consequential damage resulting from any malfunction. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you.

E. Limitation of Implied Warranties

This limited warranty supercedes any warranty, including any warranties 01 MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE which might be implied from this purchase. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

II. HOW TO OBTAIN PERFORMANCE UNDER THIS WARRANTY

A. Purchaser should first contact the dealer or contractor from whom the Hot Rod was purchased, and notify him of the defect or malfunction complained of purchasers name and date of installation of the Hot Rod. Parts to be replaced under this warranty should be delivered to the dealer or contractor, or shipped directly to Alpha American Co., 10 Industrial Blvd., Palisade, MN 56469, freight prepaid. If satisfactory performance of this warranty is not available through the dealer or contractor, the purchaser may contact Alpha American Co. to obtain performance, but all such communications must be in writing.

III. CONDITIONS OF THE WARRANTY

Alpha's performance under this warranty is conditional as follows:

A. That the purchaser shall give notice to manufacturer of the fact of purchase within ten (10) days of the date of purchase by mailing the attached postal card or other written notice sufficient to identify the purchaser, the Hot Rod purchase, the place of original installation, and the date of installation.

B. That the Hot Rod must have been installed in accordance with all applicable codes, laws, and ordinances.

C. That the Hot Rod must have been operated during each heating season according to the manufacturers instructions, within its listed capacity and with proper controls and adjustments.

NOTE: Note that the overheating of your Hot Rod is contrary to the manufacturer's instructions and may cause damage not covered by this warranty.

D. That the Hot Rod has not been moved from the site of its original installation.

E. That the purchaser perform all reasonable and necessary maintenance of the Alpha Hot Rod in accordance with the manufacturer's instruction.

IV. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

MOUNTING HOLES

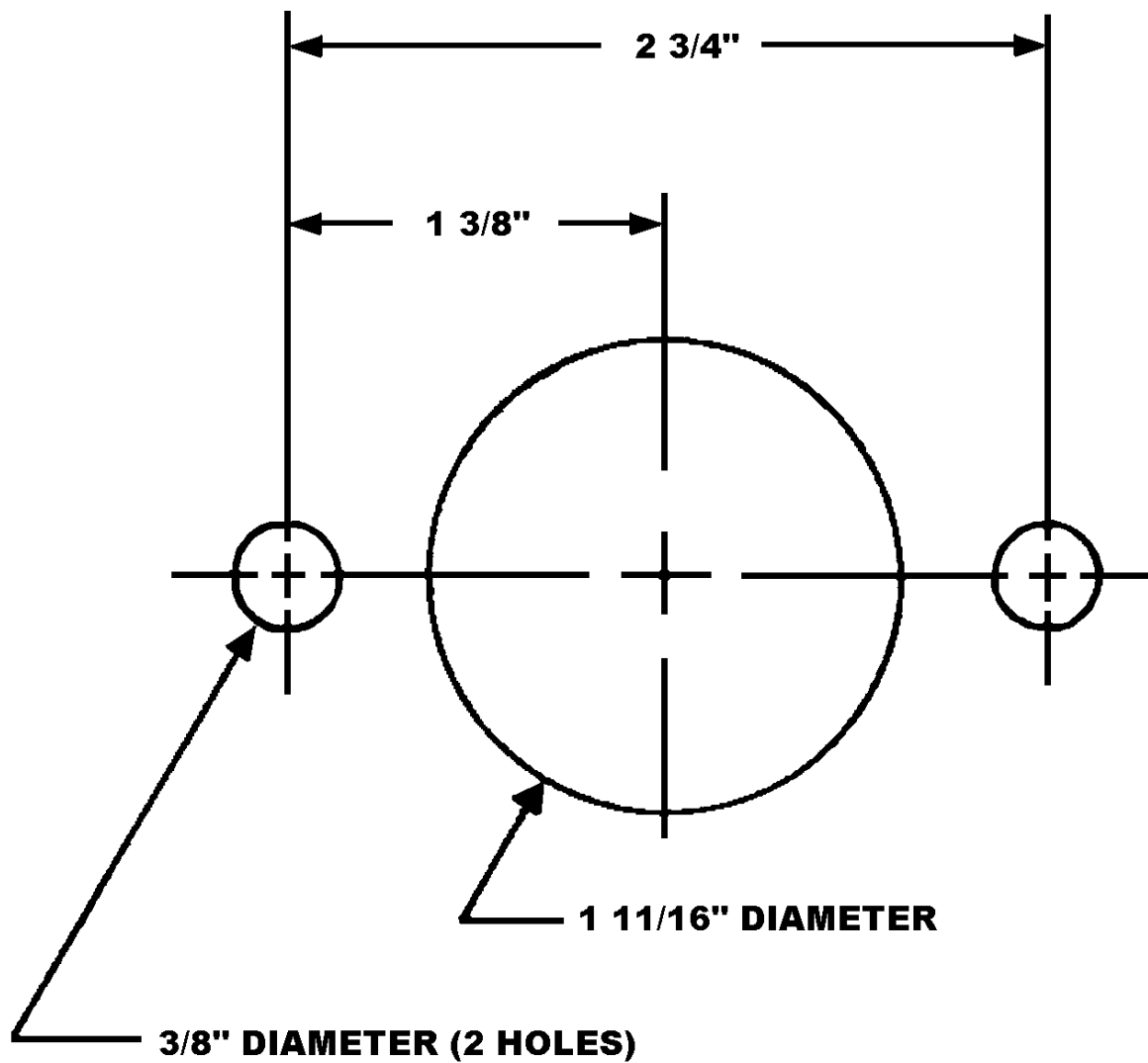


FIG. 1

RECOMMENDED SYSTEM GRAVITY CIRCULATING SYSTEM

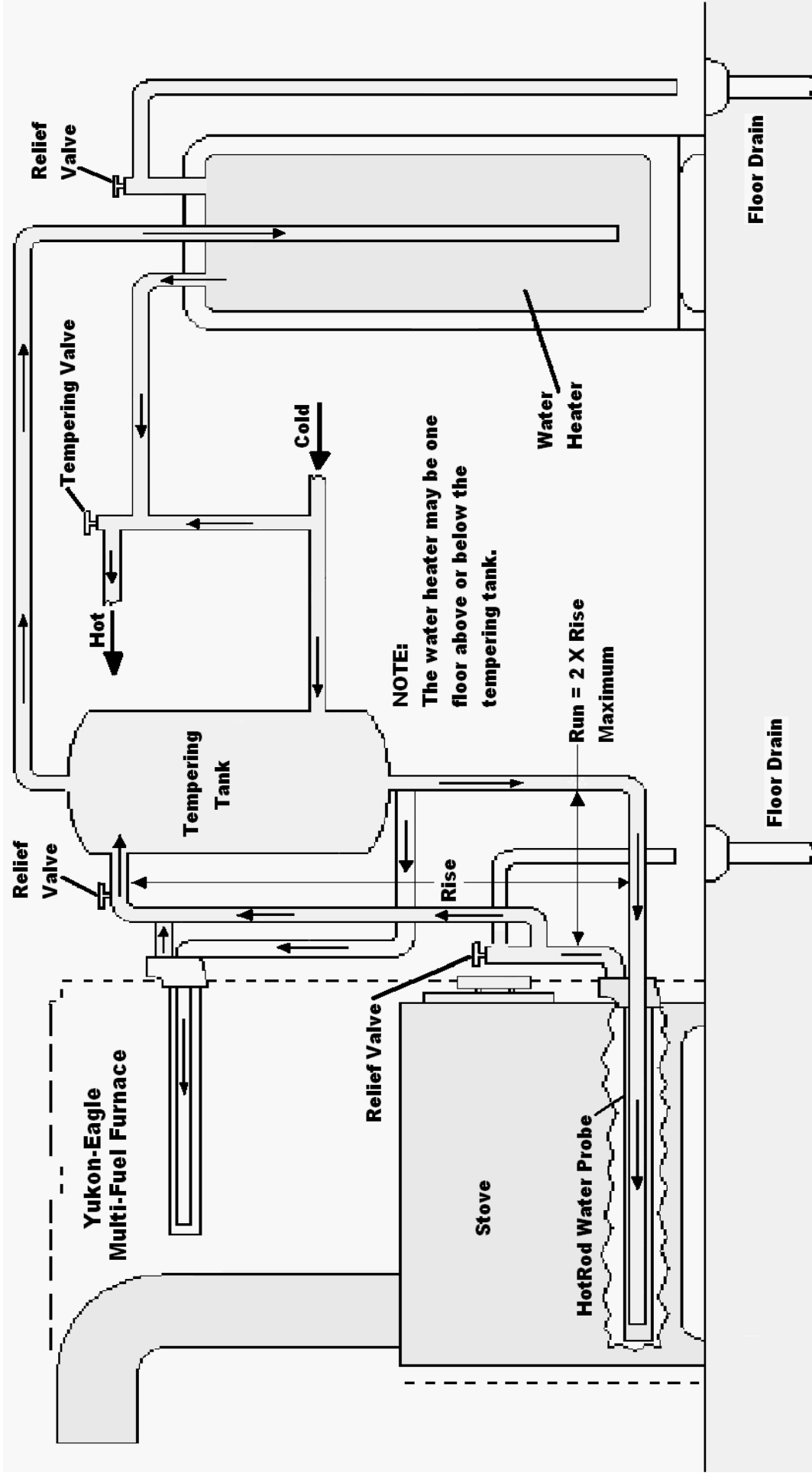


FIG. 2

CIRCULATING PUMP SYSTEM

NOT A RECOMMENDED SYSTEM

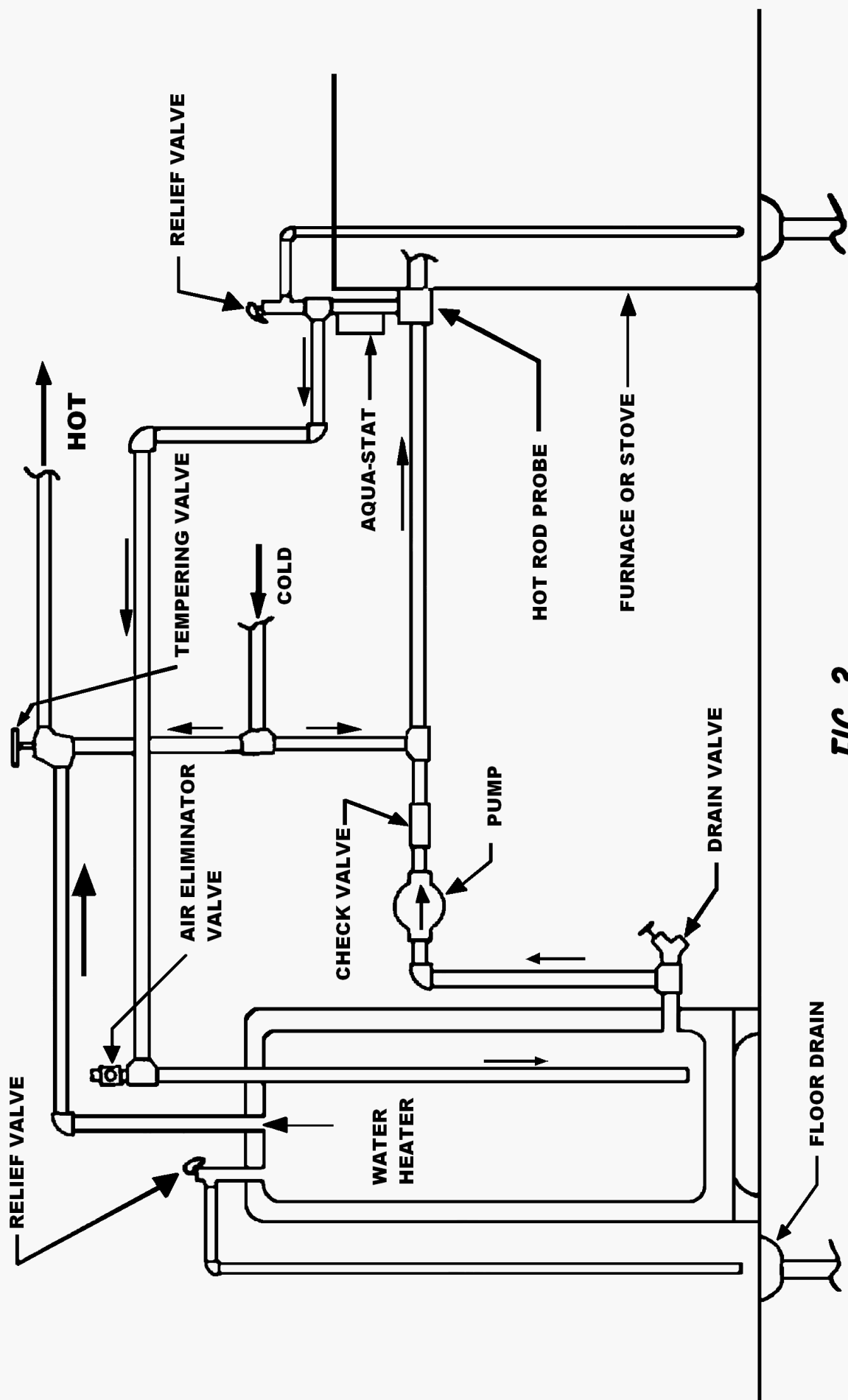


FIG. 3

Circulating Pump System

**This System is
NOT RECOMMENDED**

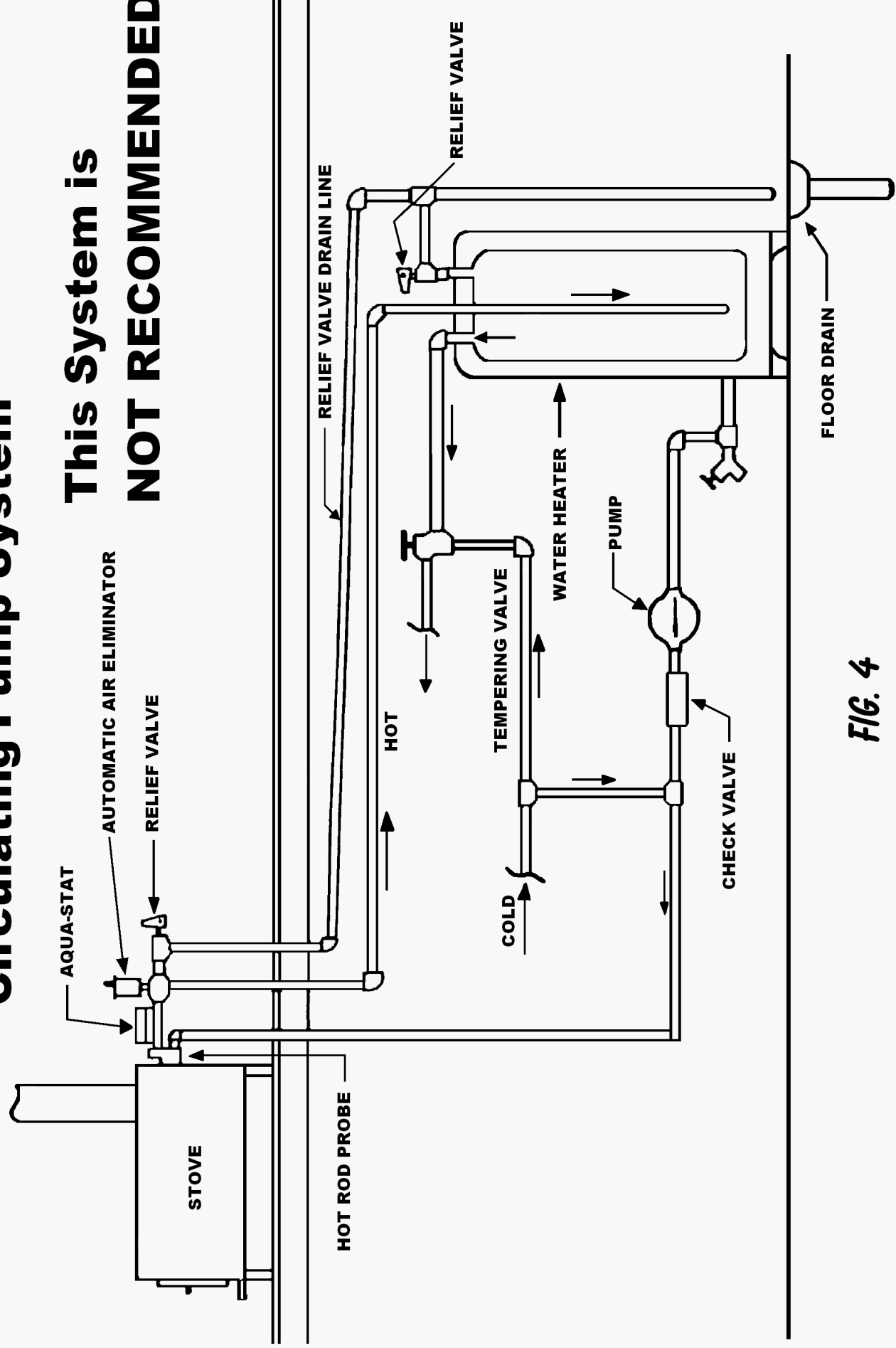
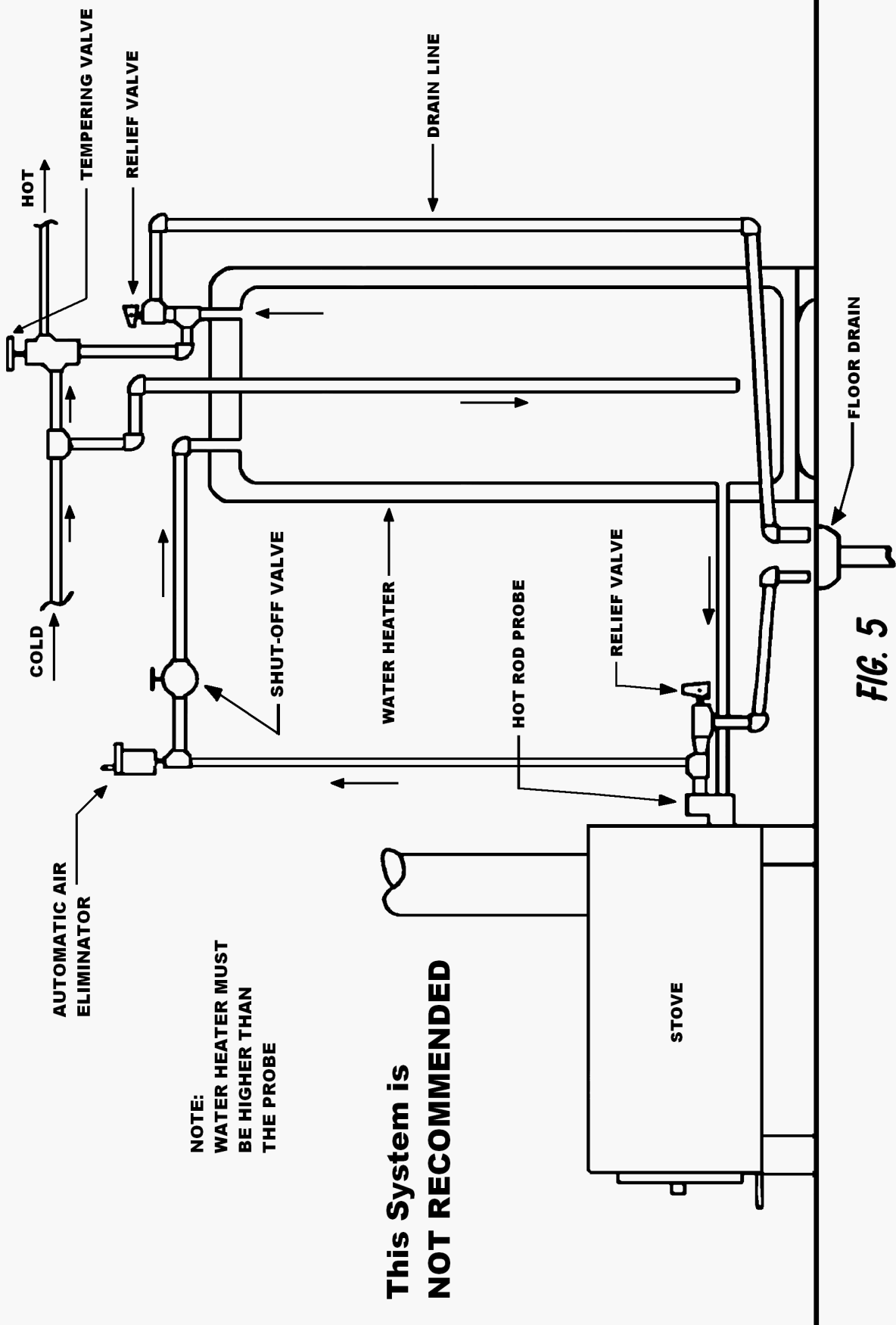


FIG. 4

Gravity Circulating System



NOTE:
WATER HEATER MUST
BE HIGHER THAN
THE PROBE

**This System is
NOT RECOMMENDED**

FIG. 5

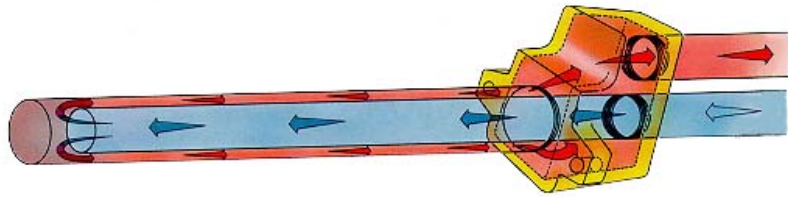
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