

"SMELLY WATER FROM WATER HEATERS"

There are many misconceptions in today's marketplace regarding the development and treatment of smelly water in the water heater. The most common odor complaint "rotten egg smell" is derived from hydrogen sulphide gas dissolved in the water. Concentrations of as little as 1 ppm, can result in this odor. This smell is a result of four factors which must all be present for the odor to develop in a water heater.

1. There must be a high concentration of sulfate in the raw water.
2. There must be little or no dissolved oxygen in the water.
3. There must be sulfate reducing bacteria within the water heater. The bacteria is of course non-toxic to humans.
4. There must be an excess of active hydrogen in the tank. This is provided by the cathodic action of the anode.

With these factors the hydrogen and sulfur combine to form the hydrogen sulfide gas that gives the rotten egg, smelly odor to the water.

Active use of the water heater will reduce the problem but idle water heaters (such as no use as a result of vacations, etc.) will allow the accumulation of this hydrogen sulfide gas and aggravate the odor problem.

Smelly water can most easily be eliminated or reduced by replacing the anode with one of less active material (magnesium to aluminum), and then chlorinating the water heating system.

Do not remove the anode leaving the tank unprotected. By doing so you void all warranty on the water heater. Removal of the anode does not affect safe heater operations, but it shortens the life of the water heater as the anode acts as a sacrificial rod thus slowing down the corrosion process.

TROUBLE SHOOTING

When an end user calls up the water department and complains of red water, black particles, rotten egg smell, staining water, etc. there is a good chance that the supplier is not responsible for the problem. Several conditions in the home and industry can be correlated to these curious complaints, such as:

1. WATER SOFTENERS

The ion-exchange water softener used to reduce total hardness in the water from 150+ ppm to less than 20+ ppm with regular brine regeneration can actually intensify iron problems in the home. If operating properly, a softener cationic exchange resin has an affinity for ferrous (soluble) iron in the water. All exchanged (ferric) iron will only be strained or filtered out, not exchanged with the sodium from the resin. Therefore, a loading up of iron on the resin without frequent backwashing, or cleaning (with Rover, Iron Out, etc.), will cause these slugs of iron into the home.

To verify this, the morning after the 2 am regeneration, turn on the tub cold water full rate and observe red water from the softener for 2 to 3 minutes. If this "slug" had gotten into the hot water heater during the am shower, the problem is stretched out over a few days. This can explain several erratic frequencies of "chronic complainers" in the water district. Fiber wound cartridge filters can also load up and bleed through to stain porcelain. To correct these conditions, inform the producers of this potential in heavily laden iron water. Recommend regular maintenance and regeneration of softeners and purifiers to isolate the problem.

2. HOT WATER HEATERS

Slugs of iron into the hot water heater can accumulate and cause filter problems of staining and odors. Regular flushing of the tank twice per year will help this concern. Hydrogen sulfide, iron/sulfate reducing bacteria, will cause odor and color problems. Flushing, chlorination and magnesium rod replacement with aluminum can often solve these contributors. (See attached diagram and directions.)

3. **DISSIMILAR METAL CORROSION/OLD PIPES**

Many homes have iron accumulation in their pipes from the water and copper/galvanized connections. A teflon disc/union separation can remedy the electrolysis. Old galvanized pipes may need to be replaced if beyond repair. Not only are the aesthetic problems important, but the health hazards of lead and copper leaching from the services are now observed by the public health agencies. Scale and corrosion inhibitors can decrease the levels of metal contamination in the instance.

*Reprinted courtesy of the Chloramone Corporation, 1868 Chestnut Street, Emmaus, Pennsylvania, (215)965-5130.

Other factors contribute to smelly-water and are also the result of the original water composition.

1. Chlorides of magnesium and calcium leave you with a bitter water taste.
2. Chlorides of sodium produces a salty taste.
3. Sulphate over 50 ppm results in a medicine taste.
4. CO₂ content in low PH water leads to a fizzy or carbonated water conditions.
5. Iron and tannic water have characteristic of bad taste and smells.

Remember do not leave the tank unprotected or you may have to replace a water heater before its time.

Magnesium anode is used to extend tank life. Removal of this anode for any purpose will nullify the warranty. Read the warranty attached to this water heater for a full explanation of the time period that parts and heater are warranted.

Maintenance:

Shut off the electric power whenever the water supply is turned off. Shut off the electric power, water supply and drain the heater completely to prevent freezing whenever the building is left unoccupied during the cold weather months. In order to insure efficient operation and long tank life, drain the heater through valve until water runs clear. Drain it at least once a month. Failure to do this may result in noisy operation and lime and sediment build up in the bottom of the tank. At the same time, check the temperature-pressure relief valve by raising the test lever at the top of this valve to make certain that waterways are clear.

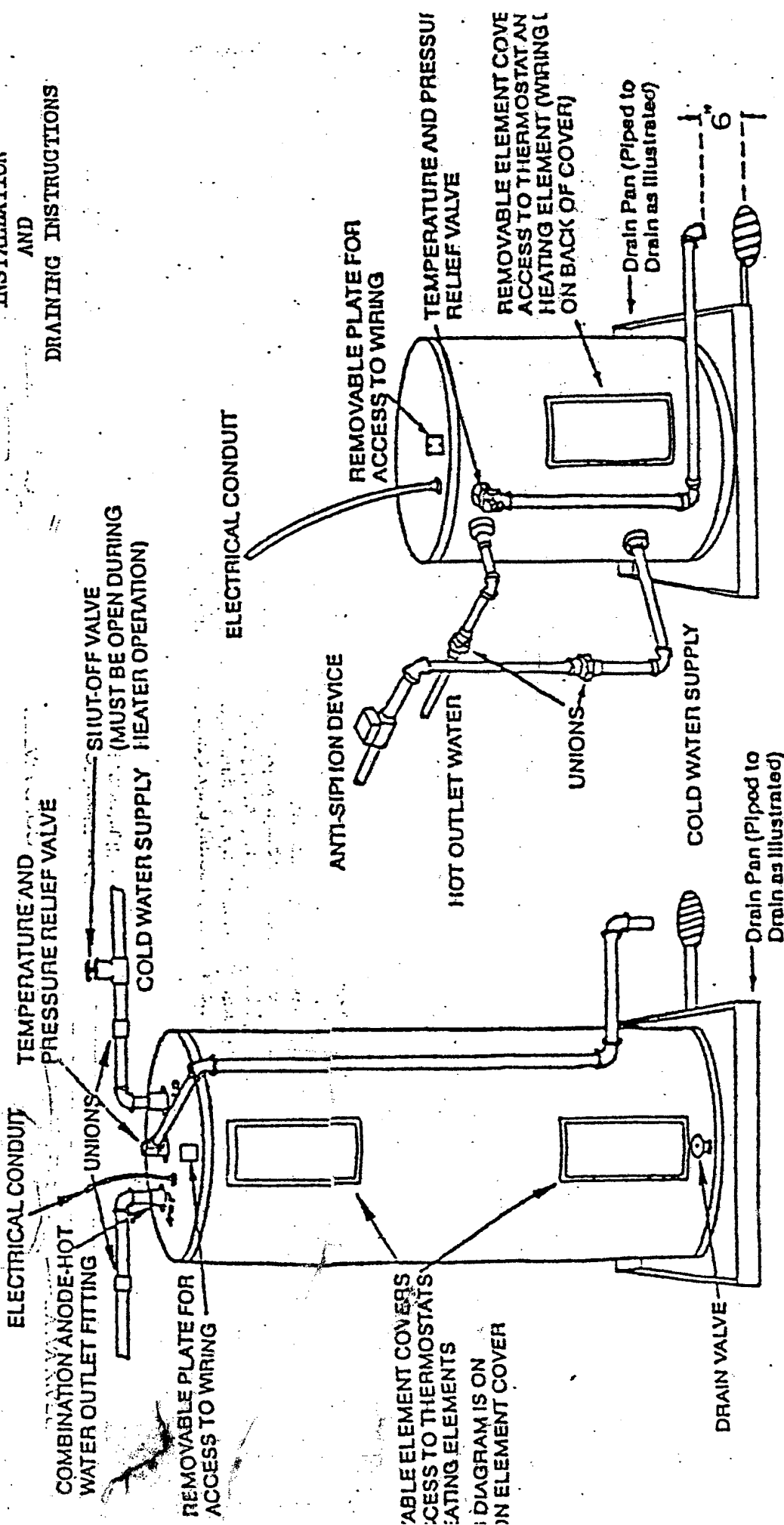
BASIC

WATER HEATER

INSTALLATION

AND

DRAINING INSTRUCTIONS



When necessary to completely drain the heater, shut off the electric power supply to heater, close cold water inlet valve, open a hot water faucet to allow air to enter the system and open the drain valve, which is threaded to receive a standard hose coupling. On Table Top models, the front panel must be removed to gain access to the drain valve.

