

Gas Appliances- Maintenance and Safety

Keep gas appliances in good working order

Customers should routinely (at least every few years) have all gas appliances, piping and venting systems inspected, cleaned and maintained by a qualified Service Technician. Not only will this program provide a safer and more reliable system, but can reduce gas usage.

Have the Technician Check the Following:

- **Appliance Flex Line Connectors.** Flex line connectors should be replaced at least every 10 years. Have them inspected for corrosion and replaced if needed, **especially if they are made of brass.** Replacement flex connectors should be coated or made of stainless steel and approved by the American Gas Association (AGA) and conform to (ANSI) Z21.24. *(Note: Where flexible connectors are used, they shall be of the minimal practical length and shall not extend from one room to another or pass through walls, partitions, ceilings, or floors. They may not be used in a concealed location. ANSI Z223.1-NFPA 54)*



**(See Left) Brass ...
Appliance Flex Connector
Replace Immediately!**

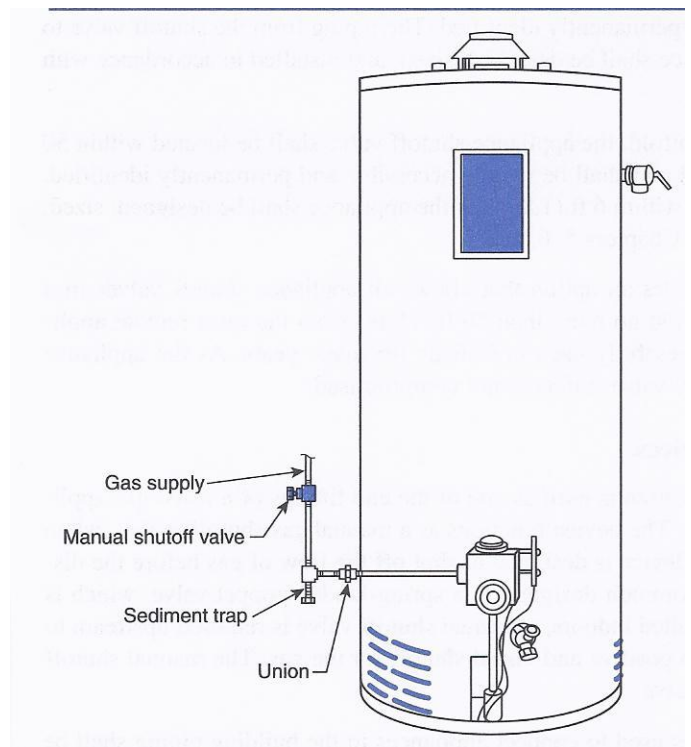
**(See Right) Stainless Steel ...
Appliance Flex Connector
Approved by: AGA and ANSI Z21.24**



- **Appliance Valves.** The National Fuel Gas Code (ANSI Z223.1-NFPA (9.6.4) requires that every gas appliance (furnace, water heater, stove, gas dryer, etc.) be equipped with its own valve that is located in the same room as the appliance and within 6 feet of the appliance.

Appliance valves allow the emergency shut-off of the appliance without affecting other gas appliances in the home or business.

Note: Make sure you also have an appliance valve installed on every yard line (customer owned underground lines to garages, gas grills or lights) located at an accessible location at the point of connection at the house.



Safety Tip: (See Right) Learn where every gas appliance valve is located in your home or business. Teach family members and employees how to properly shut off a gas appliance valve in an emergency.

- **Venting System.** Every listed appliance (usually furnaces and water heaters) must be equipped with its own venting system that meets the requirements of the National Fuel Gas Code. The technician should check for rust and corrosion on the vent piping, proper installation and tightness of the system. Vent piping that is corroded, has leaky joints or installed improperly can lead to the escape of flue gases, including Carbon Monoxide, and/or may cause a fire hazard.

Always use approved vent piping designed for flue gases, never substitute aluminum, old cans, makeshift repairs and **never use plastic** vent piping when metal is required.

NEVER USE Duct Tape to repair leaking joints on vent piping.

(Note: Most newer high efficiency 90+ furnaces and boilers are vented with PVC)



(Pictures) Severely Corroded Vent Piping

- **Water Heaters**

Scalding Prevention: Each year, approximately 3,800 injuries and 34 deaths occur in the home due to scalding from excessive hot tap water. The majority of these accidents involve the elderly and children under the age of five. The U.S. Consumer Product Safety Commission (CPSC) urges all users to lower their water heaters to 120 degrees Fahrenheit. In addition to preventing accidents, this decrease in temperature will conserve energy and money.



Most adults will suffer third-degree burns if exposed to 150 degree water for two seconds. Burns will also occur with a six-second exposure to 140 degree water.

To prevent scalding from hot water, *especially small children and the elderly*, **NEVER** set the thermostat on your water heater above the Normal (120 degree) position.



(NOTE: As a matter of policy, Gas Department employees will always set the temperature of a customer water heater to Normal (120 degrees F) after any relight of the water heater performed by the employee.)

Ignition of Flammable Vapors and Gas Water Heaters:

We have included information numerous times over the past several years in our Gas Safety Newsletters about gas water heaters and flammable vapors, but continue to discover customers with gas fired water heaters installed on the floor in garages as well as improperly stored flammable liquids around water heaters and furnaces in the home. A few years ago, a child in a nearby community, died from burns received from a gasoline spill that was ignited by a gas water heater installed in the homes garage. The following additional information is from an article published by the American Gas Association (AGA).

What is meant by the term "flammable vapors?" Flammable vapors can arise from evaporation of flammable liquids due to accidental spills or misuse in the home. These vapors, usually heavier than air, can accumulate as flammable concentrations and spread very quickly beyond their liquid source. Generally speaking, the more easily the flammable liquid evaporates, the greater its potential for producing flammable vapors.

What are the sources of flammable vapors involved in the home? According to the U.S. Consumer Product Safety Commission (CPSC), more than 75% of incidents involving gas water heaters are due to spills of improperly stored gasoline or improper indoor use of gasoline. Other sources of flammable vapors include a variety of solvents used improperly such as volatile paint strippers and thinners, acetone, cleaning supplies etc.

How frequently are natural gas water heaters involved in ignition of flammable vapors in homes? According to the CPSC, gas fired water heaters igniting flammable vapors in homes have been associated with approximately 2000 fires per year in the U.S. resulting in 17 deaths and 316 injuries for all the years up to 1994.

What codes and standard have helped protect consumers from water heater ignitions of flammable vapors? Most local fire codes and many local laws prohibit storage of gasoline indoors other than garages. The American National Standards Institute (ANSI) and the National Fuel Gas Code recognizes the standard Z21.10.1 requiring a warning label on water heaters about storage of flammable vapors around water heaters and the elevation of the burner and pilot of the water heater to above 18 inches of the floor in residential garages. The water heater should also be protected from vehicular damage.

Are there new codes and standards that have changed the installation requirements of gas water heaters? Effective July 1, 2003, all 30-50 gallon vented residential gas water heaters must be designed and tested to demonstrate that the water heater will not ignite flammable vapors. The National Fuel Gas Code also revised the code to allow installation on the floor of a residential garage if the water heater is "listed as flammable vapor resistant".

➤ **What should gas customers do?** First and foremost, be prudent about the storage and handling of flammable liquids around gas fired appliance. Teach your children about the dangers of flammable liquids. If your water heater is installed on the floor of your garage, have a qualified technician determine if it is "listed as flammable vapor resistant". If it is not, either have the technician raise the water heater to 18 inches above the floor or, remove the unsafe appliance and install an electric or approved "listed flammable vapor resistant" gas water heater.

