

- **Charles A. Hones, Inc. presents** -

The *Buzzer* User's Guide: installation, maintenance and general safety precautions

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Please note: it is important that all individuals involved in the installation, adjustment, modification, service or maintenance of the Charles A. Hones, Inc. gas equipment accompanying this safety manual **read and understand all enclosed instruction pages, including addendum pages supplied by Charles A. Hones, Inc. and by manufacturers of products we supply** (such as safety valves, sensors, and temperature controllers) **prior to using the equipment**. Do not destroy this manual. Please read carefully and keep in a safe place for future reference.

***Should you have any problems understanding the enclosed instructions
- STOP -
get help from a qualified installer, service technician, or your gas supplier.***



IMPORTANT! This symbol indicates **vital safety information**.

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Failure to follow all general safety precautions and enclosed instructions could result in fire or explosion, causing property damage, personal injury or death!

What to do if you suspect a significant gas leak

- Turn main manual shut-off valve to the OFF position. If this does not stop the leak, do not attempt to find the cause yourself or allow untrained employees to do so.
- Do not touch any electrical switch.
- Do not use any phone in the building.
- Remind employees not to touch switches or phones, then evacuate the building.
- Leave windows and doors open for ventilation.
- GO TO A NEIGHBORING BUSINESS and CALL YOUR GAS SUPPLIER OR QUALIFIED SERVICE AGENCY IMMEDIATELY. Follow the gas supplier's or agency's instructions.
- If you cannot reach your gas supplier, CALL THE FIRE DEPARTMENT.
- Do not return to your building or allow employees to return to the building until the service call has been completed, the leak corrected, and a qualified agency has determined that the area is safe.

Inspect all equipment upon unpacking

Carefully inspect equipment for possible shipping damage as you unpack it. If you discover any damage, CONTACT CHARLES A. HONES, INC, IMMEDIATELY. Also check the name plate on the equipment and/or attached paperwork to confirm that the equipment has been set up for the type of gas you intend to use.

Storage of flammable materials

Do not store or use flammable materials near gas equipment! Keep all flammable products in approved tightly closed containers. Gasoline, as well as other flammable materials and liquids (adhesives, solvents, etc.) and the vapors they produce are extremely dangerous. Vapors from flammable liquids ignite easily and may explode or catch fire, causing death or severe burns.

Gas equipment may maintain a pilot flame even when not operating!

Many gas products manufactured by Charles A. Hones, Inc. have standing pilots. A standing pilot is on all the time and can ignite flammable vapors. Be aware that vapors cannot be seen, are heavier than air, can travel a long way on the floor, and can even be carried from other rooms to the pilot by air currents.

Choose an installation site with care to avoid any exposure of flammable/combustible materials to gas burning equipment.

Gas detectors that do not rely on odor recommended



Gas leaks cannot always be detected by smell!

NFPA-54 states: “The lack of gas odor does not necessarily insure that no gas is present. Use a gas detector to be sure.” Although both L.P. (propane) and natural gas have an odorant added to help detection, some people may not physically be able to smell or recognize this odorant. Other conditions, such as “odorant fade,” in which the odorant loses intensity over time, can also make a gas leak more difficult to detect by smell alone. Both natural gas and propane are virtually odorless in their natural state. Detectors which do not rely on odor are available through your gas supplier.

Fuel choices- L.P. (propane) or natural gas

Equipment designed for L.P. (propane) gas will not function safely on natural gas, and equipment designed for natural gas will not function safely on L.P. (propane) gas **unless equipment has been competently converted by a qualified agency!**



Furnaces manufactured by Charles A. Hones, Inc. have a steel name plate stating the type of gas it is designed for, BTU/hr. rating, and required gas pressure. All burners are equipped with a identification tags supplying simular information. To avoid possible equipment damage, personal injury or fire: DO NOT connect any gas equipment to a fuel type not in accordance **with it's name plate or tag**. ONLY propane on propane units, ONLY natural gas on natural gas units.

Use only L.P. (propane) or natural gas!

Never attempt to use oxygen-enriched gas, acetyline or map gas on Buzzer equipment. All burners, furnaces, melters, and combustion systems manufactured by Charles A. Hones, Inc. are intended for L.P. (propane) or natural gas only and are NOT CERTIFIED FOR ANY OTHER TYPE OF FUEL, GAS OR MIXTURE.

Installation


General requirements


Equipment must be installed by a qualified installer, maintenance department, service agency or gas supplier!

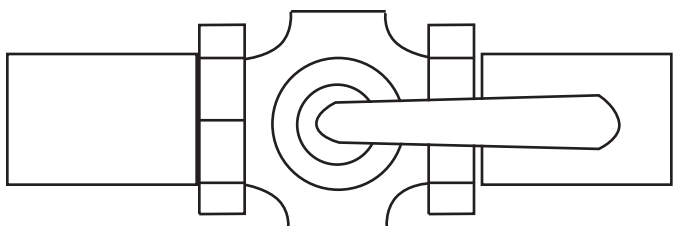
All equipment manufactured by Charles A. Hones, Inc. must be installed in accordance with these and any other enclosed instructions, local codes, utility/gas supplier requirements and/or in the absence of local codes, the latest edition of NFPA booklet 86 Standards for Industrial Ovens, Furnaces, and Baths. A copy can be purchased from the National Fire Prevention Association, Batterymarch Park, Quincy, MA 02269.

Only qualified personnel should install, operate or service burners, which should be tested and visually inspected monthly for operation and performance!

Ratings for Buzzer gas equipment are based on sea level operation. For higher elevations, installer should reduce input rating by 4% for each 1000 feet above sea level. However, no modification is necessary for installations at elevations up to 2000 feet because the air at such elevations is not significantly different from that at sea level.

 Safety controls that provide 100% shut-down of both pilot and main burner flames upon pilot failure are recommended for all installations. Temperature controls with downscale thermocouple break are also recommended to help reduce the likelihood of fire, injury, damage, or loss of life due to a sensor malfunction. FM Approved High Limit Temperature controls are strongly advised which provide automatic shut down to prevent over heating of equipment.

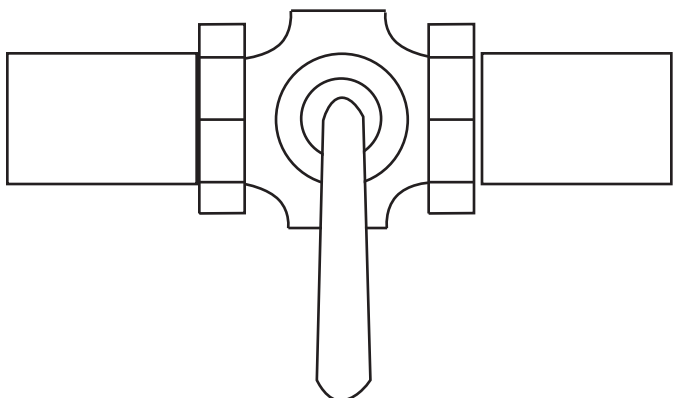
 **Emergency shut-down procedure:** in case of overheating or failure of gas supply to shut down upon flame outage. **Turn Main manual shut-off valve into off position** - perpendicular to gas pipe. This valve should be located 5 feet off the floor and accessible at all times. NFPA-54 National Fuel gas code recommends conspicuously marking such a valve with a clear sign or distinctive color.



Manual quarter-turn shut-off valve in open/ON position. Gas flows through. If handle is parallel to piping, valve is open.



Overhead View



Manual quarter-turn shut-off valve in closed/OFF position. Gas flow is stopped. If handle is perpendicular to piping, valve is closed.

Minimum clearance



Gas fired equipment should not be installed near combustible material or walls!

It is advisable that firewalls be installed using approved 5/8" sheetrock to put a non-combustible barrier between equipment and combustible walls. Minimum clearance is required from non-combustible surfaces and/or firewalls in order to maintain air circulation around the equipment and to allow for adequate inspection and servicing. There should be at least 30 inches of clearance on all four sides. If space is available, locate burners and pilots 12-18 inches above the floor to reduce the chances that equipment will contact or ignite flammable vapors.



Gas equipment should NEVER be installed on combustible (wooden) floors, tables or benches. Do not use or store on vinyl, linoleum, or any other material not designed for high ambient use. Never stack boxes, papers, rags or any other combustible material on Buzzer equipment, even when equipment is not in use.

Insuring necessary air supply



Gas fired equipment requires an adequate air supply for complete combustion and ventilation of the products of combustion to the outdoors!



Provisions for combustion air and ventilation air must comply with local codes, rules, or standards! NFPA-54 Gas Code Handbook recommends 50 cubic feet of air for each 1,000 BTU/hr. to cover air for combustion, draft hood dilution, and ventilaion.

If **Buzzer** Venturi (atmospheric) gas equipment is installed in an open or unconfined space within a building of conventional frame, masonry, or metal construction, infiltration air is normally adequate for proper combustion and ventilation to the outdoors via a well-designed venting system.

However, if the space is confined, or subject to severe negative pressure, provisions for this air must be made as described below. Negative pressure may cause draft flow to fluctuate or not vent properly naturally. Severe negative pressure will not allow gas heated equipment to breathe properly, resulting in inefficient or potentially hazardous operation. In the case of confined space or significant negative pressure, combustion air must be made available by one of the following methods:

1. Combustion air enters space from an adjoining room:

A confined space is one having a volume of less than 50 cubic feet per 1,000 BTU/hr of the aggregate input of all appliances/burners within that space. The air for a confined space or a space subject to negative pressure must be supplied through two permanent openings of equal area, providing that each permanent opening communicates with other

unconfined areas inside the building or structure. One opening should be located 12 inches above the floor and the other should be located 12 inches below the ceiling. The minimum net free area of each opening must not be less than 2 square inches per 1,000 BTU/hr of the total input rating of all the gas equipment in the confined space. In any case, the minimum net free area of each permanent opening supplying air to a confined space via unconfined areas of a building must not be less than 288 square inches. (approx. 12" x 24" vent)

2. Combustion air enters space from outside:

Buildings of unusually tight construction or subject to considerable negative pressure in which gas equipment operates should have the combustion and ventilation air supplied from outdoors. If the air is supplied from outdoors, directly or through horizontal ducts, there must be two openings located as specified in the previous paragraph and each must have a minimum net free area of not less than one square inch per 2,000 BTU/hr of the aggregate input rating of all the gas equipment in the confined space. In any case, the minimum net free opening of each permanent opening supplying outdoor air directly to a confined space must not be less than 144 square inches. (approx. 12" x 12" vent)

If the openings for any of the confined spaces outlined above are to be covered with a protective screen or grill, the net free area of the the covering material must be used in determining the size of the opening according to the guidelines above. Protective screening must not be smaller than 1/4 inch mesh to prevent clogging by lint, leaves or other debris.

Venting



Never operate gas equipment unless it is properly vented and has an adequate air supply for safe operation!



Failure to install a draft hood and properly vent gas equipment outdoors can result in unsafe operation of the gas equipment, causing bodily injury, explosion, or asphyxiation from carbon monoxide! Be sure to inspect the venting system for proper installation at initial start-up and at least annually thereafter.

For proper venting, consult vent tables in Appendix "G" of the latest version of the National Fuel Gas Code (ANSI booklet Z223.1 or NFPA booklet #54).

Once hot gases and the products of combustion have heated the work, they must be properly vented from the appliance. For Venturi burners, a vent opening of one square inch per 6500 BTU/hr is required. The vent opening should be located at the highest possible point in the equipment to take full advantage of natural draft.


Vent dampers or louvers should not be allowed to shut off 100%, as complete closure will result in the vent system backing up. If dampers or louvers are constructed so they can close completely, they must be proved in the open position before the main burners can operate.

Gas supply


Inlet gas pressure to the gas equipment must not exceed 1/2 PSI (14" w/c pressure) unless equipment label clearly states otherwise. A gas pressure regulator must be used to adjust gas pressure.

The recommended operating gas pressure for equipment manufactured by Charles A. Hones, Inc. can be found on the unit nameplate or identification tag. In most cases the operating pressure for natural gas is 5" to 7" w/c and the operating pressure for propane is 10" to 11" w/c. Only burners and furnaces designed for high pressure gas should have high pressure gas installed. If gas pressure is too high or too low - STOP - and contact your gas supplier or Charles A. Hones, Inc. for correction.


All manifold and gas piping should be black steel pipe or other approved gas piping material such as 304 stainless steel. A ground joint union or ANSI designed certified semi-rigid or flexible gas equipment connector should be installed in the gas line as close as possible to the gas equipment (ie burner, furnace, melter, etc). A manual shut-off valve should be installed in the gas line prior to the union.

 The manual gas shut-off valve should be at least 5 feet above the floor and readily accessible for turning on or off.

Using joint compound

 Compound used on the threaded joints of the gas piping must be of the type which is resistant to the action of the liquefied petroleum (L.P. or propane) gas. A teflon based rated for use with Natural Gas & Propane is recommended. Use compound sparingly on male threads only. Do not use excessive force (over 31.5 ft. lbs.) when tightening the pipe to safety or control valves, as the valve or internal body parts may be damaged.

Special precautions for propane (L.P.) gas


 **Propane is heavier than air and will collect first in lower areas making it hard to detect at nose level.** Make sure to look and smell for propane leaks before attempting to light gas equipment. Use a soapy water solution to check all gas fittings and connections. Bubbling at a connection indicates a leak that must be corrected. When sniffing to detect a propane leak, be sure to sniff near the floor.

Gas detectors may be recommended for indoor propane installations exceeding 150,000 BTU/hr. Installation of gas detectors should be in accordance with the manufacturers instructions and/or local laws, rules, regulations or customs. Gas detectors which are not dependent upon odorant are available through your gas supplier.

Propane should not be installed below grade (for example, in a basement) if such installation is prohibited by federal, state, and/or local laws, rules, regulations or customs.


Special considerations for corrosive atmospheres

 Air containing halogenated hydrocarbons is highly corrosive as it passes through a gas flame!

 The manufacture of chemicals for beauty products, dry cleaning products, photo processing, bleaching, swimming pool treatment, and laboratory uses, among others, produces halogenated hydrocarbons. Air in the plants where such chemicals are manufactured and in areas where such chemicals are stored may be safe to breathe and still prove corrosive to gas equipment. This is because when halogenated hydrocarbons pass through a gas flame, corrosive elements are released that will shorten the life of gas burning equipment and gas heated tanks, kettles, and parts.

Please note: the limited warranties of products manufactured by Charles A. Hones, Inc, as well as other manufacturers' products used in the manufacture of the end product (ie safety valves, sensors, etc), are VOID WHEN FAILURE IS DUE TO A CORROSIVE ATMOSPHERE.


Leak testing

 Never use an open flame to test for gas leaks, as personal injury, property damage, or death could result!


All gas equipment and gas connections must be leak tested at normal operating pressures before being placed in operation. Turn on the main gas shut-off valve. Use a soapy water solution to test for leaks at all connections and fittings. Bubbles indicate a gas leak that must be corrected. The factory connections to the safety valves and burners must also be leak tested after the gas equipment is put into operation.


All gas equipment, shut-off valves, and safety equipment must be disconnected from the gas supply piping system during any high pressure testing of that system at pressures in excess of 1/2PSI (14" w/c). The gas equipment and the safety valves must be isolated from the gas piping system by closing the main manual shut-off valve during any pressure testing of the gas supply piping at pressures equal to or less than 1/2 PSI (14" w/c)

Installation and initial adjustment

 Only qualified personnel should install, operate or service burners, which should be tested and visually inspected monthly for operation and performance!

Ratings for Buzzer gas equipment are based on sea level operation. For higher elevations, installer should reduce input rating by 4% for each 1000 feet above sea level. However, no modification is necessary for installations at elevations up to 2000 feet because the air at such elevations is not significantly different from that at sea level.

 Safety controls that provide 100% shut-down of both pilot and main burner flames upon pilot failure are recommended for all installations. Temperature controls with downscale thermocouple break are also recommended to help reduce the likelihood of fire, injury, damage, or loss of life due to a sensor malfunction.

 **Emergency shut-down procedure:** in case of overheating or failure of gas supply to shut down upon flame outage. **Turn Main manual shut-off valve into off position.** See diagram on page 3. (Note: service or replace any parts in the gas control system which cause operator to use emergency shut-down **prior to re-activating system**)

Routine preventive maintenance

A.) The internal flue passage ways on all furnaces and burner applications should be checked. Hearth plates, baffle plates, dampers, and supports should be in good operational condition and free of debris or foreign matter.

B.) Clean scale off burner, pots, and parts. Vacuum or remove refractory chips and parts from furnaces and burners.

C.) Inspect flue pipes, vent connectors, hoods, canopies, and openings. Make sure all such parts are in good operational condition and properly and securely positioned and installed. Replace any corroded vent connectors and remove any obstruction in vent connectors or flue ways.

D.) Visually inspect the burner annually while firing and while turned off. Replace any corroded parts. Visually inspect pilot while main burner is on and while main burner is off. Replace any corroded pilot parts. Be certain that pilot position is correct and that pilot reliably and accurately ignites main burner.

If any unusual behavior of the gas equipment is noted during inspection, shut the burner off until qualified service assistance can be obtained!

For your safety all repairs on the burner system should be performed by qualified service personnel only as it involves disconnecting gas supply and performing leak testing!

E.) Check to be certain that the area the gas equipment operates in is free of obstruction. Remember that for proper combustion, proper operation, and proper

Maintenance

Properly maintained, your **Buzzer** gas equipment will provide years of useful service. A regular routine maintenance program such as the program outlined below should be established and followed. It is further recommended that maintenance procedures on safety valves and other accessory equipment according to the manufacturer instructions. It is also recommended that furnaces, burners, pilots, controllers, safety valves, flue ways, and venting systems have regular inspections performed by service personnel qualified in industrial gas equipment repair.

ventilation, flow of air around your **Buzzer** gas equipment must be unobstructed. Never store combustible materials or flammable liquids near any Buzzer gas equipment.

F.) When burners are not in use for a long time, or are used only seasonally, care should be taken to wire brush scale off burners and inside of Venturi. An air compressor can be used to blow out cobwebs or nests which may clog orifices.

Please be certain you read and understand all safety manuals pertaining to the installation and operation of all gas burning equipment you have purchased from Charles A. Hones, Inc. In addition to the manual you are now reading, safety information may include manuals describing the safe operation of particular accessories and safety equipment. These manuals may be written by Charles A. Hones, Inc or by the individual manufacturers of equipment we supply but do not manufacture ourselves.

If you have any questions on any **Buzzer** gas equipment, please contact Charles A. Hones, Inc. or our factory sales representative in your area.

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