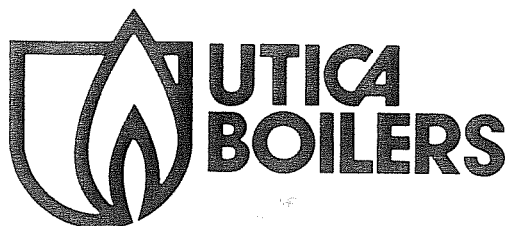


KEEP THIS MANUAL NEAR BOILER

RETAIN FOR FUTURE REFERENCE



SERIES DV  
CAST IRON

# GAS FIRED BOILERS

For Forced Hot Water

## INSTALLATION MANUAL AND OPERATING INSTRUCTIONS

### INSTALLATION PROCEDURE

The installation must conform to the requirements of the authority having jurisdiction or, in the absence of such requirements, to the National Fuel Gas Code, ANSI Z223-1-1980. (Available from the American Gas Association, 8501 E. Pleasant Valley Road, Cleveland, Ohio 44134.) Reference should also be made to local gas utility regulations and other codes in effect in the area in which the installation is to be made.

**LOCATE BOILER** on level, solid base as near the outside wall as possible and centrally located with respect to the heat distribution system as practicable. Allow 24 inches at front and right side for servicing and cleaning. When installed in utility room, the door should be wide enough to allow the largest boiler part to enter, or to permit replacement of another appliance such as a water heater.

**FOR INSTALLATION ON NON-COMBUSTIBLE FLOORS ONLY.\*** The boiler must not be installed on carpeting. Minimum clearance to combustible construction are:

Top .....	18 in.
Front .....	Alcove
Flue Connector .....	6 in.
Rear .....	4 in.
Control Side .....	9 in.
Other Side .....	3 in.

Greater clearances for access should supersede fire protection clearances.

\*For installation on combustible flooring only when installed on special base part no. 325-2-8.00.

### COMBUSTION AIR

Ventilation of boiler room shall be adequate to provide sufficient air to properly support combustion.

When the boiler is installed in a confined space, or within a building of unusually tight construction, air for combustion and room ventilation must be obtained from outdoors or from spaces freely communicating with the outdoors. A permanent opening or openings having a total free area of not less than one square inch per 5000 Btu per hour of total input rating of all appliances shall be provided. Ducts may be used to convey make-up air from the outdoors and shall be the same cross-sectional area as the free area of the openings to which they connect.

When air from combustion and room ventilation is from inside buildings, the confined space shall be provided with two permanent openings, one commencing within 6 inches of the top and one commencing within 6 inches of the bottom of the enclosure. Each opening shall have a minimum free area of one square inch per 1000 Btu per hour of the total input rating of all appliances in the enclosure. These openings must freely communicate with the interior areas having adequate infiltration from the outside.

Openings communicating directly with outdoors or by means of vertical ducts shall have a free area of not less than one square inch per 4000 Btu per hour of total input rating of all appliances in the enclosure. If horizontal ducts are used, each opening and duct shall have a free area of not less than one square inch per 2000 Btu per hour of total input rating of all appliances in the enclosure.

**AIR OPENINGS TO COMBUSTION AREA SHOULD NOT BE OBSTRUCTED.**



A. G. A. Design Certified for natural and propane gases—meets National Safety Standards.



Tested and capacity rated in accordance with the Code of The Hydronics Institute.



Constructed and hydrostatically tested in accordance with ASME Boiler Code.

**CONNECT GAS SERVICE** from meter to control assembly in accordance with ANSI Z223.1 and local codes or utility. A ground joint union should be installed for easy removal of gas control for servicing. A drip leg or trap should be installed at the bottom of a vertical section of piping at the inlet to the boiler. A pipe compound resistant to the action of liquefied petroleum gases must be used on all threaded pipe connections. Check with the local utility for location of manual shutoff valve if required. Fig. 1.

The gas line should be adequate size to prevent undue pressure drop and never smaller than the pipe size of the main gas control valve.

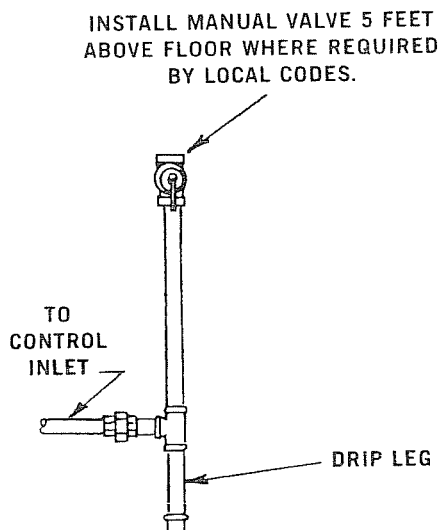


Figure 1

To check for leaks in gas piping, use a soap and water solution or other approved method. **DO NOT USE AN OPEN FLAME.** Disconnect the boiler from the gas supply piping system during any pressure testing of the gas piping. Leak test the gas connection and boiler piping before placing the boiler in operation.

**CONNECT SUPPLY AND RETURN PIPING** as suggested in Fig. 2. When the boiler is used in connection with refrigerated systems, the chilled medium must be piped in **PARALLEL** with the boiler, with appropriate valves to prevent the chilled medium from entering the heating boiler. Heating cycle—open valves A and B, close C and D. Cooling cycle—open valves C and D, close A and B. Fig. 2.

When the boiler is connected to heating coils located in air handling units where they may be exposed to refrigerated air circulation, the boiler piping system must be supplied with flow control valves or other automatic means to prevent gravity circulation of the boiler water during the cooling cycle.

Maintain a minimum clearance of one inch to hot water pipes.

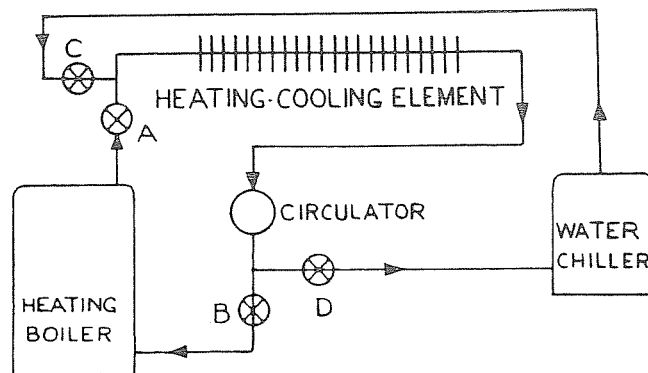


Figure 2

**ELECTRICAL WIRING** should conform with the National Electrical Code, ANSI/NFPA No. 70-1981 and/or local authority having jurisdiction. When an external electrical source is utilized, the boiler, when installed, must be electrically grounded in accordance with these requirements. Install a fused disconnect switch between boiler and meter at a convenient location. **WHEN THE BOILER IS EQUIPPED WITH SELF-ENERGIZED CONTROLS, NO OUTSIDE SOURCE OF ELECTRIC POWER SHALL BE CONNECTED TO THE MILLIVOLT CIRCUIT OF THIS SYSTEM.**

**THERMOSTAT** should be installed on an inside wall about four feet above the floor. Never install a thermostat on an outside wall or where it will be affected by drafts, hot or cold water pipes, sun light, lighting fixtures, television or near a fireplace or chimney.

## LIGHTING AND OPERATING PROCEDURE

**TO OPERATE GAS BOILER,** refer to Lighting Instruction plate attached to jacket of boiler. Make certain system and boiler are filled with water and air is vented from system.

**GAS INPUT** to the boiler can be adjusted by removing the protective cap on pressure regulator, Fig. 3, and turning screw clockwise to increase input and counter-clockwise to decrease input. Natural gas manifold pressure should be set at approximately 3.5 inches water column. Propane gas manifold pressure should be set at approximately 11.0 inches water column. These manifold pressures are taken at the  $\frac{1}{8}$ " tapping on the manifold. Fig. 4. Burner orifices should be changed if the final manifold pressure varies more than plus or minus 0.3 inch water column from the specified pressure.

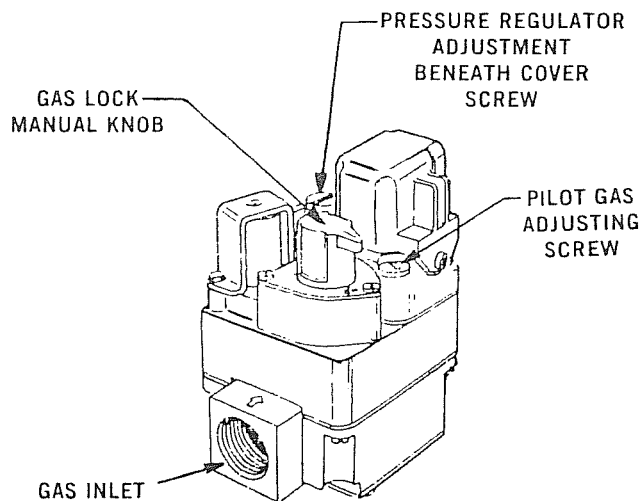
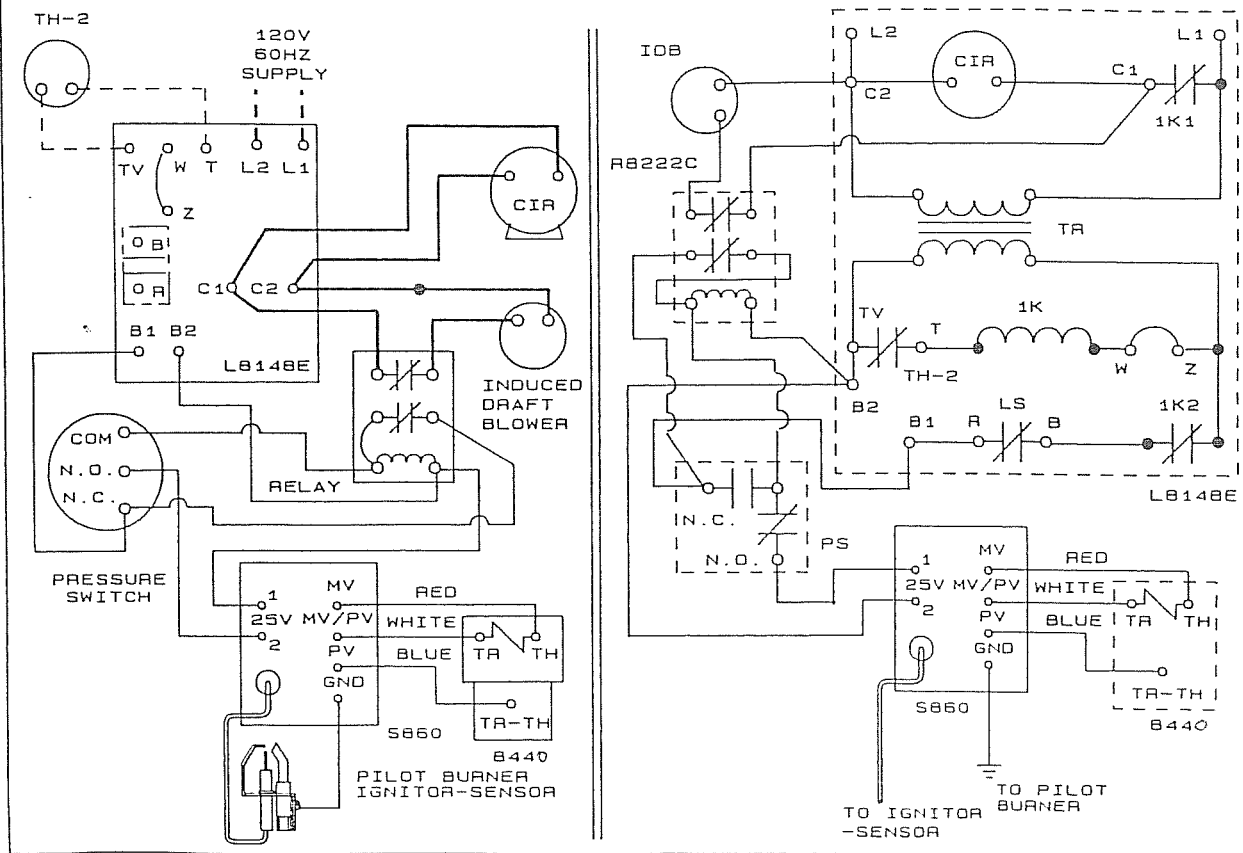


Figure 3

# HONEYWELL HOT WATER CONTROL AND INTERMITTENT IGNITION WIRING FOR DV SERIES BOILER WITH FAILSAFE RELAY



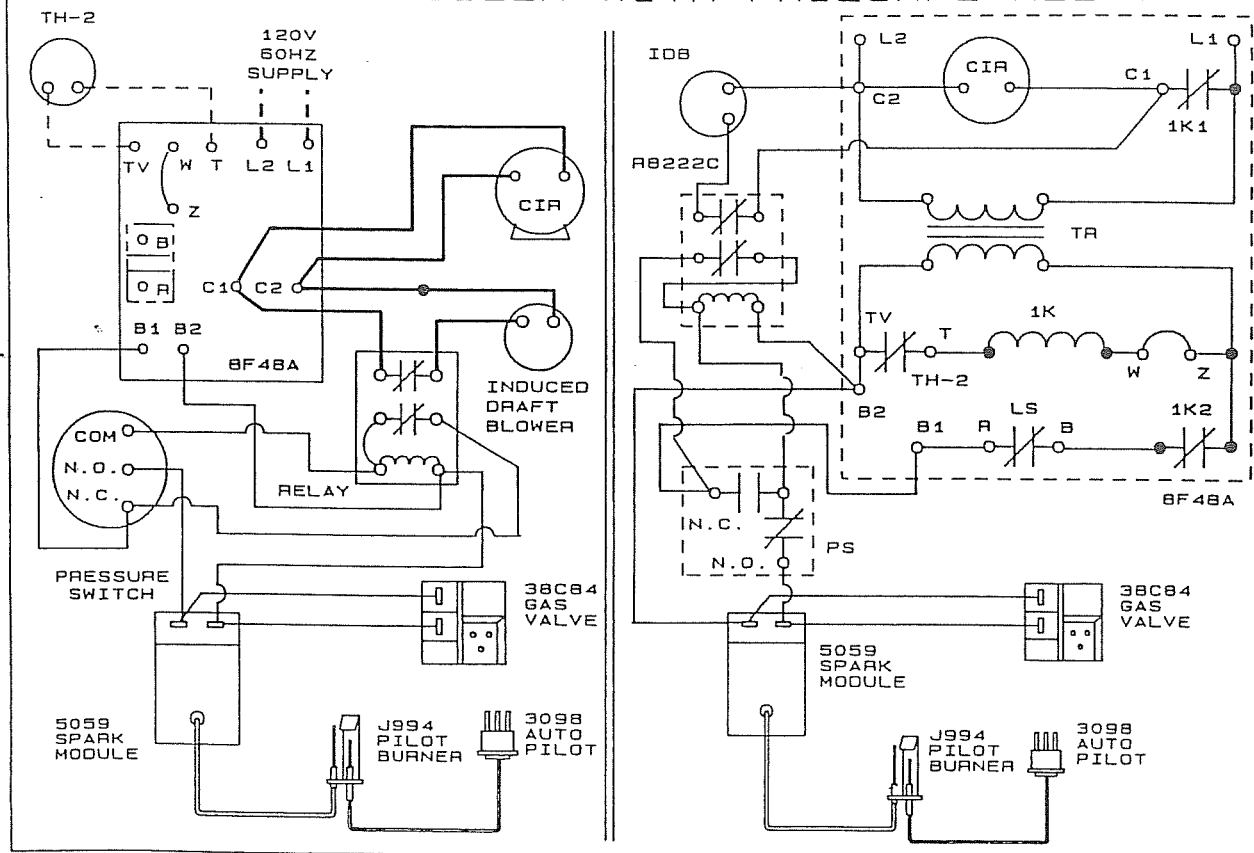
To check for proper flow of natural gas to boiler divide the input rate shown on rating plate by heating value of the gas as obtained from the local gas company. This will determine the number of cubic feet of gas required per hour. With all other gas appliances off, determine the flow of gas through the meter for two minutes and multiply by 30 to get the hourly rate. Make minor adjustment to the gas input as described above.

Primary air adjustment is not necessary, therefore, air shutters are not furnished as standard equipment. Air shutters can be furnished on request when required by local codes or conditions.

CHECK SAFETY CONTROL CIRCUIT, after burner adjustments are made, for satisfactory operation.

1. Ignition System Safety Shutoff: Remove ignition cable from ignition control with main burners operating with a pair of insulated pliers. If burners do not shut down, determine cause of malfunction. Replacement of ignition control or gas valve may be necessary.
2. High Limit Control. Fig. 4: Remove cover and note temperature setting. Decrease this setting to minimum and operate boiler. When boiler water temperature exceeds the control temperature setting, the control will open the circuit, closing the automatic main gas valve.

# WHITE-RODGERS HOT WATER CONTROL AND INTERMITTENT IGNITION WIRING FOR DV SERIES BOILER WITH FAILSAFE RELAY



## WIRING

- \_\_\_\_\_ LINE VOLTAGE BY FACTORY
- \_\_\_\_\_ LOW VOLTAGE BY FACTORY
- LINE VOLTAGE BY INSTALLER
- LOW VOLTAGE BY INSTALLER