Gas-Fired Unit Heaters Installation, Operation, and Maintenance Manual

Job Name: _____

Location: _____

Unit Model(s): _____

Serial Number(s): _____

Reference Drawings:

_____

_____

_____

FOR YOUR SAFETY

If you smell gas:
1. Open windows.
2. Don't touch electrical switches.
3. Extinguish any open flame.
4. Immediately call your gas supplier.

FOR YOUR SAFETY

The use and storage of gasoline or other flammable vapors and liquids in open containers in the vicinity of this appliance is hazardous.

ATTENTION: Read carefully before attempting to install, operate, or service the L.J. WIng equipment. Retain for future reference.

POST AND MAINTAIN THESE INSTRUCTIONS IN LEGIBLE CONDITION.

4830 Transport Drive
Dallas, TX 75247
Tel. (214) 638-6010 Fax (214) 905-0806

I. GENERAL INFORMATION

INSTALLATION SERVICE INSTRUCTIONS

During lifting operations, slings, or chains with hooks and I-beam spreaders are recommended. Lifting must be equal to all eye bolts or lugs furnished. The sling spreader (I-beam or equal) must be equal in length to the longest span between lifting points. Depending on sling length one or more spreaders are recommended. In no case should the lift be less than 60° from horizontal or more than 30° from the threaded shank direction of an eye bolt.

If correspondence with the factory is necessary, provide the unit model and serial number.

This equipment shall be installed and wired in accordance with the regulations of the National Board of Fire Underwriters, National Electric Code, and local governing bodies, or in Canada, the applicable provincial regulations for the class.

Authorities having jurisdiction should be consulted before installations are made. Local codes may require additional safety controls and/or interlocks.

! IMPORTANT NOTICE TO EQUIPMENT USERS Inspection of shipment upon arrival...

Shipments are made F.O.B., Dallas, Texas, by rail or truck. In either case, the unit is securely strapped, tied, and blocked to prevent shipping damage. All shipments are checked by an inspector before they are accepted by the carrier. Parts that are shipped unmounted are noted on the bill of materials. These parts, where feasible, are packaged and shipped with the units. Upon receipt of shipment, all units should be checked carefully for physical damage in the presence of the carrier's representative. If parts are missing or damage has occurred, a claim should be filed immediately with the carrier. Widely varying conditions under which the units are transported to the jobsite, unloaded, and installed make it impossible for L.J. Wing to assume responsibility for handling of equipment in transit.

All options and accessories are shipped mounted and wired whenever possible - within the limitations of shipping and handling. Any accessories which include wiring that are shipped separate (i.e., revolving discharge) require no additional conduit or wiring in the field.

The unit is designed to simplify field installation. All parts have been designed to facilitate field installation of parts and accessories. The purpose of this manual is to supplement, **but not to replace** the services of qualified field service personnel to supervise the initial adjustment of the unit. Persons without previous experience with gas-fired equipment should not attempt the initial adjustment and check-out procedure essential before such installations may be considered as ready for operation.

FACTORY TEST

All L.J. Wing gas-fired unit heaters are given a complete operational and control circuit check-out before final shipment. A copy of the test report is available upon request.

II. INSPECTING YOUR L.J. WING GAS-FIRED UNIT HEATER

A. Check unit nameplates to be sure that the model is correct.

B. Examine the furnace nameplate attached to the air inlet to be sure that the type of gas the unit is arranged for is the same as the gas supply.

C. Check motor nameplate for voltage and current rating characteristics. **Note:** If discrepancies exist contact your local Wing representative.

D. Turn the fan manually to assure that it is centered in the fan ring and does not strike. If necessary re-align.

III. INSTALLATION LOCATION

A. Allow outside air opening or provide make-up air to tightly sealed rooms for adequate combustion air.

B. Furnaces (all sides and collector box) should not be mounted closer than six inches to combustible materials.

C. Allow sufficient access:

1. At ends for servicing burner controls.
2. Approximately 12" between bottom of duct furnace and service platform for burner service.
3. On side at one access panel to allow for

fan unit removal:

Model #	Allow (in.)
GA-320	42"
GA-400	48"
GA-640	50"
GA-800	54"
GA-960	60"
GA-1280	60"

4. Approximately 12" at furnace ends for proper air inlet.

D. Unit should not be installed unless an adequate flue can be provided.

IV. FLUE CONNECTIONS

The flue collector is of one-piece sheet metal design with integral draft diverter. Flue outlets are factory arranged to face upward.

Flue Dimensions

Model #	Dia. (in.)
GA-320	5"
GA-400	5"
GA-640	6"
GA-800	5"
GA-960	5"
GA-1280	6"

A. Consult local codes and regulations.

B. Refer to attached furnace manual for specific venting instructions.

V. GAS PIPING

A. Connect gas piping in accordance with local codes and authorities having jurisdiction.

B. Refer to attached furnace manual for specific gas piping instructions.

VI. WIRING DETAILS

A. All units have been completely pre-wired and tested at the factory and are ready for connection to the external power source and to the operating controls. See specific wiring drawing accompanying installation instructions shipped with unit.

B. Make all external wiring in accordance with the National Electric Code and local ordinances.

VII. START UP INSTRUCTIONS

A. Energize electrical system through optional main disconnect switch.

B. Refer to attached furnace manual for start up instructions on pilot and main gas burners.

VIII. PRE-START INSPECTION

This inspection is extremely important and should be completed with the greatest care given to detail. A good pre-start inspection will insure against possible unit damage on start-up and will save valuable analysis time in the event a malfunction should occur on start-up.

- Check to see that all factory installed pipe plugs have been removed.
- Check supply voltage against unit voltage.
- Check all electrical connections for tightness at all terminals in the main control panel and optional remote control panel.
- Check that all fuses are installed.
- Check fan area to insure freedom of rotation.
- Check all areas for cleanliness.
- Secure all access doors.
- If revolving discharge section is ordered, the gear motor is secured so that it will not become damaged during transit. Check to see that gear motor has been loosened and works freely against the spring.

IX. SEQUENCE OF OPERATION (TYPICAL)

A. Room Thermostat Calls for Heat (Winter Mode):

1. Magnetic fan motor starter coil is energized.
2. Revolving discharge motor is energized (when furnished).
3. As each power venter proves airflow the spark ignition module is energized.

B. Room Thermostat Satisfied:

Entire unit is de-energized resulting in shut down of diaphragm gas valves, fan motor, and revolving discharge motor (when furnished).

C. The Summer-OFF-Winter Switch allows operation of the fan unit without firing the duct furnaces (Summer Mode).

X. TROUBLE SHOOTING

A. Refer to attached furnace manual for Trouble Shooting instructions regarding power venter, pilot burner, and main burner.

B. If fan motor fails to operate:

1. Check the magnetic starter and reset if tripped.
2. Check room thermostat.
3. Check Summer-OFF-Winter switch if used.
4. Manually energize starter.
5. If the motor is found defective after all checks are made, repair or replace.

C. If the revolving discharge (if used) fails to rotate when the fan unit is operating:

1. Check the fuse in the revolving discharge motor splice box.
2. Check for free movement of the discharge rotation, pull the drive wheel away from discharge collar before rotating.
3. While drive wheel is away from discharge, check for shaft slippage.
4. Observe if the revolving discharge motor drive wheel rotates.
5. Test for 110 voltage in the junction box on revolving discharge motor. If motor still fails to operate, replace the motor.

LJ ING®

4830 Transport Drive
Dallas, TX 75247
Tel. (214) 638-6010 Fax (214) 905-0806