

REZNOR**DISCHARGE AIR CONFIGURATIONS**

Discharge Air Configurations		Application
Standard	Horizontal Outlet * 3/4" Duct Flange designed for "U" channel top/bottom ductwork connection and "L" type on each side	Installation that requires connection to horizontal ductwork before turning downward or where immediate downturn ductwork with horizontal connection is field supplied.
Option AQ5	Vertical Outlet * Downturn Plenum Cabinet * 1" Duct Flange for slip-type connection (flange is perpendicular to the cabinet)	Installation where vertical ductwork is attached and sealed directly to the duct flange on the bottom of the downturn plenum cabinet.
Options AQ8 A-D A = 115V B = 208V C = 230V D = 460V	Vertical Outlet w/Dampers * Downturn Plenum Cabinet * Two-Position Dampers * Direct-Coupled Motor (rated for use in discharge airstream) * 1" Duct Flange for slip-type connection (flange is perpendicular to the cabinet)	Installation where vertical ductwork is attached and sealed directly to the duct flange on the bottom of the downturn plenum cabinet. The two-position (open/close) dampers in the discharge opening are designed to isolate the unit from the building atmosphere when the system is not operating. The damper motor is located inside the downturn plenum cabinet.

INSTALLATION

WARNING: Gas-fired appliances are not designed for use in hazardous atmospheres containing flammable vapors or combustible dust, or atmospheres containing chlorinated or halogenated hydrocarbons.

Installations in public garages or airplane hangars are permitted when in accordance with ANSI Z223.1 and NFPA 54 codes or CAN1-B149 and enforcing authorities.

WARNING: Failure to provide proper venting could result in death, serious injury, and/or property damage. Unit must be connected to flue having sufficient draft to ensure safe and proper operation. Unit must be properly vented to the outside of the building. Safe operation of any gravity vented heating equipment requires a properly operating vent system, correct provision for combustion air and regular maintenance and inspection.

WARNING: Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury, or death. Read the installation operation and maintenance instructions thoroughly before installing or servicing any heating equipment.

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

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

DANGER: The gas burner in all Reznor gas-fired equipment is designed and equipped to provide safe and economically controlled complete combustion. However, if the installation does not permit the burner to receive the proper supply of combustion air, complete combustion may not occur. The result is incomplete combustion which produces carbon monoxide, a poisonous gas that can cause death. Safe operation of indirect-fired gas burning equipment requires a properly operating vent system which vents all flue products to the outside atmosphere. Failure to provide proper venting will result in a health hazard which could cause serious personal injury or death.

Always comply with the combustion air requirements in the installation codes and instructions. Combustion air at the burner should be regulated only by manufacturer-provided equipment. **NEVER RESTRICT OR OTHERWISE ALTER THE SUPPLY OF COMBUSTION AIR TO ANY HEATER.** Indoor units installed in a confined space must be supplied with air for combustion as required by code and in the installation manual. **INSTALL AND MAINTAIN THE VENT SYSTEM TO CONTINUALLY VENT ALL FLUE PRODUCTS SAFELY TO THE OUTSIDE ATMOSPHERE.**

CODE REQUIREMENTS

The unit shall be installed by a qualified agency in accordance with the standards of the National Fire Protection Association and the national Fuel Gas Code for gas-fired duct furnaces. These standards should be followed carefully. Authorities having jurisdiction should be consulted prior to installation to verify local codes. The unit shall be installed in accordance with the National Fuel Gas Code ANSI Z223.1 (latest edition).

In Canada, the installation of these appliances is to be in accordance with CAN/C.G.A.-B149.1 and B149.2, Installation Code for Gas Burning Appliances and Equipment, and local codes.

Installation in aircraft hangars should be made in accordance with ANSI/NFPA No. 409 (latest edition), standard for aircraft hangars, and in public garages in accordance with NFPA No. 88A (latest edition), standard for parking structures, and NFPA No. 88B for repair garages. In Canada, installation in aircraft hangars should be in accordance with the requirements of the enforcing authorities and in public garages in accordance with CAN1-B149 codes.

INSTALLATION - (cont'd)

REZNOR

ANSI/NFPA-409 specifies a clearance of 10 feet to the bottom of the heater from the highest surface of the top of the wings or engine enclosures, or whatever aircraft would be highest to be housed in the hangar, and a minimum clearance of 8 feet from the floor in other sections of aircraft hangars, such as offices and shops which communicate with areas used for servicing or storage. The heaters must be located so as to be protected from damage by aircraft or other objects such as cranes and movable scaffolding.

NFPA-88 specifies overhead heaters must be installed at least 8 feet above the floor. Clearances to combustible construction or material in storage from the heater and vent must conform with the National Fuel Gas Code ANSI Z223.1-(latest edition) pertaining to gas-burning devices, and such material must not attain a temperature over 160°F by the continued operation of the heater.

CONDENSATION

When air inlet temperatures are below 40°F or temperature rise is less than 40°F, condensation on the heat exchanger is possible. The resulting steel corrosion will shorten the heat exchanger life expectancy. Use E-3 (409) or 321 stainless steel for heat exchanger material to inhibit corrosion.

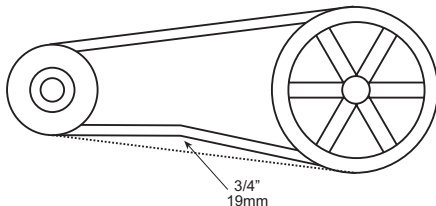
If there is a possibility of condensation of flue products, E-3 (409) stainless steel should be used for burner material.

CHLORINE

The presence of chlorine vapors in the combustion air of gas-fired heating equipment presents a potential corrosive hazard. Chlorine will, when exposed to flame, precipitate from the compound, usually freon or degreaser vapors, and to into solution with any condensation that is present in the heat exchanger or associated parts. The result is hydrochloric acid which readily attacks all metals including 300 grade stainless steel. Care should be taken to separate these vapors from the combustion process. This may be done by wise location of units with regard to exhausters or prevailing wind directions. Remember, chlorine is heavier than air. This fact should be kept in mind when determining installation locations of heaters and building exhaust systems.

BELTS AND DRIVES

Belt driven motors are equipped with adjustable pitch pulleys which permit adjustment of blower speed. Proper belt tension is important to the long life of the belt and motor. A loose belt will cause wear and slippage. Too much tension will cause excessive motor and blower bearing wear. Adjust belt tension by means of the adjusting screw on the motor base until belt can be depressed 1/2" to 3/4".



ELECTRICAL SUPPLY AND CONNECTIONS

All electrical wiring and connections including electrical grounding should be made in accordance with the National Electric Code ANSI/NFPA No. 70-(latest edition) or, in Canada, the Canadian Electrical Code, Part I-C.S.A. Standard C22.1 Check any local ordinance or gas company requirements that apply.

A separate line voltage supply should be run directly from the main panel to a fused disconnect switch, at the unit, and then making connection to leads in the unit junction box. All external wiring must be made within approved conduit and have a minimum temperature rating of 60°C.

The unit must be electrically grounded in accordance with the National Electrical Code, ANSI/NFPA No. 70-(latest edition) or C.S.A. Standard C22.1 when installed, if an external electrical source is use.

GAS PIPING AND PRESSURES

To provide adequate gas pressure at the furnace, refer to pipe sizing tables. The unit is equipped for a maximum gas supply pressure of 1/2 pound or 8 ounces. An additional service regulator external to the unit is required to reduce higher supply pressures to the 1/2 pound maximum.

WARNING: Never expose gas control on unit to greater than 1/2 pound pressure! Pressure testing of the gas supply piping system must be carried out before connecting the furnace. A pipe cap or field-supplied high pressure gas cock must be used during proof testing of the system.

For Natural Gas

Manifold pressure is regulated by the combination valve to 3.5" water column. Line pressure upstream of the controls must be a minimum of 5" water column or as noted on unit rating plate.

For Propane Gas

Manifold pressure is regulated by the combination valve to 10" water column. Line pressure upstream of controls must be 11" water column minimum and 14" maximum.

NOTE: Gas supply pressures higher than 14" w.c. or 1/2 pound require an additional service regulator to be added to the unit or supply system.

All piping must be in accordance with requirements outlined in the National Fuel Gas Code ANSI Z223.1-(latest edition) or Canadian Gas Association CAN/C.G.A.-B149 (.1 or .2).

When regulations require and for ease of servicing, install a ground joint union and manual shut-off valve upstream of unit control system.

WARNING: All components of gas supply system must be leak tested prior to placing equipment in service. NEVER TEST FOR LEAKS WITH AN OPEN FLAME.