

# TRANE XL-80

## BLU - UPFLOW

<b>MODEL NUMBER:</b>	BLU 060, 070, 085, 100J-A (Two stage)
<b>BTU SIZES:</b>	60,000, 70,000, 85,000, and 100,000 BTU's

### ACCESSIBILITY CLEARANCE

1) 24 inches at side where access for servicing and cleaning. 2) 18 inches at a side where passage is required to another side requiring servicing or cleaning, or at a side requiring inspection or replacement of the flue connector. 3) In utility room installations, the door shall be wide enough to allow the largest furnace part to enter or to permit the replacement of another appliance, such as a gas water heater.

### CLEARANCE FROM COMBUSTIBLE MATERIAL

Rear - 0"	Front - 6"	Top of Plenum - 1"	Side - 0"
Flue - 6" with single wall vent 1" with Type 'B' vent			

Upflow models are A.G.A. design certified for installation on combustible floors and for closet installation. For installation on combustible flooring, the furnace shall not be installed directly on carpeting, tile, or other combustible material other than wood flooring.

### COLD AIR RETURN AIR DUCTS

### GARAGE

Approved. Must meet requirement in the UMC and the Good Practice Book.

### GENERAL

### HIGH ALTITUDE INSTALLATIONS

Deration	Standard 4% deration for each 1,000 feet above sea level if installed above 2,000 feet.
Orifice	
Regulator Pressure	3.5 inches W.C maximum - 3.0" W. C. minimum (2.9" W.C. above 4,000 ft)
Pressure Switch	High altitude application (4,000 ft. and above elevations) of the new BLU-J Gas Furnaces necessitates a change in the air pressure differential switch which controls the ignition.

MOBILE HOME

Not approved.

VENTING MATERIAL AND REQUIREMENTS

Vent Pipe

Standard Type 'B' or 'C' vent

Vent Fittings

Standard Type 'B' or 'C' vent

VENT CLEARANCE FROM COMBUSTIBLE MATERIAL

6" Type 'C' vent pipe

1" Type 'B' vent pipe

VENTING PROCEDURE

CAUTION: The gas vent or chimney should not be less than the size of the draft hood outlet. If more than one appliance vents into a common vent, the area of the vent shall not be less than the area of the largest vent connector plus 50% of the areas of the additional vent connectors.

MISCELLANEOUS INFORMATION/NOTES

# Condensing Furnaces

## SEQUENCE OF OPERATION — BLU/BLD-K, TUC120A-A MODELS

With the disconnect in the "on" position, voltage is supplied to the primary side of the control transformer (TNS) ⑨ through the blower compartment door switch ①.

The control transformer steps down line voltage to 24 volts for the low voltage control circuit. Power is supplied from the secondary of the control transformer to the "R" terminal on the thermostat ⑩ and the common side of the control circuit.

When there is a call for heat from the thermostat, power is supplied to the furnace low voltage terminal labeled "W" ⑩. From "W", 24 volts flows through a high temperature fusible link ⑬, high temperature limit switch ⑰, See Note 1, reverse flow switch ⑮ and auxiliary limit ⑮. From the auxiliary limit switch power flows to the low voltage side of the P.C. board ⑪. The P.C. board ⑪ starts the vent motor ② on the high speed. When the required combustion air is established, pressure switch #1 ⑭ closes, allowing 24 volts to flow to the ignition control ⑱. The ignition control ⑱ then supplies 115 volt power to the igniter ⑦. The igniter will heat for approximately 45 seconds, at which time the ignition control ⑱ will energize the gas valve permitting gas flow to the main burners. Multiple burner models, as in this illustration, utilize a remote flame sensor ⑳, See Note 4, to confirm ignition within a seven second trial for ignition period. Flame sensing is accomplished by flame rectification, See Note 2.

As the heat exchanger temperature increases, the thermal fan switch (FST) ⑥ closes, starting the blower on the selected heating speed.

Approximately eight seconds after a call for heat, the vent motor ② speed is switched from high to low speed by the P.C. Board ⑪. The vent motor will continue to operate at low speed with one exception. If pressure switch #2 senses a 20 to 40 mile per hour wind condition at the vent terminal, the switch will open, causing the P.C. Board to switch the vent motor ② to high speed. Eight seconds after the 20 to 40 mile per hour wind condition ceases, the vent motor will be switched back to low speed, See Note 3.

If the wind at the vent terminal exceeds 40 miles per hour, pressure switch #1 ⑭ will open closing the gas valve, shutting the burners and vent motor off.

When the thermostat is satisfied, the blower continues to run until the fan switch ⑥ reaches its cutoff temperature. It is possible, even after shutdown, for the thermal fan switch to close and recycle to dissipate residual heat.

### Notes:

1. The reverse flow limit switch is physically located on the return air side of heat exchanger in downflow furnace models only. Should the air temperature at the switch exceed the fixed temperature setting of the switch, the switch will open, and the gas valve will close, shutting down the burners and vent motor.
2. Furnaces produced after November 1, 1986 employ a three trial ignition control. This control will repeat the 45 seconds igniter heating and seven second trial-for-ignition sequences three times with a five second delay between each sequence. If main burner flame is not proven after three trials, the control will lockout.
3. Prior to January 1987, these furnaces employed a P.C. board which kept the combustion blower on high speed for 80 seconds before switching back to low speed.
4. BLU and BLD 040K models are single burner models and do not have a remote flame sensor. The silicone carbide igniter doubles as a flame sensor. This was changed in the first quarter of 1988. A remote sensor was installed to ensure reliable flame sensing.
5. KIT-2119 is a Fenwal to White Rodgers conversion kit. This service part is the factory recommended replacement part for the Fenwal control used in Trenton built residential gas furnaces.

# Wiring Schematic

CONDENSING FURNACES — BLU/BLD-K, TUC120A-A MODELS

Fenwal Hot Surface Ignition System

