

TRANE 80 - Downflow	
TDD-B SERIES	
MODEL NUMBER:	80% AFUE TDD050B924A, TDD060B936A, TDD080B942A, TDD100B948A, TDD120B960A
BTU SIZES:	50,000-60,000-80,000-100,000-120,000 BTUH
ACCESSIBILITY CLEARANCE	
At least 24" must be provided in front of the unit. Access doors should permit removal of the largest component.	
CLEARANCE FROM COMBUSTIBLE MATERIAL	
WARNING: Do not install the furnace directly on carpeting, tile, or other combustible material other than wood flooring. (Sub-base - BAYBASE200, BAYBASE201, BAYBASE202, or BAYBASE 203 must be used.)	
MINIMUM CLEARANCE TO COMBUSTIBLE MATERIAL	
FRONT	6"
REAR & BOTTOM	0
PLENUM	1"
SIDES	0"
COLD AIR RETURN AIR DUCTS	
GARAGE	
Approved. Must meet requirements in the UMC and the Good Practice Book.	
GENERAL	
HIGH ALTITUDE INSTALLATIONS	
Deration	If the installation is above 2,000 ft., ratings should be reduced at the rate of 4% for each 1,000 ft. above sea level.
Orifice	Change only.
Regulator Pressure	3.0" W.C. minimum 3.5" W.C. maximum
Pressure Switch	

Form
10/10/00

MOBILE HOME	
Not approved.	
VENTING MATERIAL AND REQUIREMENTS	
Vent Pipe	<p>The TDD - B series furnaces have been classified as Category I furnace. Horizontal side wall vent terminations are not allowed.</p> <p>NOTE: All TDD model units must be installed with Type "B" double wall vent pipe.</p>
Vent Fittings	
Old model TDD series XL-80 furnaces can be vented with Type "C" vent material. "B" series - Type "B" vent only.	
VENT CLEARANCE FROM COMBUSTIBLE MATERIAL	
"B" vent 1"	
VENTING PROCEDURE	
Vent according to GAMA vent tables.	
MISCELLANEOUS INFORMATION/NOTES	

Induced Draft Furnace

SEQUENCE OF OPERATION — TUD/TDD-A MODELS

With the disconnect in the "on" position ①, voltage is supplied to the primary side of the control transformer (TNS) ② through the blower compartment safety door switch ②.

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 ⑩ on the thermostat 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 "W" terminal. From "W" the control voltage makes a parallel circuit. One side of the circuit contains the vent blower relay (R1) ⑪ which is energized immediately upon a call for heat. Contact (R1) ③ closes, completing the (single speed) vent motor ② circuit.

Simultaneously, voltage flows to the other side of the parallel circuit through a high temperature fusible link ⑭, high temperature limit switch ⑭, and to the pressure switch ⑮ which senses the suction side pressure of the vent blower ②. When the required combustion air is established, the pressure switch ⑮ closes, allowing 24 volts to the ignition control. The high voltage side of the ignition control ⑧ then supplies 115 volt power to the igniter ⑦. The igniter will heat for 45 seconds at which time the ignition control will energize the gas valve ⑯ permitting gas flow to the main burners. A remote flame sensor ⑰ confirms ignition within a seven second trial for ignition period. Flame sensing is accomplished by flame rectification. With flame established, the heat exchanger temperature rises and the thermal fan switch (FST) ⑤ closes, starting the indoor fan motor ④ on the selected heating speed.

If a backdraft condition occurs in the vent, the pressure switch ⑮ will open, closing the gas valve ⑯, shutting off the burners.

When the thermostat is satisfied, the "W" signal will be broken, shutting off the vent blower and burners. The conditioned air blower ④ continues to run until the fan switch (FST) ⑤ reaches its cut-off temperature. It is possible, even after shutdown, for the thermal fan switch to close and recycle the blower to dissipate residual heat.

Notes:

1. Downflow models have an auxiliary limit (not shown), called a counterflow limit, located in the heat exchanger compartment. The counterflow limit closes the main gas valve in the event of a loss of airflow. Because the switch is located "above" the heat exchangers, natural, upward convection of heat will cause the switch to open.

2. Furnaces produced after June 1, 1986 will employ a three trial ignition control. This control will repeat the 45 seconds ignitor heating and seven second trial-for-ignition sequences three times with a five second delay between each sequence. If a main burner flame is not proven after three trials, the control will lockout.

3. 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 Fenon built residential gas furnaces.





