

## ELECTRIC DUCT HEATER TROUBLESHOOTING GUIDE

A DUCT HEATER MUST BE INSTALLED ACCORDING TO THE INSTALLATION INSTRUCTIONS, WIRING DIAGRAM AND LABELING SUPPLIED WITH THE HEATER.

Listed below are some important items when installing a electric duct heater:

**1. NEVER OPERATE A DUCT HEATER WITHOUT AIRFLOW.**

The heater must always be interlocked with the fan. This may be accomplished by either an airflow switch or fan interlock relay.

**2. NEVER OPERATE HEATER WITHOUT ACHIEVING AT LEAST THE MINIMUM AIRFLOW REQUIRED.**

Always refer to the installation instructions and the nameplate label to determine your minimum air velocities based on your inlet air temperature. If the minimum airflow requirements are not present the heater will not function properly and safely. (see fig. 1)

**3. NEVER OPERATE THE HEATER WITH UNEVEN AIRFLOW.**

The minimum airflow requirements must be present at all points over the heater face. (see fig. 1)

**4. THE AIR MUST BE FILTERED.**

The incoming air must be free from all debris, combustible particles, and hazardous vapors.

**5. ALWAYS LOCATE THE HEATER AT LEAST 24" FROM AN ELBOW OR TURN.**

(see fig. 2)

**6. ALWAYS LOCATE THE HEATER AT LEAST 48" FROM AN HEAT PUMP OR CENTRAL AIR CONDITIONER.**

(see fig. 3)

**7. ALWAYS LOCATE THE HEATER AT LEAST 48" FROM ANY CANVAS DUCT CONNECTOR OR TRANSITION SECTION FOR CHANGE IN DUCT SIZE.**

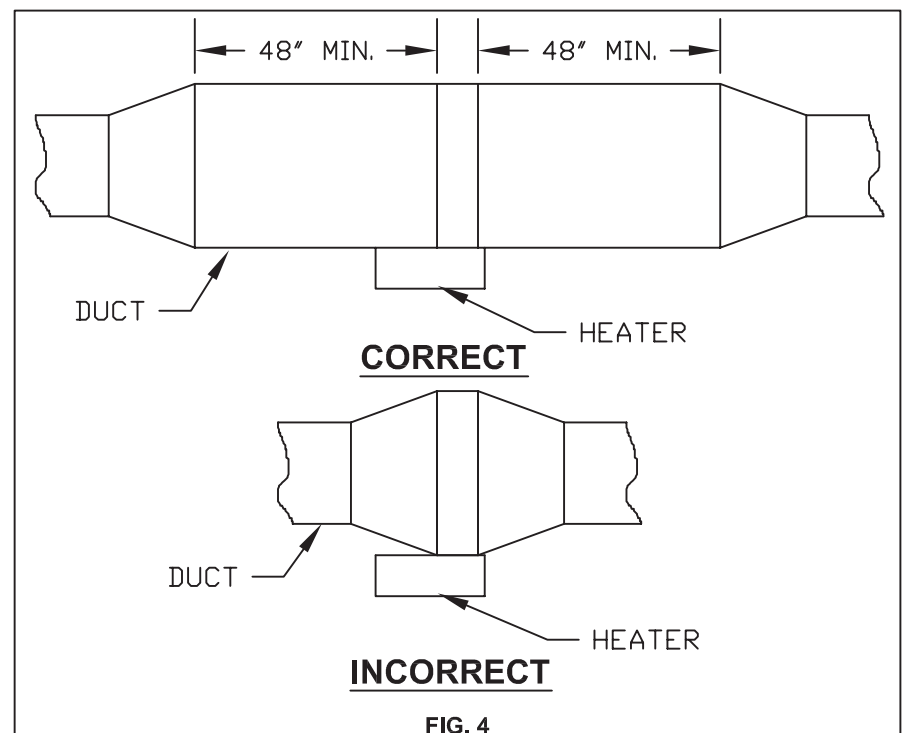
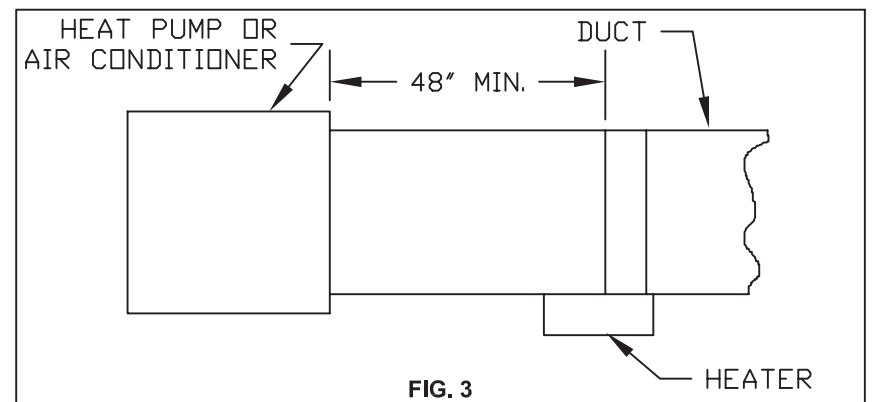
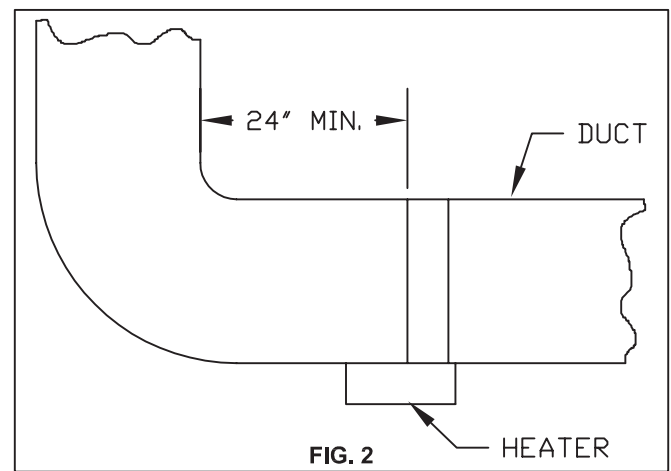
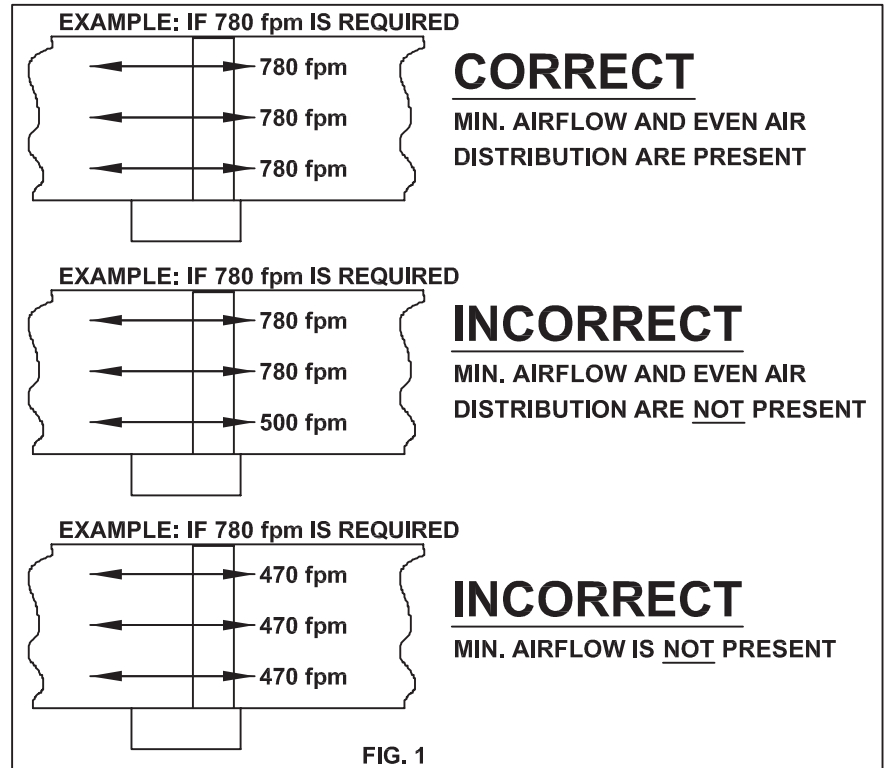
(see fig. 4)

**8. ALWAYS LOCATE THE HEATER AT LEAST 48" DOWNSTREAM FROM AN AIR HANDLER.**

(see fig. 5)

**9. ALWAYS LOCATE THE HEATER AT LEAST 48" UPSTREAM FROM AN HUMIDIFIER.**

(see fig. 6)



**NOTE: ALL FIGURES ARE SHOWING A TOP VIEW OF A HORIZONTAL DUCT.**

10. ALWAYS LOCATE THE HEATER AT LEAST 48" DOWNSTREAM FROM AN AIR FILTER.  
(see fig. 7)

11. NEVER INSTALL A STANDARD HEATER INTO A DUCT WITH AN INTERNAL OBSTRUCTION.  
Due to the fact that an obstruction can block airflow at the temperature limit controls and element terminations. If this situation exist, it can be corrected by using a heater with a recessed control box and reduced wrapper size. This situation is common with internally insulated ducts. (see fig. 8)

12. NEVER INSULATE THE EXTERIOR OF THE CONTROL BOX.  
The control box must be completely accessible and located where ventilation can be provided at all times. (see fig. 9)

13. NEVER INSTALL A HEATER NEAR A DOUBLE BLOWER OUTLET.  
A heater must be installed far enough away from a double blower outlet that even and proper airflow is present or separate duct heaters placed in the duct runouts of each blower. (all installation must conform with the heater installation instructions.) (see fig. 10)

14. NEVER INSTALL A HEATER LESS THAN 48" FROM ANY FAN.  
Mounting a heater any closer than 48" to a fan will result in uneven airflow.

15. ORDER THE HEATER WITH THE FACTORY INSTALLED LINEAR TEMPERATURE LIMIT CONTROL IF THE HEATER WIDTH > 72".

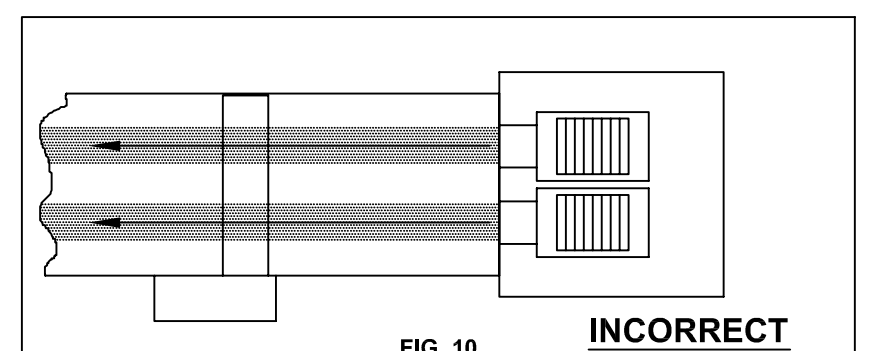
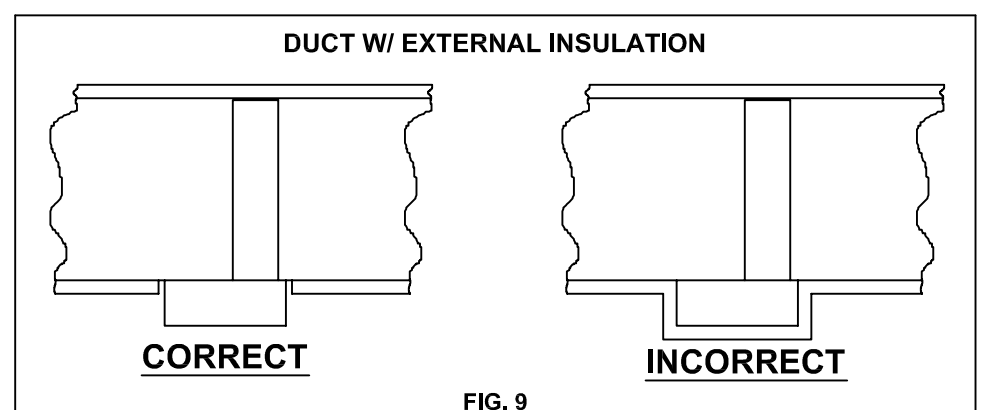
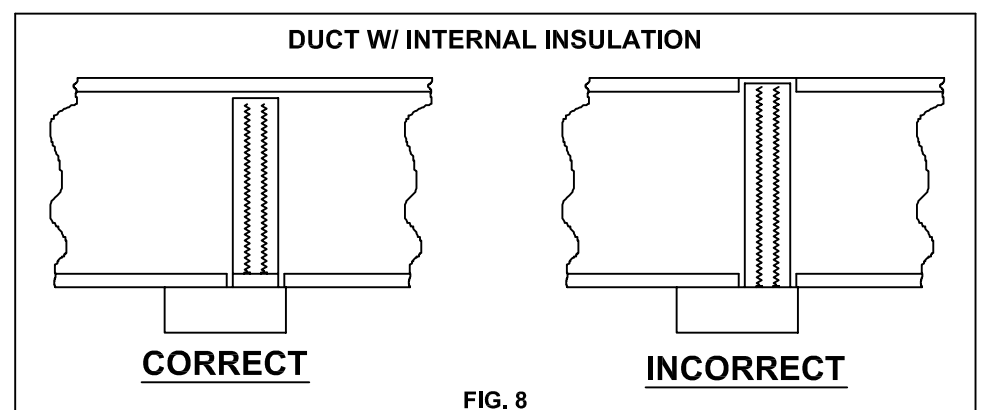
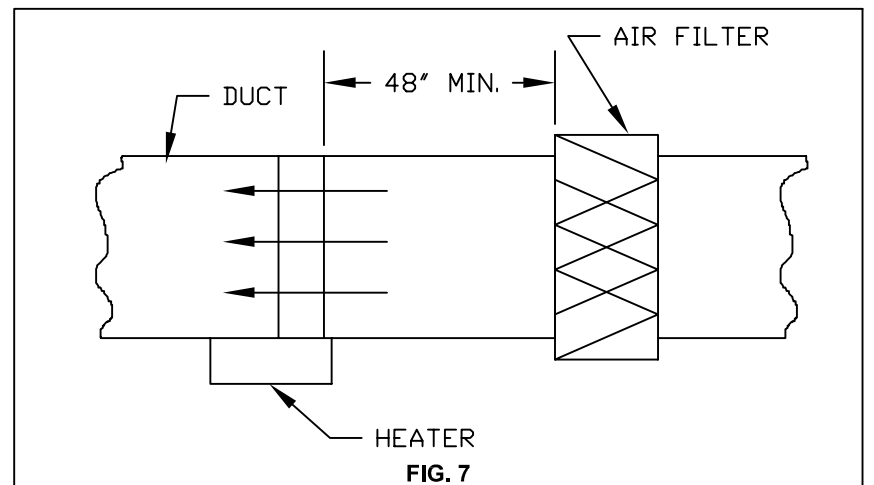
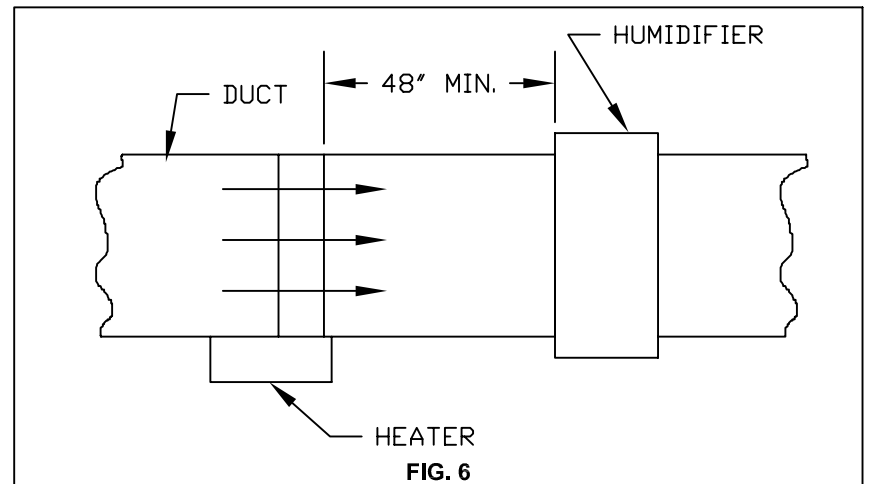
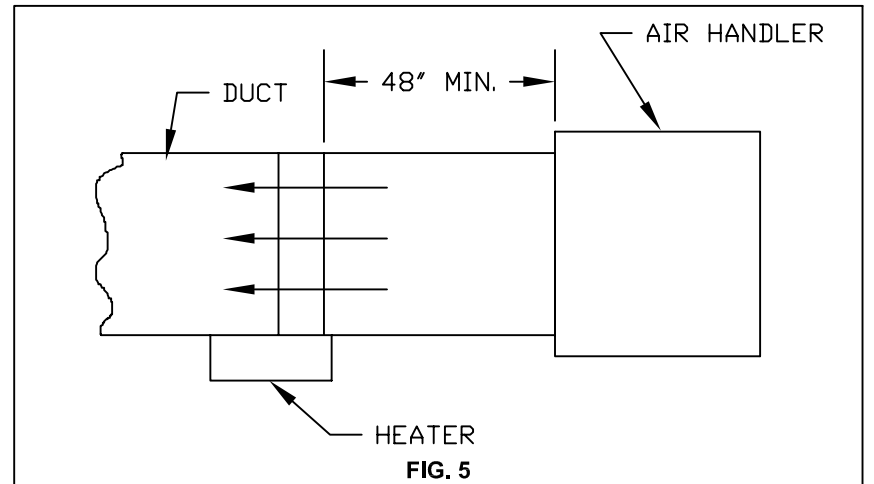
16. NEVER USE ALUMINUM CONDUCTORS.  
Use copper conductors only for all incoming wiring.

17. NEVER INSTALL A STANDARD HEATER OUTDOORS WITHOUT MAKING SPECIAL PROVISIONS TO PROTECT THE HEATER AND CONTROL BOX FROM THE ELEMENTS.

18. NEVER BUNDLE, TIE OR WRAP POWER WIRING.  
The wire could overheat or the insulation could breakdown.

19. NEVER USE A DIFFERENT VOLTAGE AND/OR PHASE THAN WHAT IS LISTED ON THE HEATER NAMEPLATE LABEL.  
The duct heater is to be used only at the voltage and phase that is listed on the nameplate label.

**Note:** An airflow switch only proves that airflow exist (a differential in static pressure), not that the minimum air velocities and proper air distribution for the duct heater exist.



NOTE: ALL FIGURES ARE SHOWING A TOP VIEW OF A HORIZONTAL DUCT.