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Fresh Air Duct installation and Maintenance instructions

Direct combustion air ducting to the burner air inlet is an acceptable practice. There are several considerations that must be taken into account when ducting outside fresh air to the burner. One of these methods must be incorporated to prevent damage to the burner or combustion problems related to condensation.

Temperature variations when using outside air

Changes in air temperature affect the density of the air and the volume of air delivered to the combustion process. For each 30 degree change in the air temperature you will see a 1 % change in O₂.

The best way to overcome this change in O₂ levels is to incorporate an O₂ trim system in the burner control scheme.

Review the burner combustion setting several times during the heating season.

Control the temperature of the air between the outside and the burner through the use of a pre heater or mixing of the air.

Condensation in the fresh air duct

A drain connection would be recommended or Pre-heating of the combustion air as noted above.

Duct Sizing

Size the fresh air duct (Sealed Combustion) to provide proper amount of combustion air to the burner with a pressure drop of < 0.1" W.C. including all screens, filters (if used) and fittings.

The inlet to the outdoor duct should be protected from weather and have an inlet screen to protect from pest or debris. Inspect monthly to insure there are no obstructions.