



**ENGINEERED AIR**

**SUPPLEMENTARY INSTALLATION,  
AND MAINTENANCE MANUAL  
FOR  
DUCTED COMBUSTION AIR  
FOR DJ, DG AND SH SERIES EQUIPMENT**

UNIT MODEL NO. \_\_\_\_\_  
UNIT SERIAL NO. \_\_\_\_\_  
SERVICED BY: \_\_\_\_\_  
TEL. NO: \_\_\_\_\_

**CANADIAN  
HEAD OFFICE  
AND FACTORY**

1401 HASTINGS CRES. SE  
CALGARY, ALBERTA  
T2G 4C8  
Ph: (403) 287-4774  
Fx: 888-364-2727

**USA  
HEAD OFFICE  
AND FACTORY**

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DESOTO, KANSAS  
66018  
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**CANADIAN  
EASTERN FACTORY**

1175 TWINNEY DRIVE  
NEWMARKET, ONTARIO  
L3Y 5V7  
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Fx: (905) 898-7244


**SALES OFFICES ACROSS CANADA AND USA**




Retain instructions with unit and maintain in a legible condition.  
Please give model number and serial number when contacting  
factory for information and/or parts.

[www.engineeredair.com](http://www.engineeredair.com)

**Warning:**  Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read and understand the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

**Warning:**  This equipment is not suitable for installation as a Separated Combustion appliance or as a Direct Vent appliance. Ducting the combustion air to the appliance is only a supplemental provision for supplying combustion air.

**Warning:**  Pool, laundry and common cleaning products often contain fluorine or chlorine compounds. When these chemicals pass through the heater, they can form strong acids. The acid can eat through the heat exchanger wall, causing serious damage and presenting a possible threat of flue gas spillage into the building.

**Warning:**  **FOR YOUR SAFETY**  
  The use and storage of gasoline or other flammable vapors and liquids in open containers in the vicinity of this appliance is hazardous.

**Warning:**  **NOT FOR USE IN HAZARDOUS LOCATIONS.**  
 

**SUPPLEMENTARY OPERATING AND INSTALLATION INSTRUCTION FOR  
DUCTED COMBUSTION AIR ON DJ, DG AND SH SERIES EQUIPMENT**

DJ, DG and SH series heating and humidification equipment may come with provisions for ducted combustion air. This option must be ordered prior to the manufacturing of the equipment.

**COMBUSTION AIR OPENING**

The combustion air opening shall be in accordance with the requirements of CAN/CSA B149.1 in Canada, NFPA 54 in the USA or the authority having jurisdiction.

**LOCATING THE COMBUSTION AIR OPENING**

The combustion air opening, in accordance with the requirements of CAN/CSA B149.1 in Canada, NFPA 54 in the USA, shall communicate directly with the outdoors.

**DUCT SIZING**

The combustion air duct sizing **shall be the larger of:**

1. That required CAN/CSA B149.1 in Canada, NFPA 54 in the USA or the authority having jurisdiction.

or

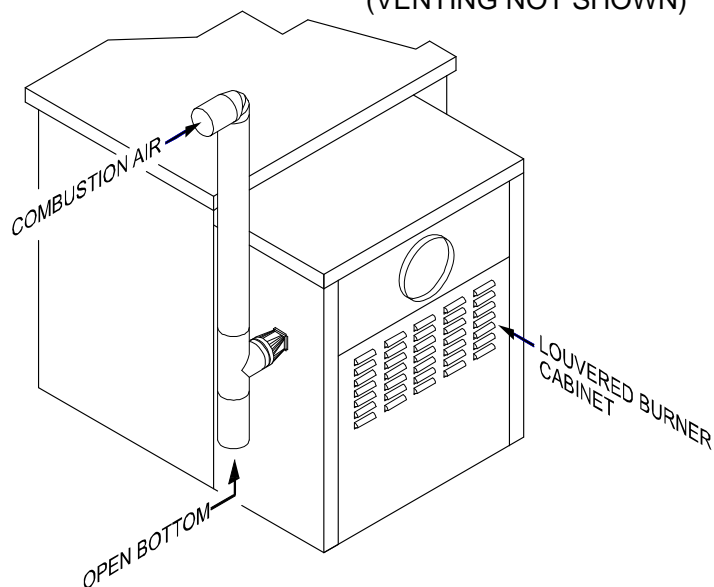
2. The calculation below is based on natural gas with heat content of 1,000 BTU/cubic foot. Revise your calculation if this constant is different for your installation. The heat input for the equipment is listed on the rating plate.

$$\text{Combustion Air Required (CFM)} = \text{heat input (BTUh)} / 3,000$$

The full fire total pressure drop in the combustion air shall not exceed **0.1" w.c.** If common ducting is used, the total pressure drop is when all appliances sharing the combustion air duct are at full fire.

**TYPICAL DUCTED COMBUSTION AIR**

(VENTING NOT SHOWN)



**DEPRESSURIZATION**

Proper flow of combustion and venting of flue gas will not occur if the space the appliance is installed in is depressurized. Ensure the space is not depressurized by exhaust systems or poorly sealed return or outside air ductwork.

**LOCATING THE APPLIANCE**

Pool, laundry and common cleaning products often contain fluorine or chlorine compounds. When these chemicals pass through the heater, they can form strong acids. The acid can eat through the heat exchanger wall, causing serious damage and presenting a possible threat of flue gas spillage into the building.

If the heater is located in any area likely to have contamination or house sources of contamination the heater should be moved or the source of contamination should be removed. Contaminated combustion air will damage the heater, resulting in possible severe personal injury or death.

**INSTALLATION**

The duct shall be of galvanized steel or a material meeting the requirements of CAN/CSA B149.1 in Canada, NFPA 54 in the USA or the authority having jurisdiction. The duct shall communicate directly with the outdoors.

The installation of the appliance and venting shall be in accordance with the requirements of CAN/CSA B149.1 in Canada, NFPA 54 in the USA or the authority having jurisdiction. The installation shall be in accordance with all other pertinent manuals. Including, but not limited to the DJ, DG or SH Series manual and burner control manuals such as the DJM, G-Trac or S-Trac manual.

**BURNER SETUP**

Once the installation is complete and the equipment is ready for operation, a combustion analysis shall be performed to ensure a clean and efficient burn through the entire gas modulation range of the appliance.

**FREEZE HAZARD**

The burner enclosure is not a sealed compartment. Spillage of combustion air in the room where the appliance is installed can cause freezing and damage to piping and liquids in the room.

**MAINTANENCE**

The combustion air duct and intake must be regularly checked for obstructions.