

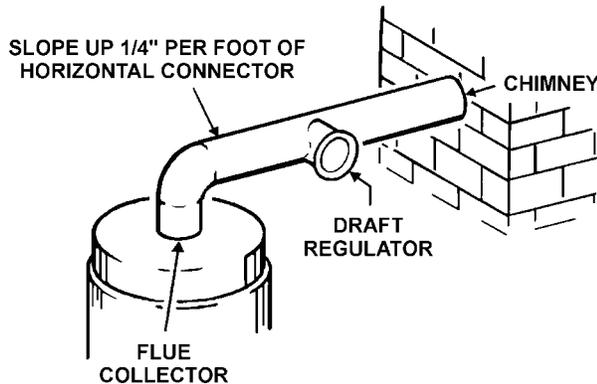
### VENTING OIL FIRED WATER HEATERS

#### 25.1 CONNECTOR AND DRAFT REGULATOR Flue Collector Outlet and Connector Size

Model No.	Outlet - Inches
COF-199	6
COF-245, 315, 385 and 455	8
COF-700	10

The chimney connector diameter should be the same size as the heater flue collector outlet, see table. A minimum rise of 1/4" per foot of horizontal connector length must be maintained between the heater and chimney opening. The connector length should be kept as short as possible.

Connectors shall not be connected to a chimney, vent or venting system served by a power exhauster unless the connection is made on the negative pressure side of the exhauster.



A draft regulator must be installed in the same room as the heater. Locate the regulator as close as possible to the heater and at least 18" from a combustible ceiling or wall. A manually operated damper should not be placed in the chimney connector.

SEE MULTIPLE HEATER FLUES when more than one heater is being installed in a system.

#### CHIMNEY

The oil-fired water heater must be connected to a chimney built in accordance with accepted building code practice or listed factory built type. The exit point of the chimney flue gas must be at least 3' above the highest point where it passes through the roof of a building. Also, it must be at least 2' higher than any portion of a building within 10' of the chimney.

#### MULTIPLE HEATER FLUES

When two or more oil-fired water heaters are connected to a single chimney or vent there shall be sufficient draft available for safe combustion and removal of combustion products to the outdoors from each heater. Refer to local codes for connection details. Only one oil-fired water heater should be connected to any one Type L venting system.

A draft regulator shall be provided for each oil-fired water heater in a multiple heater system.

## AIR REQUIREMENTS

Provide adequate air for combustion. An insufficient supply of air will cause recirculation of combustion products resulting in air contamination that may be hazardous to life. Such a condition often will result in a yellow, luminous burner flame, causing carboning or sooting of the combustion chamber, burners and flue tubes with possible damage to the heater.

Where an exhaust fan is installed in the same room with a heater, sufficient openings for air must be provided in the walls. Undersized openings will cause air to be drawn into the room through the chimney, causing recirculation of combustion products.

## CHEMICAL VAPORS

When destructive or corrosive chemical vapors (such as dry cleaning fluids, pressure can propellents, refrigerants, chlorine, bleaching compounds, flammables, etc.) may be present, even in minute quantities in the combustion air supply, provisions should be made to take all air (100%) for combustion and draft hood dilution from outside of building and at a point remote from the discharge of dry cleaning equipment and/or building exhaust systems.

## UNCONFINED SPACE

In buildings of conventional frame, brick or stone construction, unconfined spaces normally provide adequate air for combustion, ventilation and draft hood dilution.

If the unconfined space is within a building of unusually tight construction, air for combustion, ventilation and draft hood dilution shall be obtained from outdoors or from spaces freely communicating with the outdoors. Permanent openings having a total free area of not less than one square inch per 5,000 Btuh total input shall be provided.

## LOUVERS AND GRILLES

Louvers and Grilles - these free areas do not take into consideration of louvers, grilles or screens in the openings. Openings equipped with wooden louvers will have 20 to 25% free area and metal louvers or grilles will have from 60 to 75% of free area. The openings will have to be enlarged to compensate for the blocking effect of louvers and grilles.

## CONFINED SPACE ALL AIR FROM INSIDE BUILDING

a. All Air from inside the Building: The confined space shall be provided with two permanent openings communicating directly with an additional room(s) of sufficient volume so that the combined volume of all spaces meets the criteria for an unconfined space. The total input of all gas utilization equipment installed in the combined

space shall be considered in making this determination. Each opening shall have a minimum free area of 1 square inch per 1,000 Btu per hour of the total input rating of all gas utilization equipment in the confined space, but not less than 100 square inches. One opening shall be within 12 inches of the top and one within 12 inches of the bottom of the enclosure.

b. All Air From Outdoors: The confined space shall be provided with two permanent openings, one commencing within 12 inches of the top and one commencing within 12 inches of the bottom of the enclosure. The openings shall communicate directly, or by ducts, with the outdoors or spaces (crawl or attic) that freely communicate with the outdoors.

1. When directly communicating with the outdoors, each opening shall have a minimum free area of 1 square inch per 4,000 Btu per hour of total input rating of all equipment in the enclosure.

2. When communicating with the outdoors through vertical ducts, each opening shall have a minimum free area of 1 square inch per 4,000 Btu per hour of total input rating of all equipment in the enclosure.

3. When communicating with the outdoors through horizontal ducts, each opening shall have a minimum free area of 1 square inch per 2,000 Btu per hour of total input rating of all equipment in the enclosure.

4. When ducts are used, they shall be of the same cross sectional area as the free area of the openings to which they connect. The minimum dimension of rectangular air ducts shall be not less than 3 inches.

## VENTING WATER HEATERS IN COMMERCIAL KITCHENS

Gas fired water heaters used in commercial kitchens may be vented into the vent hood for the kitchen exhaust systems (except where local codes prohibit). The following is the wording of the National Fuel Gas Code Z223.1-1992 (Ventilating Hoods and Exhaust Systems 7.3.5):

(a) "Ventilating hoods and exhaust systems shall be permitted to be used to vent gas utilization equipment installed in commercial applications.

(b) Where automatically operated gas utilization equipment is vented through a ventilating hood or exhaust system equipped with a damper or with a power means of exhaust, provisions shall be made to allow the flow of gas to the main burners only when the damper is open to a position to properly vent the equipment and when the power means of exhaust is in operation."