

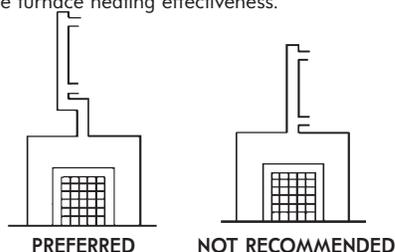
North American 8483-12000 Recuperator Radiation Type

DESCRIPTION

The 8483-12000 is a radiation type, parallel flow recuperator suitable for handling flue gases up to 2400 F.

INSTALLATION

The recuperator should be mounted at an elbow of the flue. This reduces the radiant energy intensity at the inlet of the recuperator. Mounting a recuperator directly on a furnace can "rob" heat from the furnace chamber and reduce the furnace heating effectiveness.



Flue gases may have a moderate amount of particulates but should have no elements corrosive to stainless steel (such as oxides of molybdenum and tungsten).

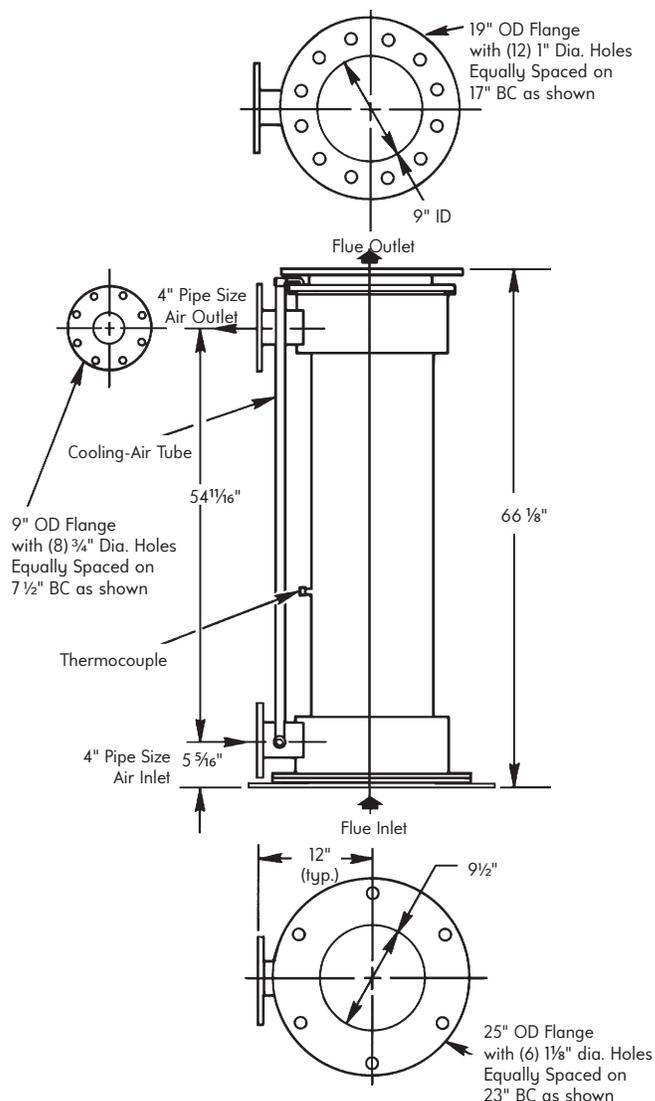
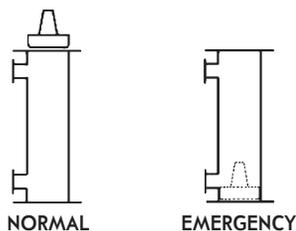
Flexible connections should be installed in the inlet cold air and outlet hot air pipes and (if there is one) the exit flue gas duct. Connecting piping should be independently supported and should not rest on the recuperator.

A thermocouple is included in the recuperator assembly for measurement of radiation tube temperature. The thermocouple should be connected to a protection system to prevent overheating the recuperator. Typical systems either bleed dilution air into the flue gas stream upstream of the recuperator, or bleed preheated air from the recuperator air outlet to maintain sufficient air flow rate through the recuperator. Consult your Fives North American field engineer for assistance on an appropriate protection system for your recuperator and furnace.

Series 8483 Recuperators at maximum temperature and flow rate will require up to 0.08"wc flue gas pressure drop. For most types of furnaces and recuperator locations this should not present a problem of excessive furnace pressure.

OPTIONAL REFRACTORY PLUG†

The optional refractory plug is normally suspended just above the recuperator where it serves as a radiation shield, reflecting escaping radiation back into the recuperator. Also the plug can be raised or lowered slightly, either manually or automatically, to control furnace pressure. In emergency situations, either over-temperature or power failure, the refractory plug can be lowered to the bottom of the recuperator where it blocks the hot flue gas inlet, thereby protecting the recuperator from damage through overheating.



SELECTION PROCEDURE

Given: scfh preheated air
flue gas temperature

1. Enter selection chart (page 2) at scfh air, and locate intersection with flue gas temperature line.
2. Read available air preheat temperature and total pressure drop directly from curves.

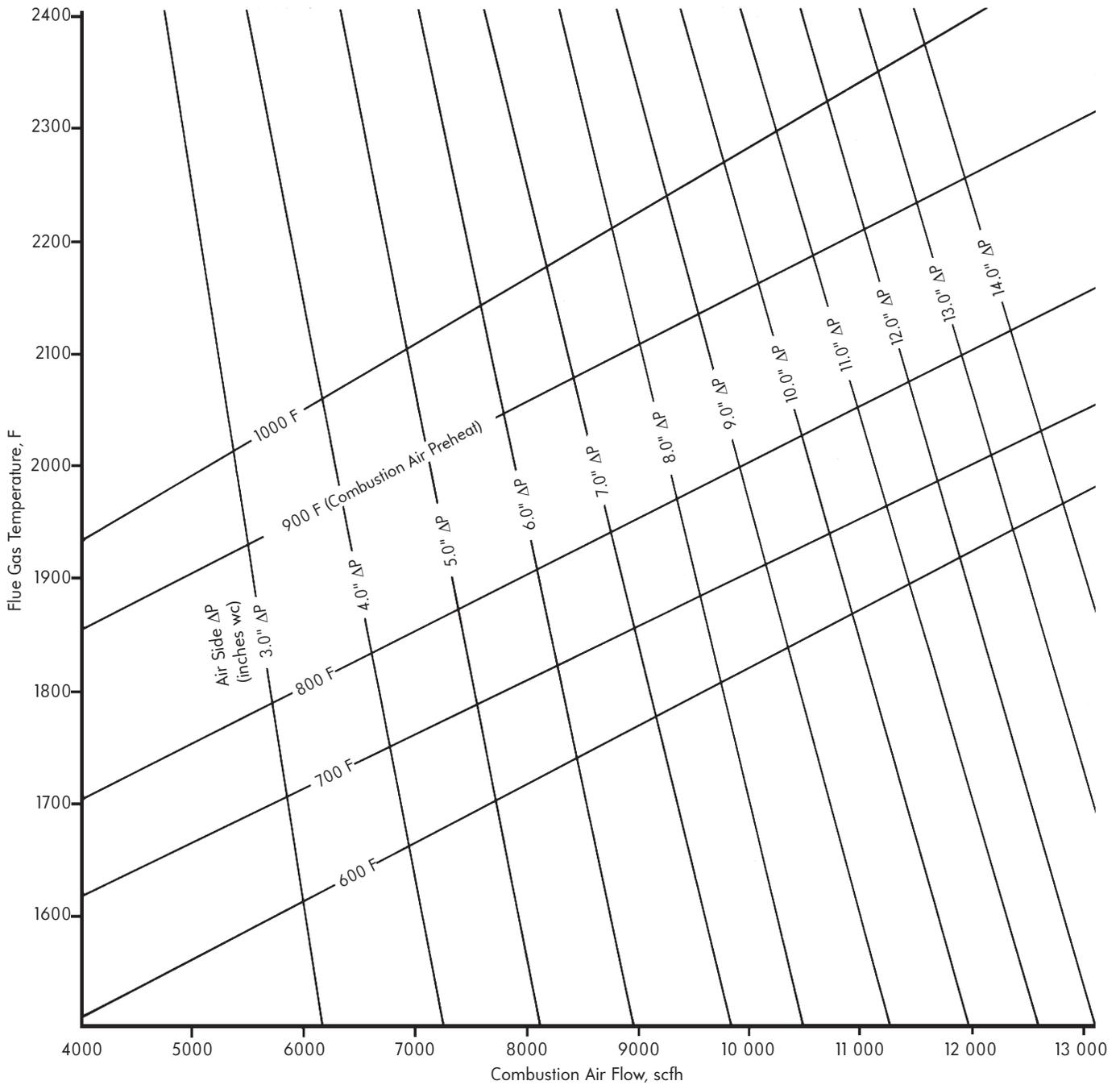
Selection Example: scfh, 11 000 flue gas temperature, 2150 F

1. Enter chart at 11 000 scfh.
2. Locate intersection with 2150 F flue gas temperature on grid.
3. Read air preheat achieved (about 860 F).†
4. Read total air side pressure drop (about 11.7"wc).

† Flue gas leakage, (out of door cracks for instance) may result in a reduction of the actual volume of flue gases passing through the recuperator. This should be considered when estimating air preheat temperatures.

‡ Patent Pending.

8483-12000 RECUPERATOR



WARNING: Situations dangerous to personnel and property may exist with the operation and maintenance of any combustion equipment. The presence of fuels, oxidants, hot and cold combustion products, hot surfaces, electrical power in control and ignition circuits, etc., is inherent with any combustion application. Parts of this product may exceed 160F in operation and present a contact hazard. Fives North American Combustion, Inc. urges compliance with National Safety Standards and Insurance Underwriters' recommendations, and care in operation.



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