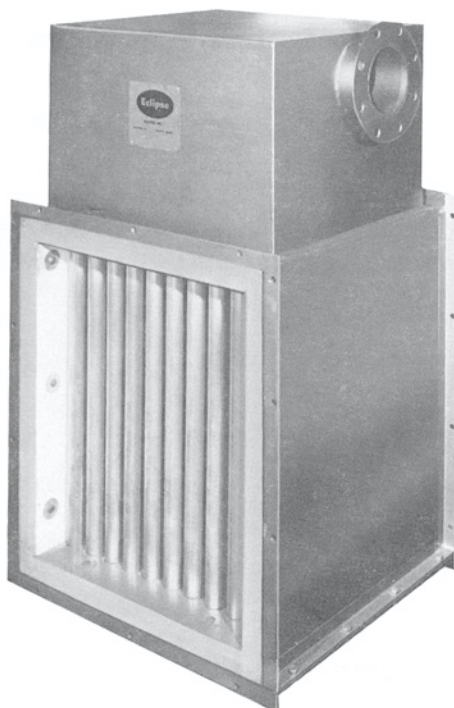


ECLIPSE

CROSS-FLOW RECUPERATORS



- Single-ended design allows free expansion of recuperator tubes; no expansion joints required.
- Compact, durable construction.
- Low pressure drops.
- Integral insulated enclosure.
- Easy installation.
- Wide range of inputs.

Eclipse Cross-Flow recuperators are compact tubular air-to-air heat exchangers designed to recover waste heat from industrial exhaust gases. The recovered heat is used to preheat combustion air for the system's burners, thereby increasing fuel efficiency.

Typical applications include steel and alloy annealing furnaces, hardening and forging furnaces, dry hearth and large crucible aluminum melting furnaces, reverb furnaces, and enameling furnaces.

Cross-Flow recuperator tubes are high grade nickel-chromium alloy and stainless steel enclosed in an insulated carbon steel housing.

The preferred method of mounting the Cross-Flow recuperator is with the recuperator tubes vertical. If another method is required, please consult the factory.

Four sizes of recuperators are available with inputs from 1,500,000 Btu/hr to 10,000,000 Btu/hr.

Percent Fuel Savings at Various Furnace Exhaust Temperatures & Combustion Air Preheats

Furnace Exhaust Temp. °F.	Preheated Air Temp. °F.				
	700	800	900	1000	1100
2400	29%	32%	35%	38%	41%
2200	26%	29%	31%	34%	36%
2000	23%	26%	28%	31%	33%
1800	21%	23%	26%	28%	31%
1600	19%	22%	24%	26%	28%
1400	18%	20%	22%	24%	26%
1200	17%	19%	21%	23%	25%
1000	15%	18%	20%	---	---

Fuel - Natural Gas @ 10% excess air.



SPECIFICATIONS

Furnace Temperature Limits:

Up to 1800°F—no special safeguards.

1800°F to 2100°F—To ensure that the safe operating temperature of the recuperator tubes is not exceeded, air flow must not fall below the following limits:

21 Tube Model	500 scfh
48 Tube Model	1500 scfh
80 Tube Model	2500 scfh
121 Tube Model	3550 scfh

2100°F to 2400°F—Dilution air must be introduced to the air stream to maintain exhaust temperature below 2100°F., and a high temperature protection thermocouple must be fitted to ensure flue temperatures do not exceed 2100°F. When using dilution air do not operate with excess fuel, either gas or oil.

The recuperator must be positioned so that it will not be exposed to direct radiation from the furnace.

The low flow air requirements listed above must be observed.

Flue Gas Restrictions:

The recuperator must not be used with any fluxing material in the flue gas.

The recuperator must not be used with any chloride, sulfide, potassium, sodium or lithium salts in the flue gas.

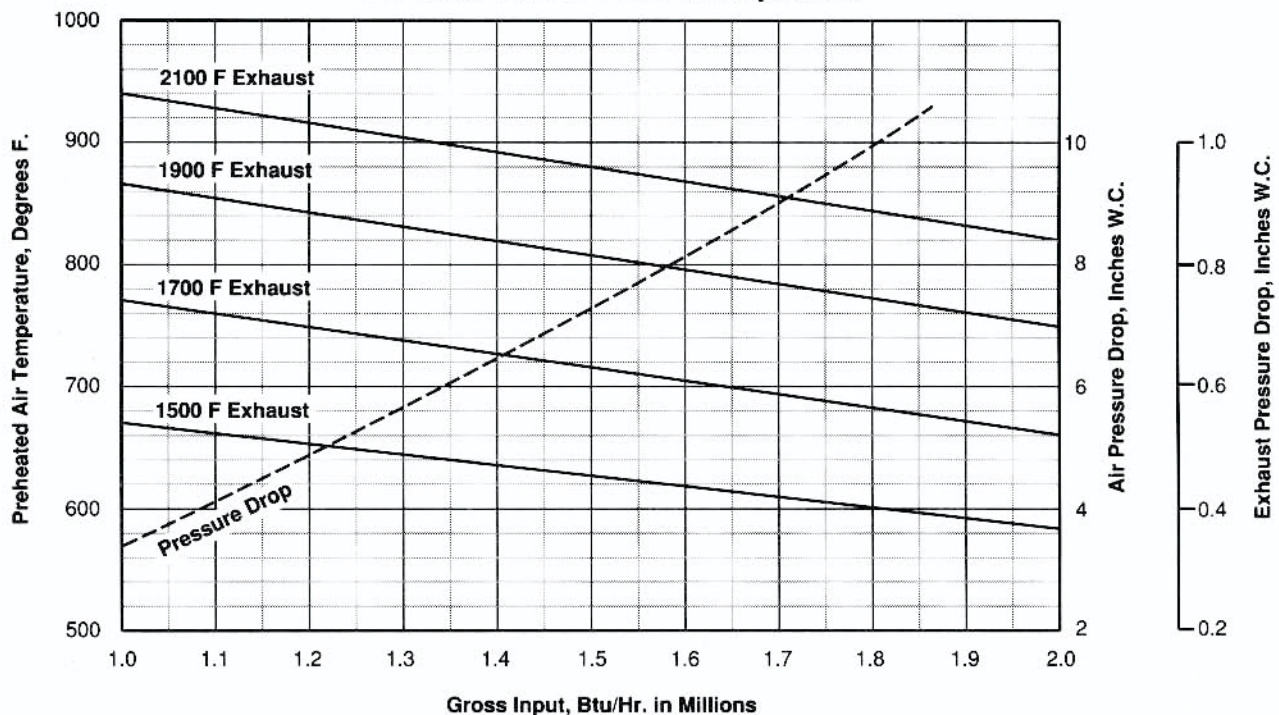
Application Restrictions:

Contact Eclipse before using these recuperators on melting applications.

CAUTION: Failure to observe these conditions can destroy the recuperator and will void the warranty.

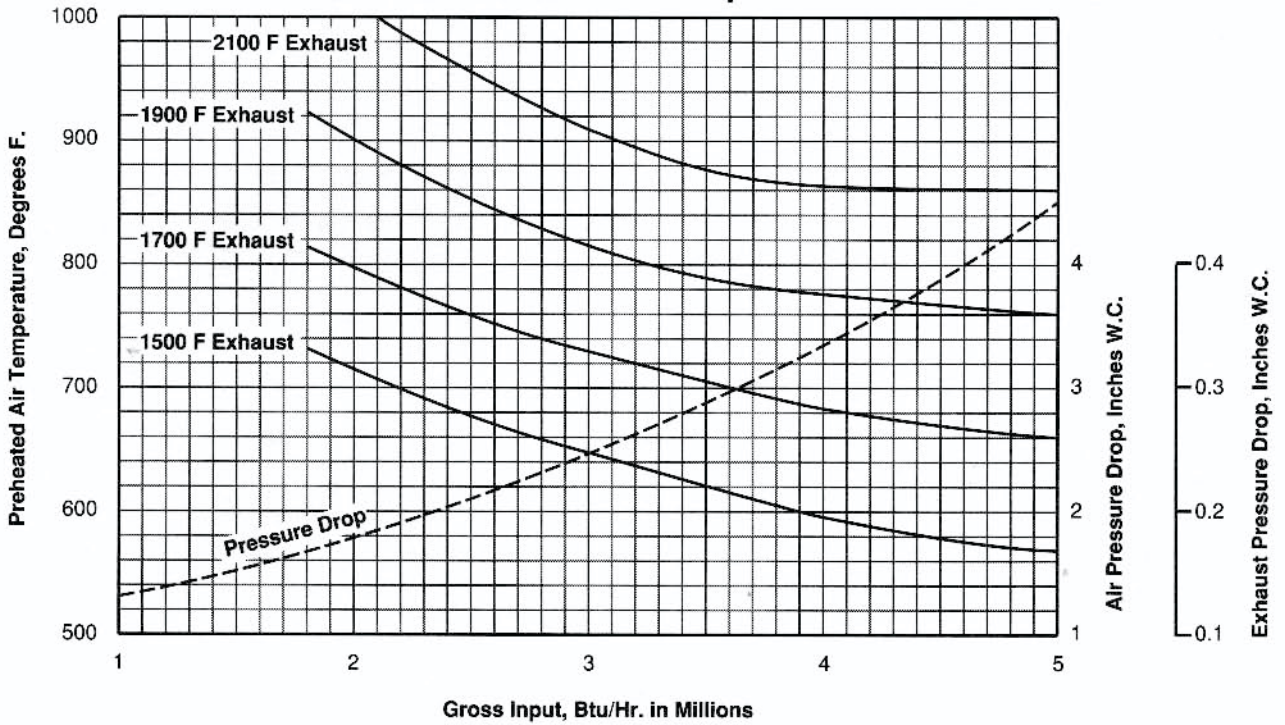
FLOWS & PRESSURE DROPS

21 Tube Cross-Flow Recuperator

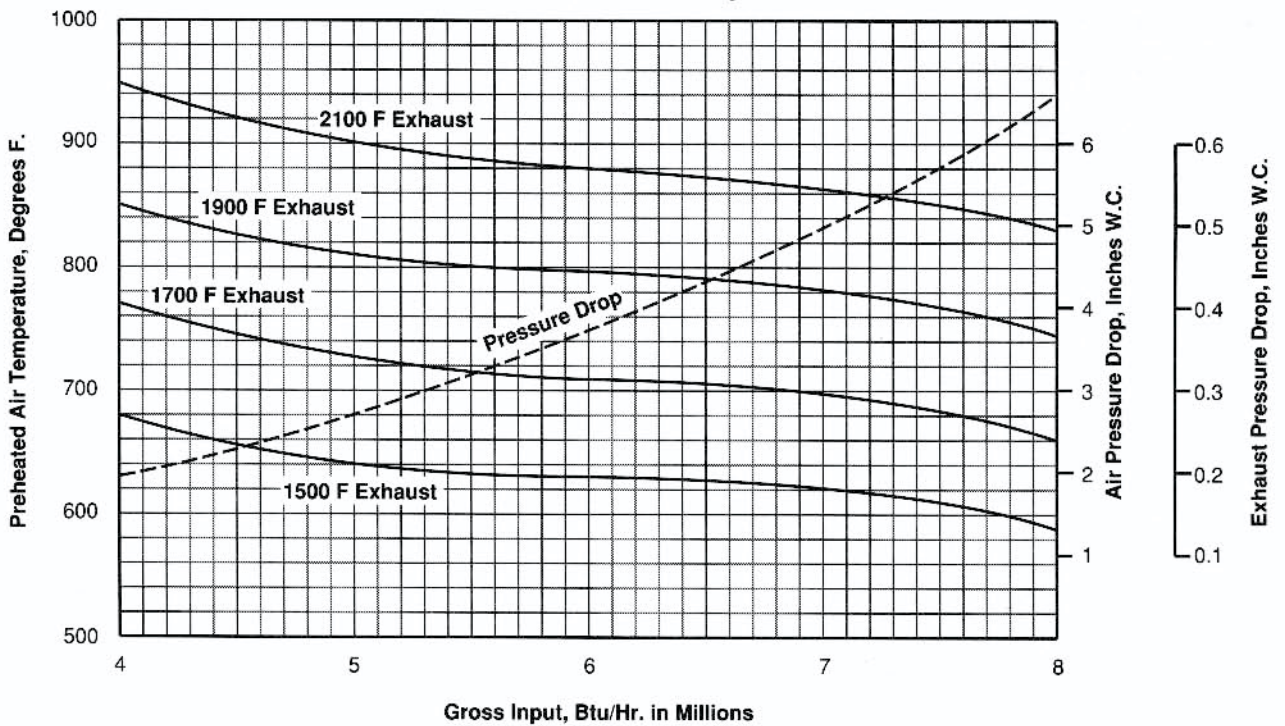


FLOWS & PRESSURE DROPS (Cont'd.)

48 Tube Cross-Flow Recuperator

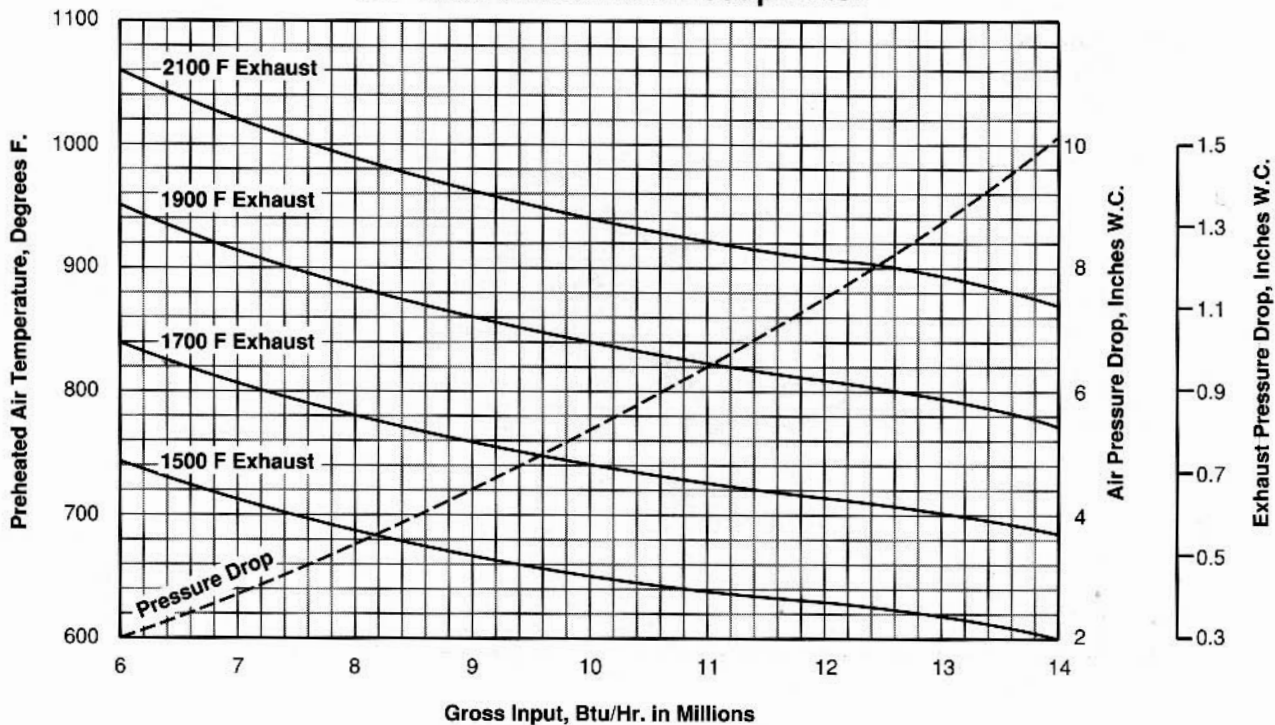


80 Tube Cross-Flow Recuperator



FLOWS & PRESSURE DROPS (Cont'd.)

121 Tube Cross-Flow Recuperator



Eclipse Combustion

ISO 9001 Registered



Eclipse Combustion

Offered By:

Power Equipment Company
2011 Williamsburg Road
Richmond, VA 23231
Phone: 804-236-3800 Fax: 804-236-3882

www.peconet.com