

RADIMAX

Radiant Tube Plug-In Recuperator

RAD-1
Edition 04-08



Hauck, a product brand
of the Elster Group

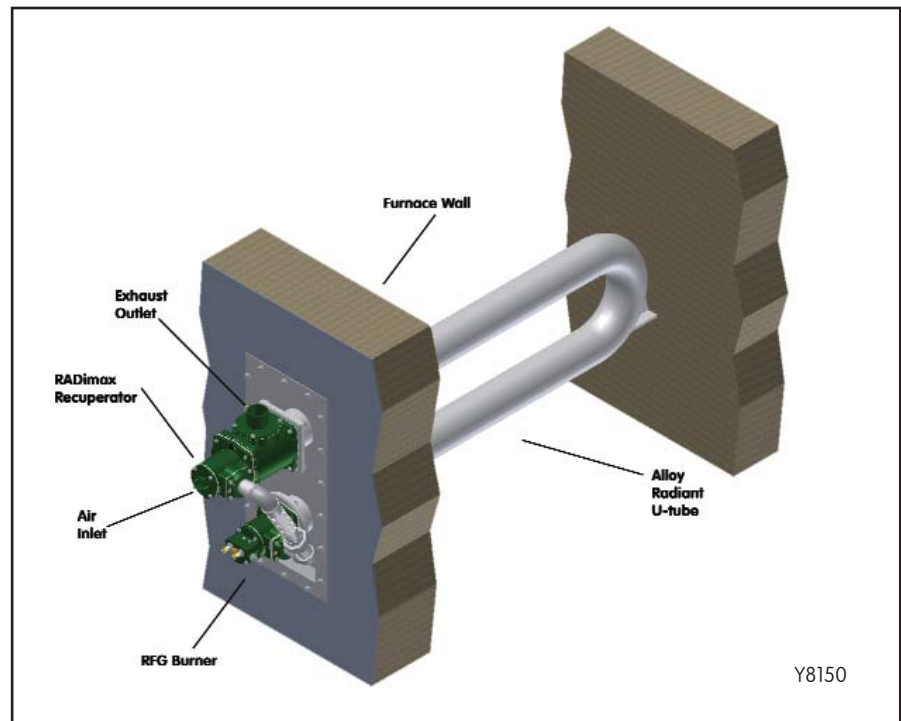


- Cast iron bodies with a rugged vacuum formed insulated exhaust chamber
- Durable industrial construction designed for long life
- Finned, cast stainless steel recuperator assembly for maximum heat transfer
- Increased efficiency and fuel savings resulting in shortened payback period
- Multiple independent orientations of preheated air and exhaust gas outlets
- Low air and exhaust pressure drop reduces blower pressure requirements
- Multiple sizes to fit a wide range of system capacities
- Preheated air up to 900°F (480°C)

For use with 6-inch ID or larger tubes, the RADimax radiant tube plug-in recuperator can be installed in the exhaust leg of U, W or Trident® type radiant tubes. It is ideally suited for use with Hauck RFG radiant tube gas burners. The design has been optimized to provide maximum efficiency and fuel savings by transferring a significant portion of the heat from the exhaust gas to preheat the combustion air to the burner. This is accomplished while still maintaining a low pressure drop through the recuperator which in turn reduces blower pressure requirements.

The heat exchanger in the RADimax is constructed of finned, cast heat resistant alloy with a large surface area to maximize heat transfer. The exhaust body is lined with a rugged vacuum formed insulation. The air and exhaust gas outlets can be independently oriented to offer flexibility to meet individual system piping requirements.

The RADimax is available in three sizes to fit a wide range of system capacities; nominal 300,000, 500,000 and 700,000 Btu/hr (88, 147 and 205 kW). It can be used with clean exhaust gas up to 2000°F (1093°C). Preheated air temperatures achieved typically range from 700 to 900°F (371 to 480°C).



Typical Radimax Installation with Radiant Tube Burner

For additional information on this product, visit our website at:

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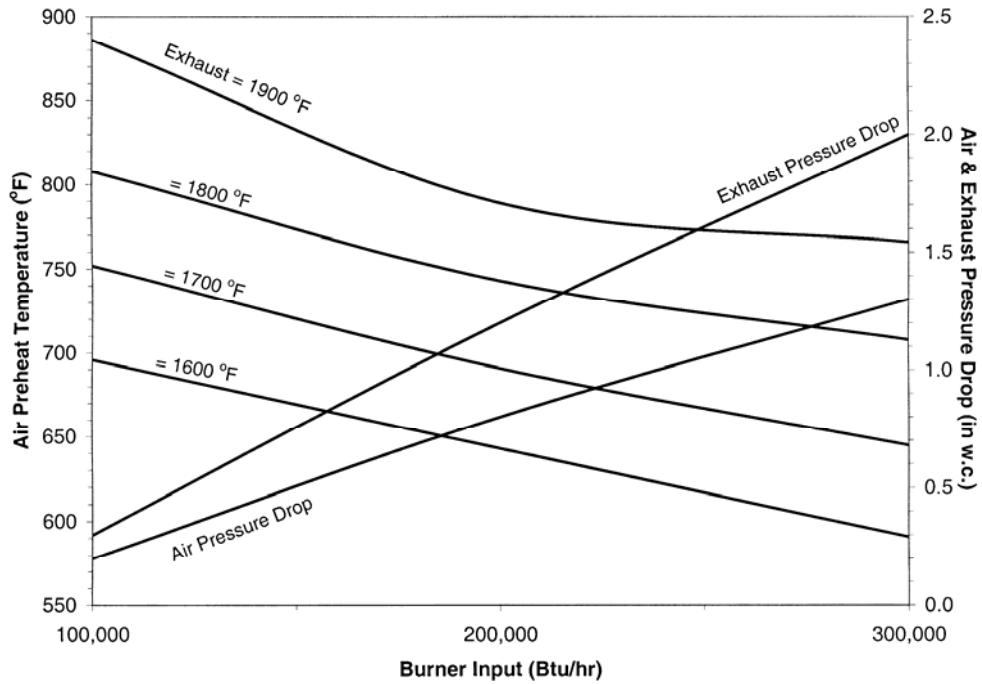
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RAD RADIANT TUBE PLUG-IN RECUPERATOR

RADimax 300

Burner Input Versus Recuperator Outlet Preheated Air Temperature

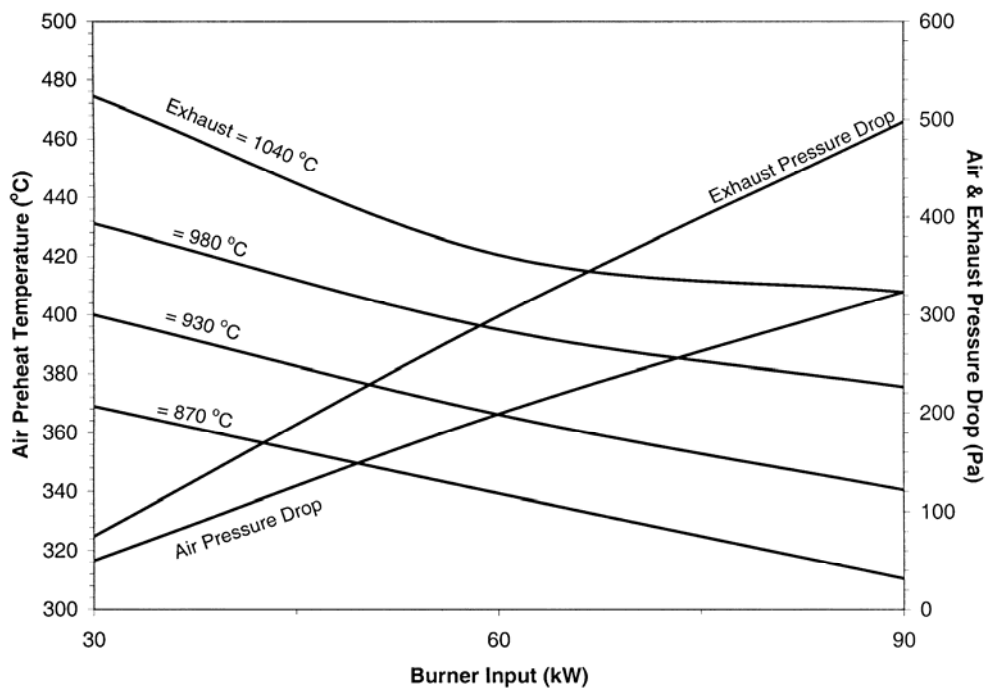


Q783

METRIC CAPACITIES

RADimax 300

Burner Input Versus Recuperator Outlet Preheated Air Temperature



Q783 Metric

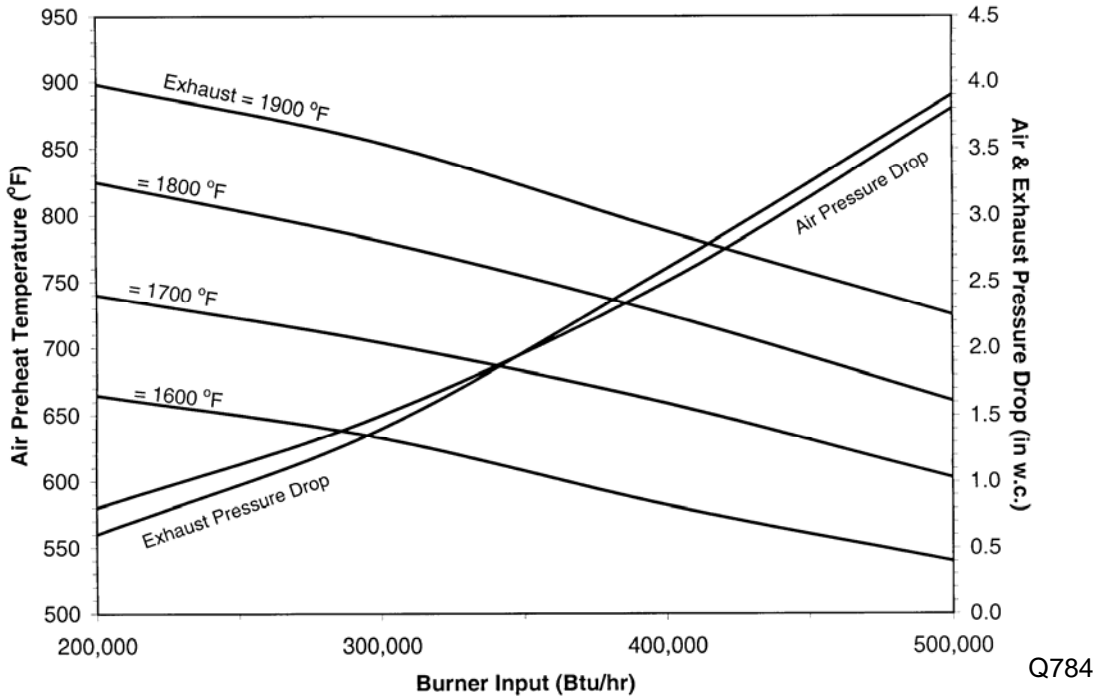
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(OVER)

RAD RADIANT TUBE PLUG-IN RECUPERATOR

RADimax 500

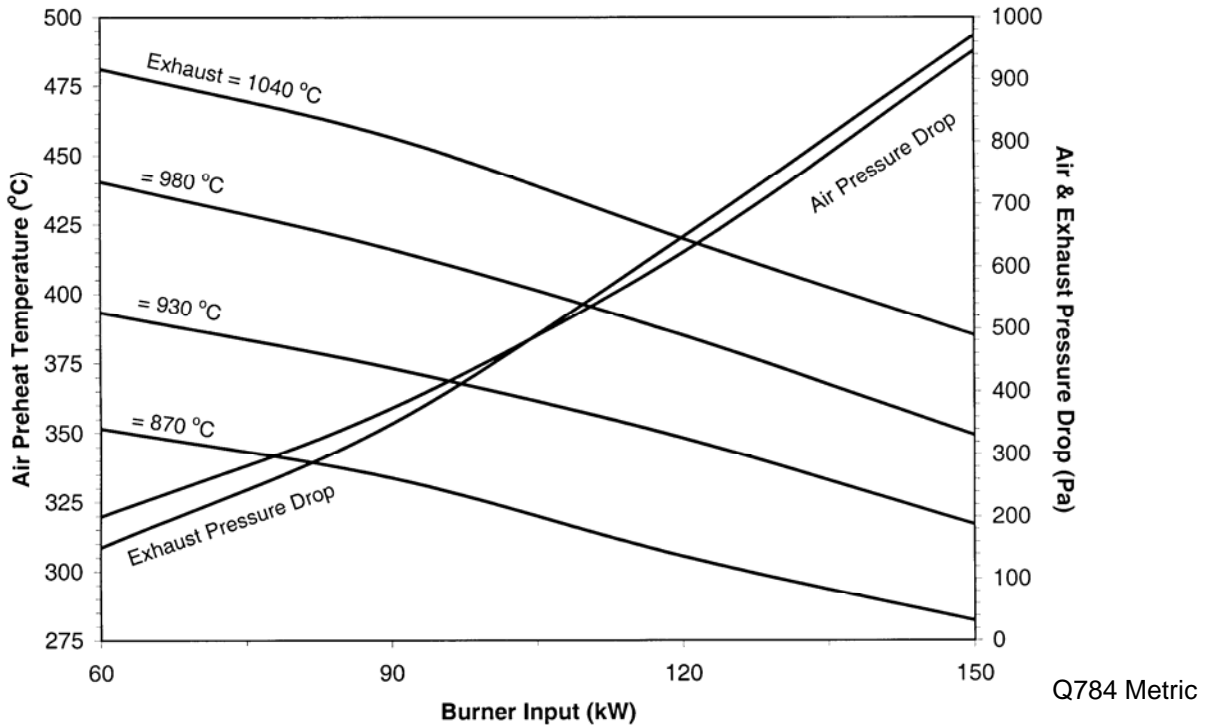
Burner Input Versus Recuperator Outlet Preheated Air Temperature



METRIC CAPACITIES

RADimax 500

Burner Input Versus Recuperator Outlet Preheated Air Temperature



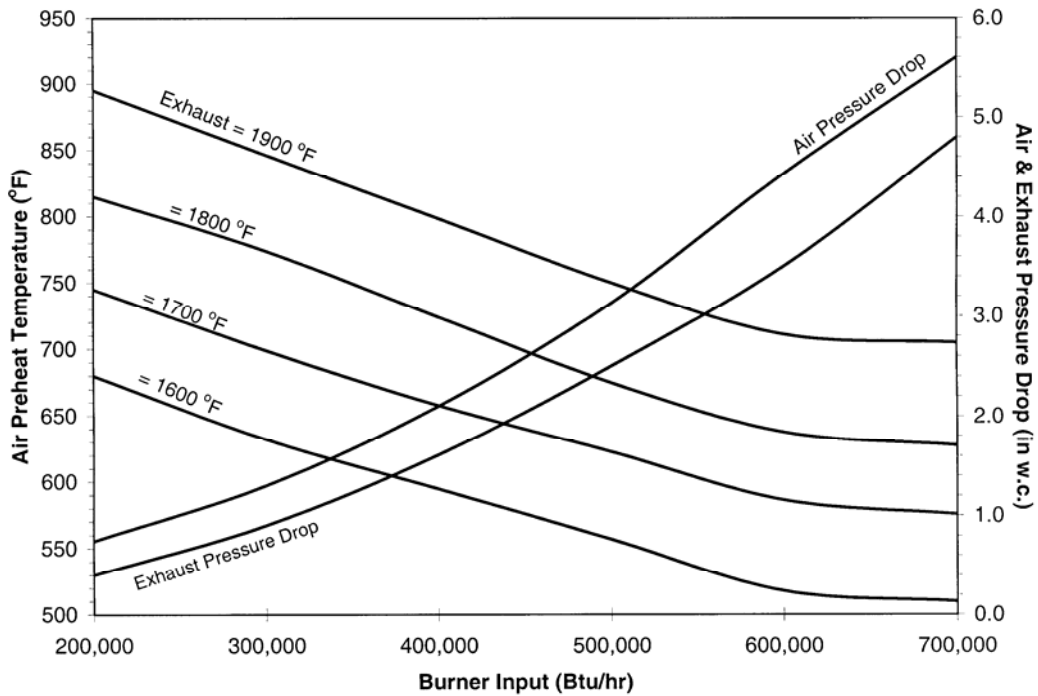


CAPACITIES

RAD RADIANT TUBE PLUG-IN RECUPERATOR

RADimax 700

Burner Input Versus Recuperator Outlet Preheated Air Temperature

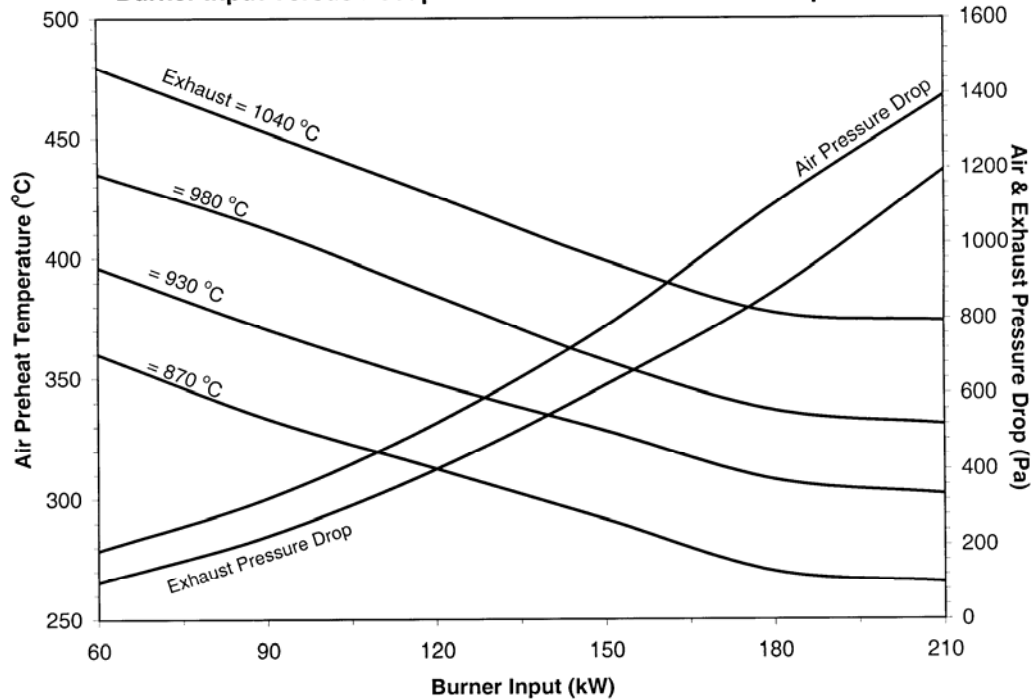


Q785

METRIC CAPACITIES

RADimax 700

Burner Input Versus Recuperator Outlet Preheated Air Temperature



Q785 Metric
(OVER)

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HAUCK MANUFACTURING CO., P.O. Box 90 Lebanon, PA 17042-0090 717-272-3051

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www.hauckburner.com

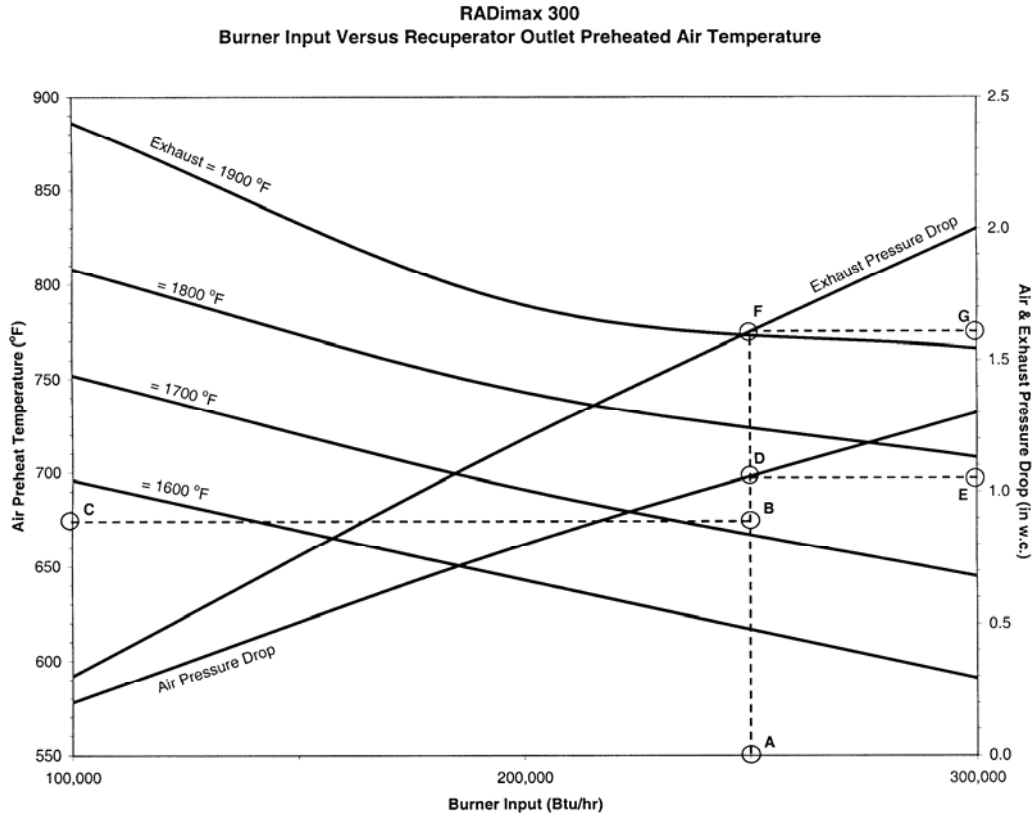
Fax: 717-273-9882

RAD-2.1

SELECTION

The performance of a RADimax radiant tube plug-in recuperator is based on two basic criteria; burner input and exhaust temperature. An example is presented below for a RADimax 300 to show how performance is determined from the respective performance curves.

Example: An existing radiant tube burner fires into a U-tube at a rate of 250,000 Btu/hr (73 kW). The measured exhaust gas temperature leaving the U-tube is 1710°F (932°C). Using the chart below, determine the potential Air Preheat Temperature, and the Air and Exhaust Pressure Drops that would result by installing a Hauck RAD 300 radiant tube plug-in recuperator.



Air Preheat Temperature

- A. Locate Burner Input of 250,000 Btu/hr (73 kW) on the x-axis.
- B. Move vertically up the graph to intersect on Exhaust temperature of 1710°F (932°C).
- C. Move vertically to the left y-axis and read the scale which corresponds to an Air Preheat Temperature of 675°F (360°C).

Air Pressure Drop

- A. Locate Burner Input of 250,000 Btu/hr (73 kW) on the x-axis.
- D. Move vertically up the graph until you intersect the Air Pressure Drop line.
- E. Move horizontally to the right y-axis and read the scale which corresponds to an Air Pressure Drop of 1.1"wc (275 Pa).

Exhaust Pressure Drop

- A. Locate Burner Input of 250,000 Btu/hr (73 kW) on the x-axis.
- F. Move vertically up the graph until you intersect the Exhaust Pressure Drop line.
- G. Move horizontally to the right y-axis and read the scale which corresponds to an Exhaust Pressure Drop of 1.6"wc (400 Pa).

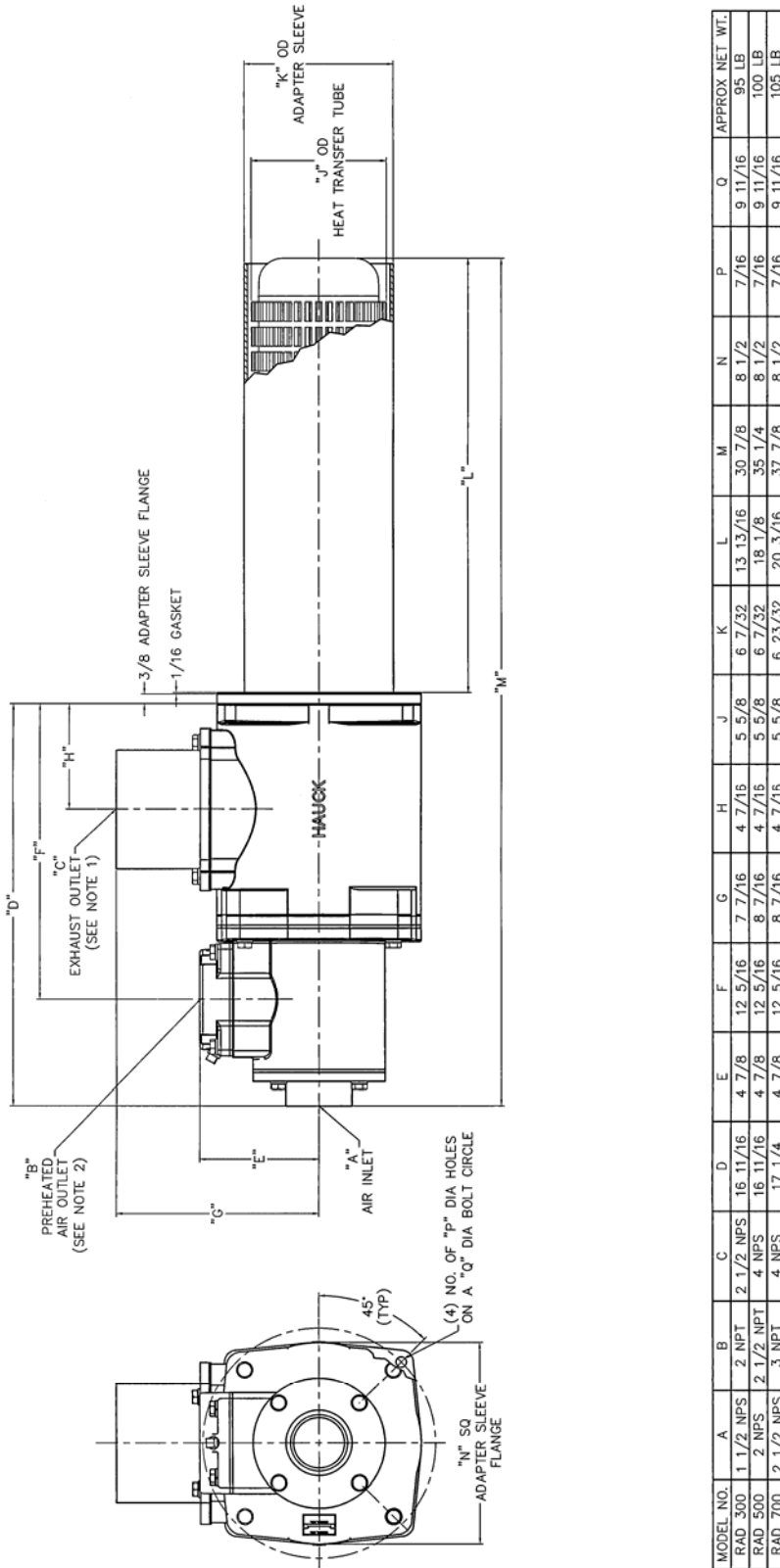
NOTE

Prior to installation of a RADimax radiant tube plug-in recuperator, it is important to verify that the existing or new combustion air blower/fan will be adequate to overcome the added air and exhaust piping pressure losses. Contact Hauck to verify adequacy of the combustion air supply system, and for analysis of system efficiency and fuel savings.



DIMENSIONS

RAD RADIANT TUBE PLUG-IN RECUPERATOR



Y7972
(NOT TO SCALE)

- NOTES:
- PREFERRED EXHAUST OUTLET MOUNTING SHOWN @ 12 O'CLOCK POSITION AND OPTIONAL MOUNTING @ 3 OR 9 O'CLOCK POSITION; 6 O'CLOCK MOUNTING IS NOT RECOMMENDED. SPECIFY MOUNTING POSITION ON ORDER.
 - PREHEATED AIR OUTLET MOUNTING AVAILABLE @ 3, 6, 9 OR 12 O'CLOCK POSITION. SPECIFY MOUNTING POSITION ON ORDER.
 - ADAPTER SLEEVE AND GASKET REQUIRED FOR RADIANT TUBES WITH AN I.D. GREATER THAN "K" DIMENSION; CONSULT HAUCK.

MODEL NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	APPROX NET WT.
RAD 300	1 1/2 NPS	2 NPT	2 1/2 NPS	16 11/16	4 7/8	12 5/16	7 7/16	4 7/15	5 5/8	6 7/32	13 13/16	30 7/8	8 1/2	7/16	9 11/16	95 LB
RAD 500	2 NPS	2 1/2 NPT	4 NPS	16 11/16	4 7/8	12 5/16	8 7/16	4 7/15	5 5/8	6 7/32	18 1/8	35 1/4	8 1/2	7/16	9 11/16	100 LB
RAD 700	2 1/2 NPS	3 NPT	4 NPS	17 1/4	4 7/8	12 5/16	8 7/16	4 7/15	5 5/8	6 23/32	20 3/16	37 7/8	8 1/2	7/16	9 11/16	105 LB

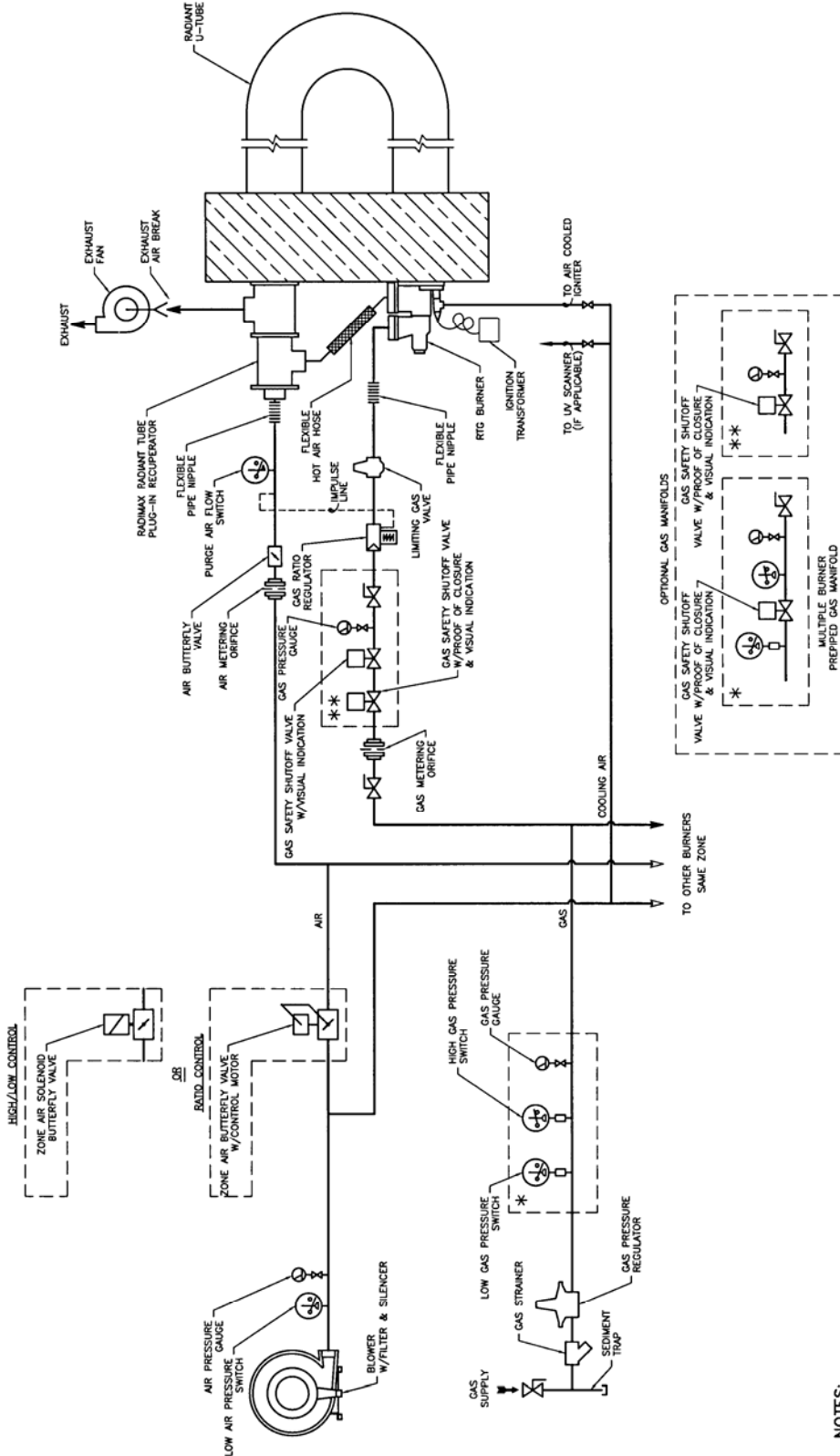
(See Reverse Side For Metric Dimensions)

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RAD RADIANT TUBE PLUG-IN RECUPERATOR

TYPICAL CONTINUOUS FURNACE HIGH/LOW OR RATIO CONTROL



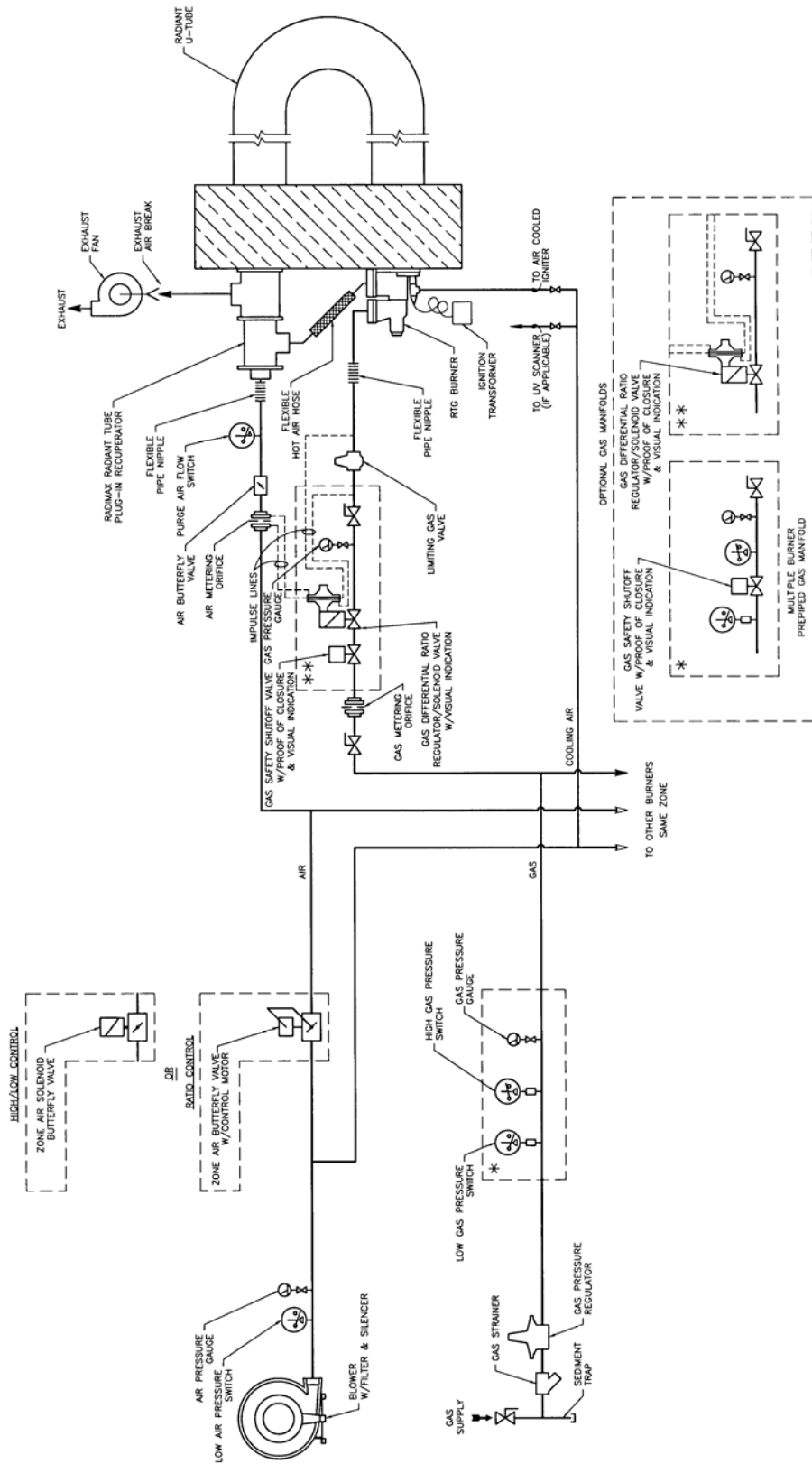
Y7190
(NOT TO SCALE)

- NOTES:
1. CONTROL METHODS SHOWN ARE RECOMMENDED FOR CONTINUOUS FURNACE.
 2. OPTIONAL GAS MANIFOLDS ARE PERMITTED AS AN EXCEPTION PER NFPA 86 2003 EDITION REQUIREMENTS FOR A RADIANT TUBE BURNER FIRING INTO A METAL TUBE OF EXPLOSION RESISTANT CONSTRUCTION, HOWEVER, SPECIAL FEATURES ARE REQUIRED IN THE ASSOCIATED CONTROL SYSTEM (SEE HAUCK APPLICATION SHEET GJ76).

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TYPICAL BATCH FURNACE HIGH/LOW OR RATIO CONTROL

RAD RADIANT TUBE PLUG-IN RECUPERATOR



- NOTES:
1. CONTROL METHODS SHOWN ARE RECOMMENDED FOR BATCH FURNACE.
 2. OPTIONAL GAS MANIFOLDS ARE PERMITTED AS AN EXCEPTION PER NFPA 86 2003 EDITION REQUIREMENTS FOR A RADIANT TUBE BURNER FIRING INTO A METAL TUBE OF EXPLOSION RESISTANT CONSTRUCTION, HOWEVER, SPECIAL FEATURES ARE REQUIRED IN THE ASSOCIATED CONTROL SYSTEM (SEE HAUCK APPLICATION SHEET GJ76).

Y7192
(NOT TO SCALE)