

RE SERIES

INDUSTRIAL RECIRCULATING DIRECT - FIRED HEATERS



FEATURES:

- VARIABLE OUTDOOR AIR VOLUME
- 1,600 TO 100,000 CFM
- INDOOR / OUTDOOR / HORIZONTAL / VERTICAL
- HIGH EFFICIENCY GREEN BURN  BURNERS



EngA®

ENGINEERED AIR®

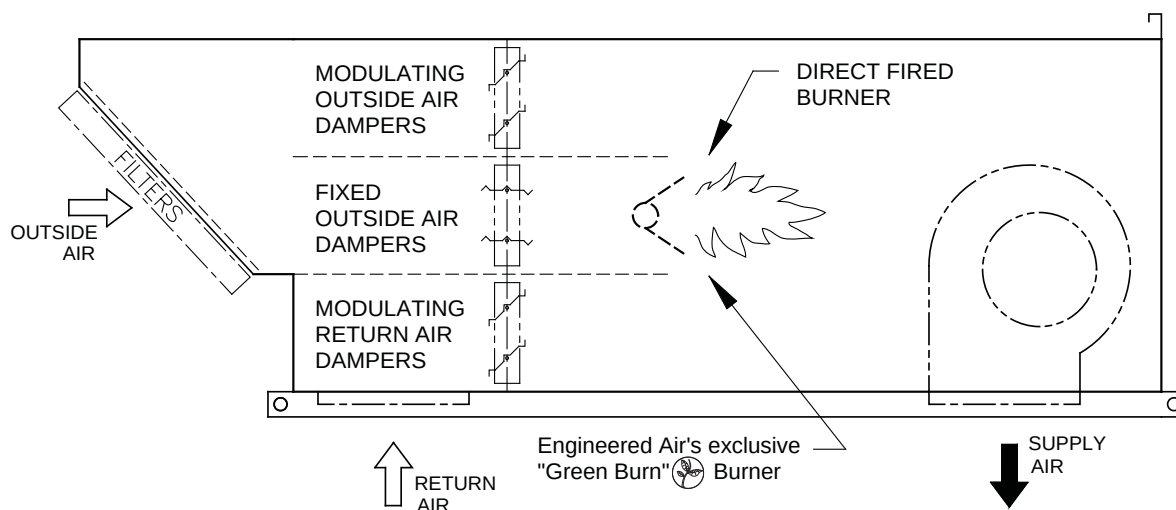
Using Direct Firing For Space Heating

Engineered Air, in the mid-1960s, promoted the use of direct firing for make up air. Since that time, Engineered Air has become one of the largest manufacturers of direct-fired equipment in North America. Due to Engineered Air's commitment to innovation and research, they produce one of the most energy-efficient direct-fired space heating system available today.

Using Engineered Air's exclusive "Green Burn"  direct fired burner, with a 25:1 turndown ratio, the designer has the flexibility to handle heating and make-up air problems with one system. Using control systems perfected by Engineered Air, the RE space heater can be designed to offset infiltration, reduce cold drafts, and improve building comfort.

RE SERIES

Recirculating Direct Fired Heaters



Design Considerations

The RE is designed to provide exactly the volume of outside air required to meet the building needs and maintain an even temperature throughout the facility. In selecting and designing an RE system that will satisfy all temperature and comfort requirements, the following information is required:

- Outside Design Temperature
- Indoor Design Temperature
- Building Dimensions
- Infiltration Amount
- Building Heat Loss

The RE direct-fired space heater offers a variety of control methods that allow the designer to control operating costs and comfort levels. The RE can be set up to provide only the heat required to offset building heat loss, or a pressure controller can be used to offset infiltration and reduce drafts. It can also be designed to circulate high volumes of low temperature air to reduce stratification. By combining the pressure controllers with the applicable ETL controls to meet ANSI Z83.18-2003, a system can be designed to provide a high degree of comfort with almost no stratification.

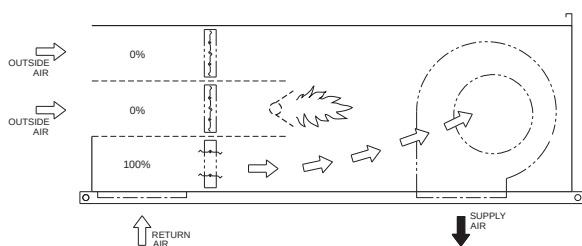
RE Series Operating Modes

It is important to understand that the minimum outdoor air volume is the only air to actually go through the burner, and that the minimum outside air is constant as long as the burner is on. This minimum volume is the sum of all constant exhaust fan volumes, and/or a calculated infiltration rate. Additional outdoor air, as required by cycling exhaust fans, or by space pressure controllers, will enter through the modulating outside air dampers, bypassing the burner. It is also important to ensure that the minimum outdoor air volume is adequate to provide an acceptable air velocity through the burner for proper combustion. The minimum amount of outdoor air across the burner varies from a high of 40% to a minimum of 4 CFM/MBH of heat input depending on unit size and control options. Contact your Engineered Air sales office for specific applications.

Unoccupied with no space heat call

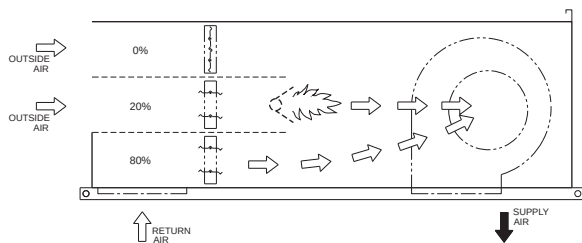
The unit and space heat exhaust are off as space heating requirements are satisfied. Modulating outside air dampers and burner outside air dampers are closed to reduce heat losses from the space. The fan is allowed to:

- 1) Run to prevent air stratification
- OR -
- 2) Be off to conserve electrical power.



Unoccupied with space heat call

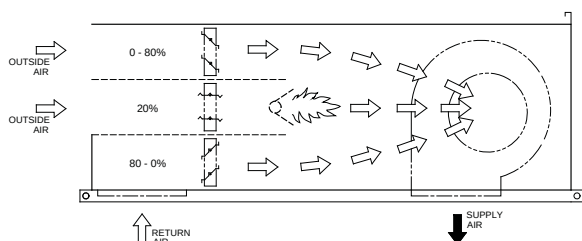
Modulating outside air dampers are closed. Burner outside air dampers and modulating return dampers are open. Burner modulates to maintain an unoccupied space temperature. Fan runs to circulate air evenly.



Occupied with varying space exhaust air

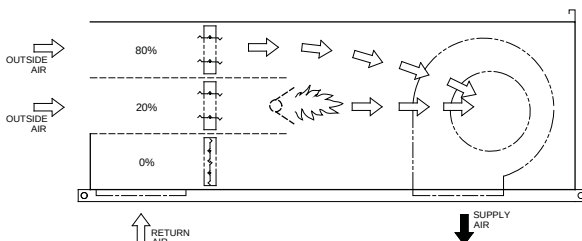
The unit is on with varying space exhaust air requirements. Outside air and return air dampers modulate in response to multiple exhaust interlocks or a space static pressure sensor. The burner outside air dampers are open, and the fan is on, and the burner will modulate:

- 1) To maintain a minimum discharge temperature
- OR -
- 2) With varying discharge temperature to maintain a fixed space temperature.



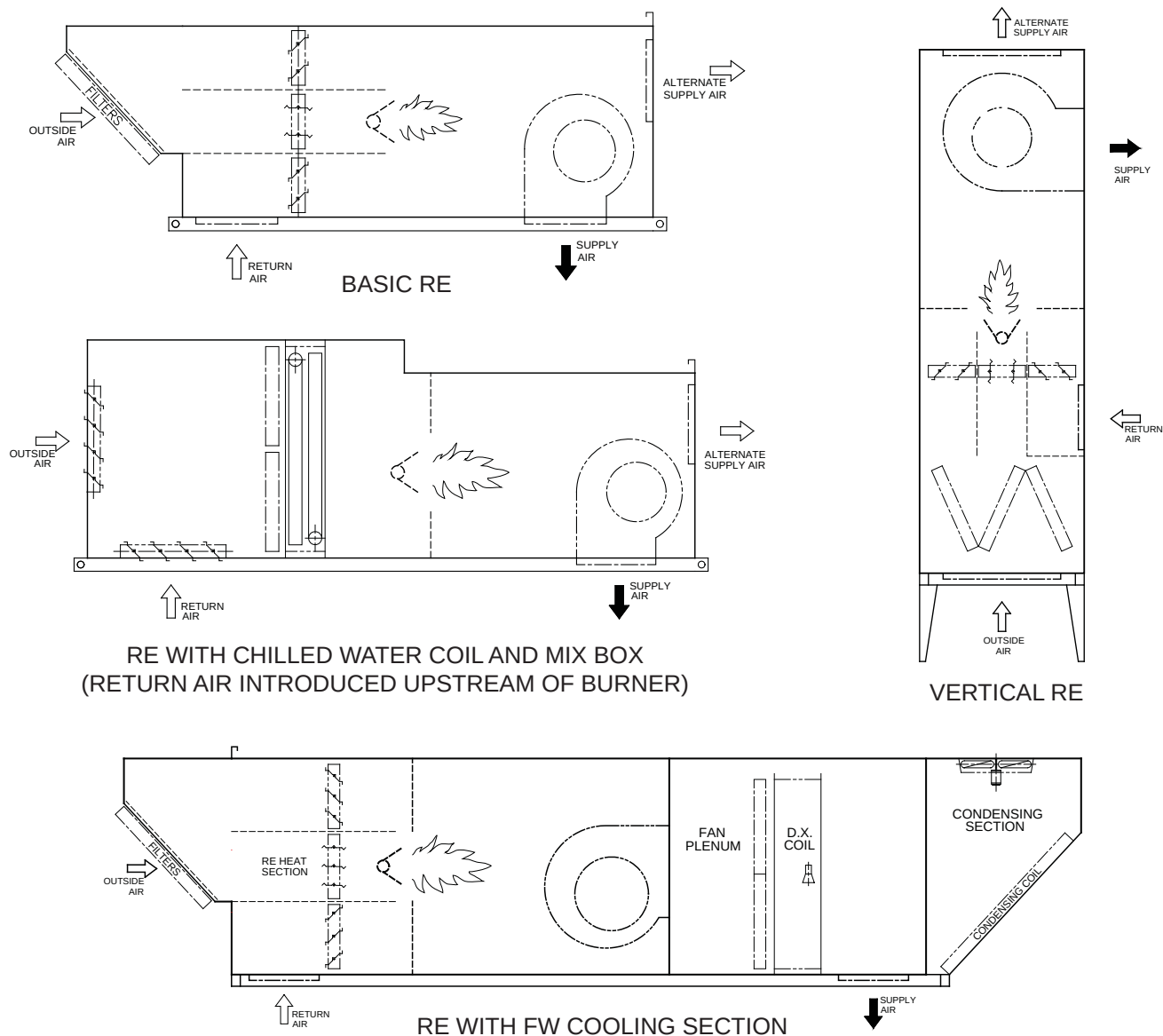
Occupied with maximum space exhaust air

The unit is on with the modulating outside air and burner outside air dampers fully open to provide 100% fresh air. The fan is on and the burner modulates to maintain fixed discharge air temperature or space temperature. The return air dampers are closed.



NOTE: The burner is located below the outside air modulating damper to reduce unit skin losses and to provide mixing.

Unit Arrangements



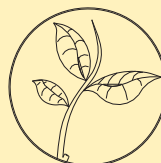
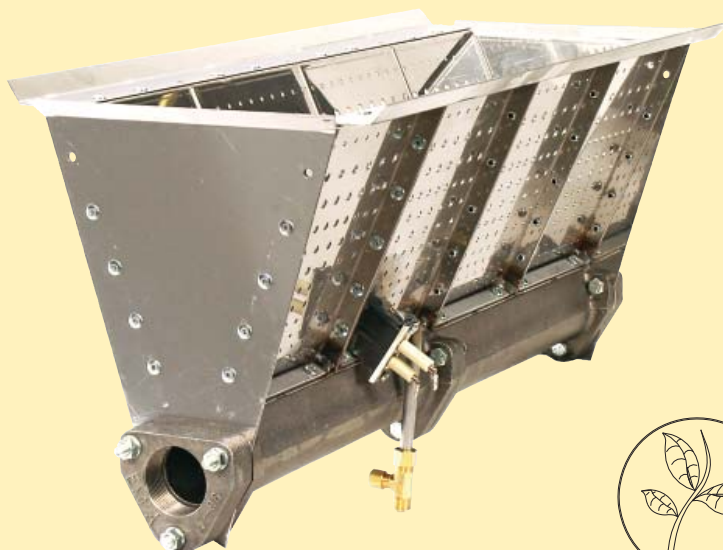
Flexibility

The RE series burners are ETL approved to be combined with other Engineered Air products, so that a prepackaged unit can be delivered to the job. All RE units are prewired and tested in the factory so the unit is ready to start on the job site.

Direct fired RE's can be packaged with:

- A) Mechanical Cooling - Model No. FW(A,B,D)/RE
- B) Mixing Box with Coils - Model No. RE/C
- C) Evaporative Cooling - Model No. RE/EC and RE/E
- D) Heat Reclaim - Model No. RE/HR(A,P,G,W)
- E) Custom Arrangements
- F) Refer to options on back page

"Green Burn" Burner The Heart of the RE



- Clean burning.
- Low CO and NO₂
- Environmentally responsible

The Engineered Air exclusive "Green Burn"  line burner is the cleanest burning on the market today. The RE Series make up air heater meets all the current ANSI standards for recirculating direct-fired units, and is certified by ETL. This assures the highest "state of the art" recirculating direct fired heaters available. Clean burning efficiency and peak operating economy are some of the reasons to specify Engineered Air RE Series recirculating direct-fired heaters.

"Green Burn" Burner

FEATURES BENEFITS

REINFORCING BAR ACROSS BAFFLES	ELIMINATES BURNER PLATE DISTORTION
ALL COMBUSTION HOLES LOCATED IN STAINLESS STEEL PLATE	SIGNIFICANTLY REDUCED BURNER MAINTENANCE
LARGEST CASTING CROSS SECTIONAL AREA	EVEN FLAME PROPAGATION OVER ENTIRE BURNER LENGTH
HIGHEST TEMPERATURE RISE	CONSISTENT SPACE TEMPERATURE EVEN IN THE COLDEST CLIMATE
25:1 TURNDOWN	PRECISE TEMPERATURE CONTROL

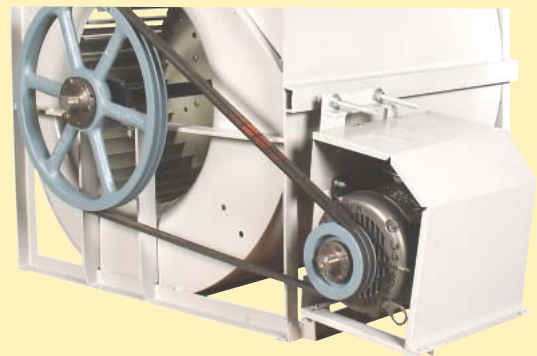


Easy access to all components.
 Damper motor and linkage protection.
 Viewport to burner assembly.
 Service switch
 All controls rated to -40°F

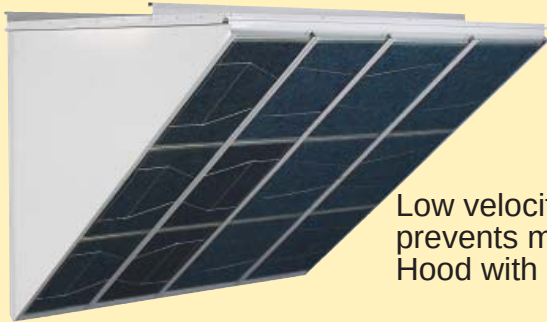


The standard intake damper has edge seals and double blade seals.

Three break standing seam roof eliminates leakage problems.



Multi-bolt arrangement insures proper sheave alignment.



Low velocity intake hood prevents moisture entrainment.
 Hood with or without filters.

Typical Options

(*Represents Standard Features)

CASING

- * 18 gauge
- 14 or 16 gauge available
- 1" or 2" insulation
- Solid liners
- Low leak dampers

FINISHES

- * Air dry gray enamel
- Special colors
- Corrosion protection

ACCESS

- * Hinged doors
- * Lined doors
- * Camlock handles
- Leverlock handles
- Service platform
- Service vestibule

FANS

- * Forward curved
- Airfoil
- Backward inclined

MOTORS

- * ODP
- TEFC
- 2 speed
- High efficiency

FILTERS

- * High velocity
- Replaceable media
- 30% pleated panel
- 1", 2", 4" or 12" as req'd.
- High efficiency
- Chemical filtration

GAS TRAINS

- FM
- IRI/CIRI
- Up to 25:1 turndown

HEAT RECLAIM

- QDT Heat Pipe
- EngA Heat Wheel
- Glycol Loop
- Plate Type

COOLING

- Packaged cooling
- DX coil
- Chilled water
- Evaporative coolers

CONTROLS

- Electronic
- Maxitrol
- M-TRAC

EngA®

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 Manufacturing Facilities:

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