



**Rapid**<sup>®</sup>  
Engineering LLC

## Direct-Fired Make-Up Air Heater

### 2000-Series

Space Heating,  
Make-Up Air and  
Ventilation



Intertek

ANSI Z83.4/CSA 3.7100% OUTSIDE AIR  
(US & CANADA)  
ANSI RECIRCULATION (US)

**1.800.536.3461**

**[www.rapidengineering.com](http://www.rapidengineering.com)**



# RAPID® 2000-Series - Direct Fired Make-Up Air Heater

**2000-Series air handlers improve indoor air quality and provide air comfort.**

Our equipment can be designed to efficiently establish and maintain a slightly pressurized condition in your facility as outdoor air is gently tempered and, as required, mixed with existing indoor air.

## Capacities

Model		2005	2010	2010B	2020	2030
CFM		1,000 - 4,000	5,000 - 10,000	11,000 - 14,000	16,000 - 25,000	27,500 - 40,000
Output [MBH]*	NG	97 - 389	594 - 1,188	1,306 - 1,663	1,900 - 2,970	3,267 - 4,752
	LPG	86-345	486-972	1,069-1,360	1,553-2,430	2,673-3,888

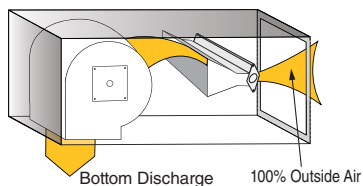
\*1 MBH = 1,000 Btu/h. Output range indicated at maximum temperature.

Max. temp. rise: 2005 NG/LPG=90/80 Degree F. 2010-2030 NG/LPG=110/90 Degree F.

## Model Styles

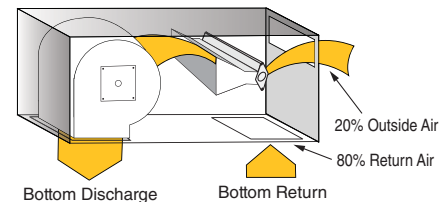
### Make-Up Air (MUA)

- Design:** 100% outdoor air with a fixed discharge air volume.
- Function:** Supplies direct replacement air for building mechanical exhaust.
- Application:** Make up air for all locations and processes that have mechanical exhaust.



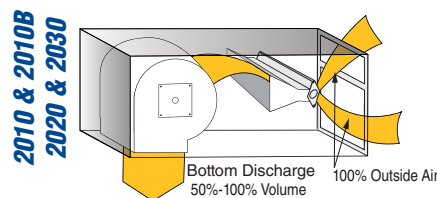
### Fixed Recirculation (FR)

- Design:** Fixed 80% return air and 20% outdoor air. Discharge air volume is fixed.
- Function:** Provides efficient, low-cost heating where minimum ventilation rates are required.
- Application:** Used in buildings that need make-up air and maximum energy conservation.



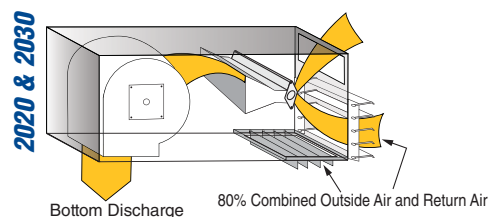
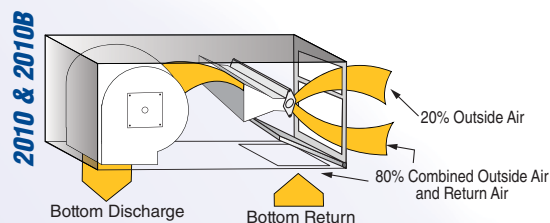
### Variable Air Volume (VAV)

- Design:** 100% outdoor air with a variable discharge air volume from 50% to 100% of total capacity.
- Function:** Automatically responds to building pressure and temperature needs.
- Application:** Used in industrial and commercial buildings that require varying amount of make-up air.

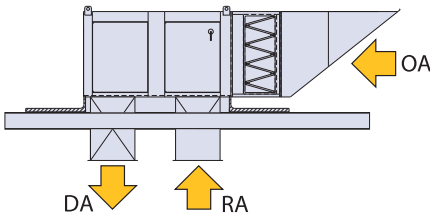
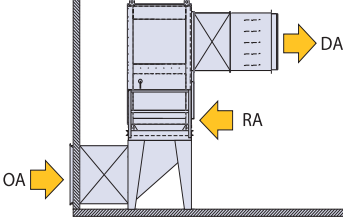
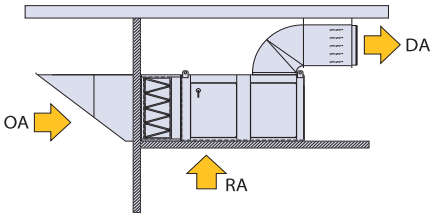
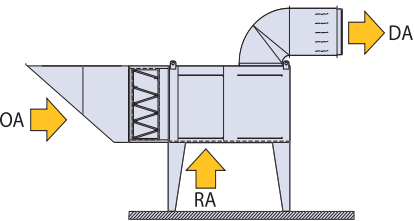
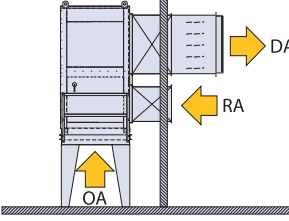
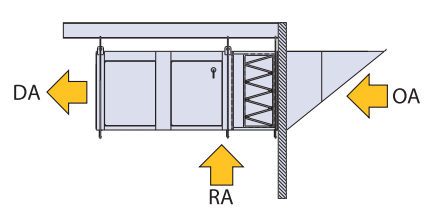


### Air Management (AM)

- Design:** Variable outdoor air / return air ratio within the range of 100% outdoor air / 0% return air to 20% outside air / 80% return air. Discharge air volume is fixed.
- Function:** Automatically responds to building pressure and temperature needs.
- Application:** Used in locations where both the building pressure and temperature requirements vary.



# Typical Installations

Roof-Mounted	Upright Indoor	Mezzanine-Supported	
			
Horizontal on Legs (Indoor or Outdoor)	Upright Outdoor	Suspended (Wall or Roof Inlet)	
			
<b>LEGEND</b>	OA = Outside Air	DA = Discharge Air	RA = Return Air

**NOTE:** All models are available in upright or horizontal, as well as indoor or outdoor configurations.

## RAPID® 2000-Series Features

### Reliable, Efficient System Operation Provided by:

- 30:1 fully modulating burner that maintains 100% combustion efficiency.
- Double-width, double-inlet, forward-curved centrifugal fan built for long life.
- Energy-saving ignition system.
- Electronic fuel modulation providing immediate response.
- Flame rod sensor for excellent reliability and durability.
- Operation of fan only in warm weather to enjoy free ventilation cooling.
- Compliance to ETL per ANSI Z83.18 or Z83.4/CSA 3.7 standards.

### Long Lasting Construction Provided by:

- Heavy-duty, corrosion-resistant, galvanized steel construction.
- Sturdy, cabinet that is screwed and bolted together for durability and longer service life.
- Unpainted galvanized steel or white painted cabinet finishes available.
- Heavy-duty, factory-installed motor and drive package designed for long-lasting performance.
- Heavy-duty, pre-lubricated ABMA L-10 30,000 hour minimum rated bearings for long life and reliable operation.

### 2000-Series Controls Options:

- DDC controls and conventional discharge temperature or room temperature controls available.
- Interlock to existing building management system or other remote devices.
- Mild weather stat.  
(included with DDC - optional for conventional controls)
- Low-temperature stat with bypass timer.  
(included with DDC - optional for conventional controls)

### Ease of Maintenance Provided by:

- Hinged access door for easy maintenance of blower, motor, drives and burner.
- Strategically located, removable panels provide easy access to internally mounted actuators and sensors.

### Other 2000-Series Options:

- 19" (48 cm) roof curb simplifies rooftop mounting.
- Inlet hood protects against water entrainment and is available with permanent filters, bird screen or moisture limiter media.
- Outdoor air filter section or combination outdoor air / return air filter section (filters both air streams through a common filter bank) with disposable or permanent filters for longer life of internal components.
- Motorized inlet or discharge dampers for exfiltration control.
- FM and GAP-XL (formerly IRI) compliant gas trains.
- Support legs for both horizontal and vertical mounted air handlers.
- Extended grease lines for ease of lubrication/ maintenance of fan bearings (not available for model size 2005).
- 120VAC powered convenience outlet with control panel light.

# RAPID® 2000-Series Control Panels



## Standard Discharge Control Remote (SDC)

This control is used for make-up air and day/night heating of the building. The discharge temperature of the heater remains constant as selected on the selection dial. The burner flame is modulated by a discharge temperature control, which is governed by the remote temperature selector.

### AUTO/WINTER Mode:

Heater cycles on/off to maintain space temperature as selected on the thermostat.

### ON/WINTER Mode:

Heater can operate continuously for building exhaust air replacement and space heating by maintaining a constant discharge temperature.

### ON/SUMMER Mode:

The blower can operate without the burner for summer ventilation.



## Deluxe Temperature Control Remote (DTC)

This control is used for make-up air and total automatic "day/night" heating of the building. A solid-state modulating room Selectrstat fully modulates the burner flame to maintain space temperature and compensate for changing building heat losses or gains.

### AUTO/WINTER Mode:

Occupied time: Heater can operate continuously, fully modulating Btu/h output to maintain space temperature as selected on the Selectrstat.

Unoccupied time: Heater cycles on/off to maintain space temperature as selected on the programmable thermostat (night setback).

### ON/WINTER Mode:

Heater can operate continuously, fully modulating Btu/h output to maintain space temperature as selected on the Selectrstat.

### ON/SUMMER Mode:

The blower can operate without the burner for summer ventilation.



## InfinityPro and Intelligent Controls

Intelligent Controls are key to keeping HVAC and productivity costs in line. Each air handler can be controlled by a DDC module to monitor, control, diagnose, log and report on a variety of functions. Time-saving benefits of Intelligent Controls include:

### Greater control:

Temperature, humidity and building pressure can be precisely monitored. Automatic tracking and recording of heating energy use and test operating parameters also available.

### Early detection of problems:

System can proactively detect and notify of potential problems.

### Data collection and trending:

Status and performance of air handler(s) can be integrated into either a facilities building management system, or network software available from Rapid Engineering. This information can be downloaded into a spreadsheet program for records/analysis.

### Compatibility:

Via modem, Internet or local network; controls communicate via the leading protocols including BACnet MSTP, Modbus, N2 and LonWorks systems.

### Easy to use and Service:

Helps simplify set up and allows for quick and efficient programming changes.

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