

BANANZA®

Direct-Fired Make-Up Air Heater

B-Series

**Space Heating,
Make-Up Air,
Ventilation and
Process Heating**



Intertek

ANSI Z83.4/CSA 3.7 100% OUTSIDE AIR
(US & CANADA)

Z83.18 - RECIRCULATION (US)

ANSI Z83.25/CSA 3.19 PROCESS HEATER
(US & CANADA)

Bananza® B-Series - Direct Fired Make-Up Air Heater

B-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		B-350	B-650	B-1000	B-2000	B-3000
CFM		1,000 - 5,000	5,000 - 10,000	11,000 - 18,000	16,000 - 30,000	27,500 - 40,000
Output [MBH]*	NG	119 - 594	594 - 1,188	1,307 - 2,138	1,901 - 3,564	3,267 - 4,752
	LPG	97 - 486	486 - 972	1,069 - 1,750	1,555 - 2,916	2,673 - 3,888

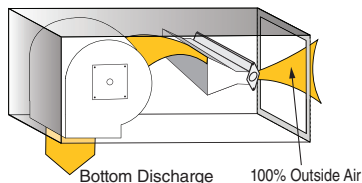
*1 MBH = 1,000 Btu/h. Output range indicated at maximum temperature.

All Models NG/LPG=110/90 Degree F.

Model Styles

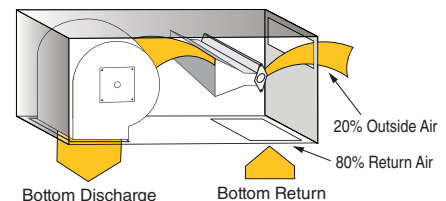
Make-Up Air (MUA)

- 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.



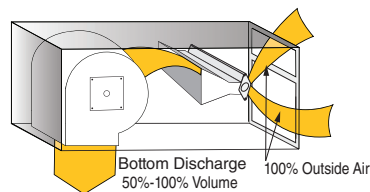
Fixed Recirculation (FR)

- 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.



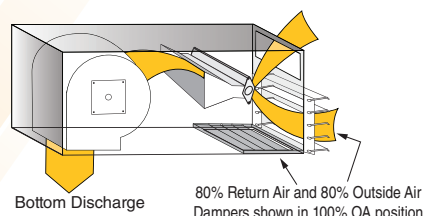
Variable Air Volume (VAV)

- 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.

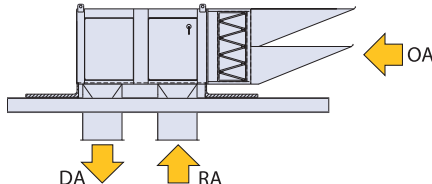
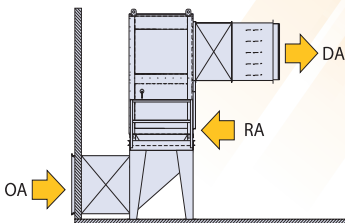
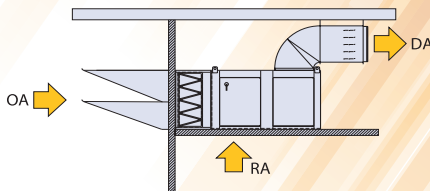
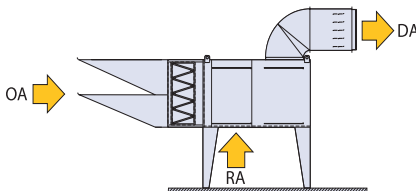
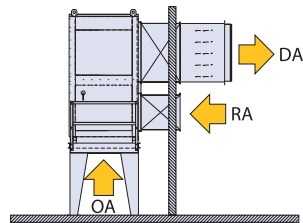
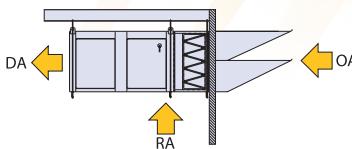


Air Management (AM)

- 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 Indoor	Suspended (Wall or Roof Inlet)	
			
LEGEND	OA = Outside Air	DA = Discharge Air	RA = Return Air

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

Bananza® B-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 ANSI Z83.4/CSA 3.7 and ANSI Z83.25/CSA 3.19 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.

B-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 B-Series Options:

- 19" (48 cm) roof curb simplifies rooftop mounting.
- Inlet hood protects against water entrainment and is available with poly 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 XL-GAP (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 B-350).
- 120VAC powered convenience outlet with control panel light.

Bananza® B-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®.

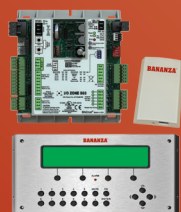
Unoccupied time: Heater cycles on/off to maintain space temperature as selected on the programmable thermostat (night setback).

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.



DDC 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 Bananza. 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.

This product is not for residential use.

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