



MicroMetl

INSTALLATION INSTRUCTIONS Horizontal Economizer Carrier Small Commercial RTU w/ Belimo ZIP

GENERAL

IMPORTANT: Read these instructions completely before attempting to install this economizer accessory.

These instructions are intended as a general guide and do not supersede Building and/or Electrical codes in any way.

All phases of the installation must comply with all NATIONAL, STATE and LOCAL CODES.

IMPORTANT: This document is the property of the end user and is to remain with the equipment.

Installation and servicing of air conditioning equipment can be hazardous due to high pressures of hazardous gases, moving parts, and electrical components. Only trained and qualified service personnel should install, service, or repair air conditioning equipment.

Untrained personnel can perform basic maintenance functions of cleaning coils, and cleaning and replacing filters, but all other operations should be performed by trained service personnel.

When working on air conditioning equipment, observe precautions in literature, tags, and labels attached to the unit, and other safety precautions that may apply.

MicroMetl Economizer's and Mixing Boxes utilize gear-driven technology with a direct-mount spring return actuator that will close upon loss of power.

When ordered with controls, the MicroMetl Economizer/Mixing Box comes standard with a Mixed Air Sensor (Supply Air Sensor), and the option of outdoor Dry Bulb, outdoor Enthalpy, Differential Dry Bulb, and Differential Enthalpy Sensors. CO₂ and Smoke Detection are also additional field installed options.

When ordered without controls, the MicroMetl Economizer/Mixing Box will have a 2-10Vdc (4-20mA option) controlled actuator only. All controls, including sensors, will be provided by others. No wiring schemes or controls instructions will be included with these instructions.

Barometric Relief Dampers are provided for natural building pressurization control.

Optional Motorized Relief is available for Positive Closure.

An optional Power Exhaust system is also available for applications requiring even greater exhaust capabilities. These exhaust options include Constant Volume Propeller Fan, Constant Volume Centrifugal Blower, and Variable (Modulating) Centrifugal Blower for building pressure control.

See supplemental instructions for more details.

SAFETY CONSIDERATIONS



WARNING



Turn off main power to the roof top unit (RTU) or air handling unit (AHU). Lockout and tag disconnect switch before starting installation, performing service, or maintenance operations.

Electrical shock and/or moving parts could cause personal injury, or death.

CAUTION

HEAVY OBJECT

To prevent personal injury use lifting aides and proper lifting techniques when installing, removing or replacing.

CAUTION

When working on air conditioning equipment, observe precautions in literature, tags and labels attached to the unit and other safety precautions that may apply.

Installation and servicing of air conditioning equipment can be hazardous due to high pressures of hazardous gases, moving parts, electrical components, and sharp sheet metal parts. Wear safety glasses and gloves.

Only trained and qualified service personnel should install, service, or repair air conditioning equipment. Untrained personnel can perform basic maintenance functions of cleaning coils, and cleaning and replacing filters, but all other operations should be performed by trained service personnel.

PRE-INSTALLATION

1. **Inspect Shipment for Damage** - File claim with shipping company if accessory is damaged or incomplete. Contact your supplier for any missing parts.

Important: To eliminate any delays in shipping and to insure part(s) replacement accuracy, provide the Economizer Model Number and Production Number.

2. **Check Unit Clearance** - In addition to the clearances required for the RTU, provide sufficient space for airflow clearance, wiring, and servicing this accessory after it is mounted on unit - See Submittal Data for unit dimensions and weight.

Exhaust/Outside Air Hood	30"
Sides	24"

INSTALLATION

1. Turn off Rooftop Unit (RTU) power supply(s) and install lockout tag.

2. Remove the Filter Access (upper) Panel, Blower Access Panel, and Control Panel. Set aside for later re-installation - See **Fig. 1 & 2**.

3. Remove the Return Air (RA) Cavity (lower) Panel and discard - See **Fig. 1**.

4. Remove the RA Duct Panel. Relocate it over the vertical duct opening and secure with screws.

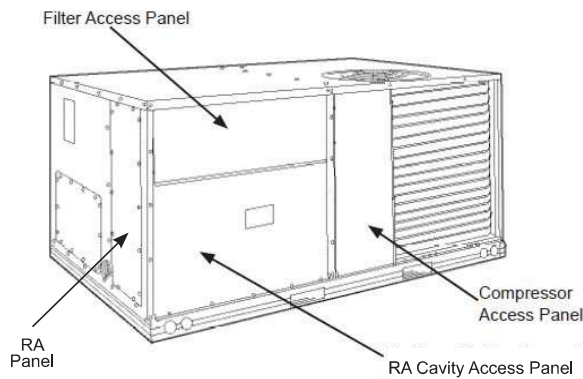


Fig. 1 - Access Panel Identification (Typical)

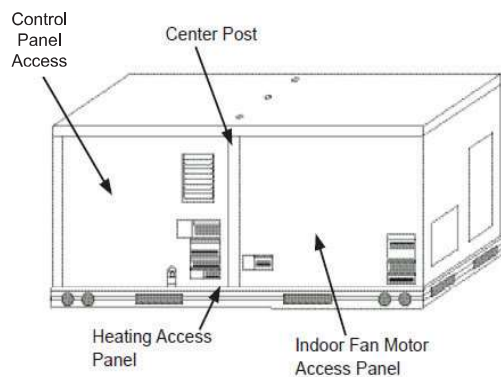


Fig. 2 - Access Panel Identification (Typical)

5. In the Blower Compartment install the supplied Mixed Air (MAT/SAT) Sensor to the blower housing or Blower Deck - See **Fig. 3 & 4**.

6. Locate and connect the Pink and Violet wires to the MAT/SAT sensor - See **Fig. 4**.

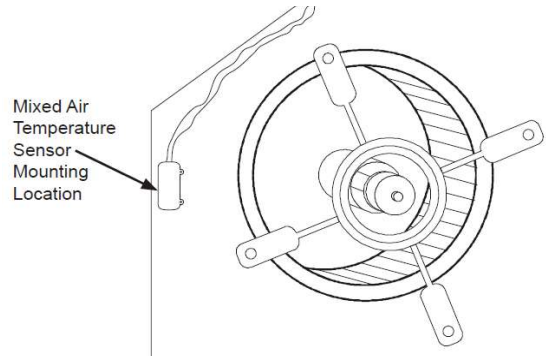


Fig. 3 - Typical MAT (SAT) Centrifugal Blower Location. If Probe or Eyelet Style Sensor, Install in Same Location

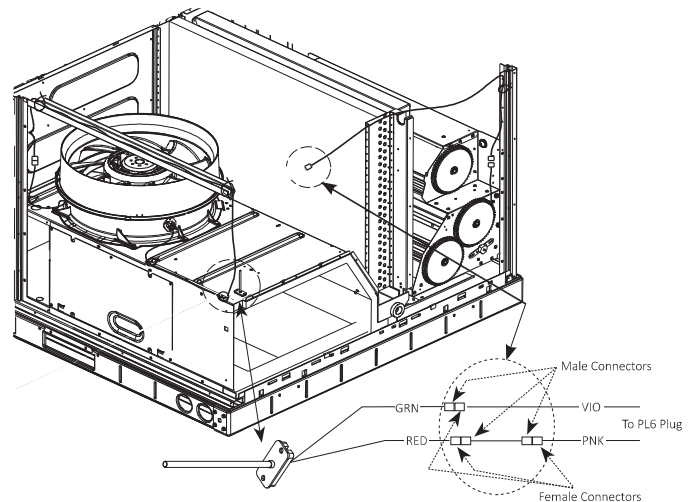


Fig. 4 - Typical MAT (SAT) for Vane Axial Fan Location. Whether Probe or Eyelet Style, Install in Same Location

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1. Set the Economizer Assembly in front of the RA opening. If installing RA sensor in RA Duct, do so at this time.

a. Mount the Sensor to the inside/top of the RA opening of the Economizer. Be sure the location chosen does not interfere with the blade rotation.

b. Route the wires through the grommet in the top of the assembly for connection to the main harness in a later step.

2. Locate and install the Belimo ZIP and Mounting Bracket per **Fig. 5**.

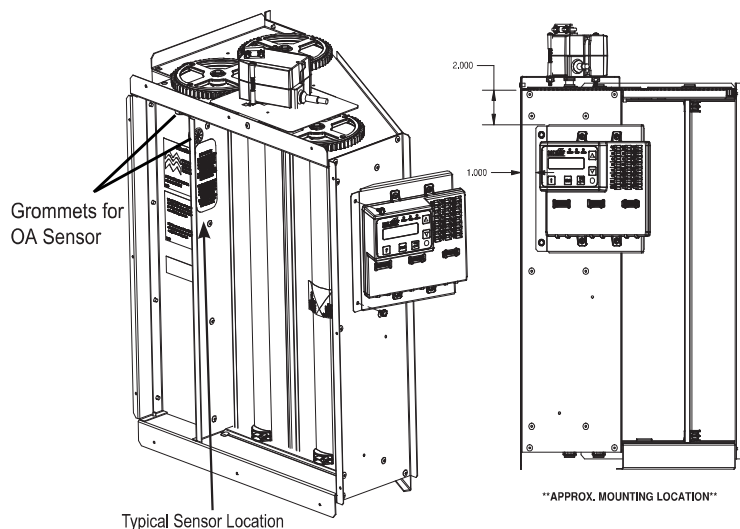


Fig. 5 - Approx. Mounting Location of Belimo ZIP Control

3. Lift the Economizer Assembly and slide into the RTU RA Cavity opening - See Fig. 6.

4. Make sure the assembly is fully inserted and as far left as possible. **(DO NOT Screw Economizer to RTU)**

5. Remove and save the PL6 12-pin Jumper Plug from the unit wiring harness (located in the upper left corner of the unit). Connect the Economizer plug to the unit wiring harness PL6 Plug - See Fig. 7 and provided Wire Diagram for more details.

Note: While the PL6 Jumper Plug is not needed as long as the Economizer is installed and operational, it is recommended that it be retained with the RTU for service, or removal of the Economizer is required.

Important: For 48/50LC-07 and larger units, a (KIT-SRT15Cx-LC needs to be ordered separately). See Fig. 7.

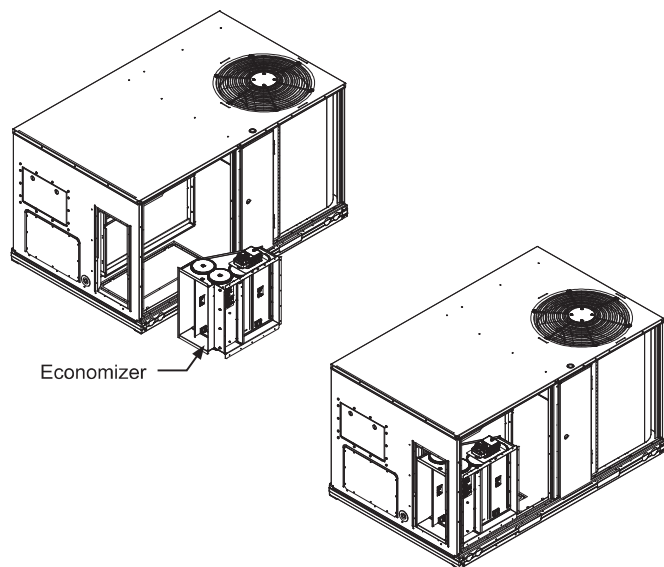


Fig. 6 - Typical Installation of Economizer Assembly Chassis 3/4 Shown

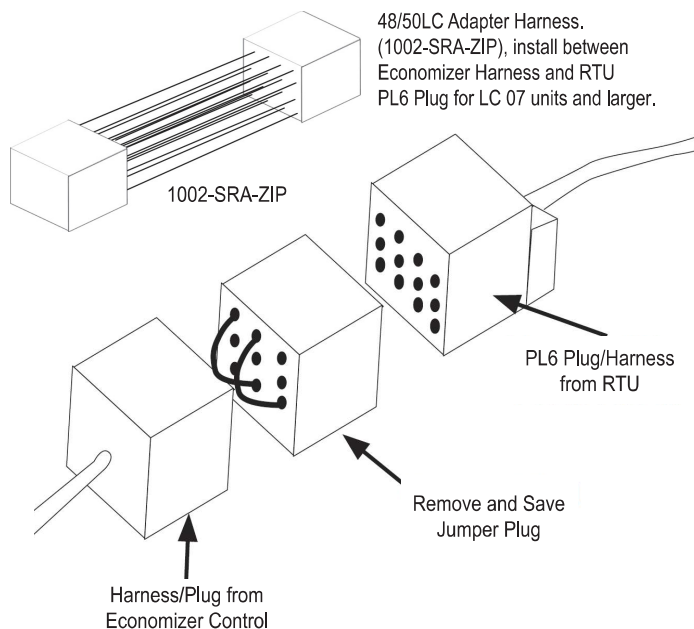


Fig. 7 - PL6 Plug Located in the RA Cavity with the Economizer

6. At this time, locate and connect the RA Sensor (if installed in Step 7).

7. If not installing a 48/50LC-07 or larger, **skip this Step**. Locate second harness from KIT-SRT15Cx-LC, 1002-LCJ-ZIP, and J5 and J3 of the Compressor Staging Control (CSC). See Fig. 8 and provided Wire Diagram for details.

8. Locate and attach the Outdoor Air (OA) Panel with provided #10 x 5/16" to the RTU See Fig. 9.

9. Lift the Economizer Assembly slightly to align the Economizer opening with the OA Panel opening.

10. Use provided #10 x 5/16" screws to attach Economizer to the OA Panel - See Fig. 10.

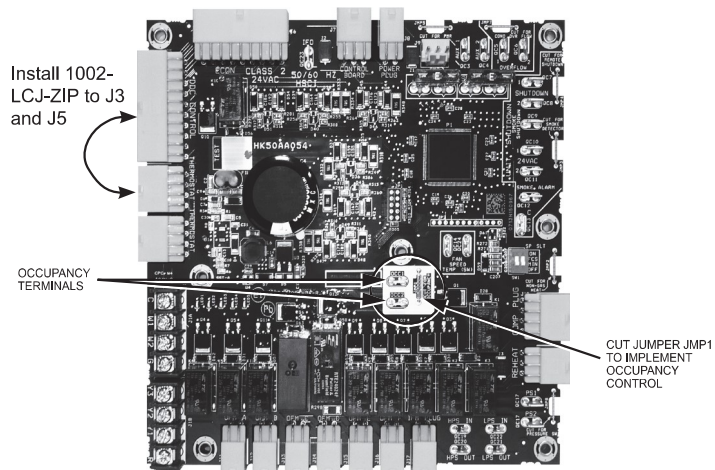


Fig. 8 - Central/Compressor Staging Control (CSC)

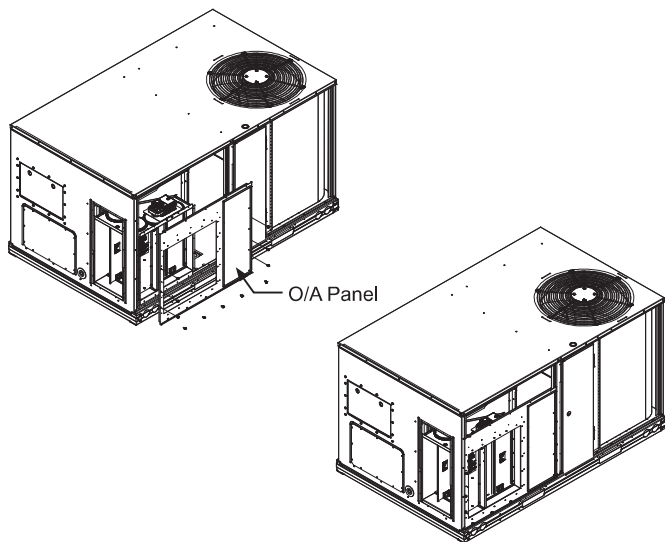


Fig. 9 - Typical Installation of OA Panel

Important: Do not use screws to fasten Economizer Assembly to the RA opening. Once the Duct is installed the Economizer Assembly will be impossible to remove.

Note: Economizer should be snug against the RA opening of the RTU. If not it may be necessary to loosen the screws in the OA Panel to the RTU and Economizer to allow the assembly to be pushed into place.

11. In some cases, the OA Temp/Enthalpy Sensor will need to be installed. Install sensor at this time and route appropriate wires. See **Fig. 5** for typical sensor location and Wire Diagram for wiring detail.

- Route all 5 available wires. Use the Pink and Violet for Temp. (Dry Bulb) only applications, and all five wires for Temp/Humidity (Enthalpy) applications. Refer to Wire Diagram for details.

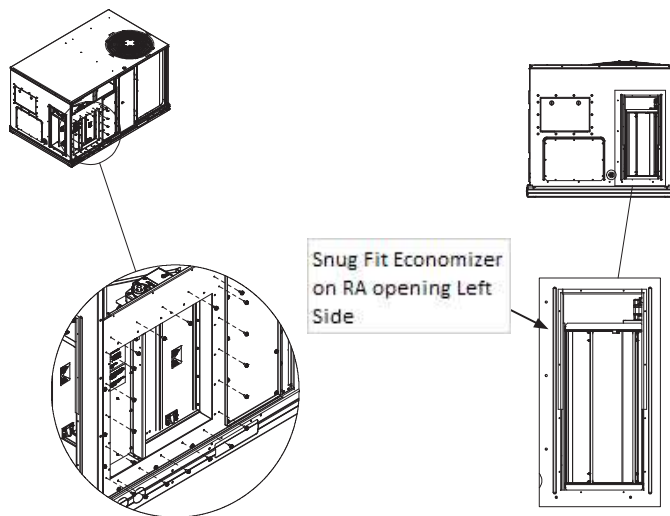


Fig. 10. - Attaching OA Panel to Economizer Assembly

12. If needed, attach Filler Panel - **Not used on Chassis 1**. Slide panel under RTU Top Rain Faring, then drop down until holes along the bottom line up. Attach with provided #10 screws - See **Fig. 11**.

13. Attach the OA Hood with the provided #10 screws - See **Fig. 11**.

14. Attach RA Blank-Off Panel with provided #10 x 5/16" screws - See **Fig. 13**.

Note: Make sure Grommet is in place before attaching Ductwork.

15. Install Ductwork.

16. Establish the desired location in the RA Duct of the Relief Hood Assembly. Cut hole in Duct to match the opening of the Relief Hood. Attach with provided TEK screws - See **Fig. 12**.

17. Seal/Caulk as necessary to insure weather tight fit.

18. Refer to the Control and Wiring Documents for proper wiring and set up.

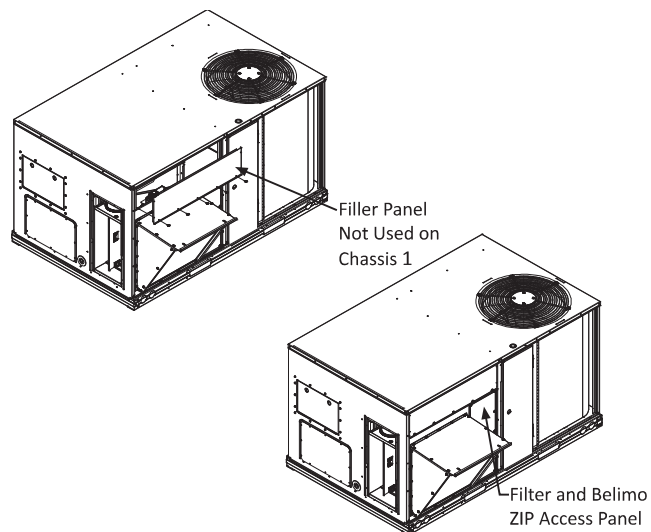


Fig. 11 - Installation of OA Hood, Filler Panel, and Filter Access

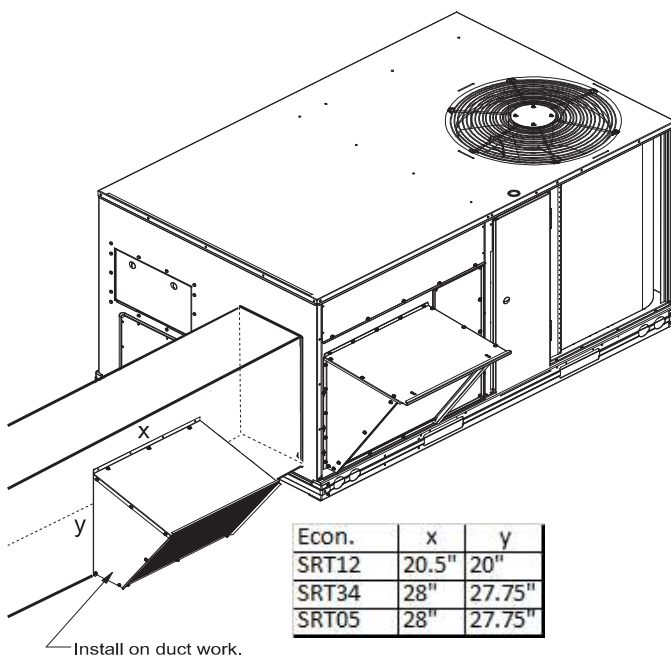


Fig. 12 - Relief Damper/Hood Assembly Installation Location

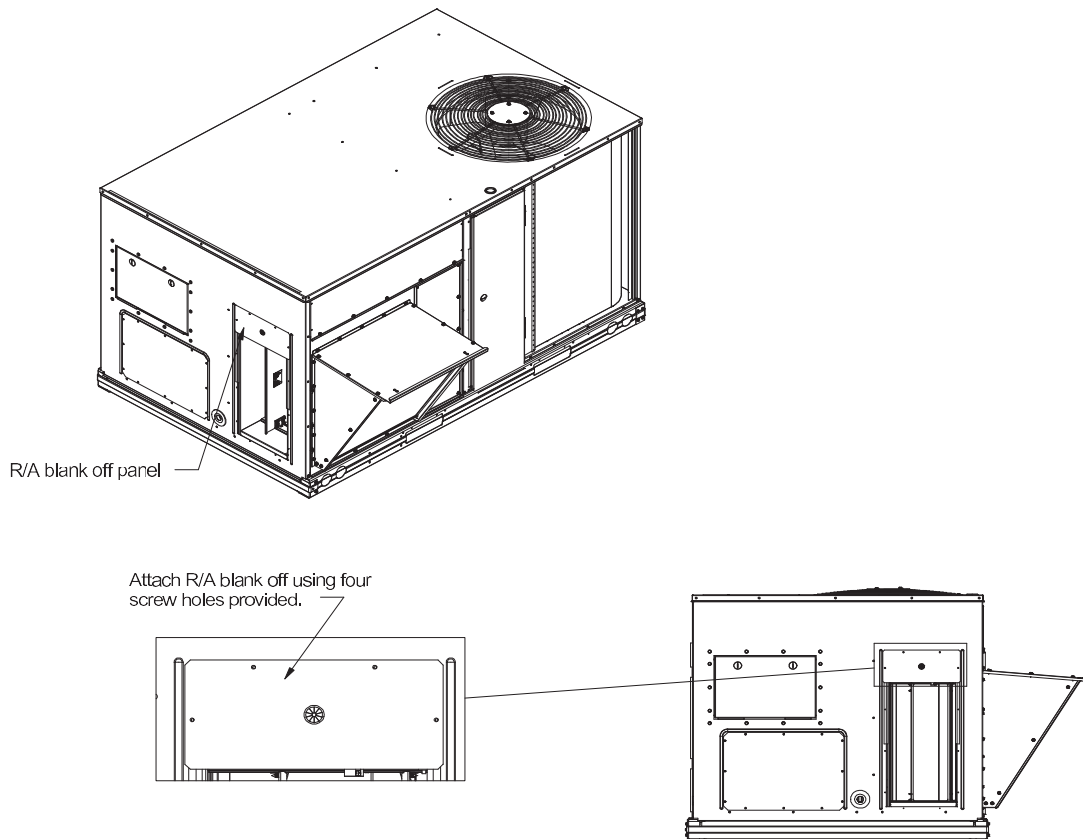


Fig. 13 - RA Blank-Off Plate Installation

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1. Locate and install the RA Damper Assembly in the RA opening of the RTU using the provided screws. See **Fig. 14**. If installing an RA Sensor, do so at this time.

a. Mount the Sensor to the inside of the RA opening (on the duct side) of the Economizer next to the grommet. Be sure the location chosen does not interfere with the blade rotation.

b. Route the wires through the grommet in the side of the assembly for connection to the main harness in a later step.

2. Set the Economizer OA Damper/Hood Assembly in front of the RA Cavity.

3. Locate and install the Belimo ZIP and Mounting Bracket per **Fig. 15**.

4. Lift the Economizer Assembly and slide into the RTU RA Cavity opening - See **Fig. 15**.

5. Remove and save the PL6 12-pin Jumper Plug from the unit wiring harness (located in the upper left corner of the unit). Connect the Economizer plug to the unit wiring harness PL6 Plug - See **Fig. 7** and provided Wire Diagram for more details.

Note: While the PL6 Jumper Plug is not needed as long as the Economizer is installed and operational, it is recommended that it be retained with the RTU for service, or removal of the Economizer is required.

Important: For 48/50LC-07 and larger units, a (KIT-SRT15Cx-LC needs to be ordered separately). See Fig. 7.

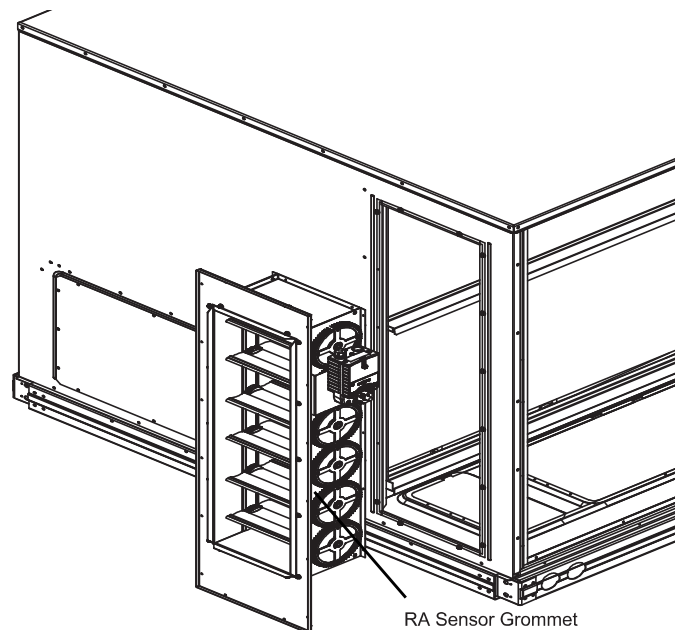


Fig. 14 - RA Damper Assembly Installation

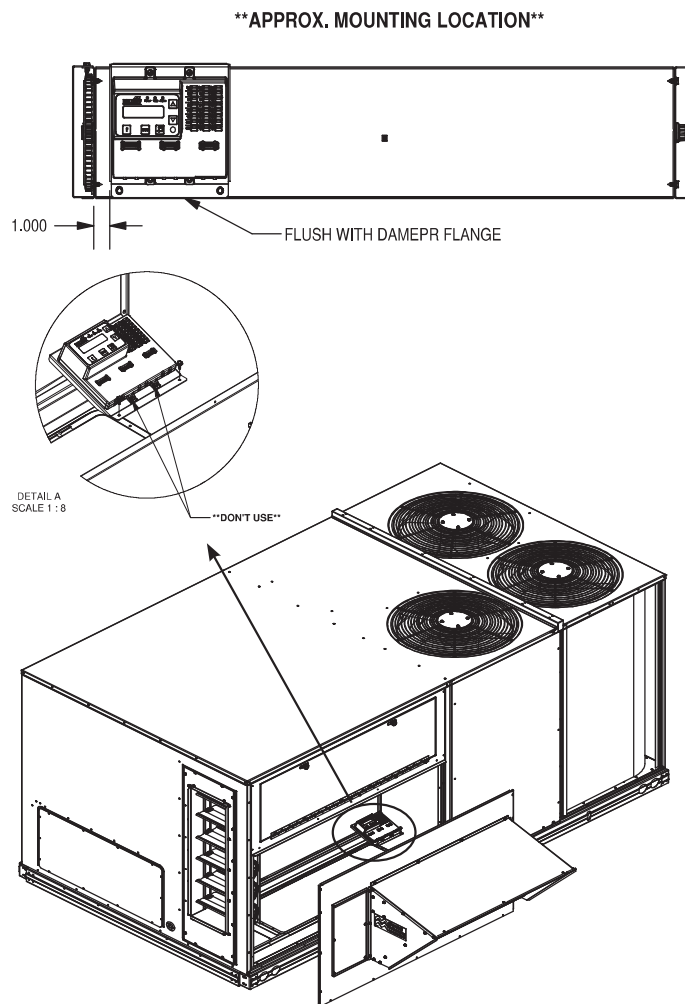


Fig. 15 - RA Approx. Mounting Location of Belimo ZIP Control

6. At this time, locate and connect the RA Sensor (if installed in Step 1).
7. If not installing a 48/50LC-07 or larger, **skip this Step**. Locate second harness from KIT-SRT15Cx-LC, 1002-LCJ-ZIP and plug onto J5 and J3 of the Compressor Staging Control (CSC). See **Fig. 8** and provided Wire Diagram for details.
8. Install Ductwork.
9. Establish the desired location in the RA Duct of the Relief Hood Assembly. Cut hole in Duct to match the opening of the Relief Hood. Attach with provided TEK screws - See **Fig. 12**.
10. Seal/Caulk as necessary to insure weather tight fit.
11. Refer to the Control and Wiring Documents for proper wiring and set up.

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