

INSTALLATION INSTRUCTIONS

TP Technical
Publications
Litho U.S.A.
©1999

ECONOMIZERS

504,155M
11/99
Supersedes 503,958M

REMD16M-09, 12 AND 15

INSTALLATION INSTRUCTIONS FOR REMD16M-09, 12, AND 15 ECONOMIZERS USED WITH GCS/CHA16-072, 090, 120 AND 150 UNITS

Shipping and Packing List

LB-96577A, B, C (90J15, 90J16, & 64L82)

Package 1 of 2 contains:

- 1- Economizer assembly
- 1- Wiring diagram
- 1- Bag assembly containing:
 - 4-#10-16 X 5/8 Screws
 - 1-Control harness (A6, TB11, R1)
 - 1-Wiring diagram
 - 4-Wire ties

LB-87442A, B, & C (27L60, 48L00, & 27L58)

Package 2 of 2 contains:

- 1- Fresh air intake hood with permanent filter
- 1- Exhaust air hood with gravity air damper and bird screen
- 1- Filter access panel

Check economizer for shipping damage. Contact the last carrier immediately if any shipping damage is found.

Application

REMD16M economizers are used with GCS and CHA16 units for automatic sensor-controlled introduction of outdoor air into the system through an electro-mechanically controlled damper. All assemblies are downflow air discharge.

GCS/CHA16-072, 090 use LB-96577A REMD16M-09
GCS/CHA16-120 uses LB-96577B REMD16M-12
GCS/CHA16-150 uses LB-96577C REMD16M-15

Economizer slides into horizontal return air opening. Mixed air sensor, TB11, and enthalpy control board are shipped in economizer and must be relocated to filter section. Intake and exhaust hoods are packaged separately.

Economizer Installation

- 1- Disconnect all power to unit.
- 2- Remove and discard shield installed over the damper motor.
- 3- Cut and discard wire tie securing wire bundle to the damper motor.

IMPORTANT - DO NOT cut other wires. Inspect for damaged connections or loose wires.

- 4- Locate bag assembly taped to the top intake air damper. Remove the A6 enthalpy control board and R1 mixed air sensor from bag assembly.
- 5- Remove the screw securing the A6 enthalpy control board and wire bundle in place. Cut wire tie securing the bundle of wires to A6 enthalpy control board, and R1 mixed air sensor.
- 6- Remove screws in the bottom of the horizontal return air panel. Slide the panel down and out of unit and discard.

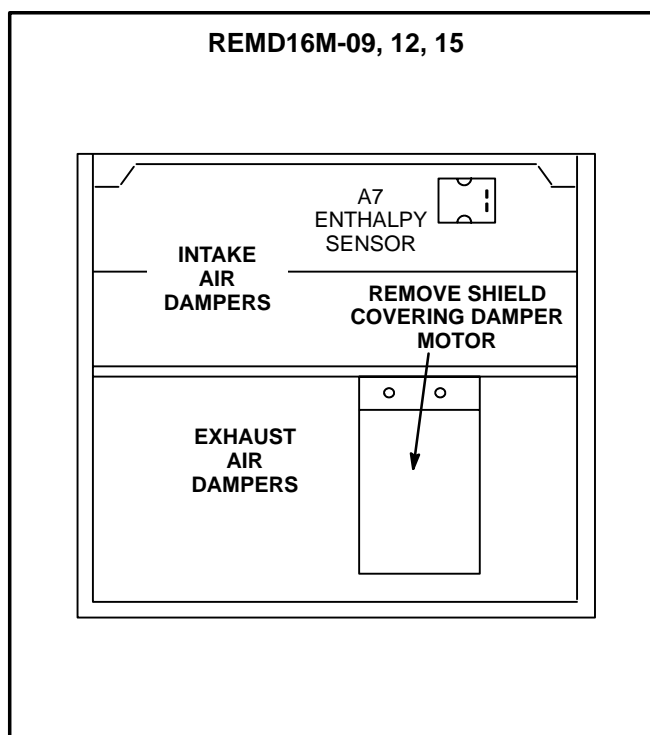


FIGURE 1

REMD16M-09, 12, and 15 ECONOMIZER INSTALLATION

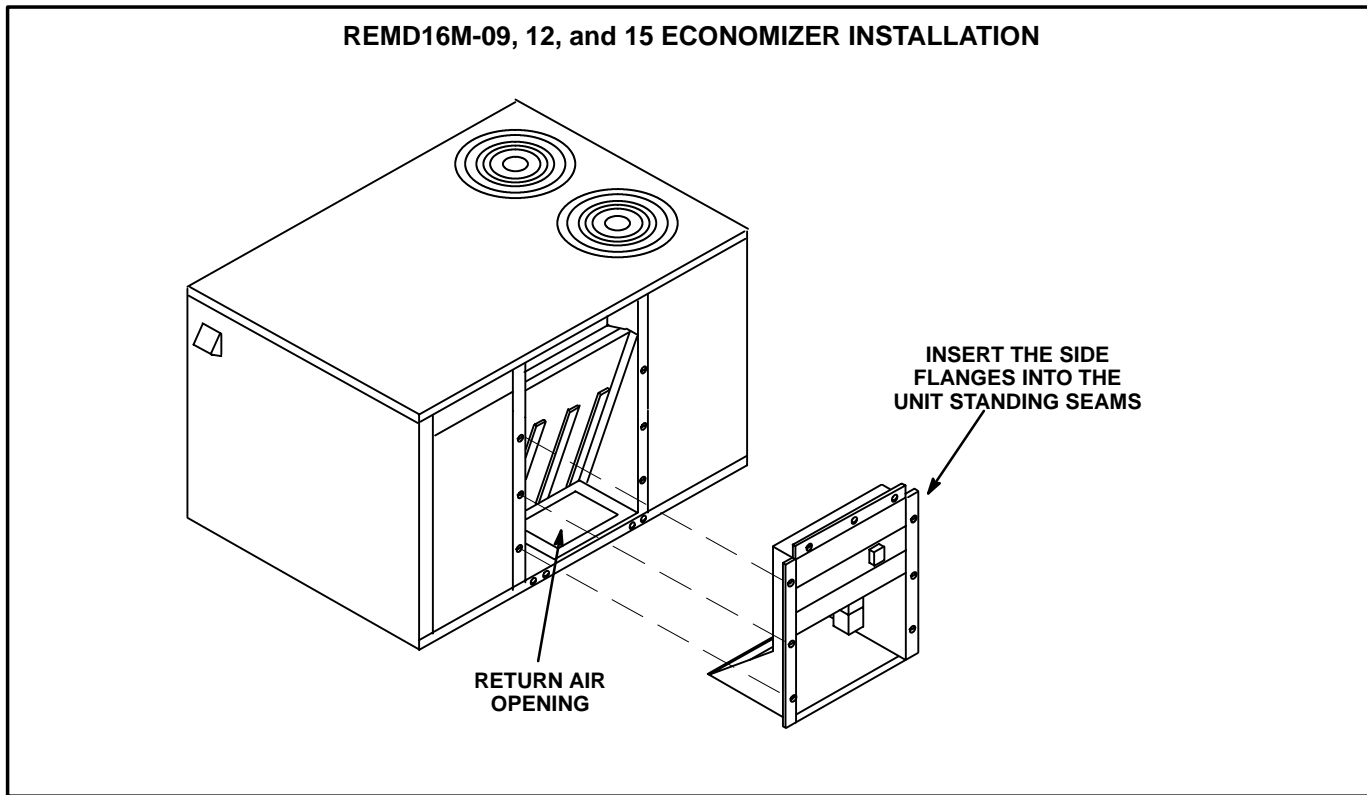


FIGURE 2

- 7- Attach blue wire from A7 enthalpy sensor (located on outside air damper blades) to "+" terminal on A6 control board. Attach white wire from A7 enthalpy sensor to "SO" terminal on A6 control board.
- 8- Connect economizer jack J9 to economizer plug P9.
- 9- Route wiring to the right side of the economizer and slide into the unit. Position the mixed air sensor and control board in the filter section routing wiring along right side of the horizontal return air section. Insert economizer side flanges into the unit standing seams. See figure 2.
- 10- Position A6 control board in filter access area as shown in figure 3. Secure control board with two #10-16 X 5/8 screws.
- 11- Push out snap plug located at the left end of the filter access compartment. See figure 3. Insert R1 mixed air sensor tube through the hole into the supply air compartment. Secure using two #10-16 X 5/8 screws.
- 12- Disconnect unit jumper plug P3 from unit jack J3. Discard unit jumper plug P3. Connect economizer plug P4 to unit jack J3.
- 13- Restore power to unit and check for proper damper operation (See System Check section).
- 14- Affix wiring diagram in control box next to the thermostat "C" section diagram.

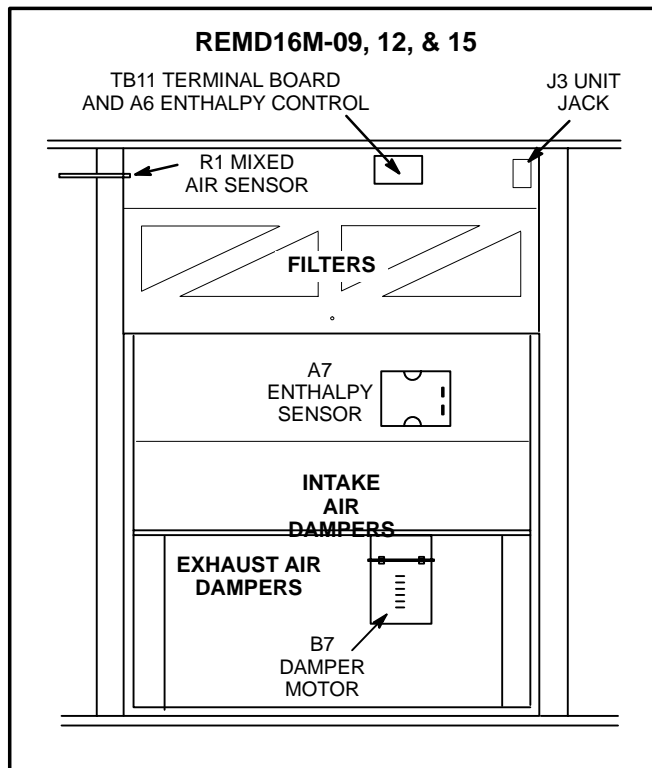


FIGURE 3

Hood Installation

- 1- Dismantle shipping box and remove sheet metal screws securing hoods to shipping blocks.

NOTE - Wooden shipping blocks hold hoods in place and also support shipping box.

- 2- Remove and discard sheet metal shipping strap across exhaust damper screen.
- 3- Loosen but **DO NOT REMOVE** six lower screws in vertical mullions on both sides of economizer.
- 4- Align keyhole slots on exhaust hood with screws on unit vertical mullions. Secure three screws on each side. See figure 4. Make sure exhaust dampers rotate freely and seal against each other.

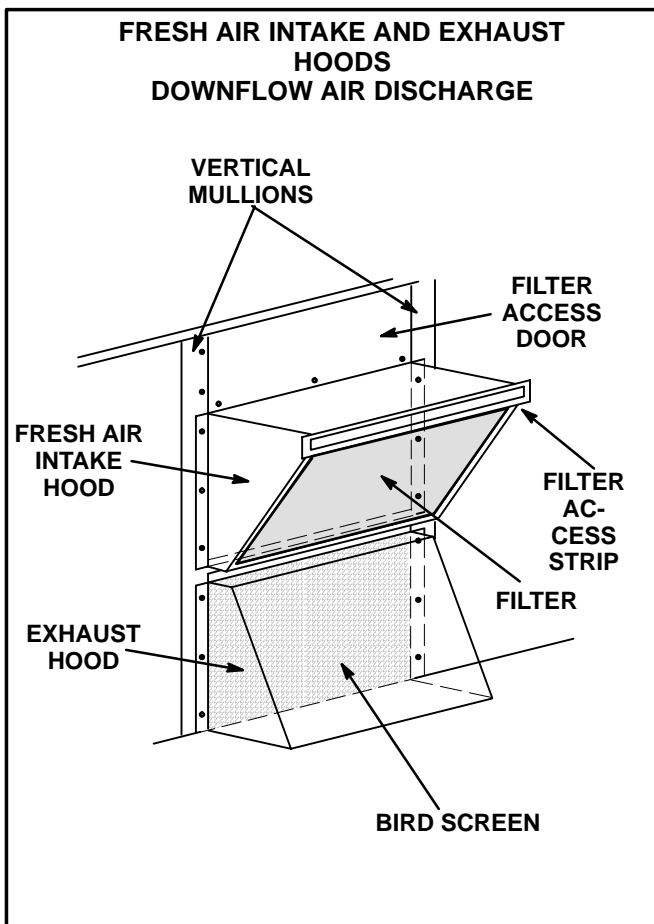


FIGURE 4

- 5- Align keyhole slots on intake hood with loosened screws on unit vertical mullions. Tighten three screws on each side. See figure 4.
- 6- Slide filter access door under unit top flange and secure at bottom with three machine screws provided. Caulk corners where hoods meet the mullions and any areas which are not watertight.
- 7- Loosen screw on each side of filter access strip and remove access strip to replace filter.

Operation

A-Cooling Mode

- 1 - On a call for cooling, with ambient temperature and humidity above enthalpy control setpoint, damper will open to minimum vent position.
- 2 - On a call for cooling, with ambient temperature and humidity suitable for cooling, enthalpy control will shift stage one control to outside air and shift stage two of thermostat to first stage compressor. Damper will modulate to control supply air temperature at 55°F (13°C). If additional cooling is required, compressor one may be energized through second stage of thermostat.

B-Heating Mode

- 1 - On a call for heat during day operation (occupied), damper will open to the minimum vent position.
- 2 - On a call for heat during night operation (unoccupied), damper will remain closed.

C-Enthalpy Control

The enthalpy control senses both temperature and humidity or the heat content of the outside air. It controls the amount of outdoor air brought into the system. When the heat content of the outside air is below control setpoint, the control modulates outdoor dampers to meet cooling needs of the building. When the heat content rises above control setpoint, the control closes outdoor dampers to minimum position. The recommended setpoint is "A." If economizer is allowing air which is too warm or too humid to enter the system, control may be changed to a lower setpoint (b, c or d). Refer to figure 5.

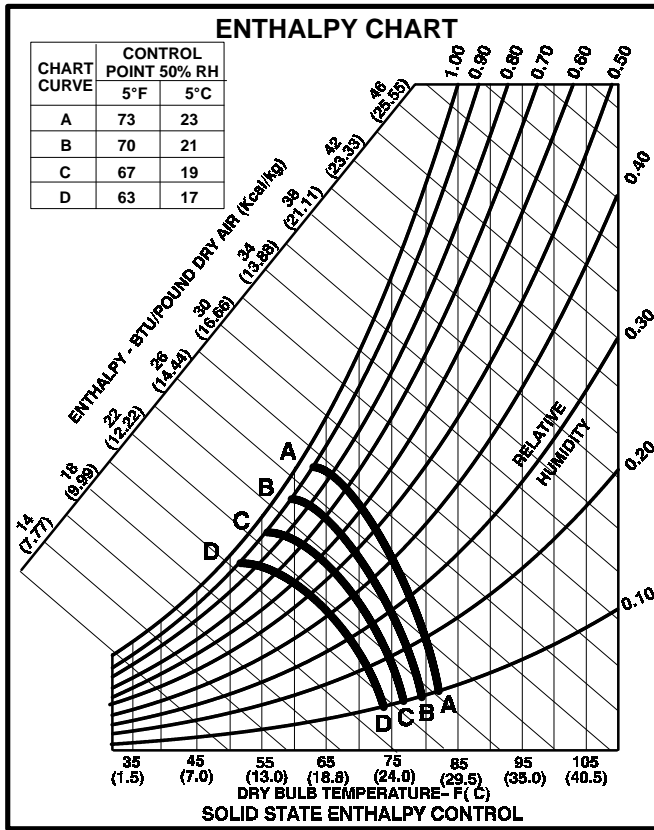


FIGURE 5

System Check

- 1 - Disconnect main power to unit.
- 2 - Install jumper on auxiliary contacts of blower contactor in main unit control box.
- 3 - Turn thermostat control to "OFF" position.
- 4 - Install jumper on damper motor terminals T and T1. See figure 6.

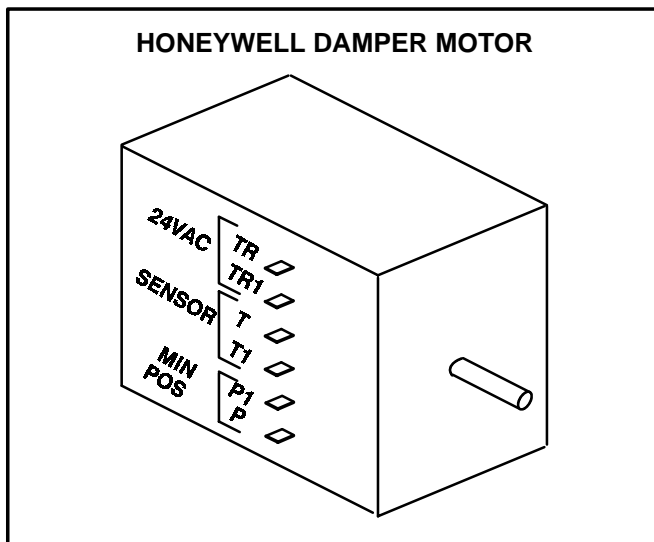


FIGURE 6

- 5 - Restore power to unit. Damper should drive to fully opened position (requires 1-1/2 minutes for full travel). Observe travel for proper damper operation.
- 6 - Disconnect power to unit. Damper should spring return to closed position.
- 7 - Remove T and T1 jumper on damper motor, then restore power to unit. Adjust minimum vent position on potentiometer on damper motor. See figure 7.
- 8 - Disconnect power to unit and remove jumper on auxiliary contacts of blower contactor in main unit control box. Restore power to unit.

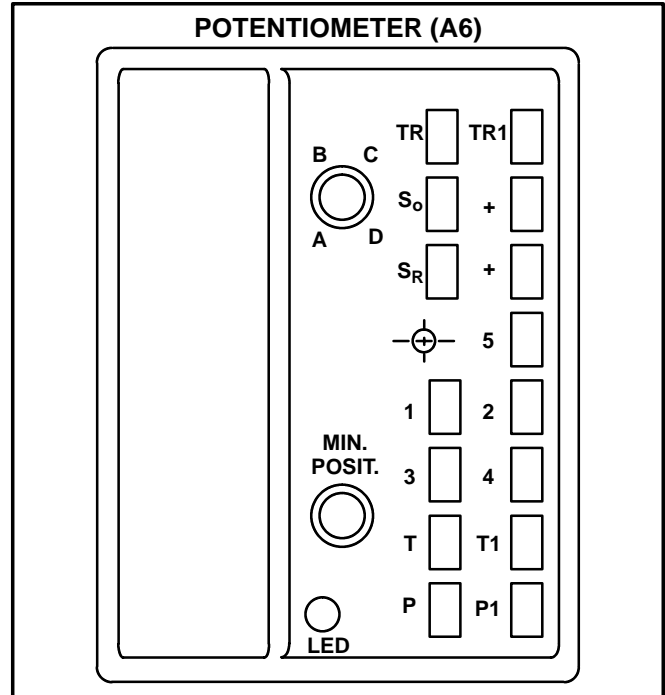


FIGURE 7

Maintenance

- 1 - Damper motor is prelubricated and does not require further lubrication.
- 2 - Make visual inspection of dampers and linkage assemblies during routine maintenance.
- 3 - Filters should be checked periodically and cleaned when necessary.
- 4 - The washable filters supplied with the economizer can be cleaned with water and a mild detergent. Before reinstalling, spray dry filter with Filter Handicoater. Filter Handicoater is R.P. Products coating No. 418 and is available as part no. P-8-5069.
- 5 - Take note of "Air Flow Direction" marking on filter frame when reinstalling.
- 6 - If filter must be replaced, filter of like kind and size must be used. DO NOT replace permanent filters with throw-away type filters.