

INSTALLATION INSTRUCTIONS FOR OUTDOOR AIR DAMPERS AND OUTDOOR AIR HOOD USED WITH LGH/LCH/KG/KC/KH/ZG/ZC/ZH 092-150 UNITS

Shipping and Packing List

Package 1 of 1 contains:

- 1- Motorized outdoor air damper assembly (53W49, 62W60, 10Z33 only)
- 1- Carton containing:
 - 1-Manual sliding outdoor air damper
 - 1-OAD cover panel (53W48, 53W49, 63W60 only)
 - 1-Lower panel
 - 1-Hood top
 - 2-Hood sides (left and right)
 - 1-Hood top seal
 - 1-Top filter bracket
 - 1-Bottom filter bracket
 - 1-Filter
 - 1-Bag assembly containing:
 - #10 sheet metal screws
 - 1-#10 - 32 X 1/2" screw
 - 1-Wiring diagram (10Z33 only)
 - 2-Harnesses (10Z33 only)
 - 3-Insertion wire ties (10Z32, 10Z33 only)
- 1- Lower panel insulation (53W48, 53W49, 62W60 only)
- 1- Bag assembly containing (53W49, 63W60 only):
 - 8-Insulation pins
 - 8-Insulation washers
 - 1-Threaded hex insert
 - 1-Wiring diagram
 - 1-Wire harness
 - 1-Insertion wire tie

Application

Optional manual and motorized outdoor air dampers provide up to 25 percent fresh air for return. Motorized damper opens to minimum position simultaneously with the blower during the occupied period and remains closed during the unoccupied period. Manual damper assembly is manually operated; damper position is manually set at installation and remains in that position.

TABLE 1

| Unit | Type | LB # | CAT. # |
|-----------------------------|-----------|-----------|--------|
| LGH/LCH092-150 | Motorized | 603423-02 | 63W60 |
| KG/KC/KH092-150 | Motorized | 603423-01 | 53W49 |
| LGH/LCH/KG/KC/ KH092-150 | Manual | 603422-01 | 53W48 |
| ZG/ZC/ZH 092-150 | Motorized | 603422-03 | 10Z33 |
| ZG/ZC/ZH 092-150 | Manual | 603422-02 | 10Z32 |

**Motorized Damper Assembly - LGH/LCH/
KG/KC/KH Units**

- 1- Disconnect all power to unit.
- 2- Remove screws and open accessories access panel.
- 3- Install insulation on the unpainted side of lower panel. Use four pins and four washers to secure insulation to panel. See figure 1.
- 4- Align holes on the lower panel with holes in the unit base and mullions. Secure panel with #10 screws.
- 5- Install the cover panel on the damper assembly.
- 6- Remove P3 jumper plug from J3 unit jack and discard.
- 7- On LG/LC units, connect damper motor plug P3 to unit jack J3. On KG/KC/KH units, connect damper motor plug P4 to unit jack J3.
- 8- Secure the cover panel and damper assembly to the unit using #10 sheet metal screws.

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a qualified installer, service agency or the gas supplier.

⚠ CAUTION

Danger of sharp metallic edges. Can cause injury. Take care when servicing unit to avoid accidental contact with sharp edges.



MOTORIZED OUTDOOR AIR DAMPER - LGH/LCH/KG/KC/KH

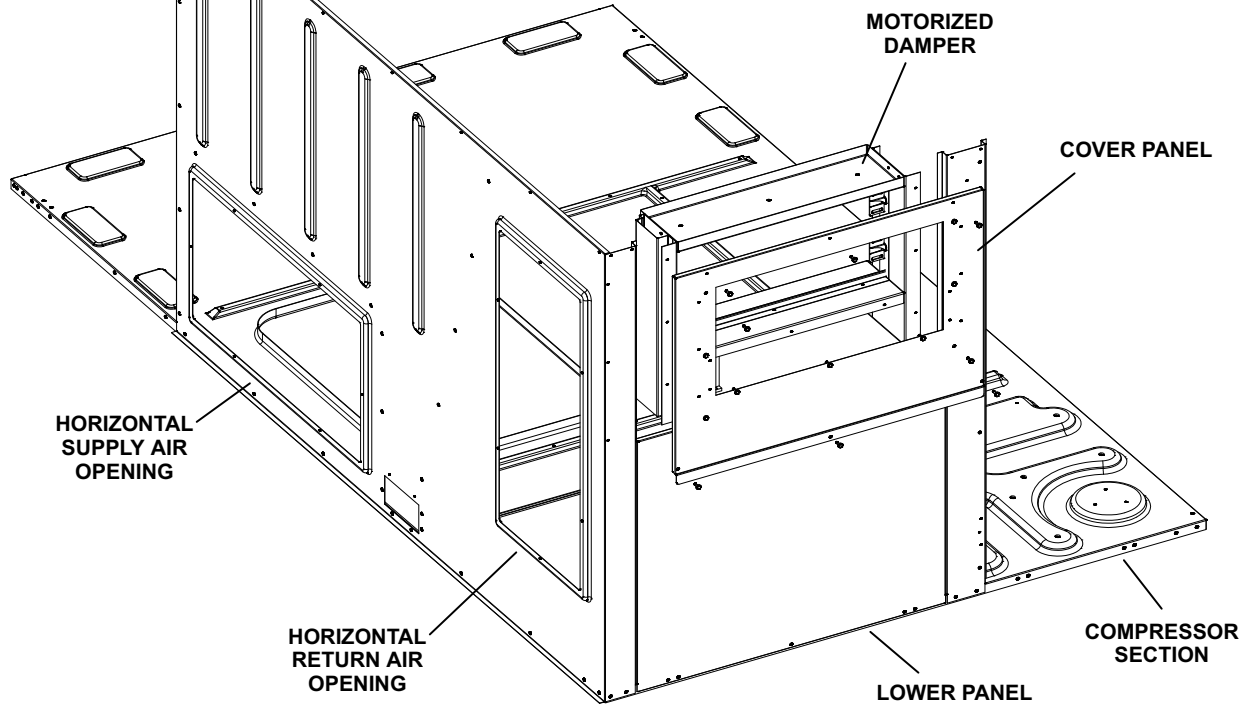


FIGURE 1

Manual Damper Assembly- LGH/LCH/ KG/KC/KH Units

- 1- Disconnect all power to unit.
- 2- Remove screws and open accessories panel.
- 3- Install insulation on the unpainted side of lower panel.

Use four pins and four washers to secure insulation to panel. See figure 2.

- 4- Align holes on the lower panel with holes in the unit base and mullions. Secure panel with #10 screws.
- 5- Install the cover panel in the unit as shown in figure 2.
- 6- Place sliding manual damper in the cover panel. Slide the manual damper in the cover panel slots as needed.

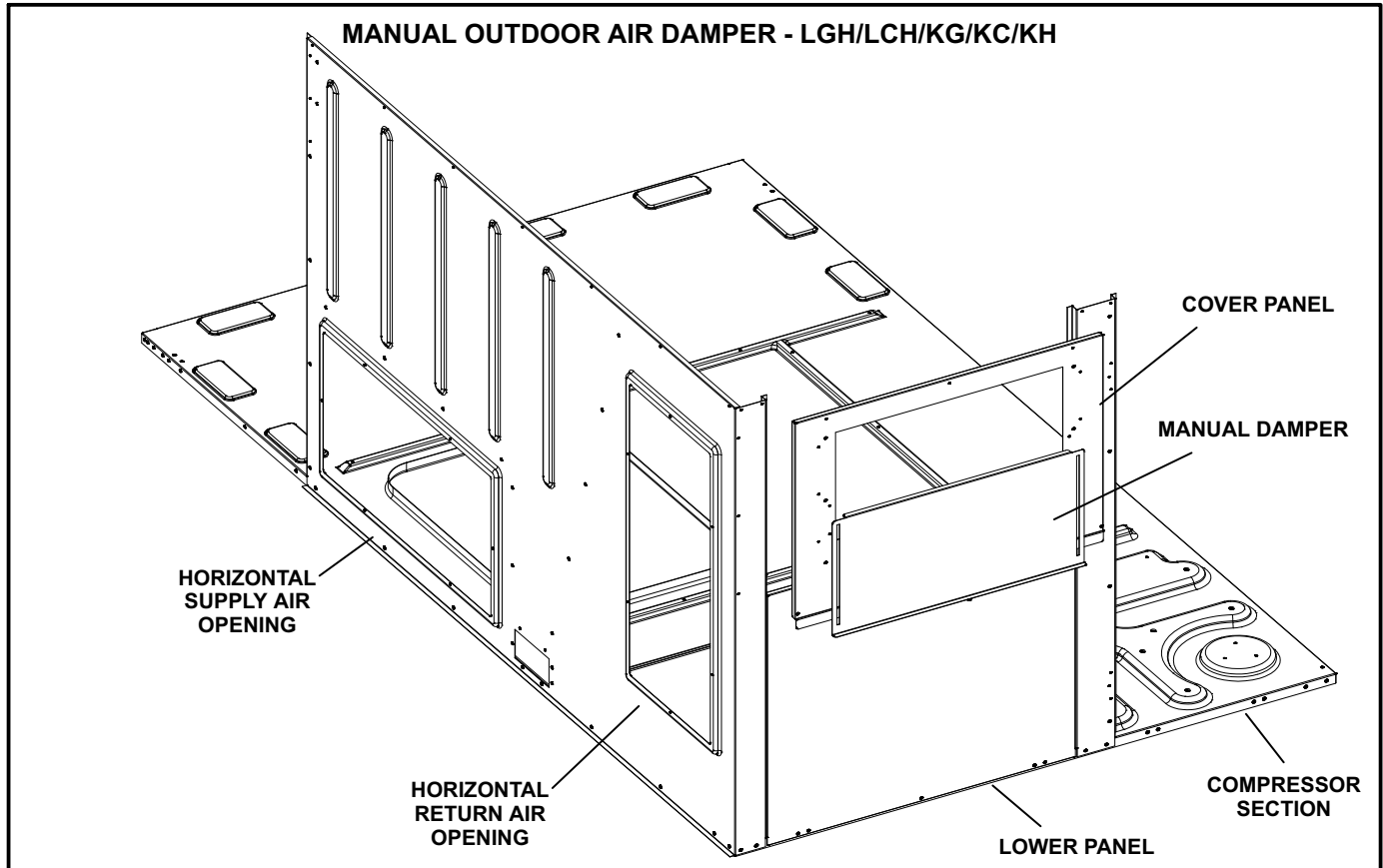


FIGURE 2

Motorized Damper Assembly - ZG/ZC/ZH Units

- 1- Disconnect all power to unit.
- 2- Remove filter and lower access panel on the back of the unit. See figure 3.
- 3- Cut insulation from opening in lower panel. See figure 4.
- 4- Install the lower panel on the damper assembly.
- 5- Discard the manual sliding outdoor air damper.
- 6- Locate the kit harness that has connectors on both ends. Connect the female jack with wires labeled J4-3 & 7 to the outdoor air damper harness plug (P4). Connect the other end of kit harness to J10 hanging in the upper left corner of the return air section. See figure 5 for J10 location.
- 7- Secure the damper assembly to the unit using #10 sheet metal screws.

- 8- Open compressor access panel on the other side of the unit. Locate the plug (P142) with wires labeled P142-2 & 3 hanging in the upper right area of the control box. See figure 6. Connect the female jack (J142) from the other kit harness to P142. Wires on the other end of the harness are marked TB1-OC and TB1-C. Connect the two wires to the appropriate terminals on TB1. Secure harness to wiring bundle shown in figure 6.

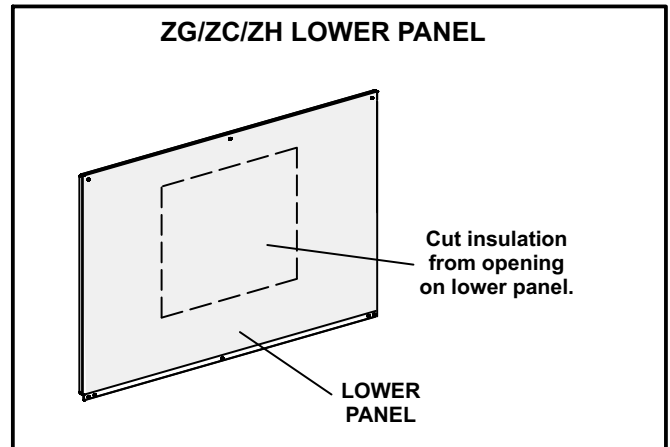


FIGURE 4

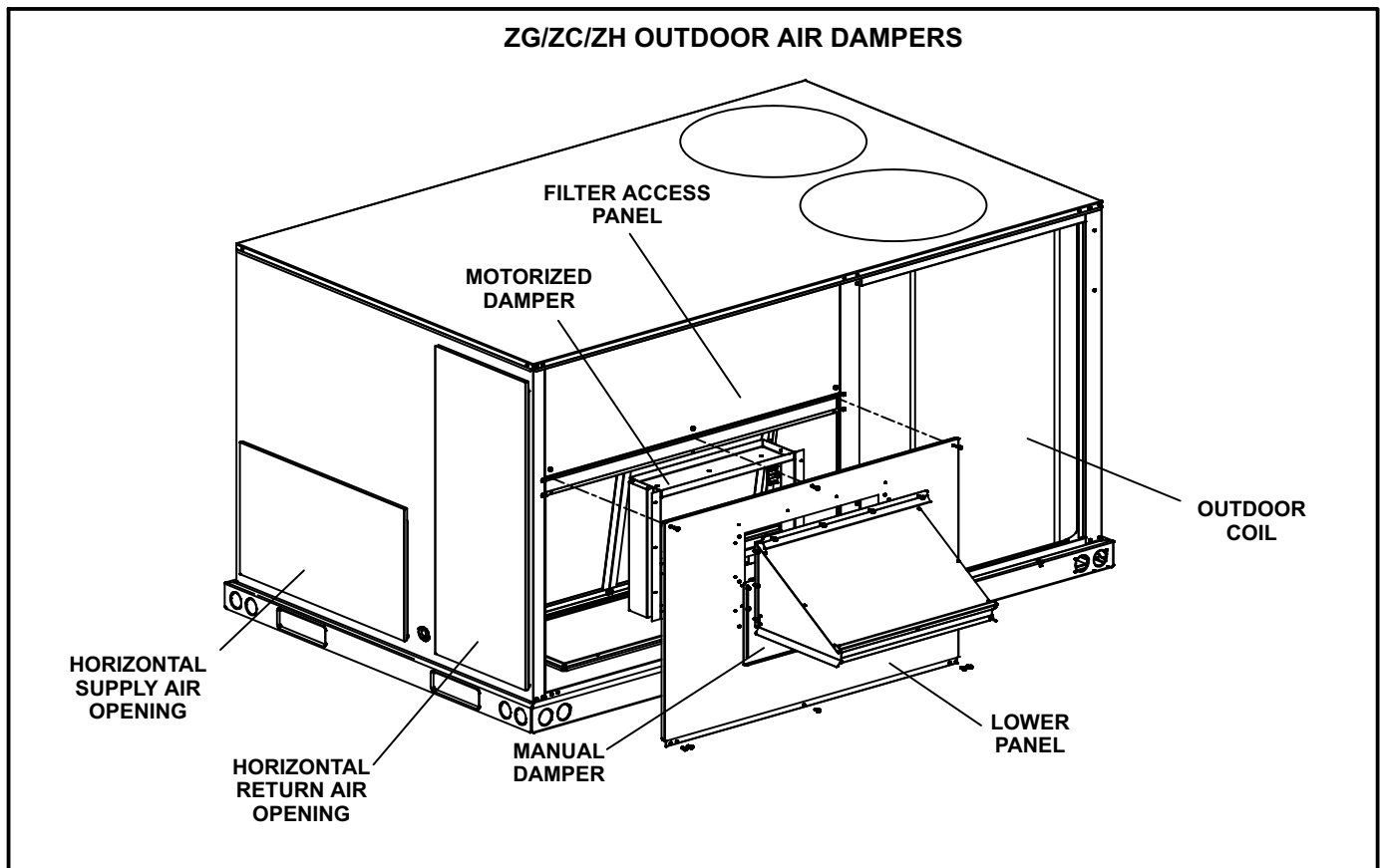


FIGURE 3

ZG/ZC/ZH RETURN AIR SECTION

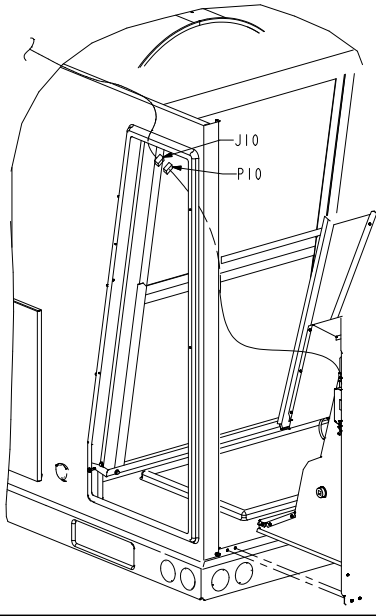


FIGURE 5

Manual Damper Assembly - ZG/ZC/ZH Units

- 1- Disconnect all power to unit.
- 2- Remove filter and lower access panel on the back of the unit. See figure 3.
- 3- Cut insulation from opening in lower panel. See figure 4.
- 4- Install the manual damper on the lower panel. See figure 3. Slide the manual damper in the cover panel slots as needed.

Install Outdoor Air Hood

Assemble hood and install as follows:

- 1- *LGH/LCH/KG/KC/KH Only* -
Remove screws securing unit top panel to accessory compartment cabinet. Lift top panel to install hood top seal.
- 2- *LGH/LCH/KG/KC/KH Only* -
Slide hood top seal under unit cabinet top and secure using three of the existing cabinet top panel screws. Install, but do not tighten, the screws on each end of the hood. See figure 7.

ZG/ZC/ZH Only -
Align four holes in top seal with holes above opening in lower panel. Secure with sheet metal screws. See figure 8.
- 3- Position the hood top edge V-channel under the corresponding V-channel on hood top seal. Slide hood from right to left until it is properly positioned. See figure 7.
- 4- Secure hood left side to the hood top and to the cabinet using the provided screws. See figure 8.
- 5- Secure the hood right side to the hood top. Do not secure the hood right side to unit. See figure 10.
- 6- Align the two holes on the left hood side with the two holes in the bottom filter seal bracket. Secure using provided screws. See figure 7.

ZG/ZC/ZH CONTROL AREA

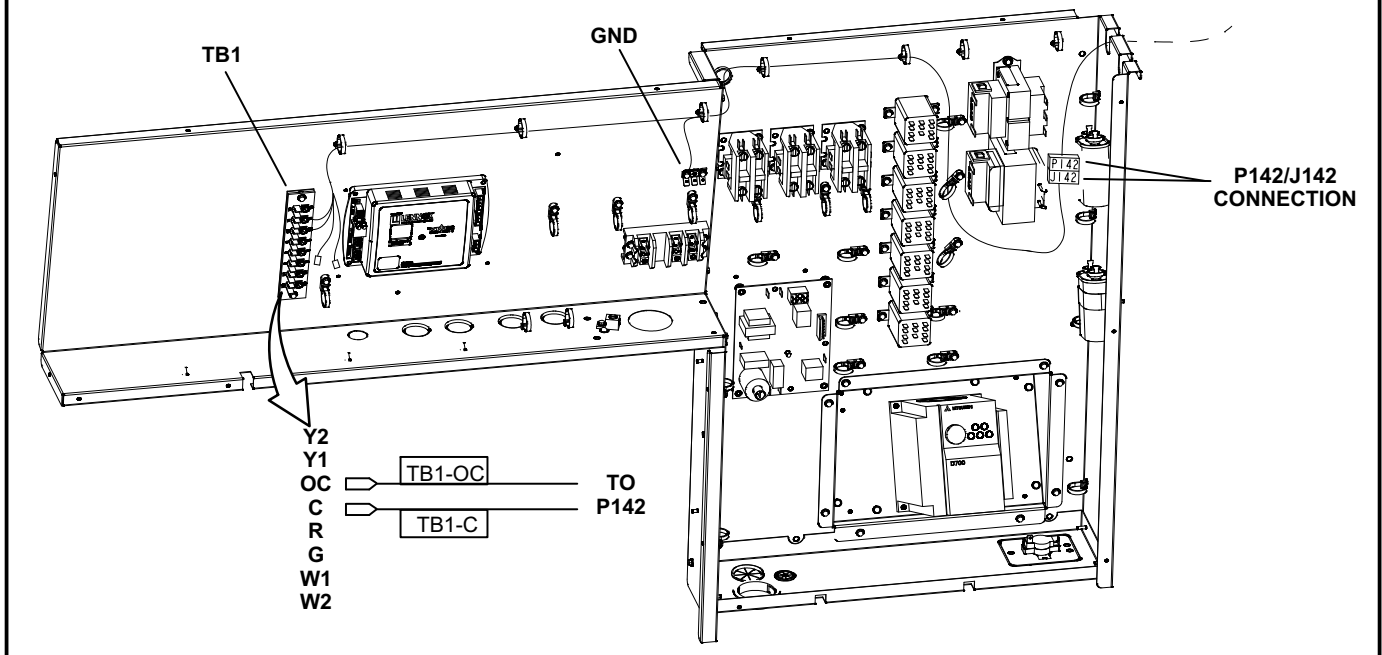


FIGURE 6

- 7- Secure bottom filter seal bracket to the right hood side as shown in figure 7.
- 8- Slide filter into the slot on the bottom filter seal bracket. Secure the hood top filter bracket to the hood top using the hex thread insert and screw provided. See figure 10.

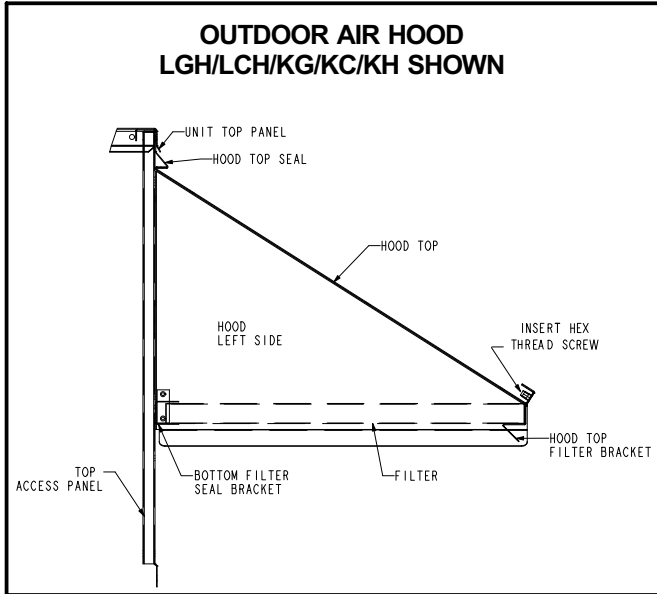


FIGURE 7

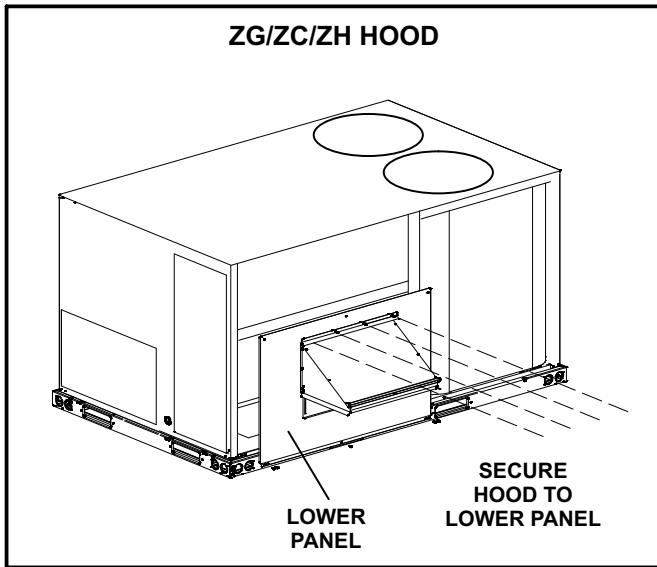


FIGURE 8

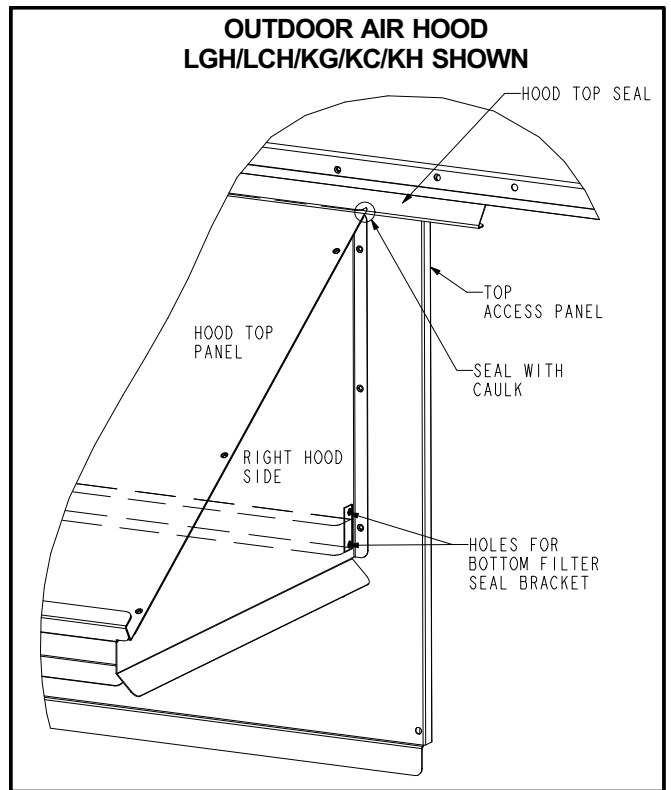


FIGURE 9

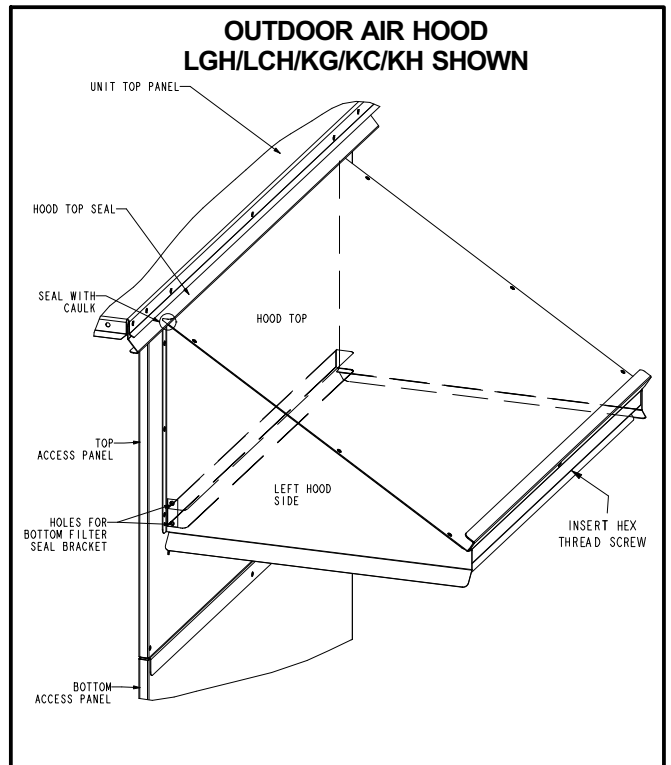


FIGURE 10

Unit Controller Settings - LG & LC Units

The dampers are controlled by the Unit Controller which is located in the unit control panel. A detailed menu layout can be found in the Unit Controller manual provided with each unit.

The unit will be equipped with either an M2 or M3 Unit Controller. M2 or M3 will be printed on the bottom of the Unit Controller near the SBUS connector. Application manuals are available for both Unit Controllers.

New Unit With Factory-Installed Dampers

M2 Unit Controllers Only -

Use the Guided Setup section in the Unit Controller manual provided with each unit.

Existing Unit With Field-Installed Dampers:

The Unit Controller must be set to identify dampers have been installed.

M2 Unit Controllers -

Use the following menu:

Settings>Install>Damper>MOAD ENTER
(display will flash !SET!)

M3 Unit Controllers -

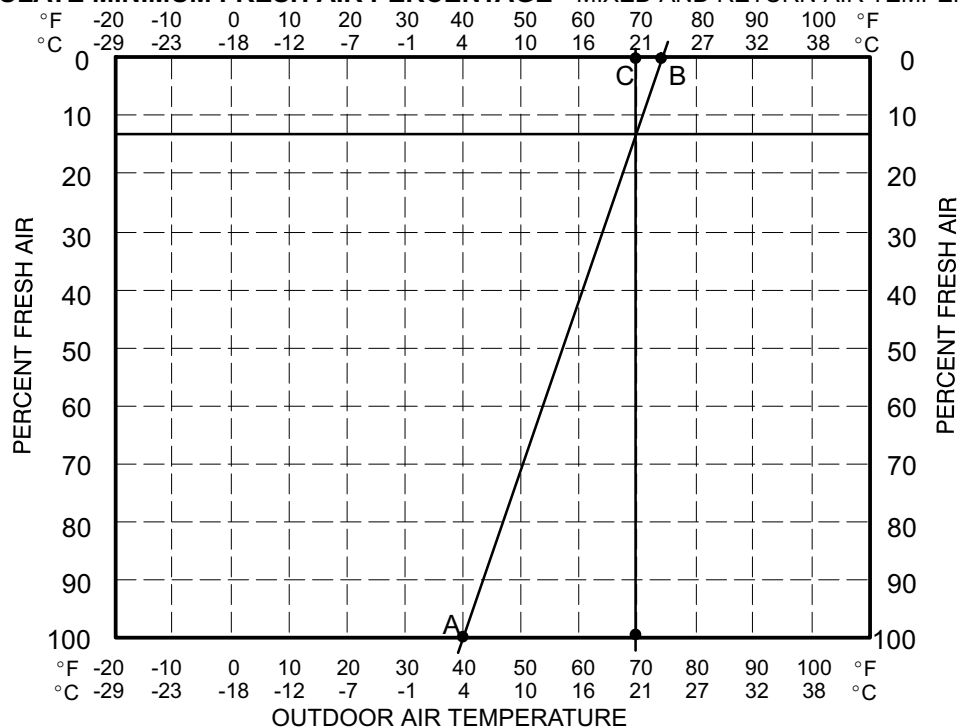
1. Use the Unit Controller keypad to enter the following menu:
MAIN MENU > SETUP > INSTALL
2. Press SAVE until CONFIGURATION ID 1 appears. Change the second character in the configuration ID to "M" for motorized outdoor air damper only.
3. Press SAVE. The Unit Controller is now set up to operate the outdoor air dampers.

Damper Minimum Position Setting

- 1- Measure outdoor air temperature. Mark the point on the bottom line of chart 1 and label the point "A" (40°F, 4°C shown).
- 2- Measure return air temperature. Mark that point on the top line of chart 1 and label the point "B" (74°F, 23°C shown).
- 3- Measure mixed air (outdoor and return air) temperature. Mark that point on the top line of chart 1 and label point "C" (70°F, 21°C shown).
- 4- Draw a straight line between points A and B.
- 5- Draw a vertical line through point C.
- 6- Draw a horizontal line where the two lines meet. Read the percent of fresh air intake on the side.
- 7- *KG/KC/KH/ZG/ZC/ZH Units Only -*
Honeywell Actuator - If fresh air percentage is less than desired, adjust thumbwheel higher. If fresh air percentage is more than desired, adjust thumbwheel lower. Repeat steps 1 through 6 until calculation reads desired fresh air percentage. See figure 13.

Siemens Actuator - Damper stops are factory-set at 100% outdoor air and are adjustable in five degree increments. To adjust fresh air percentage, remove retainer clip and adjust damper stop to desired air percentage. See figure 14. Replace retainer clip. Repeat steps 1 through 6 until calculation reads desired fresh air percentage.

CHART 1
CALCULATE MINIMUM FRESH AIR PERCENTAGE - MIXED AND RETURN AIR TEMPERATURE



Damper Minimum Position Setting

- Continued -

NOTE - Manual damper fresh air intake percentage can be determined in the same manner.

NOTE - LG/LC Units Only - In addition to the previous method, damper minimum position may also be remotely set using Unit Controller software (ECTO 5.24 on M2; parameter 132 on M3). Refer to Unit Controller manual.

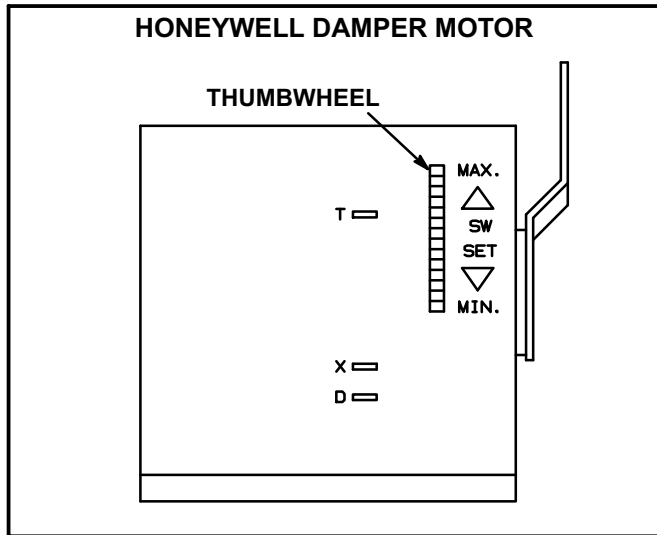


FIGURE 13

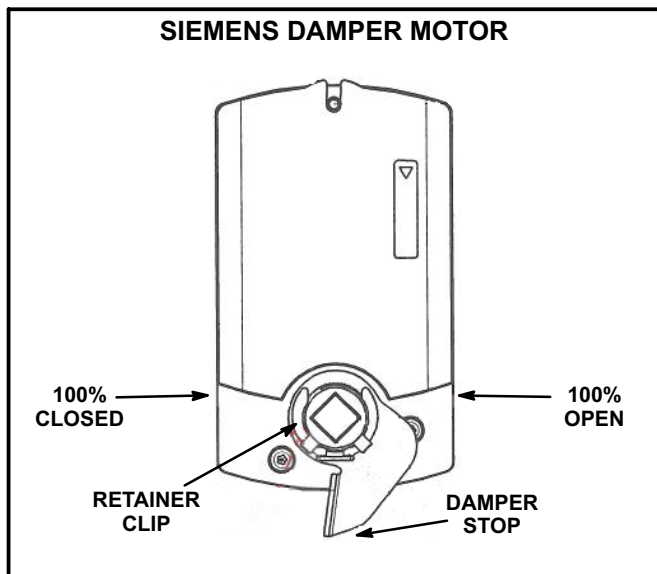


FIGURE 14

8- LG/LC Units Only -

Enter the % of fresh air (minimum % open damper position) into the Unit Controller. Use the menu path in figure 15 for M2 versions and table 2 for M3 versions. The minimum setpoint range is 0% open (dampers closed) to 100% (dampers fully open). On units with staged supply air blowers, refer to the unit installation instructions.

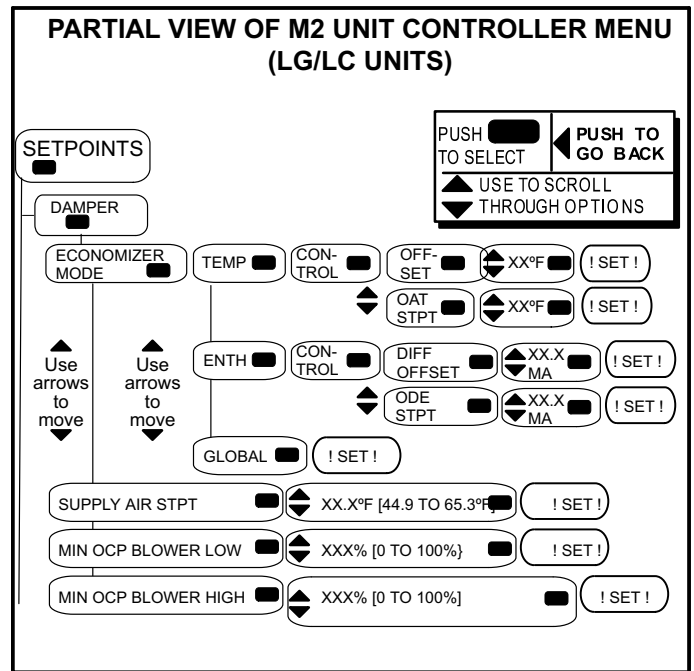


FIGURE 15

**TABLE 2
DAMPER OPTIONS -
LG/LC UNITS WITH M3 UNIT CONTROLLER**

| Level 2 | Level 3 | Level 4 | Level 5 |
|-------------|---------|---|---------|
| RTU OP-TION | DAMPER | ECONOMIZER ENTHALPY OFFSET = 12.0 MA | |
| | | ECONOMIZER ENTHALPY SETPOINT = 1.0 MA | |
| | | ECONOMIZER TEMP ECON TYPE = TEMPERATURE OFFSET OR TEMPERATURE SETPT | |
| | | ECONOMIZER OAT SETPOINT = XX.X F | |
| | | FREE COOLING SUPPLY AIR SETPOINT = 55°F | |
| | | MIN DAMPER POSITION BLOWER ON HIGH = X.X % | |
| | | MIN DAMPER POSITION BLOWER ON LOW = X.X % | |

Note - Menu options vary depending on hardware configuration.

Note - Use the "Adjust and set values" arrows to scroll up or down for selection options.