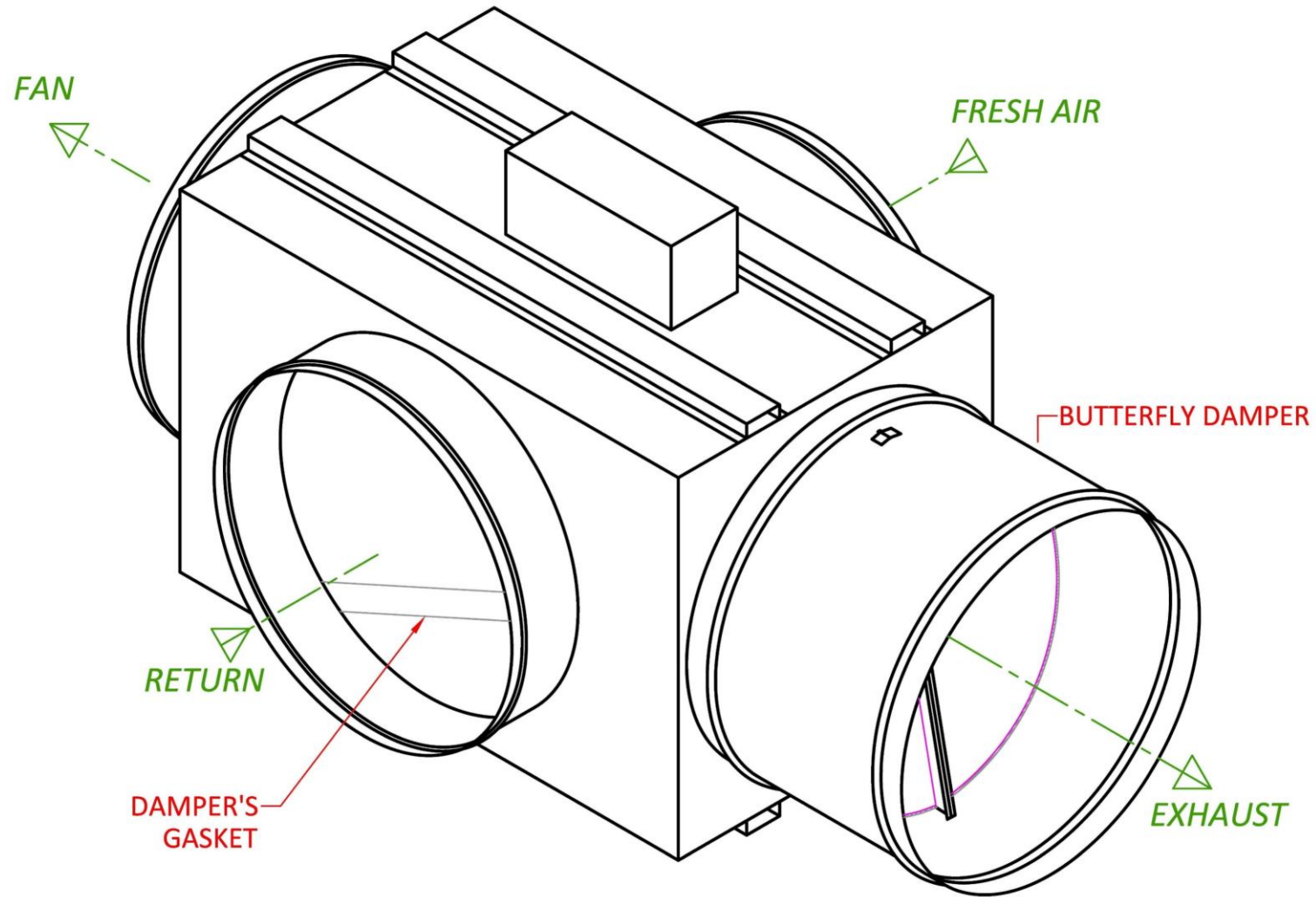


FAMCO ECONOMIZER DAMPER INSTALLATION MANUAL



DAMPER PICTURED IN ECONOMIZING POSITION

TYPICAL DAMPER INSTALLATION SEQUENCE

IF YOU HAVE NOT INSTALLED A FAMCO ECONOMIZER DAMPER BEFORE, IT IS RECOMMENDED THAT YOU READ ALL INSTRUCTIONS IN THIS MANUAL AND THE ZIP ECONOMIZER MANUAL BEFORE STARTING.

- 1) Determine if existing system allows for proper installation of the Economizer:
 - a. Access to existing ductwork, and ability to install components as recommended? The damper box should be installed so that ALL return air to flows through the damper box on its way to the blower. This may require some ductwork reconfiguration.
- 2) Determine installation location for outside air intake, outdoor air temperature sensor, supply air temperature sensor, damper Box, and ZIP controller.
- 3) Determine if the existing HVAC system is functioning properly before beginning installation.

INSTALLATION

IMPORTANT: Turn off the HVAC system at the breaker box before beginning installation.

Straightness of ductwork matters. Avoid sharp bends in ductwork. Watch out for flex duct that may kink if required to turn close to the connection to the damper box.

Proper operation requires that at a minimum an equal amount of air passes over the evaporator coil as in normal return air operation. Insure that air volume is not negatively impacted by the installation of damper box. **It is the installers' responsibility to insure the appropriate volume of air is available.** Poor installation may adversely affect available air volume and could damage HVAC system.

Do not allow the thermostat "Fan call" to run the blower fan below the mechanical cooling speed as this will result in poor performance. In the case of free-cooling, more air is better.

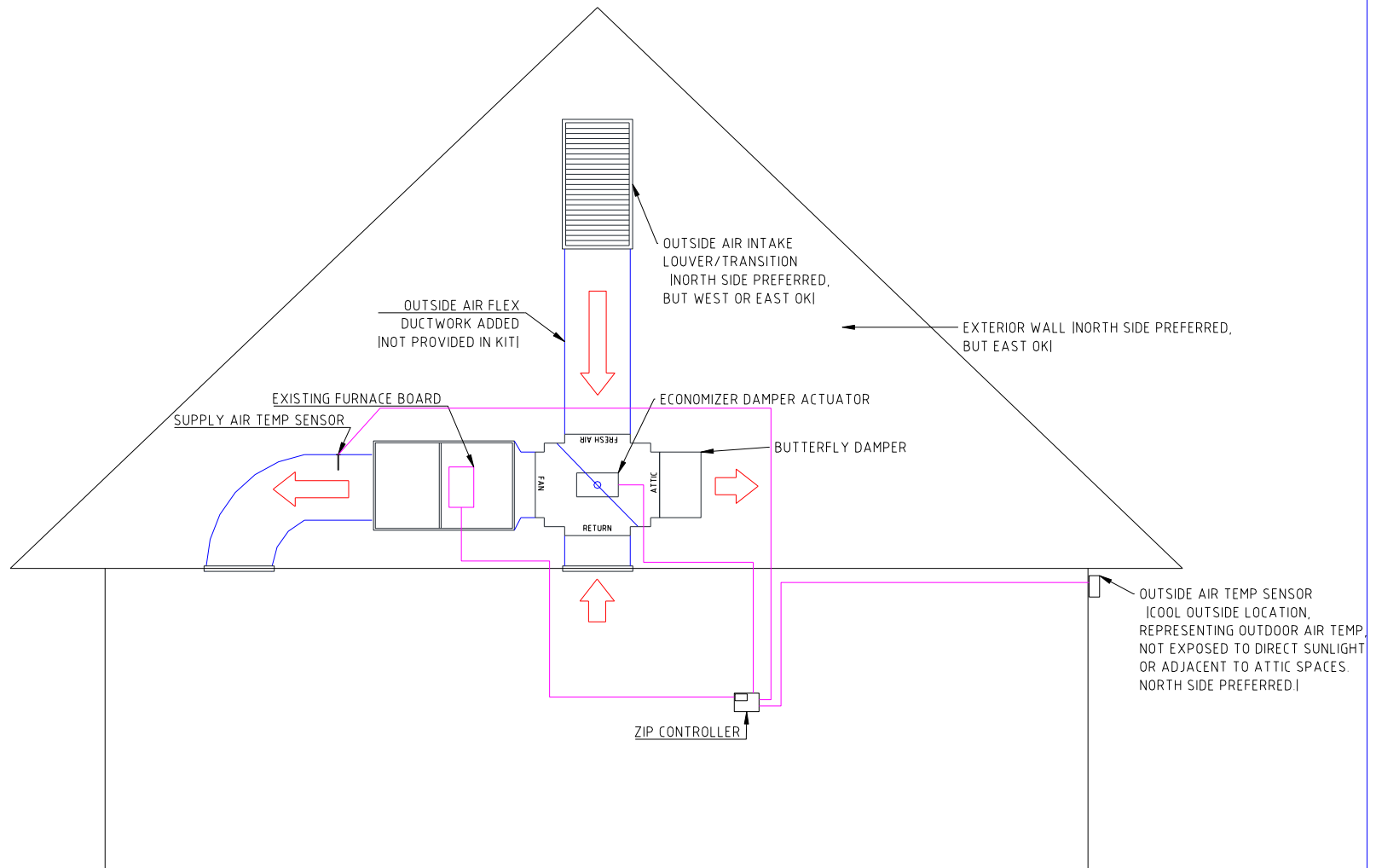
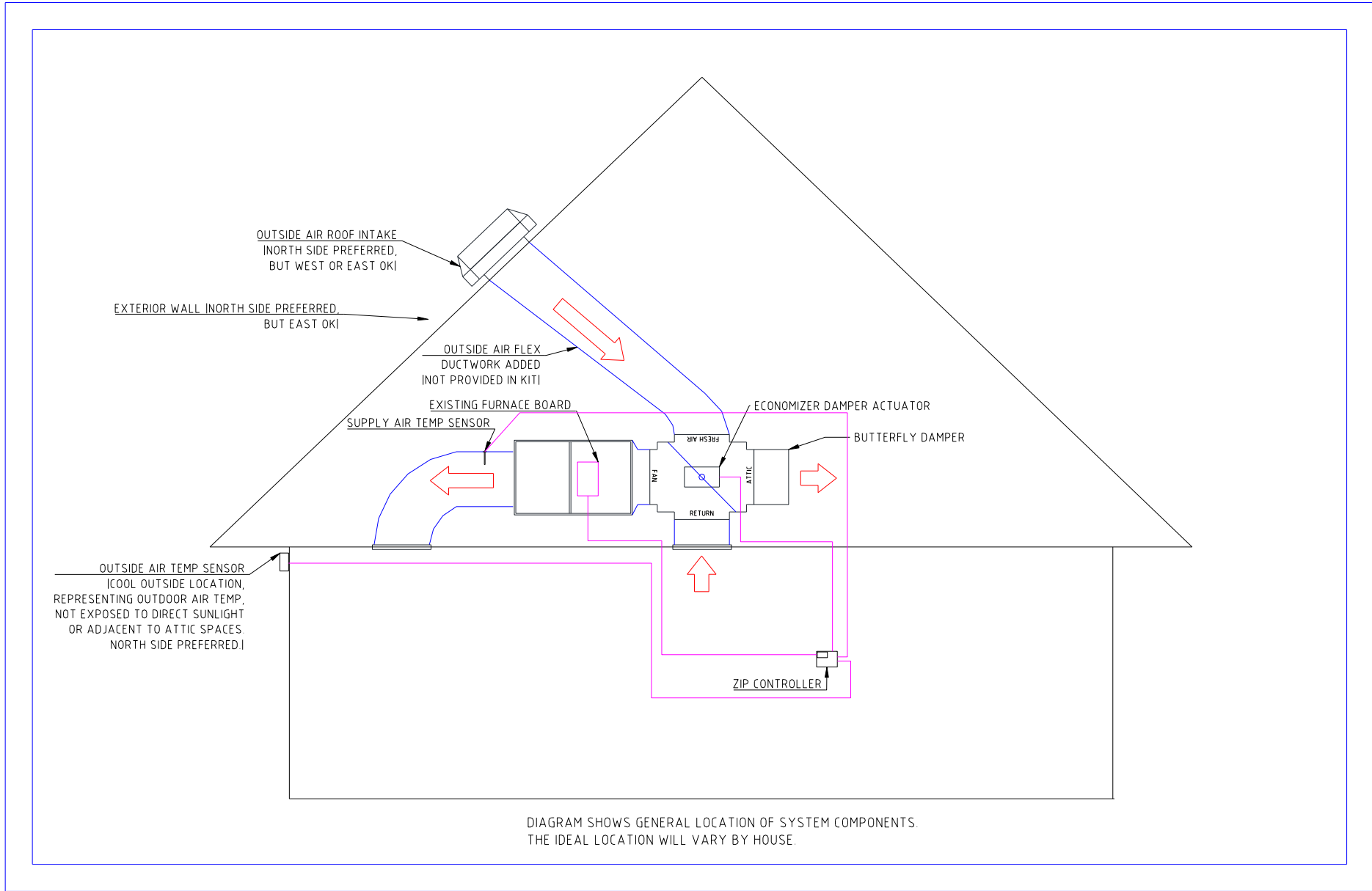
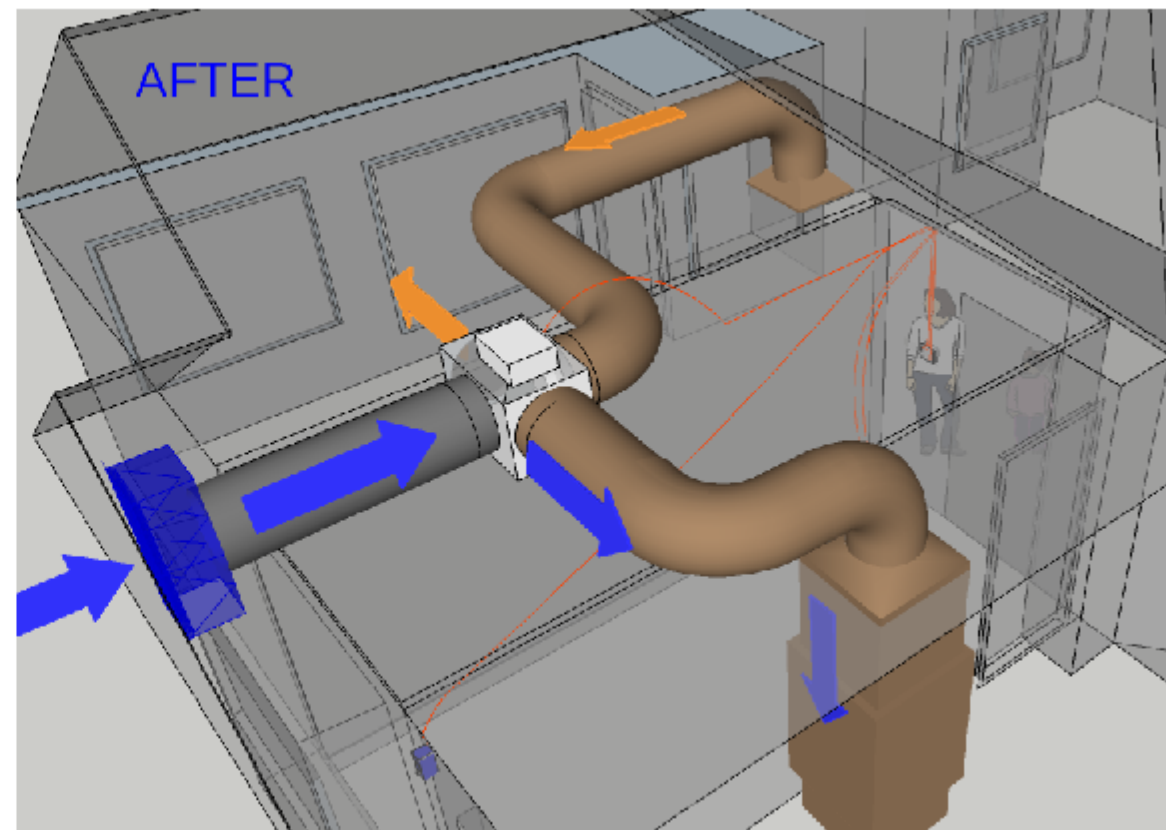
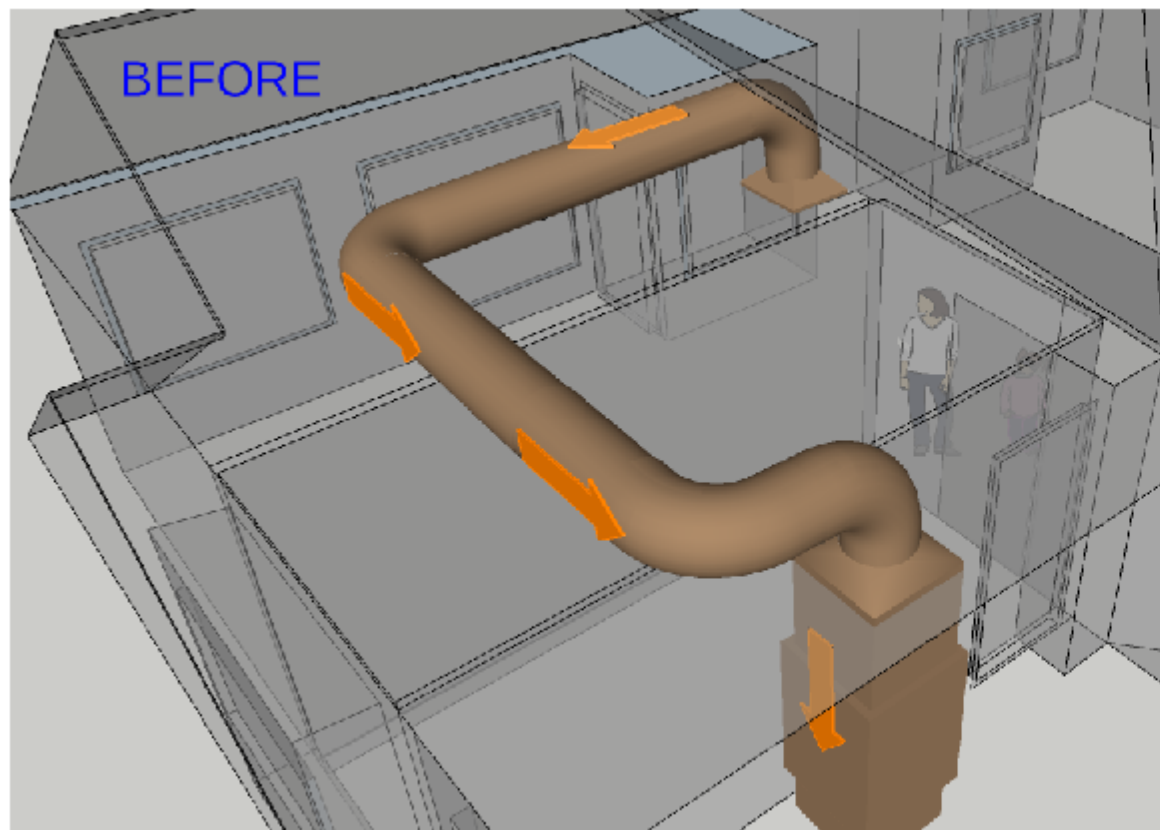


DIAGRAM SHOWS GENERAL LOCATION OF SYSTEM COMPONENTS.
 THE IDEAL LOCATION WILL VARY BY HOUSE.





Identify the main return duct at the point after any secondary returns feed into the main return. This is where the damper box will be installed. (Install the damper box to allow for the shortest and straightest duct runs possible.)

Move the Damper Box to the installation location. Be careful when moving the damper box to the attic as to not damage the damper or damper actuator.

Install the gable vent and transition, (outside air intake,) on the North side of the building. If this is not possible, install the gable vent on the West or East side. Installing the gable vent on the South side may significantly degrade system performance. If installation on the North, West or East side are not possible, FAMCO recommends using a rooftop intake. Preferred orientation for roof vents is the same as for gable vents.

Connect a flex duct from the intake transition to the FRESH AIR port on the Damper Box.

Cut the main return duct in a location that will allow re-connection to the damper box. (The damper box will replace a section of duct, so the duct may need to be shortened to prevent the restriction of return air.)

Connect the return duct to the RETURN port on the damper box.

Connect the duct leading to the fan to the FAN port on the damper box.

Install the butterfly damper and make it is oriented so gravity pulls it closed when not held open by airflow.

Wire properly sized/rated wire to the damper box actuator (LF24-SR US) and run to the ZIP controller install location.

LF24-SR US Color code:

- Common (Blk)
- + Hot (Red)
- Y Input, 2 to 10V (Wht)
- U Output, 2 to 10V (Grn)

Install the KMC STE-1451 Outdoor air temperature sensor and wire properly sized/rated wire. (See Outside air temperature sensor installation guide) Run wire to the ZIP controller install location.

Install the ECON-ZIP-10K ZIP Supply air temperature sensor (See ECON-ZIP-10K ZIP installation guide) Run wire to the ZIP controller install location.

Install the ZIP controller, connecting Actuator (ACT), Supply air temperature sensor (SAT), and Outdoor air temperature sensor (OAT) that were ran earlier and make all other necessary connections based on your application. (See ZIP Economizer manual)

Replacement transformer is supplied if existing transformer isn't sized to handle added components. (see ZIP Economizer manual)

Check that the replacement is sized for your application.

Test system for proper operation. (see ZIP Economizer manual) You should observe the physical operation of the damper at least once to insure it is stroking properly. You can do this by holding open the butterfly damper and watching damper movement and seal.