

#### Removal and Installation Instructions for Humiditrol® Enhanced Dehumidification Accessory (EDA) Unit Replacement Valve (100336-01 and -02)

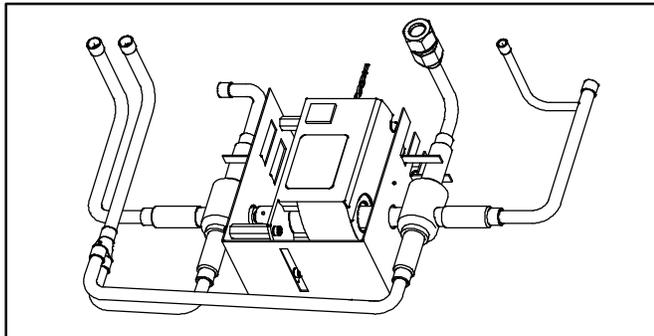


Figure 1. Humiditrol® EDA Valve Assembly

#### Shipping and Packing List

- 1 - Valve assembly
- 1 - Valve replacement instructions (this document)
- 1 - *Installation and Service Instructions for Humiditrol® Enhanced Dehumidification Accessory (506064-01).*

#### Required, Field-supplied Parts

- 12 - 6" tie wraps

#### Confirm Valve Assembly Failure

Before beginning the valve removal procedure, first confirm that the valve is not operating properly and must actually be replaced. Remove the two screws from the center access panel and remove the panel (see figure 2).

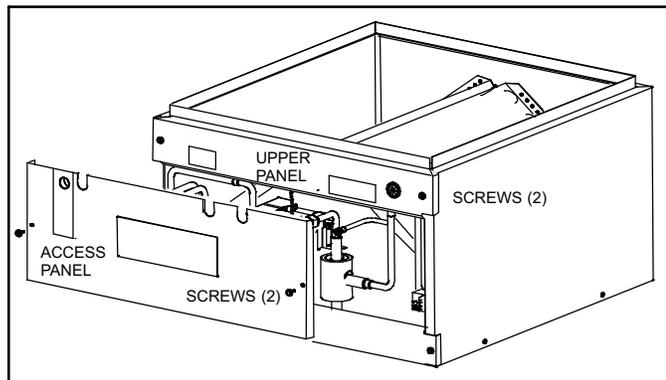


Figure 2. Accessing the Valve

#### Mechanical Checkout

Following the steps in figure 3, determine if the valve rotates mechanically through its full range. Make sure all mechanical connections are tight and properly aligned.

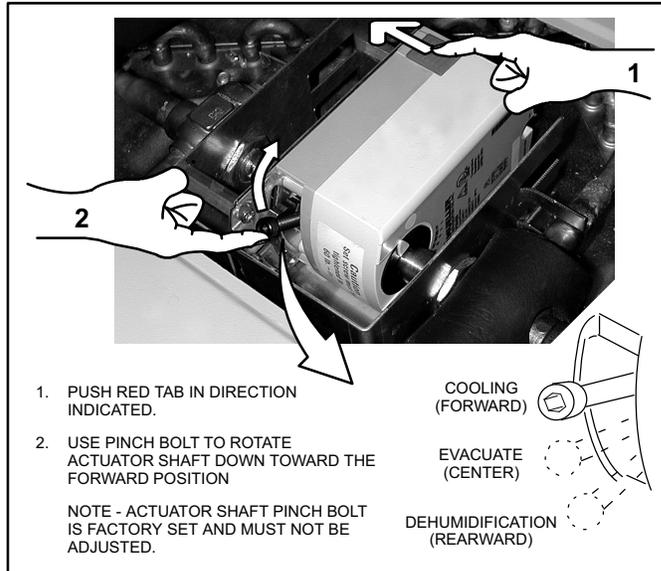


Figure 3. Set 3-Way Diverting Valve to Evacuate Position

#### Electrical Checkout

The valve assembly requires a 24-volt power source to operate (open and close) the valve. Shut off any power to the EDA. Note the location of wires from valve assembly on the 24-volt relay in the EDA. Remove wires from the relay. (see wiring diagram in figure 6 on page 4).

Mechanically move the valve lever to the cooling position (forward).

1. Apply a 24-volt source across the red and orange actuator wires. Motor should drive to the dehumidification position (rearward).
2. Apply a 24-volt source across the red and violet actuator wires. Motor should drive to the cooling position (forward).

#### Replace valve if...

- the valve fails the mechanical checkout, or,
- the valve fails either of the two electrical tests.

#### Refrigerant Recovery

Follow these procedures to recover refrigerant from the system:

1. Set the valve assembly lever to the cooling (forward) position. (This will allow for a faster recovery of the system refrigerant back to the outdoor unit. If the valve has seized and can not be moved, the system refrigerant will still return to the outdoor unit).
2. If the unit is equipped with a low-pressure switch, this pressure switch must be bypassed to allow system pressures to pump down to 5 psig.

- Set the room thermostat a minimum of 5°F below room temperature to call for cooling.

## ⚠ IMPORTANT

Because the two stage compressor bypasses pressure inside the scrolls during first stage operation it is necessary to operate the compressor on 2nd stage to recover all refrigerant into outdoor unit).

- Connect a set of R-410A refrigeration gauges to the liquid and vapor service valves at the outdoor unit.
- Allow system to run for 3 or 4 minutes to balance out pressures in system.
- Close liquid line service valve.
- Observe vapor and liquid pressures on gauges. Once the pressure reading on both gauges is less than 5 psig, close the vapor service valve at the unit. Observe gauge readings for any increase in pressure to confirm that all refrigerant from system has been returned to outdoor unit. If system charge prevents all refrigerant from being recovered into the outdoor unit. Recover the remaining refrigerant in clean empty R-410A cylinder.

**IMPORTANT: To prevent compressor damage, do not allow system to pump into a vacuum.**

- Turn "OFF" all power to the indoor and outdoor units.

## ⚠ CAUTION

Valve assembly must be repositioned to the evacuation position and refrigeration gauges checked to confirm that the low side system is void of pressure.

- Reposition valve to evacuate position (center) and recheck refrigerant gages to confirm low side of system is void of pressure.

### Valve Assembly Replacement

During the replacement of the EDA valve assembly, 1 to 2 psig of nitrogen pressure should be purged through the indoor system to prevent unwanted debris and moisture from entering the system. This will prevent oxidation from occurring during the brazing steps used to remove and install the new valve assembly.

*NOTE - this document shows the -036 EDA model; -024 and -060 are similar - differences are shown only at pertinent points.*

Remove two screws and remove upper access panel.

Shut off electrical power to the EDA. Disconnect electrical wiring between valve actuator and relay at the relay and remove the actuator's red wire from the wire nut splice.

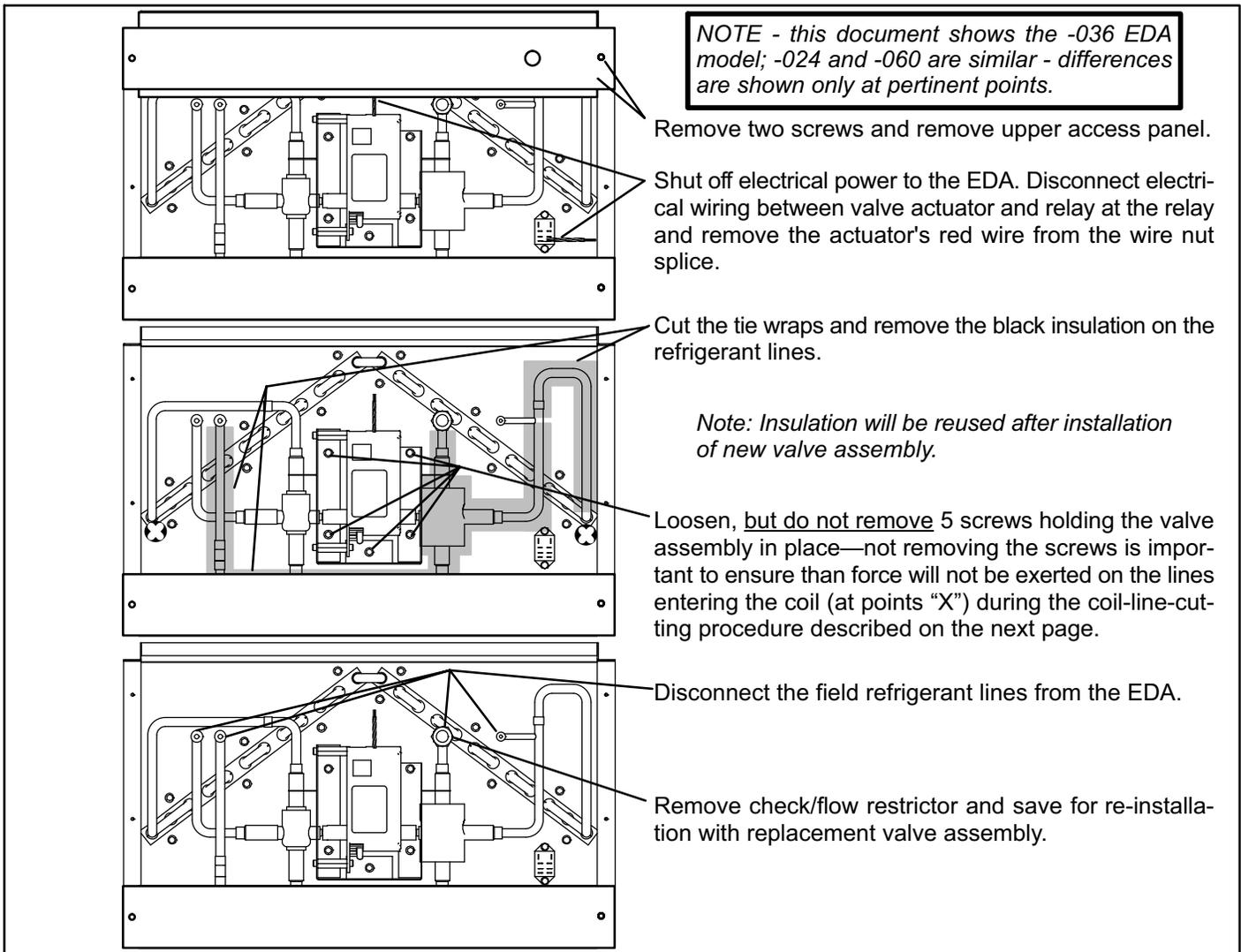
Cut the tie wraps and remove the black insulation on the refrigerant lines.

*Note: Insulation will be reused after installation of new valve assembly.*

Loosen, but do not remove 5 screws holding the valve assembly in place—not removing the screws is important to ensure that force will not be exerted on the lines entering the coil (at points "X") during the coil-line-cutting procedure described on the next page.

Disconnect the field refrigerant lines from the EDA.

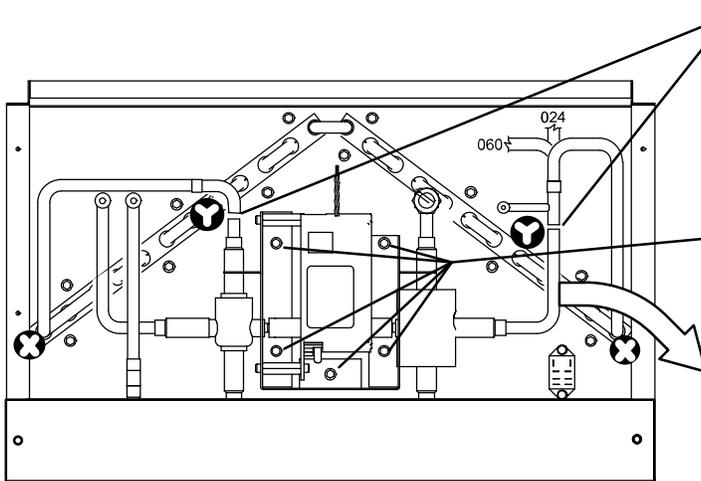
Remove check/flow restrictor and save for re-installation with replacement valve assembly.



**Figure 4. Valve Assembly Replacement**

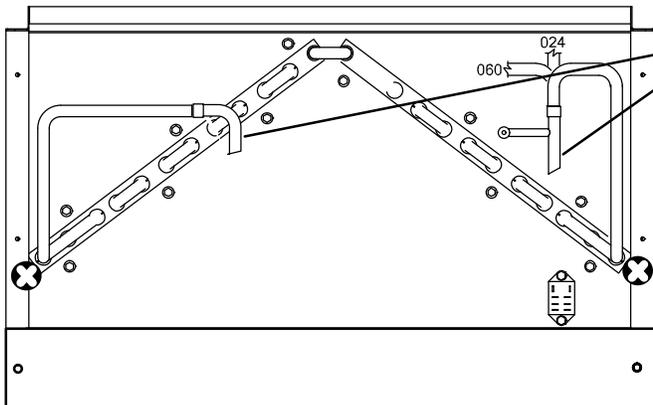
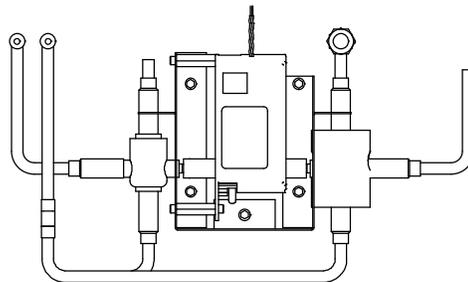
# ⚠ IMPORTANT

The next step - separating the valve assembly from the EDA COIL - is the most CRITICAL of the replacement procedures. Use caution to ensure that NO force is exerted on the two lines that enter the coil at the points on the diagram below marked "X". Any excessive force could result in weakening the copper at the connection to the coil, resulting in a refrigerant leak.



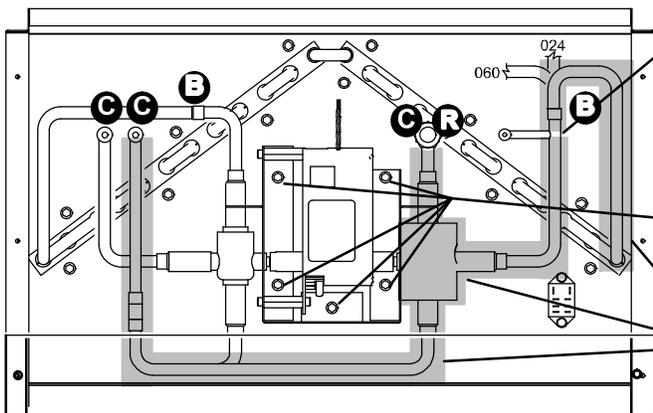
**Separating valve from coil**—The recommended procedure is to use side cutters to cut the two coil lines of the valve assembly connections where indicated at "Y".

After the two coil lines have been cut, remove the screws and the valve assembly from the EDA housing.



Un-braze the remaining pieces of the valve assembly carefully, being sure not to exert force at points "X" shown in diagram. Use a shield to protect the sheet metal from the heat (an elastomeric insulation material is used behind the panel).

*NOTE - this document shows the -036 EDA model; -024 and -060 are similar - differences are shown only at pertinent points.*



Insert new valve assembly and position for brazing. Install mounting screws, tightening only enough to hold the valve assembly in position (Do NOT fully tighten screws).

Braze (points "B"). **IMPORTANT: Use wet rag at all areas that could be overheated while brazing connections.**

Tighten screws.

Reinstall check/flow restrictor (point "R").

Reconnect all circled connections (points "C").

Re-install the insulation and secure with new tie wraps (field-provided).

**Figure 5. Separating Valve from Coil; Installing Replacement Valve Assembly**

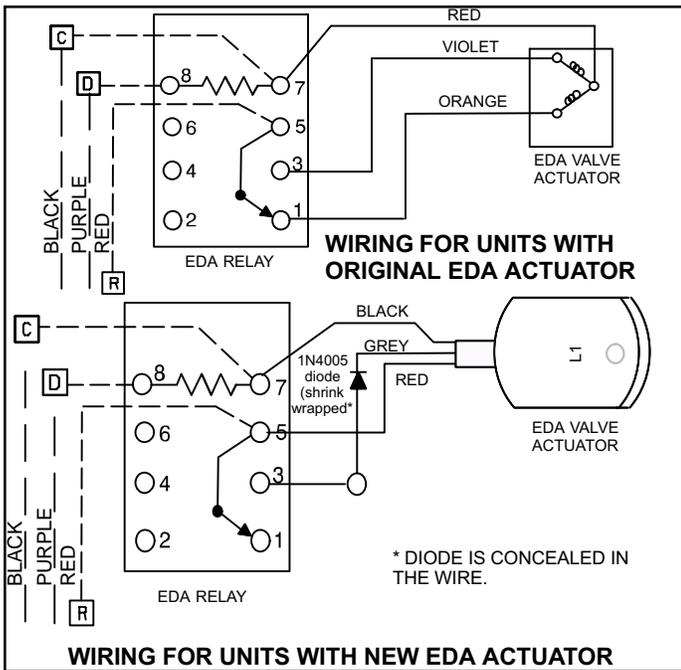


Figure 6. Factory Actuator Wiring

### Electrical Wiring

Connect electrical wiring from valve actuator to relay and wire nut splice as shown in the wiring diagram in figure 6. Apply power to EDA.

### Leak Testing, Evacuating, Charging

#### ⚠ IMPORTANT

The 3-way diverting valve actuator shaft pinchbolt (see figure 3) is factory set and is not to be adjusted.

#### ⚠ IMPORTANT

Prior to starting the outdoor unit for charging, be sure the 3-way valve is energized and in the “cooling” (forward) position (see figure 3).

1. Set the 3-way diverting valve actuator shaft to the center (evacuate) position for leak testing and evacuation (see figure 3).

**IMPORTANT! The actuator shaft must be set as described to allow the EDA to evacuate more quickly.**

2. Refer to instructions provided with the outdoor unit for leak testing, evacuating and charging procedures.
3. Very little charge is required for the additional volume of the EDA unit. When in normal cooling, the components will all be occupied by vapor that has very little weight. At most (depending on the model) an additional 1/4 pound of refrigerant may be required.

4. When shifting from dehumidify mode to cooling, or vice versa, wait at least 10 minutes for the system to reach stable operating pressure before checking temperatures and pressures, or adjusting refrigerant charge.

*NOTE - Prior to starting the outdoor unit for charging, set the thermostat to call for cooling (dehumidification OFF). It will take about 90 seconds for the 3-way diverting valve to energize and shift to the cooling position. To ensure that the 3-way diverting valve is energized and in the “cooling” (forward) position, observe the position of the 3-way diverting valve actuator shaft pinch bolt in figure 3; if properly shifted, the pinch bolt will be in the forward position.*

5. The charge must be checked with the system in cooling operation (dehumidification OFF). After testing and charging as required, set the thermostat to force a demand for dehumidification.

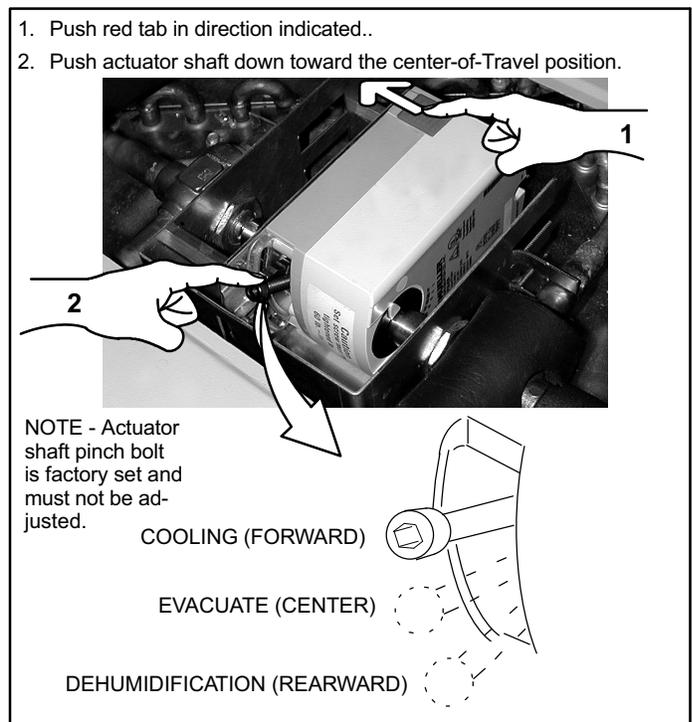


Figure 7. Setting 3-Way Diverting Valve to Evacuate Position

### Checkout and Operation

After the valve assembly has been installed and the system passes the leak tests and has been recharged, refer to the Humiditrol® Enhanced Dehumidification Accessory Installation and Service Instructions for checkout and operation procedures.

After unit checkout is complete, replace all panels.