

Gilmore Enterprises

Installation Manual

For

Bus Edition Type - IV

1972 - 1979

Air Conditioning Systems

For Air-Cooled Volkswagens

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COMPRESSOR BRACKET INSTALLATION:

Step 1:

Remove the engine tin below the cooling fan intake and the adjacent piece to the left.



Step 2:

Remove cooling fan and spacer behind fan and install new pulley.

Step 3:

Install the pulley at this time and hold it in place with the original fan bolt do not reinstall the spacer from behind the fan as shown.





Step 4:

Install the compressor bracket using the four 8mm x 20 mm hex bolts and a flat and lock washer.

Step 5:

Install the compressor belt at this time.

It is best to install the belt by slipping it between the cooling housing and block from the compressor bracket side.

**Step 6:**

Note: Install the adjuster to the compressor using the 10mm x 110mm bolt a flat washer, lock washer and nut. Only tighten the nut until the lock washer is just flat and no more.

The adjuster is made to float on this bolt.

If you overtighten the nut on the bolt, it will possibly damage the compressor by cracking the compressor case.

****THIS WILL VOID THE COMPRESSOR WARRANTY.**



Mount the A/C compressor to the bracket but first put the belt on the clutch pulley groove farthest from the compressor. Then mount the compressor to the bracket using two 10 mm x 35mm hex bolts with a flat washer, lock washer, and nut.



Step 7:

After the compressor is mounted with the belt installed tighten the belt by prying the compressor over until belt has sufficient tension and **then tighten the nut on the adjuster bracket.**

Step 8:

Install the condenser assembly approximately 5" behind the front cross member. The condenser is installed using six #10 x 1/2" screws. If you have a camper, the sink drainpipe can now be positioned in front of the condenser.



EVAPORATOR INSTALLATION

Step 9:

Drill two 1 ¼" holes in the floor to the right of the heater/defroster tube. Drill each hole, one on either side of the floor indent as shown.



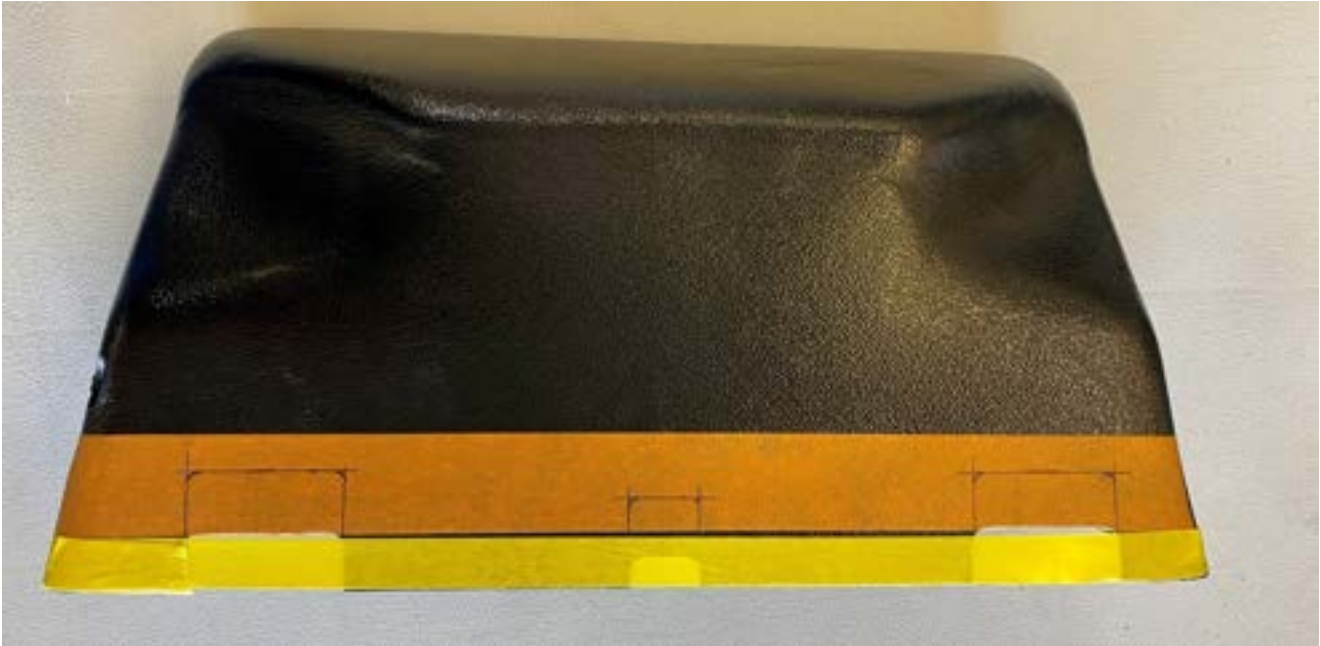
Top View



Bottom View

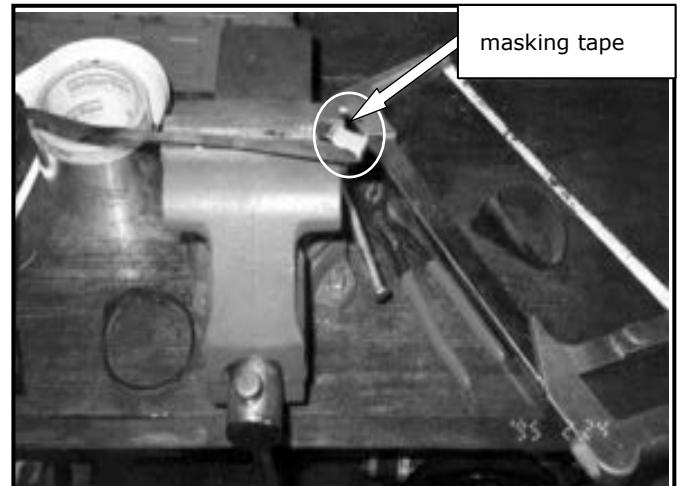
Step 10:

Remove the glove box door and glove box. It is necessary to trim $\frac{3}{4}$ " from the glove box. (As shown with yellow tape) This is best done by using $\frac{3}{4}$ " masking tape all around the edge of the glove box. Do not forget to add the stock glove box cutouts (As shown with orange tape).



Step 11:

It will be necessary to shorten the strap that holds the glove box in. The easiest way is to use a piece of $\frac{3}{4}$ " masking tape placed on the end of the strap; then straighten out the current bend and re-bend the strap $\frac{3}{4}$ " shorter using the tape as a guide. Leave the glove box out at this time.

**Step 11****Step 12:**

Remove the left and right plastic defroster/fresh air ducts. They will need to be cut. The two round duct openings in the dash will now become air conditioning ducts. Cut the ducts as shown.

(Save both pieces)

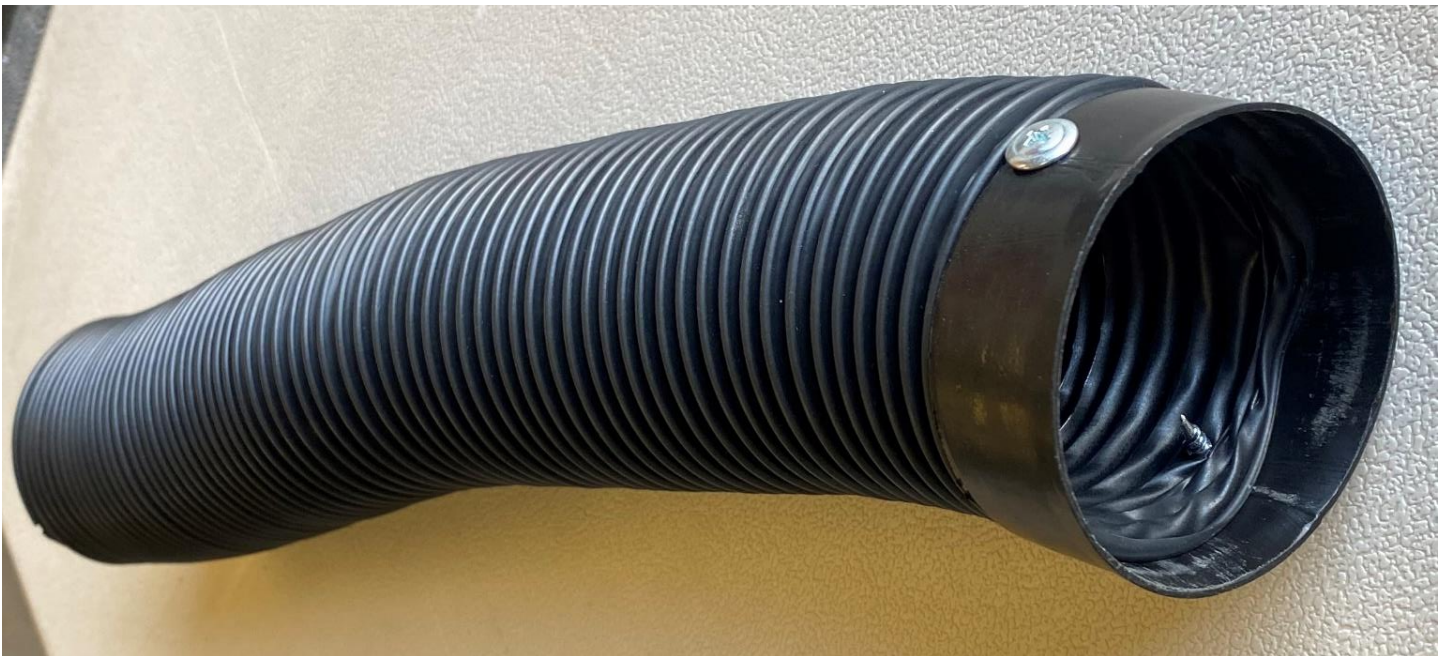


Step 13:

Tape over the opening on both ducts as shown with the aluminum tape supplied and re-install them at this time.

**Step 14:**

Install the 2 ½" diameter hoses to the cutoff piece of ductwork that attaches to the dash vents with two self-drilling screws, one on each side of the hose. The 2-ft. length attaches to the right vent and the 5ft. piece attaches to the left dash vent. Connect hoses to vents using two #8 self-drilling screws per hose.



Step 15:

Route the left side hose above the steering column and over the radio and behind the defroster duct work as shown.

Step 16:

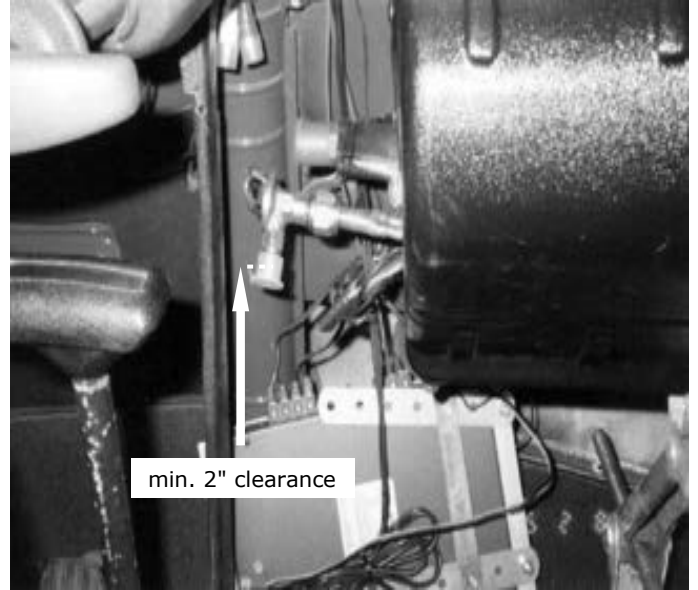
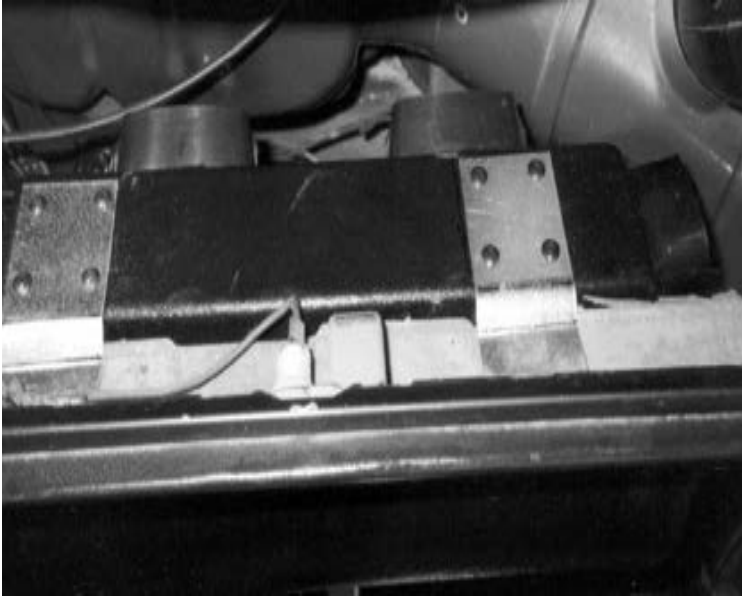
Connect the 2-ft. hose to the right-side dash vent as shown. Let both the left and right hoses hang at this time.





Step 17:

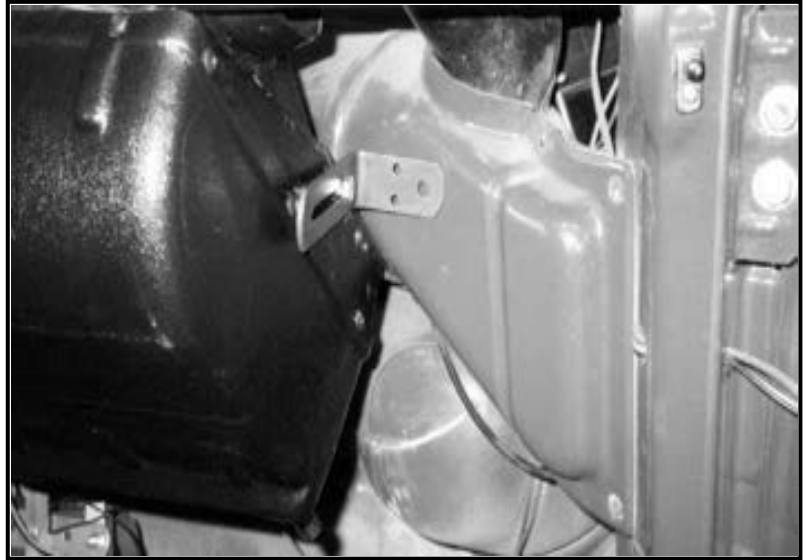
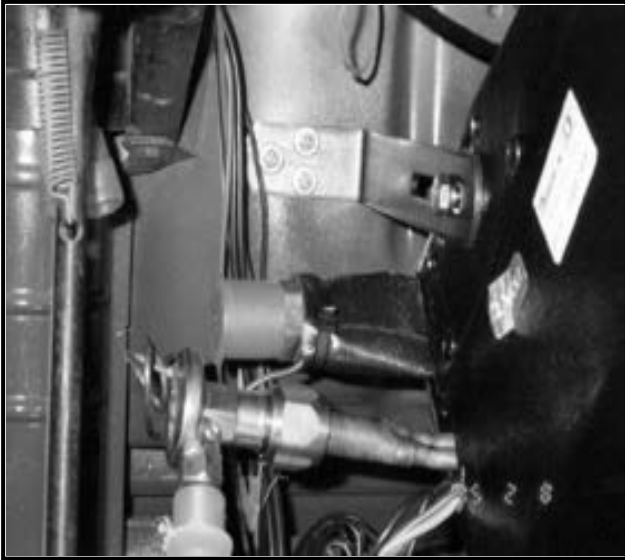
Mount the evaporator as shown by slipping the metal tabs onto the underside of the dash and far enough to the right so the expansion valve will clear the hand brake by at least 2".

**Step 18:**

The evaporator can be held in position by using a block of wood or a scissor jack as shown.

Step 19:

Install the mounting brackets at this time. The long one goes on the left side and the short one on the right side. It will be necessary to bend the right-hand bracket somewhat to fit flush on the air vent.

**Step 20:**

After you have secured the evaporator in place, make sure that the emergency brake lever will clear the expansion valve by at least 2" when the emergency brake is engaged.

Now that you can see how the evaporator will be positioned in the bus, remove the evaporator and **re-install the shortened glove box with the shortened strap.**

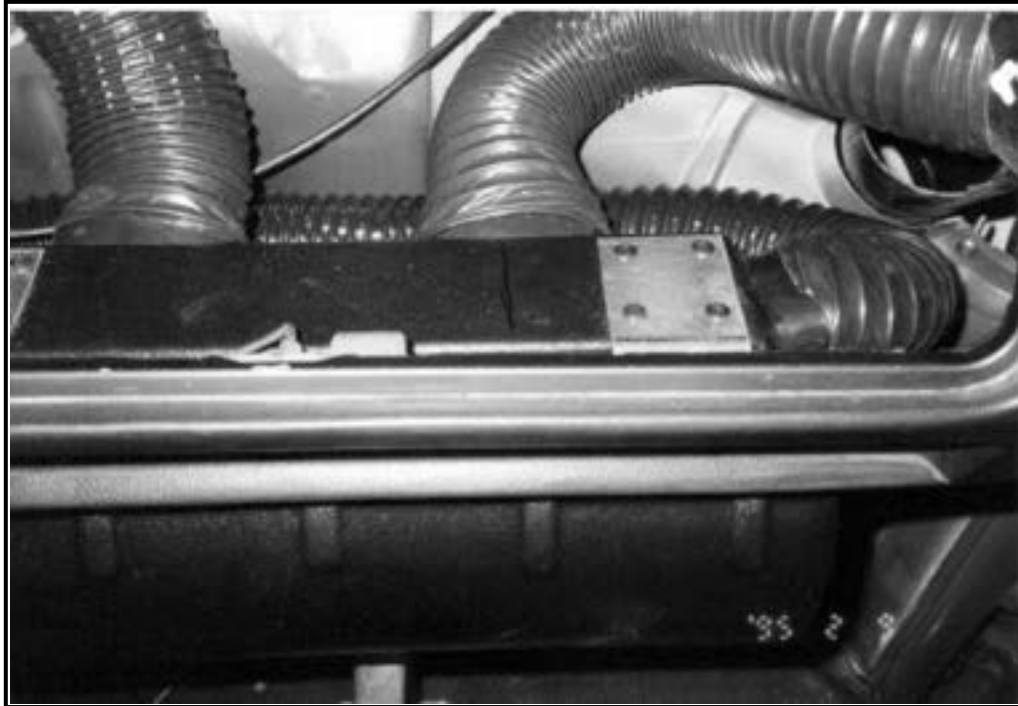
Step 21:

The additional dash vent hoses are installed at this time to the 2" hose connection on the right side of the evaporator. Install a 3-ft. length of 2" hose with two self-tapping screws. Install the other 2" hose (42") to the left side connection on the evaporator with two self-tapping screws.



Step 22:

****The glove box was left out in the picture for clarity only. It shows how to route the right-side hose below the other 2 ½" hoses. This can easily be done from the underside of the dash.**

**Step 23:**

Mount the control panel at this time, as shown, using two #8 x 1¹/₄" screws. After mounting the control panel, route the capillary tube over the emergency brake assembly.



NOTE: It is better to put the ball vents on each side of the emergency brake handle and move the switch panel to the left of the steering column for a more even cooling.

**Step 24:**

Install at approximately a 45° angle to clear the tubes, 3" of the capillary tube into the fins in the evaporator coil.

Step 25:

Install the 2 ½" hoses to the evaporator and re-install the evaporator assembly and secure in place. **Route the right side 2" hose.**

Step 26:

Route the left side 2" hose over the emergency brake assembly and over the steering column mounting plate and let hang at this time.

Step 27:

Install the two round vents at this time using #8 x 1" screws. The vent to the right of the emergency brake needs only one screw because one side of the vent is held up by the evaporator housing as shown. Connect hose.



Step 27

Step 28:

Install the left side vent using two #8 x 1" screws, as shown, and connect hose.

NOTE: For more even cooling move vent to left side of emergency brake and put control panel left of steering column.



Step 28



A/C HOSE INSTALLATION

Step 29:

Install the # 10 and # 8 hoses on the compressor and route them along the left frame rail using the rubber coated clamps.



Step 30:

Route the #8 hose down along the frame rail as shown in the pictures and attach it to the condenser #8 fitting and to the compressor. Secure the hose to the frame with the hose clamps provided.

**Step 31:**

Route the #10 hose along the frame as shown. Attach the hose to the compressor at this time and make sure you have enough slack in the hose to allow for movement. Run the hose alongside the #8 hose on the frame and past the condenser.

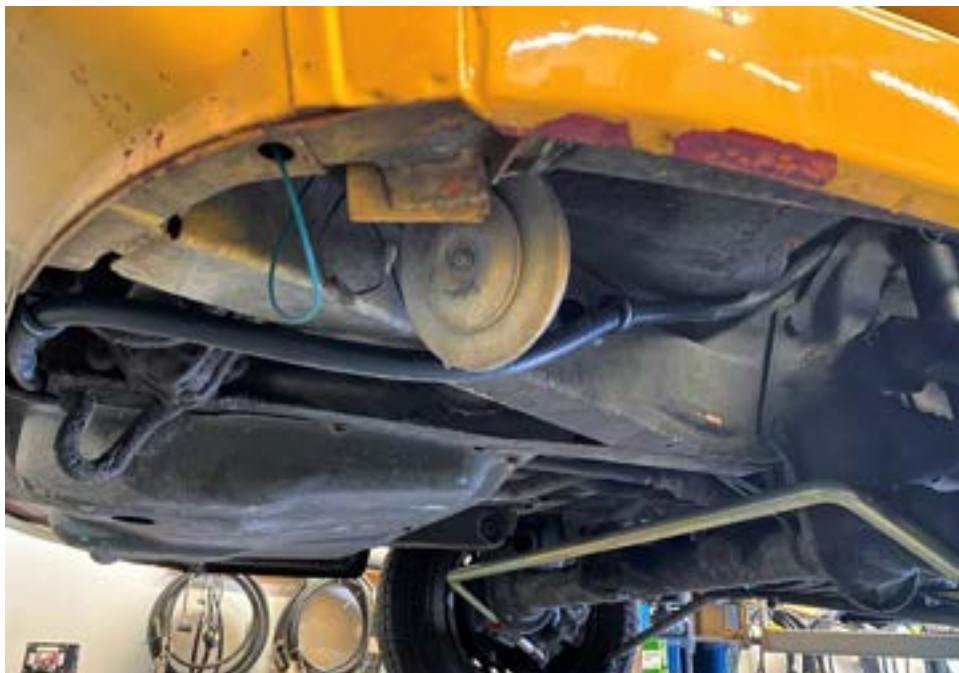
*Anchor the #10 hose with clamps provided up to the condenser.





Step 32:

At this time the dryer should be mounted in the left front fender well as shown. Make sure that it does not rub the tire when wheel is turned hard to left. Also, connect the short #6 hose from the condenser to the dryer and secure it in place with clamps provided.



Step 33:

This step takes a little bit of time to route the hose in the proper location to make sure that everything clears.

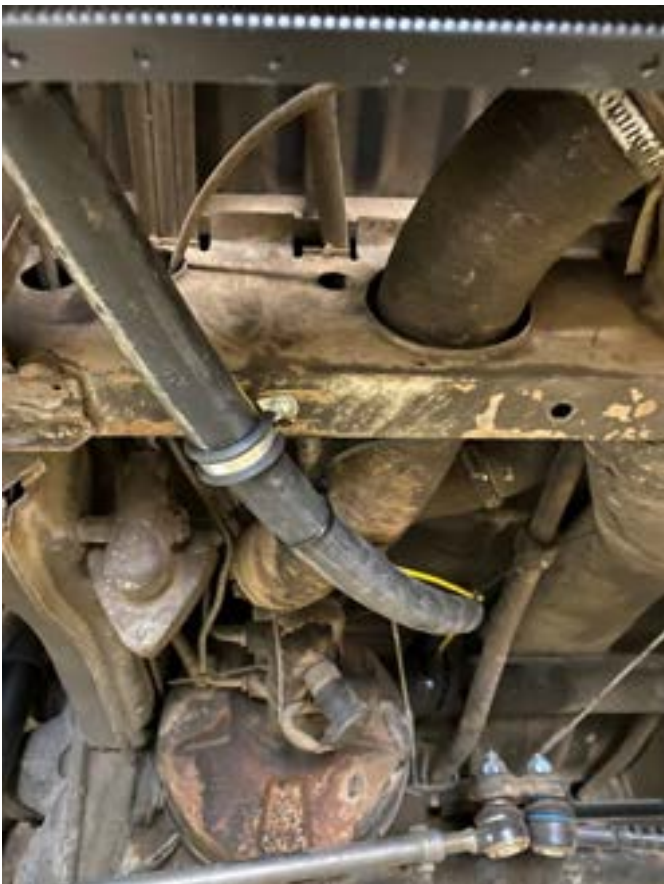
Connect the long #6 hose to the dryer and, along with the #10 hose, past the heater tube and up through the holes in the floor.



The #10 hose goes through the floor closest to the heater tube. Attach the hoses to the evaporator at this time.

Make sure all O-rings are in place (One O-ring at each connection).

Now go back and attach the hoses as shown with the clamps provided.





Step 34:

With all the hoses secured to the frame and zip ties, make sure that the hose connections all have O-rings in place and tighten at this time.

Step 35:

The Red and Yellow wires on the condenser go as follows:

Run the Red wire along the hoses to the rear of the bus and push it up alongside the #8 hose through the grommet and connect it to the compressor using two female spade connectors and the double ended male spade connector.

Run the Yellow wire from the condenser along the hoses to the front of the bus and push the wire through the grommet on the #6 hose.



Step 36:

The pre-wired relay and circuit breaker mount to one of the screws on the firewall end of the bracket that holds the evaporator secure.

Connect the wires as follows:

- The Yellow wire from the condenser goes to the Yellow wire of the relay.
- The Brown wire on the relay is grounded.
- The Red wire on the relay is connected to the circuit breaker.
- The other Red wire on the circuit breaker goes to the +12V on the fuse box non-switch and not through a fuse (connect directly to large Red wire on fuse box from battery).

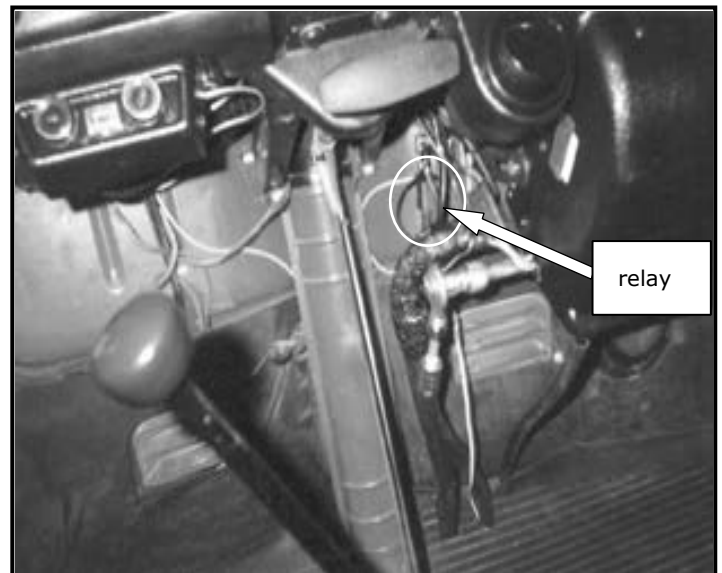


Step 37:

Route the wires from the control panel over the emergency brake and connect as follows:

- The Blue wire from the control panel connects to the Blue wire on the relay.
- The Pink wire from the control panel connects to a switched +12V source on the fuse box.
- The 3-wire plug connects to the evaporator 3-wire plug.

Make sure the **Black wire** on the evaporator is connected to ground.



Step 38:

Check all your connections, both wires and hoses, and make sure nothing will get in the way of the operation of the clutch pedal, brake pedal, steering, emergency brake, etc.

Step 39:

Have the system vacuumed & charged at an authorized shop and checked for leaks. Charge with approximately 22 – 24 oz. of R134 freon. The high side pressure on a summer day (90°) should read approx. 175 – 190° at idle.

Step 40:

After the system is charged and checked for leaks, it will be necessary to finish wrapping the fittings on the evaporator with the insulating black cork tape provided and install the drain hose.

