

1983-1988 THUNDERBIRD / COUGAR **HEATER PANEL UPGRADE**

FOR ALL VEHICLES WITH MANUAL AIR CONDITIONING (*NOT* ATC)

SETTING UP

▶ ***Donor Cars:***

- 1991-1995 Taurus / Sable (manual A/C only)
- 1992-1996 Mustang
- 1992-1995 F-150 (manual A/C only)
- 1992 - 1993 Thunderbird / Cougar (manual A/C only; check for correct settings)

▶ ***Parts Required from Donor Cars:***

- Heater Panel
- Slider Cable (complete and unbent!)
- All Related Wiring Harnesses (with approx. 6" of wiring attached)
- Vacuum Harness (with approx. 6" of vacuum line attached)
- All Nuts and Screws Related to Donor Car's Panel

- Rear Defrost Switch (optional --see Page 6 for more information)

▶ ***Tools & Materials Required:***

- Philips Screwdriver
- Small Straight-Slot Screwdriver
- T-20 Torx Screwdriver or Socket
- Needlenose Pliers
- Utility Knife / Scissors
- Wire Cutters / Splicing Tool
- Socket Set (screwdriver attachment a plus)
- Power or Cordless Drill (5/16" bit)
- 1-2 Feet of 1/8" I.D. Vacuum Hose and Tees
- Two 1/2" Hex Nuts
- Dremel Tool (optional)

NOTE: If you wish to install the new panel in the existing location, some steps will be omitted. If you are installing the panel in a different location, relocation of wiring and vacuum harnesses will be necessary. Be sure that this will work without interference from any objects, metal, etc. behind the dashboard.

PART 1

REMOVAL OF EXISTING HEATER PANEL

- 1) **DISCONNECT THE VEHICLE'S BATTERY.**
- 2) Remove the 4 Phillips screws from the radio trim panel; set all aside.
- 3) Remove all 4 Torx screws from radio support. Disconnect all wiring and/or harnesses from radio, then remove radio and set aside.
- 4) If car is 1985-88, remove the 4 Torx screws from the storage bin; remove bin and set all aside.
- 5) Remove the 4 Torx screws for heater panel and set aside.
- 6) Very gently, wiggle the panel out toward you. There may be a significant amount of tension on the panel; be patient. Remember, this panel has probably never been removed before, so everything is still rather tight. Try to pull out as much of the panel as you can, because you will need access to the rear of the panel next. *(Refer to Figure 1)*
- 7) Starting on the left side, unclip the D-shaped wiring harness. This is for the fan speed switch. *(Refer to Figure 2)*
- 8) On the far right of the panel face, pull very hard and remove the rear defrost switch knob. Then, using a 1/4" socket, remove the defrost switch retaining screw *(underneath the panel; refer to Figure 2)*. The switch then rotates and pulls out of the back.
- 9) Unclip the red harness from the back of the panel.
- 10) Next, pull off the cable retaining nut on the back top side of the panel. The cable can then be pulled off the assembly. **Be careful not to bend it!** *(Refer to Figure 2)*
- 11) Unclip the remaining harness from the panel back. This is the lighting harness with two wires. *(Refer to Figure 2)*
- 12) The only thing left now to remove is the vacuum harness. Using an 8mm socket, unscrew the two retaining nuts from the green-colored harness. These are quick-screw aluminum nuts that can be unscrewed to remove, but must be pushed on to tighten. Save these for later.
- 13) Wiggle the harness gently back and forth until it frees. You may hear a pop or a hissing noise; this is just the vacuum lines releasing the vacuum. [When the new panel is working, the vacuum will build up again]. Set the old panel aside.

PART 2

INSTALLATION OF NEW HEATER PANEL

CABLE ATTACHMENT

- 14) First, you need to remove the old slider cable from the car and install the new one. Disconnect the glove box. You will need to shine a flashlight (through the glove box hole) to the left. Follow the old cable to the heater case. The cable is clipped onto the casing approximately 8" back from the end; the end itself is attached to the bellows lever. The first thing to do is to simply pull the end of the cable off of the bellows lever. Next, get a pair of needlenose pliers and squeeze the plastic retainer tabs -- just to the right of the cable attachment loop -- together very hard. At the same time, pull the cable out to the right. When the cable is freed, remove it from the car. *Utmost care in removing the cable carefully is essential in this step if the old cable is to be used again.*
- 15) The new cable can now be installed. There is a metal adjustment clip on the end of the new cable (if there isn't one, use the clip from the old cable). It needs to be pulled up all the way to the curled end of the cable *(Refer to figure 3)*. To install the cable, slide the curled end through the loop on the heater case lid. Pull through until the retaining clips snap, then place the looped end of the cable on the bellows lever. The lever must move in order to slide the cable end onto it; this is good for now, because additional adjustments, if any, can be made at a later time. Let the other end of the cable hang out into the passenger side footwell.

▶ WIRING

- 16) To wire in the new harnesses, the existing car wiring must be used. To remove the wires, you must release the tabs holding them into the harness. If you look directly into the end of the harness, you may be able to see the clips. Get a very small screwdriver and place it into one slot in the harness (if you've never done this before, you might want to practice on a harness that came with the new panel--**just try one wire only!!**). Press up on the screwdriver, and at the same time, pull the wire out of the other end of the harness. Remember, each wire has its own function, and just one misplaced wire can cause a blown fuse, a short, or worse, even a fire. When you are confident that you can successfully rewire, move on to the next step.
- 17) Start with the leftmost existing harness, the D-shaped fan switch harness. The new harness is square. Note the wiring colors between the two. The same five colors should appear in both harnesses; this means that all you must do is simply rearrange the wiring order. Remove the black (12v - ground) wire from the D-shaped car harness, then remove the black (clipped) wire from the new square harness. Place the car wire into the new harness, then put the clipped black wire into the car harness. **Remember , do only one wire at a time!!** (Refer to Figure 2)
- 18) Proceed to do the same for each of the other four wires, matching color for color. This should only take a few minutes, once you get the hang of it. When you are finished, set the car harness aside, and place the old harness outside the vehicle.
- 19) Next, compare the old red rectangular harness with the new one. Note that it is the same harness with the wires in different locations. Again, start with the black wire, switching old for new. When completed, set both aside.
- 20) The final wiring harness is just two wires. On the new panel, the harness from the car just clips on, once the short jumper harness (with the light bulb) is removed. Be sure that the wiring is in the correct order, then move on.

▶ VACUUM TUBES & CONNECTORS

- 21) Since the new panel's vacuum connector is different than the one from the car, the existing car vacuum tubes must be spliced in to the new connector. This is not as bad as it sounds; however, it must be done correctly the first time in order for the vacuum to build properly. Find the car's vacuum lines behind the old heater panel location. There are five tubes: black, yellow, white, red, and light blue (**Note:** Sometimes, the tubes are all black, with colored stripes that match the stated colors. This is OK!) Pull the tubes out into the passenger's side footwell so you can work on them more easily. You will need to keep as much of the tubing as possible, if you are moving the panel location. (Refer to Figure 4)
- 22) With a pair of scissors, cut the lines approximately 2"-3" back from the old coupling. Save the old coupling, and set it aside.
- 23) Using the new vacuum connector as a guide, observe where the old and new tubing will be spliced. All tubing should be squared off at the cut ends and should be of equal length. Cut five pieces of new 1/8" I.D. hose, each piece 1 1/2" in length. Push one new piece onto the red tubing from the car, then the yellow, etc., until all new hoses are attached to the car vacuum tubes. **Only push the hoses onto each tube about 1/2" - 3/4"**! More than likely, it will be difficult to push the hoses into the tubing; however, it is necessary that the splices be as tight as possible. Take your time.
- 24) Get the new vacuum tubing harness, and carefully push each colored tube into the corresponding hose from the car. Be sure that each color from the new harness matches the color from the car tubing. You may need to match a solid-colored tube with a striped tube (i.e. a solid red tube with a black tube/red stripe). When the two tubes meet inside the hose, there should be very little, if any, gap between them. When done, set the new tubing harness aside. All wiring and vacuum harnesses should now be out of the way.

► PREFITTING OF PANEL

(NOTE: IF YOU ARE USING THE NEW PANEL IN ITS ORIGINAL LOCATION, SKIP TO STEP 30)

- 25) Get the new panel and prefit it to its new location (the former storage bin area). Note that it is necessary to cut out some plastic in order for the panel to properly (and visually) fit. The new panel uses only the top two holes of the former storage bin; the lower two holes must be cut out. With a utility knife or a Dremel tool, cut out the two lower tabs and square up the plastic. *Refer to Figure 1* if you need visual help. Or, it may be easier for you to grind away the lower portion of the heater panel so that you may leave the dash intact. You can use a bench grinder or Dremel tool to do this.
- 26) Using the drill and 5/16" bit, drill out (and round out) the guide holes, underneath the screw holes. Leave the top screw holes alone. The new panel has larger guide posts, so it may be necessary to use larger size bits to round out the guide holes.
- 27) Place the panel in the new location. Check that all surrounding plastic does not interfere with the fit of the panel. Also, be sure that the guide pegs on the panel fit into the guide holes. This is a good time to temporarily screw in the panel, just to make sure that the panel will fit correctly. When you are confident of a good fit, take the panel out and set it aside.
- 28) You must now reroute all wiring and vacuum tubing to the new location. The existing car wiring will reach up, albeit tightly, and the new vacuum harness will probably be too long, but it will still work. The slider cable will also need to be obtained. First, push the vacuum harness up through and out of the new location. Next, push all wiring harnesses behind the old location and pull them through to the new area, and out to the front. All the wiring and vacuum lines will now be hanging out of the new location (except for the rear defroster harness, which will be addressed later). Also, watch the metal bracket behind the radio location; it can easily tear up a wire or vacuum line.
- 29) Push the slider cable up under the dash and out of the new location. Be extremely careful not to bend or kink the cable. It will more than likely fight you; be patient.

► INSTALLING THE NEW PANEL

- 30) Rotate the temperature knob on the face of the new panel all the way to the left ("COOL") side. Next, get the slider cable and hook the end into the hole on top of the sliding, toothed bar (behind the temperature assembly). Slide the bare cable down into the slot on the plastic retainer. Then, push the covered part of the cable forward into the retaining hole until it snaps in. The dial will rotate when you do this, as the bare cable slides into the cable covering.
- 31) Install the vacuum harness next, pushing it on very tight. Lock it down by pushing the two aluminum retaining nuts onto the guide pegs.
- 32) Clip on the 3 wiring harnesses: the fan speed harness, the red main power harness, and the light harness. After this is done, gently push the panel in to its location.
- 33) You will find that the panel tilts in toward the top slightly; it will need to be spaced in the back in order to fit and look good. Take one of the 1/2" hex nuts and place it behind the panel where one of the screws will go through the panel. Get one of the Torx screws and push it through the panel, through the hex nut, and tighten it slightly into the mounting hole. Do the same for the other side, then tighten the screws down all the way.
- 34) Reconnect the car's battery and start the vehicle. There should be a short hiss or snap behind the dash; this is the vacuum building up inside the tubing. If there is a constant hiss, there is a leak in one or more of the splices that you made; they will have to be fixed. Try all of the knobs on the panel, making sure that they all function properly. The temperature knob should turn easily (if not, it's bent somewhere). The fan speeds should all be in sequential order, and the controls ("A/C", "VENT", etc.) should all work right. If they don't, there is more than likely a wiring mistake somewhere. Also, try the lights to make sure that they work inside the panel.

**INSTALLATION OF THE NEW PANEL IS NOW COMPLETE.
THE REAR DEFROSTER (IF YOU HAVE ONE) IS NOT OPERABLE AT THIS POINT.
A NEW SWITCH MUST BE INSTALLED IN ORDER FOR IT TO FUNCTION AGAIN.**

**IF YOU WISH TO INSTALL A NEW SWITCH, CONTINUE WITH STEP 35.
IF NOT, THEN SEE THE "NOTES" ON THE NEXT PAGE.**

35) The new rear defroster switch can be obtained from a variety of donor cars. Good choices are a newer Taurus/Sable ('92-'93), a Mark VII or VIII, any Escort / Lynx / Tracer, a '92 - newer Grand Marquis / Crown Victoria, etc. First, however, you must determine where to put the switch.

If your vehicle has...

A) **A full console**, the switch can be placed in the lighter panel (the best and easiest location). Either a vertical switch (such as from a '92-up Taurus) or horizontal switch (such as from an '86-'91 Taurus) is acceptable. You may also place the new switch on the console panel, next to the power antenna switch (if so equipped), or any other location desired; however, the wiring will need to be lengthened if you place the new switch anywhere outside its present area..

B) **Split seats with the consolette and push-out ashtray**, you may need to find a creative spot. A suggestion would be next to the power antenna (the blank spot next to it is great if you don't have a power antenna). You should use a vertical switch in this instance, and again, all the wiring will need to be lengthened.

Before you connect the new switch, be sure to disconnect the battery again!

36) Once again, the harness must come with the new switch. The wiring colors may or may not be the same as the existing car wiring, but there is a fairly easy way to determine the wiring. There are usually only 5 wires in a Ford rear defroster harness:

• The following wires are usually a thinner gauge:

Black - Ground (12 v-)

Light Blue / Pink Stripe - Lights 12v+ (matches w/ same or Orange / Brown Stripe)

• The following may have either 1 or 2 wires:

White / Purple Stripe - Ignition 12v+ (matches w/same or White /Purple Stripe)

• The following wires are always a thicker gauge:

Yellow / Black Stripe - Constant 12v+ (matches w/same or Black / Yellow Stripe)

Grey / Black Stripe - To Rear Defroster (matches w/ same or a variety of colors)

By matching up the wires (either by using a shop manual or by process of elimination), you can get the new switch to work properly and safely. Sometimes all you need to do is switch the wiring from the car to the new harness; sometimes you must clip the ends of the car wiring and splice on the new ends. Either way, make sure that the wiring is safely connected, out of the way of anything that moves, and will not be exposed to moisture or metal.

When you are done, reconnect the battery, turn on the car either to "ACCESSORY" or "IGNITION", and try the switch. **(If you see or smell smoke, immediately turn the ignition off and disconnect the battery.** Determine where the problem is, then repair it and try again). Let the defroster run its cycle (ten minutes) just to make sure it's working properly.

TIPS AND SUGGESTIONS

Since you have moved the heater panel location, there are several possibilities for the empty space in the dash:

- A second radio;
- An equalizer;
- A stereo crossover;

or, possibly the slickest choice,

- A coin/cup holder panel from a '92-'95 Taurus / Sable. It looks like original equipment, fits exactly in the space, and solves the problem of where to put that cup in the morning.

Whatever you decide, be sure to check clearance behind the dash before you install.

When finished, replace all trim panels and screws.

▶ Be sure that you save all the old pieces and store them properly. Try not to trash the cable when you put everything in storage. If necessary, the old panel can be put back in, with the installation the reverse of this booklet.

Due to the difference in length of the heater cables, plus the relocation of the panel (if applicable), the new heater panel's temperature dial may be slightly stiff. You may wish to lubricate the cable before installation.

FIGURE 1

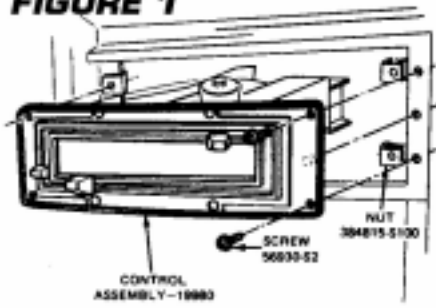
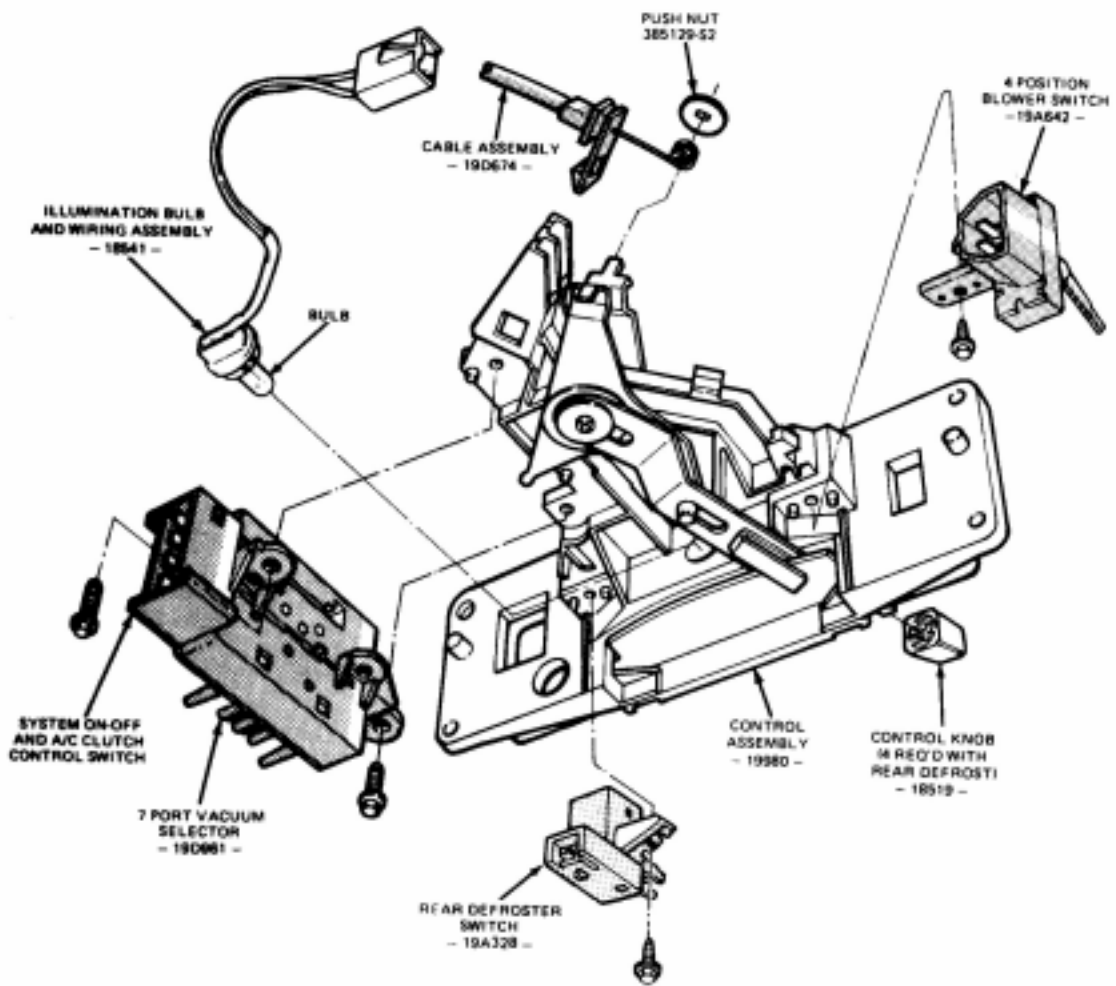


FIGURE 2 - WIRING HARNESS



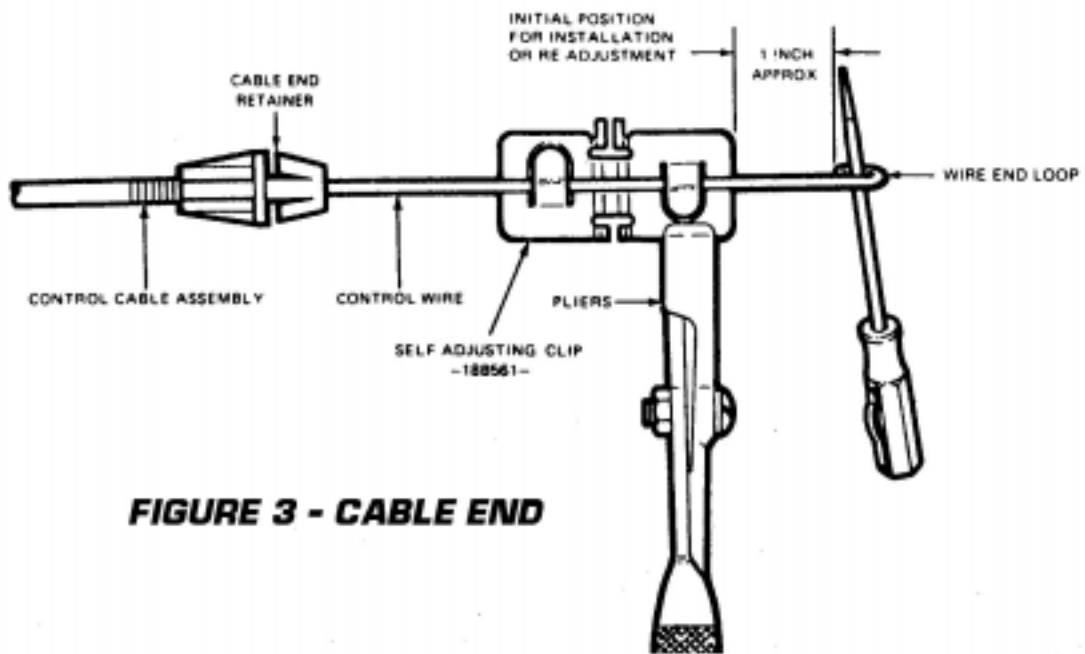


FIGURE 3 - CABLE END

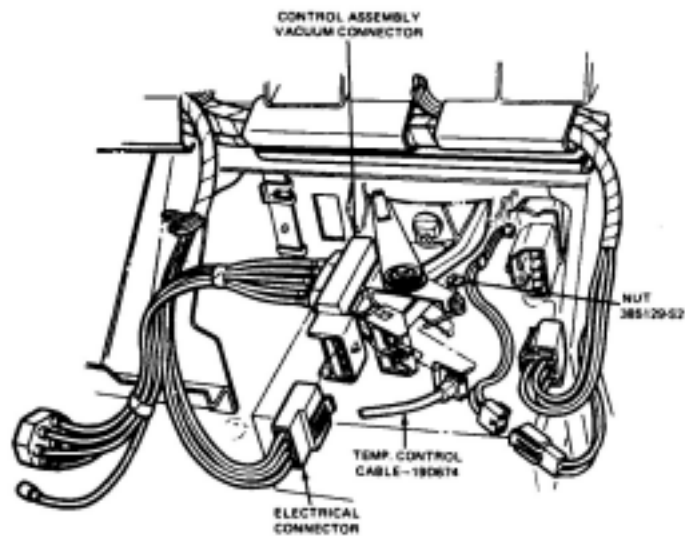


FIGURE 4 - VACUUM HARNESS