

# Replacing the Speedometer and Clock in a 3.0CS

Photos and text by Michael Thompson

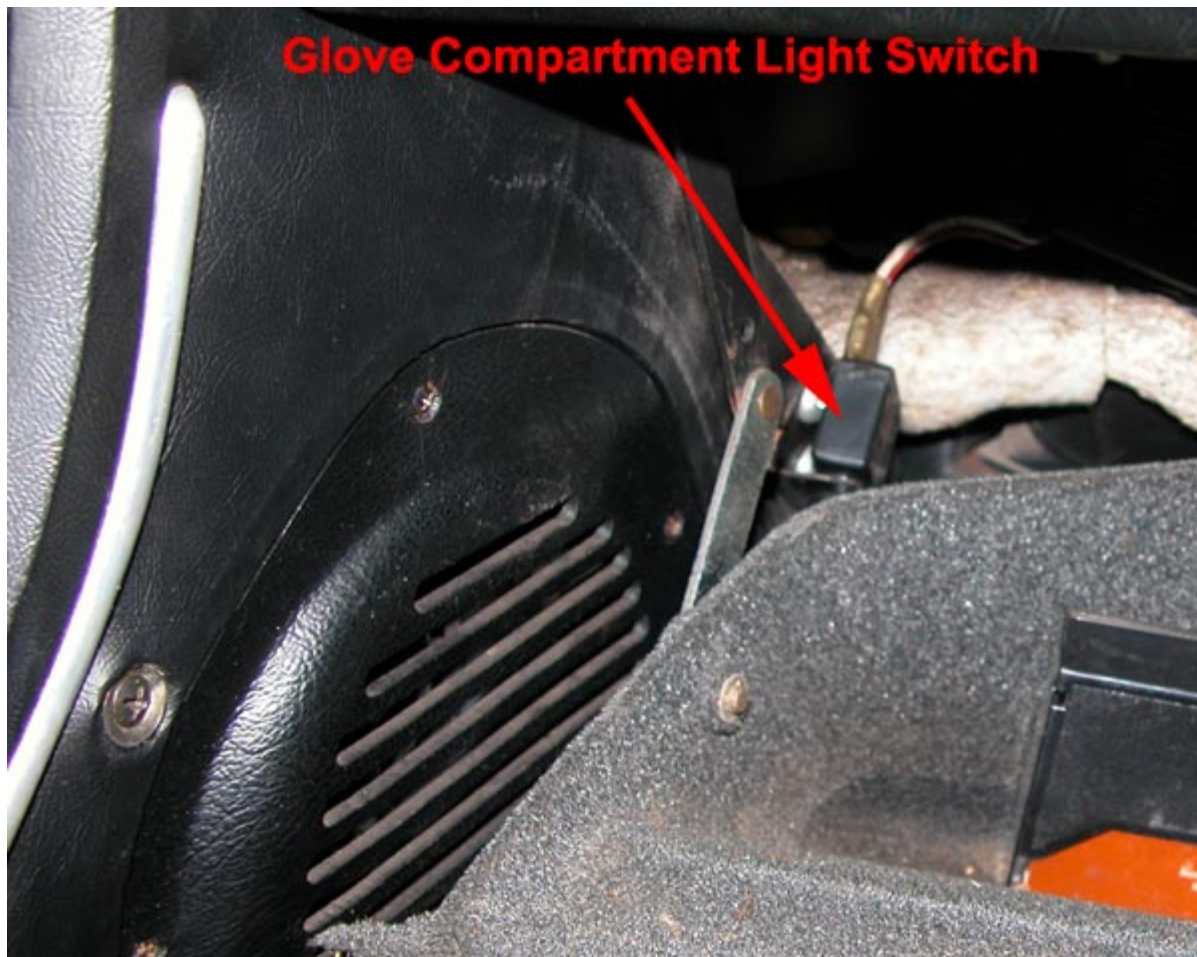
The odometer in my '72 3.0CS stopped working in warm weather. Since I only drive it in warm weather that became a bit of a problem. Using the very brief information in the factory BMW 3.0CS manuals and a lot of suggestions from members of the E9 Forum and the BMW CS Registry I was able to get the speedometer out without disassembling the entire car. [North Hollywood Speedometer & Clock](http://www.nhspeedometer.com) ( <http://www.nhspeedometer.com> ) repaired and returned the speedometer within two weeks. They are very nice people and communicated often and well. I reassembled the gauges and found that I couldn't get to the nuts that hold the top of the speedometer and tachometer in place. I didn't want to leave the gauges loose so I figured that this might be the time to disassemble the dash some more and fix the clock that has been broken for 25 years.

I suspect that BMW assembled the dash before the windshield and floor pans were installed. Maybe they had assemblers with really little hands? Some of the fasteners are really difficult to get to. The factory manual has pictures of a CS without AC so mine was more than a little difficult to work on.

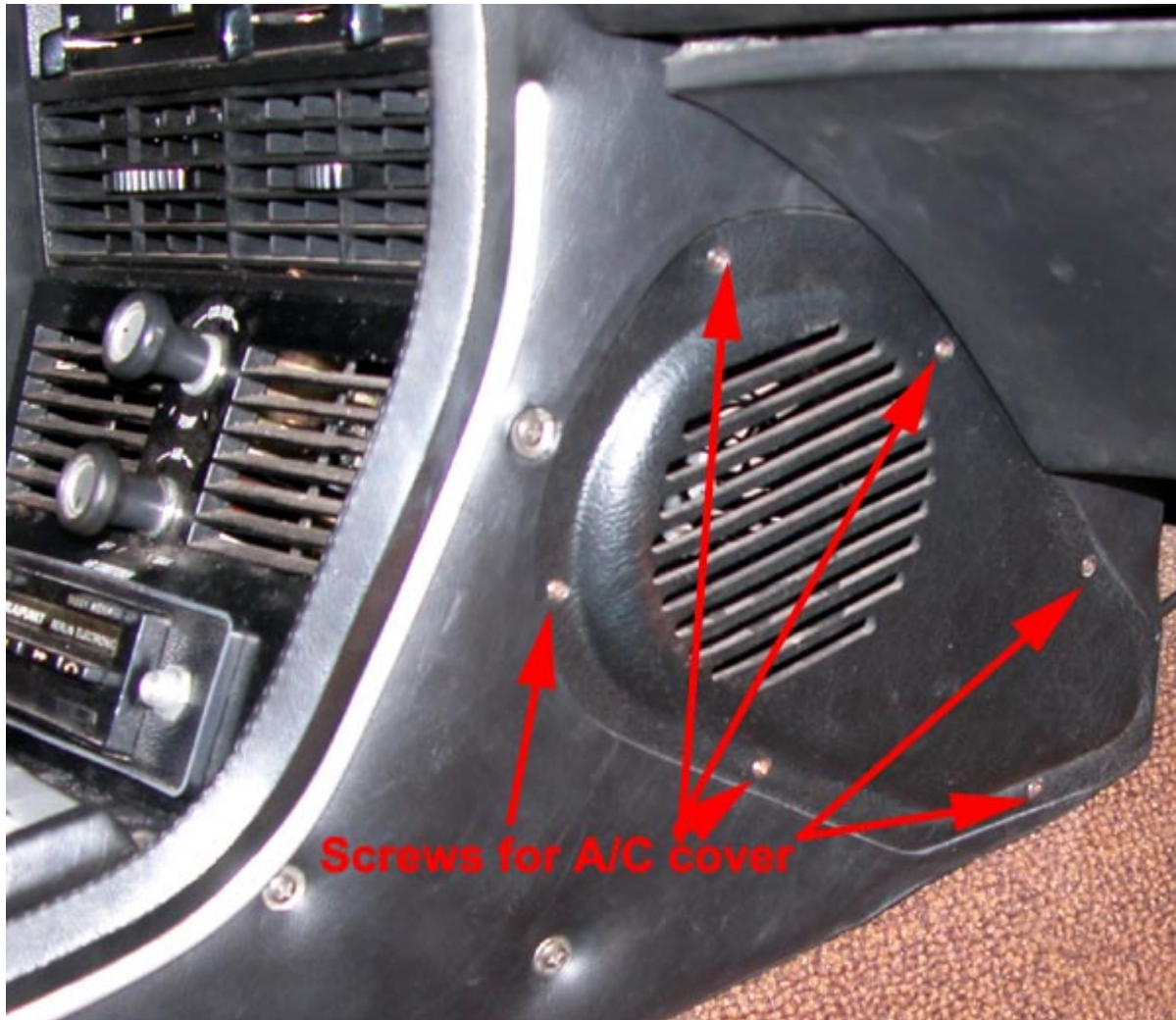
This procedure was done on a 1972 3.0CS USA model with A/C and electric windows. Yours will be a little different even if it is the same model and year as mine...

Disassembly starts with removing the pad that is below and to the right of the steering column. I disassembled and removed the center console. Several people suggested that this was not necessary, but I couldn't see how I was going to get to the nut that hold the right side of the gauges otherwise.

You need to remove the glove compartment light switch. I pulled both wires so the light would not stay on. There is a plastic nut that holds the switch to a bracket on the right console side.

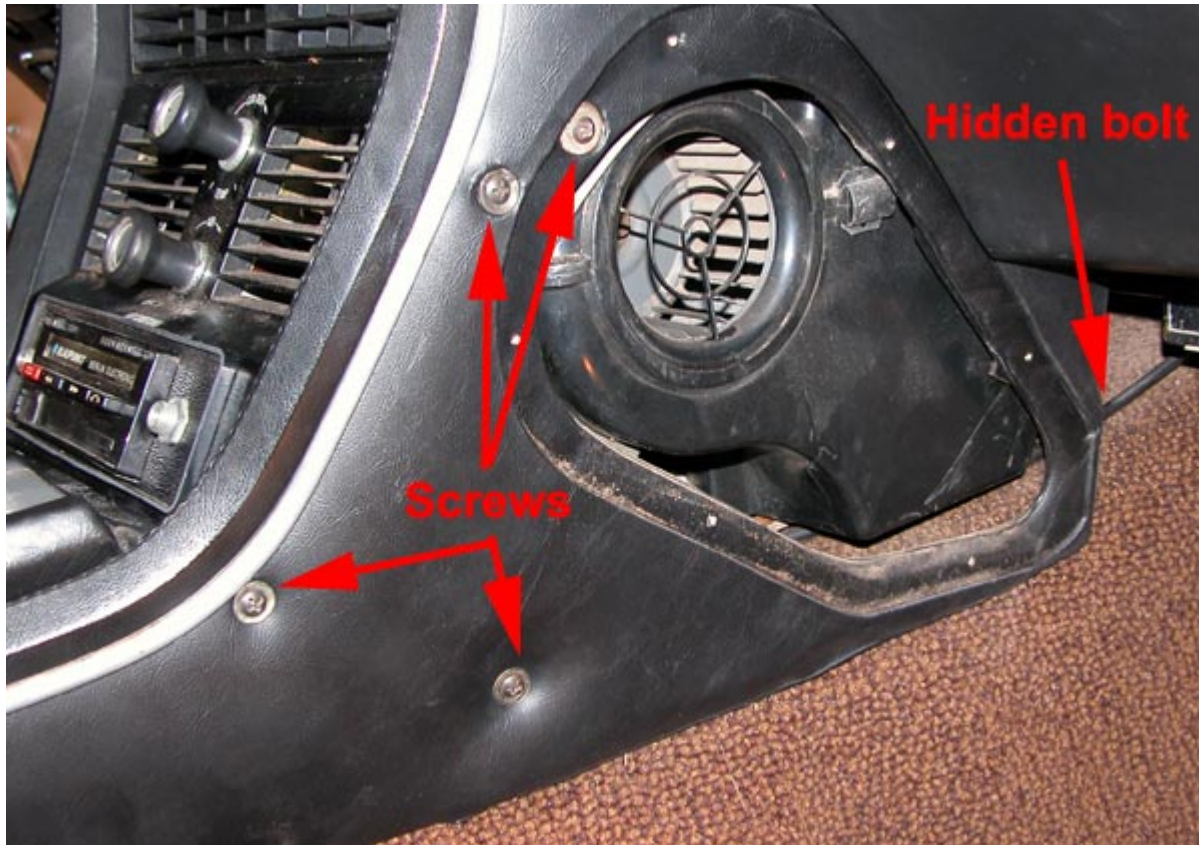


Console removal starts with removing the A/C air inlet covers (if you have A/C). Six little screws hold the cover on. The procedure is the same for both sides.





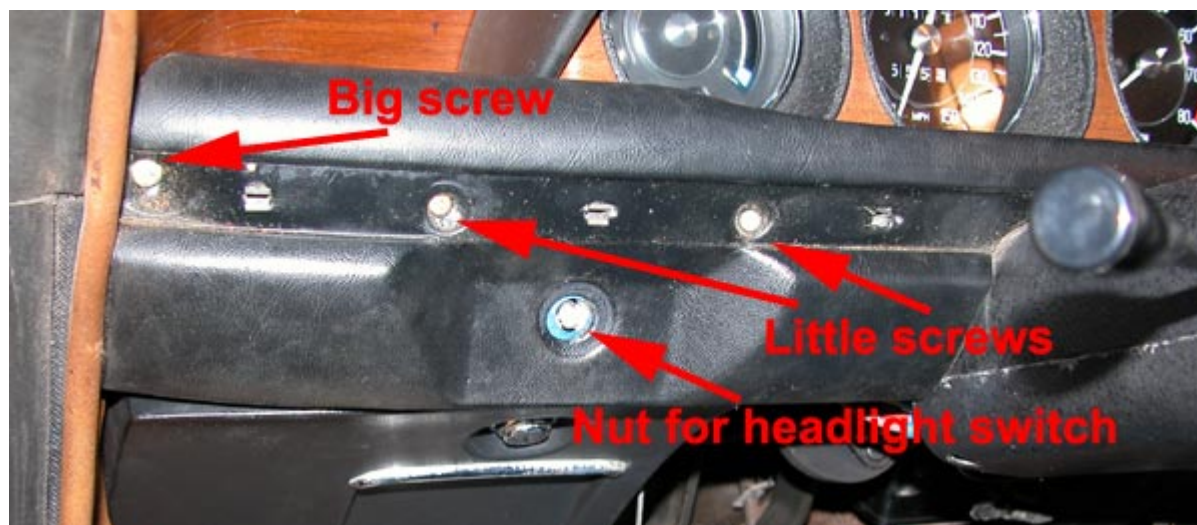
Then you need to remove four screws and one well hidden bolt. There is a nut on the bolt that is not attached to anything. Be careful or you will drop it and have a difficult time finding it.



I removed the lip at the back of the dash shelf for more access. If you put your fingers under the trim and carefully pull, it will come off the dash. It is only held on by little push in studs. The stainless steel at the top of this trim comes off easily. Now is the time to polish it.



Once the trim is off you can see the big screws at each end, and the little screws that hold the lip onto the dash. With this part off it was much easier to get the sides of the console off.





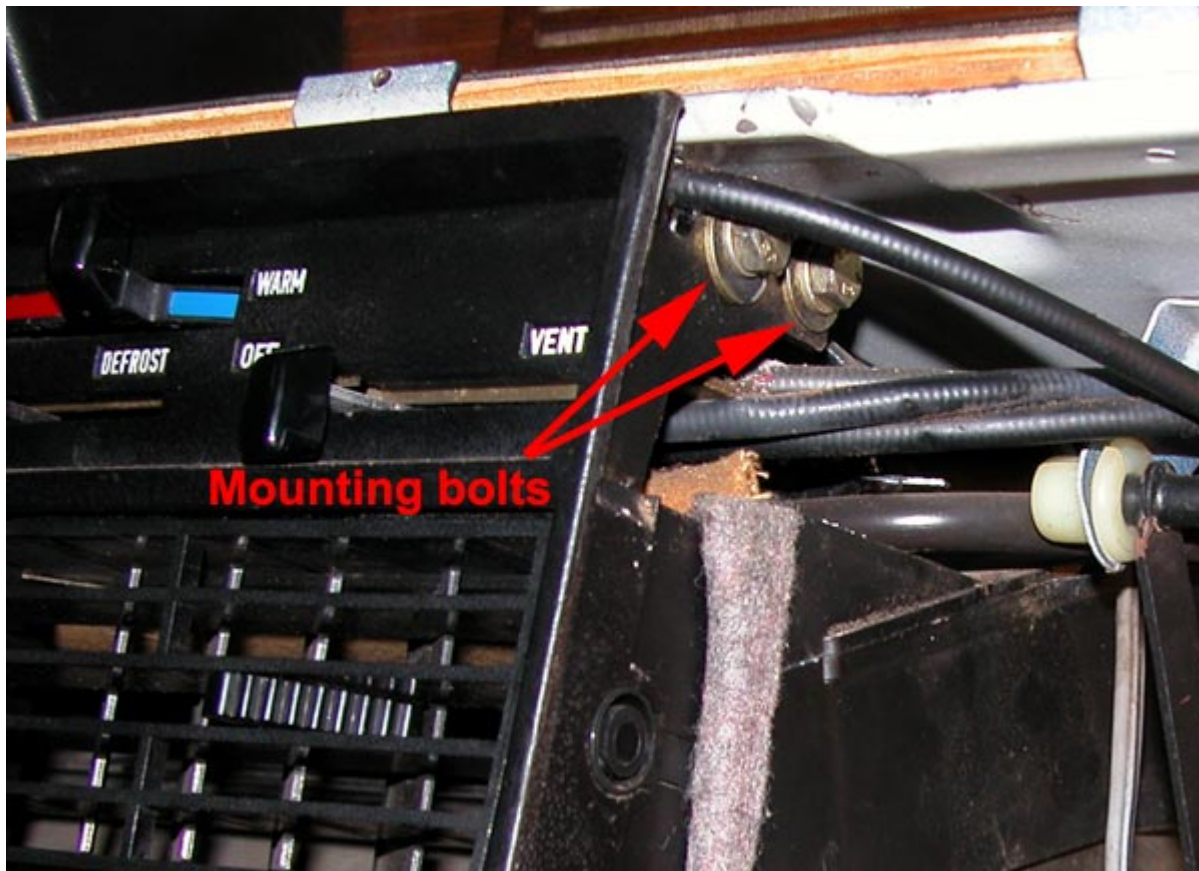
There is a screw under each rear window switch. Carefully lift out the switch. I found it easier to unzip the shifter boot and push the switches up from below. With the switch out of the way you can see the screws.



Shift into 2nd or 4th and you can lift the part of the console that incorporates the shift boot and switches over the shifter. You don't need to remove it, just lift it up for access.

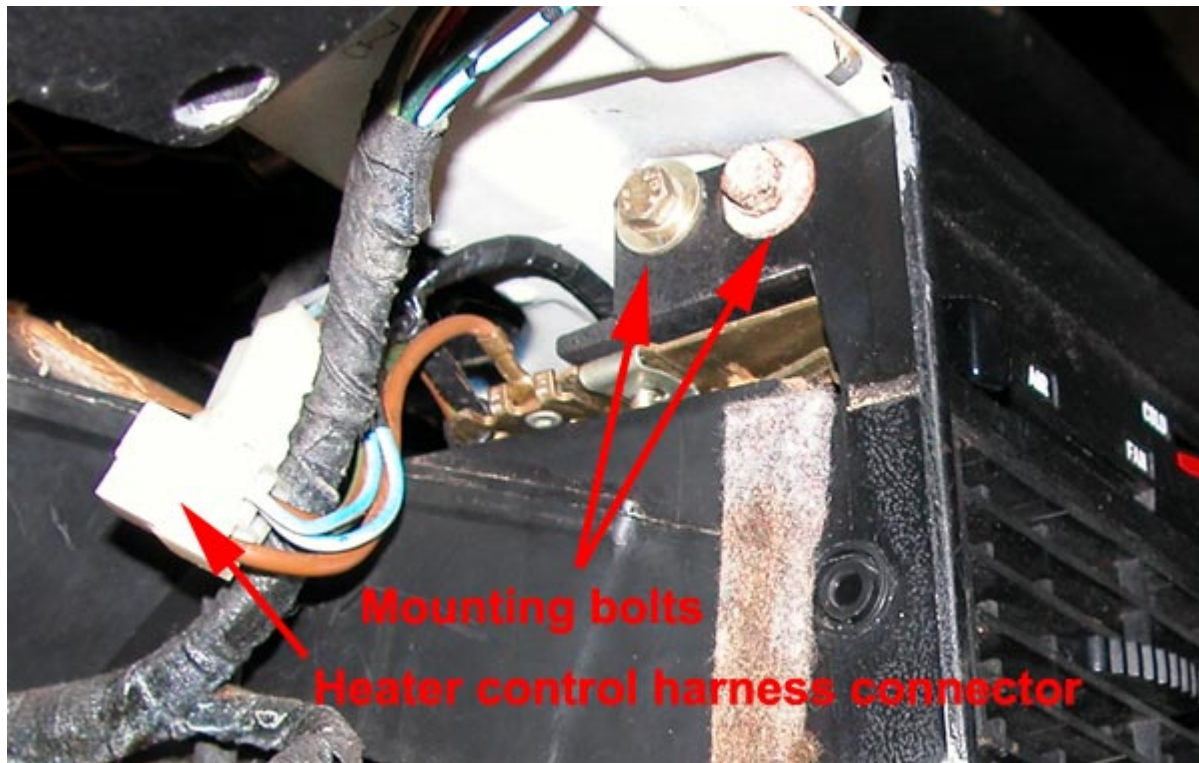
The radio and A/C console can stay where they are. The thermostat for the A/C has a capillary tube on the back that goes to the evaporator core. Don't kink or bend it! Carefully pull the front of the console sides down and towards the rear. Lift the metal bracket at the rear of the console over the hand brake. Keep an eye on the bracket for the glove compartment light switch so it doesn't damage anything. Now you can lift the two console sides towards the rear and out of the way. I just set it on the back seat to keep it safe.

I removed the heater controls for more access, just like it says in the manual. There are two bolts on each side. The front right bolt on mine was missing. I dug through the hardware that I found in the car when I fixed the floor and there it was. The threads in the captive nut were damaged so Fritz threw it on the floor.





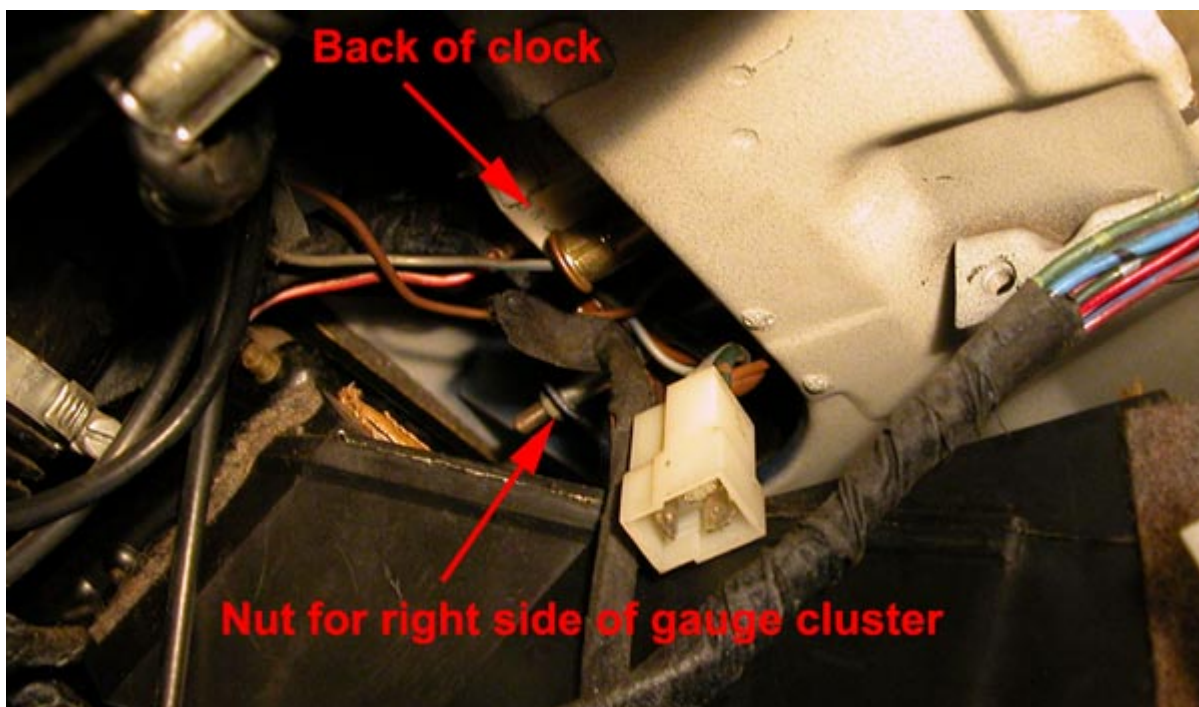
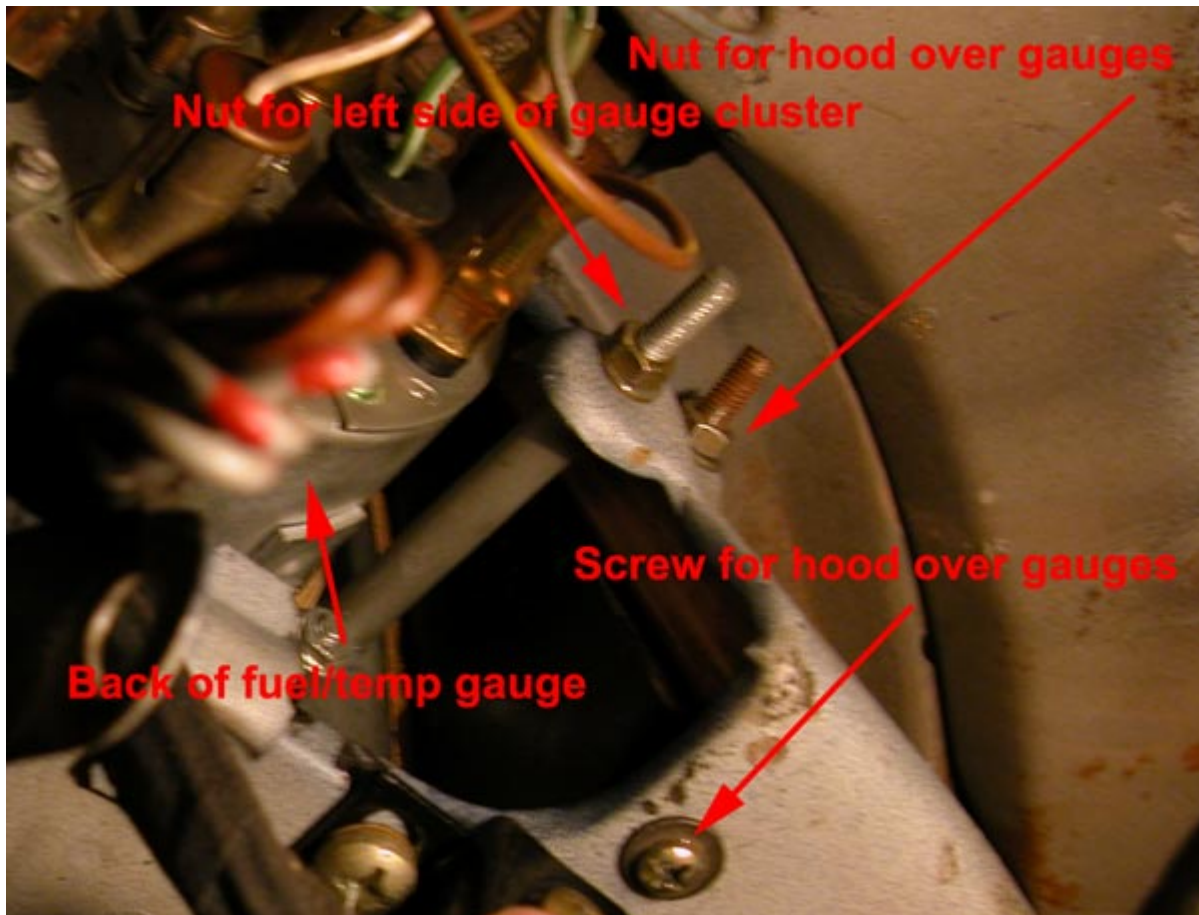
There is a wire harness at the left that needs to be disconnected. I didn't completely remove the controls because I didn't want to readjust all of the control cables.



I was a little surprised to see that there were bulbs for the heater controls. Collective wisdom from a discussion on the E9 forum is that '73 and newer coupes have illuminated heater controls. My '72 has lots of '73 parts so that fits. The bulbs were #2712, 12V 1.2W. The local parts store had them for \$3.80 per pair. They also fit Mercedes, Audi, Volvo, Porsche, etc. so they should be easy to get.



Once the console and lower dash panels are out of the way you can get to the nut and screw that hold the left side of the hood over the gauges, and to the two nuts that hold in the gauge cluster. You also need to disconnect the speedometer cable. My speedometer cable had a crew on collar that took a few turns to get off. I have been told that some only need a 1/4 turn to be free.





If you pull and lift on the bottom left corner of the hood over the gauges you can get the stud to slide through the sheet metal, then the wood and then you can lift the left side of the hood just a little. Be careful! Once the left side of the hood was lifted I could pull the gauge cluster out enough to get a ratchet behind the dash to loosen nuts that hold in the gauges. As you are facing the front of the car you rotate the gauges just a little counter-clockwise and they will be free of the gauge cluster. I lifted the gauge cluster up and out of the way.

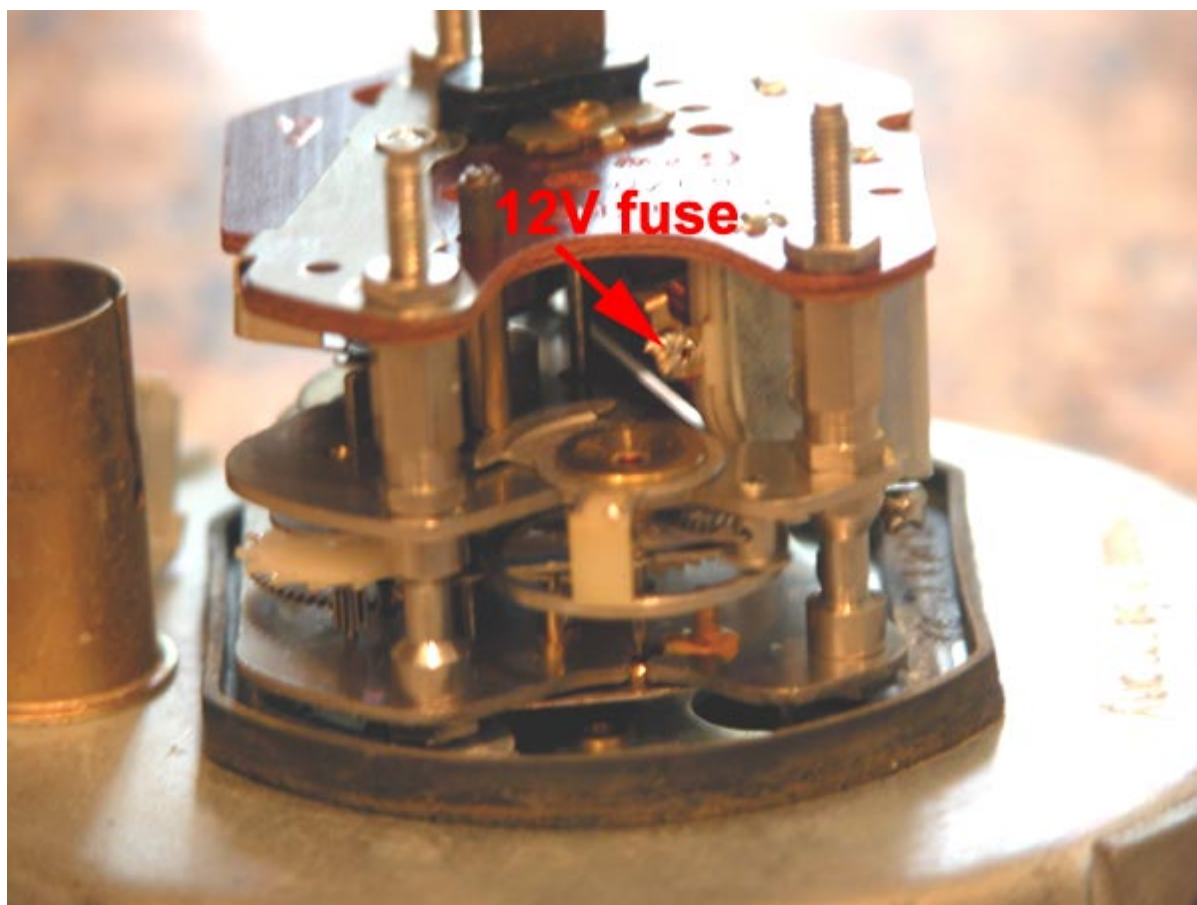
If you need a little more wiggle room in the hood that goes over the gauges then you can take out the screw at the right bottom of the gauge hood. See the picture below. There is also a nut on a stud at the back right of the gauge hood. I think that I could get to it through the speaker hole. I didn't need to take it off to get the gauge cluster out on mine.



The back of the clock looks like the picture below. You need to remove three nuts to get the plastic cover off. One of the nuts is under a plastic cover. I just turned the grey plastic part around the nut. Two little tabs on the protective cover broke. Since it is way out of warranty I don't care.



Once you get the plastic cover off it looks like the picture below. There is a metal strip that runs under the circuit board and is supposed to connect the 12V feed tab to the winding coil. The metal strip is connected to the tab on the coil by a small piece of very low temperature solder. Mine was melted and the metal strip had sprung away from the tab. I held the strip in place and used a little dab of solder to hold them together. The clock works great now.



Copyright 2008 Michael Thompson