

C4 12V V6 Cam Position Sensor Replacement DIY

Compared to the 20VT AAN Cam Position Sensor, the 12V V6 cam sensor is a piece of cake. Having never done a V6 one, I asked if there was a DIY somewhere and somebody replied to the effect, “two 10 mm bolts, what’s to write up?”. Fair enough. Nevertheless, since I had to replace the one on my 98 C4 A6 V6 avant (I broke the plastic connector on the cam sensor while replacing the 98’s plastic cam covers with the earlier metal ones two years ago) , I thought that I might as well take some photos and write it up.

Parts required:

Cam sensor:

PN 078 905 161C. I got an one through a dealer but, if you are feeling lucky, aftermarket ones are cheap (buy two, install one and keep one in the car as a spare)



Tools:

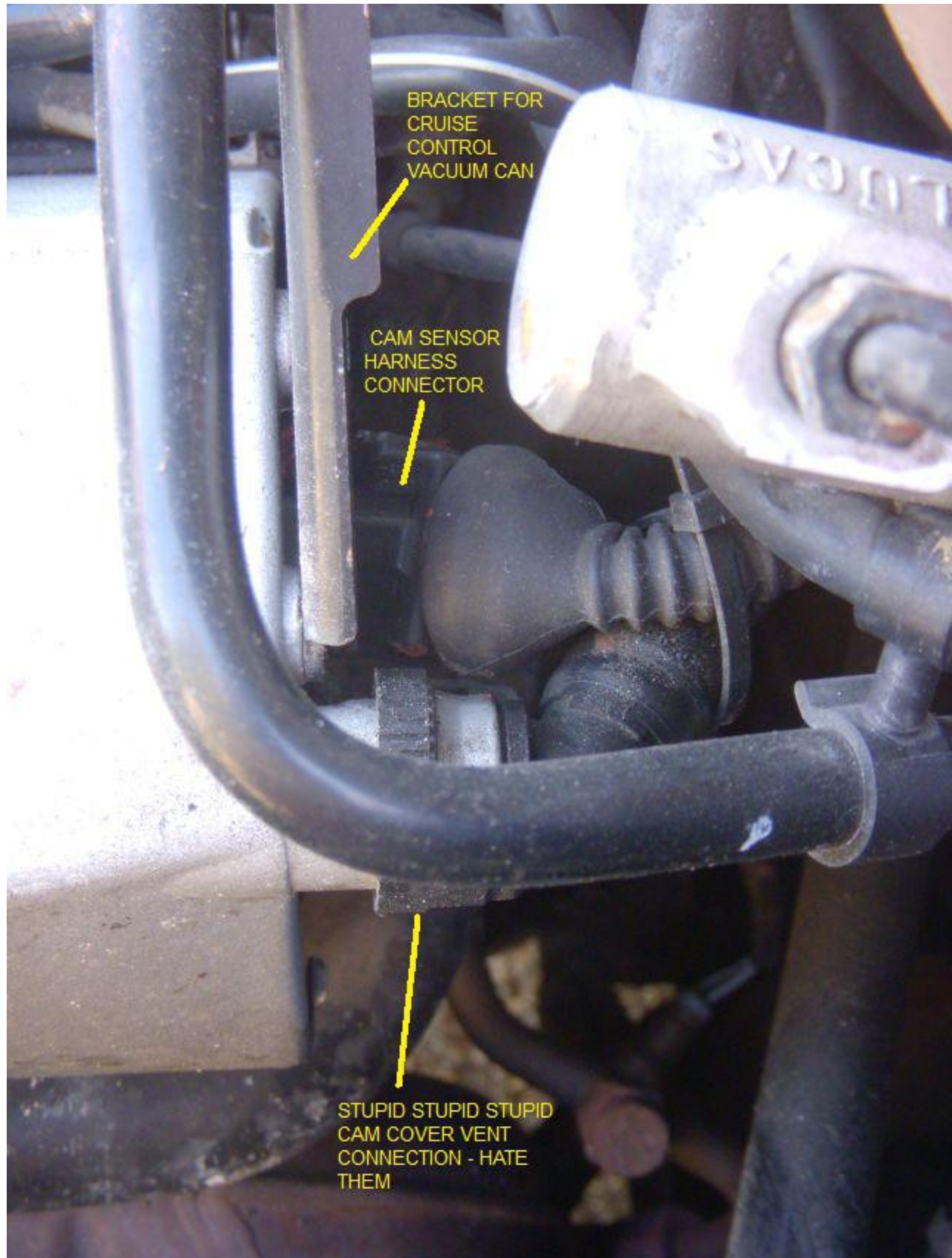
³⁵₁₇ Flat blade screw driver(s)

³⁵₁₇ 10 mm sockets (short and long) and 3/8 drive stubby ratchet (my favorite tool)

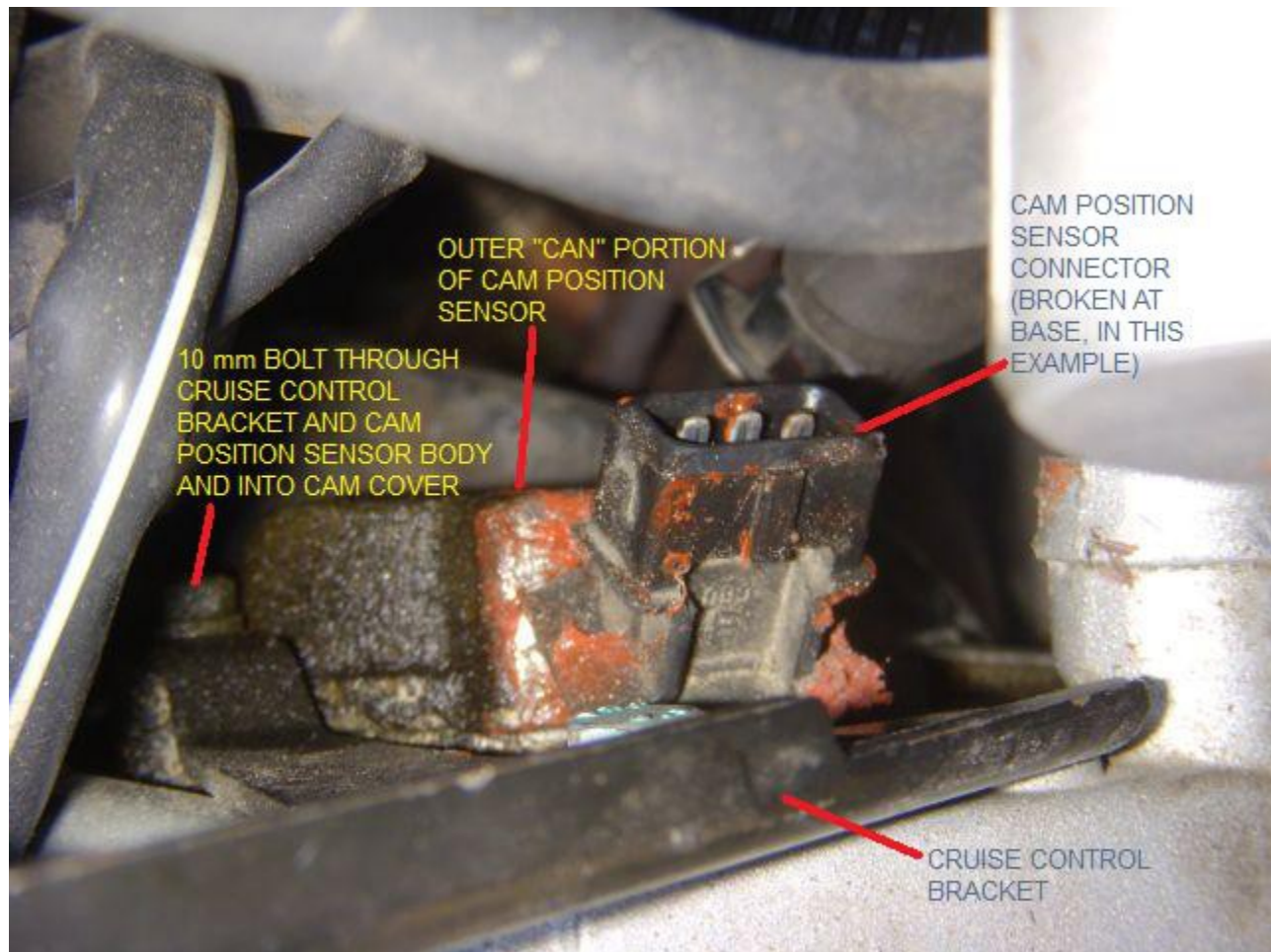
Finding the cam sensor: It's at the back of the left engine bank (follow the yellow arrow). Note the location of the cruise control vacuum can and bracket. The bracket is the one thing that makes this DIY a bit difficult.



Here is a closer shot of the cam sensor connector and the cruise control vacuum can bracket (destined to cause a little grief) (Note: I HATE those pinch clamps that hold the vapour vent tubes to the cam cover):



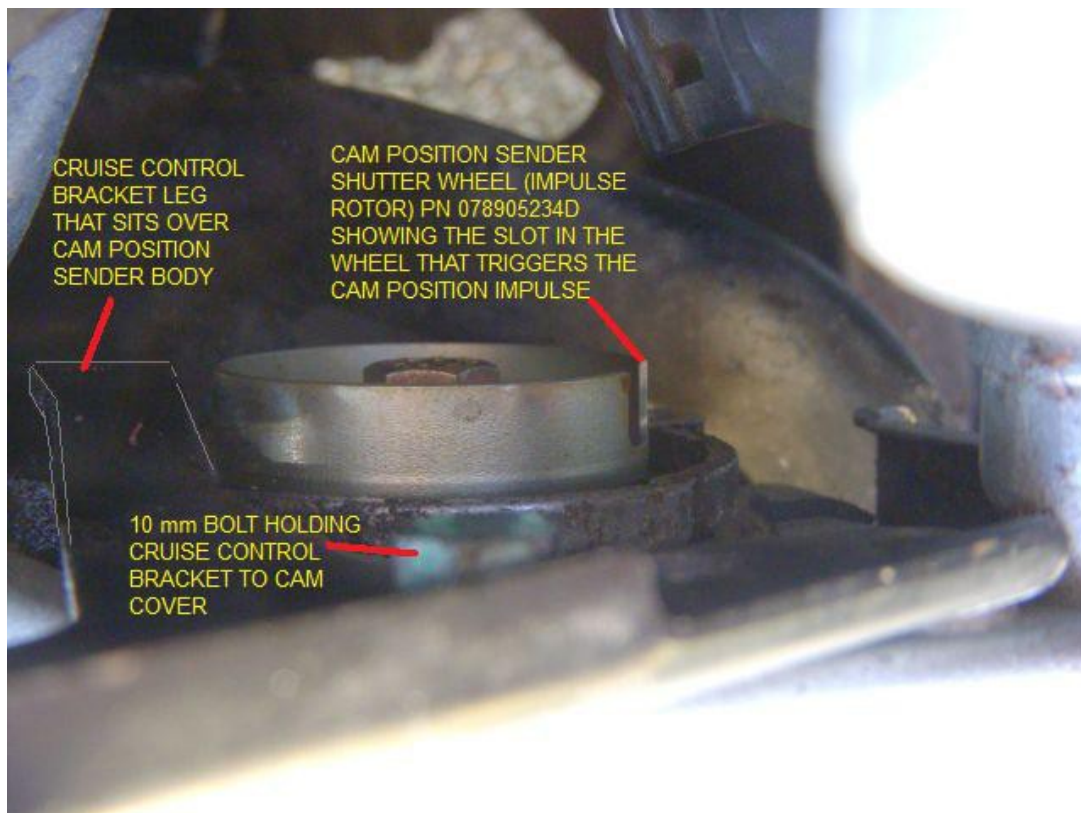
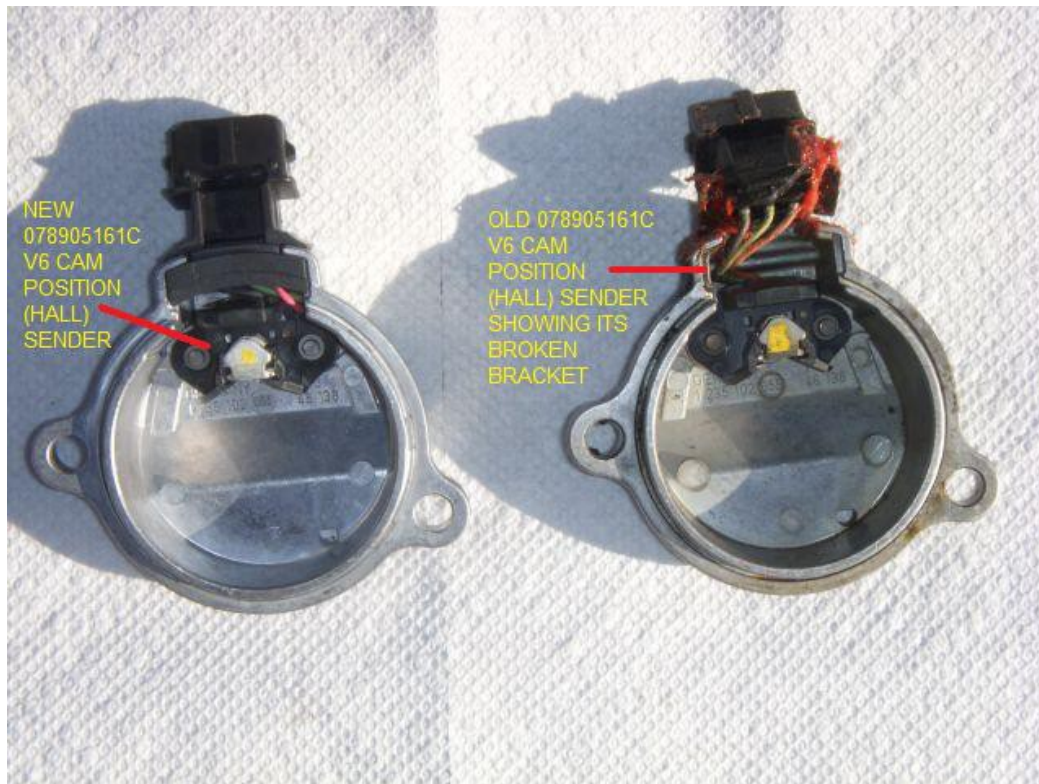
With the cam position sender harness connector and the cam cover vent tube disconnected and moved out of the way, you can see the connector on the cam position sender (broken in my case) and one of the two 10 mm head bolts that hold the sender to the cam cover, as shown here (Note the cruise control bracket actually ends up partially holding the sender to the cam cover):



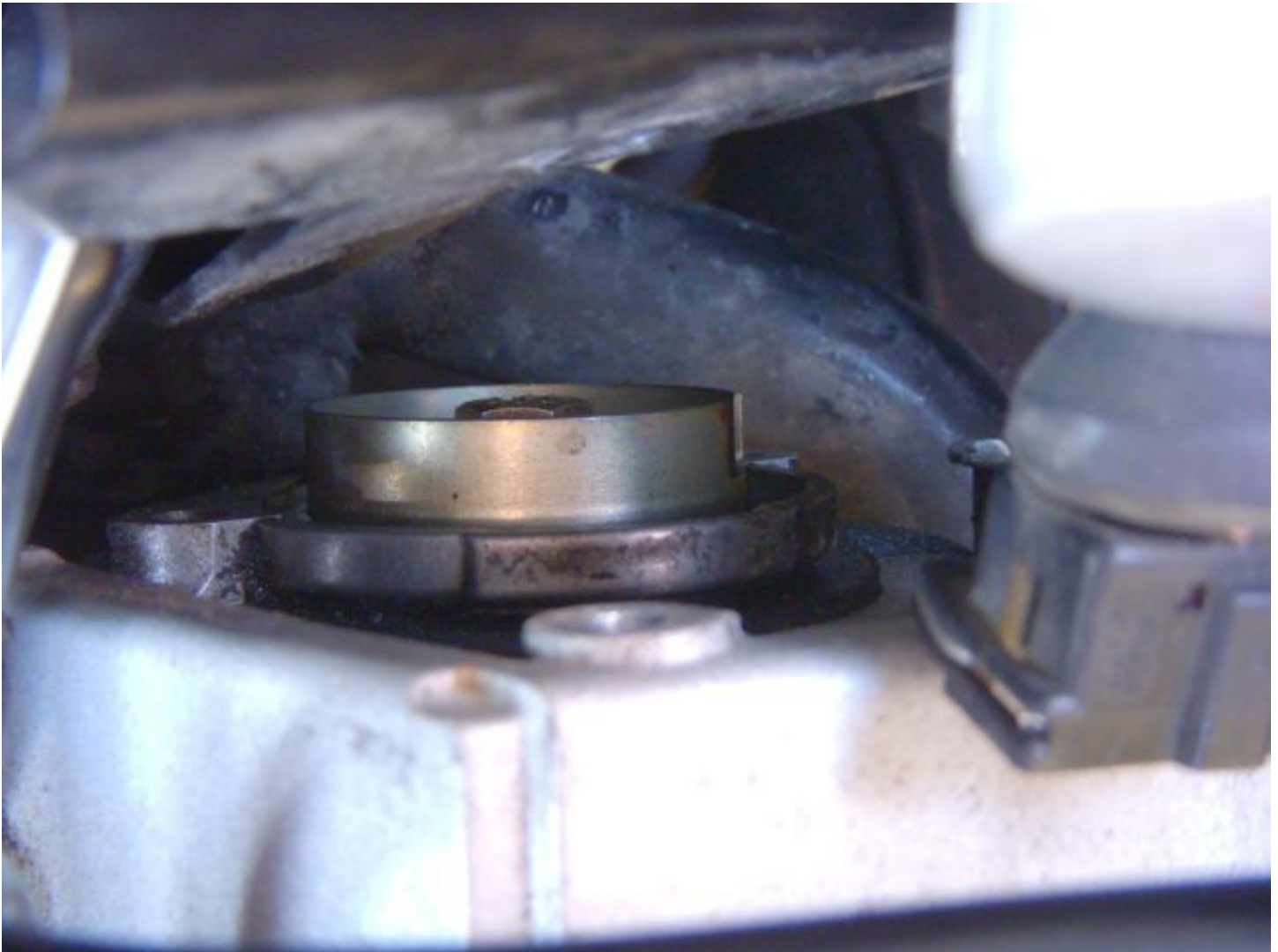
So, at this point, to remove the cam position sender, you need to remove two, PN N 01021710 M6 x 20, 10 mm head bolts, the one you see on the left in the photo above, and one towards the outer side of the engine and on the bottom edge of the sender body (hidden in the photo above).

I used a stubby 3/8" ratchet and both short and long 10 mm sockets to get these bolts loosened. Then I spun them out by hand, making sure that I didn't drop them. Then I wriggled the cam position sender off the cam cover. There was an issue with the sender body getting hunk up underneath the cruise control bracket (the portion shown to the left in the photo above). I did get the sender out without removing the cruise control bracket but it was a pain.

In this photo you can see the new 078905161C Cam Position (Hall effects) sender on the left and the old damaged one (broken bracket on the right). In the second photo, with the sender removed, you can see the shutter wheel (impulse rotor) and the slot in its edge that sends the position impulse to the ECU when it passes through the Hall effects sender.



I tried to get the new cam position sender back into place with the cruise control bracket in place but it was too much of a pain and I didn't think that I would be confident that everything was lined up properly. Since there was only one more 10 mm head bolt holding the bracket to the cam cover (the green-headed bolt in the previous photo), I just removed it. This made it easier to see what was going on, as seen in this photo:



Being able to see what was going on, I put the cam position sender over the shutter wheel (impulse rotor) making sure that the lip of the rotor/shutter fit into the gap in the Hall sender. Then I started the bottom sensor bolt by hand. Then I put the cruise control bracket back in place, including the leg of the bracket that covered the edge of the sender. I started these bracket bolts by hand and then used the stubby ratchet and the 10 mm sockets to tighten the three bolts (one at the bottom outside of the sender, one on the upper part of the cruise control bracket and the one that goes through the cruise control bracket and the cam position sender body and then into the cam cover). No room for a torque wrench so the spec is "GoodandTight".

Here is the new sender with the unbroken connector all buttoned down, waiting for the connection to the harness connector:



So the only things left to do was to put the connector on (push in the bail spring and push the connector on – it only goes on one way) and reconnecting anything else that you had disconnected (in my case the stupid cam cover ventilation tube).

To check for success, try to start the car. Should start right up. If not, check that you have the sender connection fully on.

Vow next time to be more careful with the connector and not break the connector bracket if the connector has to be removed for any reason. (Duh) ;>)

Dave F. March 30, 2013