How I Managed To Remove My 2003 Mercedes Benz S-Class Driver's Door Actuator Without Going Insane In The Process

This process worked for me and hopefully it will help someone else who may experience the same problem

Purpose of this documentation, disclaimers, and acknowledgements.

I am not a professional automotive technical or for that matter any other type of automotive repair person. This is simply a Do It Yourselfer that I decided to create so that it may benefit others having the same problem. ***This document is not intended to replace technical documentation published by any official automotive publications***. The documentation is a compilation of my own personal experiences combined with information from various forums, videos, and other websites.

I would advise that the individual attempting to do this read all of the information and review each slide prior to starting the work. Forgetting one little step in the process can cause a lot of unnecessary misery.

The information I am furnishing is to be used strictly as a guide. I assume no responsibility for the results obtained by any user. This process has worked for me but it is up to him/her to determine if it will work for them. It is my intent that the reader of this document determine on their own if it is suitable for their use. Please observe all of the safety precautions recommended by the “official” Workshop Instruction Sheets. Hopefully my documentation will provide you with some complimentary information and pictures that will assist in this operation making the job easier and saving some money in the process.

I have included the manufacturer’s part numbers whenever they were available to make your search less difficult.

I apologize for any grammatical errors that you may find in the document. I have spell checked and proofread the document as best I can. I am not an English major or professional editor.

I would like to acknowledge Benzwerks and other individuals for their excellent videos on YouTube, epc.startinfo.com for the official part numbers, Mbworld, Benzworld, Pelican Parts, Amazon, Google, and Autohauz.

Finally, special acknowledgements to my superheroes - Skylaw, Quadcammer, Tusabes, Vmystikilv, Fxdeebee, Wallyp, and all of the other ladies and gentlemen who continuously provide invaluable knowledge and wisdom on the forums.

Door Panel Removal

- I *have not* included the door panel removal process because there is a very informative video from Benzwerks on *YouTube* that demonstrates how this procedure is done. Just do a search on S500 door panel removal.
- The following slides indicates the steps that I used after the door panel was removed.

The following tools are required:

Regular flathead pocket screwdriver
T-20 Torx Screw Driver or Ratchet
T-30 Torx Screw Driver or Ratchet
Door Clip Tool
Drill and bits (steel)
Magnet – Antennae Type (in case you drop a screw or something else)
Flashlight
Rivet Gun (if replacing with rivets)

The following parts may be required:

These are the manufacturer's part number it is a personal choice if you decide to use other suppliers.

Rivets (3) **A 003-009-24-97** (you may choose to use some type of nut and washer combo instead of replacing the rivets)

Door Lock Actuator (1) **A 220 720 69 35** (**Driver's door**)
(Be sure to check your VIN number before ordering the actuator). The part number shown is the one that fits my car, a 2003 S500 with keyless go.

If replacing just the ***white cap*** on the actuator you will need this part which can be found through an online search. Just search ***for S500 door lock actuator repair***.

If you are like me you may want to order some of the door panel clips. They break rather easily when removing or reinstalling the door panel. **A 124 988 09 78**

You can get these clips from Autohauz for about .70 each.

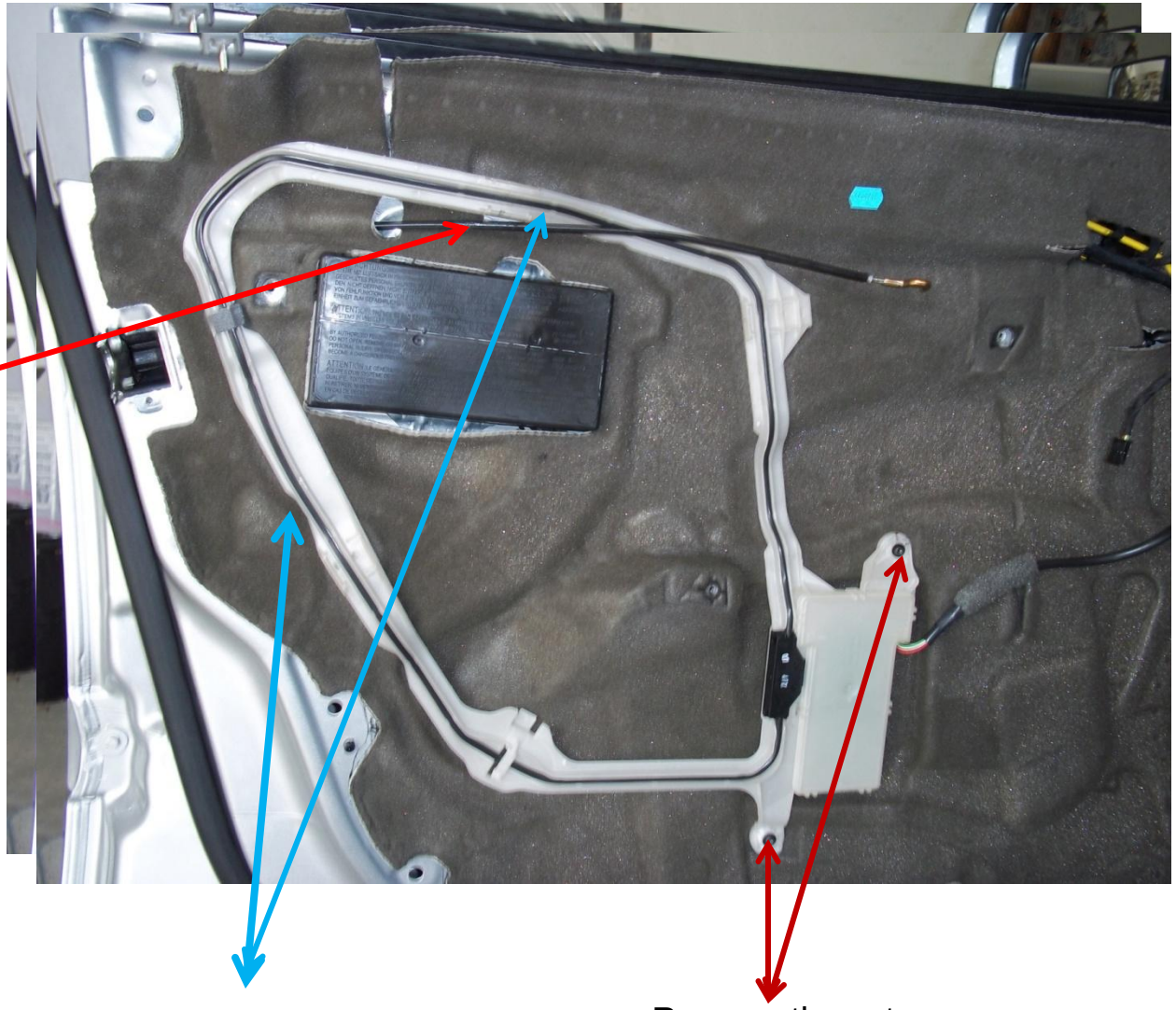
Make sure your window is **rolled all the way up** to prevent the possibility of scratching or even breaking the glass.

Since this was my first time I used a sharpie and labeled some zip lock bags so that I would know what screws/bolts went where when reassembling. Lucky me I had no spare parts when the job was completed.

To some with much more experience than me, my comments might be a bit over simplified but I always tell folks to explain things to me as they would a five year old. That way I might get lucky and comprehend some of the information.

Take your time doing this task because it is not trivial. However, once you are finished and everything is working you will have a major moment of jubilation.

This is what the door looks like with the door panel off.



When reassembling notice where the inside door handle rod goes and how it fits on the outside of the white guard. **You will also need to unhook this cable from the door latch mechanism once the insulation is removed.**

After the screws are removed you can just run your fingers around the edge to pop this white piece out. ***It is held in place by plastic clips. The clips are in the general areas where the arrows are pointing.***

Remove these two screws. ***T20 Torx***

This is how the door looks with the panel removed. The moisture protection layer can be peeled back to expose the actuator and the window guide rails.

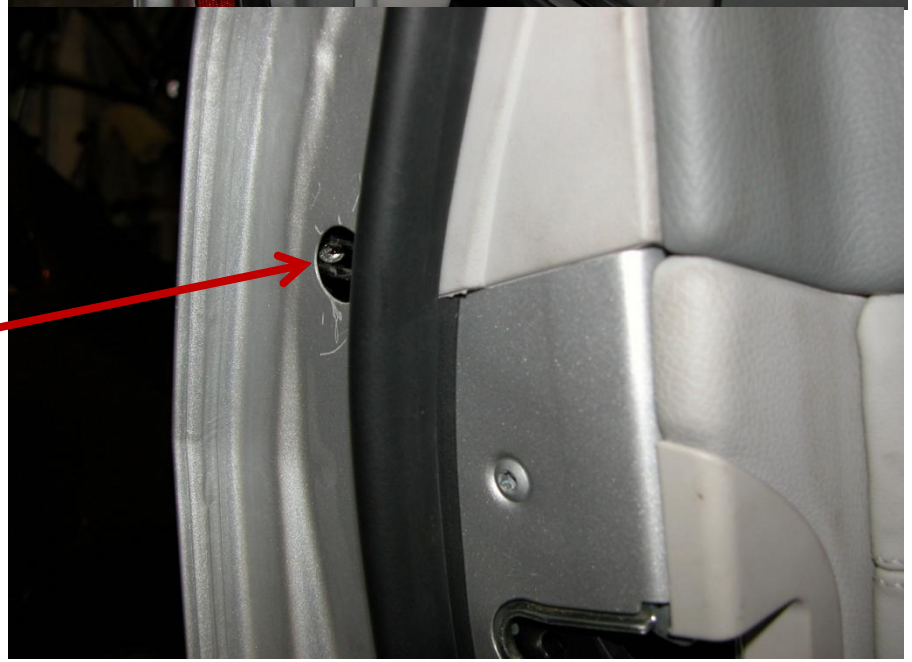
Remove the cap on the door lock. It can barely be seen in this photo. *Make a mental note of the number of turns it took to remove it. It just unscrews. You don't want it sticking up too far or down too low after the panel is replaced.*

Just start peeling here. There is some type of sticky substance holding the insulation in place. It is sort of like those sticky notes. I Started peeling where the arrows are.

REMOVING THE DOOR LOCK

This is the door lock plug. Just take a small screwdriver and pop it out.

This is the screw inside the door lock plug. You will need a **T20 TORX** to unscrew it. *It is designed so that the screw is held in by some type of clips to keep it from falling out.*



Removing Door Lock and Door Handle

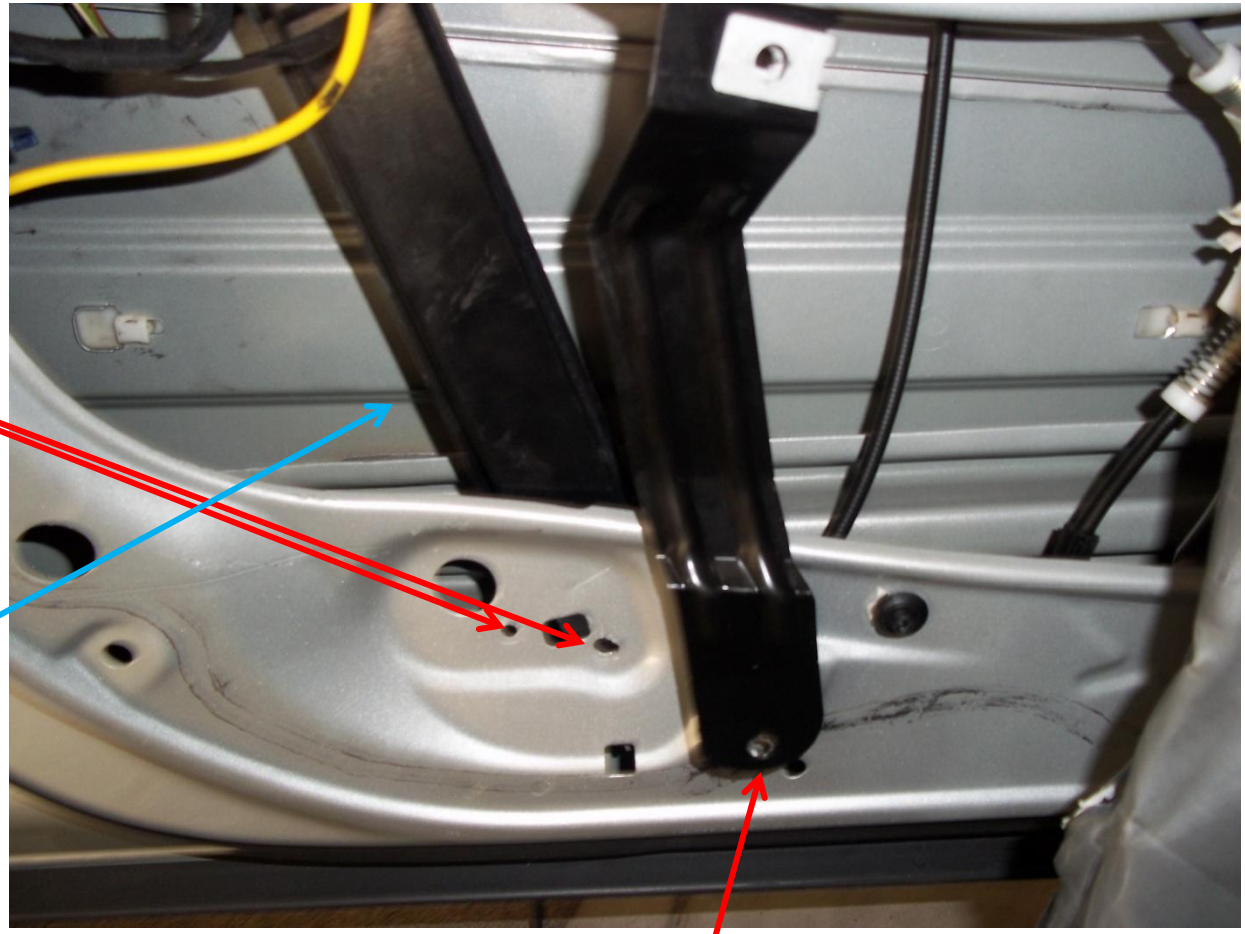
Slide the handle to the right once the door lock is removed. **Slide in the direction of the blue arrows.**

When removing the actuator this infrared sensor has to be unattached from the door lock. It is actually attached to the actuator. You will have to carefully pull it out to detach it.

When reinstalling the actuator make sure you allow for the sensor to go through the door lock hole. Otherwise you will have to remove and start over. **I used a piece of stripped speaker wire to wrap around the sensor to make sure it was always available to pull through.**

Door lock after it has been released. Once the brass colored screw has been unscrewed you can just pull the lock out just by using our finger tips under the edges.

You will need to drill these two rivets out. Use a drill bit that is a bit larger than the rivet head.

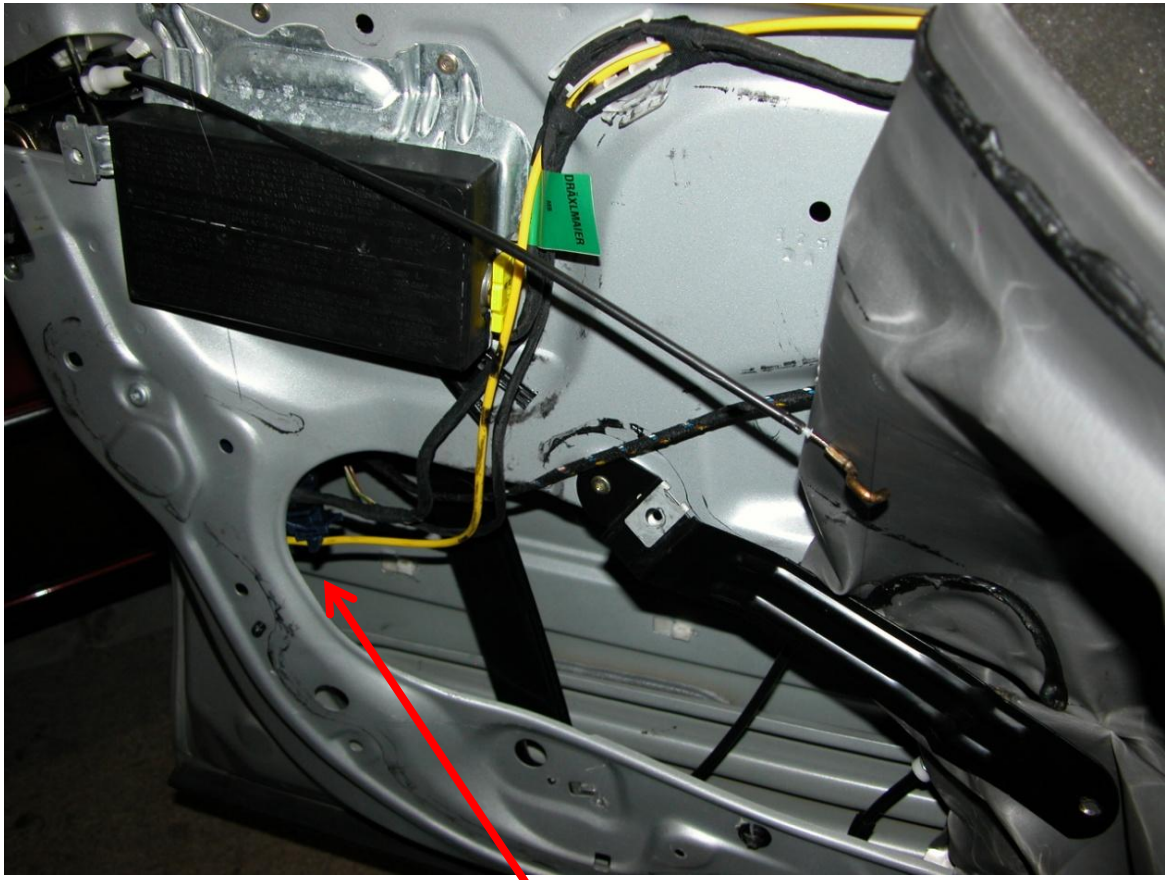


Once the two rivets are out and the ***guard rail*** rivet is drilled out, you can move **this** bar just enough to the right to get the actuator out. **DO NOT try and force this rail more than you need.**

The part number for the rivet is 003-990-24-97 Personally I would not use aluminum rivets. MB sells these rivets for about $1.50 each. Some folks choose to use small bolts with locktite in the event they have to go in a second time. I suppose the choice is up to the individual doing the work.

Also drilled out this *guard rail* rivet. This will allow you to move the bar out of the way. This one can be tilted all the way to the right once the rivet is removed.

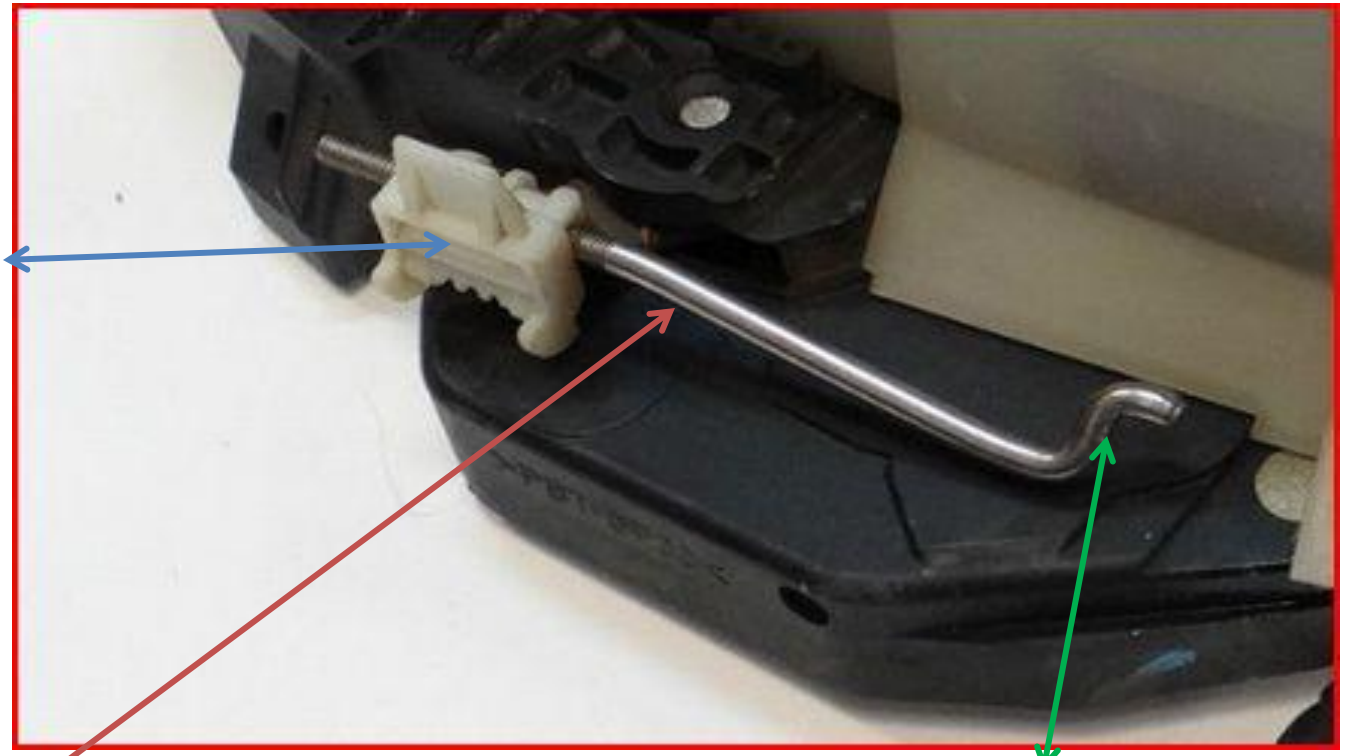
THIS IS WHERE THE FUN REALLY BEGINS!!!



The actuator is located right in here.

I UNHOOKED THIS ROD BEFORE REMOVING THE SCREWS THAT HOLD THE ACTUATOR.. This is the part that you can't see. It is all done by feel. This is also assuming that you have already removed the **rivets,** the **door lock**, the **infrared sensor attached to the door lock**, and the **door lock cap** that sticks up out of the panel.

While the actuator is still installed you will need to release this clamp in order to get the hook/rod out. Using your thumb or finger will release the clamp.

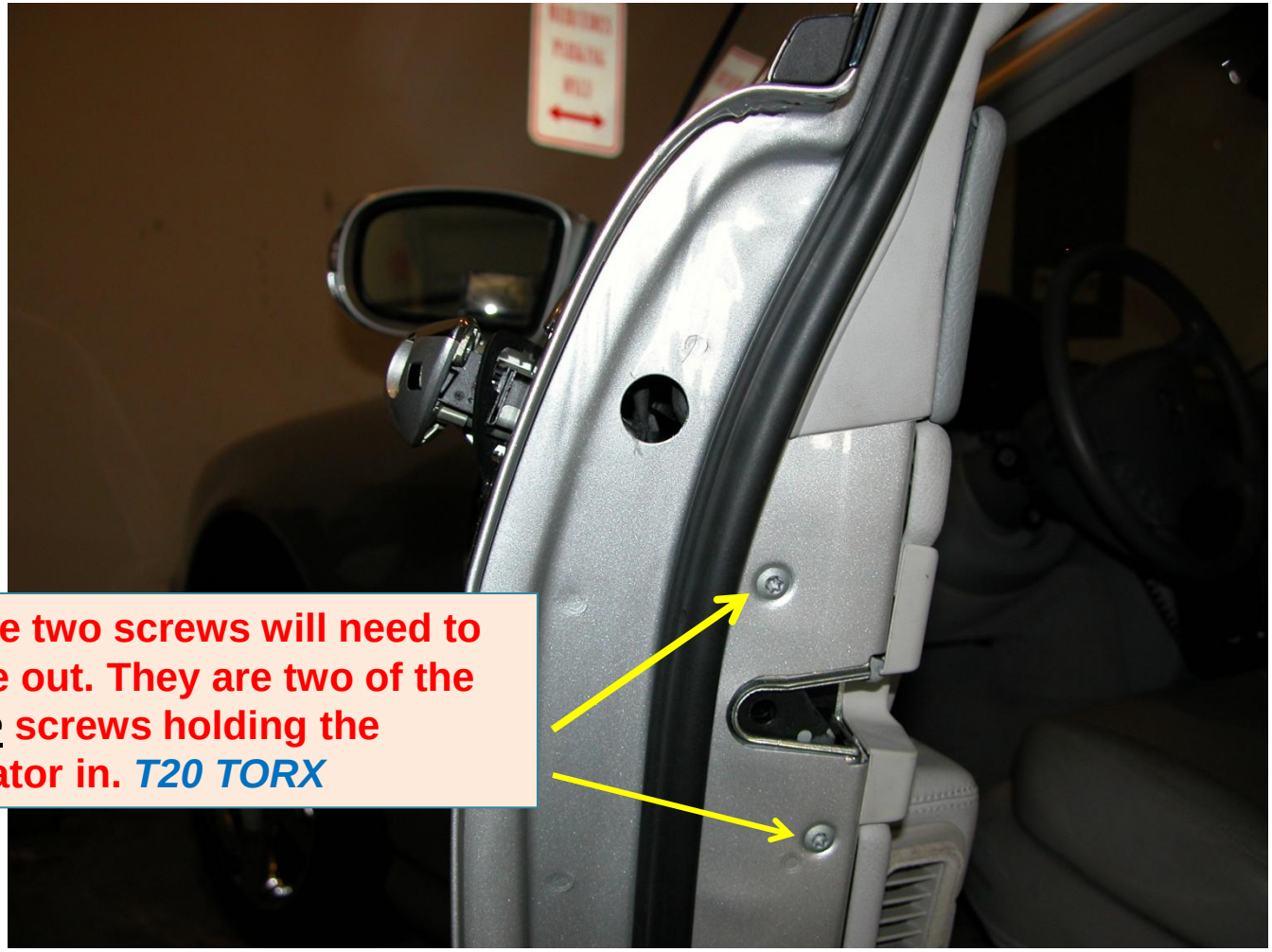


This hook goes into the door handle but it is a blind fit. In the next slide you will see how this connects to the outside door handle. Once you unclamp the white clamp. *If you can't unclamp it try and follow the rod up to where it attaches to the door handle and attempt to remove it that way..* Once this is done you can remove the three screws holding the actuator in place.

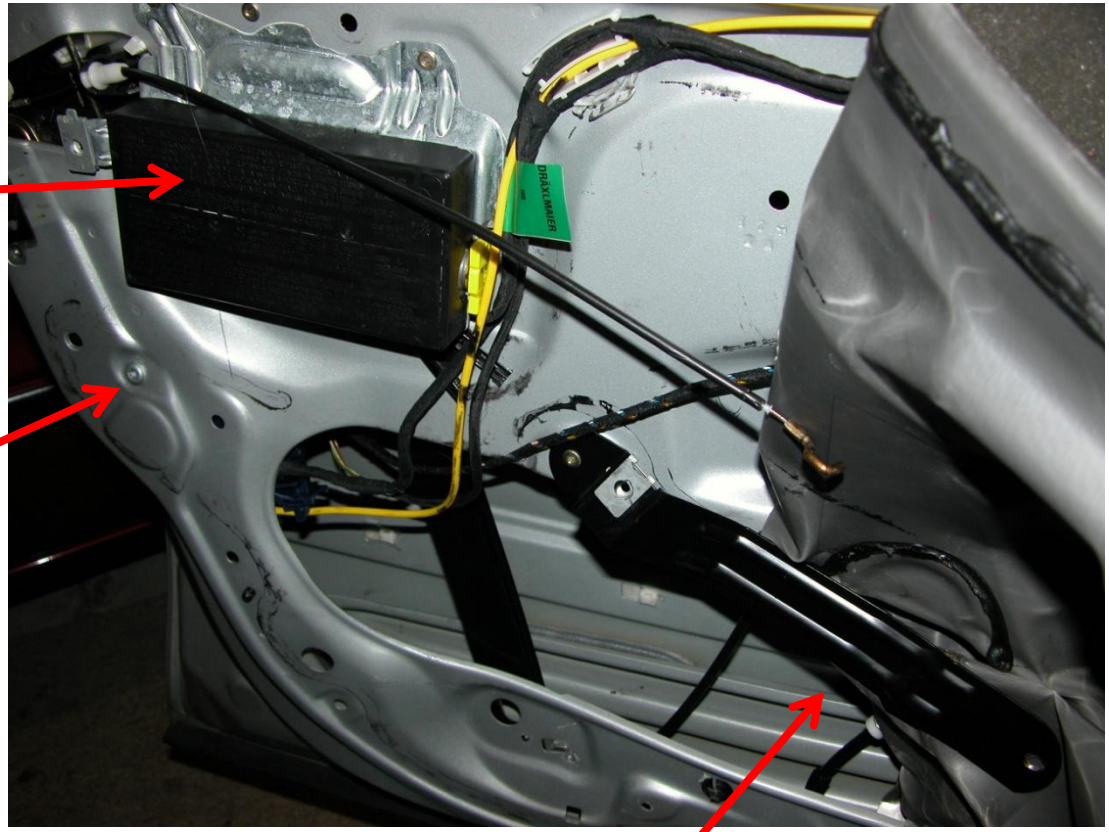
Prior to putting the actuator back in *make sure that the white clamp is open and the hook is already attached to the door handle*. It will dangle but you should be able to feel it and reattach.

Getting this rod loose will have an effect on your vocabulary. All women and children should exit the work area immediately.

REMOVING THE ACTUATOR SCREWS



It is not necessary to remove the rivets from this airbag and no requirement to unplug it. LEAVE IT BE!!! THIS IS NOT SOMETHING TO FOOL AROUND WITH.



This is the other screw that holds the actuator in. You will see it once the door insulation has been removed.

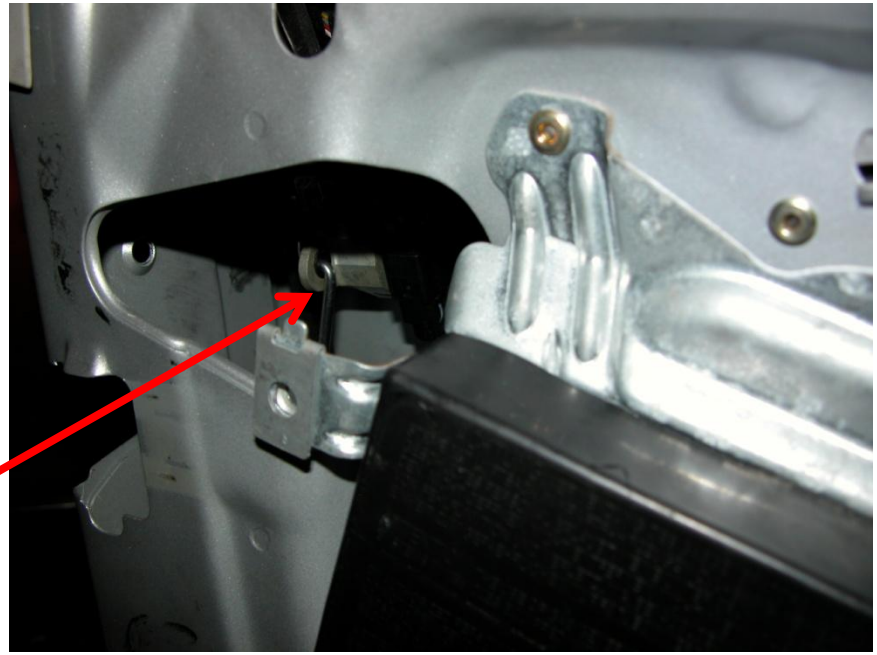
Notice this rail has been moved out of the way. **This one can be tilted as much as required.**

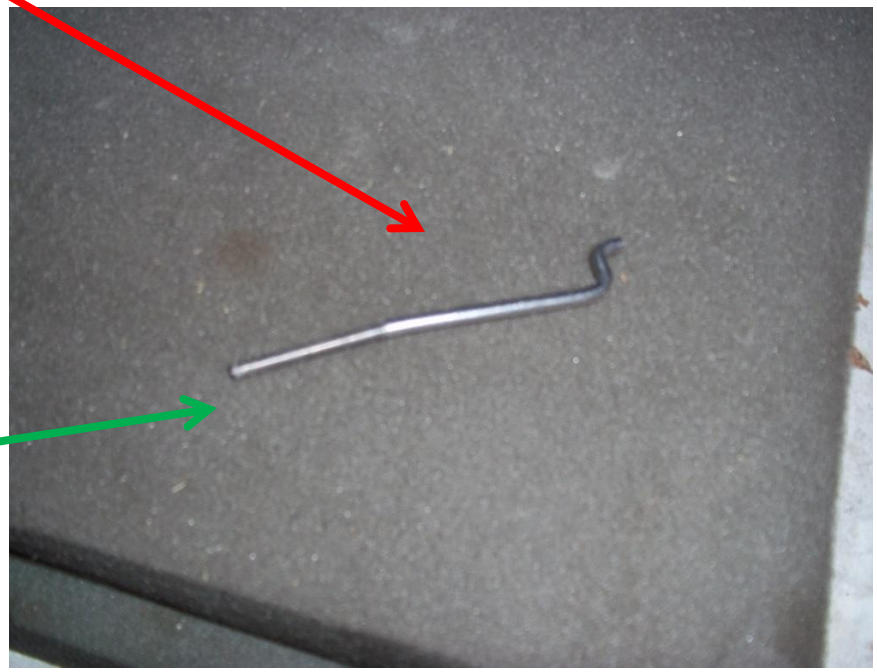
This is the hook that locks into the white plastic cap on the back of the actuator.

In order to get the actuator out this hook has to be unsnapped. (It is a blind feel but you will need to release it).

It controls the outside door handle. You can only see it if the actuator is removed.
(I suppose this rod must come with a new actuator since I couldn't find a part number).

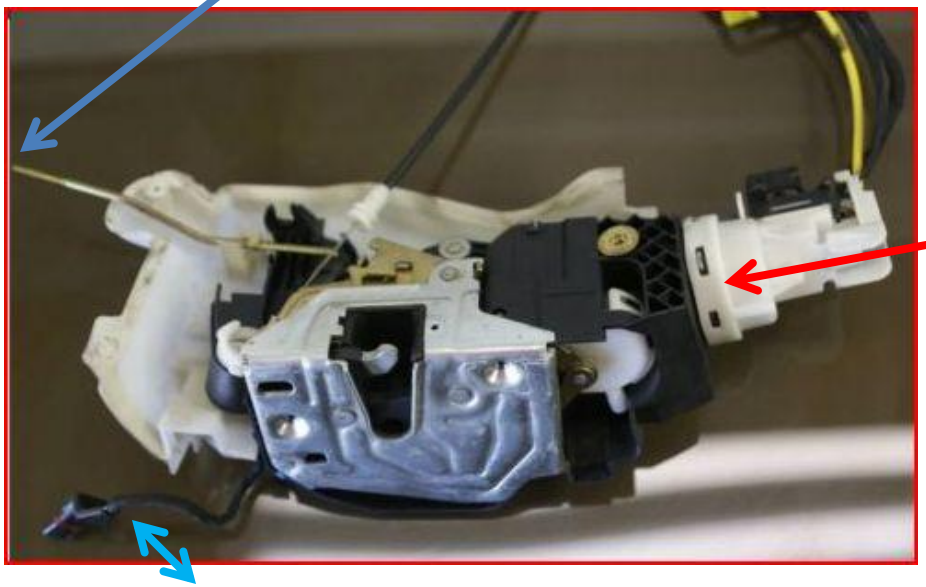
This is the rod that has to be hooked into the little white clamp on the back of the actuator. ***It is threaded on the end that attaches to the white clamp.*** This is what causes the door to release with the external handle.





Hopefully you finally got the little monster out.

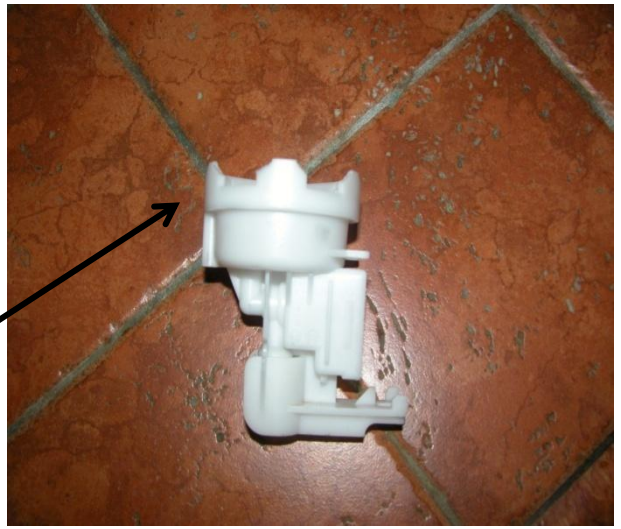
This is the rod where the lock cap screws on. ***Make a mental note of how many turns you took to get if off.*** Mine was 20 turns to get it off. You don't want it sticking up too far when the door is locked



This is how the cap should look.

The infrared sensor cable at the top of the actuator. ***As mentioned in a previous slide I attached a piece of speaker wire to make sure it was accessible.***

You can see here that the cap has sheared from the pressure and years of wear and tear.

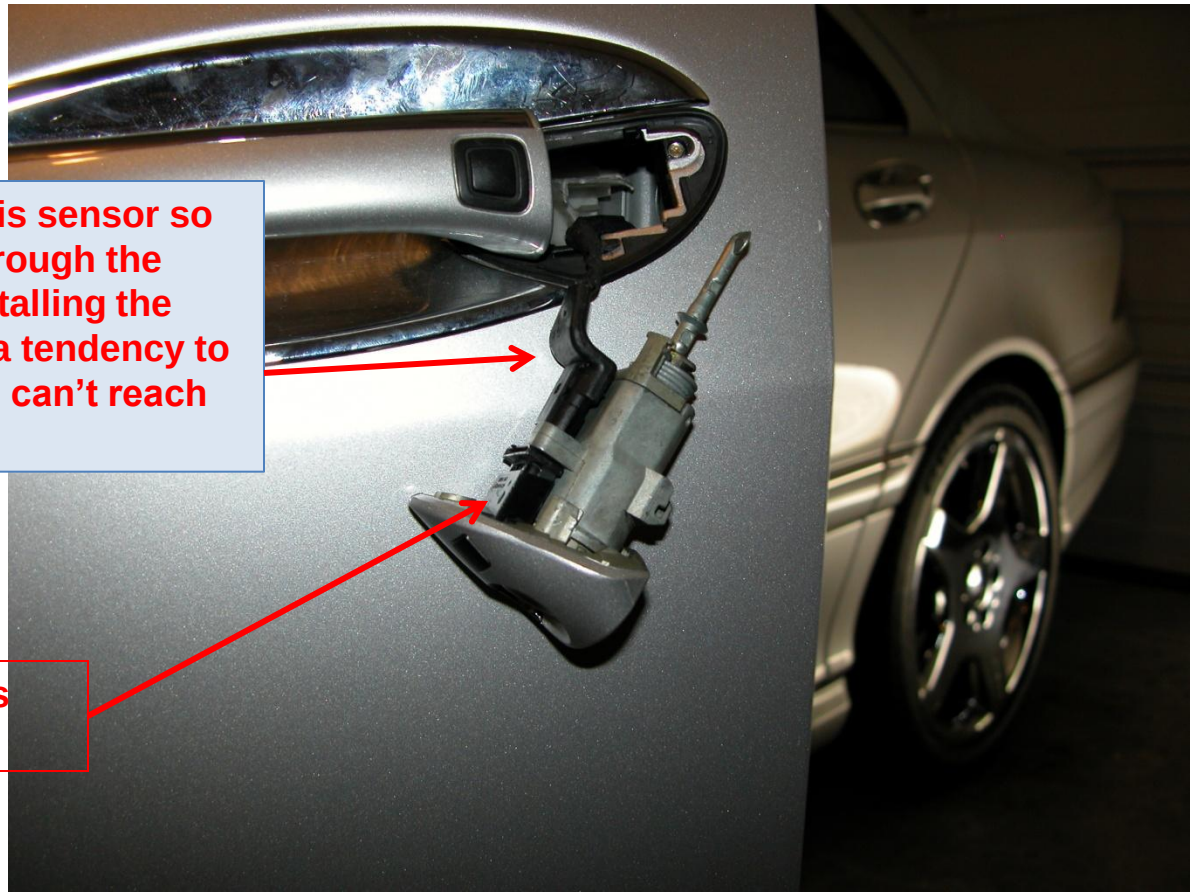


The following slides indicate a few things to consider when reinstalling the actuator.

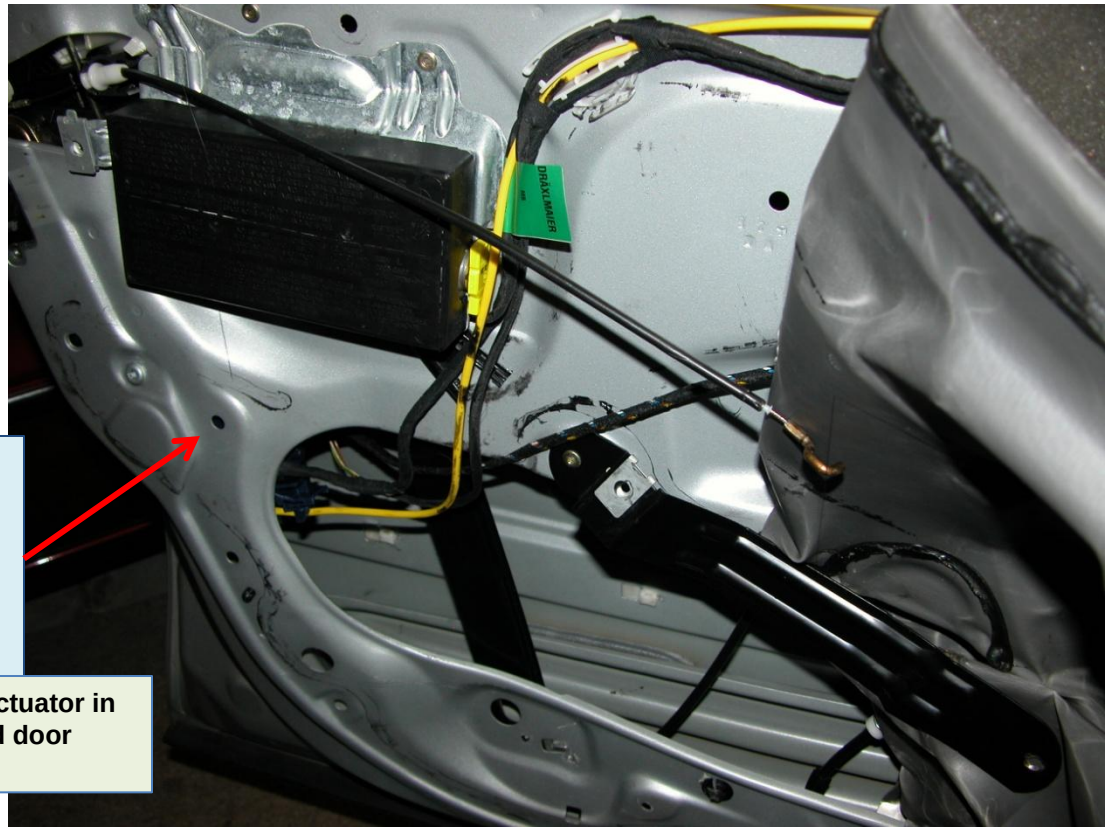
DO SWEAT THE SMALL STUFF!!

Tie something around this sensor so that it is easier to pull through the lock housing when reinstalling the actuator. This thing has a tendency to get caught up where you can't reach it.

Notice how the sensor fits into the lock.



Placing the actuator in the proper position



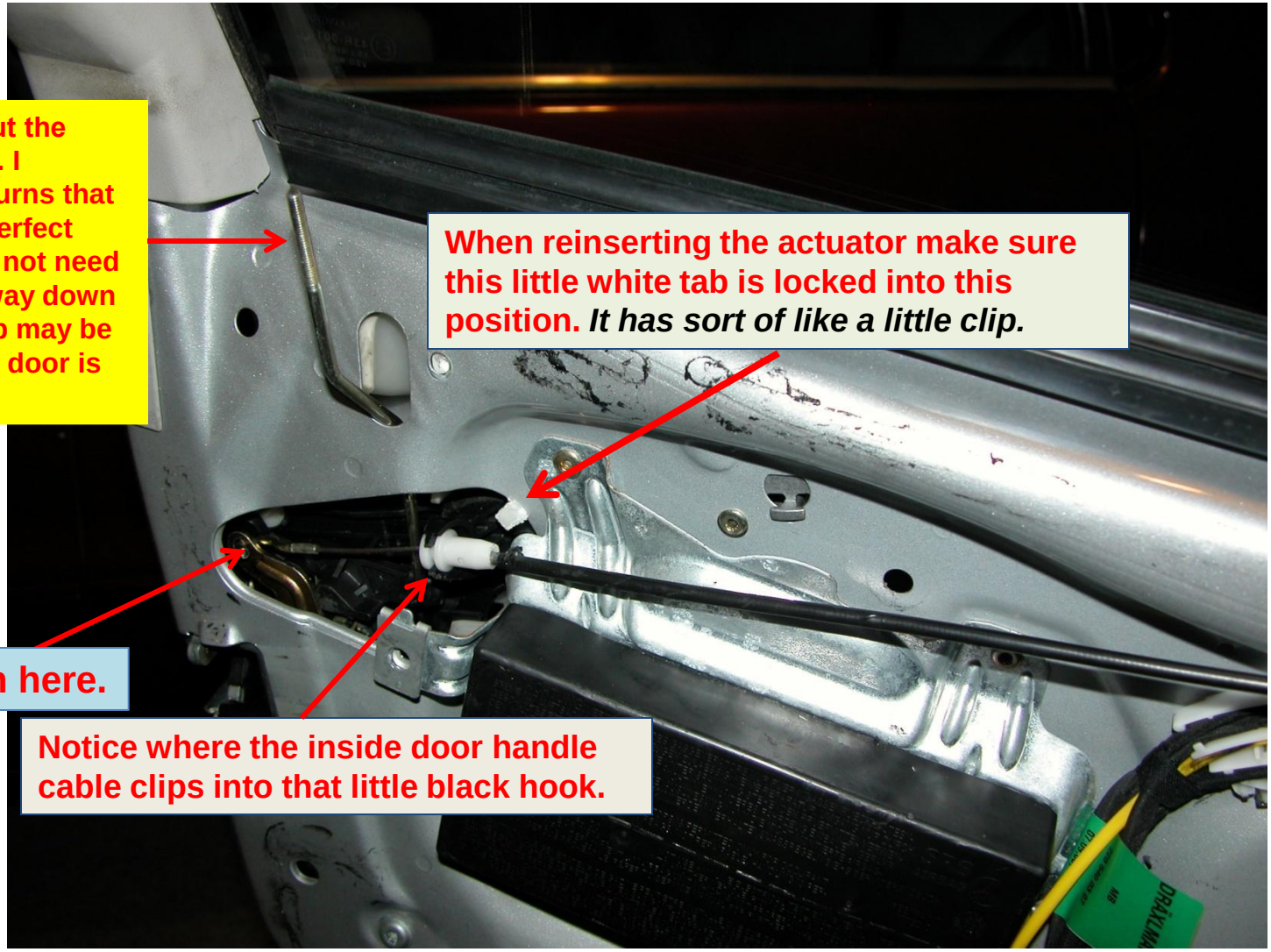
When reinstalling the actuator you will know that it is in the proper position when you see the brass colored hole where this screw is inserted.

Only hand tighten the screw just to hold the actuator in place while you make sure that the sensor and door lock knob are in the proper position up top.

Once everything is in the proper position you can insert the other two screws on the edge of the door that holds the actuator. Don't forget to tighten this screw.

They are all T20 Torx.

NOTICE THE POSITION OF THE OUTLINED ITEMS



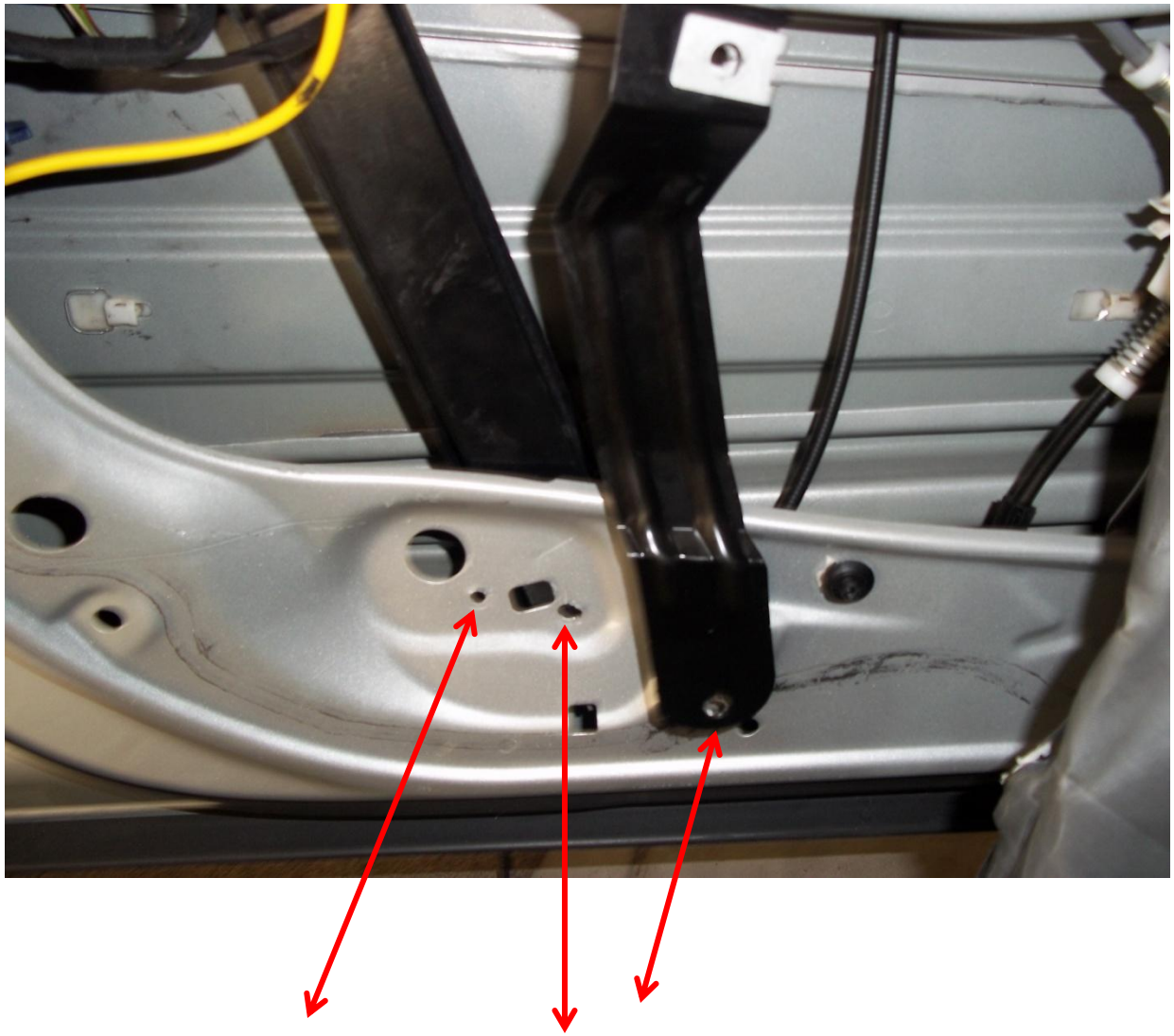
Don’t forget to put the lock cap back on. I counted twenty turns that put mine in the perfect position. IT does not need to screw all the way down otherwise the cap may be too low when the door is locked.

When reinserting the actuator make sure this little white tab is locked into this position. ***It has sort of like a little clip.***

Rod hooks in here.

Notice where the inside door handle cable clips into that little black hook.

ALMOST HOME



I did not put the rivets back in until everything was tested and working properly.

However, that is a personal choice.

Assuming everything is working properly you can now reinstall the moisture covering and the white bar.

Follow the instructions from the Benzwerks video on YouTube to reinstall the door panel.

One thing to note: If you removed each plug individually from the door control module make sure none of them are hiding behind the panel before you clip it back in place.

CELEBRATION TIME

This file is a work in progress. Please feel free to add corrections, additional information, and any comments or suggestions.

Thanks in advance,

John a.k.a. IBEFORREAL