DDM 30658116 Cleaning Procedure

Introduction

The Drivers Door Module (DDM) Part number 30658116 is used to control the power windows, Door locks and mirrors. The DDM consists of the button panel on top, which includes and upper circuit board assembly, and the lower casing which houses the lower circuit board assembly and connectors.

The DMM does not have mechanical contacts as have been used on earlier versions of this switch assembly, instead the upper circuit board has integral force sensors that are activated through a rubber mat which has raised portions on it that act like springs to push on the force sensors when the buttons are activated.

The rubber mat has a series of holes in it that allow the light from the Light Emitting Diodes (LED) on the circuit board to shine through and illuminate the buttons. These holes expose a number of sections of the circuit board and allow dust and dirt to accumulate over time. I found that this dust and dirt is able to get between the mat and the circuit board.

The dust and dirt contamination has two effects the first is because the force sensors are extremely sensitive any particles between the mat and the circuit board will affect what portion of the sensor is pushed on this can lead to intermittent operation. The second is that the particles will act like sand paper and over time could wear through the protective coating on the circuit card causing a permanent failure of the sensor.

This procedure is guide to removing the rubber mat and cleaning any accumulated dust and dirt.

The upper and lower sections of the DDM are held together externally by 8 latch points and internally the two circuit boards are connected by a ribbon cable. Disassembly and reassembly of the DDM is quite simple.

Disassembly and Cleaning Procedure

This procedure is written as a guideline for the cleaning of a DDM that has already been removed from the door lining and is in a clean area at room temperature.

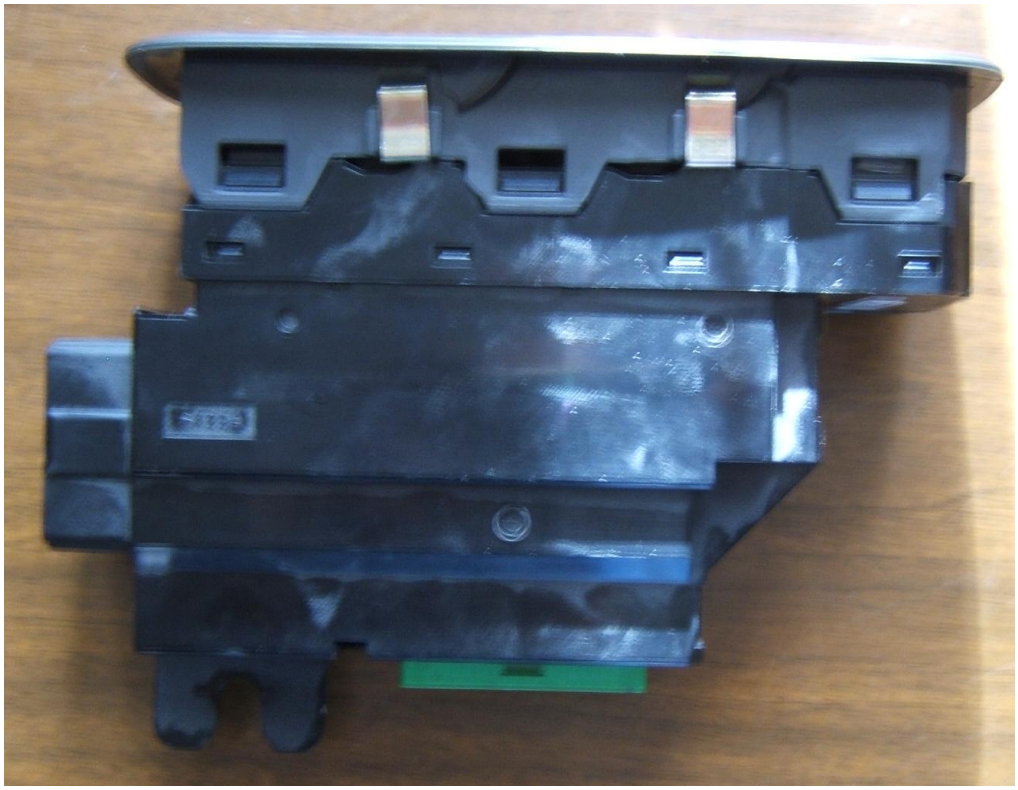
Use extreme caution when handling the module, and its individual parts to prevent damage. They can be easily damaged if dropped or otherwise mishandled. Take the time necessary to do the job properly.

Respect normal safety precautions when using hand tools and respect the health and safety information included with the can of contact cleaner.

Materials and Tools

2 small flat screw drivers (use a file to remove any sharp edges from the screw drivers)
1 small Phillips screw driver
Lint free cloth
Contact Cleaner

1) Gently release the 6 large tab latches (3 on each side of the module) holding the interior finish cover by using a small flat screw and remove cover.



2) Release the 8 smaller latches (4 on each side) sequentially that hold the upper section of the DDM to the lower section. Using two small screw drivers at a time one at each consecutive latch will make the process easier. Take your time and be gentle so the upper section does not crack. In the picture above 4 of the 8 smaller latches can be seen just below the larger latches.

3) Once the latches are released slowly separate the two sections and you will see the ribbon cable connecting the upper and lower circuit boards, this cable will only allow the two sections to be separated by about 1 ½ inches. Do not pull on the ribbon cable.

4) Locate the connector on the upper circuit board that holds the ribbon cable. There is a small lug on each end of the connector. Using you thumb and index finger gently pull on the lugs away from the circuit board, they will move about 3/16 of an inch and release the ribbon cable. Note the orientation of the cable to the connector so it can put it back together later.

5) Once the ribbon is released the upper and lower sections can be separated.

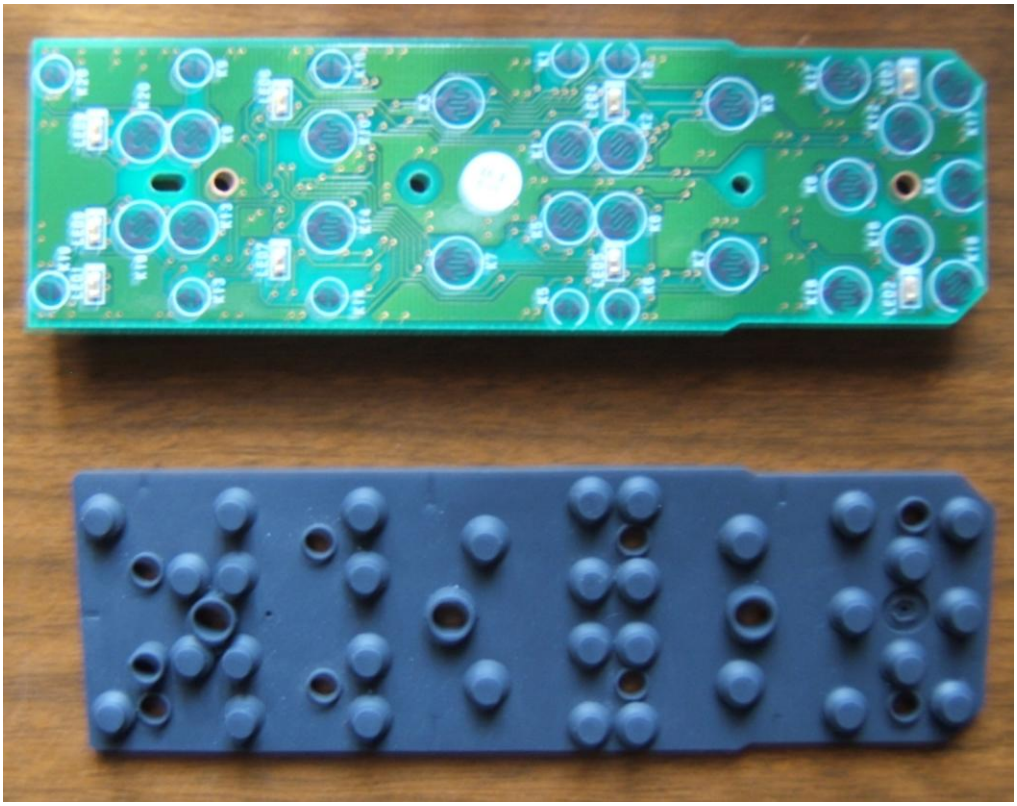
6) There is no need to release the ribbon cable from the lower circuit board.

7) Holding the upper section upside down, looking at the bottom of the upper circuit board you will see three small Philips screws holding the upper circuit board in place. Remove the screws gently and remove the circuit board. It is recommended to always hold the circuit board by the edges when handling.

8) With the circuit board removed keep the button assembly upside down or the mirror control lever will fall out if the lever knob was removed or is broken.

9) With the upper circuit board removed you will see the grey rubber mat on the top of the circuit board.

10) The rubber mat is held to the circuit board by two rubber lugs molded into the mat that go into holes on the circuit board. Gently pull on the rubber mat to release each lug and remove the mat from the circuit board.



11) The round circles with wavy lines in them are the force sensors and the small white rectangular blocks are the LED's on the upper surface of the circuit board.

12) Using water and the lint free cloth clean all of the dust and dirt from the rubber mat on both the upper and lower surface. Make sure there are no particles remaining.

13) Using the lint free cloth wipe the upper surface of the circuit board and ensure there are no particles remaining. Do not use water, other liquids or a scraper to clean the circuit board. Damage to the circuit board could result. If there was something like a soft drink spilled on the circuit board, use a damp cloth to wipe the surface and let dry.

14) Reassemble the rubber mat onto the circuit board by gently pushing the two lugs on the mat into the holes in the circuit board one at a time. Do not use any adhesive or other type of spray or assembly compound, they need go together dry.

15) Using a soft tooth brush and water, clean the button assembly dust and dirt and let dry. Hold the mirror control lever so that is does not fall out. If it does fall out or is removed the round section of the lever goes forward and the 4 lugs on the lever and square actuator need to engage in the slots in the button assembly housing.

16) Install the upper circuit board on the button assembly and gently reinstall the three Phillips screws. Tighten the screws only enough to hold the circuit board in place (finger tight), do not over tighten or the circuit board could crack.

17) Push on each of the buttons to make sure they move freely.

18) Reconnect the ribbon cable to the upper circuit board, make sure the cable is not twisted and that the metal wires on the connector contact the wires on the ribbon cable. With the ribbon cable held in place with one hand push on the lugs on each end of the connecter towards the circuit board to lock the ribbon cable in place.

19) Reassemble the upper and lower sections of the module buy pressing them together to connect the 8 small latches. When assembling the two sections gently guide the ribbon cable into the lower housing.

20) If the knob from the mirror lever was removed reinstall it.

21) Reinstall the interior finish cover by pushing it on to the module and engage the six large latches.

22) Look at the two connectors on the module, make sure they are clean and there are no bent pins.

23) Use a very light spray of contact cleaner on the connectors. Spray one connector at a time and hold the module with the connector pointing down so that any drips will not go into the module.

24) The module is now ready to reinstall in the door.

Summary

This module is made very well and is relatively simple to work on. Since there are no contacts to wear out is should last a very long time with a minimum of maintenance.

This cleaning procedure should be redone every about every 5 years or when a problem develops. If the car is driven in a very dusty area with the windows or sunroof open it will probably need to be done more often.

If this cleaning procedure does not restore proper operation of the DDM, a replacement DDM will be required.

Note:

If a replacement DDM is required, and using the procedure in this document it is evident that the upper section from the replacement DDM could be installed on the lower section of the original module. If this is done and there is no problem with the lower circuit board the module will work and there will be no need for the dealer to reprogram the DDM when it is reinstalled since the original lower circuit board is being reinstall with the replacement upper section and is already programmed for the car.

If a used replacement DDM is being used, the cleaning procedure should be accomplished to ensure it will operate properly before replacement...