

XM heater flap servo

Problems with the servo motor unit that moves the heater flap seems to be quite common on (older) XM's.

The heater flap servo is located on the left side of the central heater box high-up under (in) the dash. In order to be able to remove the servo from the car, the panel under the steering wheel has to be removed first (see Fig. 1). One also has to remove the carpet covered panel in the footwell that cover the left side of the central console.



Fig. 1 : Panel under the steering wheel and carpet covered panel removed.

When the panels have been removed the flap motor servo unit is visible under the dash. Unfortunately the front screw that mounts the servo to the heater box can not be accessed because of the of large white connector (See Fig. 2 and 3). The rear screw is not visible at all, here a very short screwdriver is needed because of the limited space.

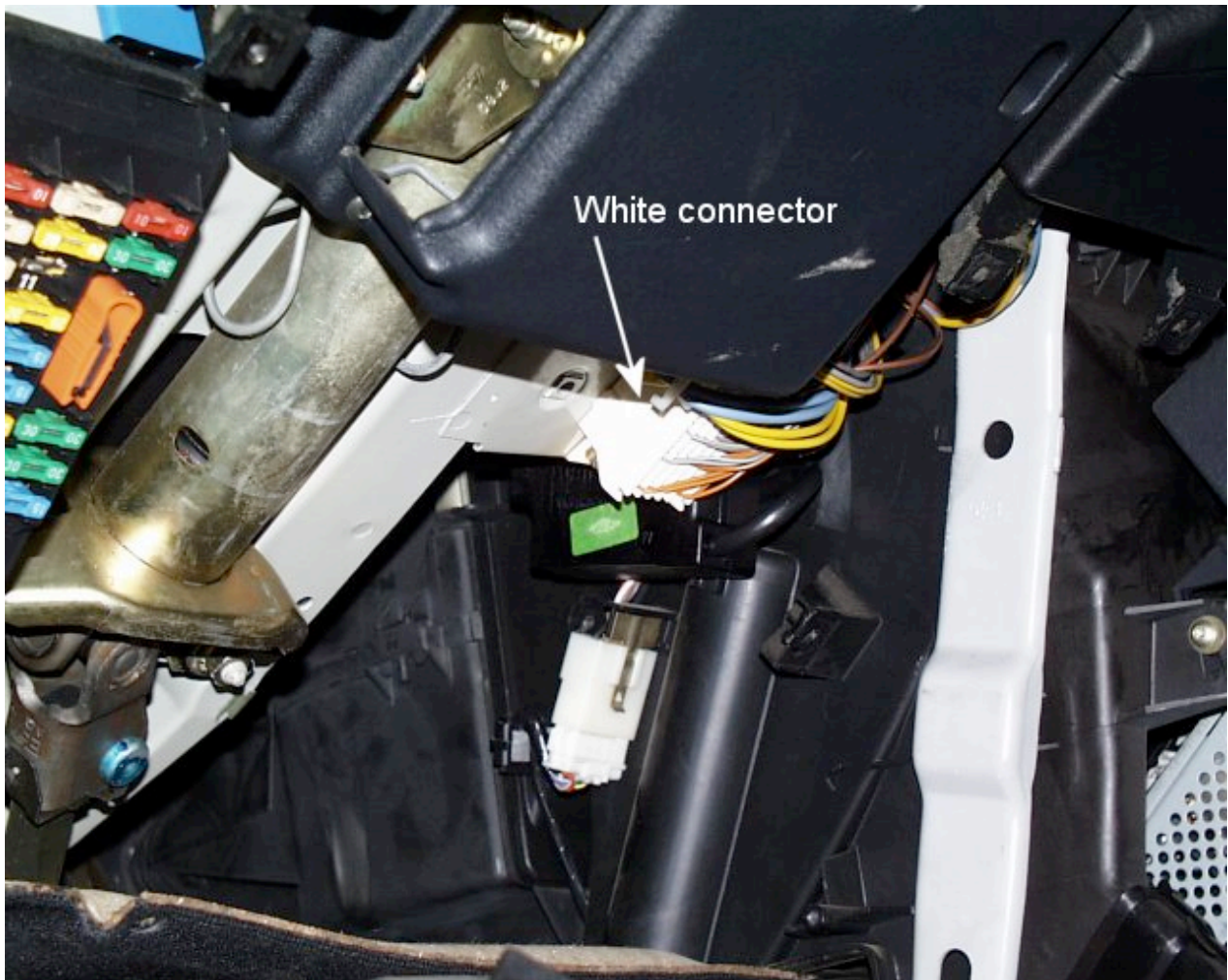


Fig. 2 : The heater flap servo is now visible, it's small black plastic box with the green sticker.

The white connector has to be removed in order to be able to access the front screw. The connector is bolted to the frame with two bolts, removing is easy.

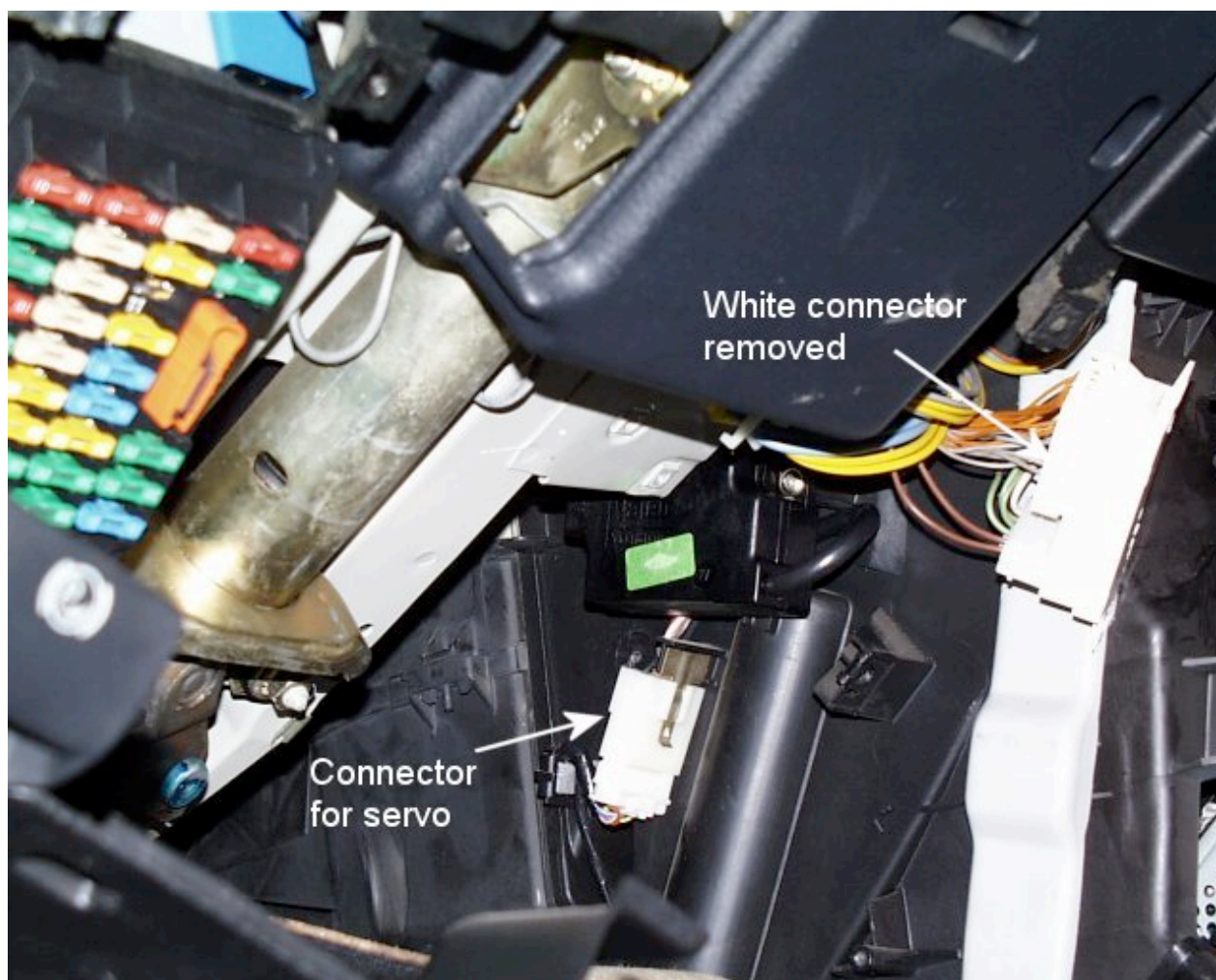


Fig. 3 : After removing the white electrical connector unit the rear mounting screw is accessible.

After the heater flap servo has been removed (Fig. 4) one can see the two mounting points and the heater flap axis with the small lever-arm (which is probably there for the cars with manual heater control).

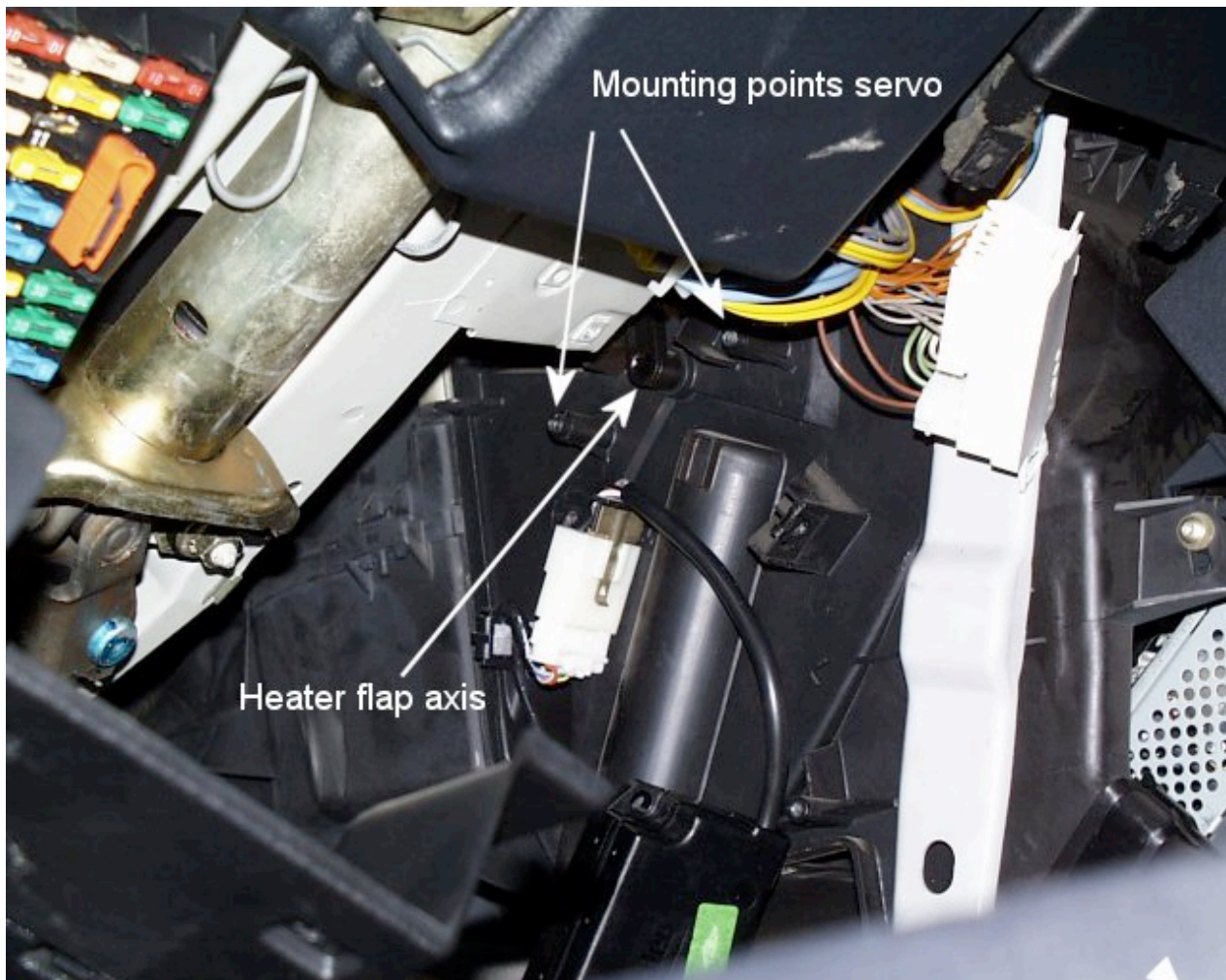


Fig. 4 : The servo is now removed, it's hanging from its electric cable.

The servo axis is flattened at one side (see Fig. 5), the hole in the heater flap axis has the same shape. Both axis will fit together at one position only, so make sure that the servo axis is in the same position after reassembling.

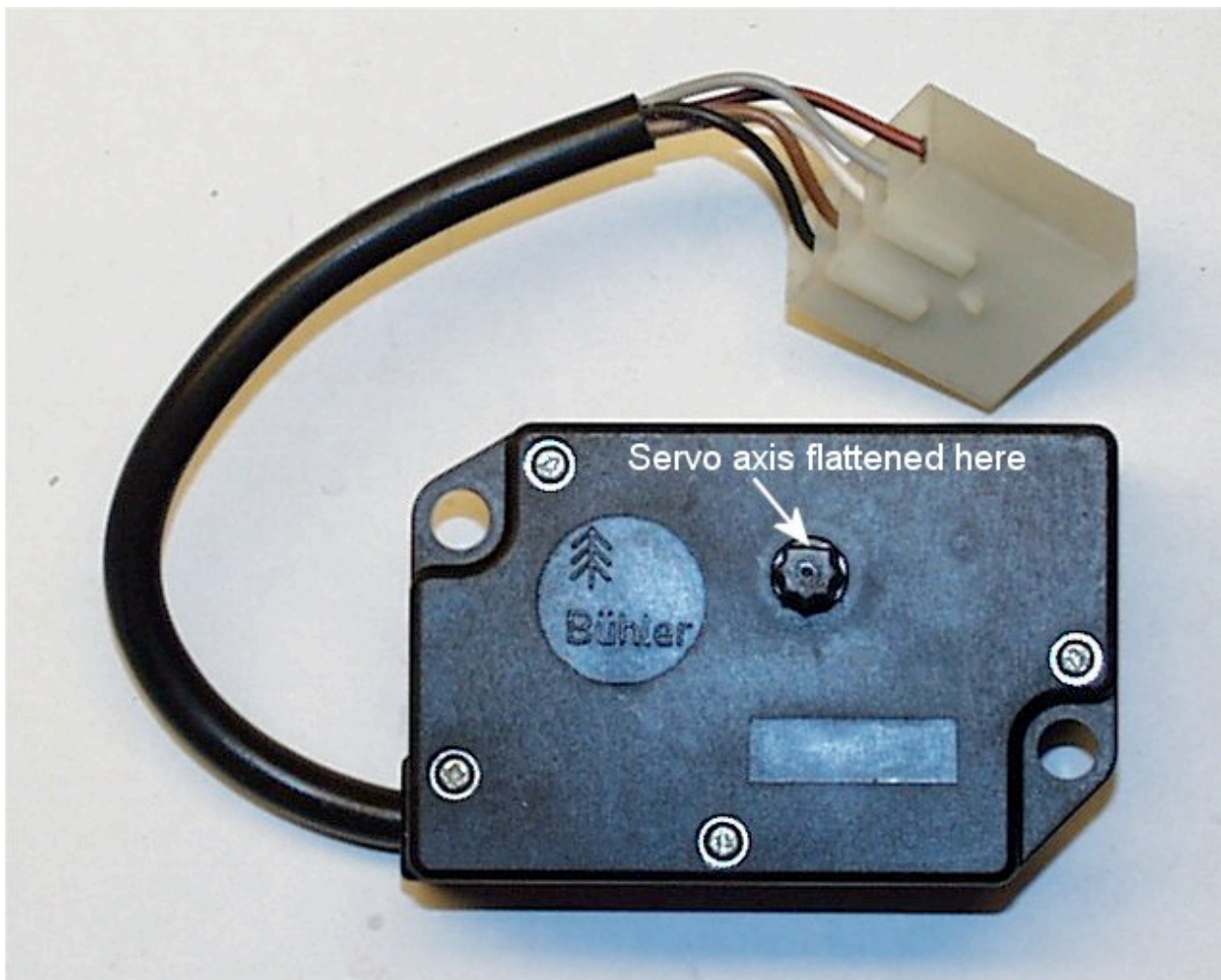


Fig. 5 : The complete heater flap servo.

The servo is easily opened by unscrewing the four screws (see Fig. 6). Take care while pulling apart the two halves of the servo box in order not to tear the rather fragile seal (see Fig. 7). Please note the arrows on the big gear wheel (that drives the flap) and the smaller gear wheel (that drives the servo potentiometer) at the right. On both gear wheels there is an arrow, they have to be aligned when the servo is reassembled.

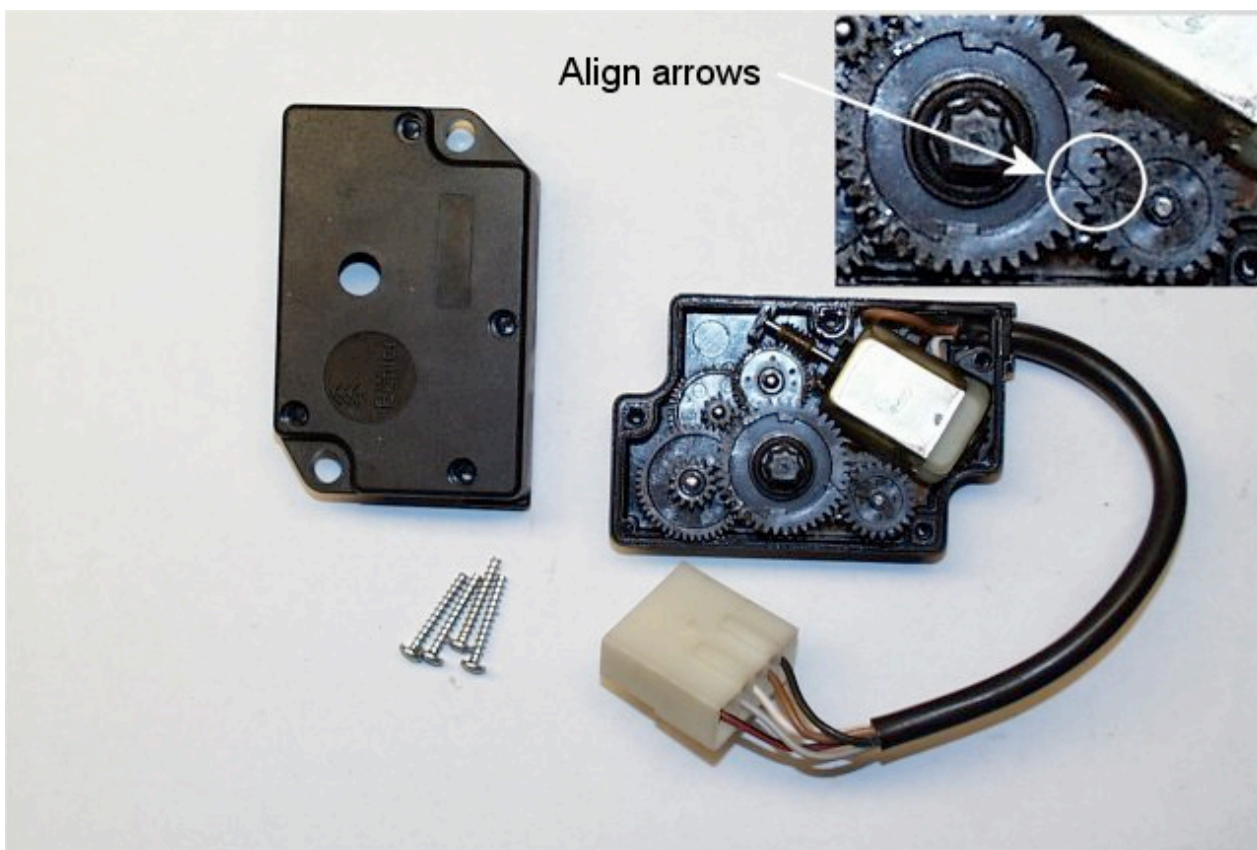


Fig. 6 : The heater flap servo box opened.

The two gear wheels mentioned above are easily removed (just pull them upwards).

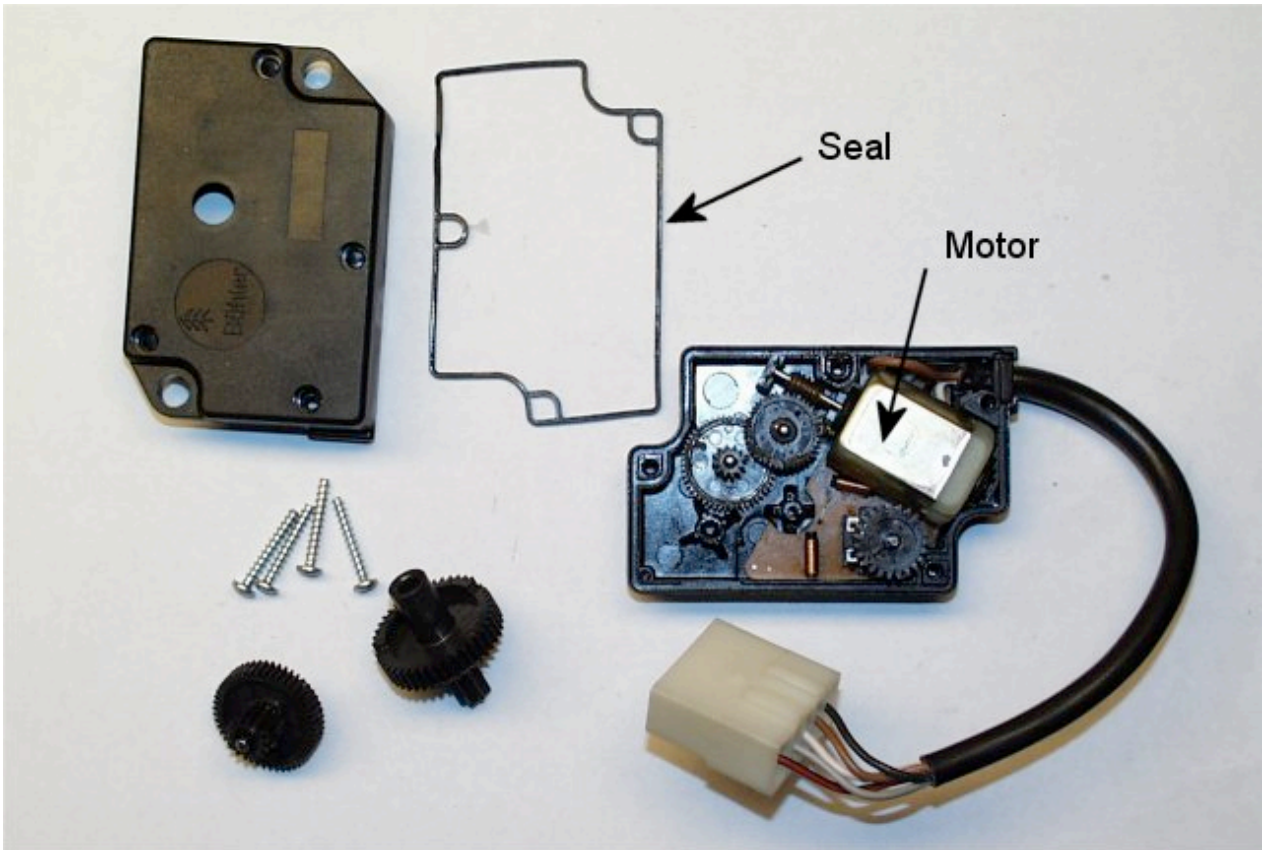


Fig. 7 : The heater flap servo partly disassembled.

Now the little motor can be removed together with the circuit board (PCB). The motor is soldered onto the PCB.

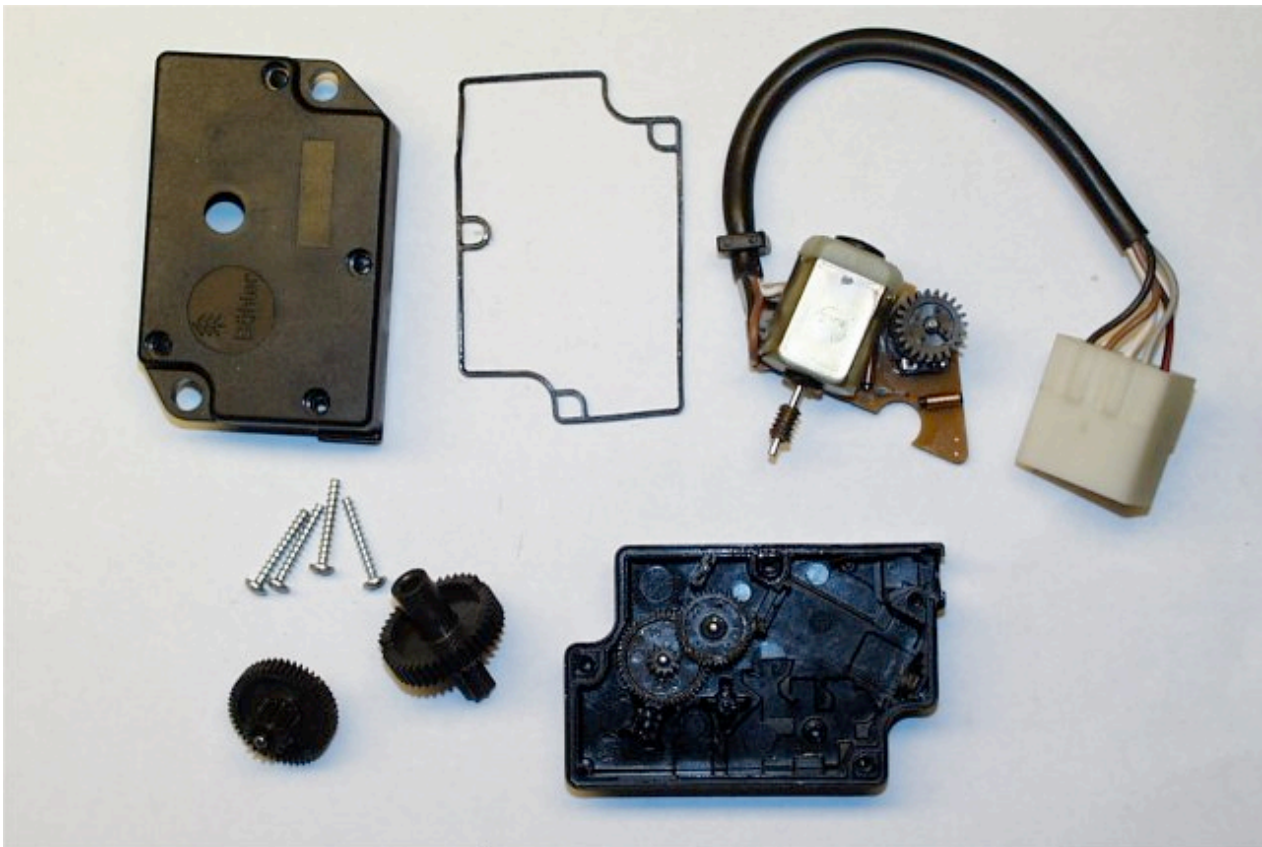


Fig. 8 : The heater flap servo almost completely disassembled.

The motor can be tested by applying 7 Volt DC to the brown and the black wire in the plug. Of course you can also do this when the servo is still assembled.

In case the motor doesn't run correctly anymore you might try the following as suggested by Frank Verschuren on the XM-L mail list :

Typically what happens is that the brushes in the motor short circuit a little, so the current through the motor is to big for the IC output in the climate control ecu to handle. I took me some time to figure out, because in my case the motor would still run on a normal 9V battery (and then it runs for some time until the motor stops at the wrong place causing the brushes to short-circuit again.) If above sounds familiar than read on below.

It's not that difficult to solve if you are careful and handy. You can open up the unit and solder the motor out. Don't overheat it with the soldering iron btw, I did that the first time and the plastic where the brushes are in melted a little.

If you have the motor apart you can carefully scrape the brushes of the motor somewhat into shape. You must scrape some of the graphite(?) off, so the brush is more square rather than rounded around the contacts of the rotor (which is causing the short-circuit).

Assemble the rotor in the motor outside and dry-run it first with a 9V battery. If it works you can reassemble it back in the flap control housing. When assembling look at the marking on two of the gear-wheels they should face each-other getting the potentiometer in line with the flap position.

You don't have to reset anything when all is back in place, just cycle the ignition off and back on, it should be cleared.

It worked for me. The first I repaired got the problem back after a year and I repeated the procedure. Within the current XM, I had the same problem and it hasn't reappeared yet. (1.5 years ago now).

© 2002 Jint Nijman, Germany. All rights reserved. This page was last updated on : Sat Feb 04 2006 10:50:21
The URL of this page is : http://www.citroen-ds-id.com/xm/XM_Heater_Flap_Servo.html