

AC Control Servo Repair

This Procedure is written for assistance and is now way associated with Audi. The user of this document takes full responsibility/liability for their work and actions. No liability is assumed by the author for the use of the information contained within this document.

Items required:

Small Flat Blades (Jeweler Screwdrivers)
Torque driver or bit
Needle Nose pliers
Freon
Razor blade or Exacto
Fine Sandpaper (1000 grit)

Helpful items but not required:

Dremel (will help with longevity of repair, plus the money saved on the servo will pay for it)
Round object such as a drill bit approx. 3/16"

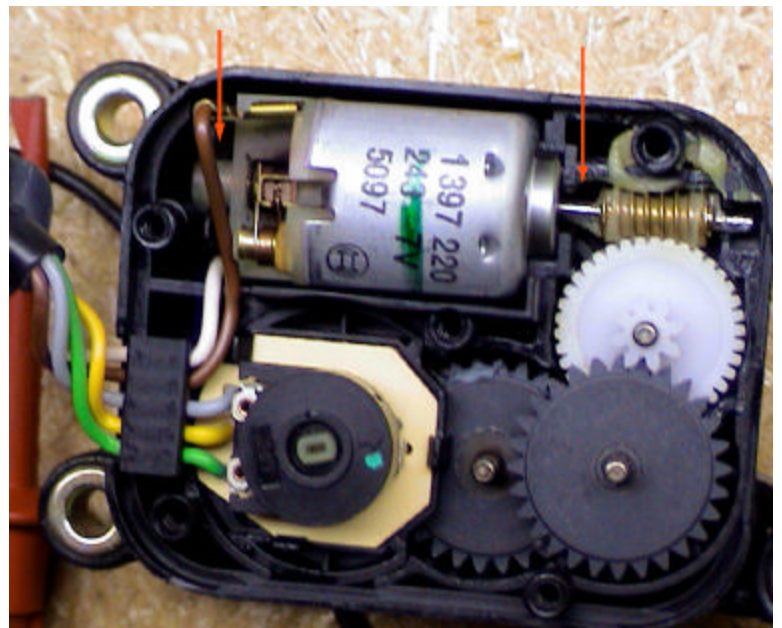
Prior to servicing, I tested my motor to assure it wouldn't turn by using a AC/DC converter and placing it directly on the motor tabs. Both of my servos refused to turn in the housing but one did start to spin after removing it from the house although it sparked like crazy. After cleaning, each motor spun freely and evenly.



Remove the servo from the vehicle and open the back cover by removing the 5 torque screws.

After removing the cover take note of the motor orientation, in this illustration text is up along with the brown wire, and lift the motor out of the housing with a small screwdriver at the points indicated.

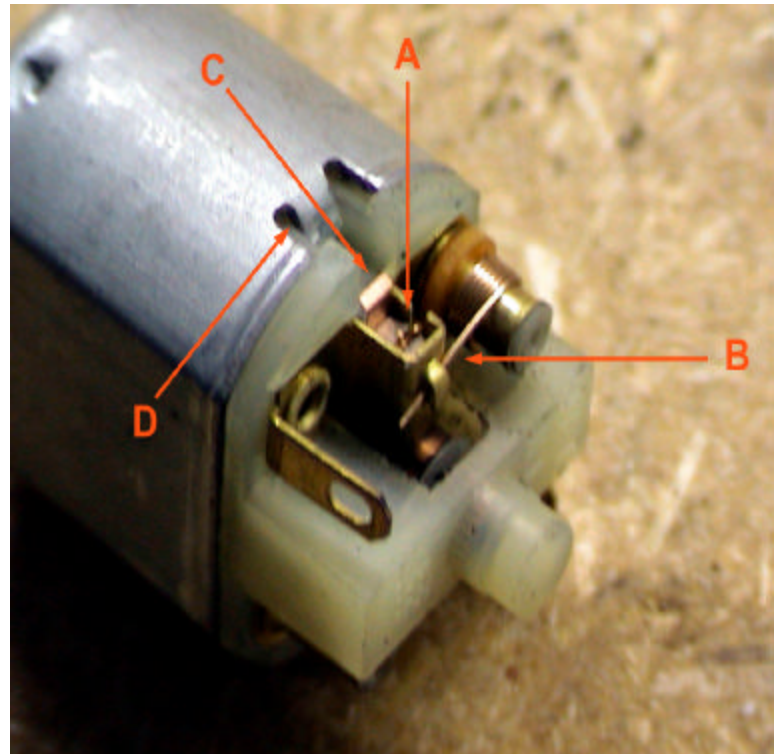
While the motor is out you can take advantage to clean the potentiometer with some freon spray.



Using a smaller screwdriver, move the pressing spring up off the brush (point A) and over to the side (point B).

Only do one side then flip the motor and tap on a table till the brush comes out. Be careful because there is a tin copper tab (C) that acts as a buffer between the brush and motor housing. Make sure this item come out otherwise it will fall into the motor and get hung with the magnets/coil. Also note the direction it comes out, with the bends around the plastic.

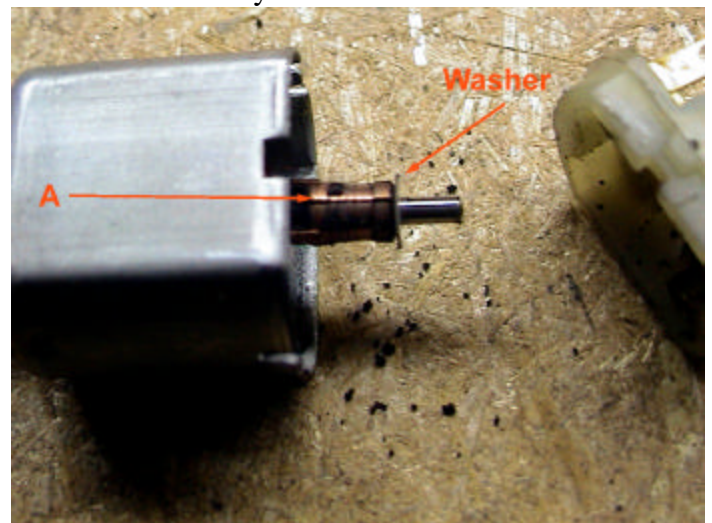
After the brushes are removed, pry the motor case open with a small flat blade driver at the two casing tabs (D). Be careful because the driver likes to pop and jab you, trust me I did it like 5 times!



Here are some ideas of what you may expect to see with the dirty brushes and contactor

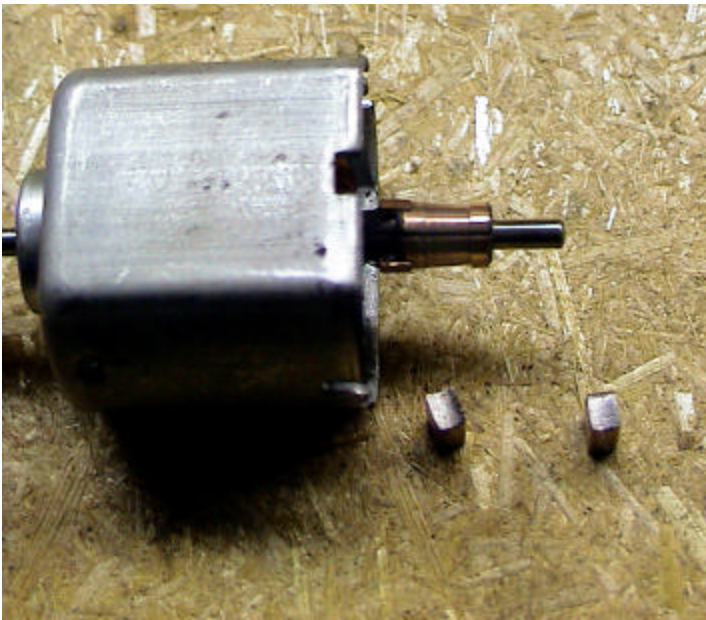


You can see all the old brush sediment laying on the table



Make sure you don't loose the small clear washer on the end of the shaft.

Take a razor blade/exacto and clean the three slits (A) to clear of debris otherwise this can result in a short circuit around the motor.



Using a polishing tip on the dremel at low speed, clean the contactor and the brushes. Clean the brushes on all sides because they receive power through the housing. Be very careful when buffing the brushes because they launched right out of my fingers a couple of times and I don't recommend holding with needle nose because they can crush.

I also took some sandpaper wrapped around a drill bit to smooth the inside of the brushes and retain the concave shape.

Then clean the above parts with freon and dry.

Put the clear washer back on the shaft

Insert the motor case into the brush housing and bend the clips back down using a needle nose pliers. Note: the housing can only be placed together in one way as they are notched as shown in the above illustration.

Install the metal buffer being careful not to drop into motor and then replace one brush. Move the pressing spring into the center groove of the brush. Repeat for the other brush.

Install motor back into housing noting the correct position and wires. Test with power source.

Replace top cover and reinstall followed by some beer.