

I have recently disassembled 5 failed fans from A4's and A5's - ALL of the failures have been brush tension failures, and 4 of the 5 fans were repairable with about 30 to 45 minutes work each.

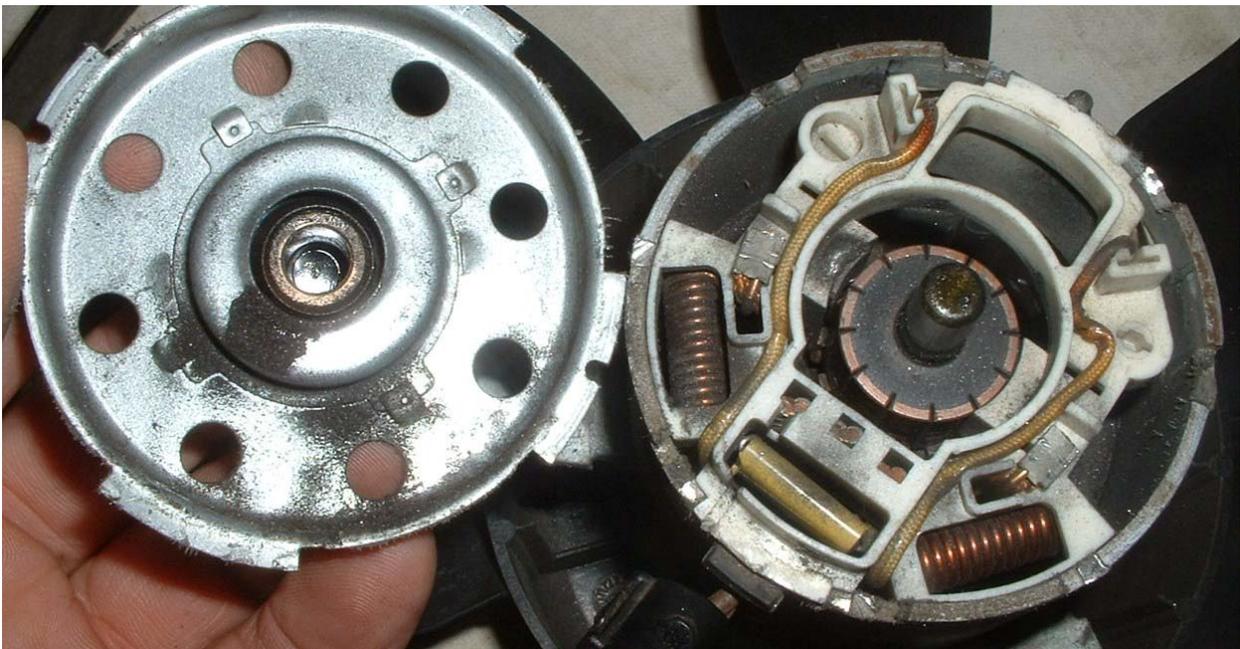
The brush holders are getting some debris in them (sand?) that is causing them to stick, and not feed into the commutator. In 4 cases simply cleaning the brush holder out with contact cleaner and exercising the brush through its range of motion allowed normal operation to be restored.

**Avoid the mistake I made on this fan – note the metallic debris all in it.
Tape the openings prior to any grinding.**

- 1) Remove the fans from the car and their holding fixtures.
- 2) Tape the openings closed. Use a Dremel tool to cut off the bent ears that hold the rear bearing plate on.



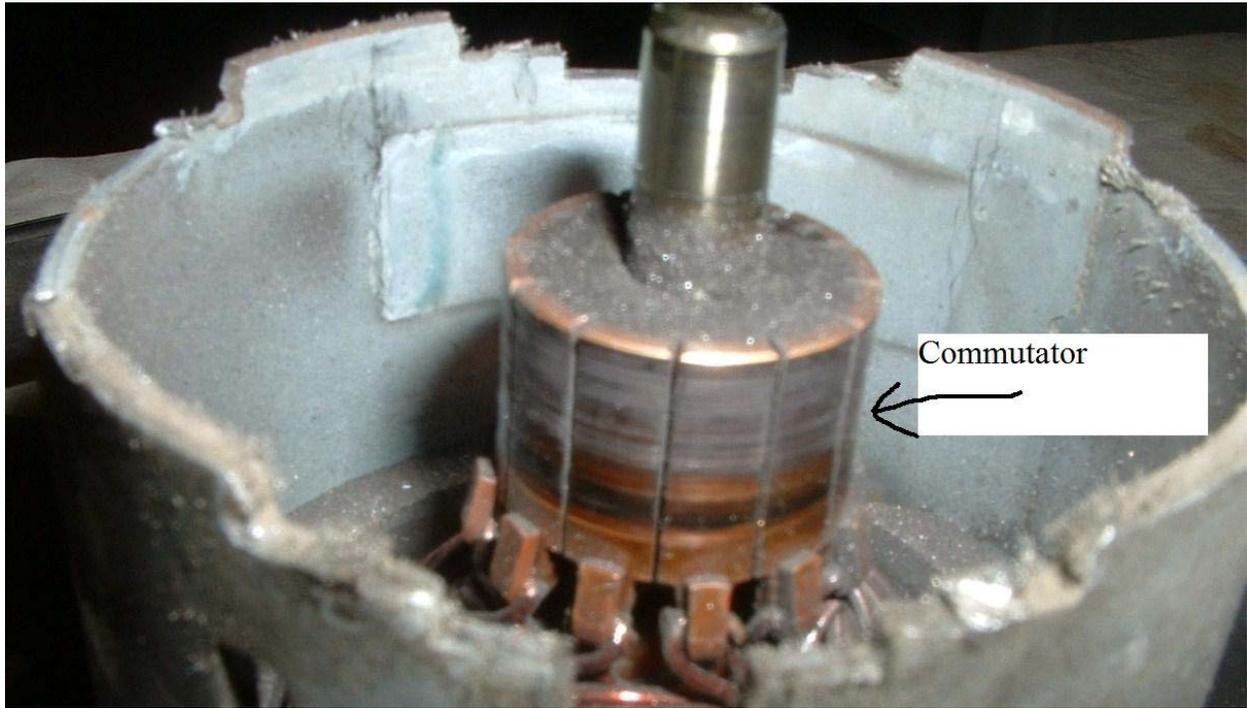
3) Remove the rear bearing plate, by prying it out with a putty knife.



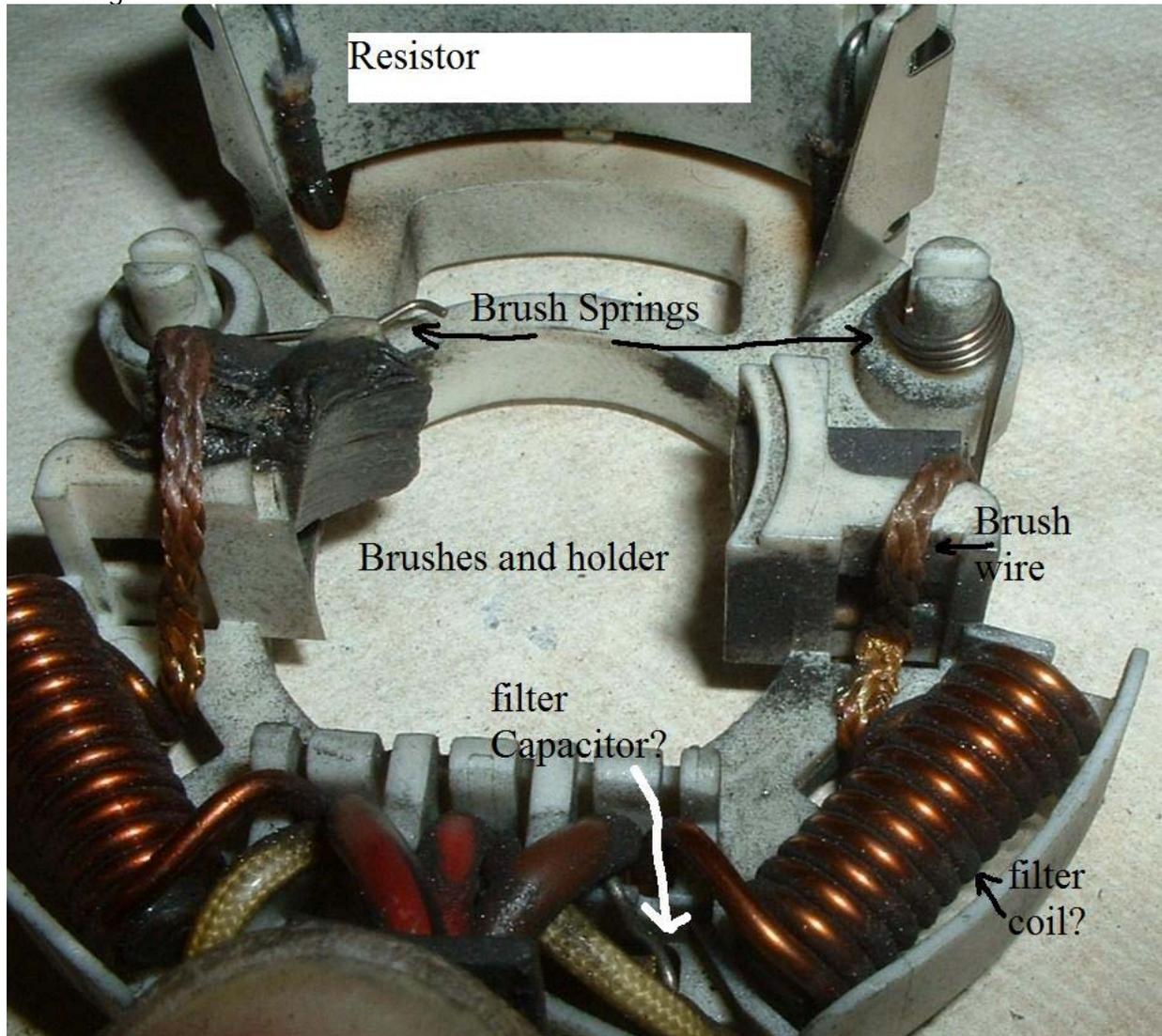
4) Remove the brush holder plate.



5) Examine the commutator; if it has a step of less than 1/16" ground into it, it is probably functional. Clean the fan internals – all you can reach.



6) Examine the brushes, do they move freely in their holders? Note the brush length for later use. They will need to have about 3 times as much in the holder as out, to prevent becoming cocked. These have cocked and stuck and ruined the brush holders.



7) Remove the brushes from the holder, leaving electrical connections intact. (photo missing)

8) Flush the holder and clean the brushes with a non-residue electrical contact cleaner.

9) Put a rag and tape inside to cover the rotor and internals. Take the Dremel tool and remove any remaining burrs, so that the rear bearing plate will fit flush again. Be careful to direct the debris out of the fan. This one is not fitting flush.



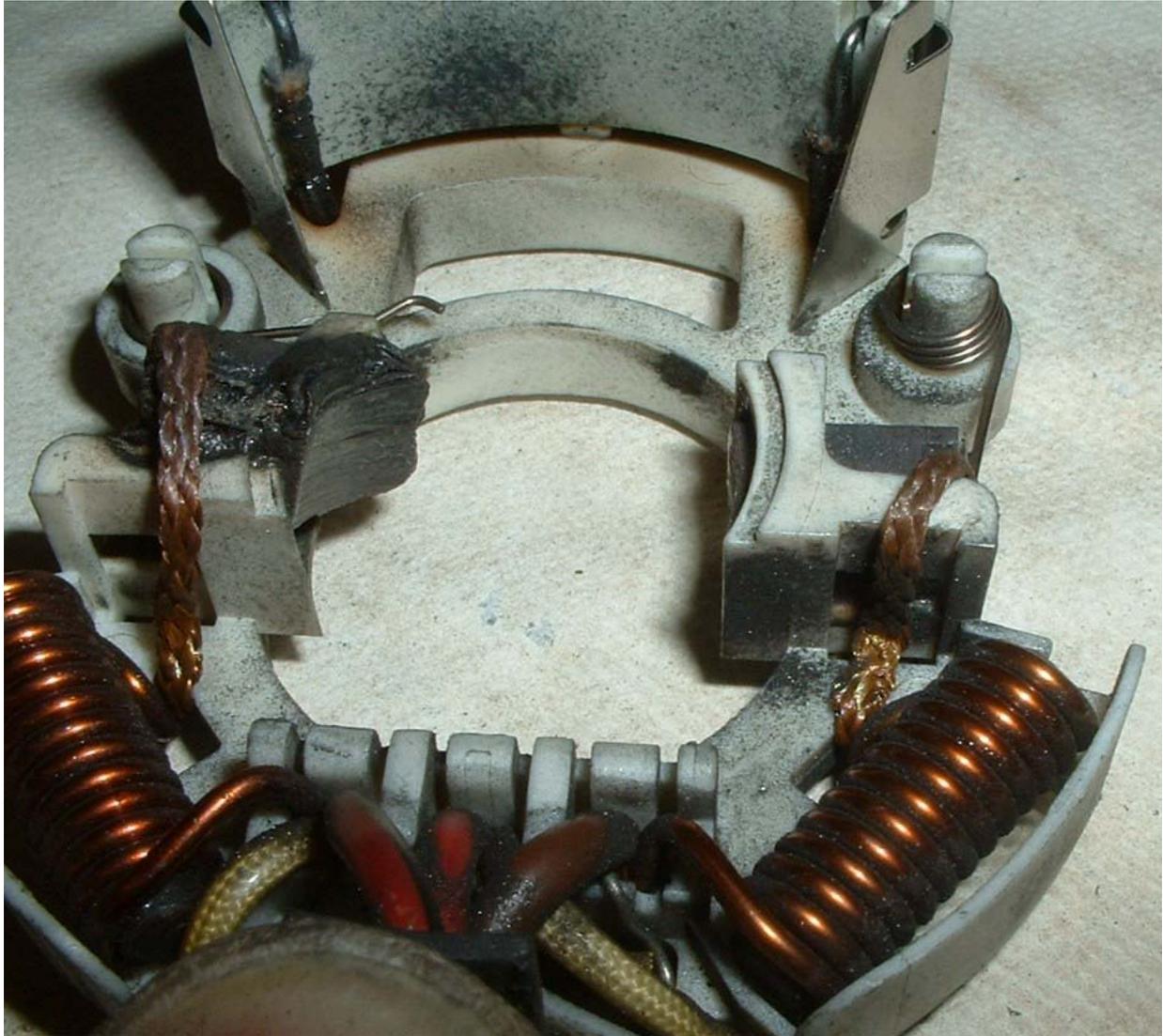
Can you see the remnants of the ears you ground off to remove the backing plate?



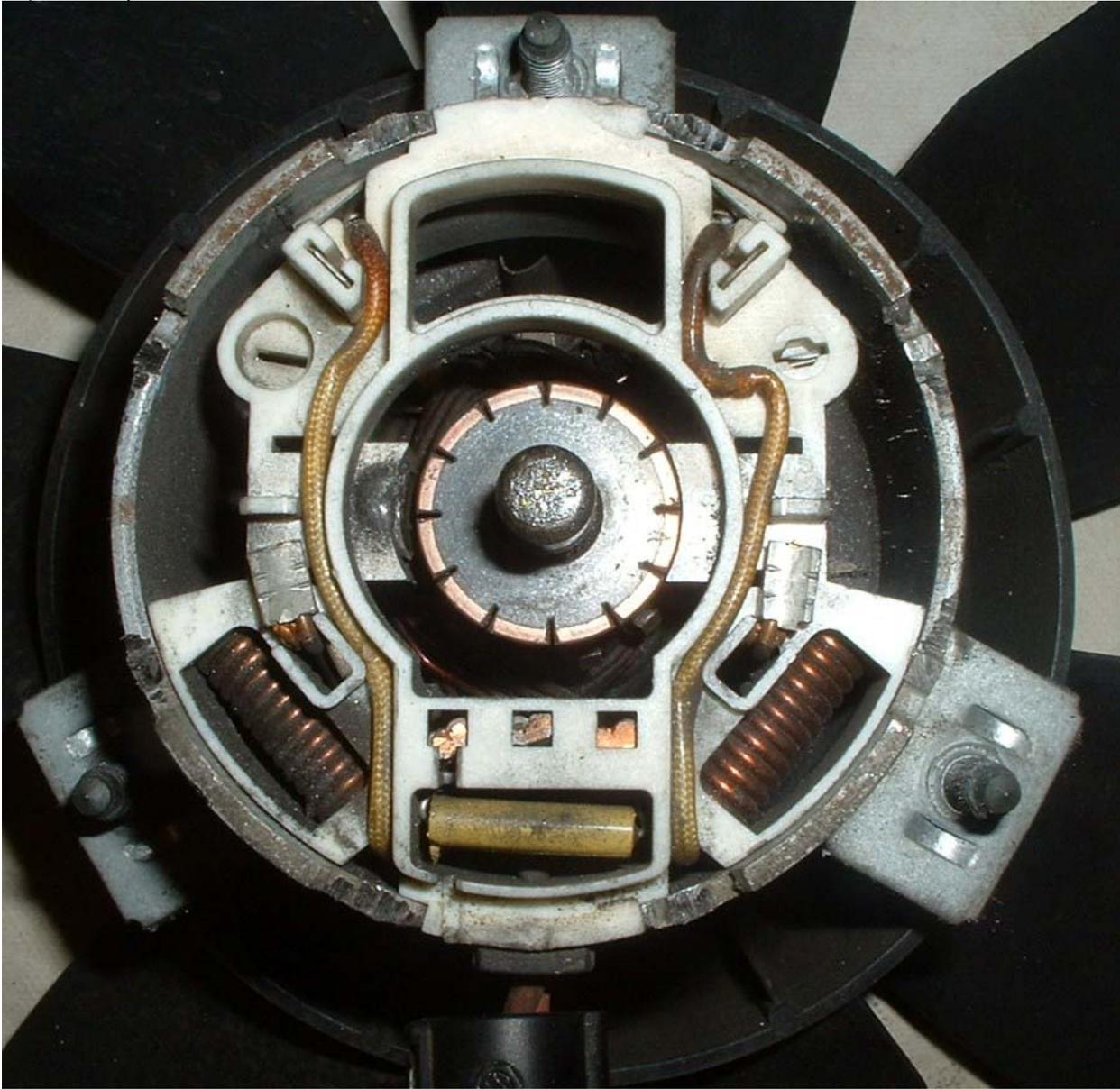
Use a Dremel to remove the remnants of the clamping ears. Direct debris out of the fan. Cover the internals with a rag and tape.



10) Reinstall the brushes, hold them back with your fingers (may be easier with two people, if there are 4 brushes.) Inspect the wiring attachment to the brushes to ensure it has freedom to move in its slot.



11) Brush plate reinstalled.



12) Ensure the bearing plate sits flush.



13) Clean off an area between the cylinder walls and the rear bearing plate with a non-residue cleaner.

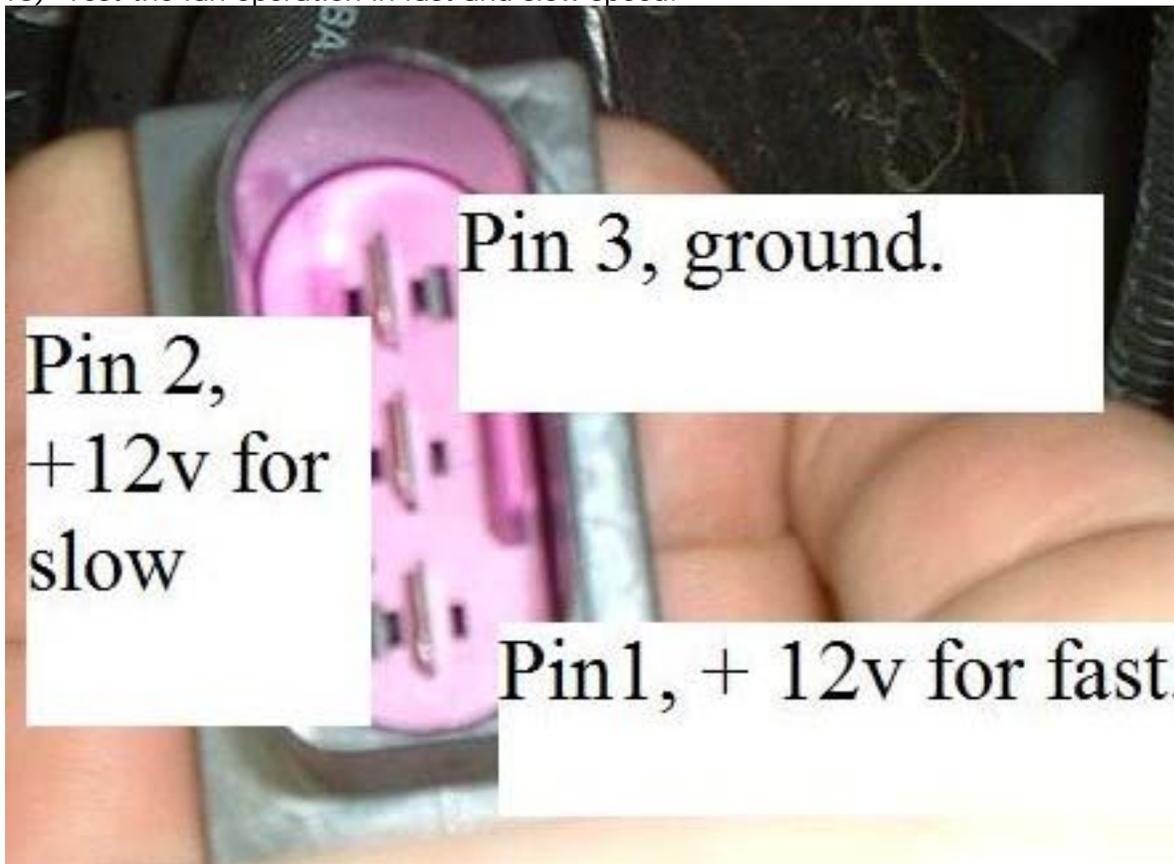
14) Mix up some DEVCON or JB WELD and put 3 or 4 dabs spaced evenly around the rear plate, to form a bond between the side walls and the plate.

This backing plate has 4 segments, so I would use 4 dabs of JB Weld, instead of 3.

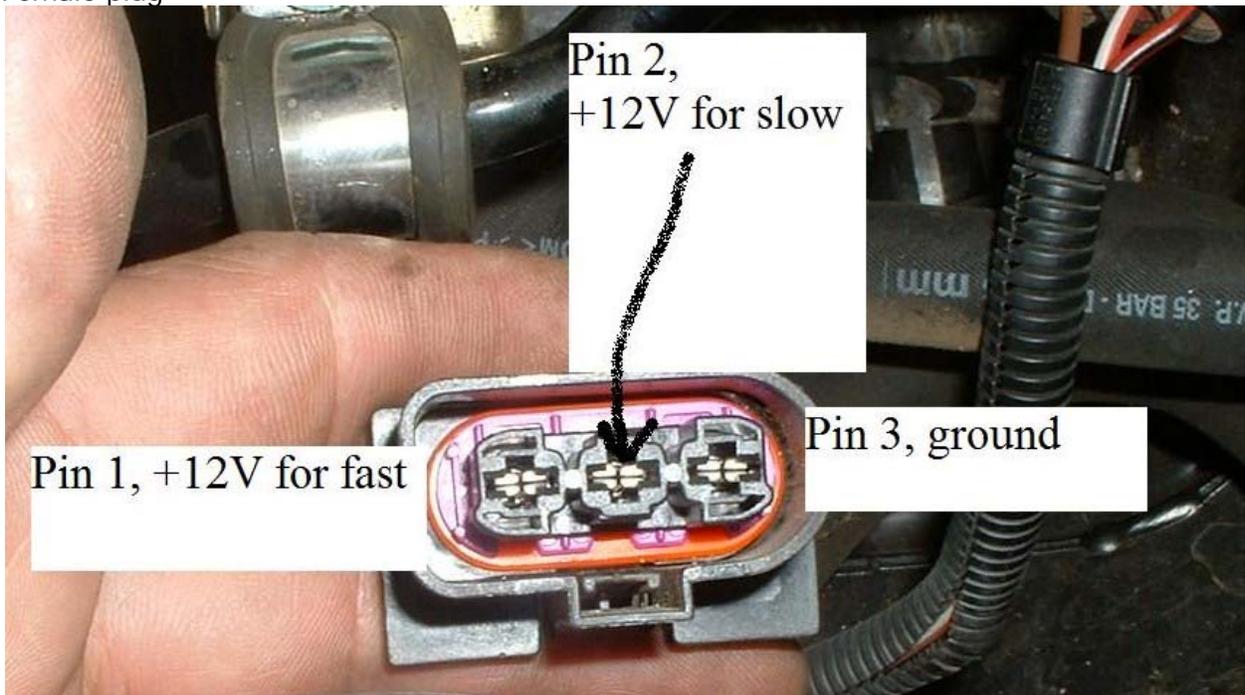


15) Let it cure. You can get 15 minute cure time JB Weld; that is what I use.

16) Test the fan operation in fast and slow speed.



Female plug



The single fan that was not repairable was also a brush holder failure, but it had melted off of the plate. (This is the one I used for these photos.) So it could be repaired eventually, when I get some spare parts.

Note that my experience differs from a post I previously held to be definitive on the subject. A UK Mark IV forum post found that most failures were in the slow speed resistor connections (which can also be repaired), but I found no issues with the resistors.

[A4 fan troubleshooting](#)

[Sept 98 - May 99 Build date A4 Manual Air Conditioner Troubleshooting](#)

[May 99 - end of A4 Manual Air conditioner Troubleshooting](#)

[Fan Repair is possible](#) Sorry I have not put in the photos yet, this is pretty crude by the forum standards.

[pinout of J293](#) Thanks to wulee

[Refrigerant Pressure table vs temperature and G65 pressure transducer](#) This is based solely on reading one (my own) pressure transducer; this is not guaranteed accurate. If you have the real calibration data, or data from your own transducer, please forward it to me (DanG144 on tdiclub.com)