DIY - AC & Oil Fan Series Resistors

Part 2 - Changing the AC Fan Series Resistor

In this post I describe how to change the AC fan series resistor.

Overview of the steps involved

- Lift the front-end onto jack stands
- Remove the left front wheel
- Remove the left front wheel well liner
- Remove the front spoiler left lower part
- Loosen and lower the AC condenser
- Remove the old series resistor
- Install the new series resistor
- Test operation of AC fan
- Installation is the reverse of removal

Porsche Parts Needed

Series Resistor	993-616-521-01	$41.42 (Sunset Porsche prices 2012)
Socket screw	N-044-728-1	$0.51
Washer	N-011-556-2	$0.23

Optional Materials

Thermal compound	Arctic Silver Ceramique 2	$8.00 (Radio Shack)
Copper paste	Lubro-Moly	Rennsport Systems
Isopropyl Alcohol		
Nitrile glove		
Coffee filter or lint-free lens cloth		

Tools Needed

Tools to lift front end of car (floor jack and jack stands or a lift)
Tools to remove and install front wheel
P2 phillips screwdriver
4mm stubby hex bit socket 1/4 inch drive I like Snap-On TMAMXS4E $13.25
8mm hex socket 1/4 inch drive
10mm hex socket 3/8 inch drive
13mm hex socket 3/8 inch drive
1/4 inch ratchet
3/8 inch ratchet

Detailed Steps to Change AC Fan Series Resistor

Photos that accompany this article can be found here:

https://goo.gl/photos/JbfQ4zxURS4o2LKEA

Removal Steps

Note the date and mileage

Loosen the left front wheel bolts

Lift the front end of the car and place onto jack stands or use a lift.
Make sure the parking brake is set to prevent accidental rolling.

Remove the left front wheel

Remove the left front wheel liner. (P2 Phillips screwdriver, 10mm hex socket)

NOTE: The liner has a "pocket" that surrounds the circular opening into the inner body panel, so you need to wiggle and pull it past this to free the liner.

Remove the front spoiler left lower part. (P2 Phillips screwdriver, 8mm hex socket)

NOTE: If you have a bumper cover that does not have a removable lower front part, then you will need to remove the entire bumper cover to be able to proceed. There is a DIY for this on www.pcarworkshop.com.

Unfasten the wiring harness from the series resistor.

Remove the 4 nuts that hold the AC fan assembly to the car. (13mm & 10mm hex socket)

Pull out and lower the AC fan assembly so that the resistor can be accessed.

Remove the series resistor. (4mm stubby hex bit socket)

Check for any debris in the fan and condenser area and remove it.

Installation Steps

Clean the cooling guide area where the new series resistor will be installed.

If using the thermal compound, first clean the cooling plate and the bottom of the series

resistor with isopropyl alcohol to remove any traces of oil, dirt, fingerprints, etc.

Next, tint the new series resistor and the cooling plate mating surfaces. To do this, apply a small amount of thermal compound the size of a grain of rice to the surface of the cooling plate and series resistor. Put on a clean nitrile glove and rub the thermal compound into the surface of the cooling plate and bottom of the series resistor. Now, take a clean coffee filter or lint-free lens cloth and remove the excess. There is no need to apply thermal compound to the side of the cooling plate that will attach to the cooling assembly air guide.

Apply a little copper paste to the end threads of the 4mm hex head screw to help prevent corrosion.

Assemble the cooling plate, series resistor, hex head screw and washer together and attach to the AC fan assembly. Do not be concerned about the notch in the cooling plate as it has no function here. Do not over tighten the screw. NOTE: The cooling plate does not fully sit down onto the cooling air guide.

Position the AC fan assembly into place and connect the wiring harness.

Test the low speed operation as described in the Part 1 post using a jumper wire.

If the fan does not run then more diagnostics will need to be done.

Reinstall the nuts which hold the AC fan assembly in place.

Reinstall the front spoiler left lower part.

Reinstall the wheel well liner.

Reinstall the wheel.

Lower the car.

Torque the wheel bolts.

Start engine and turn on AC. Fan should be running in low speed mode.

Update log.

For additional reading, see also:

Thermal grease from Wikipedia, the free encyclopedia:
http://en.wikipedia.org/wiki/Thermal_grease

Thermal Interface Basics:
http://www.arcticsilver.com/PDF/WhtPr/Thermal_Interface_Basics.pdf

Ceramique 2, Tri-Linear Ceramic Thermal Compound:
http://www.arcticsilver.com/cmq2.html

Detailed diagnostics for CCU and other system components:
http://www.pcarworkshop.com/index.php/993_-_Oil_Cooler_Fan