

DIY - AC & Oil Fan Series Resistors

Part 3 - Changing the Oil Fan Series Resistor

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

Overview of the steps involved

- Lift the front-end onto jack stands
- Remove the right front wheel
- Remove the right front wheel well liner
- Remove the front spoiler right lower part
- Remove the right headlight assembly
- Loosen and lower the oil fan assembly
- Remove the aluminum air duct
- Remove the old series resistor
- Install the new series resistor
- Test operation of oil fan
- Installation is the reverse of removal

Porsche Parts Needed

Series Resistor	993-616-521-01	\$41.42 (Sunset Porsche prices 2012)
Hex-head screw	900-378-030-01	\$0.26
Washer	N-011-524-27	\$0.23
Lock nut	N-022-148-12	\$0.18

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		
Emory cloth or similar		

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
8mm hex socket 1/4 inch drive
9mm hex socket 1/4 inch drive
6 inch socket extension 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 Oil Fan Series Resistor

Photos that accompany this article can be found here: <https://picasaweb.google.com/bruce.carter54/ACOilFanSeriesResistorsPart3?authkey=Gv1sRgCJSqnrLfwLfSQQ>

Removal Steps

Note the date and mileage

Loosen the right 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 right front wheel

Remove the right 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 right 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.

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

Remove the right headlight assembly. (See also page 136 in owners manual.)
Detach release lever from locking bar, move lever first to position C and then back to position B.

Remove the bolt in the headlight bucket that fastens the top of the oil fan assembly. (10mm hex socket)

Disconnect the horns from the wiring harness.

Pull out and lower the oil fan assembly. Pull off the bottom tray and set aside.

Remove 3 plastic nuts holding aluminum cooling duct in place. (9mm hex socket)

Lower the cooling duct and unfasten the wiring harness to the series resistor.

Remove the series resistor. (10mm hex socket)

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

Installation Steps

Clean the aluminum cooling duct and remove any corrosion in the area where the new series resistor will be installed using emory cloth or similar.

If using the thermal compound, first clean the cooling plate, the attachment point on the cooling duct 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. Do the same for the mating surfaces of the aluminum cooling duct and the other side of the cooling plate.

Apply a little copper paste to the end threads of the 10mm hex head screw to help prevent corrosion.

Attach the cooling plate and series resistor to the cooling duct so that the notch fits where the bump in the cooling duct exists and fasten.

Connect the wiring harness to series resistor and reinstall the aluminum cooling duct.

Reattach the bottom tray to the oil fan assembly and position the assembly into place.

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 lower 4 nuts which hold the oil fan assembly in place.

Reinstall the upper bolt which holds the top of the assembly in the headlight bucket.

Reinstall the headlight.

Reconnect the horns.

Reinstall the front spoiler lower part.

Reinstall the wheel well liner.

Reinstall the wheel.

Lower the car.

Torque the wheel bolts.

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/cm2.html>

Detailed diagnostics for CCU and other system components:

http://www.pcarworkshop.com/index.php/993_-_Oil_Cooler_Fan