

## NRF TECHNICAL ARTICLE

## BLOWER MOTOR RESISTORS



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### WHAT ARE THEY? HOW DO THEY WORK?

The blower motor resistor is an MODULE that controls the speed of the blower motor.

This are simple resistors but with a huge importance as they as they regulate the desired speed of the blower motor,

this is controlled by the internal controls located on the central climate control.

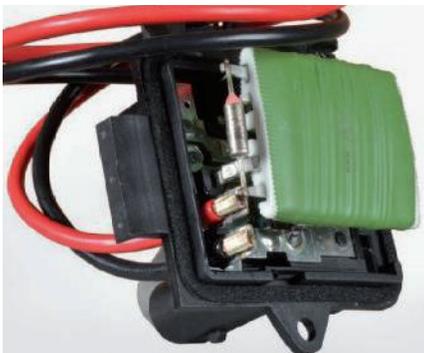
These resistors are one of the most common failure point in car HVAC (Heating Ventilation and Air Conditioning).

### HOW IT WORKS?

The blower motor is connected to the negative side of the battery (ground) and the resistor is connected to the positive side, as so the resistor makes the connection with the blower motor in series. The driver can now select the desired temperature (speed of the blower motor).

### INSIDE THE RESISTOR

The resistor is made up with 4 smaller resistors inside working on different resistances enabling the interior blower fan to work up to 4 different speeds.



As for the high speed have a bypass connection (connected directly on the battery) this means no resistance but maximum power from the interior blower. The resistor is located inside the air flow from the blower motor, and this has an IMPORTANT effect on cooling down the resistor itself.

### NOT WORKING

This resistors can fail from different reasons, mechanical stress, overheating, vibration etc. When an RESISTOR is faulty the blower fan, usually works only on the highest speed (as is connected directly to the battery).

At this point we know for sure the resistor is causing the problem and it need to be replaced. When working on HVAC system.

### NOTE: ALWAYS USE PROTECTIVE EQUIPEMENT WHEN REPLACING THE RESISTOR.

The resistor in most cases is usually located behind the glove box compartment. Replace the resistor to the OEM specifications for your application. Be aware this resistor can get very HOT during normal operation After the resistor is replaced make sure that it operates on all speeds settings.

Quality resistors and control units.

See > [www.nrf.eu](http://www.nrf.eu) for more information

