



RAFFREDDAMENTO MOTORE

191 - Giulietta

ENGINE COOLING - DESCRIPTION

The radiator and air conditioner condenser cooling system consists of two electric fans operated at two different speeds, by means of a series/parallel connection:

- the first speed is activated at an initial engine coolant temperature level or a certain air conditioning refrigerant fluid pressure;
- the second speed engages at higher temperature or pressure levels.

The fans are operated by three specific relay switches, two located in the engine compartment control unit and one located directly on the radiator.

The supply line for the fans is protected by two special fuses, located in the engine compartment junction unit.

ENGINE COOLING - FUNCTIONAL DESCRIPTION

relay switches T06 and T07 of the engine compartment control unit B001 and relay switch J030 - located on the radiator - manage the operation of the two fans N011 and N012 in serial/parallel mode; the relay switch power lines are protected by fuses F06 and F07, in engine compartment control unit B001.

The coil of relay switch J030 is supplied by the line protected by fuse F18, in the engine compartment control unit B001

The relay switches are energised by an earth control signal coming from the engine management control unit M010.

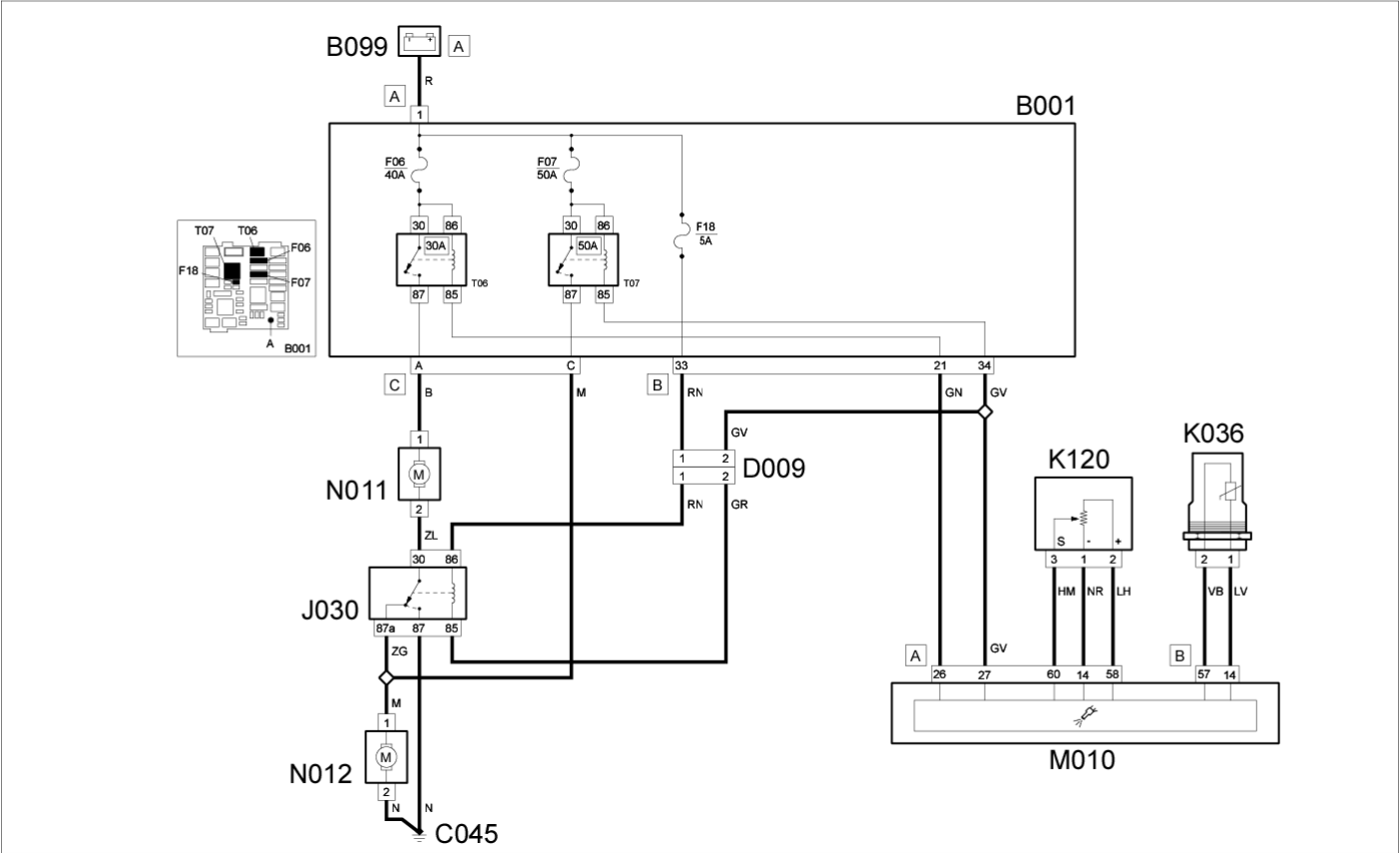
If the engine coolant reaches an initial temperature level or linear sensor K120 indicates to the control unit M010 - pin 60 of connector A - that a certain pressure level has been reached, control unit M010 sends a signal from pin 26 of connector A that triggers the fan first speed relay T06, which then sends power to fans N011 and N012 which are connected in series and turn the fan at the first speed (slow).

The linear sensor K120 receives power supply and reference earth from the engine management control unit M010, pins 14 and 58 of connector A.

If the engine coolant reaches a higher temperature level or linear sensor K120 indicates to the control unit M010 that a certain pressure level has been reached, the control unit M010 sends a signal from pin 27 of connector A that triggers the fan second speed relay T07 and relay switch J030, which then sends power to fans N011 and N012 which are connected in parallel and thus turn the fan at the top speed.

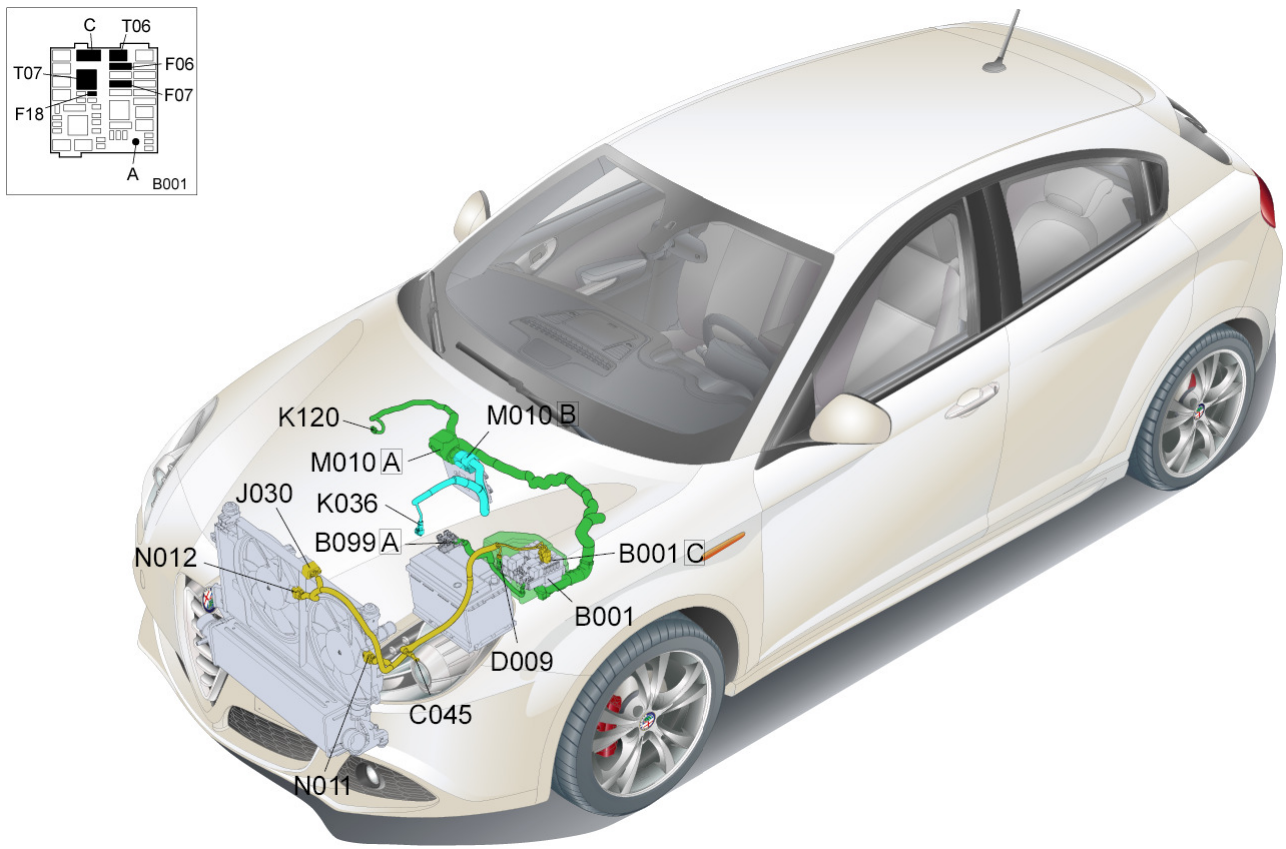
Engine temperature sensor K036 measures the engine temperature and receives a reference earth from pin 14 of connector B of the control unit M010 and sends a signal proportional to the engine coolant temperature to pin 54 of connector B.

ENGINE COOLING - WIRING DIAGRAM



Component Code	Description	Reference to the operation
B001	JUNCTION UNIT	Op. 5505A28 CONTAINER FOR ADDITIONAL JUNCTION UNIT IN ENGINE COMPARTMENT - R.R.
B099	MAXI FUSE BOX ON BATTERY	Op. 5530B40 SUPPLY BOX ON BATTERY (LINK BATTERY AND FUSE BOX) - R R
C045	FAN EARTH	-
D009	FRONT/RADIATOR COUPLING	-
J030	ENGINE FAN FIRST SPEED RELAY	-
K036	ENGINE COOLANT TEMPERATURE SENSOR/SENDER UNIT	Op. 1056F50 COOLANT TEMPERATURE SENSOR - R.R.
K120	LINEAR SENSOR FOR FANS	Op. 5040B20 AIR CONDITIONING LINEAR PRESSURE TRANSDUCER - R.R.
M010	ENGINE MANAGEMENT CONTROL UNIT	Op. 1056F82 CONTROL UNIT (ONE) FOR INJECTION IGNITION SYSTEM - R.R.
N011	FAN MOTOR	Op. 1088E10 RADIATOR COOLING FAN - R + R
N012	ENGINE FAN MOTOR - 2	Op. 1088E10 RADIATOR COOLING FAN - R + R

ENGINE COOLING - COMPONENT LOCATION



Component Code	Description	Reference to the operation
B001	JUNCTION UNIT	Op. 5505A28 CONTAINER FOR ADDITIONAL JUNCTION UNIT IN ENGINE COMPARTMENT - R.R.
B099	MAXI FUSE BOX ON BATTERY	Op. 5530B40 SUPPLY BOX ON BATTERY (LINK BATTERY AND FUSE BOX) - R R
C045	FAN EARTH	-
D009	FRONT/RADIATOR COUPLING	-
J030	ENGINE FAN FIRST SPEED RELAY	-
K036	ENGINE COOLANT TEMPERATURE SENSOR/SENDER UNIT	Op. 1056F50 COOLANT TEMPERATURE SENSOR - R.R.
K120	LINEAR SENSOR FOR FANS	Op. 5040B20 AIR CONDITIONING LINEAR PRESSURE TRANSDUCER - R.R.
M010	ENGINE MANAGEMENT CONTROL UNIT	Op. 1056F82 CONTROL UNIT (ONE) FOR INJECTION IGNITION SYSTEM - R.R.
N011	FAN MOTOR	Op. 1088E10 RADIATOR COOLING FAN - R + R
N012	ENGINE FAN MOTOR - 2	Op. 1088E10 RADIATOR COOLING FAN - R + R