

P20-0030-57

1	Coolant pump	75	Fan with armature ring
68	Solenoid body	78	Spacer disk
68a	Connector with cable for solenoid body	79	Tensioning disk
68b	Carrier for solenoid body	80	Collar bolt
72	Belt pulley with steel ring insert	G	Temperature switch for solenoid fan coupling, red 100 °C
74	M6 × 12 hex. socket bolt or M6 × 12 Torx bolt	H	Temperature switch for solenoid fan coupling and 2-stage auxiliary fan, 110 °C, red for air conditioning or automatic climate control

General

The engines have a temperature-controlled electromagnetic fan coupling.

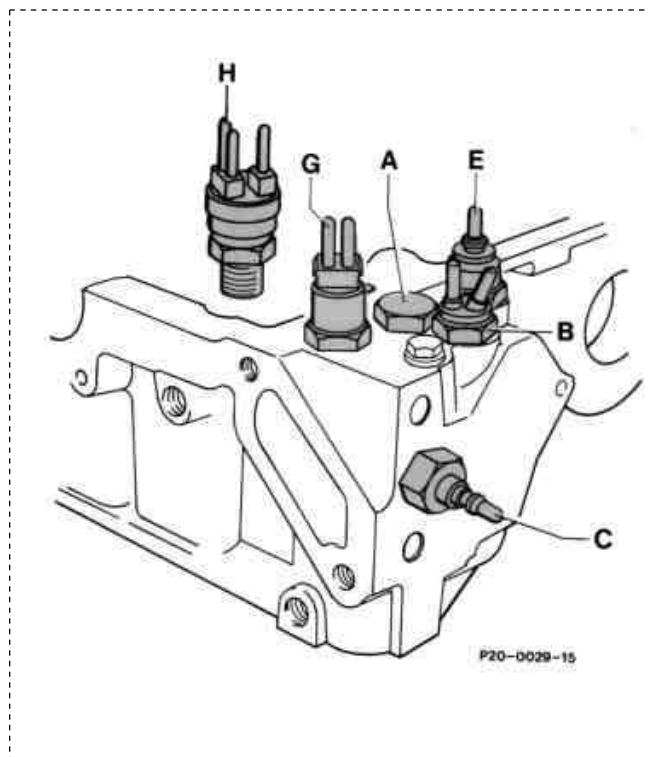
It is engaged or disengaged by a temperature switch (100 °C, G) inserted into the sensor box on the cylinder head.

The same function is performed on vehicles with air conditioning system or automatic climate control by a 110 °C temperature switch (H).

The electromagnetic fan coupling is maintenance-free.

Fan

The fan (75) is mounted on a stud on the coolant pump bearing and is attached by a collar bolt (86).



Matching

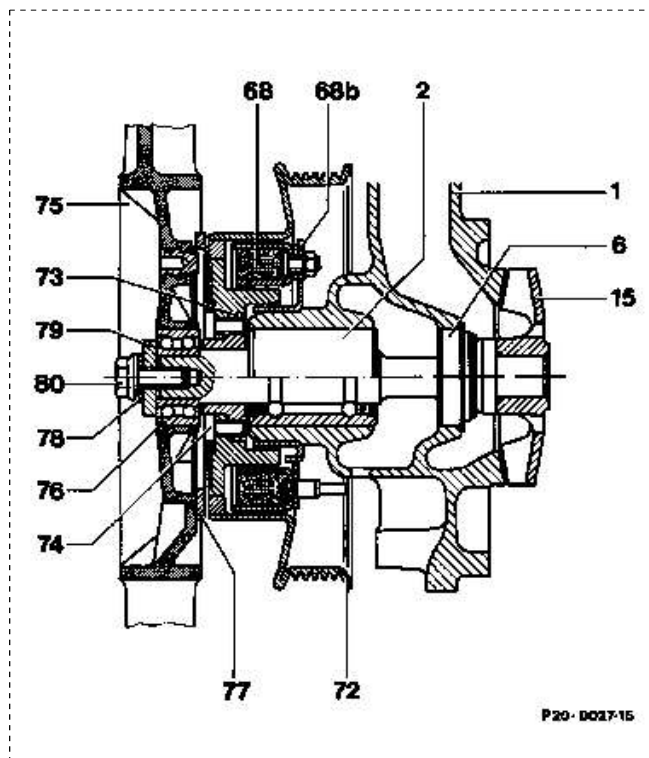
Model	Engine	Air conditioning/ Automatic climate control		Fan dia.	No. of blades	Capacity %
		with	without			
124	102.922	×	×	430	5	45 100
	102.963	×	×	430	5	100
	102.982					
201	102.924	×	×	380	6	100
	102.961		×	380	6	100
		×		430	5	100
	102.985	Man. transmission	×	380	6	100
		Autom. transmission	×	430	5	100
		×		430	5	100

Design of electromagnetic fan coupling

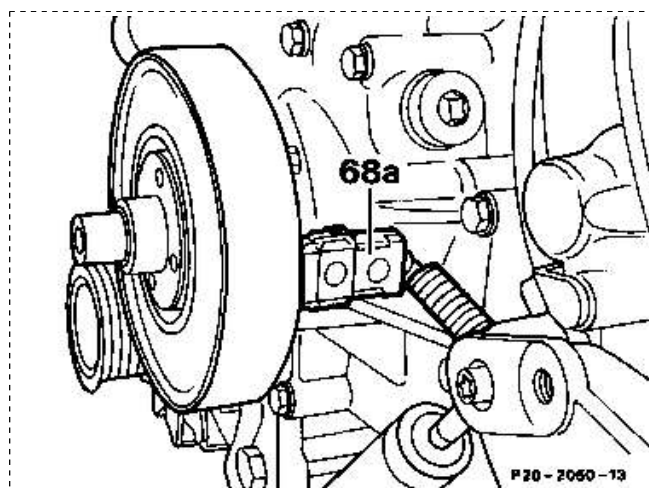
The solenoid body (68) is attached to the solenoid carrier (68b) by 3 nuts (70).

The solenoid carrier is bonded to the coolant pump housing.

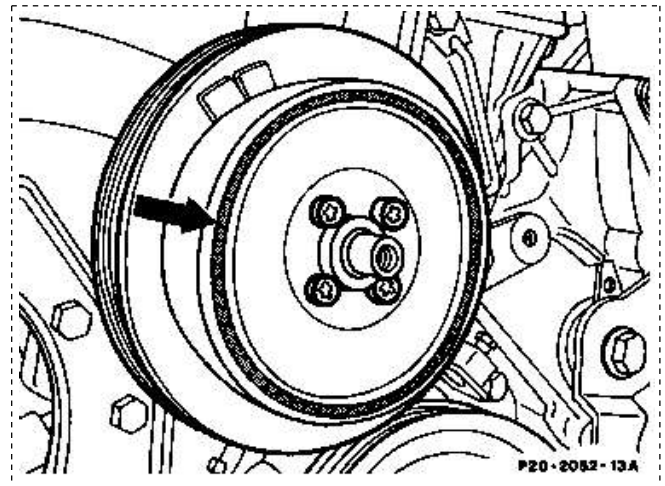
- 1 Coolant pump housing
- 2 Coolant pump bearing
- 6 Cassette-type mechanical seal
- 15 Impeller
- 68 Solenoid body
- 68b Carrier
- 72 Belt pulley
- 73 Flange
- 74 Fastening bolts
- 75 Fan
- 76 Angular-contact ball bearing
- 77 Armature
- 78 Tensioning pulley
- 79 Pulley
- 80 Fastening bolt



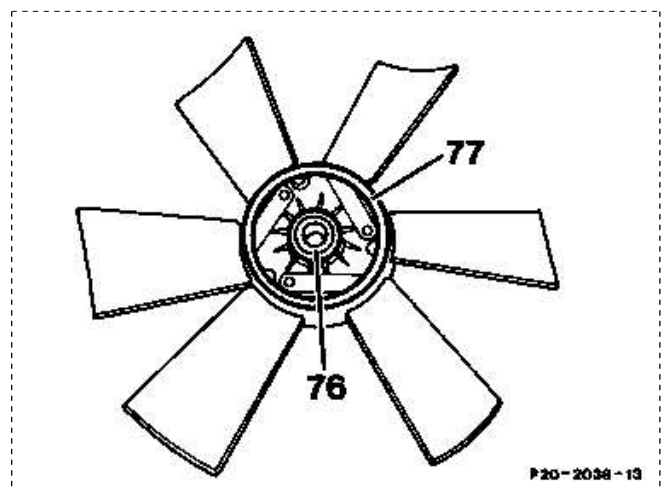
The electric cable is connected to the solenoid body by a connector (68a).



The belt pulley is located on the coolant pump shafts ahead of the solenoid body. A steel ring is inserted in the belt pulley which attracts the armature ring on the fan when the fan coupling is engaged (arrow).



The armature ring (77) and the angular-contact roller bearing (76) are installed on or in the fan, respectively.



Function

The fan is engaged only when the ignition is switched on and at a coolant temperature above 98 - 102 °C.

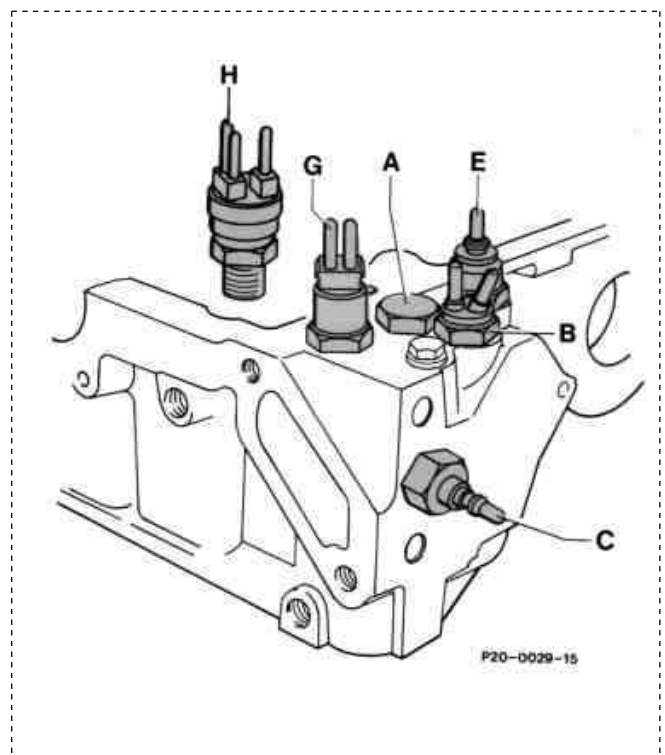
A constant positive exists at the solenoid body (68).

Below a coolant temperature of 98 - 102 °C, the fan is switched off and only rotates as a result of the airstream or as a result of the bearing friction.

Minus is engaged at a coolant temperature of not more than 102 °C through the temperature switch (G or H) at the sensor box.

The armature (76) is attracted by the solenoid body (68) and presses against the end face of the belt pulley.

The fan is now rigidly connected to the belt pulley and rotates in line with the coolant pump speed.



If the coolant temperature drops below 93 - 98 °C, the temperature switch opens and the armature (76) is lifted off the belt pulley by the leaf springs.

On vehicles fitted with air conditioning or automatic climate control, the fan and the electric auxiliary fan are engaged by a double-contact relay which is activated by the triple temperature switch (H).