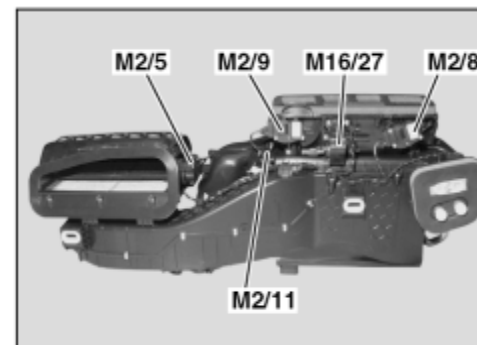
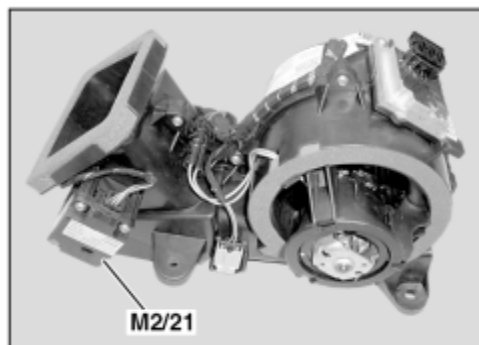
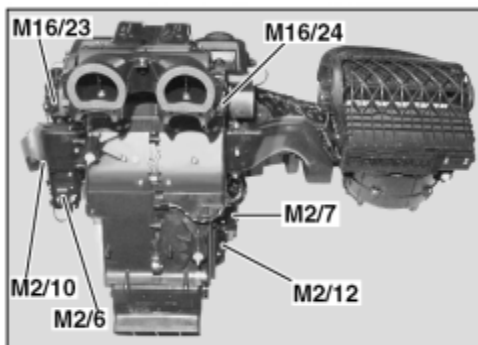


GF83.10-P-2201GZK	Actuator motor, component description	16.12.04
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MODEL 164

with CODE (581) Comfort automatic air conditioning
except CODE (582) Rear air conditioner



P83.10-2486-07

M2/5 Fresh air/air recirculation flaps actuator motor
M2/6 Left blending air flap actuator
M2/7 Right blending air flap actuator
M2/8 Left defroster vent flap actuator motor
M2/9 Right defroster vent flap actuator motor

M2/10 Left footwell flap actuator motor
M2/11 Right footwell flap actuator motor
M2/12 Rear shutoff flap actuator motor
M2/21 Rear air distribution flap actuator motor

M16/23 Left center air flap actuator motor
M16/24 Right center air flap actuator motor
M16/27 Diverter flap actuator motor

Location

The actuator motors are located on the A/C housing and are located at the respective positions as shown in the picture above.

Task

General information on actuator motors and flap control

Continuous positioning of the flaps.

To prevent the actuator motors from continuously running in the controlled range, the following release function is implemented for each flap in the automatic air conditioning.

Release function: Once a position has been adjusted, then until the next change, the specified temperature of the blown in air for example must change by so much that the release value going above or below it is either not reached or exceeded.

Final values are approached directly (0 %, 100 %).

Anti-fogging function

The anti-fogging function prevents the windshield and side windows from fogging up after starting the engine thanks to the fact that moist air is not guided directly against the windows after starting, but instead into the footwell of the vehicle.

Left center air flap actuator motor and right center air flap actuator motor

The left center air flap actuator motor and the right center air flap actuator motor operate the particular air flap that controls the air flow to the center nozzles separately for left and right.

Depending upon the desired air outlet temperature at the center nozzle, the left center air flap actuator motor and the right center air flap actuator motor are actuated via the comfort AAC [KLA] control and operating unit (N22/7).

Actuation during "Defrosting" Center outlet flaps 0 % (closed)

Actuation during "Rest" According to regulation

Actuation during "0" Retain current position

Actuation during ignition OFF Retain current position

Automatic air flap control

Depending upon the following variables, the air flaps can be opened up to 100 % by the left center air flap actuator motor and the right center air flap actuator motor in line with a defined characteristic:

- Blending air flap setting
- Coolant temperature
- Evaporator temperature
- Footwell flap position

Air flap control via the center nozzle

In manual mode the air flap settings are determined by the selector on the center nozzle.

Left blending air flap actuator motor and right blending air flap actuator motor

The left blending air flap actuator motor and the right blending air flap actuator motor are used to set the ventilation temperature of the heater and the air conditioning separately for left and right.

The actuator motors of the blending air flaps are actuated via the comfort automatic air conditioning control and operating unit depending on the temperature buttons selected and the actual interior temperature according to defined characteristics and move the blending air flaps. The flaps open or close the passage of air through the heating system heat exchanger in order to mix hot air with fresh air or cooled air in order to achieve the desired in-car temperature.

The specified flap angles of the blend air flaps are determined by the comfort automatic air conditioning control and operating unit as a function of the following information:

- Regulated target temperature on the temperature selector wheel
- The in-car temperature measured by the in-car temperature sensors
- Coolant temperature

Blend air flaps closed No air flows through the mixing chamber and thus no heating of the air

Blend air flaps open All air flows through the mixing chamber with maximum heating of air

Left defroster vent flap actuator motor and right defroster vent flap actuator motor

The left defroster vent flap actuator motor and the right defroster vent flap actuator motor operate the particular defroster vent flap that controls the air flow to the windshield defroster vent and the side window defroster vents separately for each side. By pressing the window defrost switch on the comfort AAC control and operating unit, the defroster vent flap actuator motors are actuated and

the defroster vent flaps are operated, which then adopt the following positions at various requirements:

Actuation during "Defrosting" Defroster vent flap open 100 %.

Actuation during "0" Defroster vent flap open 100 %.

Manual flap control

(division as clock by actuating the air distribution wheel)

1 o'clock 2 o'clock 3 o'clock 4 o'clock 5 o'clock 6 o'clock

100 % 100 % 100 % 67 % 21 % 0 %

7 o'clock 8 o'clock 9 o'clock 10 o'clock 11 o'clock 12 o'clock

0 % 0 % 0 % 23 % 65 % 100 %

Automatic flap control

The defroster vent flaps are opened in line with the following variables linear up to 100 %:

- Blending air flap setting
- Coolant temperature
- Evaporator temperature
- Relative humidity

Left footwell flap actuator motor and right footwell flap actuator motor

The left footwell flap actuator motor and the right footwell flap actuator motor operate the particular footwell flap that controls the air flow to the front footwell and the rear legroom separately for each side.

By pressing the footwell air distribution button in the comfort AAC control and operating unit, the left footwell flap actuator motor and the right footwell flap actuator motor are actuated. The footwell flaps adopt the following positions at various requirements:

Actuation during "Defrosting" Footwell flaps 0 % (closed)

Actuation during "Rest" According to regulation

Actuation during "0" No change

Manual flap control

(division as clock by actuating the air distribution wheel)

1 o'clock 2 o'clock 3 o'clock 4 o'clock 5 o'clock 6 o'clock

29% 72 % 100 % 100 % 100 % 100 %

7 o'clock 8 o'clock 9 o'clock 10 o'clock 11 o'clock 12 o'clock

54% 30 % 0 % 0 % 0 % 0 %

Automatic footwell flap control

The footwell flaps are opened in line with the following variables linear up to 100 %:

- Blending air flap setting
- Coolant temperature
- Evaporator temperature

Fresh air/air recirculation flaps actuator motor

The fresh air/air recirculation flaps actuator motor is used to close or open the fresh air supply by actuating the fresh air/air recirculation flaps. The fresh air/air recirculation flaps actuator motor is actuated by pressing the air recirculation switch (N22/7s2) on the comfort AAC control and operating unit. In recirculation mode, the recirculation flap is open and the fresh air flap is closed.

Air is suctioned from the vehicle interior into the comfort automatic air conditioning housing by the blower. In fresh air mode, the fresh air flap is open and the recirculated air flap is closed. Fresh air is suctioned into the comfort automatic air conditioning housing by the blower.

If the air recirculation switch is operated manually, the system immediately enters time-limited 100 % recirculated air. This is displayed by the function LED. Time limit function:

- after 30 min with outside temperature above approx. 7 °C,
- after 5 min with outside temperature below approx. 7 °C,
- after 5 min with AC OFF.

100 % automatic recirculated air is possible for one time only for 30 min after ignition is switched "ON". After the time has elapsed, the system switches to 80 % recirculated air mode or fresh air mode, depending on the conditions.

If automatic recirculated air is required after engine ON, fresh air will be circulated initially for 30 seconds. Then 80 % automatic recirculated air is supplied first and 10 s later as required also 100 % automatic recirculated air.

Tunnel function

Activation of the tunnel function:

Only possible where the recirculated air LED is not illuminated.

Pressing the air recirculation switch for more than 1.5 s

Reaction: fresh air and air recirculation flaps are driven into air recirculation position. Now the 4 windows and the tilting/sliding roof are closed in a staggered manner.

If the recirculated air-LED is extinguished manually or by the automatic timer, the fresh air and air recirculation flap moves to the fresh air position, however, the windows and the sliding roof remain closed.

Deactivation of tunnel function:

Only possible where the recirculated air LED is illuminated.

Pressing the air recirculation switch for more than 1.5 s

Reaction: fresh air and air recirculation flaps are driven into fresh air position. Now the 4 windows and the tilting/sliding roof are opened in a staggered manner.

If the recirculated air LED is reset to manual mode (pressing the air recirculation switch for less than 1.5 s), only the fresh air/air recirculation flap is set to recirculated air position.

Special functions of the fresh air/air recirculation control:

- The function AC OFF does not allow any automatic nor emissions-controlled recirculated air.
- Only fresh air mode is possible in the defrosting function.
- In the function "0" 100 % recirculated air applies.
- Manual recirculated air is deleted after ignition OFF.
- No manual or automatic recirculated air is possible in the rest function.