

**SUBJECT****Important Information about Heating and Air Conditioning****MODEL**

E90, E91, E92, E93 (3 Series)

E60, E61 (5 Series)

E63, E64 (6 Series)

**SITUATION**

Certain customer complaints related to the heating and air conditioning system; do not always require a workshop visit.

Customers can often be satisfied via the telephone or at the workshop reception, simply by changing the customer's vehicle settings or by explaining certain behavior characteristics (including noises) of the air conditioning system, thus avoiding a workshop visit.

Because the system has many different possible settings, it is possible that the customer's setting can create unfavorable operating characteristics of the system which may lead to a customer complaint. To prevent this from happening, the customer should be made aware of these functions before taking delivery of the vehicle.

**For optimal performance of the heating and air conditioning system, the "AUTO" mode should always be recommended.**

**INFORMATION**

The following information about individual functions and potential complaints has been drawn up based on field experiences and for the purpose of information can be passed on to the customer.

**1. Noises**

- a. **Noises, permanent during air recirculation or intermittent when automatic air recirculation is active (AUC)**
  - o The change in blower noise when air recirculation is active is caused by the system as the airflow is deflected (flap movement). When automatic air recirculation is selected, the noise automatically changes, depending on whether or not a pollutant has been detected, or based on the position of the air recirculation flap.
  - o The air recirculation flap also closes when the vehicle is reversing, so that no exhaust fumes can get into the vehicle interior. Depending on the quality of the air, the air recirculation flap will sometimes be heard to move back to the fresh air setting after about 30 seconds.
- b. **Noises after switching off the engine**
  - o Flow noise from the engine compartment. These noises could be caused by refrigerant flowing through the expansion valve after the engine has been switched off. This condition depends on the ambient conditions and tolerances in the refrigerant circuit, so it may occur to a greater or lesser degree even on identical vehicles. This noise is considered normal.

- Noise from the heating/air conditioning case. After switching off the engine and /or ignition, the stepper motors for the control flaps in the heating/air conditioning housing may still move to its predefined rest position. This process may take several minutes.

## 2. Temperature and blower control

### a. Blower profiles

- On E60, E61 (5 Series), E63, 64 (6 Series), and E90, E91, E92, E93 (3 Series); the profiles "soft", "medium" and "high" can be accessed through the iDrive menu on vehicles equipped with CCC (Car Communication Computer), CHAMP (Central Head Unit and Multimedia Platform) and MASK (Multi Audio System Controller) to allow the blower settings to be individually programmed. These profiles are only effective in "AUTO" mode. Excessively soft or high blower intensity can be controlled here, allowing comfort to be individually adapted. The customer should definitely be made aware of this setting when the vehicle is sold. In the event of such a customer complaint, check whether the customer complaint can be rectified by resetting the profile or by adjusting the ventilation grille before performing a repair.

### b. Temperature differences

- Temperature differences from the center vents to outer air vents are to a certain degree normal even if all temperature settings are the same.
- Temperature differences between the footwell vents and center vents depend on temperature setting in the center vents (stratification). The airflow to the footwell will in general be slightly warmer while airflow to the center vents will be generally slightly cooler.
- Note: on E6x vehicles, stratification can only be programmed in the CID (Central Information Display). On all other vehicles it is programmed (if fitted) with a thumbwheel next to the center air vents. This setting can be freely selected (blue = cooler, white = neutral, red = warmer) and directly influences the heating/cooling output available in the interior.

## 3. Insufficient heating and cooling output

Note: Maximum heating and cooling output can only be achieved on vehicles with proper stratification (settings of center vents set properly. See note in section 2(b) of this service information or if "MAX" A/C is active for maximum cooling.

- To achieve maximum cooling from the air-conditioning system, it is not enough to simply set the temperature to minimum (60°F). In this case, stratification must also be set to "blue" (cold). Air recirculation can also be temporarily selected to intensify cooling. Alternatively, the "MAX" A/C button can be activated. Activating the "MAX" A/C function automatically sets the temperature to minimum, stratification to cold, blower speed to maximum and the air recirculation to active. The activation of the air recirculation can be heard.
- Depending on the outside temperature and the refrigerant pressure, the air-conditioning system will automatically shut down when the outside temperature drops below a certain level (approximately 32°F – 44°F). This is necessary to prevent the evaporator from icing up and resulting in reduced air output.
- If maximum heating is required, proceed accordingly. Set the temperature to maximum, stratification to "red" (warm) and, if necessary, air recirculation to active. Of course the vehicle can only be heated if the coolant temperature is sufficiently high.

## 4. Misted windows

- When the recirculation is active the windows may become misted over. This can happen in particular when the air-conditioning system is shut down (snowflake button off) due to low outside temperature. The air is then no longer dehumidified. In such cases, check the condition of the interior filters. These should be replaced as necessary.
- If the AUC (automatic air recirculation) is active, this complaint may also occur, either permanently or intermittently. In such cases, AUC should be turned off.
- If the front windshield is misting, check for proper function of the window misting sensor if equipped.
- On a hot/humid day the front windshield may become misted if the air distribution is set to front screen.

## **5. No or insufficient blower output or unsteady blower speed**

- If the battery state of charge in the vehicle is too low, the power management system will reduce power consumption on the vehicle. Current consumption is reduced to ensure that primary vehicle functions such as engine starting ability is guaranteed. This also affects the blower. Blower output is reduced from 25% to 75% depending on the battery state of charge. This particularly affects short distance drivers.
- Whether the electrical system management has intervened can easily be tested with the defrost system. The power management system has no effect on the defrost function, the blower must run at full speed when the defrost function is activated.
- In such cases, the customer should be informed that this is normal vehicle operation designed to ensure the vehicle's starting ability is guaranteed. It can only be countered by occasionally driving longer distances or by recharging the battery. The energy diagnosis test plan should always be carried out in these cases to find the root cause of the power management problem.

## **6. Heated seats inoperable**

- If the battery state of charge in the vehicle is too low, the power management system will reduce power consumption on the vehicle. Current consumption is reduced to ensure that primary vehicle functions such as engine starting ability is guaranteed. This also affects the heated seats. The heated seats may be deactivated in this state.
- In such cases, the customer should be informed that this is normal vehicle operation designed to ensure the vehicle's starting ability is guaranteed. . The energy diagnosis test plan should always be carried out in these cases to find the root cause of the power management problem
- If the power management system is good, perform standard troubleshooting using the DIS/GT1.

## **Further important information for the workshop and workshop reception.**

### **1. Fault symptom diagnosis**

From DIS DVD 50 new fault patterns for complaints about the air conditioning system have been integrated in the fault pattern selection on the DIS/GT1 for 3, 5, and 6 Series models. It is important for these fault patterns to be adhered to and the associated test modules processes so that the cause of the fault can identified and the problem rectified.

### **2. Reference vehicles**

Because of model upgrading, the wide range of possible settings and the various integration levels, it is not advisable to

compare the functions on two similar vehicles. The probability of two vehicles having minor differences is very high, even if they are of the same model. Keep this in mind when using reference vehicles.

### **3. Odors**

In the event of complaints about odors, the cause should be identified. Make sure that the odor is not caused by any objects or dirt inside the vehicle interior. Carefully examine the floor mats, seats stowage compartments and luggage compartment. If air circulation is activated, air from inside the vehicle will be drawn in and blown out again. This can have the affect of intensifying odors inside the vehicles (including those caused by dirt on floor mats, upholstery and shoes). It is also important to check the air intake system in the engine compartment. Here rotting leaves or even dead animals could cause odors. If the odor that the customer is complaining about disappears shortly after switching on the air conditioning system (maximum 3 minutes), the cause could be the evaporator, in which cases the vehicle should be sent to the workshop to have the evaporator cleaned.

### **4. Cold sensation**

A sensation of coldness is a normal reaction of the human body after a lengthy journey, caused by poor blood circulation when seated for a long time. In such cases, the temperature should be adjusted manually. Alternatively, longer journeys should include regular breaks to allow movement.

### **WARRANTY INFORMATION**

For information only

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