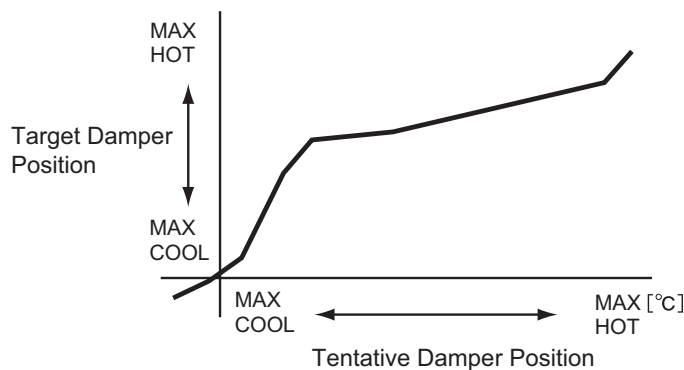


Nozzle Temperature Control

- For outlet control, air-mix servomotor control and a cool air bypass damper servomotor control are used.

Air-Mix Servomotor Control

- In response to the temperature set at the temperature switch, the neural network calculates the required outlet temperature, based on the inputs from various sensors. The system adds corrections based on the post-evaporator sensor and the coolant temperature sensor to the required outlet temperature in order to calculate a tentative target damper position. Then, based on the tentative target damper position, the system calculates the true target damper position in accordance with the diagram, and outputs pulse signals to rotate the air-mix servomotor to the desired position.



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Cool Air Bypass Damper Servomotor Control

- The system determines the airflow volume ratio of the cool air bypass in accordance with the air-mix damper position and the outlet mode (BI-LEVEL, FOOT, FOOT/DEF), and controls the cool air bypass damper servomotor in order to attain the ratio. In the FACE mode, the cool air bypass damper opens fully only during MAX COOL. In the DEF mode, the cool air bypass damper closes fully only during MAX HOT.

Blower Control

- The following types of blower controls are used: multiple-stage blower control, warm-up control, delay blower control, etc.

Manual Control

- The airflow volume is determined by the position of the blower switch that has been selected.

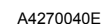
Automatic Control

- When the AUTO switch on the air conditioner control is turned ON, the system effects various controls of the multiple-stage airflow volume, warm-up, cool down, and delay airflow volume. This is based on the target airflow volume that has been calculated by the neural network in accordance with the inputs received from various sensors.

Multiple-Stage Blower Control

- When the AUTO switch on the air conditioner control is turned ON, the front air conditioner ECU sends a signal to the blower motor controller in accordance with the target airflow volume that has been calculated by the neural network. Thus, the system automatically controls the airflow volume in multiple stages.

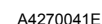
- When the engine is cold and the air outlet mode is FOOT or BI-LEVEL FOOT/DEF, the system turns OFF the blower motor, and keeps it stopped until the engine coolant temperature (temperature detected by the coolant temperature sensor) reaches above a predetermined level. When the coolant temperature reaches $T2^{\circ}\text{C}$, the system operates the blower motor at the LO speed, and turns it OFF below $T1^{\circ}\text{C}$. Until the coolant temperature reaches $T2^{\circ}\text{C}$ to $T3^{\circ}\text{C}$, the system compares the calculated airflow volume based on the coolant temperature sensor and the target airflow volume calculated by the neural network. Then, it automatically controls the blower motor at the lower airflow volume of the two. When the coolant temperature exceeds $T3^{\circ}\text{C}$, the system operates the blower motor at the HI speed. Thereafter, the system controls the blower motor in accordance with the target airflow volume calculated by the neural network.



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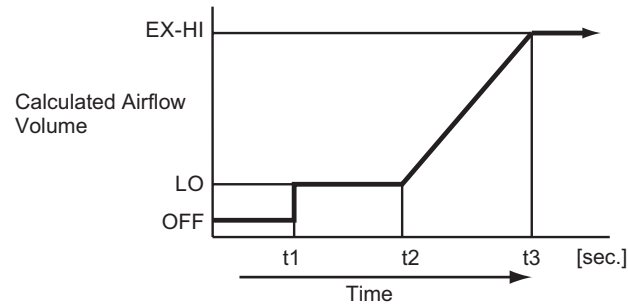
- The system effects two types of delay blower control in accordance with the temperature detected by the post-evaporator sensor. Thus, it prevents the center register from blowing out hot air when the air outlet mode is FACE or BI-LEVEL.

- As shown in the diagram, the system turns OFF the blower motor for approximately t_1 seconds, and turns ON the compressor in order to cool the air conditioner unit. After approximately t_1 seconds, the system operates the blower motor in the manual LO mode. This causes the cooled air to flow out of the air outlets, thus preventing the discomfort associated with the discharge of hot air. During approximately t_2 to t_3 seconds, the system compares the delay calculation airflow volume and the target airflow volume calculated by the neural network, and automatically controls the blower motor at the lower airflow volume of the two. After approximately t_3 seconds have elapsed, the system controls the blower motor at the target airflow volume calculated by the neural network.



When the Post-Evaporator Sensor Temperature Is Low (30°C maximum)

- As shown in the diagram, the system operates the blower motor for approximately t_4 seconds in the manual LO mode. Then, until approximately t_5 seconds, the system compares the delay calculation airflow volume and the target airflow volume calculated by the neural network, and automatically controls the blower motor at the lower airflow volume of the two. After approximately t_5 seconds have elapsed, the system controls the blower motor in accordance with the target airflow volume calculated by the neural network.



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Air Flow Mode Control

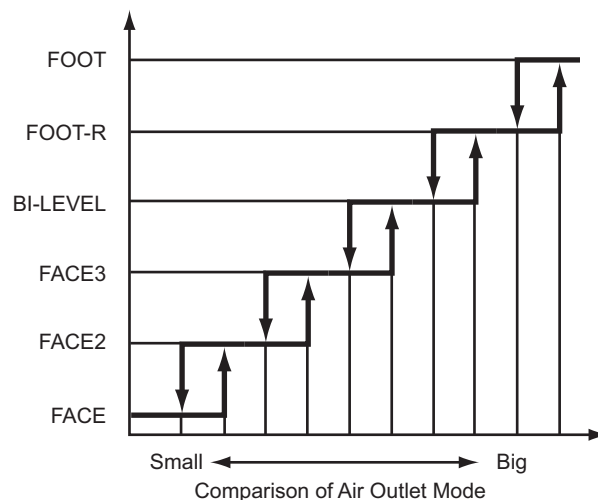
- Air outlet control that consists of air outlet servomotor control and low-temperature FOOT/DEF control is used.

Manual Control

- The system switches the air outlet to suit the position of the blower mode selector switch that has been selected.

Mode Damper Selector Servomotor Control

- When the AUTO switch on the air control is turned ON, the system calculates the target damper position in accordance with the air outlet mode ratio calculated by the neural network. Then, the system automatically switches the air outlet mode to FOOT, FOOT-R, BI-LEVEL, FACE3, FACE2, and FACE, in accordance with the target damper position.



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