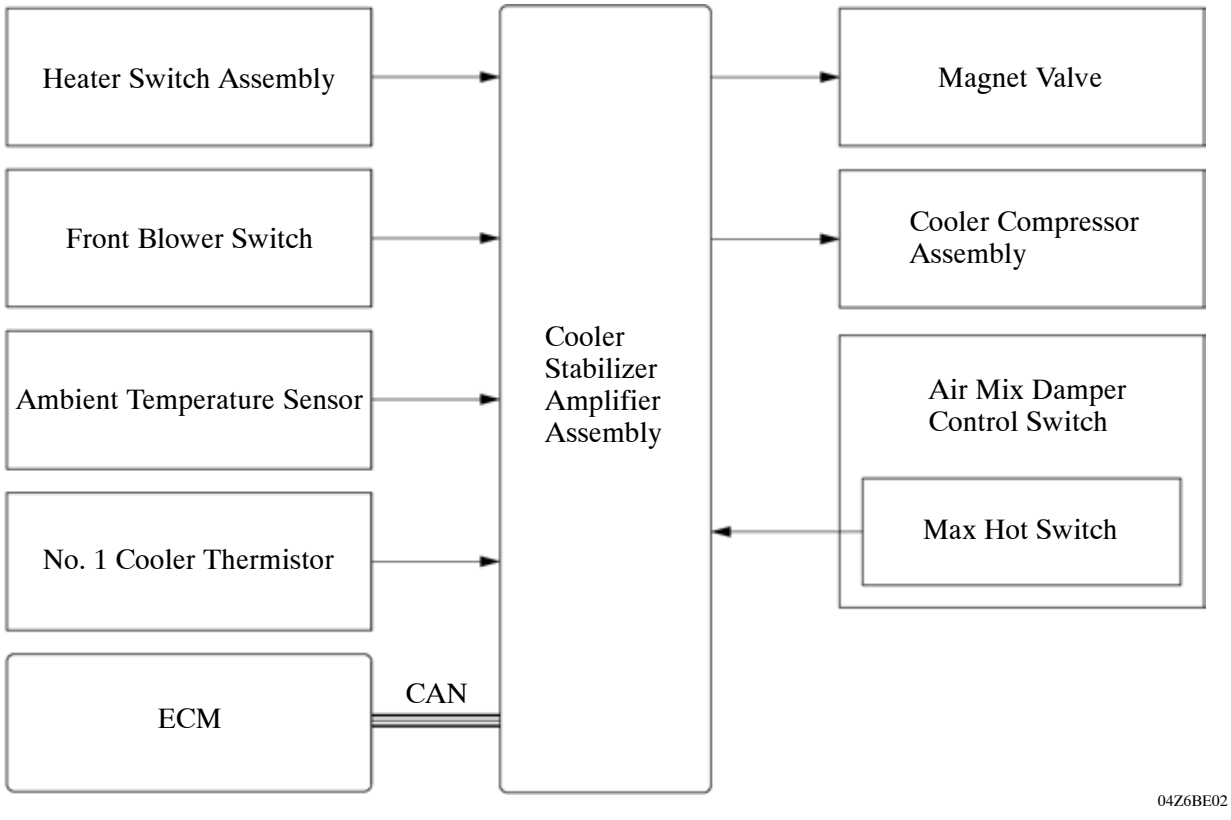
AIR CONDITIONER

■ HOT-GAS POWER HEATER SYSTEM

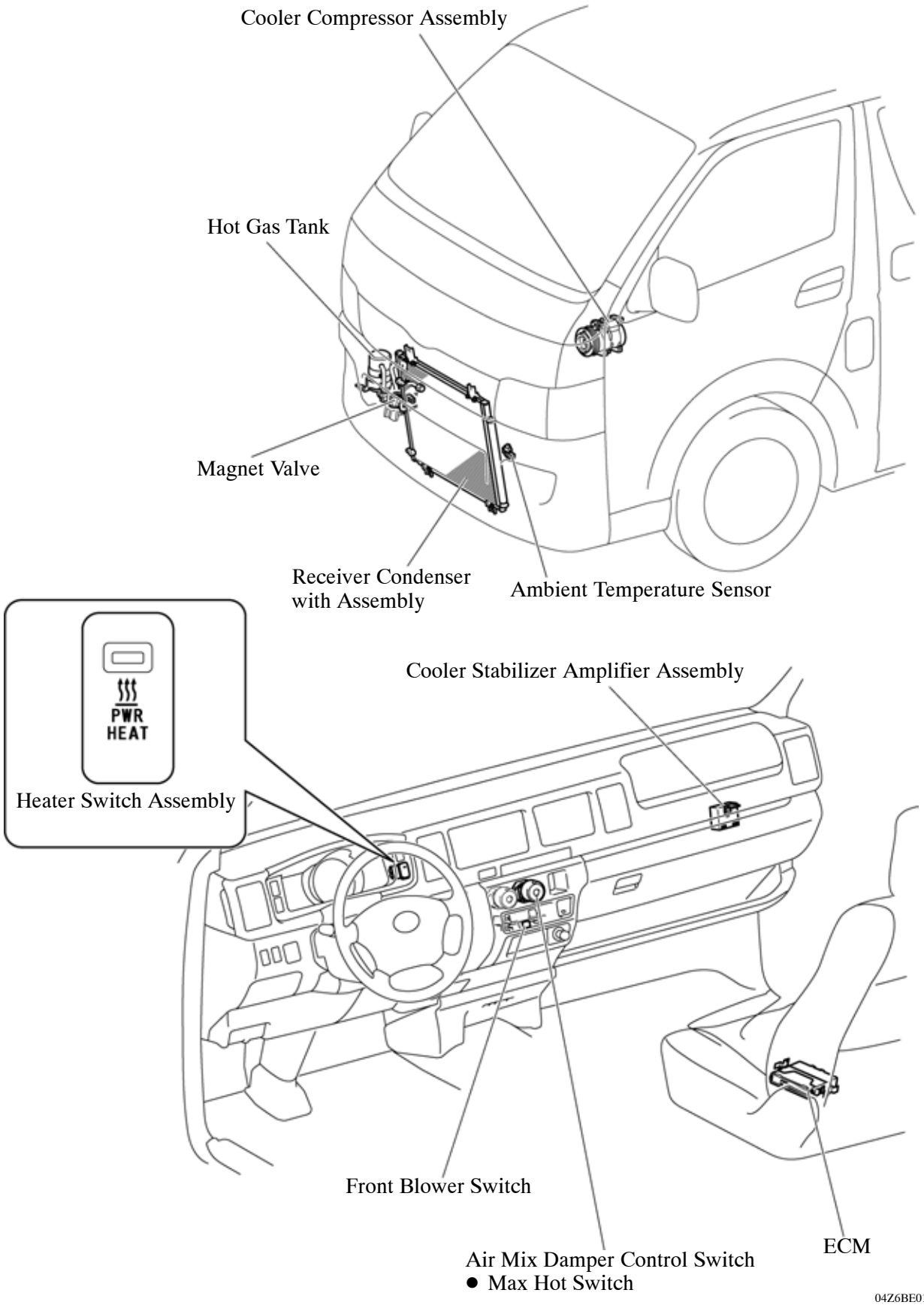
1. General

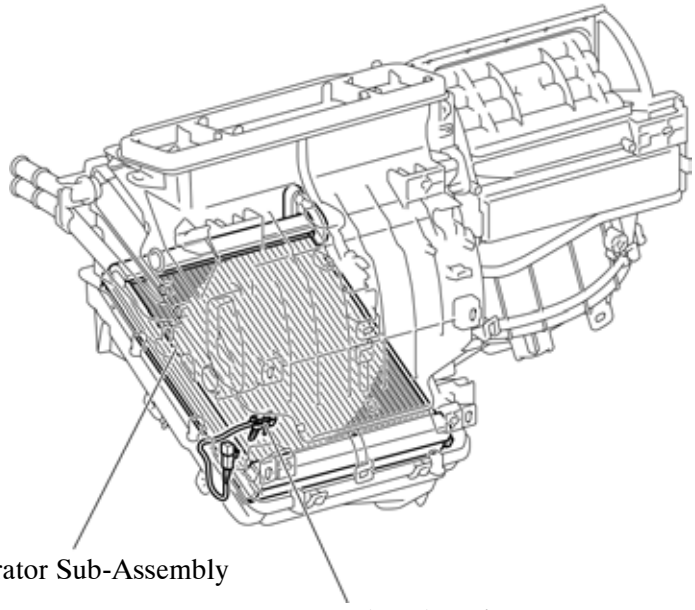
- A hot-gas power heater has been adopted as an auxiliary heater during engine coolant heating and cooling.
- This heater system uses the heat produced when gas discharged from the cooler compressor assembly is liquefied in no. 1 cooler evaporator sub-assembly, and it is both smaller and simpler than other general auxiliary heaters because it repurposes components of the air conditioner.
- A momentary heater switch assembly has been adopted and installed inside no. 2 instrument cluster finish panel sub-assembly on the right side. Pushing the heater switch assembly outputs a power heater operation request signal to the cooler stabilizer amplifier assembly.

▶ System Diagram ◀



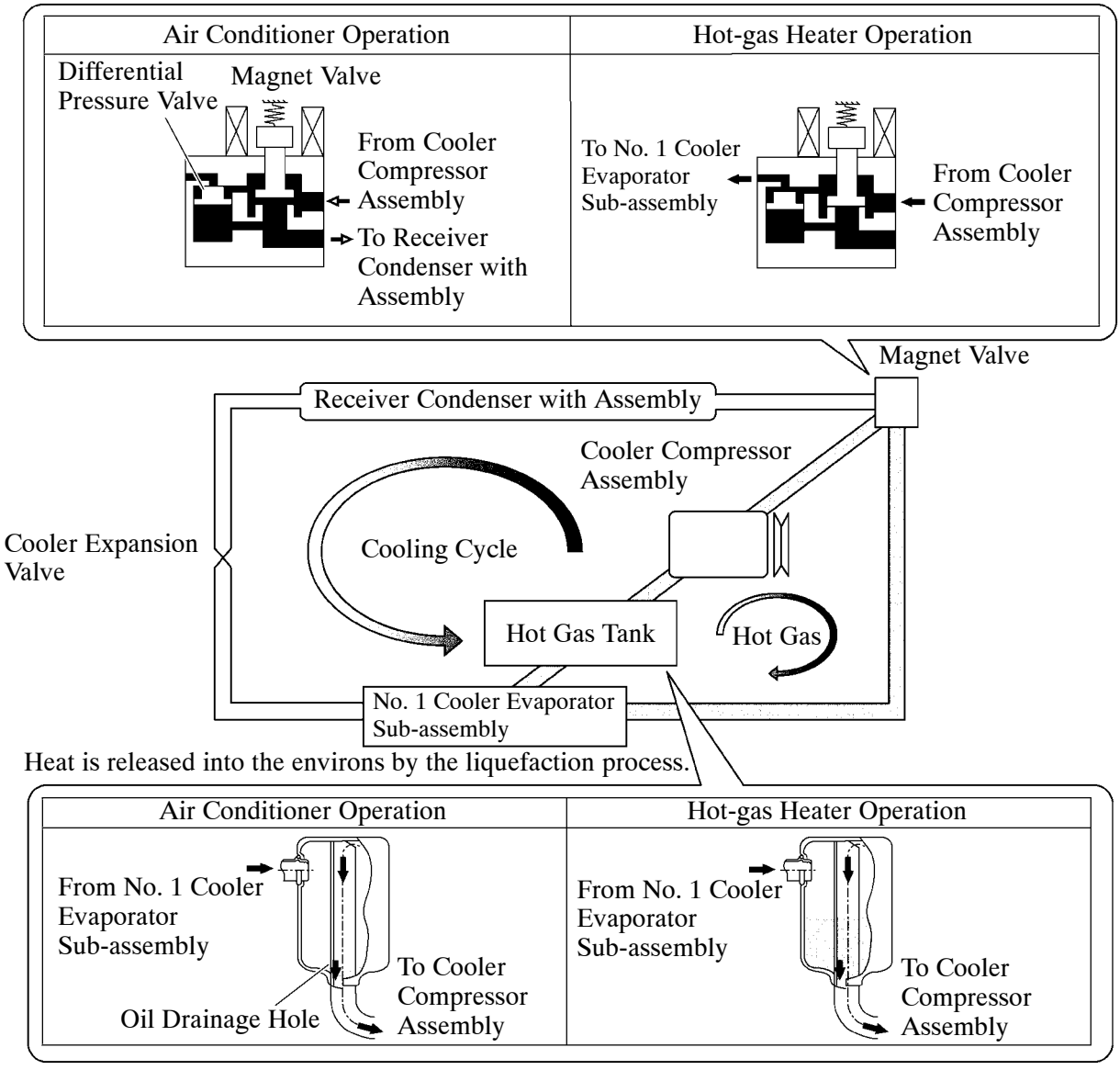
2. Layout of Main Components




No. 1 Cooler Evaporator Sub-Assembly
No. 1 Cooler Thermistor
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3. Construction

- The hot-gas heater is constructed to use the same system as during air conditioner operation. During air conditioner operation, refrigerant compressed by the cooler compressor assembly is cooled by the receiver condenser with assembly and sent to no. 1 cooler evaporator sub-assembly, but during hot-gas heater operation, the refrigerant paths are switched over by the magnet valve installed in front of the receiver condenser with assembly intake, and refrigerant is sent to no. 1 cooler evaporator sub-assembly, bypassing the receiver condenser with assembly.

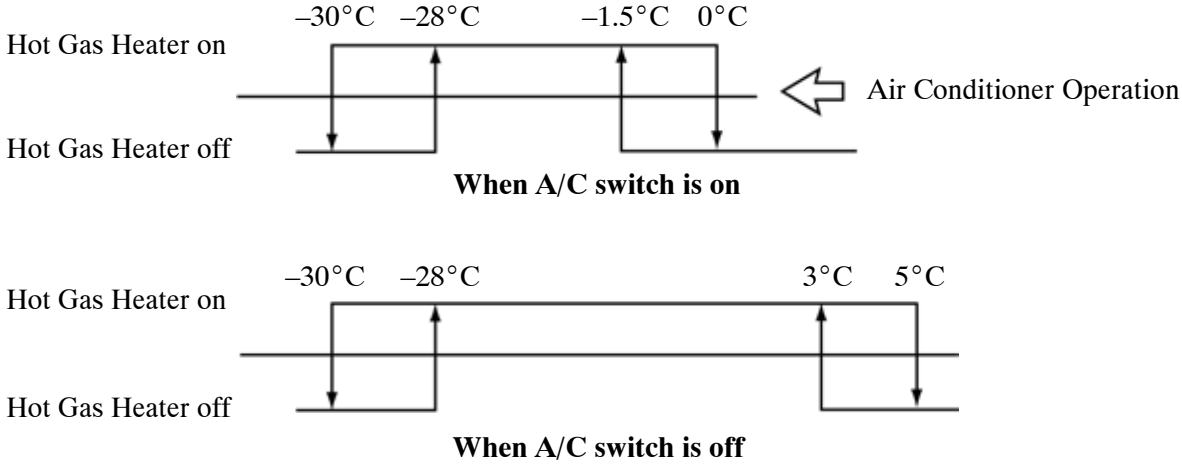


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- By feeding in some of the liquid refrigerant condensed by the receiver condenser with assembly and some of the gas discharged from the cooler compressor assembly into the hot-gas tank, discharged gas heat can be fed back, and the amount of refrigerant that circulates during the cycle can be controlled.
- When the temperature of the gas discharged from no. 1 cooler evaporator sub-assembly is high, liquid refrigerant in the hot-gas tank is fed into the cycle, and the amount of circulating refrigerant is increased. Similarly, when the temperature of the discharged gas is low, liquid refrigerant is added to the hot-gas tank, achieving greater energy conservation.

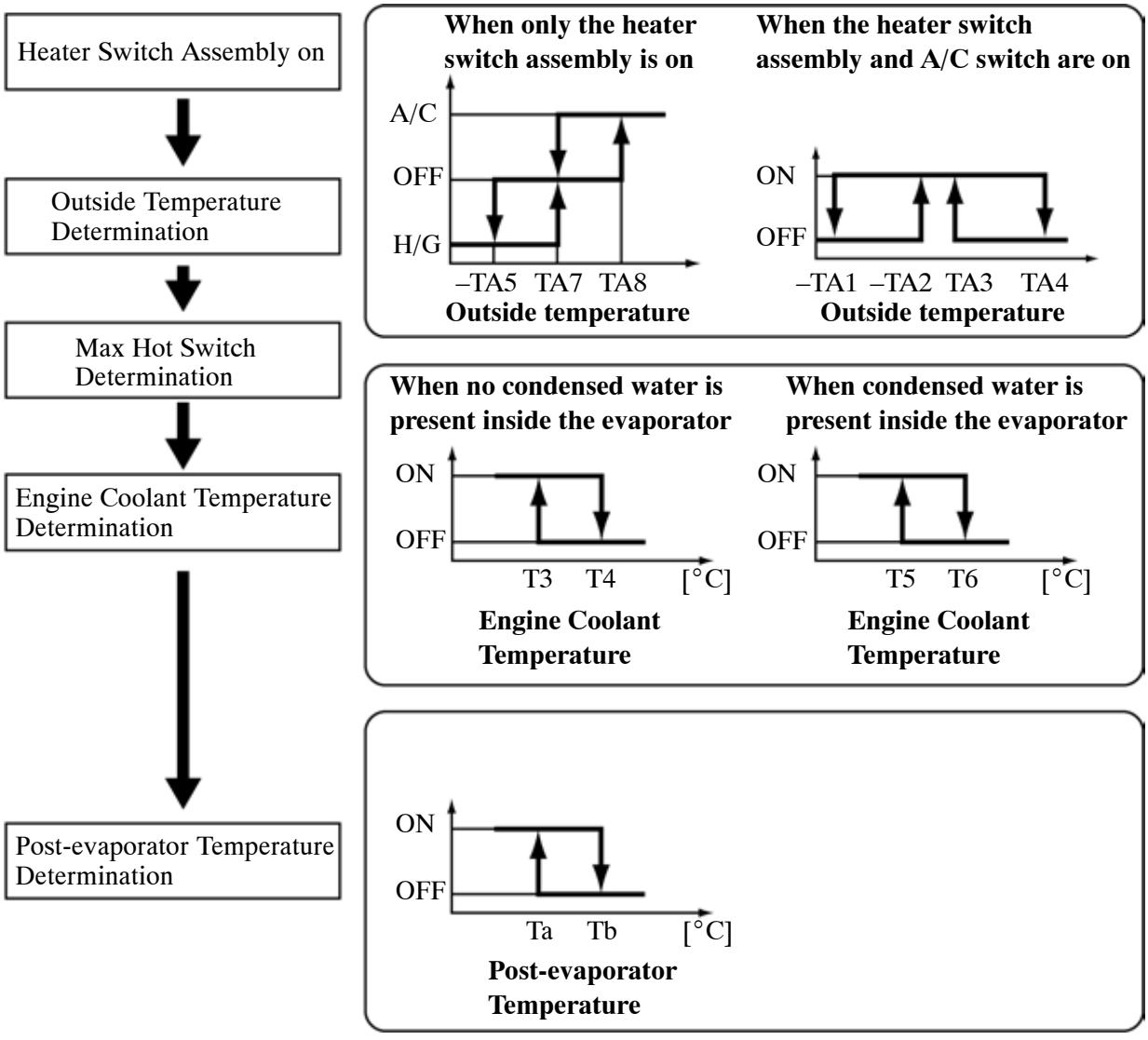
4. Operating Domain

- Operation occurs when the blower switch is on, the temperature outside is low, engine coolant temperature is low, and the temperature setting dial is set to max hot.
- Because the hot-gas heater uses the air conditioner system, its operating domain is minimized to the winter season when the A/C switch is on.



5. Operation Flow Diagram

- When the heater switch assembly is on, the cooler stabilizer amplifier assembly is input the outside temperature/front air mix door open amount (max hot position)/engine coolant temperature/ post-evaporator temperature status, and if all the conditions below are met, the magnet valve is activated to switch the refrigerant path.



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