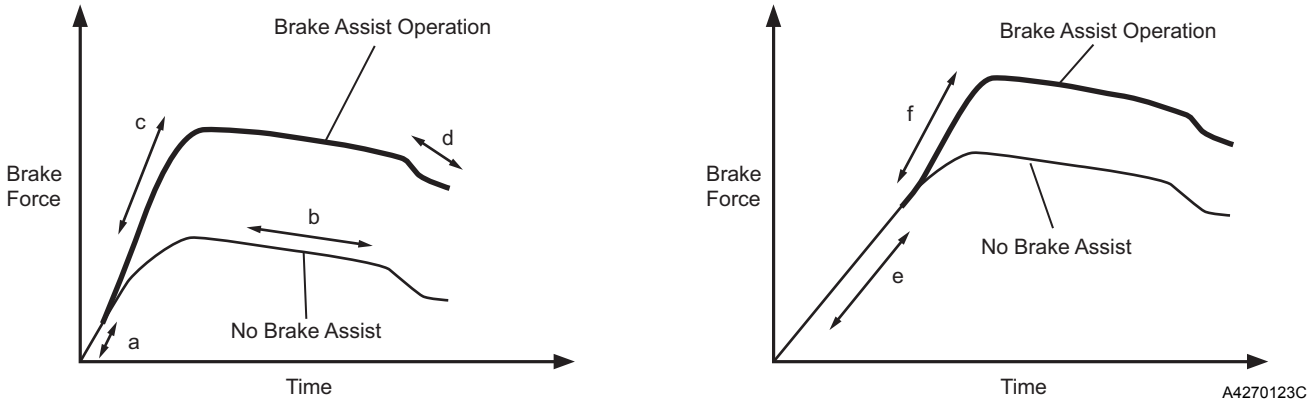
Brake Assist System

● The system determines emergency braking based on the amount and speed of the brake pedal effort and generates a strong brake force accordingly.

Concept of Brake Assist

- In emergency braking, the driver in a panic state might press the brake pedal quickly but not firmly, generating only a small amount of braking force (see "a" in the figure).
- In that state, the driver might not be able to keep the brake pedal depressed during the latter half of braking, and cause the brake force to drop (see "b" in the figure).
- The brake assist system estimates the intention of the driver to apply emergency braking upon detecting a quick application of the brake pedal. Thus, even if the driver is unable to press the brake pedal firmly, this system increases the brake force (see "c" in the figure).
- If the driver intentionally eases the brakes after the brake assist operates, the system reduces the amount of brake force assist to reduce the sense of intrusiveness (see "d" in the figure).
- There are other instances that require a strong brake force even if the driver does not press the brake pedal quickly, such as when the vehicle is fully loaded with occupants or cargo (see "e" in the figure).
- The brake assist system increases the brake force in those instances when a strong brake force is required (see "f" in the figure).



Precautions on Brake Assist

- The brake assist is not intended to extend the actual capability of the brakes. Therefore, drive safely by paying attention to your speed, as well as the distance between your vehicle and others.
- If you press the brake pedal quickly, the brake force will increase, and the brake pedal could pulsate, along with making an operation sound. These occurrences indicate the normal operation of the brake assist system.

Servo Failure Auxiliary Control

- If the boost (servo) function decreases below normal due to a malfunction in the brake booster, the skid control ECU might determine that the driver's operating force (pedal effort) is insufficient to provide the proper brake force. In this case, the system actuates the brake actuator pump to increase the brake hydraulic pressure, in order to increase the brake force.