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2003 NISSAN Primera Hatchback OEM Service and Repair Workshop Manual

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Symptom Description

SIEMD-7106163

The AEB warning lamp is blinking. Refer to [Diagnosis Procedure](#).



NOTE:

When any of the following conditions, the AEB warning lamp blinks:

- The distance sensor area of the front of the vehicle is covered with dirt or is obstructed
- The interior temperature of the vehicle is extremely high
- The windshield is dirty, frosted, fogged up, or damaged in front of the front camera unit
- The front camera unit or the front camera unit bracket is not mounted properly

Sample

1. CHECK THE WINDSHIELD

Check if the windshield is dirty, frosted, fogged up, or damaged in front of the front camera unit.

Is the inspection result normal?

YES>>

[GO TO 2.](#)

NO>>

Clear, clean, or repair the windshield as needed. Refer to [Removal & Installation](#).

2. CHECK THE FRONT CAMERA UNIT OR FRONT CAMERA UNIT BRACKET INSTALL CONDITION

Check if the front camera unit or the front camera unit bracket is mounted properly.

Is the inspection result normal?

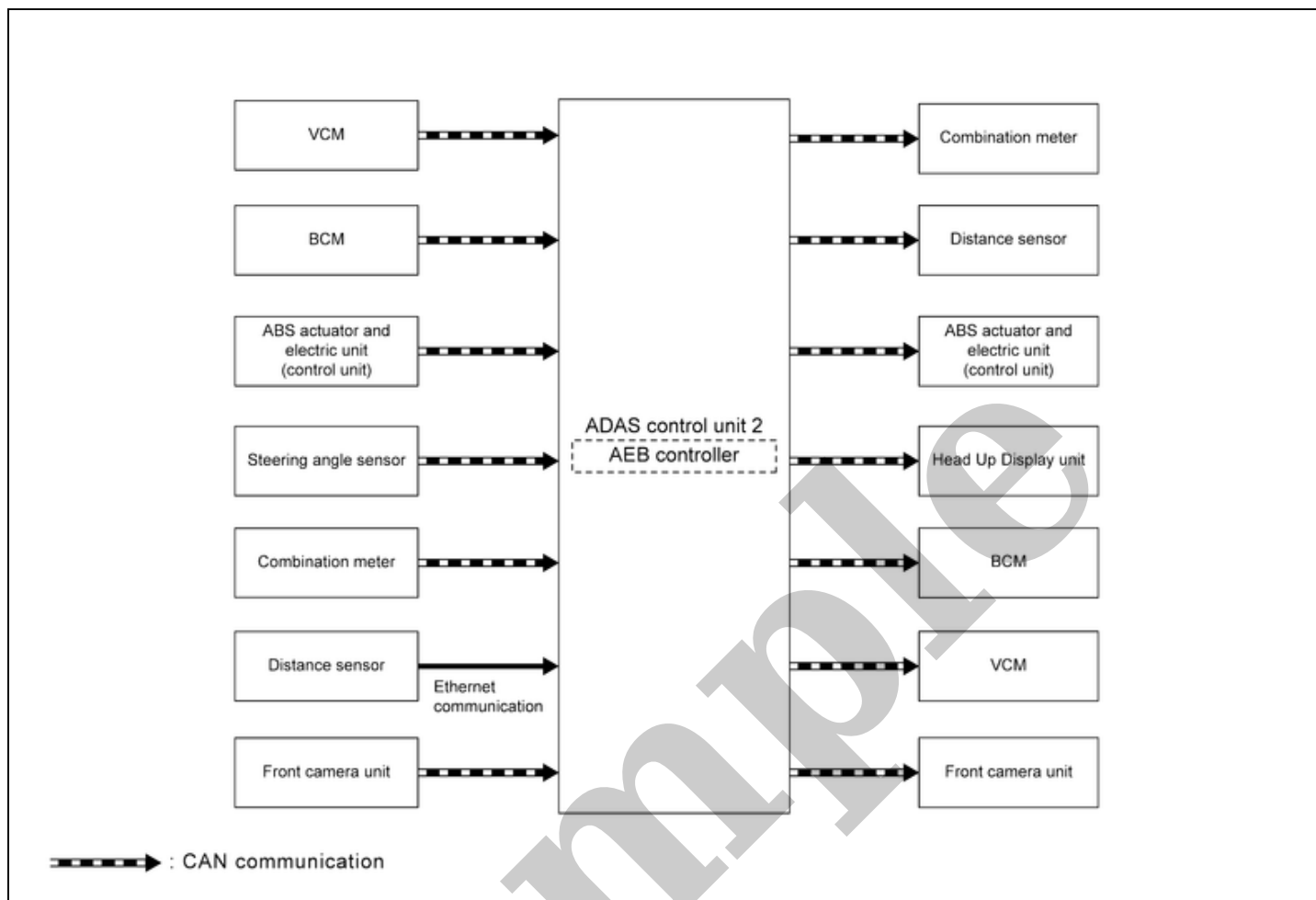
YES>>

INSPECTION END

NO>>

Correct improper mounting.

SYSTEM DIAGRAM



SIEMD-7106169-02-000430605

Component	Description
VCM	Component Description
BCM	System Description
ABS actuator and electric unit (control unit)	Component Description
Steering angle sensor	Component Description
Combination meter	Combination Meter
Distance sensor	Distance Sensor
Front camera unit	Front Camera Unit
Head Up Display Unit	Head Up Display Unit
ADAS control unit 2	ADAS Control Unit 2

ADAS CONTROL UNIT 2 INPUT/OUTPUT SIGNAL ITEM

Input Signal Item

Transmit unit	Signal name	Description	
VCM	CAN communication	READY status signal	Receives READY status
		Accelerator pedal position signal	Receives accelerator pedal position (angle)

Transmit unit	Signal name		Description
		Shift position signal	Receives a select lever position
BCM	CAN communication	Stop lamp switch signal	Receives an operational state of the brake pedal
		Stop lamp status signal	Receives a stop lamp status signal
		Tail lamp request signal	Receives a tail lamp request signal
		Front wiper request signal	Receives an operational state of front wiper(s)
ABS actuator and electric unit (control unit)	CAN communication	ABS malfunction signal	Receives a malfunction state of ABS
		ABS operation signal	Receives an operational state of ABS
		ABS warning lamp signal	Receives an ON/OFF state of ABS warning lamp
		TCS malfunction signal	Receives a malfunction state of TCS
		TCS operation signal	Receives an operational state of TCS
		VDC OFF signal	Receives an ON/OFF state of VDC
		VDC malfunction signal	Receives a malfunction state of VDC
		VDC operation signal	Receives an operational state of VDC
		Vehicle speed signal (ABS)	Receives wheel speeds of four wheels
		Yaw rate signal	Receives yaw rate acting on the vehicle
		Side G sensor signal	Receives lateral G acting on the vehicle
Steering angle sensor	CAN communication	Steering angle sensor malfunction signal	Receives a malfunction state of steering angle sensor
		Steering angle sensor signal	Receives the number of revolutions, turning direction of the steering wheel
		Steering angle speed signal	Receives the turning angle speed of the steering wheel
Combination meter	CAN communication	System selection signal	Receives a selection state of each item selected with the information display
Distance sensor	Ethernet communication	Distance sensor signal	Receives detection results, such as the presence or absence of a leading vehicle and distance from the vehicle
Front camera unit	CAN communication	Pedestrian ahead signal	Receives detection results of pedestrian ahead of vehicle
		Vehicle ahead signal	Receives detection results of vehicle ahead
		Cyclist ahead signal	Receives detection results of cyclist ahead of vehicle

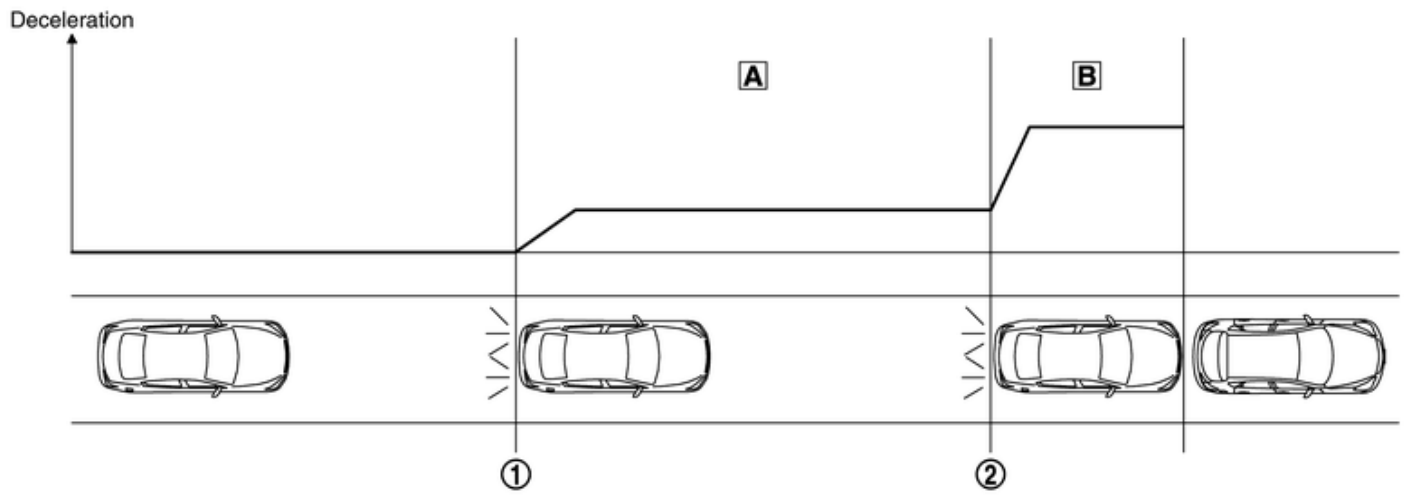
Output Signal Item

Reception unit	Signal name		Description
Combination meter	CAN communication	Meter display signal	Transmits a signal to display a state of the system on the information display
		Buzzer output signal	Transmits a signal to activate buzzer
		AEB warning lamp signal	Transmits a signal to turn ON the lamp
Distance sensor	CAN communication	Vehicle speed signal	Transmits a vehicle speed calculated by the ADAS control unit 2

Reception unit	Signal name		Description
ABS actuator and electric unit (control unit)	CAN communication	Brake fluid pressure control signal	Transmits a brake fluid pressure control signal to activates the brake
BCM	CAN communication	Stop lamp request signal	Transmits a signal to activates the stop lamp
VCM	CAN communication	Torque down request signal	Transmits a signal to control the motor torque
Head Up Display unit	CAN communication	Display signal	Transmits a signal to display a state of the system on the Head Up Display
Front camera unit	CAN communication	Vehicle speed signal	Transmits a vehicle speed calculated by ADAS control unit 2
		Turn indicator signal	Transmits a turn indicator signal received from BCM


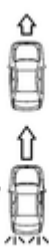
FUNCTION DESCRIPTION

- There are three types of AEB available, the type fitted to the vehicle depends on the vehicle specification:
 - Automatic Emergency Braking (AEB)
 - Automatic Emergency Braking (AEB) with Pedestrian Detection
 - Automatic Emergency Braking (AEB) with Pedestrian and Cyclist Detection
- Depending on the specification of the AEB system fitted to the vehicle, AEB can assist the driver when there is a risk of a forward collision with:
 - A vehicle ahead in the traveling lane.
 - A pedestrian ahead in the traveling lane (where Pedestrian Detection is fitted).
 - A cyclist ahead in the traveling lane (where Cyclist Detection is fitted).
- The AEB system operates when the vehicle is driven at the following speeds:
 - Approximately 5 km/h (3 MPH) or more (For vehicle)
 - Approximately 10 – 80 km/h (6 – 50 MPH) (For pedestrian and cyclist)
- When a risk of a forward collision is detected, the AEB system provides a warning to the driver by blinking the warning (yellow) on the information display, providing a warning chime, and causing the brake system to pulse (quickly partially apply).
- In addition, the AEB system applies partial braking.
- When the driver applies the brakes quickly and forcefully, but the AEB system detects that there is still the possibility of a forward collision, the system automatically increases the braking force.
- When the driver does not take action, the AEB system issues the second visual warning (blinking red and white) and warning chime, then the system applies partial braking when the condition to do so is satisfied.
- When the risk of a collision becomes imminent, the AEB system applies harder braking automatically.



SIEMD-7106169-03-SOIA0952ZZ

①	Start of warning and partial brake. (include brake pulse when the condition is satisfied)	②	Start of harder brake		
A	Applies partial braking (include brake pulse when the condition is satisfied)	B	Harder brake		

Situation		Brake	Warning
No obstacle approached		No operation	—
①	Start of warning and partial brake	Partial brake  SIEMD-7106169-04-SOIA0222ZZ	<ul style="list-style-type: none"> Sounds the buzzer (High temperature) Indicates warning indicators on the information display
②	Start of harder brake	Harder brake  SIEMD-7106169-06-SOIA0222ZZ	<ul style="list-style-type: none"> Sounds the buzzer (Higher pitched buzzer) Indicates warning indicators on the information display

CAUTION:

It is the driver's responsibility to stay alert, drive safely and be in control of the vehicle at all times. As there is a performance limit, it may not provide a warning or brake in certain conditions.

OPERATION DESCRIPTION

- The distance sensor measures the distance from the vehicle ahead and transmits the distance sensor signal to the ADAS control unit 2.
- The front camera unit measures the distance from a vehicle and transmits the vehicle ahead signal to ADAS control unit 2.

- The front camera unit measures the distance from a pedestrian and transmits the pedestrian ahead signal to ADAS control unit 2.
- The front camera unit measures the distance from a cyclist and transmits the cyclist ahead signal to ADAS control unit 2.
- The ADAS control unit 2 judges the possibility of a collision from the distance sensor signal, the pedestrian ahead signal and the vehicle speed.
- The ADAS control unit 2 performs the following operations according to the degree of possibility of a collision.
 - Transmits the buzzer output signal to the combination meter and sounds the buzzer.
 - Transmits the meter display signal to the combination meter and displays a state of the system on the information display.
 - Transmits the brake fluid pressure control signal to the ABS actuator and electric unit (control unit) and performs the brake control.
 - Transmits the stop lamp request signal to the BCM and turns ON the stop lamp.



NOTE:

- **ON/OFF of AEB system is performed with the information display.**
- **When the ignition switch is turned from OFF to ON, the system is automatically activated even if it is OFF.**
- **The AEB system operates under the following conditions.**
 - **The AEB system will function when the vehicle is driven at speeds of approximately 5 km/h (3 MPH) and above, and when the vehicle's speed is approximately 5 km/h (3 MPH) faster than that of the vehicle ahead. (For vehicle)**

OPERATION CONDITION

ADAS control unit 2 performs the control when the following conditions are satisfied.

- AEB system: ON
- Vehicle speed (For vehicle): Approximately 5 km/h (3 MPH) or more
- Vehicle speed (For pedestrian and cyclist): Approximately 10 – 80 km/h (6 – 50 MPH)
- When there is a possibility of a collision with the vehicle or pedestrian ahead.
- When there is a possibility of a collision with the pedestrian ahead.
- When there is a possibility of a collision with the cyclist ahead.

CANCEL CONDITION

The ADAS control unit 2 cancels the operation when the system is under any conditions of the operation cancellation condition.

- When the system judges that the vehicle comes to a standstill by the system control.
- When the system malfunction occurs.
- When the distance sensor area of the front grill is dirty and the measurement of the distance between the vehicles becomes difficult. (For vehicle)
- When the view of ahead is hard is recognized due to dirt around front camera unit of windshield. (For vehicle, pedestrian, and cyclist)

Circuit Diagram

Refer to [Circuit Diagram](#).

Sample

ADAS Control unit 2

Refer to [Fail-safe \(ADAS Control Unit 2\)](#).

Distance Sensor

Refer to [Fail-safe \(Distance Sensor\)](#).

Front Camera Unit

Refer to [Fail-safe \(Front Camera Unit\)](#).

Sample