NEW FEATURES

■ BRAKE CONTROL SYSTEM
(ABS with EBD, BRAKE ASSIST, TRC and VSC)

1. General

The brake control system of new xA has the following functions:
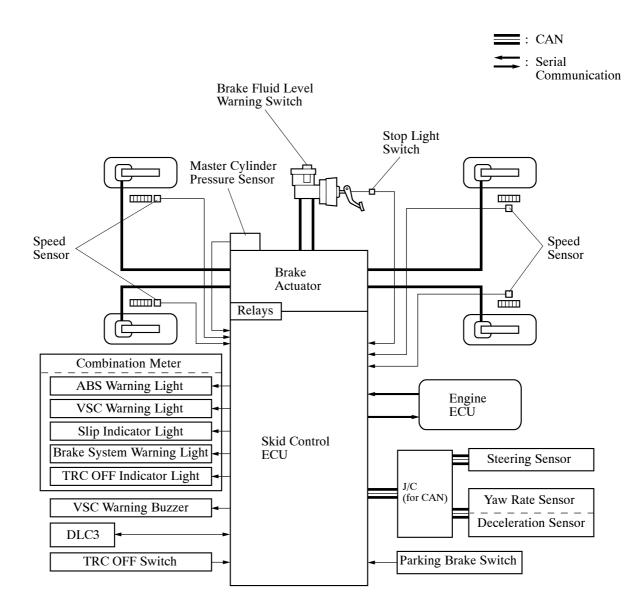
Function	Outline
ABS (Anti-lock Brake System)	The ABS helps prevent the wheels from locking when the brakes are applied firmly or when braking on a slippery surface.
EBD (Electronic Brake Force Distribution)	The EBD control utilizes ABS, realizing the proper brake force distribution between front and rear wheels in accordance with the driving conditions. In addition, during cornering braking, it also controls the brake forces of right and left wheels, helping to maintain the vehicle behavior.
Brake Assist	Brake assist applies the sufficient pressure on the brake pedal if the brake pedal operation is not sufficient when urgent braking is needed.
TRC (Traction Control)	The TRC system helps prevent the drive wheels from slipping if the driver presses the accelerator pedal excessively when starting off or accelerating on a slippery surface.
VSC (Vehicle Stability Control)	The VSC system helps prevent the vehicle from slipping sideways as a result of strong front wheel skid or strong rear wheel skid during cornering.

- The functions of the ABS with EBD have been carried over from the previous xA. For an outline and the operation of the ABS with EBD, see the previous xA manual (Pub. No. NCF254E).
- This model uses the CAN (Controller Area Network) communication system for communication between the skid control ECU, steering angle sensor and yaw rate & deceleration sensor.
- The "skid control ECU and brake actuator" and the "yaw rate sensor and deceleration sensor" are both integrated units.
- A trochoid gear type pump has been adopted for the pump in the brake actuator.
- A pressure regulator valve has been adopted to regulate the pressure of the fluid that is supplied to the pump.

Service Tip

When the brake control system (ABS with EBD) is activated, the brake pedal could shudder, which is a normal occurrence of the system in operation and should not be considered as a malfunction.

▶ **System Diagram** ◀

: CAN

: Serial
Communication

Brake Fluid Level
Warning Switch

Stop Light
Switch

Master Cylinder
Pressure Sensor

Speed
Sensor

Speed
Sensor

Brake
Actuator

Relays

Combination Meter

ABS Warning Light

VSC Warning Light

Slip Indicator Light

Brake System Warning Light

TRC OFF Indicator Light

VSC Warning Buzzer

DLC3

TRC OFF Switch

Skid Control
ECU

Engine
ECU

Steering Sensor

J/C
(for CAN)

Yaw Rate Sensor

Deceleration Sensor

Parking Brake Switch

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