Description

General/Features/Construction

General

In a conventional brake system, if the brake pedal is depressed excessively, the wheels can lock before the vehicle comes to a stop. In such a case, the stability of the vehicle is reduced if the rear wheels are locked, and maneuverabily of the vehicle is reduced if the front wheels are locked, creating an extremely unstable condition.

The Anti-Lock Brake (ALB) system modulates the pressure of the brake fluid applied to each caliper, thereby preventing the locking of the wheels, whenever the wheels are likely to be locked due to excessive braking. It then restores normal hydraulic pressure when there is no longer any possibility of wheel locking.

Features

- Increased braking stability can be achieved regardless of changing driving conditions.
- The maneuverability of the vehicle is improved as the system prevents the front wheels from locking.
- When the ALB goes into action, kick-back is felt on the brake pedal.
- The ALB system is equipped with a self-diagnosis function. When an abnormality is detected, the dash warning light comes on and the LED display on the control unit blinks. The location of the system's trouble can be diagnosed from the frequency of the LED display blinks.
- This system has individual control of the front wheels and common control ("select low") for the rear wheels."Select Low" means that the rear wheel that would lock first (the one with the lowest resistance to lock-up) determines ALB activation for both rear wheels.

Construction

In addition to the conventional braking sysem, the ALB system is composed of: gear pulsers attched to the rotating part of individual wheels; speed sensors, which generate pulse signals in correspondence to the revolution of the gear pulsers; control unit, which controls the working of the ALB system by performing calculations based on the signals from the individual speed sensors and the individual switches; modulator unit, which adjusts the hydraulic pressure applied to each caliper on the basis of the signals received from the control unit; an accumlator, in which high-pressure brake fluid is stored; a pressure switch, which detects the pressure in the accumlator and transmits signals to the control unit; a power unit, which supplies the high-pressure working fluid to the accumlator by means of a pump; a motor relay for driving the power unit; a fail-safe relay, which cuts off the solenoid valve ground circuit when the fail-safe device is at work; and, a dash warning light.