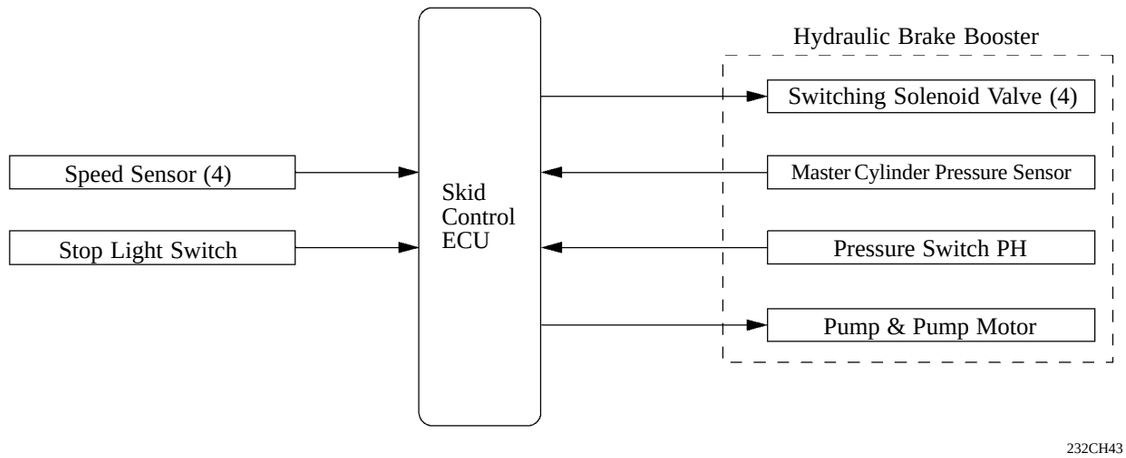
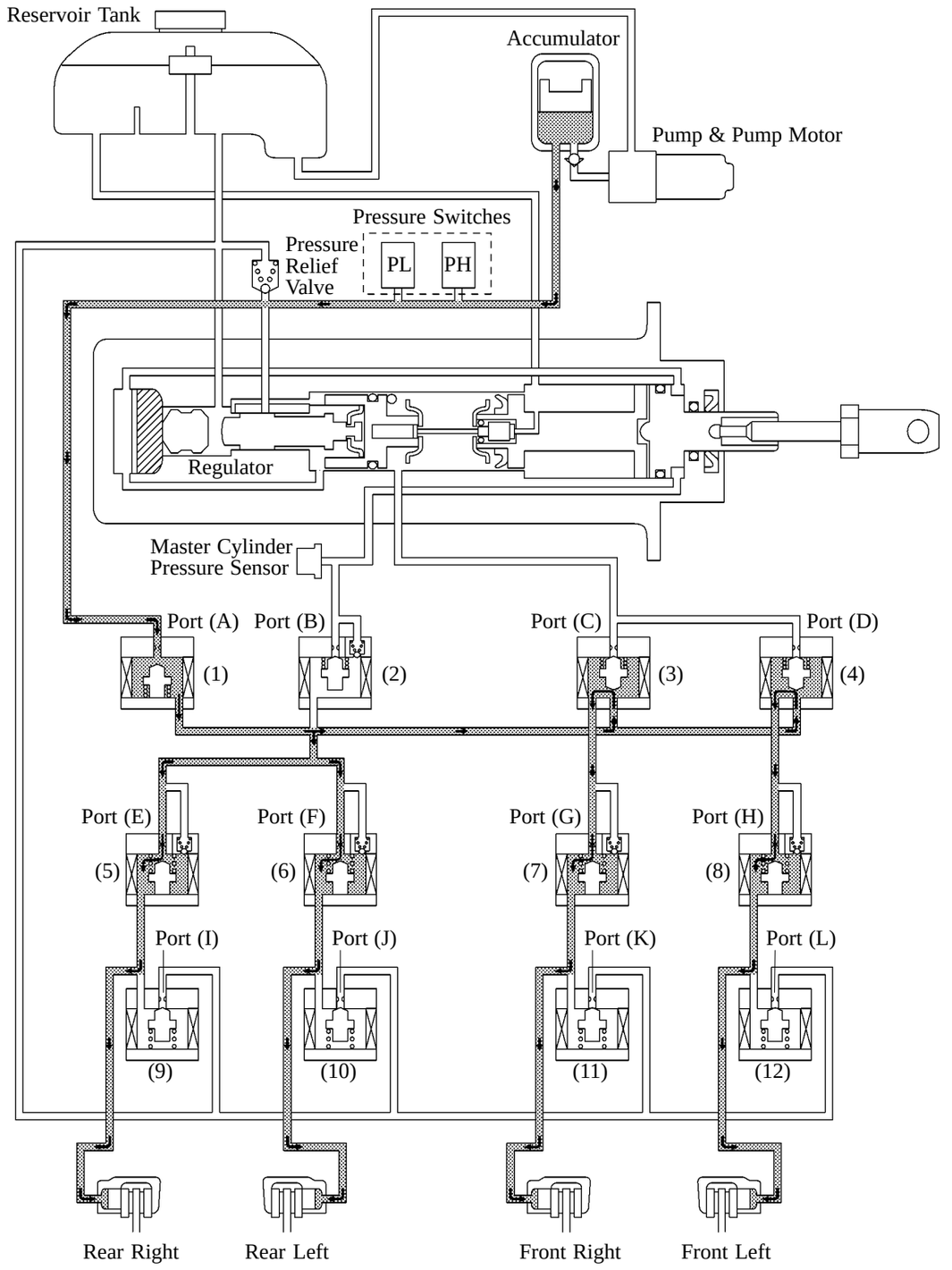
Brake Assist Operation

If an emergency braking situation has occurred, it is detected by the skid control ECU based on the vehicle speed signal from the speed sensor, the brake pedal application speed from the master cylinder pressure sensor, and the signal representing the amount of pedal effort. Then, the skid control ECU actuates the switching solenoid valves. As a result, the fluid pressure from the accumulator is applied to the wheel cylinders. The accumulator fluid pressure that is applied to the wheel cylinders generates a higher fluid pressure than the master cylinder.
If the accumulator pressure drops during this operation, the skid control ECU receives the signals from the pressure switch PH and actuates the pump & pump motor to ensure the proper accumulator pressure.

▶ System Diagram ◀




Reservoir Tank
Accumulator
Pump & Pump Motor
Pressure Switches
Pressure Relief Valve
PL
PH
Regulator
Master Cylinder Pressure Sensor
Port (A)
Port (B)
Port (C)
Port (D)
(1)
(2)
(3)
(4)
Port (E)
Port (F)
Port (G)
Port (H)
(5)
(6)
(7)
(8)
Port (I)
Port (J)
Port (K)
Port (L)
(9)
(10)
(11)
(12)
Rear Right
Rear Left
Front Right
Front Left

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Item				Brake Assist not Activated	Brake Assist Activated
Switching Solenoid Valve		(1)	Accumulator Cut Solenoid Valve STR	OFF (Close)	ON (Open)
			Port (A)		
		(2)	Regulator Cut Solenoid Valve SA3	OFF (Open)	ON (Close)
			Port (B)		
		(3)	Master Cylinder Cut Solenoid Valve SA1	OFF (Open)	ON (Close)
			Port (C)		
		(4)	Master Cylinder Cut Solenoid Valve SA2	OFF (Open)	ON (Close)
			Port (D)		
Control Solenoid Valve	Front Brake	(7), (8)	Pressure Holding Valve	OFF (Open)	←
			Port: (G), (H)		
		(11), (12)	Pressure Reduction Valve	OFF (Close)	←
			Port: (K), (L)		
		Wheel Cylinder Pressure		—	Increase
	Rear Brake	(5), (6)	Pressure Holding Valve	OFF (Open)	←
			Port: (E), (F)		
		(9), (10)	Pressure Reduction Valve	OFF (Close)	←
			Port: (I), (J)		
		Wheel Cylinder Pressure		—	Increase