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Types of Brake Systems

Year models 1988 through the later 2004. were equipped with the Air Disc Brake system by Arvin Meritor. Year models 2005 and later were equipped with Dana Axles and the Bendix ADB Air Disc Brake system.

DUAL AIR TANK BRAKE SYSTEM WITH SPRING PARKING BRAKE

Spring parking brakes in this system serve two purposes: first, as a parking brake; second as an emergency braking system. If a failure occurs in the primary circuit and a brake application is made, controlled air from the foot valve is directed to a spring brake modulator valve. As there is no supply air to maintain balance in the modulator valve, because of the primary circuit failure, the modulator valve then exhausts the air pressure from the spring parking brake circuit. The amount of air released is equal to the amount of air applied by the foot valve. The release of the air in the spring parking brake circuit causes the drive axle to brake using spring pressure. When the brakes are released, supply air from the secondary circuit returns the spring parking brakes to an OFF position.

Brake applications can be repeated until all of the air from the secondary circuit is lost. However, as the air pressure drops below 85 psi, the spring parking brakes will not return to the full OFF position, in fact they will start to drag. At approximately 35 psi , the spring parking brake control valve on the dash will exhaust the remaining air in the secondary circuit (automatically engaged), and the spring parking brakes are fully applied. The only way the vehicle can be moved after all of the air is lost is to repair the damaged circuit and recharge the system, or cage the spring parking brake system.

PARKING BRAKE

This type of spring loaded valve requires that the driver push the button to release the parking brakes. This valve cannot be left in the released position below approximately 35 P.S.I. pressure in the main reservoir system. Any time the main reservoir pressure drops to approximately 35 P.S.I., this valve will exhaust automatically, placing the parking brakes into full application.

APPLYING THE PARK BRAKE WHILE IN MOTION

If the air pressure is present when activating the park brake, the rear spring brake chamber will become active and will slowly bring the unit to a stop. Only then will the rear axle spring brake be applying brake force. If no air pressure is present, the spring brake should have already been engaged.

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by James Triana - Foretravel Technical Advisor