Normally, pushing the dash control inward causes air to exhaust from the parking diaphragm and at the same time releases the locking mechanism, allowing the pushrod to retract. But if more than 4 p.s.i. (27.6 kPa) pressure has been lost from the parking reservoir, the parking brakes will not release. A heavy service brake application must also be made, causing the pushrod to move slightly ahead, allowing the locking mechanism to disengage.

Because spring force is not used for parking, safety actuator parking brakes can’t be compounded.

**Note that safety actuator parking brakes will not apply automatically,** even if service reservoir pressure is drained or pumped down to zero. Only loss of pressure in the parking reservoir will cause automatic application.

### Tractor-trailer air brake systems

To understand the basics of tractor-trailer air brake systems, it’s best to start with the trailer. Once you understand the trailer system, it becomes simpler to understand the components that are needed to tow a trailer.

A trailer system has many of the components found on a truck system: foundation brakes, air chambers, air reservoirs and control valves. The only major item not found on a trailer air system is an air compressor.

The trailer system must rely on the tractor for two important needs. First, the trailer must receive the compressed air from the tractor to fill the trailer reservoirs. Second, the trailer system must receive the commands from the tractor about when to apply and release the brakes.

To fulfill these needs, there are two air line connections between the tractor and the trailer air systems.

The air line that supplies the trailer reservoirs with air at full tractor reservoir pressure is called the **supply line**. It’s sometimes called the **emergency line**.

The line that carries the control signal from the tractor is called the **control line**. It’s also commonly called the **service line**.

Because tractors and trailers need to be disconnected and reconnected from time to time, the air lines are equipped with quick coupling devices called **glad hands**. Each coupler resembles a human hand about to make a handshake. Glad hands are often colour-coded — a blue line or blue colouring indicates the control line, and red’s used to indicate the supply line.