Air Semi Trailer Brakes

In order to drive a semi with air brakes you must be certified to do so. This means that you have to pass an air brake test and know how to inspect and test them. With a semi that has air trailer brakes, you to understand how to test the trailer brakes and how the system is set-up.

The trailer hand valve, also called Johnson bar, is located in the cab of the truck. The trailer hand valve is only used for testing the brakes. The hand valve is never used in stopping, as it will cause the trailer to skid and possibly jackknife. The foot brake of the truck will also operate the brakes and prevent such events from occurring.

The trailer air supply control is red 8-sided knob, which controls the tractor protection valve. The tractor protection valve will keep air in the truck if the trailer develops an air leak or breaks away from the truck. If you push the trailer air supply control it will shut off the air and put on the trailer emergency brakes. The valve pops out and closes the tractor protection valve when the air pressure in the system drops between 20 and 45 psi. On older vehicles, this knob may not pop out automatically.

Every semi and semi trailer has two air lines. These are the service line and emergency line. They attach to both the truck the semi trailer. The service air line is blue and will carry air that is controlled by the foot brake in the truck or the trailer hand valve. The service line is connected to a relay valve on the semi trailer and will apply pressure on the semi trailer brakes. When pressure builds in the line, the relay valve will open and send air pressure from the trailer’s air tank to the trailer’s brake chamber, which applies the brakes.

The emergency air line is red. The line supplies the trailer air tanks and will control the emergency brakes on the semi trailer. Loss of air pressure in this line will cause the semi trailer emergency breaks to come on in the event that the trailer disconnects from the truck, or the hose is torn apart. When the emergency line loses pressure it will cause the tractor protection valve to pop out in the truck cab.