



SURFACE VEHICLE RECOMMENDED PRACTICE

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Test Procedure for Air Supply of Truck-Tractors and Towing Trucks

RATIONALE

This Recommended Practice is being Stabilized because it covers technology, products, or processes which are mature and not likely to change in the foreseeable future.

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1. SCOPE

This SAE Recommended Practice (RP) provides test procedures for air braked trucks and truck-tractors used to tow single and multiple trailer combinations on highways. This RP is not intended for off-highway applications.

1.1 Purpose

This document provides a method of determining the capability of towing trucks and truck-tractors to supply compressed air to the reservoirs and parking brake chambers on towed vehicles.

2. REFERENCES

2.1 Applicable Publication

The following publication forms a part of this specification to the extent specified herein. Unless otherwise indicated, the latest version of SAE publications shall apply.

2.1.1 SAE Publication

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE J318 Automotive Air Brake Line Couplers (Gladhands)

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3. INSTRUMENTATION AND EQUIPMENT

3.1 Instrumentation

- 3.1.1 Timing device accurate to within 1% of elapsed time.
- 3.1.2 Minimum of two pressure gages that are accurate to within 2% of the measured pressure.
- 3.1.3 (Optional) Electronic pressure measuring system accurate to within 2% of the measured pressure.

3.2 Equipment

- 3.2.1 A reservoir assembly consisting of a 49 170 cm³ (3000 in³) reservoir and 13.72 meters (45 feet) of 9.8 mm (.375 inch) ID tubing with one end connected to a gladhand type coupler (conforming to SAE Recommended Practice J318) with the assembly volume totaling 50 153 cm³ (3060 in³). The fittings making these connections are to have an ID of 9.8 mm (.375 inch) except that the tubing shall be connected to the reservoir by a pipe nipple which is 50.8 mm (2 inches) long and has an inside diameter of 3.2 mm (.125 inch).

4. VEHICLE CONDITION

- 4.1 All air connections are to be secured so that the leakage rate for the entire system with the vehicle's engine stopped, reservoir pressures within 69 kPa (10 psi) of the cut-out pressure (air dryer purged), parking brakes applied and service brakes released, is not more than 6.9 kPa (1 psi) per minute (13.8 kPa (2 psi) per minute if the test vehicle is not new). For the leakage rate evaluation, the supply line coupler of the test vehicle shall be connected to the 49 170 cm³ (3000 in³) reservoir assembly with the vehicle's trailer air supply valve delivery pressure (pushed in to supply air).
- 4.2 All air operated equipment outside of the brake system shall be in the "off" position.
- 4.3 Governor cut-in and cut-out pressures are those specified by the test vehicle's manufacturer.
- 4.4 Record vehicle information on a data sheet.

5. TEST PROCEDURE

- 5.1 Park the test vehicle on a level surface, chock the wheels and place the transmission in neutral.
- 5.2 Attach the 49 170 cm³ (3000 in³) reservoir assembly coupler to the test vehicle supply line coupler.
- 5.3 Install pressure gages (or sensors) in the test vehicle's reservoir that the governor senses (normally the supply reservoir), the supply line coupler (optional), and the 49 170 cm³ reservoir.
- 5.4 Run the engine until the vehicle coolant temperature is in its normal operating range.
- 5.5 While the engine is warming up (idling), position the trailer air supply valve to deliver pressure (normally push in the valve). After the compressor cuts-out, open the drain valve on the 49 170 cm³ (3000 in³) reservoir to cause the test vehicle's compressor to go through its load/unload cycle 5 times. Record the governor cut-in and cut-out pressures.
- 5.6 Close the tractor's air supply valve (normally pull out the valve).
- 5.7 Drain all of the air pressure from the 49 170 cm³ (3000 in³) reservoir by opening its drain valve. Close the drain valve after all of the pressure is depleted.