



SURFACE VEHICLE RECOMMENDED PRACTICE

J1854™

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Brake Force Distribution Performance Guide - Truck and Bus

RATIONALE

This revision expands brake force output in 4.3 from 40 psi to 5 to 40 psi to better understand balance between drum and ADB systems. It also includes grammatical corrections.

FOREWORD

This document has been changed to reflect a Five-Year Review and update.

The performance guidelines specified in this SAE Recommended Practice represent the accumulation of information available from investigations of the brake system performance of air-braked towing, truck-tractors, truck-trailers, converter dollies, and combinations of these types of vehicles. Because these guidelines are based on data limited by voluntary submissions of equipment and information and testing was limited to specific conditions, they may not necessarily represent optimum performance for all vehicles under all operating conditions. Therefore, the values specified in this document are target values; all targets are mean values except for the one minimum value specified.

1. SCOPE

This SAE Recommended Practice establishes performance guidelines for the threshold pressure and brake force output of the brakes on the axles of air-braked towing trucks, truck-tractors, truck-trailers, and converter dollies with GVWRs over 4536 kg (10000 pounds) designed to be used on the highway in combination with other air-braked vehicles of this type in commercial operations.

1.1 Purpose

The purpose of this document is to establish target threshold pressures and brake force outputs with reference to brake application pressures as measured at the rear control line gladhand of truck-tractors and towing trucks, the front control line gladhand of non-towing trailers, and the front and rear control line gladhand of towing trailers and dollies.

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2. REFERENCES

2.1 Applicable Documents

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

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J1505 Brake Force Distribution Test Procedure - Trucks and Buses

2.1.2 FMVSS Publications

Available from the Superintendent of Documents, U.S. Government Printing Office, Mail Stop: SSOP, Washington, DC 20402-9320.

49 CFR 571.121 Brake Performance - Air Brake Systems

3. TEST PROCEDURE

Tests to determine the brake force output and threshold pressure of vehicles to be used in single unit or combinations and the brake force distribution of single unit or combination vehicles shall be conducted in accordance with SAE J1505. The brakes of newly manufactured vehicles built to be used in single unit or combinations shall be burnished prior to testing according to the burnish procedure specified in SAE J1626, Section 11, or FMVSS 121, Section 6.1.8.

4. PERFORMANCE GUIDELINES

4.1 Newly manufactured vehicles used in single unit trucks/tractors/trailers or truck/trailer combinations.

4.2 Threshold pressure (average of the brake apply and release pressures measured as specified in 6.3 of SAE J1505) 41 kPa (6 psi).

4.3 Brake force output at 35, 69, 103, 138, 207, 276 kPa (5, 10, 15, 20, 30, 40 psi as specified in 7.5 of SAE J1505.)

NOTE: For 4.3.1 through 4.3.5, use the output at the highest tested pressure without lockup as specified in 7.5 of SAE J1505.

4.3.1 For Tractor or Towing Truck Steer Axles

4.3.1.1 Measured braking force to be equal to or greater than 0.20 x GAWR (for pre-RSD vehicles).

4.3.2 For Single Axles with GAWRs of 7260 to 9071.8 kg (16000 to 20000 pounds)

4.3.2.1 Measured brake force to be equal to or greater than 20460 N (4600 pounds-force).

4.3.3 For Single Axles with GAWRs of 9072.3 to 13154 kg (20001 to 29000 pounds)

4.3.3.1 Measured brake force to be equal to or greater than 20460 N (4600 pounds-force).

4.3.4 For Axles of an "Axle System" Whose GAWR Divided by the Number of Axles is from 7260 to 9072.3 kg (16000 to 20000 pounds)

4.3.4.1 Measured brake force to be equal to or greater than 20460 N (4600 pounds-force).