RECOMMENDED PRACTICE SAE J1404

APPROVED AS ANSI/SAE J1404-1980
BY AMERICAN NATIONAL
STANDARDS INSTITUTE

Service Brake Structural Integrity Requirements—Vehicles Over 10 000 lb. (4500 KG) GVWR —SAE J1404

SPONSORED BY:
SOCIETY OF AUTOMOTIVE ENGINEERS, INC.

PUBLISHED BY:
SOCIETY OF AUTOMOTIVE ENGINEERS, INC., 400 COMMONWEALTH DRIVE,
WARRENDALE, PA 15096

SERVICE BRAKE STRUCTURAL INTEGRITY REQUIREMENTS—VEHICLES OVER 10 000 LB (4500 KG) GVWR—SAE J1404

SAE Recommended Practice

Report of Brake Committee approved May 1977. Editorial change March 1978.

1. Introduction—The requirements in this SAE Recommended Practice represent the accumulation of the best information available from investigation of the brake system performance of new motor vehicles designed for roadway use.

2. Scope—This SAE Recommended Practice presents requirements for the structural integrity of the brake system of all new trucks, buses, and combination of vehicles designed for roadway use and falling into the following classifications:

Truck and Bus: Over 10 000 lb (4500 kg) gvwr.

Combination of Vehicles: Towing vehicle over 10 000 lb (4500 kg) gvwr. The requirements are based on data obtained from SAE Recommended Practice J294 (June, 1973).

3. Purpose—The purpose of this Recommended Practice is to establish the minimum service brake system requirements with regard to structural integrity.

4. Test Procedure

4.1 The vehicle is to be tested in accordance with SAE J294 (June, 1973).

4.2 At the completion of the mandatory portion (40th stop of the Structural Test, Section 6.4), make a check stop per Section 6.2.2 of SAE J294 (June, 1973).

5. Acceptance Performance Requirements

5.1 Actuation System

5.1.1 On hydraulic braked vehicles, the pedal shall not go to the floor or the limit of travel on any stop.

5.1.2 Brake failure warning devices shall not remain on after any stop.

5.1.3 On hydraulic braked vehicles, there shall be no evidence of fluid leakage from the master cylinder, booster, wheel and brake assembly, valves, hose, fittings or tubing.

5.1.4 On air braked vehicles, the leakage rate with the brakes applied shall not exceed the manufacturer's recommendations.

5.1.5 There shall be no distortion of the brake pedal or treadle, master cylinder, actuating valve, or their attachment hardware or brackets so as to prevent continued braking operation.

5.2 Foundation Brakes and Drums/Rotors

5.2.1 When the brakes are released after the last stop of the test, and the vehicle is moved, all wheels should rotate freely. In this recommended practice, the phrase, *all wheels should rotate freely,* is defined as: The wheels can be manually rotated by one man when the axle is raised.

5.2.2 On the check stop per Section 4.2, there shall be no uncontrollable braking action causing any tire of a vehicle to leave a 12 ft (3.7 m) wide roadway lane.

5.2.3 On the check stop per Section 4.2, no wheel shall lock.

5.2.4 There shall be no permanent distortion of foundation brake components, drums/rotors, or their attachment hardware or relative movement between the brake assembly and the axle flange so as to prevent continued braking operation.

5.3 Because this recommended practice is to establish only the minimum requirements, no acceptable performance requirements are specified for the optional portions of SAE J294 (June, 1973). (The optional portions are stops exceeding 40 of the Structural Test, Section 6.4, and the Endurance Test, Section 6.5.) These optional tests and the final Inspection Section 6.6, provide an indication of how far the brake system would surpass minimum requirements for satisfactory vehicle usage.