



SURFACE VEHICLE RECOMMENDED PRACTICE

J1953™

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Superseding J1953 MAY2018

Brake-Stroke Indicator Design Guideline for Cam or Disc Air-Brake Actuators

RATIONALE

This revision updates references from SAE J1817 to the newer standard SAE J2899, which is now the recognized source for brake inspection limits. This revision also brings nomenclature in line with SAE J2899.

SAE J1953 has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE

This SAE Recommended Practice shall cover mechanical-brake adjustment limit stroke indicators for actuators with visible exposed pushrods and electrical-brake adjustment limit stroke indicators for all air-brake actuators.

This device shall indicate the foundation brake(s) may require adjustment or service when inspected per vehicle manufacturer's procedures. A measurement shall be made to determine actual stroke measurement for any system not factory calibrated.

Stroke indication accuracy of an air-brake actuator can be assured only when all of its components are supplied by the original brake actuator manufacturer.

1.1 Purpose

This document establishes design guidelines for air-brake actuator stroke indicators.

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.

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Documents
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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 J1292 Automobile and Motor Coach Wiring

SAE J1455 Recommended Environmental Practices for Electronic Equipment Design in Heavy-Duty Vehicle Applications

SAE J1469 Air Brake Actuator Test Procedure, Truck-Tractor, Bus, and Trailers

SAE J2899 Brake Adjustment Limit for Air Brake Actuators

3. REQUIREMENTS

3.1 Stroke Indicator

Mechanical Design Guidelines.

3.1.1 The stroke indication shall occur at +0 -3.8 mm (+0.00 -0.15 inches) of the recommended brake adjustment limit in Figure 3 of SAE J2899.

3.1.2 The stroke indication shall be high visibility orange to red (see Figure 1).

3.2 Stroke Indicator

Electrical Design Guidelines.

3.2.1 The stroke indication shall occur at +0 -3.8 mm (+0.00 -0.15 inches) of the recommended brake adjustment limit in Figure 3 of SAE J2899.

3.2.2 Electrical system installation shall conform to SAE J1292, if applicable.

3.2.3 Electrical systems shall have a system function test capacity.

3.2.4 Any system that provides a driver-warning device in a distracting manner shall be provided with manual override which shall automatically reset each time the vehicle is shutdown or restarted.

3.3 Test Procedure

3.3.1 Mechanical Design

Test per SAE J1469.

3.3.2 Electrical Design

Test per SAE J1455.