SURFACE VEHICLE RECOMMENDED PRACTICE

J1817™ JAN2023

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Superseding J1817 FEB2018

(R) Long-Stroke Air-Brake Actuator Marking

RATIONALE

This revision brings renewed focus on the original purpose of the document by (1) re-establishing the list of air brake actuators with the industry recognized standard stroke, and (2) providing a list of the different means by which air brake actuators with stroke lengths greater than the industry recognized standard stroke can be identified.

The revision also adds reference to SAE J2899 (Brake Adjustment Limit for Air Brake Actuators) as the recognized source for brake inspection limits based on actuator rated stroke and as an additional means for stroke length identification.

SAE J1817 has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE

This SAE Recommended Practice describes a marking system to distinguish long-stroke from standard stroke for service, parking, and combination air-brake actuators, and components. Said actuators are used for applying cam type foundation brakes by slack adjuster means.

1.1 Purpose

This document establishes a uniform marking system to identify long-stroke actuators and components used in air-brake systems.

2. REFERENCES

2.1 Applicable Document

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 Publication

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

SAE J2899 Brake Adjustment Limit for Air Brake Actuators

2.2 Related Publication

The following publication is provided for information purposes only and are not a required part of this SAE Technical Report.

2.2.1 SAE Publication

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 J1953 Brake-Stroke Indicator Design Guideline for Cam or Disc Air-Brake Actuators

3. DEFINITIONS

3.1 RATED STROKE

The minimum design stroke of a unit as listed in Table 1.

3.2 STANDARD STROKE ACTUATORS

Brake actuators having a rated stroke as listed in Table 1, Column 1.

3.3 LONG-STROKE ACTUATORS

Brake actuators having a rated stroke greater than the standard stroke of the equivalent size.

Table 1 - Air-brake actuator rated service stroke - clamp band/sealed designs - standard stroke

Type (Size)	Standard Rated Stroke mm	Standard Rated Stroke in
9	44.5	1.75
12	44.5	1.75
16	57.2	2.25
20	57.2	2.25
24	63.5	2.50
30	63.5	2.50
36	76.2	3.00

4. GENERAL

Long-stroke air-brake actuators have pushrod stroke capabilities in excess of standard stroke actuator designs. As some of these actuators are nearly identical in exterior appearance to the standard actuators, a unique marking system is needed for the purpose of identification by mechanics, inspectors, and others in the field. This marking will help assure both types of actuators are serviced correctly and that brakes are adjusted properly. Unique long-stroke actuator components are not interchangeable between actuator manufacturers nor standard actuator components.

5. REQUIREMENTS

5.1 Identification - Long-Stroke Actuators

There are four (4) methods described as follows, for differentiating long-stroke from standard stroke actuators. All long-stroke actuators must have a letter code marking per 5.1.1 and 76.2 mm (3.00 inches) long-stroke actuators must use square inlet ports per 5.1.2. All long stroke actuators should incorporate at least one (1) of the other two (2) methods per 5.1.3 and 5.1.4.

5.1.1 Letter Code Marking

Marking on spring housing or service side pressure housing in accordance with SAE J2899 with letter code corresponding to air brake actuator rated stroke (see Figure 1).

5.1.2 Square Air Port and/or Pressure Cap Embossment

All 76.2 mm (3.00 inches) long-stroke actuators shall have square inlet ports. The top port of the service actuators shall have a square embossment that is clearly visible and cannot be obscured by paint or square port can be used (see Figures 1 and 2).

5.1.3 Servicing Instructions

Service instructions should be embossed or stamped on spring brake center sections or service side pressure caps. These instructions will instruct that long-stroke diaphragms are required for replacement. Numerical values shall be in mm and inches (see Figures 1 and 2).

5.1.4 Tags

A tag (typically trapezoidal) shall be secured to the service side clamp band bolts or attached/affixed to the actuator by a suitable means. The actuators rated stroke shall be embossed or otherwise readable within the trapezoidal area with numerical values in millimeters and inches. For actuators without clamp bands, the same information is to be provided in a highly visible alternative directly on the actuator (see Figures 1 and 2).

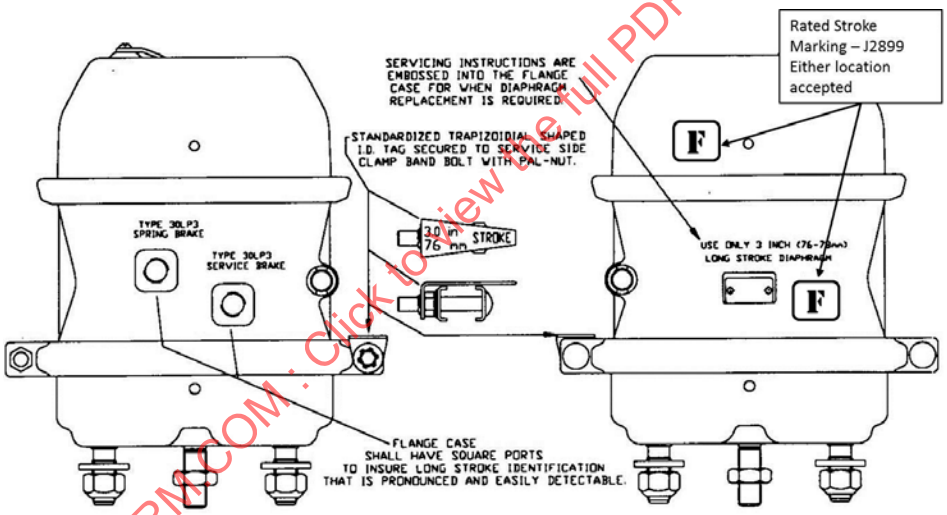

Figure 1 – 76.2 mm (3.00 inches) long-stroke spring brake actuator identification

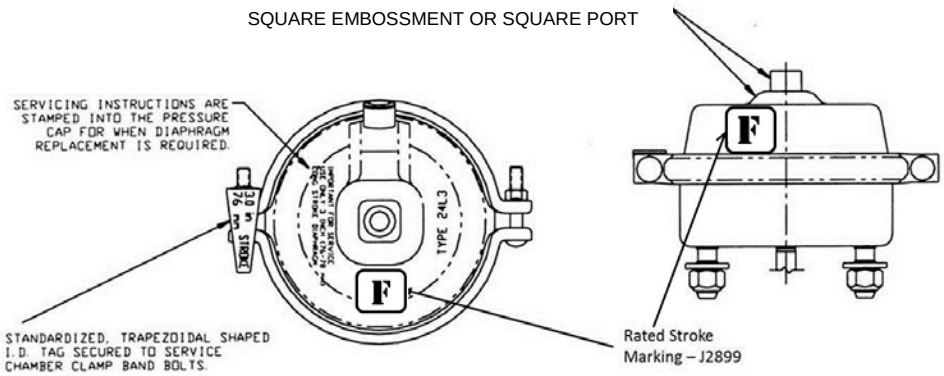

Figure 2 - 76.2 mm (3.00 inches) long-stroke actuator identification

5.2 Components unique to the long-stroke actuator shall have suitable text permanently marked on the components in order to identify them as long-stroke. Typical components might include (see Figure 3):

a. Diaphragm

b. Center section

c. Pressure cap service chamber

d. End cap combination

e. Non-pressure housing

f. Service pushrod