SURFACE VEHICLE STANDARD

J1282™ JAN2021

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Superseding J1282 APR2012

(R) Snowmobile Brake Control Systems

RATIONALE

Section 4.1 is clarified to make both performance criteria and design requirements mandatory requirements under this standard. Imperial units are removed. This document is upgraded from SAE Recommended Practice to an SAE Standard. The scope was revised to reflect the upgrade to SAE Standard status.

1. SCOPE

This SAE Standard establishes a uniform testing procedure and performance requirements for a snowmobile brake control systems.

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 J33 Snowmobile Definitions and Nomenclature - General

SAE J192 Maximum Exterior Sound Level for Snowmobiles

3. DEFINITIONS

3.1 SNOWMOBILE

As defined in SAE J33.

3.2 BRAKE CONTROL

A hand-controlled device mounted on the steering control; generally a pivotable lever type (squeeze grip), which, when actuated, will cause the vehicle to decelerate and/or stop the vehicle.

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https://www.sae.org/standards/content/J1282_202101

3.3 CONTROL LINE(S)

Rigid and/or flexible tubing used to transmit hydraulic fluid from brake control to brake cylinder.

3.4 CONTROL LINKAGE

A means of transmitting mechanical motion between two or more points.

3.4.1 CONTROL CABLE ASSEMBLY

A linkage consisting of a flexible assembly with an outer housing or conduit and an inner cable, usually multiple stranded; capable of transmitting motion between two points. This assembly is provided with connection means on both ends of housing and cable.

3.5 BRAKE CONTROL SYSTEM

A complete system used to decelerate the vehicle. This includes the brake control, control linkage, or control line, brake assembly, springs, brackets, etc. necessary for operation of the system. Any attachment to the brake control system, such as a warning light switch, etc., shall be considered as part of the system if attachment affects the system's operation.

3.6 RIGHT or RIGHT-HAND, LEFT or LEFT-HAND

Designation refers to orientation of the vehicle when the operator is seated in the operator's position, facing forward.

3.7 NORMAL POSITION

Position of brake control system when not activated.

3.8 ROOM TEMPERATURE

Defined as being in the range of 15 to 27 °C.

3.9 SHALL

In this standard, “shall” is used to express a requirement; i.e., a provision that the user is obliged to satisfy in order to comply with the standard.

3.10 SHOULD

In this standard, “should” is used to express a recommendation or that which is advised but not required.

4. DESIGN REQUIREMENTS

The brake control system shall comply with the following design requirements when verified by visual inspection.

4.1 The brake control(s) shall be on the left side of the steering control (i.e., at the left-hand position).

4.2 Lever type brake control shall be positioned so that pivoting the lever toward the steering control shall decelerate and/or stop the vehicle.

4.3 Lever, Maximum Extension in the Normal Position of the Brake Control System

Maximum extension of the brake control lever at the center of action shall not exceed 9 cm. The center of action is:

- The mid-point of a line drawn from the top of the lever to its pivot point (see Figure 1); or
- Any point along the lever, no closer than 5 cm to the pivot point, where, from a normal handlebar handholding position, the finger(s) may grasp for the purpose of activating the said lever (see Figure 2).

The normal extension will be the shortest dimension through the center of action to the outside surfaces of the lever and the handlebar gripping point.

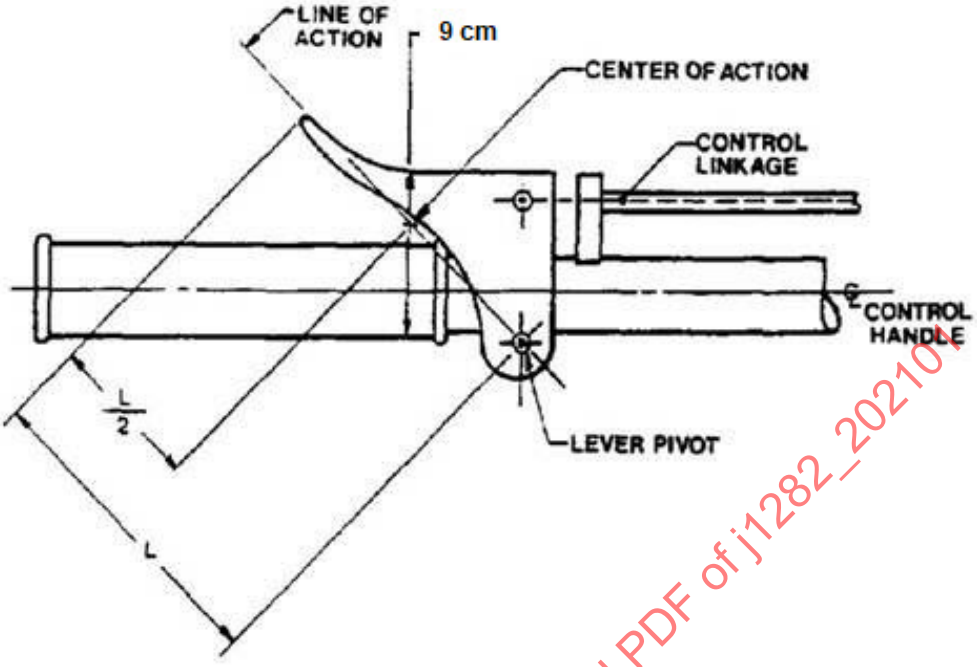

Figure 1 - Lever, maximum extension

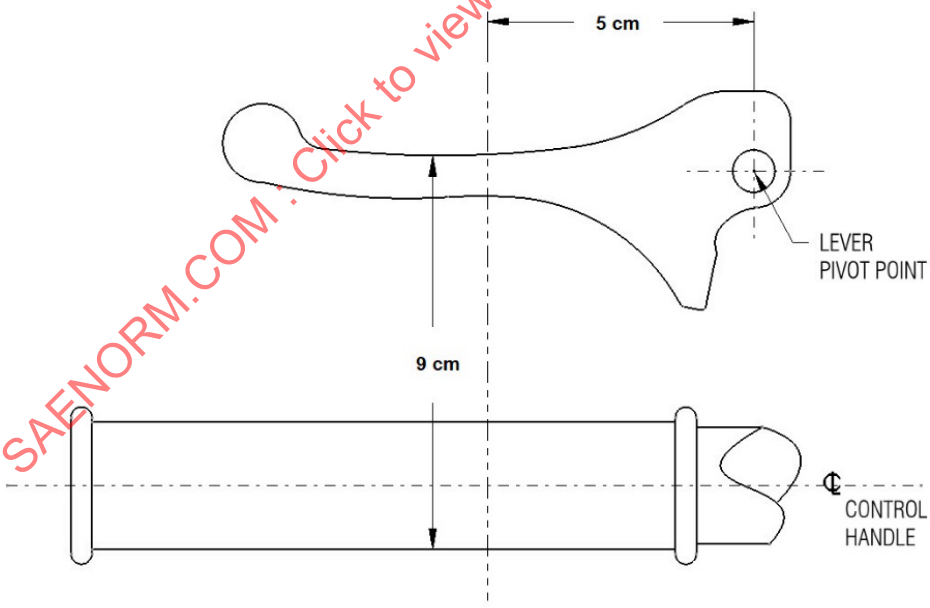

Figure 2 - Lever, maximum extension

4.4 The brake control system shall, when released from any partial or full-braked position, automatically return to the normal position, and the brake shall deactivate within 1 second, except when such brake control system is equipped with a locking device for parking purposes, and the locking device has been activated.

4.5 The brake control system's performance shall not be adversely affected by the intended climatic conditions during vehicle operation.

4.6 The brake control system shall be protected from areas which would cause the system's temperature to exceed the temperature limit of the material used.

4.7 The brake control system shall be protected so that with all guards and shrouds in place, it cannot be inadvertently pulled or snagged in a manner that would activate the brake.

4.8 Motion of any part of the vehicle, such as the steering control, shall not cause activation, prevent activation, or jam the brake control system.

5. PERFORMANCE REQUIREMENTS

The brake control system shall comply with the following performance requirements.

5.1 General Conditions

5.1.1 A minimum of two samples of each type of brake control system are to be tested.

5.1.2 The brake control system used throughout the following testing shall be identical to those to be used in vehicle production.

5.1.3 All brake control system tests shall be conducted on a vehicle with production routing or on a suitable fixture that duplicates the location of components and routing.

5.1.4 The engine does not have to operate, unless otherwise noted.

5.1.5 Components may be lubricated at time of initial assembly if specified on production assembly specification. After tests have started, lubrication of any component of the brake control system other than components which receive lubrication during normal maintenance operations, or which are specified in vehicle service instructions, shall not be allowed.

5.1.6 The brake control system shall comply with the following performance requirements as tested in the following sequence.

5.2 Strength Test

The brake control system shall withstand a minimum force of 400 N at 25 mm from the outward tip of the brake control (See Figure 3). This first test is to be conducted at room temperature.

5.2.1 Test Acceptance

The control lever may contact a fixed, non-adjustable stop before the linkage is subjected to the force resulting from the system high-temperature test of 5.3. The brake control system shall, when released from any partial or full-braked position, automatically return to the normal position, remain fully functional, and the brake shall deactivate within 1 second.