



SURFACE VEHICLE STANDARD	J1791	JAN2015
	Issued	2002-08
	Revised	2015-01
Superseding J1791 APR2007		
Self-Propelled Sweepers and Scrubbers Dual Position Driving Controls and Displays		

RATIONALE

The document has been revised to update the referenced documents.

1. SCOPE

This SAE standard applies to self-propelled driver operated sweepers and scrubbers as defined in SAE J2130-1.

1.1 Purpose

The purpose of this document is to establish the basic requirements associated with controls and displays for dual position driving controls as depicted in a typical installation shown in Figure 1. The control layout illustrated being of a conventional installation as associated with a normal on-road vehicle having a steering wheel to steer the machine and foot pedals to control the speed and braking functions. The document elaborates the requirements for an originally built machine with two driving positions but also where a proprietary commercial truck chassis is converted from a single driving position, it also advises recommendations in design, construction and safety related elements.

In the case where National Regulations pertain to the design and performance of driving control systems as depicted, then these regulations take precedent over the recommendations in this document.

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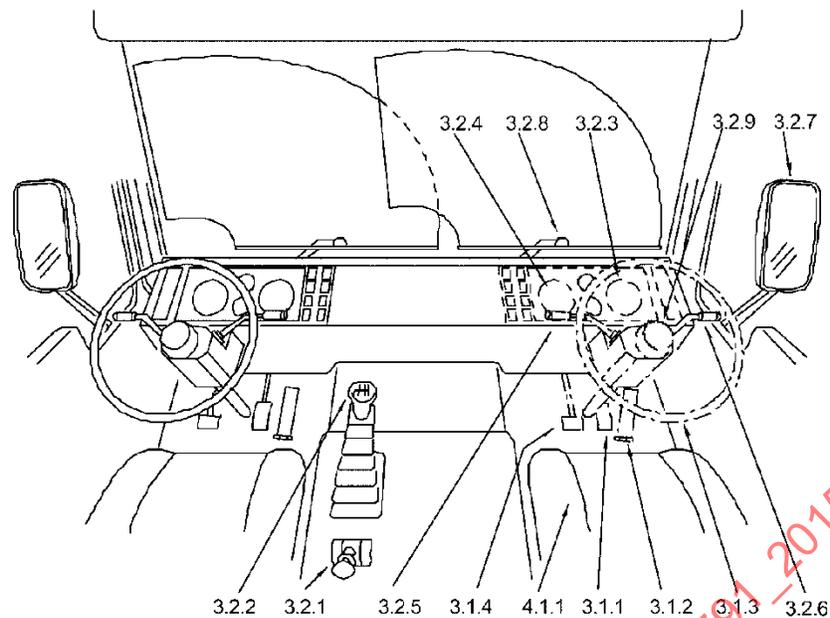


FIGURE 1 - TYPICAL LAYOUT OF SYSTEM

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 724-776-4970 (outside USA), www.sae.org.

SAE J287	Driver Hand Control Reach
SAE J680	Location and Operation of Instruments and Controls in Motor Truck Cabs
SAE J898	Control Locations for Off-Road Work Machines
SAE J1050	Describing and Measuring the Driver's Field of View
SAE J1517	Driver Selected Seat Position for Class B Vehicles - Seat Track Length and SgRP
SAE J2130-1	Identification of Self-Propelled Sweepers and Cleaning Equipment Part 1 - Machines with a Gross Vehicle Mass Greater than 5000 kg

2.2 Related Publication

The following publications are 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 724-776-4970 (outside USA), www.sae.org.

SAE J1521 Truck Driver Shift-Knee Position for Clutch and Accelerator

3. DEFINITIONS

3.1 PRIMARY CONTROLS

Are the controls principally used to operate, control and drive the machine safely, these include:

3.1.1 Service Brake

A system to arrest, hold and bring the machine to a stop. Actuation is by a foot pedal control located in the normal position for an automotive application. The service brake can be pneumatic, hydraulic or hydrostatically operated or a combination of systems.

3.1.2 Accelerator

A system to regulate either or both the engine speed and the machine's ground speed.

3.1.3 Steering System

A system that controls the direction of the machine by means of a steering wheel and associated linkage, with or without power assistance.

3.1.4 Clutch

A system for disconnecting the engine from the drivetrain.

3.2 SECONDARY CONTROLS, DISPLAYS, AND SYSTEMS

Are controls and systems that are operated or observed intermittently in order to conduct specific functions during the control of the machine, these include:

3.2.1 Parking Brake

A system to prevent the machine from moving when unattended.

3.2.2 Gear Shift

A system to engage or disengage a train of gears or other propulsion transmission

3.2.3 Speedometer

A device to visually indicate the machine's ground speed.

3.2.4 Displays and Symbols

- a. Displays: a system for indicating the operational status of the machine's vehicular functions and systems.
- b. Symbols: a method of identifying a control device and its function.

3.2.5 Lighting Control

Control system for the operation of all mandatory lamps.

3.2.6 Turn Indicator

A device to control an external visual indicator to show the driver's intention to turn.

3.2.7 Rearview Mirrors

System to enable the operator to observe rearwards.

3.2.8 Wiper System

Mechanism for cleaning the windscreen of rain, snow, mist, etc.

3.2.9 Horn

Audible warning device operated by the driver to warn of presence to others in hearing range.

3.3 COMPONENTS

3.3.1 Locking Fastener

Screw fasteners and similar components that embody a torque prevailing friction element used to join, attach and secure machine components.

3.3.2 Cables

Flexible mechanical linkages contained in a routing conduit.

3.3.3 Brake Control Valves

Components used to regulate the braking forces in a braking system.

3.3.4 Mirrors

Components displaying a reflected mirrored visual image.

4. TECHNICAL REQUIREMENTS

4.1 Control Layout, Construction, and Safety Requirements

4.1.1 Driver seating position and foot pedal arrangements shall observe the requirements of - SAE J1517, SAE J898.

4.1.2 Driver hand control reach shall observe the requirements of - SAE J287, SAE J898.

4.1.3 Location of all controls and displays shall observe the requirements of - SAE J898, SAE J680.

4.1.4 Location of mirrors shall observe the requirements of SAE J1050.

4.2 Control System Functionality

4.2.1 All primary controls, shall be duplicated for both driving positions and function at all times, although in the case of duplicated power steering systems and electronic accelerator pedals, it is permissible to disable the redundant driving position.