



SURFACE VEHICLE RECOMMENDED PRACTICE	J48™	OCT2023
	Issued 1972-10 Revised 2017-02 Reaffirmed 2023-10	
Superseding J48 FEB2017		
(R) Guidelines for Liquid Level Indicators		

RATIONALE

This recommended practice has been revised using the updated SAE format as well as to update reference standards. Also the priority of method for indicating liquid levels was changed to preferred methods of indicating liquid levels as the priority of the method to be used can be dependent on type and location of the compartment being monitored.

SAE J48 has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE

This SAE Recommended Practice pertains to liquid level determination for any fluid compartment of off-road work machines as defined in SAE J1116 and ISO 6165.

1.1 Purpose

SAE Recommended Practice to outline preferred methods of indicating liquid levels.

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 J371 Drain, Fill, and Level Plugs for Off-Road, Self-Propelled Work Machines
- SAE J531 Automotive Pipe, Filler, and Drain Plugs
- SAE J532 Automotive Straight Thread Filler and Drain Plugs
- SAE J614 Engine and Transmission Dipstick Marking
- SAE J829 Fuel Tank Filler Cap and Cap Retainer
- SAE J1116 Categories of Off-Road, Self-Propelled Work Machines

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https://www.sae.org/standards/content/J48_202310/

2.1.2 ISO Publications

Copies of these documents are available online at <http://webstore.ansi.org/>.

ISO 6165 Earthmoving machinery - Basic types – Identification and terms and definitions

ISO 6302 Earth-moving machinery - Drain, fill and level plugs

3. PREFERRED METHODS OF INDICATING

The following are preferred methods of indicating liquid levels in different fluid compartments. The appropriate method for a given compartment should be determined based on the type and location of the compartment being monitored and the required monitoring intervals.

3.1 Dipstick

3.2 Electrical indicator (gauge, display, etc.) using input from electronic switches/sensors

3.3 Mechanical indicators

3.4 Plug, cap, or cover

3.5 Sight gage

4. GENERAL REQUIREMENTS

4.1 Indicator reading should be consistent with the fluid level in the compartment.

4.2 The indicator shall be read with the machine level, in the machine manufacturer's recommended parked position.

4.3 The indicator should be marked "FULL" and "ADD" (except fuel and diesel exhaust fluid indicators).

4.4 Fuel and diesel exhaust fluid indicators should show the fraction of container capacity remaining (in increments of one-fourth container capacity).

4.5 The full level mark should be at a point at least 1/2 L above the add mark on compartments with less than 4 L capacity. On large compartments, the full level mark should be a whole number of liters above the add mark.

4.6 Special instructions should be avoided; however, if necessary for checking liquid level, the instructions should be located on or near the indicator.

4.7 Liquid level indicators should be mounted in a protected, easily accessible or visible location.

5. RECOMMENDATIONS

5.1 Dipstick

See SAE J614.

5.1.1 Where "CHECK ENGINE RUNNING" is used, the opposite side of the dipstick should show the starting range "CHECK ENGINE STOPPED."

5.1.2 Where "CHECK HOT" is used, the opposite side of the dipstick should show the starting range "CHECK COLD."

5.1.3 The dipstick cap should prevent contaminant entry.