



SURFACE VEHICLE STANDARD

J2506™**APR2025**

Issued 2000-08
Revised 2012-04
Reaffirmed 2025-04

Superseding J2506 APR2019

(R) Material Handler Nomenclature and Specifications

RATIONALE

This document has been totally revised to bring it into alignment with the latest SAE format and update the references. Base machine and front operating dimensions have been added. The number of mountings has been reduced to reflect the three most common mountings.

SAE J2506 has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE

This SAE Standard establishes terminology and the content of commercial literature specifications for self-propelled crawler and wheeled material handlers, pedestal mounted material handlers and their equipment as defined in 3.1. Illustrations used here are not intended to include all existing commercial machines or to be exactly descriptive of any particular machine. They have been provided to describe the principles to be used in applying this document. (Material handlers share many design characteristics with hydraulic excavators and log loaders; primarily 360 degree continuous rotation of the upperstructure relative to the undercarriage or mounting. They differ in their operating application. Material handlers are used for the handling of scrap material and normally utilize grapples or magnets. Hydraulic excavators are used for the excavation of earth, gravel and other loose material utilizing a bucket. Log loaders are used for the handling of logs and trees and normally utilize grapples.)

1.1 Purpose

The purpose of this document is to establish a uniform method of providing nomenclature and defining specifications for material handlers.

SAE Executive Standards Committee Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2025 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, or used for text and data mining, AI training, or similar technologies, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
http://www.sae.org

SAE WEB ADDRESS:

Full document details: SAE J2506_202504

For more information on this standard, visit
https://www.sae.org/standards/content/J2506_202504/

Documents

Standard, visit Sharing Hub

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 J2518 Lift Capacity Calculation Method Scrap and Material Handlers

SAE J1309 Travel Performance and Rating Procedure, Crawler Mounted Hydraulic Excavators, Material Handlers, Knuckle Boom Log Loaders and Certain Forestry Equipment.

2.1.2 ASME Publications

Available from American Society of Mechanical Engineers, 22 Law Drive, P.O. Box 2900, Fairfield, NJ 07007-2900, Tel: 973-882-1170, www.asme.org.

ASME B30.25 Scrap and Material Handlers

2.1.3 ISO Publications

Available from American National Standards Institute, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

ISO 6165 Earth-moving machinery - Basic types - Vocabulary

ISO 6746-1 Earth-moving machinery - Definitions of dimensions and codes - Part 1: Base machine

ISO 6746-2 Earth-moving machinery - Definitions of dimensions and symbols - Part 2: Equipment

ISO 7135 Earth-moving machinery - Hydraulic excavators - Terminology and commercial specifications

3. DEFINITIONS

3.1 MATERIAL HANDLER

Self-propelled or pedestal mounted swing to load machine using a hydraulic system to grab, lift, swing and place various types of material.

3.2 BASE MACHINE

Material handler without front as described by the manufacturer's specifications. The base machine consists of the machine's upperstructure and one of three different undercarriages or mountings. The three types of undercarriages or mountings are crawler, wheel and pedestal. See Figures 1, 2, and 3.

3.3 FRONT

Set of components mounted onto the base machine to fulfill the primary design. Fronts are either two piece or three piece. A two piece front consists of a boom and arm and a three piece front consists of a boom, arm and jib. The front does not include the working tool. See Figures 4 and 5.

3.4 WORKING TOOL

Optional assembly of components that can be mounted onto the front for material handling normally a magnet, grapple or mag-grapple. The mag-grapple is a combination tool that includes a magnet nested inside the grapple.

3.5 OPERATING MASS

Mass of the base machine with operator, (75 kg), front and working tool as specified by the manufacturer, full fuel tank, and full lubricating, hydraulic and cooling systems.

3.6 SHIPPING MASS

Mass of the base machine without operator, with full lubricating, hydraulic and cooling systems, 10% of fuel tank capacity and with or without front and working tool as specified by the manufacturer.

3.7 GROUND REFERENCE PLANE, GRP

The plane on which the machine is placed for measurements, a hard level surface on which the machine sits.

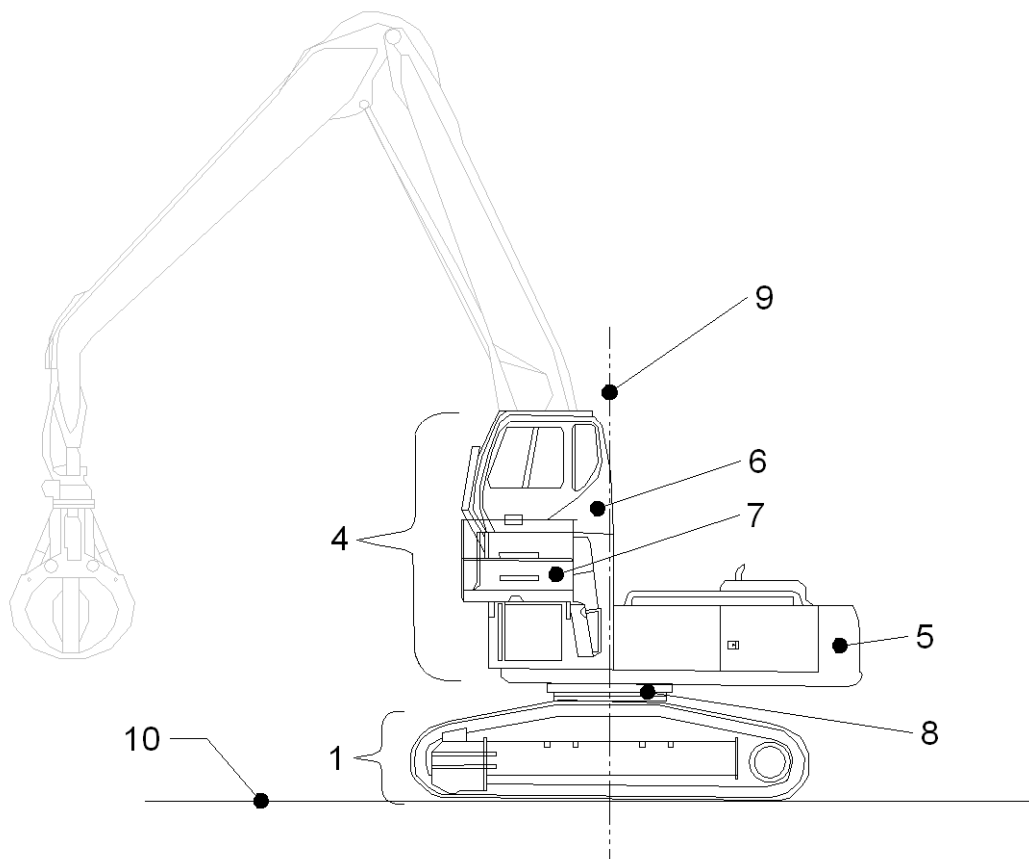


FIGURE 1 - CRAWLER MOUNTED MATERIAL HANDLER

