The Engineering Society For Advancing Mobility Land Sea Air and Space

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Identification Terminology and Specification Definitions — Pipelayers and Side Booms, Tractor or Loader Mounted

SAE Standard
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Submitted for Recognition as an American National Standard

SAE The Engineering Society For Advancing Mobility Land Sea Air and Space

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Ø IDENTIFICATION TERMINOLOGY AND SPECIFICATION DEFINITIONS - PIPELAYERS AND SIDE BOOMS, TRACTOR OR LOADER MOUNTED

1. PURPOSE: The purpose of this standard is to establish identification terminology and specification definitions for pipelayers and side booms, tractor or loader mounted.

2. SCOPE: This is applicable to pipelayers and side booms, mounted on tractors or loaders defined in SAE J1057.

3. DEFINITIONS:

3.1 Pipelayer: A self-propelled crawler machine specifically designed to handle and lay pipes and carry pipeline equipment. The machine has specially designed components such as undercarriage, main frame, counter-weights, boom and load hoist mechanisms and a vertically pivotable side boom.

3.2 Side Boom, Tractor or Loader Mounted: An attachment, added to a tractor or a loader (wheel or crawler type machine), which is designed to handle and lay pipes and carry pipeline equipment. The attachment includes boom and load hoist mechanisms and a vertically pivotable side boom. It may or may not include counterweights.

3.3 Base Machine: A pipelayer as described by the manufacturer's specifications including the lifting (boom and hoist) mechanism and undercarriage.

3.4 Equipment: A set of components (boom and counterweights) mounted to the base machine to fulfill the primary design function of a pipelayer.

3.5 Masses:

3.5.1 Operating Mass: The mass of the base machine with all equipment specified by the manufacturer, 75 kg opertor, full fuel tank, full lubricating, hydraulic and cooling systems, and rope and hook.

3.5.2 Shipping Mass: The mass of the base machine without operator, with full lubricating, cooling and hydraulic systems, 10% of fuel tank capacity and with the equipment as specified by the manufacturer.

3.6 Boom: The structural member that supports the load.

3.7 Counterweight: Any additional removable weight and its removable support added to increase tipping load. There are two types of counterweights.

3.7.1 Adjustable: That portion of the counterweight that is movable.

3.7.2 Nonadjustable: Counterweight fixed in one location on the machine.

4. IDENTIFICATION TERMINOLOGY: The identification terminology is shown in Fig. 1.

5. SPECIFICATION DEFINITIONS: Refer to Figs. 2, 3, 4 and 5.

5.1 Overall Width Less Counterweight (A): The overall width of the machine with boom, counterweights and counterweight rack removed.

5.2 Overall Width with Counterweights (B): The overall width of the machine with boom removed and the adjustable counterweight in the retracted position.

5.3 Overall Width with Counterweights Extended (C): The overall width of the machine with the boom removed and the adjustable counterweights fully extended.

5.4 Overall Height (D): The overall height from the reference line to the highest point on the machine with the boom removed and the adjustable counterweight in the retracted position.

5.5 Length of Boom: The straight line distance (E) measured between the centerline of the boom foot pivot and the centerline of the top load block pivot.

5.6 Tractor Tread (Gage): The transverse centerline distance (F) of the drive sprockets on track type machines or the tires on wheel machines. Where wheel machine front and rear treads are different, both must be specified.

5.7 Load Overhang Distance (Crawler Machine) See Fig. 2: The horizontal distance (G) from the center of the load hook measured perpendicular to the outer edge of the outer track rail on the boom side.

5.8 Load Overhang Distance (Wheel Machine) See Figs. 3, 4 and 5: The horizontal distance (G) from the center of the load hook measured perpendicular to the centerline of the tires on the boom side.

5.9 Track Bearing Length (Crawler Machine): The horizontal distance between the centerline of the front idler and the centerline of the drive sprocket.

5.10 Wheel Base (Wheel Machine): The horizontal distance between the centerline of the front axle and the centerline of the rear axle when the machine is steered straight ahead.

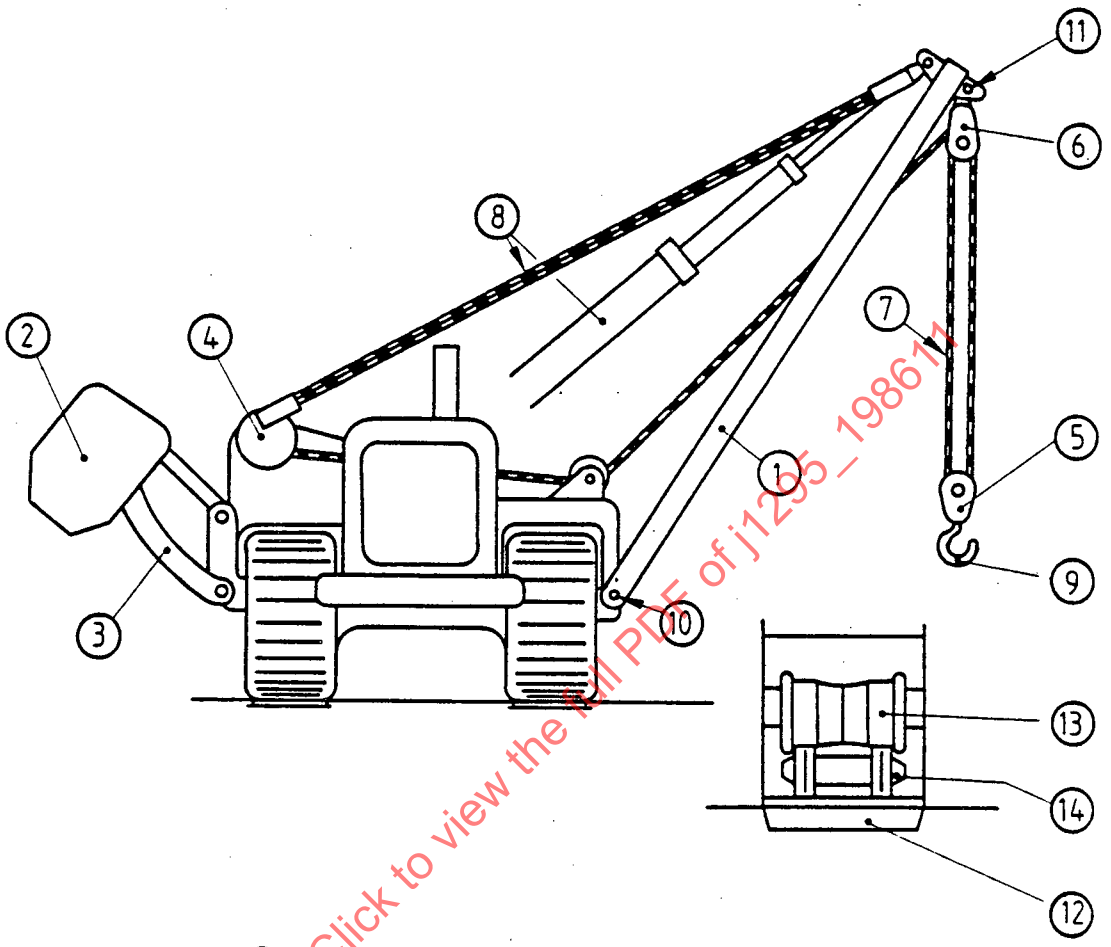
5.11 Track Bearing Area (Crawler Machine): The product of track shoe width multiplied by track bearing length for each track.

5.12 Ground Pressure (Crawler Machine - Each Track) - (Counterweights and Boom in Fully Retracted Position): The operating weight carried by each track divided by track bearing area.

5.13 Overall Length: The overall length of the machine including drawbar or rear track arc.

6. REFERENCE:

6.1 J1234 JAN85 Specification Definitions - Off-Road Work Machines.



1. Boom
2. Counterweight
3. Counterweight frame(s)
4. Load hoist and, if applicable, boom hoist drums
5. Load block, lower
6. Load block, upper
7. Loid hoist rope
8. Boom hoist rope or boom cylinder
9. Load hook
10. Boom foot pivot
11. Upper load block pivot
12. Track shoe
13. Lower track roller
14. Track link

FIG. 1 - CRAWLER PIPELAYER

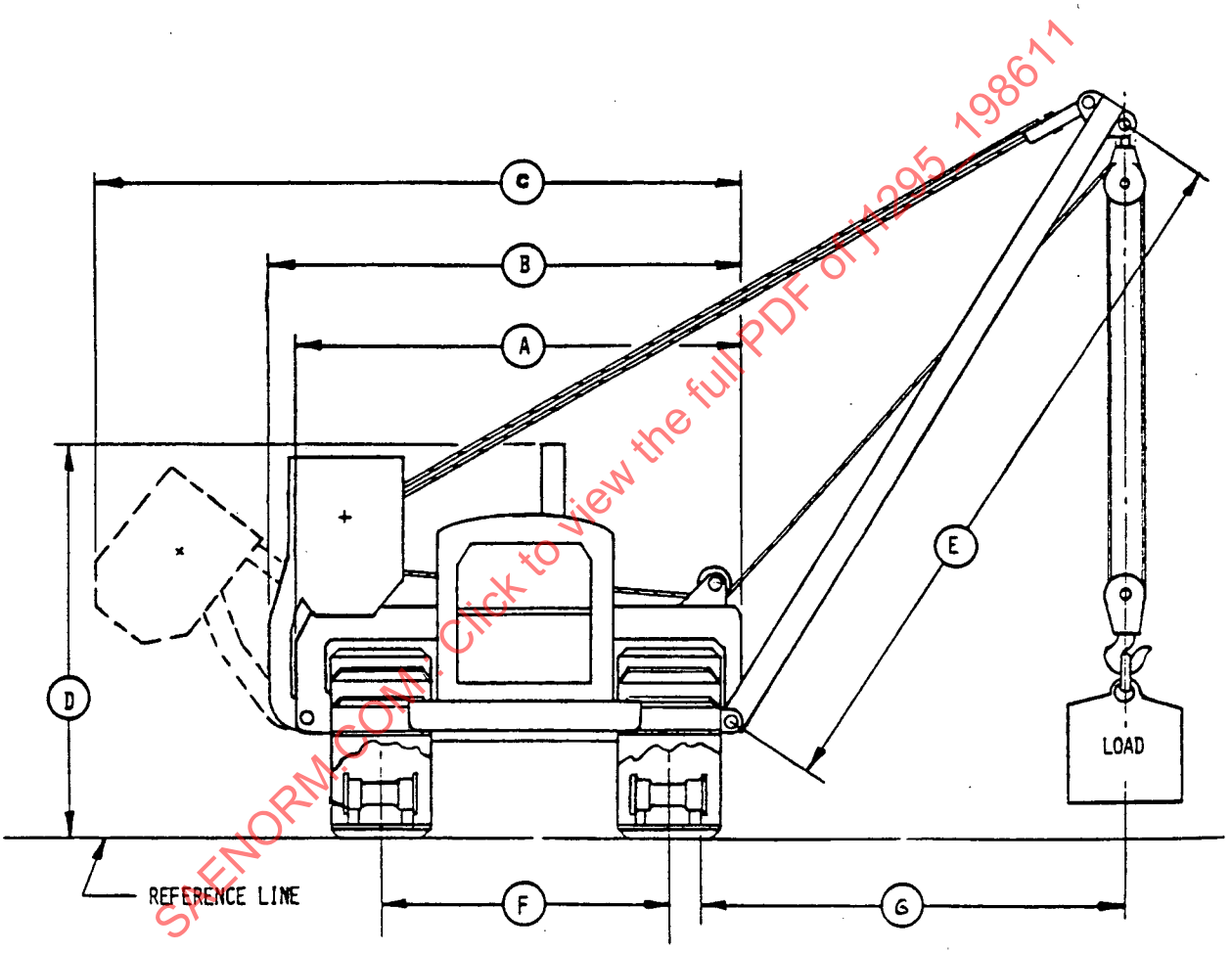


FIG. 2 - CRAWLER PIPELAYER

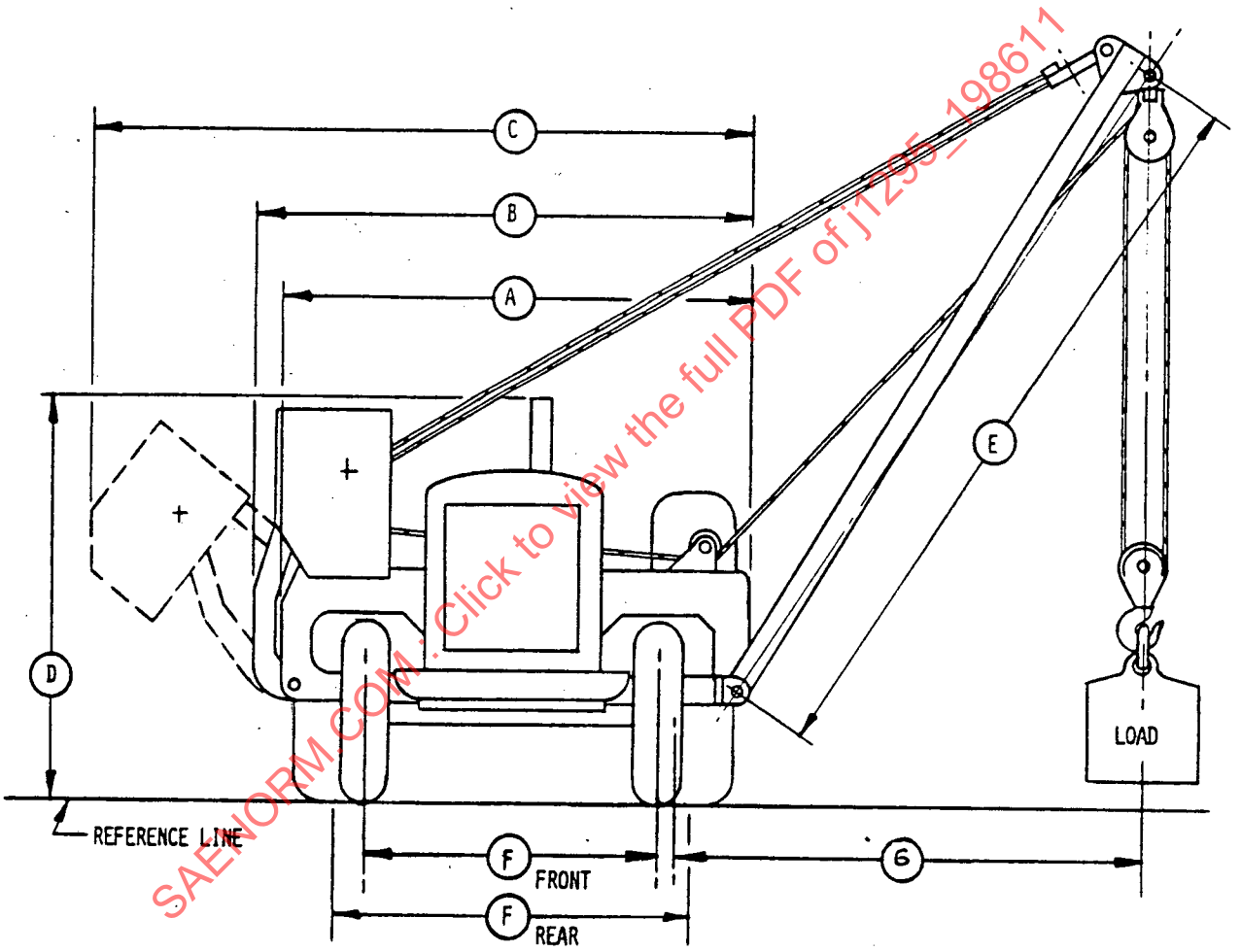


FIG. 3 - WHEEL TRACTOR STEERED STRAIGHT

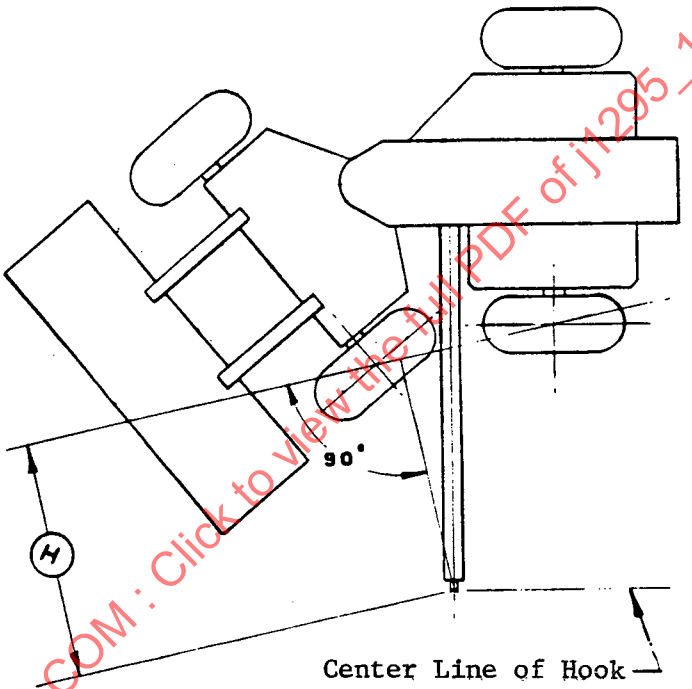


FIG. 4 - ARTICULATED WHEEL TRACTOR STEERED LEFT
LOAD OVERHANG DISTANCE

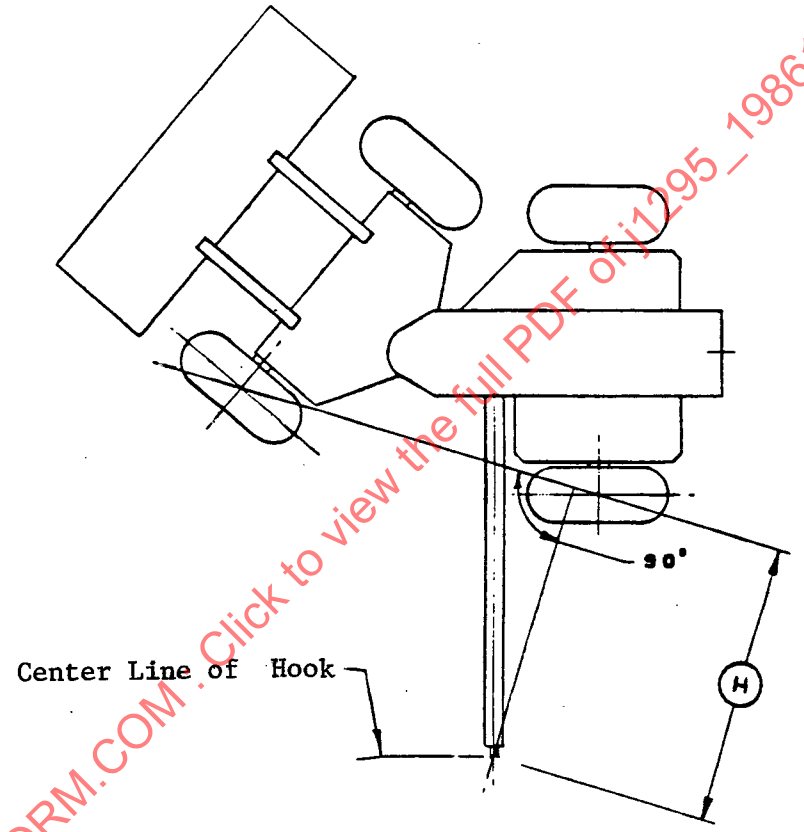


FIG. 5 - ARTICULATED WHEEL TRACTOR STEERED RIGHT
LOAD OVERHANG DISTANCE