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Superseded by J113860

### Specification Definitions—Articulated Rubber-Tired Forwarder

1. **Scope**—This SAE Recommended Practice identifies and defines the specifications most commonly used to describe articulated rubber-tired forwarders. The illustrations used are not intended to be descriptive of any existing machine or dictate a combination needed for a particular logging situation. The dimensions indicated are basic and may be supplemented by the individual machine manufacturer.
  - 1.1 **Purpose**—The purpose of this SAE document is to establish a uniform method of identifying and defining the specifications most commonly used to compare various models of this type of equipment.
2. **References**—There are no referenced publications specified herein.
3. **Definition**—Forwarder: A self-propelled machine, usually self-loading, designed to transport trees, or parts of trees, by carrying them completely off the ground.
4. **Specifications**—The specifications described must be qualified by stating the tire size, the tire ply rating, and the recommended tire inflation pressure. All measurements are to be stated in SI units.
  - 4.1 **Front Axle to Hinge (A)**—The horizontal distance from the center of the front axle or front tandem axle assembly to the center of the hinge. (Figure 1)
  - 4.2 **Hinge to Rear Axle (B)**—The horizontal distance from the center of the hinge to the center of the rear axle or rear tandem axle assembly. (Figures 1 and 7)
  - 4.3 **Wheelbase (A + B)**—The horizontal distance from the center of the front axle or front tandem axle assembly to the center of the rear axle or rear tandem axle assembly when both are perpendicular to the longitudinal axis. (Figure 1)
  - 4.4 **Centerline of Hinge to Front of Machine (C)**—The horizontal distance from the centerline of the hinge to a vertical plane touching the farthest point forward, blade excluded. (Figure 1)
  - 4.5 **Total Frame Length (D)**—The horizontal distance between the vertical planes perpendicular to the longitudinal axis passing through the farthest points on the front and rear of the machine, blade excluded. (Figure 1)

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- 4.6 **Centerline of Hinge to Maximum Blade Arc (E)**—The horizontal distance from the centerline of the hinge to a vertical line tangent to the arc of the blade's lower edge as it passes from its maximum height (G) to the lowest position (J). (Figure 1)
- 4.7 **Overall Length (F)**—The horizontal distance from a vertical plane touching the forward most point of the machine, blade positioned to give maximum forward reach, to a vertical plane touching the rearmost point of the machine, excluding the loader. (Figure 1)

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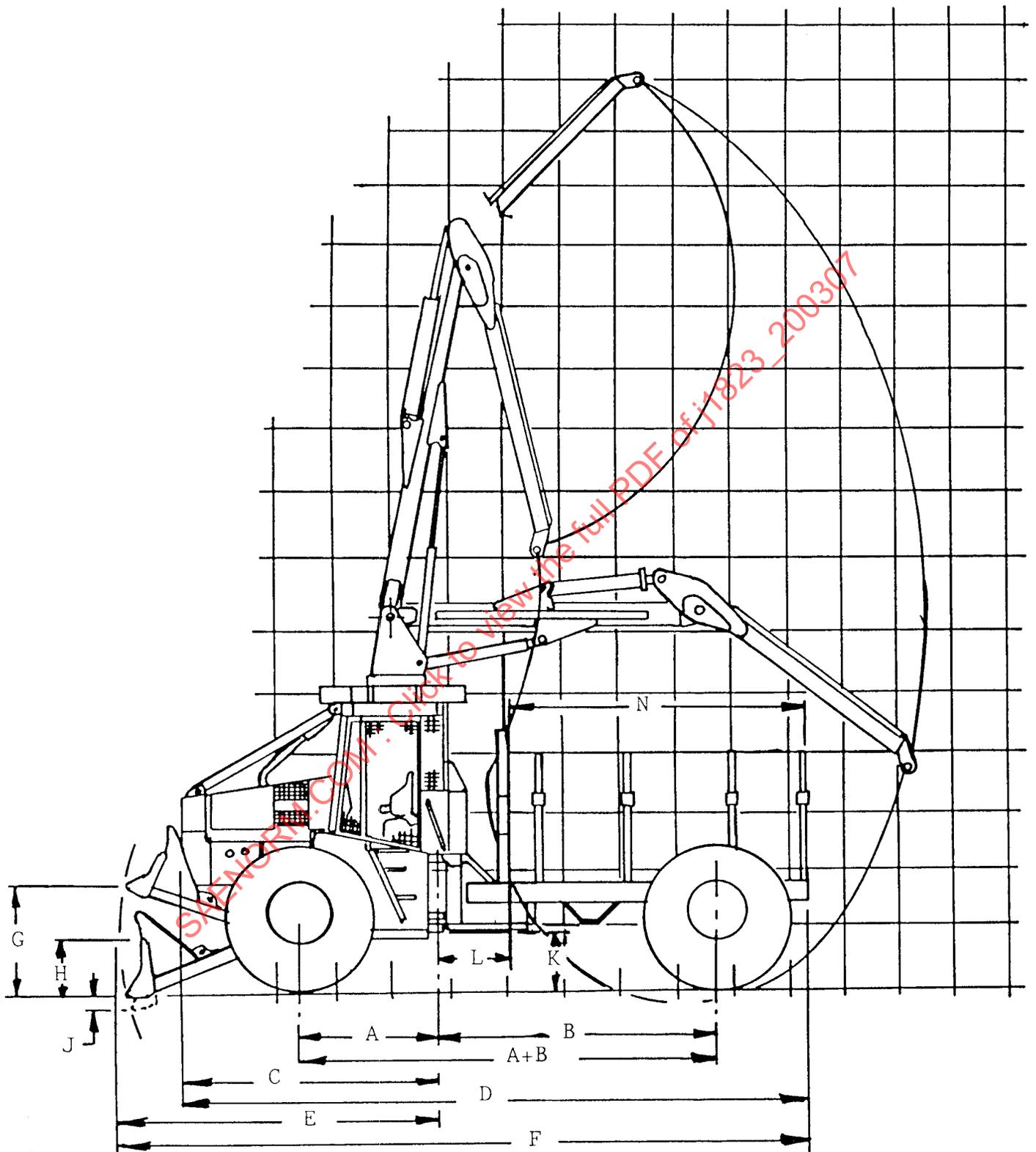


FIGURE 1—SIDE VIEW ARTICULATED RUBBER-TIRED FORWARDER

- 4.8 **Maximum Blade Lift, Lower Edge (G)**—The maximum vertical height to which the lower edge of the blade can be raised from the horizontal reference plane. (Figure 1)
- 4.9 **Blade Height (H)**—The vertical distance from the lower edge to the top of the blade, decking lugs excluded. (Figure 1)
- 4.10 **Lowest Blade Position (J)**—The vertical distance from the horizontal reference plane to the blade's lower edge with blade at its lowest position. (Figure 1)
- 4.11 **Ground Clearance at Hinge Point (K)**—The perpendicular distance from the horizontal reference plane to the lowest point at the hinge. (Figure 1)
- 4.12 **Centerline of Hinge to Headboard (L)**—The horizontal distance from the centerline of the hinge to the tree side of the headboard. (Figure 1)
- 4.13 **Centerline of Hinge to the Centerline of Loader Base (M)**—The horizontal distance from the centerline of the hinge to the centerline of the loader base on the longitudinal axis. (Figures 3 and 7)
- 4.14 **Headboard to Rear of the Frame (N)**—The horizontal distance between the tree side of the headboard and the rear of the frame. (Figure 1)

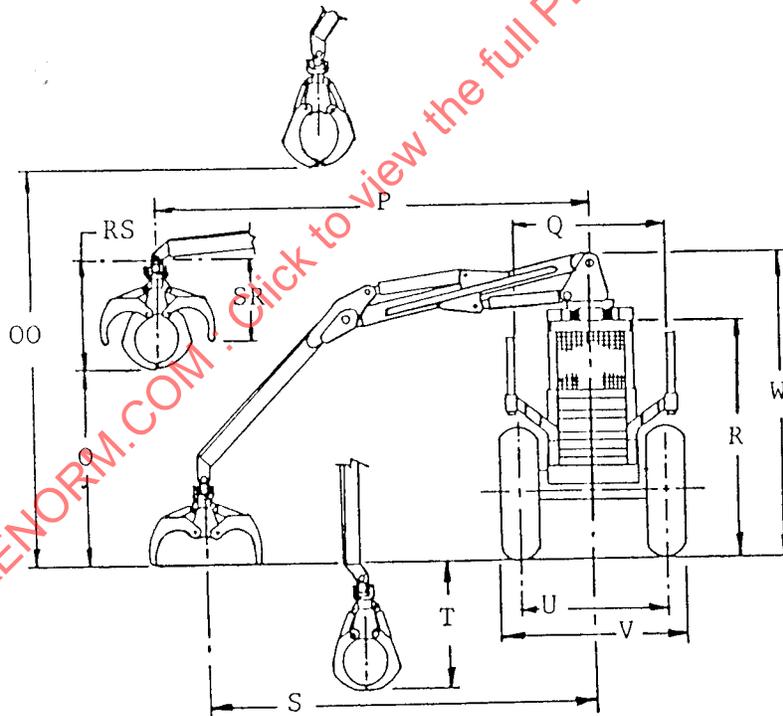


FIGURE 2—REAR VIEW ARTICULATED RUBBER-TIRED FORWARDER

- 4.15 Loading Height of Loader at Maximum Reach (O)**—The vertical height of the loader at the maximum horizontal loader reach (P), measured from the bottom of the grapple in tip to tip condition to the horizontal reference plane. (Figure 2)
- 4.16 Maximum Reach of Loader (P)**—The maximum horizontal reach from the axis of rotation to the centerline of the grapple. (Figure 2)
- 4.17 Maximum Loader Lift Height (OO)**—The maximum vertical lift height from the bottom of the grapple in tip to tip condition to the horizontal reference plane on a specified horizontal radius from the centerline of the loader. (Figure 2)
- 4.18 Grapple Height Closed (RS)**—The vertical distance between the boom pivot and the bottom of the grapple in tip to tip condition. (Figure 2)
- 4.19 Grapple Height Open (SR)**—The vertical distance between the boom pivot and the tips of the fully open grapple. (Figure 2)
- 4.20 Width Across Stakes (Q)**—The horizontal distance between the tree side of the stakes on the rear frame. (Figure 2)
- 4.21 Operator Enclosure Height (R)**—The vertical distance between the horizontal reference plane and a horizontal plane passing through the outside top of the operator enclosure. (Figure 2)
- 4.22 Maximum Loader Reach at Ground Level (S)**—The maximum horizontal distance from the longitudinal axis of the loader with open grapple resting on the horizontal reference plane. (Figure 2)
- 4.23 Maximum Depth of Loader (T)**—The maximum depth below the horizontal reference plane to the bottom of the grapple in tip to tip condition on a specified horizontal radius from the centerline of the loader. (Figure 2)

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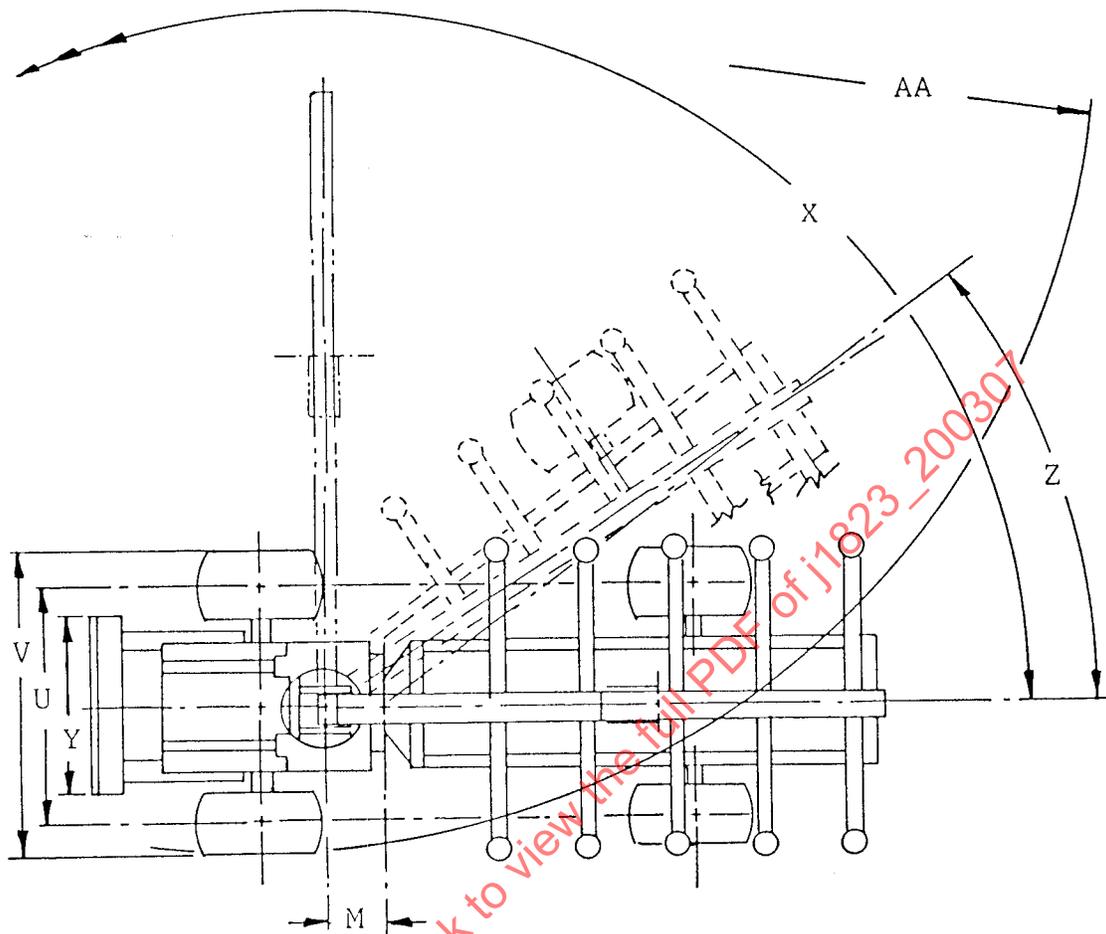


FIGURE 3—STEERING AND LOADER ROTATION ARTICULATED RUBBER-TIRED FORWARDER

- 4.24 Tread (U)**—The horizontal distance between two parallel vertical planes passing through the centerline of the tires on an axle. If the front and rear are different, both must be specified. (Figures 2, 3 and 4)
- 4.25 Overall Width (V)**—The horizontal distance between the vertical planes parallel to the longitudinal axis and passing through the farthest points on the two sides of this axis. (Figures 2 and 3)
- 4.26 Overall Height (W)**—The vertical distance between the horizontal reference plane and a horizontal plane passing through the highest point of the forwarder, with the main loader boom cylinder in retracted or travel position. (Figures 2 and 7)
- 4.27 Loader Rotation (X)**—The maximum loader rotation in degrees from the centerline of forwarder. (Specify if continuous rotation.) (Figure 3) (Quantify right and left if unequal.)
- 4.28 Blade Width (Y)**—The horizontal distance between the outer edges of the blade. (Figure 3)

**4.29 Angle of Articulation (Z)**—The maximum angle of frame steering movement from the straight ahead position measured in degrees between longitudinal centerlines of the machine frames. (Figure 3) (Quantify right and left if unequal.)

**4.30 Clearance Circle (AA)**—The smallest diameter that the outermost point on the machine will describe when turning under the following conditions: (Figure 3)

- a. Brakes unapplied.
- b. Blade in carry position.
- c. Loaded and unloaded.

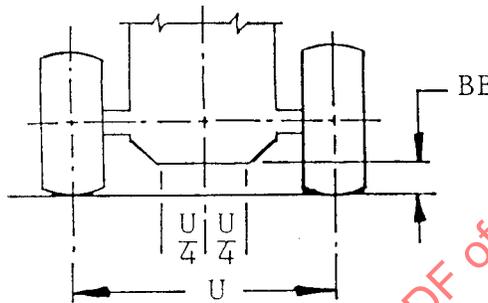


FIGURE 4—GROUND CLEARANCE

**4.31 Ground Clearance (BB)**—The perpendicular distance from the horizontal reference plane to the lowest point of the center portion of the machine. The center portion of the machine is defined as 25% of the tread to either side of the longitudinal centerline. (Figure 4)

**4.32 Frame Oscillation (CC)**—The angle in degrees that one frame will rotate from a horizontal datum, in both directions, without rotating the other frame. (Figure 5)

**4.33 Axle Oscillation (DD)**—The angle in degrees that one axle will rotate from a horizontal datum, in both directions, without rotating either frame. (Figure 6)

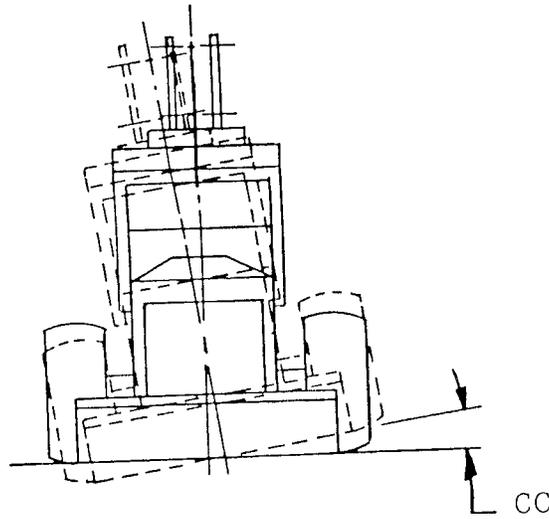


FIGURE 5—FRAME OSCILLATION

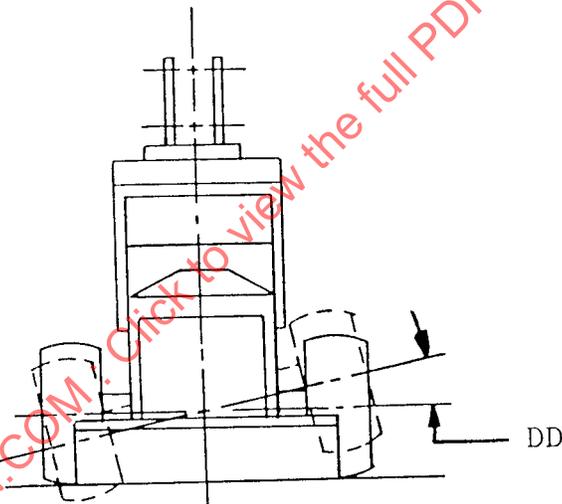


FIGURE 6—AXLE OSCILLATION

- 4.34 **Centerline Distance of Tandem Axle Assembly (EE)**—The horizontal distance between the centerline of the tandem axle assembly and the centerline of the front or rear tire of the tandem axle assembly. (Figure 7)
- 4.35 **Centerline of the Hinge to the Centerline of the Stabilizer (FF)**—The horizontal distance from centerline of the hinge to the centerline of the stabilizer. (Figure 7)