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Superseding J958 JUN1989

**Nomenclature and Dimensions for Crane Shovels**

**Foreword**—This Reaffirmed Document has been changed only to reflect the new SAE Technical Standards Board Format. Scope is Section 1, References added as Section 2.

1. **Scope**—This SAE Standard includes names of major components and parts peculiar to this type of equipment. The illustrations are not intended to show all existing commercial machines or to be exactly descriptive of any particular machine. They have been selected to depict principles used in identifying specific mechanisms and to identify useful dimensional relationships.

2. **References**

2.1 **Applicable Publications**—The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated, the latest revision of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J695 FEB84—Turning Ability and Off Tracking—Motor Vehicles

SAE J1234 JAN85—Specification Definitions—Off-Road Work Machines

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3. Rubber Tire Carrier Mountings with Revolving Superstructure—See Figures 1 and 2.

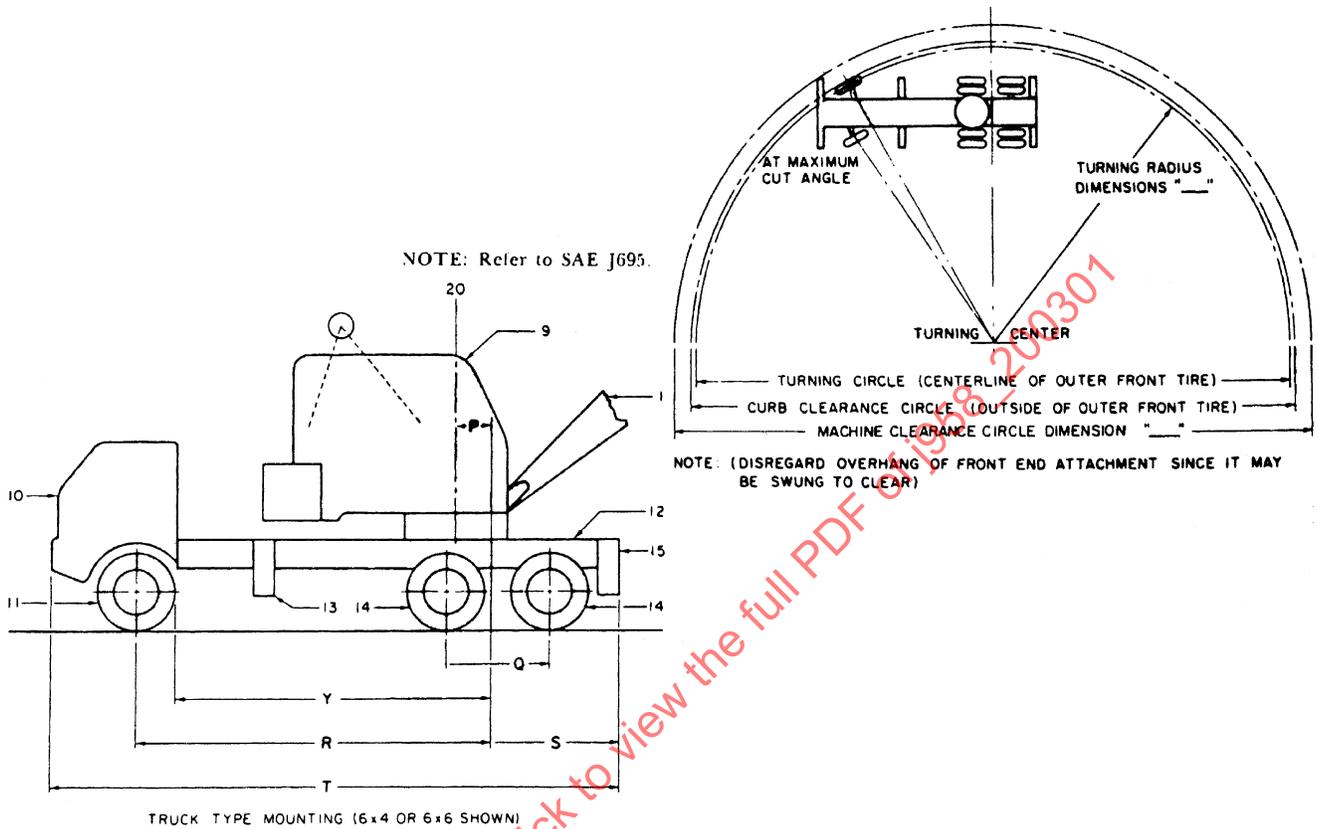


FIGURE 1—RUBBER TIRE CARRIER MOUNTINGS WITH REVOLVING SUPERSTRUCTURE

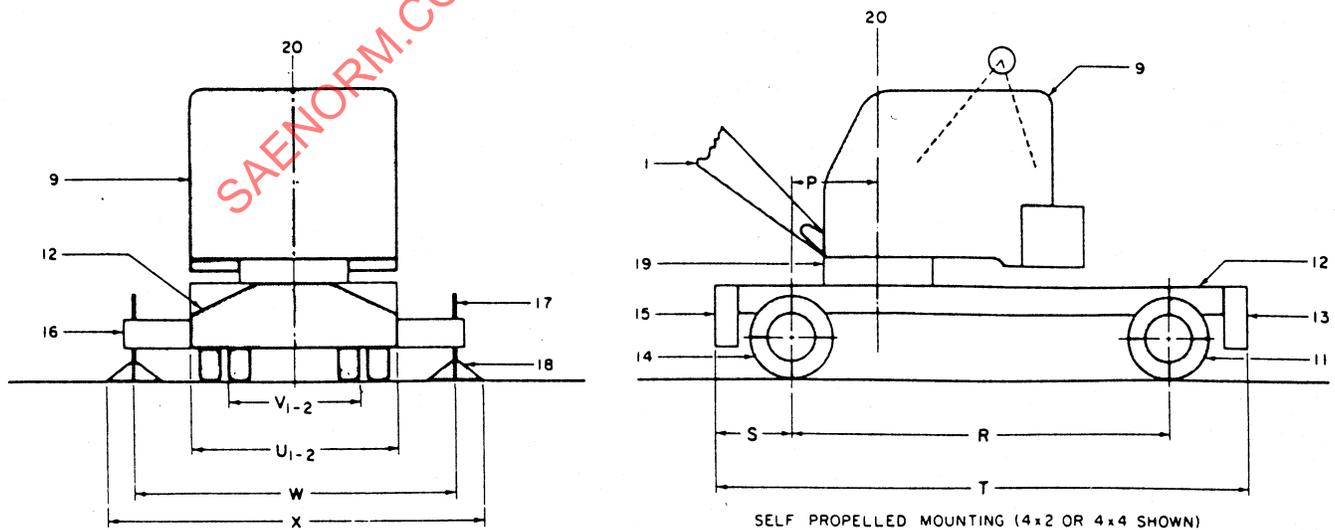


FIGURE 2—RUBBER TIRE CARRIER MOUNTINGS WITH REVOLVING SUPERSTRUCTURE

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### 3.1 Dimensions—For revolving superstructure dimensions, see Figure 3 (A-F<sub>2</sub>).

- P Distance from center of rear axle or bogie to axis of rotation
- Q Distance between centers of axles of tandem axle bogie
- R Wheelbase (wheelbase for tandem front axle is measured to tandem center pivot point)
- S Distance from center of rear axle or bogie to rear end of frame
- T Overall length of carrier
- U<sub>1</sub> Maximum overall width with retracted outriggers (floats removed)
- U<sub>2</sub> Maximum overall width with retracted outriggers (floats attached)
- V<sub>1</sub> Track or tread width, rear axle
- V<sub>2</sub> Track or tread width, front axle
- W Effective length of extended outriggers
- X Overall width over floats with outriggers extended
- Y Distance from back of carrier cab to center of rear axle or bogie (known as CA distance in trucking industry)

### 3.2 Definitions—For revolving superstructure definitions, see Figure 3 (2-4).

1. Front end attachment
9. Revolving superstructure
10. Carrier cab
11. Front axle
12. Carrier frame
13. Front outrigger box
14. Rear axle or rear tandem bogie
15. Rear outrigger box
16. Outrigger beam
17. Outrigger jack
18. Outrigger float
19. Swing circle or roller path
20. Axis of rotation

NOTE—For ground clearance dimensions, see SAE J1234.

4. Crawler Mounting with Revolving Superstructure—See Figure 3.

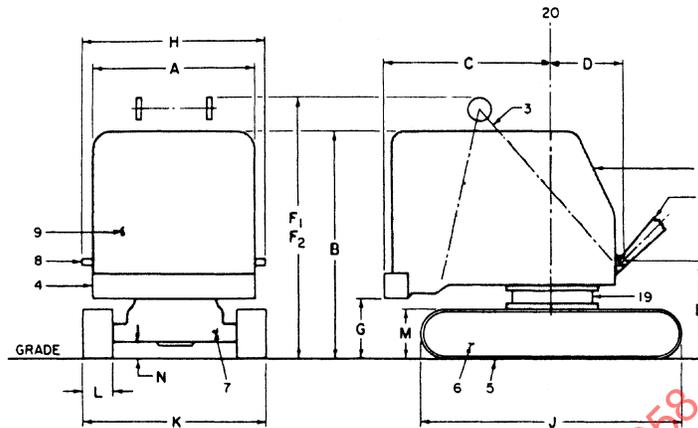


FIGURE 3—CRAWLER MOUNTING WITH REVOLVING SUPERSTRUCTURE

4.1 Dimensions

- A Width of Cab
- B Maximum height of cab above grade
- C Swing clearance (radius of rear end from axis of rotation)
- D Distance of boom foot pin to axis of rotation
- E Height of boom foot pin above grade
- F<sub>1</sub> Gantry height above grade when in lowered position
- F<sub>2</sub> Gantry height above grade when in raised operating position
- G Distance under counterweight to grade
- H Overall width when running boards are used
- J Overall length of crawler
- K Overall width of crawler
- L Width of crawler tread shoes
- M Height of crawler tread belt at center of end tumblers
- N Minimum clearance under crawler base to grade

4.2 Definitions

- 1. Front end attachment
- 2. Cab
- 3. Gantry or A-frame
- 4. Counterweight
- 5. Crawler tread belt
- 6. Crawler side frame
- 7. Carbody or crawler base
- 8. Running board
- 9. Revolving superstructure
- 19. Swing circle or roller path
- 20. Axis of rotation

NOTE—For ground clearance dimensions, see SAE J1234.

5. **Shovel Attachment**—See Figure 4.

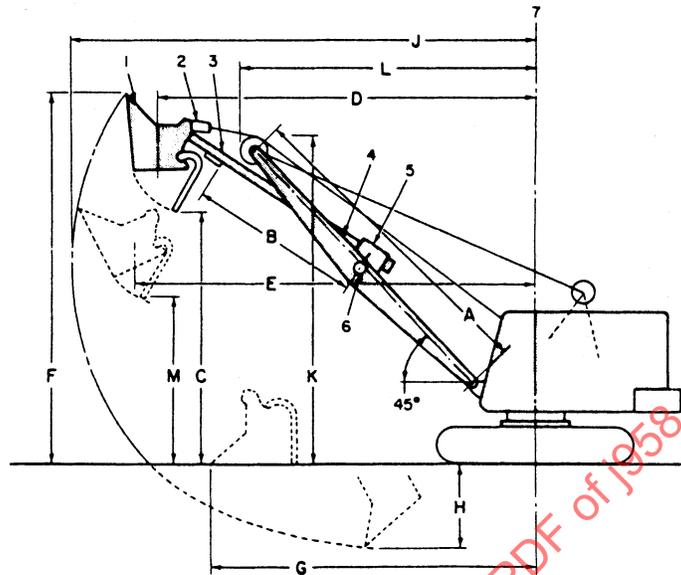


FIGURE 4—SHOVEL ATTACHMENT

5.1 **Dimensions**

- A Boom length from boom foot pin to boom head sheave pin
- B Effective travel length of dipper stick
- C Maximum dumping height
- D Dumping radius (center of flow from dipper) at maximum height
- E Maximum dumping radius (center of flow from dipper)
- F Maximum cutting height
- G Maximum clean-up radius at floor level
- H Maximum digging depth below floor level
- J Maximum cutting radius
- K Boom head clearance height
- L Boom head clearance radius
- M Dumping height at maximum dumping radius

5.2 **Definitions**

- 1. Dipper
- 2. Dipper bar
- 3. Dipper stick
- 4. Boom
- 5. Shipper shaft saddle
- 6. Shipper shaft
- 7. Axis of rotation

6. **Hoe Attachment**—See Figure 5.

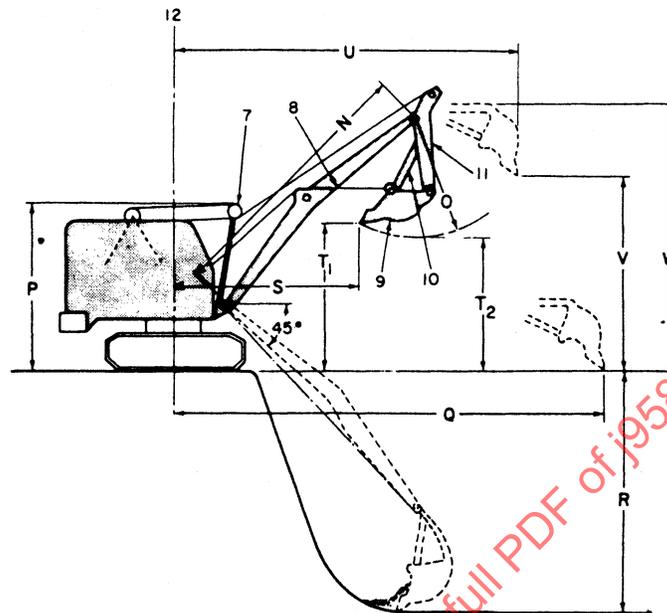


FIGURE 5—HOE ATTACHMENT

6.1 **Dimensions**

- N Boom length from boom foot pin to dipper arm hinge pin
- O Sweep radius from dipper arm hinge pin to dipper tooth point
- P Height of hoe mast in working position
- Q Maximum reach at grade level
- R Digging depth rating (45 degree boom angle for rating purposes)
- S Radius of dipper teeth at beginning of dump
- T<sub>1</sub> Clearance of dipper from ground at beginning of dump
- T<sub>2</sub> Clearance of dipper from ground at the low point of the dipper dump clearance
- U Clearance radius at end of dump
- V Clearance from grade at end of dump
- W Overall height at end of dump

6.2 **Definitions**

- 7. Hoe mast
- 8. Boom
- 9. Dipper
- 10. Dipper brace bar
- 11. Dipper arm
- 12. Axis of rotation