SAE The Engineering Society For Advancing Mobility Land Sea Air and Space®
INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J133

REV. OCT87

Issued 1970-03
Revised 1987-10

Superseding J133 DEC84

Submitted for recognition as an American National Standard

FIFTH WHEEL KINGPIN PERFORMANCE—COMMERCIAL TRAILERS AND SEMITRAILERS

Foreword—This Document has also changed to comply with the new SAE Technical Standards Board Format.

1. Scope—The purpose of this recommended practice is to establish test procedures and minimum performance standards for kingpins and their supporting structure manufactured to SAE specifications. The dimensions shown in SAE J700 will permit the establishment of standard clearances in the installed condition which, in turn, will permit fifth wheel manufacturers to design their products to establish interchangeability with any kingpin made and installed to the SAE specification.

2. References

2.1 Applicable Publication—The following publication forms 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 PUBLICATION—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J700 JUN85—Upper Coupler Kingpin—Commercial Trailers and Semitrailers

2.2 Other Publications

Association of American Railroads M931

3. Definitions—GVW = Gross Vehicle (Trailer) Weight, including payload and vehicle (trailer) weight. TVW = Total Weight of Towed Vehicles (Trailers).

The kingpin, when completely installed, shall fit within the tolerances and dimensions shown in SAE J700.

The kingpin, when installed, shall meet the following performance requirements:

a. Withstand a force "A" of 1.15 TVW in a fore or aft direction. (See Figure 1.)
b. Withstand a cycling force "B" of 0.4 TVW in a fore and aft direction for 500 000 cycles. (See Figure 1.)
c. Withstand a cycling force "C" of 7000 lb (31.1 kN) for 100 000 cycles applied by a typical fixture illustrated in Figure 2. Force "C" is to be applied horizontally to a point 90 deg to the plane of forces "A" and "B."

QUESTIONS REGARDING THIS DOCUMENT: (724) 772-8512 FAX: (724) 776-0243
TO PLACE A DOCUMENT ORDER; (724) 776-4970 FAX: (724) 776-0790
SAE WEB ADDRESS http://www.sae.org

d. Withstand a cycling force "D" of +0.667 to +1.34 times the vertical load rating of the coupler for 1 000 000 cycles applied to the upper coupler plate and kingpin through a plate 36 in (914 mm) wide by 24 in (610 mm) long, shaped like Figure 2.
e. Withstand a single application of force "E" of 1.0 GVW up and down through the fixture described in Figure 2, with the kingpin locked to that plate by its 2.8125 in (71.44 mm) dia. lip.
f. Kingpin and supporting structure should withstand these conditions without deformation that will prevent compliance with the installation dimensions of SAE J700.

Trailers intended for "Trailer on Flat Car" operation shall withstand force "A" of 3.5 GVW and other requirements specified in Association of American Railroads M931.

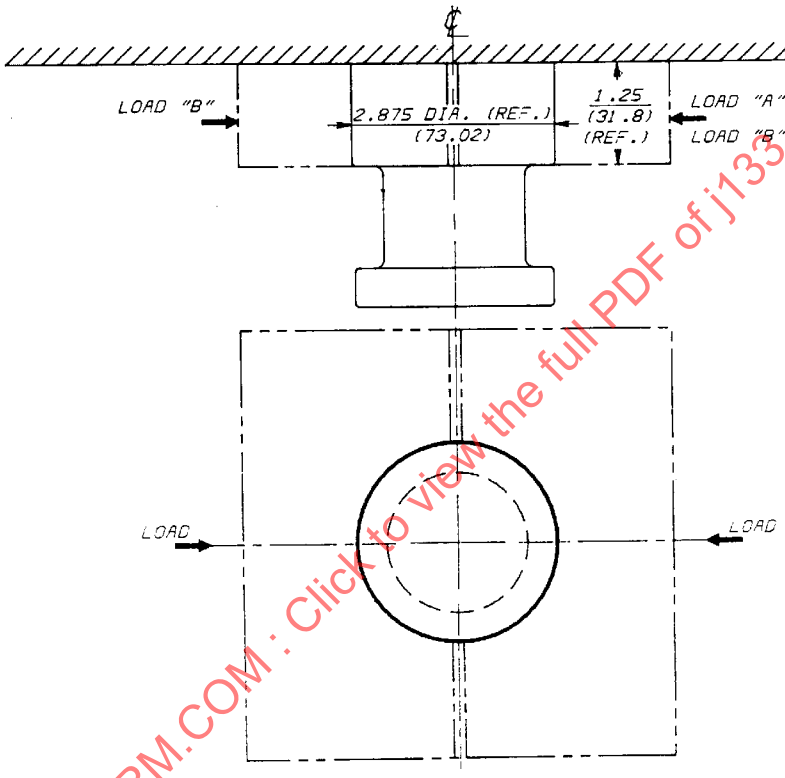

FIGURE 1—

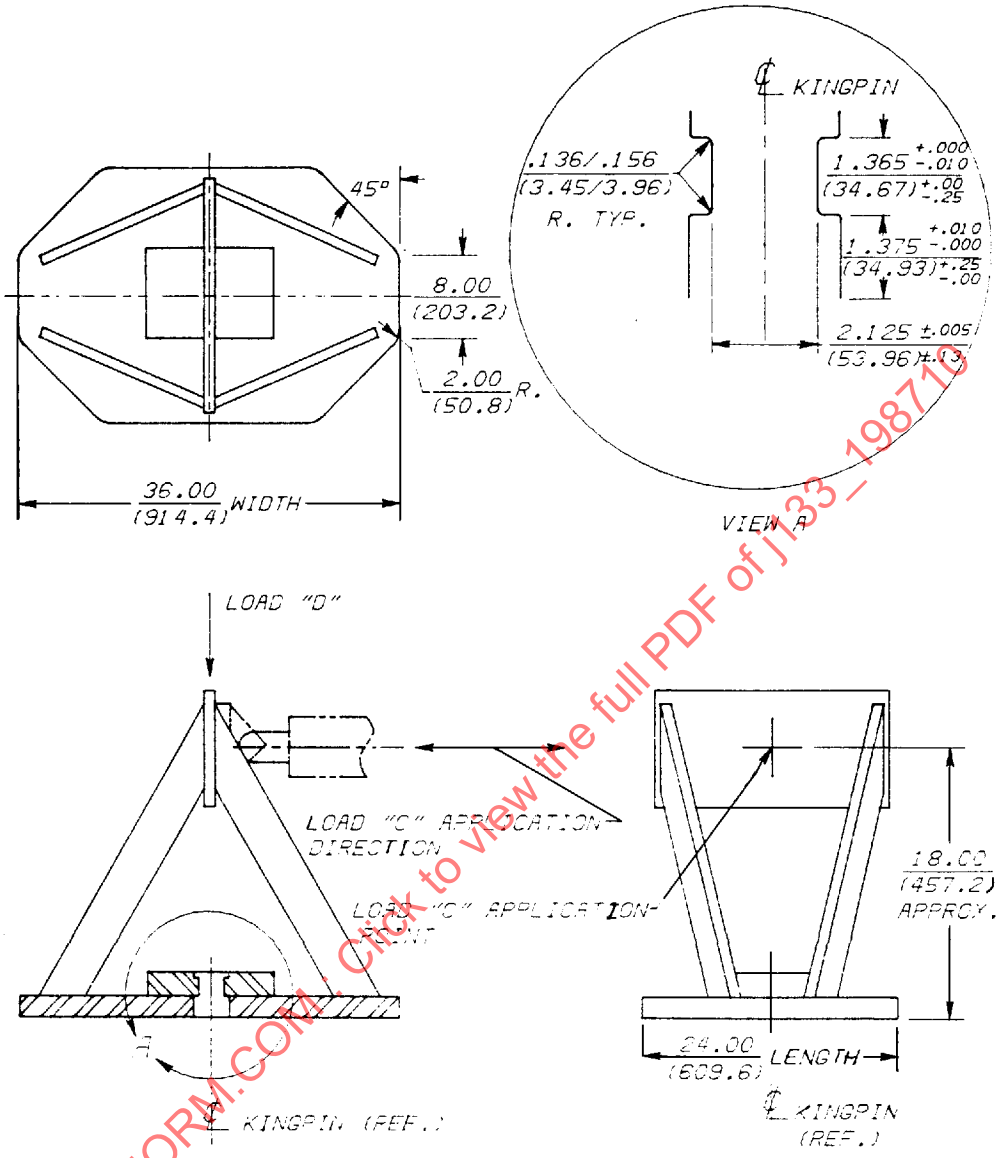

FIGURE 2—FIXTURE FOR APPLYING "C" LOAD

4. Notes

4.1 Marginal Indicia—The change bar (l) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED BY THE SAE CHASSIS COMMITTEE