



SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J133 JUL2011

Issued 1970-03
Stabilized 2011-07

Superseding J133 OCT2003

Fifth Wheel Kingpin Performance – Commercial Trailers and Semitrailers

RATIONALE

The Truck and Bus Coupling & Interchangeability Committee which owned this report has become inactivated and the technical expertise for the subject report within the Truck and Bus Council is not available at this time. This standard has been transferred to the Total Vehicle Steering Committee to stabilize the standard.

STABILIZED NOTICE

This document has been declared "Stabilized" by the SAE Truck and Bus Total Vehicle Steering Committee and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

SAENORM.COM : Click to view the full PDF of J133_201107

SAE Technical Standards Board 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 reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2011 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, 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
SAE WEB ADDRESS: <http://www.sae.org>

**SAE values your input. To provide feedback
on this Technical Report, please visit
http://www.sae.org/technical/standards/J133_201107**

1. *Scope*

The purpose of this SAE 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 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 PUBLICATION

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.
SAE J700—Upper Coupler Kingpin—Commercial Trailers and Semitrailers

2.1.2 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.

SAENORM.COM : Click to view the full PDF of J133-201107

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 31.1 kN (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 degrees to the plane of forces "A" and "B"
- (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 914 mm (36 in) wide by 610 mm (24 in) 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 71.44 mm (2.8125 in) diameter 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 3.7 GVW and other requirements specified in Association of American Railroads M931.

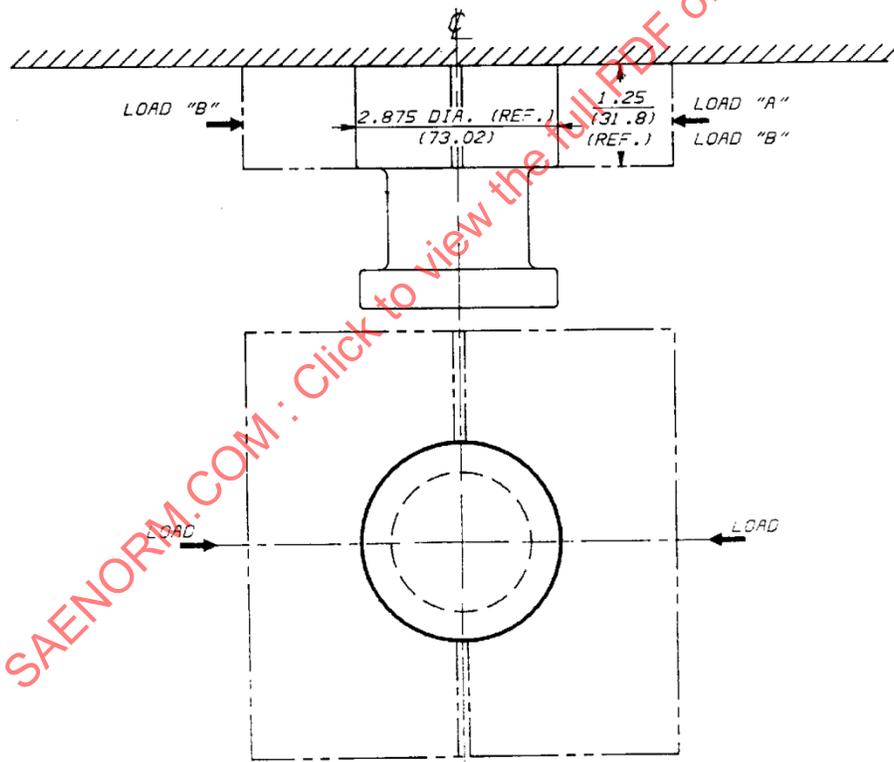


FIGURE 1—FIXTURE FOR APPLYING "A" AND "B" LOAD