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**Articulated vehicles—Fifth wheel
assemblies**



STANDARDS AUSTRALIA 

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Australian Road Research Board
Australian Road Transport Federation
Austroads
Commercial Vehicle Industry Association of Australia
Department of Defence
Department of Transport and Communications
Federal Chamber of Automotive Industries
Institute of Metals and Materials Australasia
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assemblies**

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PREFACE

This Standard was prepared by the Standards Australia Committee on Semitrailer and Heavy Trailer Couplings, to supersede AS 1773—1975, *Test requirements and criteria for fifth wheel and turntable assemblies*.

The method of rating and selecting couplings introduced in this Standard is based on the 'D-value' method used in the United Nations ECE Regulation 55* and in ISO and DIN Standards.

In this Standard, the D-value has been specified in kilonewtons to avoid confusion with the towed-load capability of the coupling. This unit is also being used more widely in Europe.

In the application of the D-value method, a series of equations is used to determine the required rated strength of the fifth wheel assembly. In this Standard, these equations have been obtained from original experimental research conducted by the Australian Road Research Board. These equations differ from those used in the ECE Regulation 55 and the ISO and DIN Standards in order to reflect Australian conditions. Whereas the equation for semitrailers, i.e. for articulated vehicles with one trailer, is the same as in ECE, ISO, and DIN documents, additional equations have been developed for multiple trailer combinations in accordance with Australian practice.

The dynamic test procedure used in this Standard to determine the rated strength of the fifth wheel assembly is also the same as that used in the ECE, ISO, and DIN Standards. However, the loadings measured on vehicles using fifth wheel assemblies in service under Australian road conditions have indicated that lateral and overturning loadings are significant, and the nature of these loadings indicated a need for an additional test procedure for dynamic overturning moment. Therefore, such a test procedure is currently being developed; consequently, until the test procedure is finalized and trial tests have been performed and proven to be satisfactory, a static overturning moment test has been incorporated in Appendix B of this Standard which, based on the research results, reflects the manner in which the coupling is loaded in service. The overturning moment previously specified has been modified accordingly.

The strength requirements in this Standard refer to 50 mm and 90 mm couplings alike. The dimensional requirements for 50 mm fifth wheels correlate with the dimensional requirements for 50 mm fifth wheels in the United Nations ECE Regulation 55.

* ECE R55 United Nations agreement concerning the adoption of uniform conditions of approval and reciprocal recognition of approval for motor vehicles equipment and parts, done at Geneva, 20 March 1958; Addendum 54, Regulation 55.

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STANDARDS AUSTRALIA

Australian Standard

Articulated vehicles—Fifth wheel assemblies

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE. This Standard specifies minimum requirements for fifth wheel assemblies suitable for 50 mm and 90 mm kingpins for articulated vehicles including B-doubles and road trains in normal use on both sealed and unsealed roads.

The requirements cover dimensional standards for interchangeability, strength testing, and rating.

NOTES:

1. Additional components not specified or supplied by the fifth wheel manufacturer for a typical installation but necessary for a specific installation (e.g. attachment brackets) are not covered by this Standard.
2. Recommendations and requirements for the installation of fifth wheel assemblies on prime movers are given in AS 1771.
3. Guidance on the selection of fifth wheel assemblies is given in Appendix C.
4. Recommended wear limits are given in Appendix D.
5. Components which are part of the semitrailer (i.e. skid plate and kingpin) are not covered by this Standard.
6. Requirements for 50 mm and 90 mm kingpins are specified in AS 2175.

1.2 REFERENCED DOCUMENTS. The following documents are referred to in this Standard:

AS

1771 Installation of fifth wheel and turntable assemblies

2175 Articulated vehicles—Kingpins

ECE

R55 United Nations agreement concerning the adoption of uniform conditions of approval and reciprocal recognition of approval for motor vehicles equipment and parts, done at Geneva, 20 March 1958; Addendum 54, Regulation 55.

1.3 DEFINITIONS. For the purpose of this Standard, the definitions below apply.

1.3.1 Converter dolly—a special trailer comprising one axle group, a fifth wheel, and a drawbar, used to convert semitrailers into full (or 'dog') trailers.

1.3.2 Coupler plate—the part of the fifth wheel which houses the closing jaw system that engages the kingpin of the semitrailer, and which provides a turning base or support for the skid plate of the semitrailer. The coupler plate is mounted on feet which permit limited pivoting about the transverse axis (see Figure 1.1).

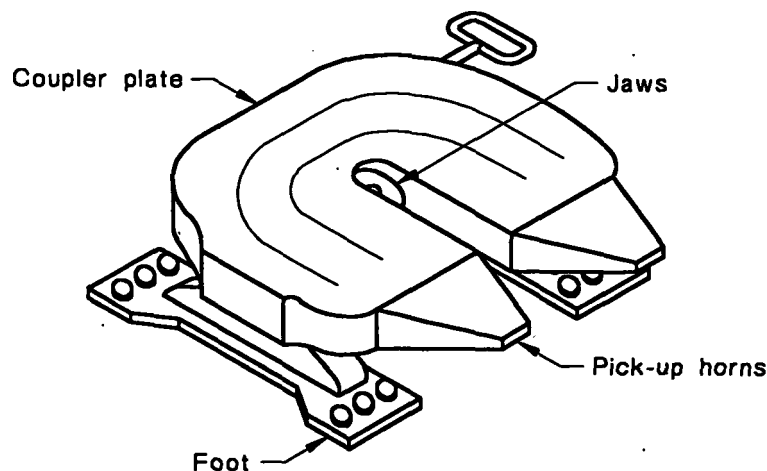


FIGURE 1.1 TYPICAL FIFTH WHEEL

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