

Vehicle Standards Instruction (General 22.0)

Fitting of non-compliant fifth wheel couplings

Released April 2014

The Department of Transport and Main Roads (TMR) has recently been advised by New South Wales Roads and Maritime Services (RMS) about some 'Hijacker' brand fifth wheel hitches, both single and double oscillating variants, that have been found to be non-compliant with the requirements in ADR 62/... *Mechanical Connections between Vehicles*.

To ensure vehicle owners, modifiers and Approved Persons are aware of the issues that were identified by RMS, TMR has issued this Vehicle Standards Instruction (VSI). The information in this VSI should not only be applied to 'Hijacker' brand fifth wheel hitches, but as general requirements that apply to all fifth wheel hitches that are fitted to vehicles.

The areas of possible non-compliance that have been identified are:

1. Testing to Standards

Tests conducted to confirm compliance with mandatory safety standards may not be complete or may not record the essential details needed for traceability. RMS has reported that the evidence to demonstrate compliance of Hijacker turn tables, namely a test report by *University of Sydney Dynamic Testing of Fifth Wheels; Test Record T627* is incomplete, and poorly documents the testing conducted. TMR will not accept the report T627 as evidence of compliance to ADR 62/02 or ADR62/01.

2. Marking

Several inspections of Hijacker Fifth wheel turn tables conducted by RMS showed markings to be incorrect both in content and format. For example, the turntable has a marking indicating compliance to AS/NZS 4968.2 *Testing and Installation of fifth wheel and associated equipment* **or** AS/NZS 4968.3 which is actually the standard applicable to King Pins and not fifth wheel turn tables.

Also RMS determined that the marking indicating compliance to AS/NZS 4968.2 on Hijacker hitches was incorrect, as the installations inspected did not comply with the installation requirements of this standard.

3. Fitting to vehicle

The fitment of a fifth wheel type turn table on a heavy vehicle must be certified.

The fitment of a fifth wheel type turn table on a light vehicle must be carried out using the P2 code in the National Code of Practice – Heavy Vehicle Modifications (VSB 6) as a guideline.

Consistent with the findings by RMS, please note that TMR will not accept test report T627 as evidence of compliance.

If you have certified a Hijacker hitch using the University of Sydney Test report T627, you must contact the Vehicle Standards Section of TMR via email, so that TMR can issue further instructions.

Either additional evidence or clarifications to the report must be provided as outlined in this bulletin.

OR

New testing conducted as per requirements of ADR 62/02 clearly indicating which option is used for testing/compliance (AS/NZS or ADR) and correctly reported as outlined in this VSI.

Specific concerns reported by NSW RMS in this regard include:

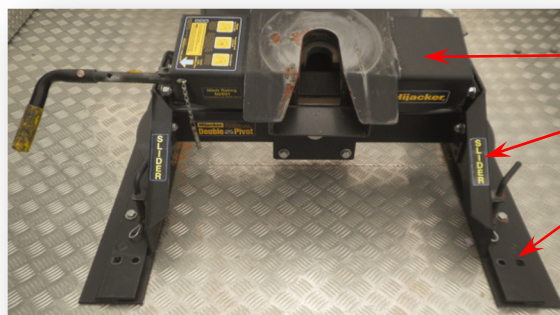
1. Testing

Concerns have been raised by RMS about the accuracy and adequacy of a test document being provided titled *Dynamic testing of Fifth Wheels, Test Record T627*. These concerns are in the areas of record keeping and test methodology.

As a result TMR has determined that, **the subject test report alone cannot be used to demonstrate compliance to ADR 62/..**

Advice on Turn table compliance to ADR 62/...

- The following options are available under ADR 62/02 to demonstrate compliance:
 - If the **"D value" of the turn table is below 40kN** - the turn table can be tested either to AS4968.2 - "Testing and Installation of Fifth Wheel and Associated Equipment" or to ADR62/02 clause 12.3.2 (for trailer ATM up to 3.5 Tonne) or 12.3.3 (for trailer ATM greater than 3.5 Tonne)
 - If the **"D value" of the turn table is above 40kN** - the turn table is to be tested to AS4968.2 (ADR 62/02 does not permit an alternate standard for a "D value" greater than 40kN)
- If the option is taken to use AS4968.2 to demonstrate compliance to ADR62/02 both tests as outlined in Appendix A and B of AS4968.2, must be conducted - regardless of D Value.
- When it comes to evidence of compliance based on physical testing a 5th Wheel Assembly includes those mechanical components that are shown in the examples below, i. e. it includes the turn table coupling head, the frame, and the sliding rails which are supplied by the assembly manufacturer as part of the unit. It does not include any chassis mounting components that are required for each individual vehicle installation.

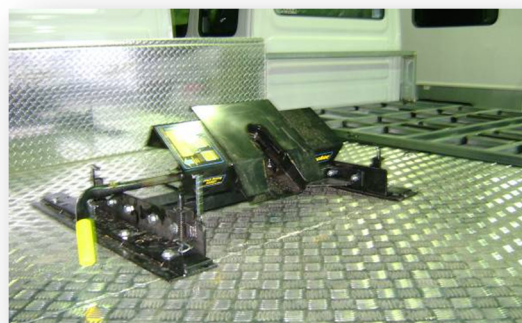


Turn table coupling head

Frame

Sliding rails

Note; Even though the head of this unit is similar in appearance to the previous example, the design of the frame work is different and the two assemblies are not comparable. They would require separate testing.





Turn table coupling head and base plate (as supplied by manufacturer).

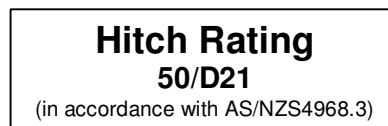
Frame (fabricated)

Note: In this example the frame has been fabricated specifically for this application. Only the turn table coupling head has been tested by the unit's manufacturer. The entire assembly, including the fabricated frame needs to be tested in accordance with ADR 62/02.

- Where the turn table plate is adjustable in height - the test must be conducted in the assembly's worst case configuration(s). In general, for a height adjustable turn table plate, this corresponds to the turn table coupling head in its highest possible position.
- A dye penetrant crack detection system is to be used to assist in crack detection. (or an appropriate instrument based crack detection method) – Post-test inspection relying only on unaided visual inspection is not acceptable.

2. Marking

RMS has reported that some Hijacker fifth wheels have been incorrectly marked.



Example of incorrect label (actual and re-created to be legible)

The above marking is incorrect as it refers to AS/NZS 4968.3 which is the standard that covers kingpins and not fifth wheel turn tables.

Further, the decal has significantly faded. On some occasions, it has also been noted that decals have become partly dislodged. It should be noted that ADR 62/.. requires “permanently affixed” marking and that the intent of this clause is that markings are indelible and should remain attached for the life of the component.

If marked directly on the assembly, care should be taken that the markings are not made obscure by a subsequent manufacturing process. For example paint or powder coat finish has coated the markings too thickly and are illegible.

Material for Labelling

ADR 62/.. does not prohibit use of decals. However experience shows that decals vary in quality greatly, become illegible and peel off after a short exposure to the elements.

TMR **recommends** and prefers that markings on a turn table be embossed, stamped or engraved either directly on the assembly, or on a metal plate which in turn is attached by rivets to the 5th Wheel assembly in a readily visible location when assembled and fitted.

Marking Options under ADR 62/02

(i) AS/NZS 4968.1:2003 marking option used.

Turntables, slider assemblies and load cells must be marked with:

- The manufacturer's name or trademark.
- The D-value rating expressed in kilo newtons.
- Any other necessary information indicating any limitation of it's rating, which may include the height of the coupler plate above the component.

The diagram shows a rectangular marking plate with three horizontal slots. The top slot contains the text 'ACME TURN TABLE COMPANY'. The middle slot contains the text '50/D160'. The bottom slot contains the text 'Other information'.

(ii) ADR 62/02 Clause 12.4

1. For coupling for use with **trailers up to 3.5 tonnes ATM** (Clause 12.4.1) & **D value less than 40kN**, coupling must be marked with:

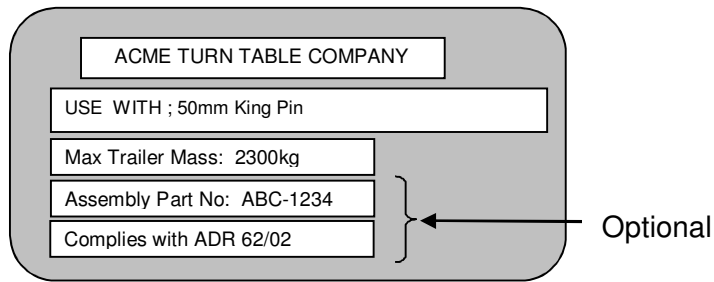
- The manufacturer's name or trademark.
- The maximum allowable trailer ATM and it's unit of measurement
- The words 'Use with XX mm King Pin" (See note below)

Note: Clause 12.4.1.3 of ADR62/02 indicates to use wording "Use with Model (Identified model).

The turntable assemblies available in the market are generic in application rather than vehicle specific. TMR will accept "Use with Kingpin Size (Identified kingpin size in mm)" in lieu of "Use with Model (Identified model)"

Optional:

- Manufacturer assembly part number.
- If turntable was complied to ADR62/02 a statement "Complies with ADR62/02" or if CRN issued, the CRN eg "CRN 123456 "

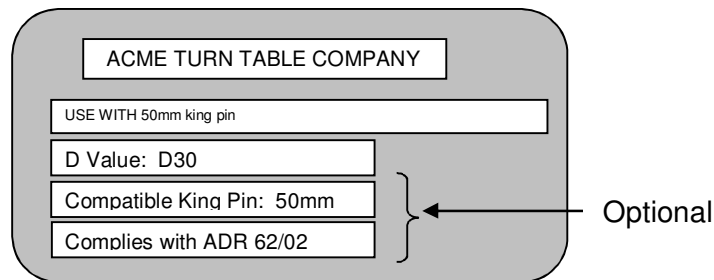


2. For couplings used for trailers **over 3.5 tonnes ATM, (Clause 12.4.2) & D value less than 40kN**, coupling must be marked with:

- The manufacturer's name or trademark.
- The words 'Use with XX mm King Pin' (see previous note regarding 12.4.1.3)
- Either the rated 'D-value', or rated 'D-value' and 'V-value' kN)

Optional

- If turntable was complied to ADR62/02 a statement "Complies with ADR62/02" or if CRN issued the CRN eg "CRN 123456"
- Maximum trailer ATM (in kg) be added.



3. Fitting to the vehicle

On Heavy Vehicles

The fitting of Fifth Wheel type Turn Table on heavy vehicles (GVM exceeding 4.5 tonnes) must be certified by an Approved Person holding the appropriate VSB-6 Modification Code (P2 "Fifth Wheel and Kingpin Installation").

Certification must:

- Demonstrate via testing or calculation that the attachment method of the turn table assembly to the vehicle chassis is adequate.
- Include evidence from manufacturer or Australian distributor of the turn table assembly that it is compliant to ADR 62/02 (via test evidence or a CRN is held for the assembly)

NOTE: If the distributor or manufacturer of the 5th wheel turn table assembly does not provide test evidence, letter of compliance, or hold a CRN for the assembly– It is the responsibility of the Approved Person to demonstrate compliance of the 5th wheel turn table components.

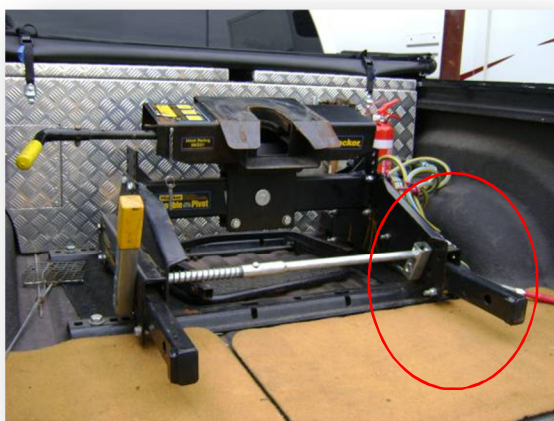
On Light Vehicles

The fitting of the Fifth Wheel type Turn Table on light vehicles (GVM not exceeding 4.5 tonnes) must be carried out using the appropriate VSB-6 Modification Code (P2 “Fifth Wheel and Kingpin Installation”) as a guideline.

In practice, many vehicles up to 4.5 T GVM may not be able to have a fifth wheel turn table fitted exactly in accordance with VSB6 and in many cases the light vehicle manufacturer may not have provided fitting instructions for a 5th wheel turn table.

Sound engineering principles and practices must be followed to ensure the arrangement is “fit for purpose”. For example: the sub-frame of the Fifth Wheel Turn Table assembly is securely attached to the substantial part of the vehicle chassis frame and not to the load body. Professional engineering advice should be sought where necessary and appropriate.

Other General Advice to Approved Persons and installers



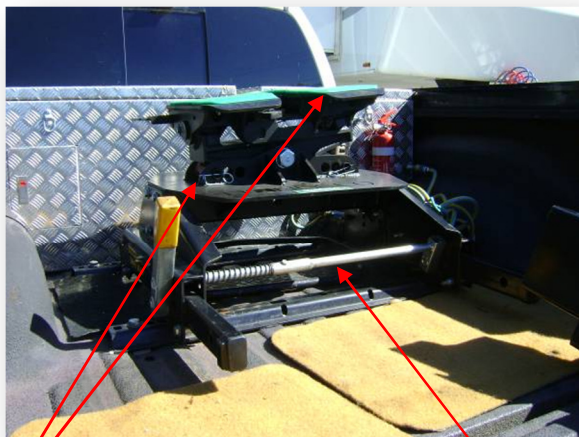
Products being installed and certified must match the test specimen

In the above photos note that the designs of the frames are different, particularly in relation to attachment to the rails and the heights of the turn table coupling head from the vehicle’s loading deck. The test specimen must be **completely** mechanically identical to the unit that is supplied to the market. The test report T627 from the University of Sydney cannot be clearly linked to any of the above hitches shown.

Hybrid Configurations

RMS reports that in some cases the base of a Hijacker hitch has been used in conjunction with a turntable coupling head from another manufacturer.

Hybrid Configuration



Turn table coupling head and base plate
(as supplied by other manufacturer).

Original Hijacker frame.

Original Configuration



To demonstrate compliance, these turn table assemblies must be tested in individual “hybrid” configurations.

Acknowledgement

TMR wishes to acknowledge and thank Mr Paul Caus and the Vehicle Standards & Operations team from New South Wales Roads and Maritime Services, for providing the material and the permission to use the material in preparing this VSI