



Department of
Transport

ADR 38/04 trailer brake requirements

Overview of the changes in the latest revision



ADR 38/04 trailer brake requirements

Definitions

Antilock System (ABS) - a service brake system that automatically controls the degree of rotational wheel slip relative to the road at one or more road wheels of the vehicle during braking.

Variable Proportioning Brake System - a system that automatically adjusts the braking force at the axles to compensate for vehicle static axle load and/or dynamic weight transfer between axles during deceleration.

ADR 38/04 is applicable to

Design and construction of TC & TD trailers, except those trailers designed for use behind a drawing vehicle with a maximum speed less than 50km/h

TC and TD trailers must be fitted with an antilock or variable proportioning braking system from:

- 1 July 2014 on all new model vehicles
- 1 January 2015 on all trailers manufactured after this date

Introduction to ABS

- ABS stands for anti-lock braking system
- purpose is to prevent the wheels from locking
- provides a maximum exploitation of the available road surface friction
- governed by a control unit (micro-computer)
- senses the wheel speeds
- governs the braking pressure of the individual wheel brake actuators
- ABS system includes a number of control functions that test individual electrical circuits

Performance requirements for ABS

- wheels must remain unlocked when control signal is applied at 40km/h and 80km/h
- powered by a 12 or 24 volt electrical supply using a conforming connector (7 pin plug)
- must signal to the towing vehicle when energised
- a break in the electrical system to an antilock system must be signalled to the towing vehicle

Installation requirements

- Each axle group of the trailer must be equipped with an antilock and / or a variable proportioning brake system
- An antilock system must be fitted to
 - Each single axle (at least 2 sensors);
 - At least 1 axle in any tandem group (at least 2 sensors);
 - At least 2 axles in any tri-axle group (at least 4 sensors);
 - At least 3 axles in any quad axle group (at least 4 sensors)

ABS Wheel sensor



Trailers fitted with variable proportioning

- Trailers must have indelible markings to enable the device to be checked in service.
- Load Proportioning Valves (LSVs) must be set for axle load & suspension characteristics . The valve supplier will need to know trailer specific info in order to set the valve correctly.
- LSVs are generally set by adjusting for the desired delivery pressure at laden and empty axle loads for an input pressure of 650kpa.

Load Proportioning Valve



Electrical connections

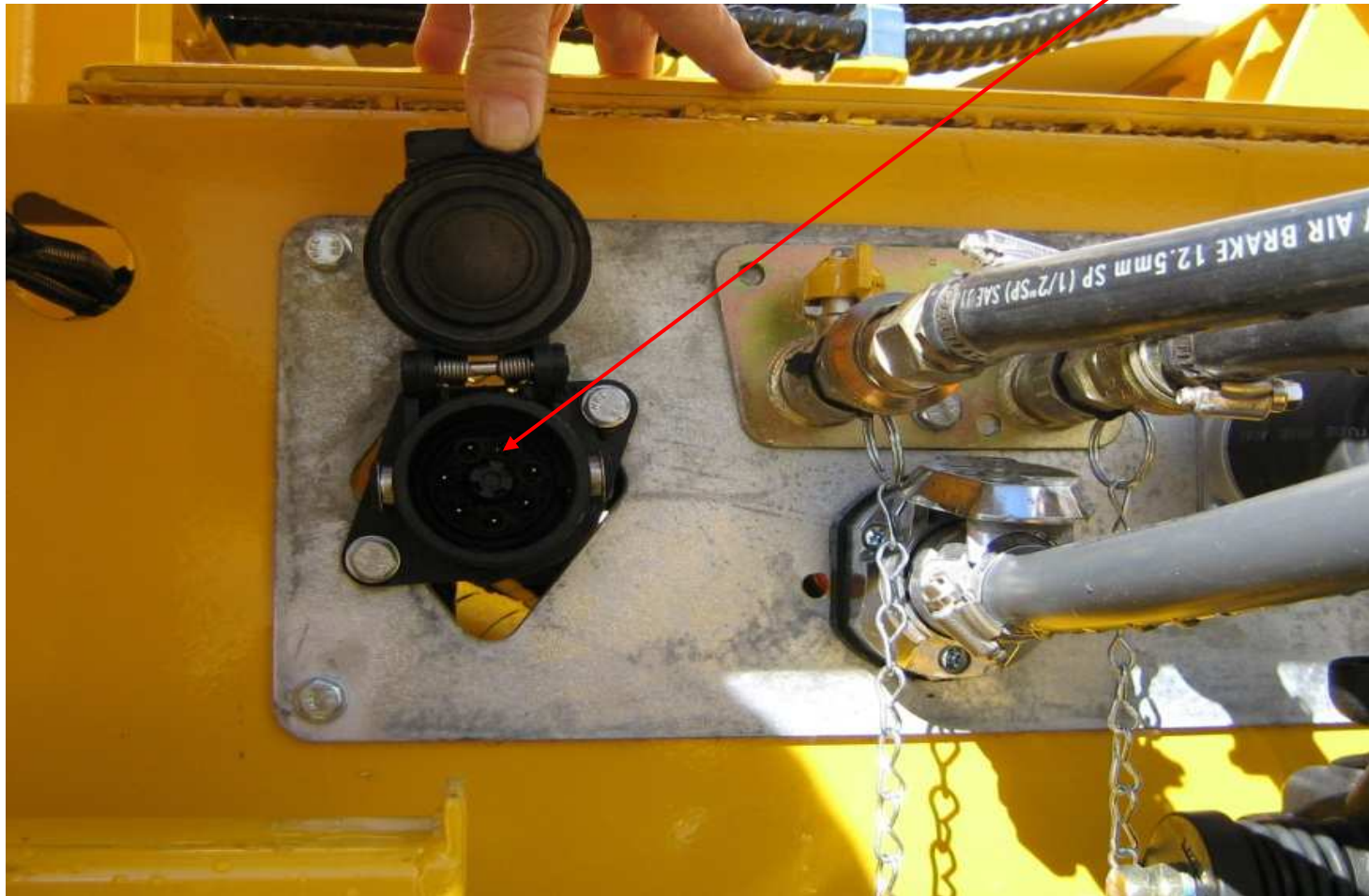
- Trailers with rear tow couplings must be fitted at the front and rear with ABS connections.
- See Clause 6.7.2 of ADR 38/04
- Connection must meet Appendix 1 clause 3 and must include a 'Control Line' and seven pin connectors.
- A break or disconnection in the electrical system must be signalled to the towing vehicle. The warning light must be fitted to the prime mover cabin.

Brake adjustments

- Each brake system must incorporate devices which compensate for any increased movement of its components arising from wear.
- Trailers with ABS/EBS require disc or drum brakes with auto slack-adjusters.

Typical brake fittings

ABS 7 pin connector



Trailers towed by older vehicles

- *Road Traffic (Vehicle Standards) Regulations 2002, Part 2, Regulation 6 (3):*

A person must not drive the first or only motor vehicle forming part of a combination on a road unless each other vehicle forming part of the combination is maintained —

(a) in a condition that enables it to be towed safely;

(b) in a condition that is unlikely to occasion unreasonable annoyance to any person or damage to any property; and

(c) so that every part of the vehicle is in a serviceable condition.

Trailers towed by older vehicles (contd.)

- Trailers fitted with ABS can be towed with non ABS trucks. However, must power ABS from the truck via the ABS socket.
- Trailer must be connected to towing vehicle using the correct type of 7 pin connector.
- ABS must be powered by 12 or 24 volt supply. (Reducers or inverters may be required for a “mixed” combination using both voltages)

Responsibilities

- At first registration, examiners will not be testing the ABS / VP functionality. They will only be checking if the components are fitted.
- The manufacturer is responsible under consumer law to ensure the trailer is compliant and fit for purpose.
- Drivers, if the trailer you are about to couple is fitted with ABS, it is your responsibility to ensure that the system is working before commencing a journey.

Trailers exempt from this rule

- Trailers exempt:
 - Converter dollies;
 - Trailers fitted with an axle group arrangement consisting of more than four tyres in a row of axles or more than four axles in an axle group;
 - Trailers meeting the unladen performance requirements without a variable proportioning brake system being fitted.
- The vehicle plate must contain the words:
“THIS VEHICLE IS NOT FITTED WITH ANTILOCK BRAKES OR VARIABLE PROPORTIONING BRAKES”



Inquiries

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