



ATA - ITC TECHNICAL DICTIONARY:

A-type COUPLING: A drawbar-based coupling type. This coupling type does not transfer roll, nor generally, load between the vehicle units.

ABB-Quad: A prime mover towing four semi-trailers. The third and fourth semi-trailers are connected by a fifth wheel located towards the rear of the preceding semi-trailer and the second semi-trailer is connected by a converter dolly. Can also be described as a semi-trailer towing a B-triple using a converter dolly.

ADR: Australian Design Rule.

Advanced Emergency Braking System (AEBS): A system which can automatically detect a potential forward collision and activate the vehicle braking system to decelerate the vehicle with the purpose of avoiding or mitigating a collision.

AGGREGATE TRAILER MASS (ATM): The total mass of the laden trailer when carrying the maximum load recommended by the 'Manufacturer'. This will include any mass imposed onto the drawing vehicle when the 'Combination Vehicle' is resting on a horizontal supporting plane.

ANTILOCK BRAKING SYSTEM (ABS): A portion of 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.

ASPECT RATIO (tyre): The dimensional relationship between the tyre section height and the section width; section height divided by section width.

ARTICULATED VEHICLE: A combination of 'Prime Mover' and 'Semi-trailer'.

ATIC: The Australian Tyre Industry Council

ATRA: American Tire and Rim Association

AUTOMATIC PIN COUPLING: A 'Coupling' which utilises a vertical pin through a towing eye attached to the 'Drawbar' with a 'Drawbar' eye guidance socket and a self-engaging pin and locking mechanism.

AXLE: One or more shafts positioned in a line across a vehicle, on which one or more wheels intended to support the vehicle turn.

AXLE GROUP: Either a 'Single Axle', 'Tandem Axle Group', 'Triaxle Group', or 'Close Coupled Axle Group'.

AXLE LOAD: Total load transmitted to the road by all the tyres of all the wheels whose centres may be included between 2 transverse parallel vertical planes less than one metre apart.

BAB-Quad: A prime mover towing four semi-trailers. The second and fourth semi-trailers are connected by a fifth wheel located towards the rear of the preceding semi-trailer and the third semi-trailer is connected by a converter dolly. Can also be described as a B-double towing a B-double using a converter dolly.

BALL COUPLING: A 'Coupling' comprising a ball and complementary body which clamps only on the outer surface of the ball.

B-type COUPLING: A fifth wheel connection coupling. This coupling type transfers roll and load between the vehicle units. See fifth wheel coupling.

B-DOUBLE: A combination of vehicles consisting of a prime mover towing two (2) 'Semi-trailers'.

B-TRIPLE: A combination of vehicles consisting of a prime mover towing three (3) 'Semi-trailers'.

BEAD: The area of the mounted tyre which seats against the rim.

BEAD SEAT: The area where the tyre seats and seals on the inside of the rim.

BIAS TYRE: Consists of multiple rubber plies overlapping each other. The crown and sidewalls are interdependent.

BRAKE REACTIVE SUSPENSION: A suspension in which there is a transfer of vertical loading from one 'Axle' to another 'Axle' in the same 'Axle Group' due to the application of the 'Brakes'.

CENTRE AXLE TRAILER: A towed vehicle equipped with a towing device and in which the axle/s is (are) positioned close to the centre of gravity of the vehicle (when uniformly loaded) such that only a small static vertical load, not exceeding 10% of the load corresponding to the maximum design total mass (ATM) or load 10kN (whichever is the lesser), is transmitted to the towing vehicle.

CLOSE COUPLED AXLE GROUP: Is where two (2) axles in a group have their centres not more than one (1) metre apart, or three (3) axles not more than two (2) metres apart.

COLD INFLATION PRESSURE: The amount of air pressure in a tyre before a tyre has built up heat from driving.

COMBINATION CONFIGURATIONS: Refer to Technical Advisory Procedure – Description of Truck Configurations

<http://www.truck.net.au/sites/default/files/TAPs%20-%20description%20of%20truck%20configuration%20September%202016.pdf>

COMBINATION VEHICLE: Either a combination of a rigid goods vehicle and one trailer (other than a 'Semi-trailer'); or an 'Articulated Vehicle'

CONTACT PATCH: The part of the tyre in contact with the road (see footprint).

CONVERTER DOLLY: A 'Pig Trailer' with a 'Fifth Wheel Coupling', designed to convert a 'Semi-trailer' into a 'Dog Trailer'.

CRN: Component Registration Number

CROWN: The region between the shoulders of the tyre.

DEF: Diesel Emission Fluid (Selective Catalytic Reduction – SCR). Includes products such as AdBlue.

DOG TRAILER: A trailer with 2 'Axle groups' of which the front 'Axle Group' is steered by connection to the drawing vehicle.

D-VALUE: An expression of the horizontal dynamic load capacity of a coupling or drawbar eye.

DOG Trailer: A trailer (including a trailer consisting of a semi-trailer and converter dolly) with—
 (a) one axle group at the front that is steered by connection to the towing vehicle by a drawbar; and
 (b) one axle group at the rear.

DRAWBAR: Portion of a trailer that connects the trailer body to the 'Coupling' for towing purposes.

DRAWBAR LENGTH: Horizontal distance from the centreline of the towing pivot to the centreline of the 'Axle Group' of the trailer; or, leading 'Axle Group' of a dog trailer.

DRAWBAR CONFIGURATION:

Hinged Drawbar – **can move freely** in the vertical plane and does not support any vertical load nor transfer vertical load to the towing coupling.



Rigid Drawbar – **cannot move freely** in the vertical plane and does support any vertical load and does transfer vertical load to the towing coupling.



DRAWBAR TRAILERS: Include

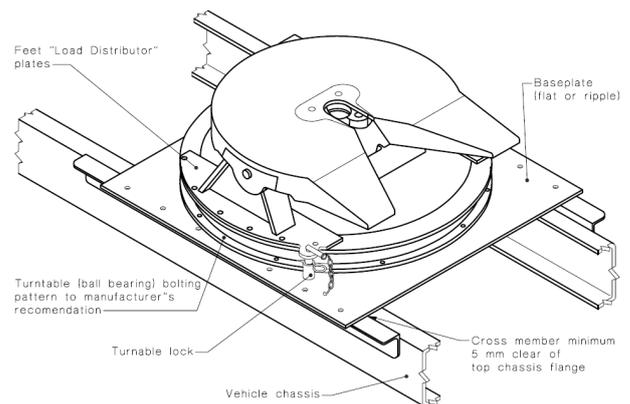
- Pig (centre axle) trailer
- Dog Trailer
- Converter Dolly
- Tag (semi) trailer

DUAL TYRES: Two tyre and rim assemblies, mounted on one side of an axle

ETRTO: European Tyre and Rim Technical Organisation

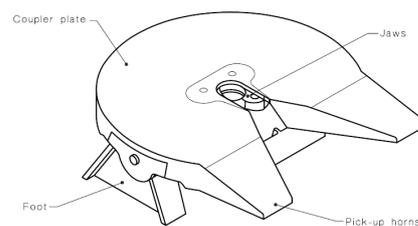
FIFTH WHEEL ASSEMBLY: A fifth wheel coupling including any turntable (ballrace), mounting plate, sliding assembly, load cell and other equipment mounted between the towing vehicle chassis and the trailer skid plate, but not including any attachment angles or other sections used for the same purpose.

NOTE: This includes any mechanism which allows the adjustment of the longitudinal location of the fifth wheel.



FIFTH WHEEL COUPLING: A device fitted to a vehicle to permit quick coupling and uncoupling of a semi-trailer, provide articulation for the combination, and provide stability and support to the semi-trailer.

Where a fifth wheel is specially designed to have a turntable base as an integral part, the term "fifth wheel assembly" includes that turntable base. It does not include the skid plate and kingpin, which are parts of the semi-trailer.



NOTE: Frequently, a fifth wheel is incorrectly referred to as a Turntable.

FOOTPRINT: The mark left by a loaded tyre's tread as it meets the road surface (see contact patch).

GROSS AXLE LOAD RATING (GALR): The 'Manufacturer's' specified maximum 'Axle Load' for each 'Axle' for which compliance with applicable Australian Design Rules has been or can be established.

GROSS COMBINATION MASS (GCM): Value specified for the vehicle by the 'Manufacturer' as being the maximum of the sum of the 'Gross Vehicle Mass' of the drawing vehicle plus the sum of the 'Axle Loads' of any vehicle capable of being drawn as a trailer.

GROSS ROAD TRAIN MASS: The sum of the laden masses of each of the vehicle units of a 'Road Train'.

GROSS TRAILER MASS (GTM): The mass transmitted to the ground by the 'Axle' or 'Axles' of the trailer when coupled to a drawing vehicle and carrying its maximum load approximately uniformly distributed over the load bearing area, and at which compliance with the appropriate Australian Design Rules has been or can be established.

GROSS VEHICLE MASS (GVM): The maximum laden mass of a motor vehicle as specified by the 'Manufacturer'.

GROUND CLEARANCE: The minimum distance to the ground from the underside of a vehicle excluding its tyres, wheels, wheel hubs, brake backing plates and flexible mudguards or mudflaps.

GROUP GROSS AXLE LOAD RATING (GGALR): The least of the values allowed by 'GALR', Table 1 of ADR 38/... or that determined by 'Gross Trailer Mass'.

HOOK COUPLING: A 'Coupling' comprising a hook and towing ring where the hook has a retaining device.

KINGPIN: A pin (including retention plate and bolts, where applicable) attached to the skid plate of a semi-trailer and used for connecting the semi-trailer to the fifth wheel of a towing vehicle.

The kingpin 'transfers lateral forces between the towing vehicle and the towed trailer', the towing and braking forces.

Lateral Protection Device (LPD) is a construction consisting of longitudinal member(s) and link(s) (fixing elements) to the chassis side members or other structural parts of the vehicle that is designed to offer effective protection to unprotected road users against the risk of falling under the sides of the vehicle and being caught under the wheels. Parts of the vehicle can be considered an LPD when designed appropriately.

Note: LPD is the European reference to Side Underrun Protection

LOAD INDEX: An assigned number ranging from 0 to 279 that corresponds to the load-carrying capacity of a tyre.

MODULAR COMBINATION: A modular combination is a multi-vehicle combination that consists of more than two (2) vehicle units, where:

- All individual vehicle units comply with the ADR's and AVSR's
- The sub-combinations are complying vehicle combinations (eg: the prime mover and any two trailers of a B-triple can be assembled to form a complying B-double).

NEGATIVE CAMBER: A condition where the top of the tyre is leaning inward from the tyre's vertical centreline, as viewed from the top.

NEGATIVE CASTOR: A setting where the steering axis is inclined forward at the top as viewed from the side; a condition which tends to cause instability.

NEGATIVE OFFSET: When the back of the bolt pad is closer to the inside of the wheel; when the mounting face is inboard of the rim centreline; extends assembly away from vehicle resulting in wider tracking.

OEM (Original Equipment Manufacturer):

OVERALL LENGTH: The maximum distance measured longitudinally; length includes everything (except front blind s pot mirrors that protrude less than 150 mm).

OVERALL WIDTH: The maximum distance measured across the body including wheel guards, but excluding:

- Rear vision mirrors, signalling devices, side mounted lamps and reflectors,
- Anti-skid devices mounted on wheels, central tyre inflation systems, and tyre pressure gauges,
- Permanently fixed webbing-assembly type devices, such as curtain-side devices, provided that the maximum distance measured across the body including any part of the devices does not exceed 2.55m.

OVER-STEER: A cornering condition where the rear tyres lose traction before the front tyres; the tendency of a vehicle to turn more sharply than the driver intends while negotiating a turn.

PCBU: Person Conducting a Business or Undertaking (This is a legal term, and a 'person' could be a company).

PIG TRAILER: A trailer having one 'Axle Group' near the middle of the length of the goods-carrying surface. See "centre axle trailer".

POSITIVE CAMBER: A condition where the top of the tyre is leading outward from the tyre's vertical centreline, as viewed from the top.

POSITIVE CASTOR: A setting where the top of a tyre is inclined rearward at the top, as viewed from the side; makes possible self-centring force that tends to return the wheel to the direction the vehicle is travelling.

POSITIVE OFFSET: When the back of the bolt pad is closed to the outside of the wheel; when the mounting face is outboard of the rim centreline; draws assembly towards the vehicle resulting in narrower tracking.

PRIME MOVER: A motor vehicle built to tow a 'Semi-trailer'.

QUAD AXLE GROUP: A quad axle group means a group of four axles in which the horizontal distance between the centre lines of the end axles is between 3.2 and 4.9 metres.

RADIAL TYRE: A tyre built with casing plies that cross the crown at 90 degrees

REAR OVERHANG: The distance measured horizontally and parallel to the longitudinal axis of the vehicle between the 'Rear End' of the vehicle and the 'Centre of an Axle Group' (See diagram under 'Wheelbase').

RETREAD: The process of reconditioning a worn tyre by curing a new tread to the prepared surface of the tyre.

ROAD TRAIN: A combination of vehicles, other than a 'B-Double', consisting of a motor vehicle towing at least 2 trailers (counting as one trailer a 'Converter Dolly' supporting a 'Semi-trailer').

'S' DIMENSION: Measurement from the front articulation point to the rear overhang line (*centre of rear axle group*)

SAFETY ALERT: Safety alerts are issued when there is a specific safety issue that without immediate action being taken could result in a serious or fatal injury. When dangerous equipment, processes, procedures, or substances are identified during or after an investigation or as the result of a notification from others, to notify users and other stakeholders of the danger and steps that need to be taken to rectify the fault and/or protect people against a safety issue.

SARN: Sub-assembly Registration Number

SECTION HEIGHT: The distance from the bottom of the bead to the top of the tread.

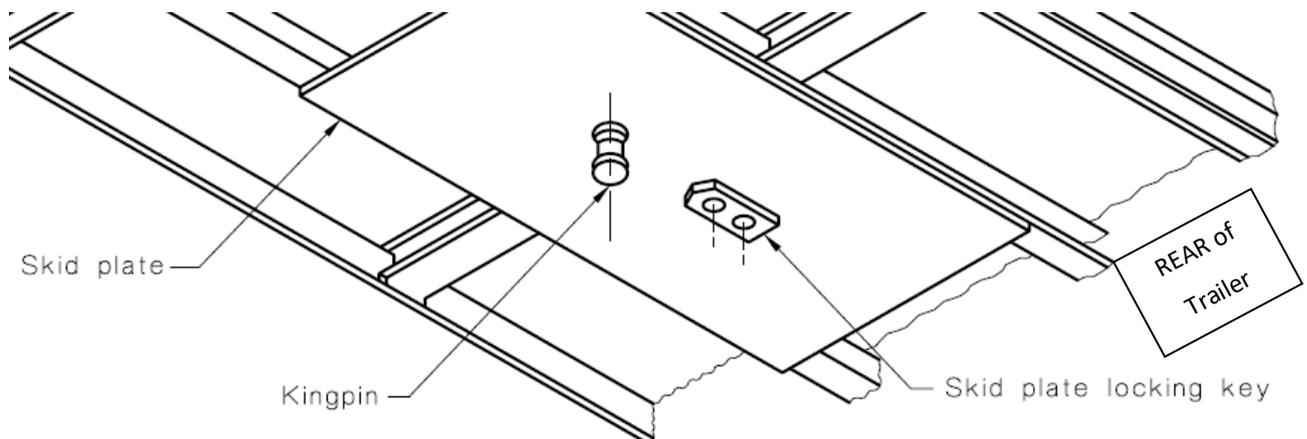
SECTION WIDTH: The distance from sidewall to sidewall, exclusive of any raised lettering.

SEMI-TRAILER: A trailer (including a pole-type trailer) that has:
 (i) one 'Axle Group' or single axle towards the rear; and
 (ii) a means of attachment to a 'Prime Mover', [towing semi-trailer or converter dolly](#) that would result in some of the load being imposed on the ~~'Prime Mover'~~ [towing vehicle](#).

SIDEWALL: The side of the tyre between the tread shoulder and the rim bead.

SKID PLATE: The plate structure on the 'Semi-trailer' which houses the kingpin, and which mounts on to the 'Fifth Wheel Coupling' coupler plate to form the connection between the towing vehicle and the 'Semi-trailer'.

The Skid plate transfers vertical force (the weight) from the trailer to the towing vehicle through the fifth wheel assembly.



SKID PLATE LOCKING KEY: A steel block attached to the underside of the skid plate. It is located rearward of the king pin to key into the throat of the coupler plate of a turntable based fifth wheel, to prevent relative rotation of these two components.

A skid plate locking key is sometimes referred to as the “block”.

SPEED CATEGORY/SYMBOL: An alphabetical system describing a tyre’s capability to travel at established and predetermined speeds and gauged by controlled indoor laboratory testing. An indication of the tyre’s performance.

SPLIT AXLE CONFIGURATION: Two adjacent axle groups in a configuration (subject to specific approval) to a maximum of four (4) axles that form a non-complying axle group. A split axle group will normally involve three or four axles, examples include: **1 + 2; 1 + 3; 2 + 2; 3 + 1; 2 + 1; 1 + 2 + 1:**

SUP: Side Underrun Protection (Australia)

SUSIE: Susie (or Suzi, Suzy) Coil originally referred to self-coiling Suspended Insulated Electrical, Electrical Susie Coils. The technology has also been adopted for airlines Air Susie Coils. Susie coils should only be used in semi-trailer applications.

S-VALUE: Manufacturer’s static vertical load rating for a coupling or drawbar eye.

TAG TRAILER: Is a semi-trailer (with one ‘Axle Group’ or single axle towards the rear) with a GTM greater than 4.5 tonnes, that includes a cargo carrying load space and is so constructed that:

- the design unladen coupling height is ≤ 950 mm,
- the trailer’s rated imposed static vertical load at the coupling is:
 - $\geq 10\%$ of the trailer GTM.

TANDEM AXLE GROUP: A group of at least 2 ‘Axles’, in which the horizontal distance between the centre lines of the outermost axles is at least 1.0 metre, but not more than 2.0 metre.

TOW COUPLING OVERHANG: The horizontal distance from the centre of the rearmost ‘Axle Group’, or the centre line of the single axle, to the pivot point of the coupling near the rear of the vehicle.

TOW COUPLING: A device, other than a fifth wheel, used with a ‘Prime Mover’ or a ‘Trailer’ to permit quick coupling and uncoupling and to provide articulation for the towing of a trailer.

TRAA: The Tyre and Rim Association of Australia

TRAILER CONTROL BRAKE VALVE (Trailer Service Brake Controller Handpiece): The “trailer control brake valve” is normally used to operate the trailer service brakes independent of the prime mover service brakes. It may be used, however, wherever a hand-controlled pressure graduation function is desired. It is

handle-operated and is designed for dash or panel mounting. It is not designed for use as, or as a substitute for a vehicles park brake and should never be used to hold the brakes applied when the operator leaves the vehicle.

TRIAxLE GROUP: A combination of 3 'Axles' in which the front and rear 'Axles' are not less than 2.0 m and not more than 3.2 m apart.

TRUCK IMPACT CHART: Refer to Technical Advisory Procedure – Truck Impact Chart
<https://www.truck.net.au/system/files/industry-resources/TAPs%20-%20Truck%20Impact%20Chart%20March%202018.pdf>

TUG TEST: A tug test is simple, apply the trailer service brakes, put the towing vehicle in the lowest available forward (or reverse) gear, release the towing vehicle/s brakes and apply forward tractive power. If properly connected, the towing vehicle will pull forward but be unable to move because the trailer brakes are engaged, and the fifth wheel has coupled to the kingpin.

TURNTABLE: A bearing built to carry vertical and horizontal loads, but that does not allow quick separation of its upper and lower rotating elements (*typically, a Ball-race or greasy plate*) and is used to connect and allow articulation between -

- (a) a prime mover and a semi-trailer; or
- (b) the front axle group or axle of a dog trailer and the body of the trailer; or
- (c) a fifth wheel coupling and the vehicle to which it is mounted.

Note: A ball-race type turntable may also be referred to as a slewing ring by the manufacturer.

UNDER-STEER: A cornering situation where the front tyres generate more slip angle than the rear tyres; the tendency of the vehicle to turn less sharply than the driver intends and compensated for by the addition of more steering input.

V-VALUE: An expression of the vertical dynamic load capacity of a coupling or drawbar eye.

WHEELBASE: The dimension measured horizontally and parallel to the longitudinal axis of the vehicle between the front and rear wheel centrelines at '*Unladen Mass*'. In the case of the rear '*Axle Group*' the dimension must be to the '*Centre of an Axle Group*'. For a steerable front '*Axle*' or '*Axle Group*' the dimension shall be to the centreline of the foremost '*Axle*' (See illustration Appendix 1).

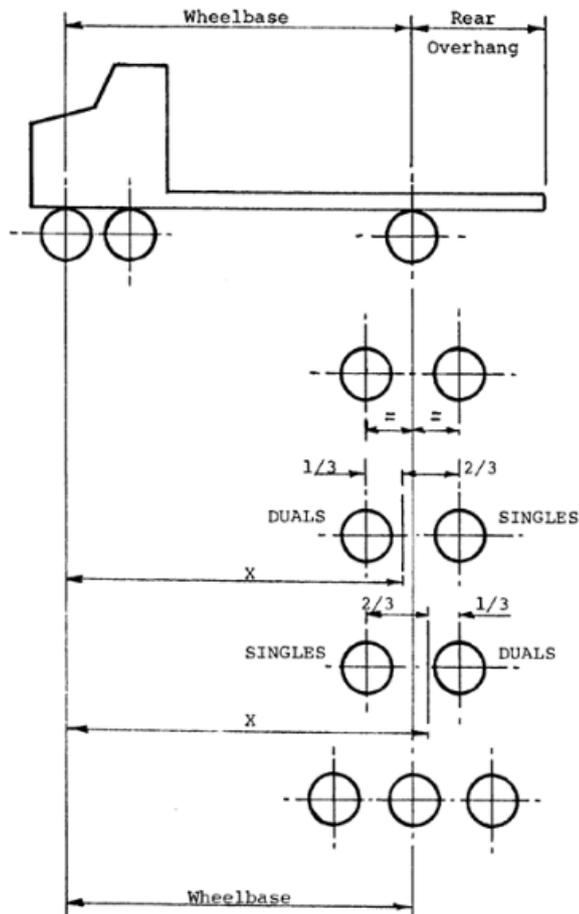
WIDE SINGLE TYRE: A single truck tyre having a '*Specified Design Section Width*' of 375 mm or more which is intended to perform the function of a pair of dual truck tyres. There are 2 ranges of '*Specified Design Section Width*', viz 375 mm to 450 mm and over 450 mm.

Additional Resources:

- Third Edition Australian Design Rule – Definitions and Categories
<https://www.legislation.gov.au/Details/F2016C00487>
- NHVR - Glossary of common terms
<https://www.nhvr.gov.au/files/201612-0062-nhvr-glossary-of-common-terms.pdf>

APPENDIX 1:

'WHEELBASE' AND 'REAR OVERHANG'



X = Distance from front 'Axle' to the line from which the 'Rear Overhang' is measured.