



## **DRIVE & MANOEUVRE TRAILERS**

AURTG001



# HOW TO HOOK UP A TRAILER

Knowing how to hook up a trailer is an essential step to ensuring your towing experience goes smoothly. Connecting a trailer incorrectly can result in expensive damage to your vehicle, trailer and load, or could cause a serious or deadly accident.

If you've never towed a trailer before or even if you have, this guide will help to ensure you connect your trailer correctly.

Before explaining the process of hooking up a trailer, it's important to identify the parts that we'll be discussing.

There are many different configurations and sizes of each component, so we'll just focus on the most common general use items.

## THE TOW BAR

The tow bar is bolted directly to the chassis of your vehicle. Tow bars come in various shapes and sizes to suit a wide range of applications. The one pictured above is a heavy-duty tow bar.

It features a 7-pin flat wiring connector, a 50mm square ball-mount receiver and two anchor points for connecting safety chains.



## THE BALL MOUNT OR TOW BAR TONGUE

The ball mount or tow bar tongue is the part of a tow bar to which a tow ball is attached. The ball mount pictured here is a heavy duty removable type.

This ball mount features a hole for the tow ball and another two for the hitch pin.

There are several benefits of a removable ball mount. For example, you can replace it with another ball mount that is configured for a different trailer, or you can replace it with other components such as a bicycle rack or a bow shackle recovery hitch.

This type of ball mount can also be removed so it doesn't go missing in a public car park, or so you don't kick it with your shin while walking behind the vehicle.



## THE HITCH PIN AND R-CLIP

The hitch pin and R-clip secure a removable ball mount or other tow bar accessory to the tow bar. You first slide the ball mount into the mount receiver on the tow bar, ensuring that the holes in both components are aligned.

The hitch pin is then inserted through the aligned holes until it protrudes through the other side. The straight section of the R-clip is then inserted through the hole at the end of the hitch pin, preventing it from falling out.

The hitch pin pictured here is a basic design and there are many others available, such as a hitch pin lock that can prevent your ball mount from being stolen.



## THE TOW BALL

The tow ball is the direct connection point between your trailer and your vehicle. Its spherical design allows your trailer to freely move left and right when turning, and up and down over bumps and crests.

The most common sized tow ball in Australia is 50mm.

The tow ball is comprised of three separate components:

- the ball, base and threaded shank
- a spring or split lock washer
- the tow ball nut (usually 32.5mm in diameter)



If you're heading off road, you'll need a different kind of coupling that allows for more travel over undulating surfaces.

## THE TRAILER COUPLING

The trailer coupling is the foremost part of a trailer that connects to the tow ball of your vehicle. For applications requiring additional braking assistance, over-ride couplings are also available.

The coupling pictured above is a fixed-type coupling that is commonly found on general use trailers.

It features:

- an adjuster screw and nut
- a handle with thumb-operated safety catch
- a cup that captures the ball
- a spring-loaded plunger that grasps the ball (not visible)



## SAFETY CHAINS

Trailer safety chains are designed to prevent a trailer from veering away from the tow vehicle in the event that the trailer should become unhitched during travel.

They should be appropriately rated for the trailer and load and are often attached to the tow bar anchor points using D-shackles.



## D-SHACKLES

D-shackles are often used to connect trailer safety chains to a towbar. They're also useful for other things like connecting a snatch-strap or tow rope when four wheel driving, or even attaching a boat anchor to a chain.

When choosing a "D" or "Bow" shackle for loads up to 3500kg, the Caravan Industry Association of Australia recommends shackles that:

- meet the requirements of AS 2741-2002
- have a minimum shackle grade of "S" or "6"
- have a working load limit (WLL) of at least 1000kg
- are at least 10mm in diameter
- are either a "Bow" or "Dee" shackle design



## THE JOCKEY WHEEL

Jockey wheels also come in a variety of types and sizes and the one pictured here is a 'swing-up' style.

This style of jockey wheel utilises a spring-loaded handle that releases a locking mechanism to allow the wheel and shaft to 'swing' up into a horizontal storage position.

The jockey wheel enables the trailer's A-frame and coupling to be raised and lowered, and also makes it easier to move the trailer around for repositioning and storage.



## THE TRAILER WIRING PLUG

The trailer wiring plug connects the trailer lights to the signal lighting of your vehicle. The plug pictured here uses a 7-pin flat connector. Depending on where in you are Australia, you may find the most common trailer plug features a small 7-pin round connector.

If that's the case and your trailer or tow bar uses a different socket, head to Belco Custom Trailers or one of the leading auto stores to buy an adapter that will convert one to the other.

Remember to check that all your lights are working before you get towing.



# 9 SIMPLE STEPS FOR CONNECTING A TRAILER TO A TOW VEHICLE

Now that you have an understanding of the main components, we can run through the steps for connecting a trailer to a tow vehicle.

1. Reverse the tow vehicle slowly toward the trailer so that the tow ball is close to the coupling. You may need a helper to guide you if you don't have a reverse camera.
2. Raise the trailer coupling by winding the handle on the jockey wheel in a clockwise direction, so the tow ball can pass under the ball cup.
3. Reverse the vehicle to position the tow ball under the cup. If the trailer is light and empty, you may be able to position the coupling over the ball by moving the trailer.
4. Lower the coupling down onto the tow ball using the handle on the jockey wheel. Ensure the coupling is seated correctly by locking the coupling handle using the safety catch.
5. Attach the safety chains from the trailer to the tow bar using the D-shackles. When using two chains, cross them over like an 'X' before connecting (as pictured). Crossing the chains like this creates a cradle that will help to 'catch' the trailer and prevent it from nose-diving into the ground should it become unhitched while driving. If this ever happens to you, try to slow down gradually to avoid the trailer smashing hard into the back of your vehicle.
6. Connect the trailer harness plug to the wiring connector on the tow bar, ensuring it is seated correctly.
7. Raise the jockey wheel off the ground and into the horizontal storage position. If you don't have a swing-up style jockey wheel, you may need to wind the wheel up fully, or remove it.
8. If fitted, remove the wheel chocks, disengage the park brake and place the catch into the "open" position.
9. Individually test the trailer lights to ensure they are working correctly (Avoid using the hazard lights to test the indicators, as it may give a false reading).



Once you're on the road, pay particular attention to anything that might indicate there's a problem. If there is, it'll be fairly obvious so it's best to get it sorted before you start mingling with traffic.

It also pays to do a quick inspection if you stop for fuel or something to eat, and again when you load or unload the trailer.

It doesn't take long to have a quick look to ensure that everything is still connected securely, and doing so can prevent a lot of heart-ache if you find something before it becomes an issue.



If you're by yourself and you can position the trailer in front of a wall, garage door or fence, you may be able to see the reflection of the trailer lights to ensure they are working.

# HOW TO DECOUPLE A TRAILER FROM A TOW VEHICLE

Now that you've safely arrived at your destination, it's time to decouple the trailer from the tow vehicle.

1. Park the trailer on solid, level ground if possible.
2. Chock the wheels and apply the park brake (if fitted)
3. Disconnect the trailer wiring plug from the tow vehicle's connector.
4. Lower (or attach) the jockey wheel and ensure it is locked into position.
5. Release and raise the coupling handle to disengage it from the ball.
6. Wind the jockey wheel to ground level and raise the coupling off the tow ball.
7. If the trailer is secure, disconnect the safety chains.
8. If parking on the roadside, always ensure the trailer is visible at night and parked in the direction of travel. This improves motorist's ability to see the reflectors at night.



If you follow this guide for connecting and disconnecting your trailer, you'll greatly reduce the risk of damage to the trailer, the load, your vehicle, yourself and others.



# HOW TO TOW A TRAILER SAFELY

Towing a trailer requires knowledge and skill. All trailers affect the performance of the towing vehicle. They affect fuel consumption, acceleration, braking ability, general control and maneuverability. Plus, there are external variants that affect towing such as, the wind, road surface, and passing vehicles, putting additional responsibilities on to the driver.

The most important thing to check is that your trailer drawbar and vehicle tow bar are level. Towing a trailer that is not level puts unnecessary stress on both your vehicle and your trailer.

We like to remind our customers to 'Keep your trailer **C.L.O.S.E**' when hooking up to your vehicle:

- Connect the trailer
- Lock the Coupling
- Overlap the Chains
- Secure the Jockey Wheel
- Electrics – plug in and test



Get into the habit of doing your own safety checks before each trip.

Make sure you check:

- ✓ All tyres are properly inflated
- ✓ The trailer's wheel-bearings, suspension and brakes work correctly
- ✓ All lights work and safety chains are properly connected
- ✓ You have sufficient oil, water, brake fluid and battery power on the towing vehicle

## YOUR TOWING VEHICLE

Before towing your trailer, you will need to consider whether your vehicle is legally up to the job. You need to ensure that your vehicle's towing capacity is high enough to tow your trailer. You will also need, towbars and couplings of a suitable type and capacity, electrical sockets for lighting, brake connections if the trailer is fitted with power or electric brakes and additionally, extra mirrors if towing a large trailer, an extra transmission oil cooler for vehicles with automatic transmission, and some vehicles may need structural reinforcement and/or special suspension and transmission options and load-distributing devices to be able to tow heavier trailers.

# HOW TO REVERSE A TRAILER

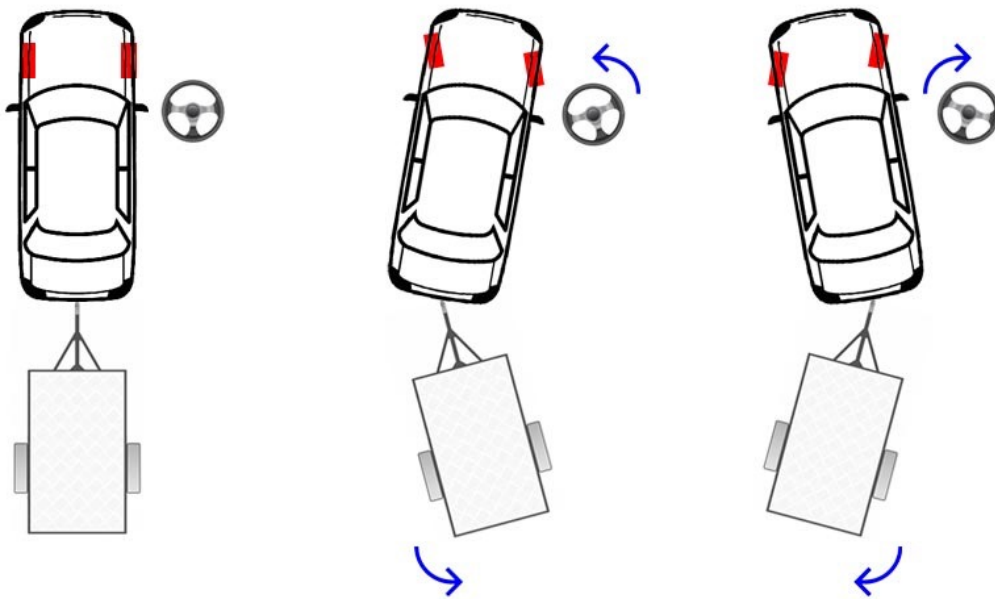
For many people, one of the scariest things about towing a trailer is having to reverse it. However, despite the fear, you are going to have to put it in to reverse at some point. Reversing a trailer takes lots of practice.

These 4 simple steps will help you to reverse your trailer

## STEP 1 – GET READY

Drive your trailer in a straight line until it's directly behind the car and pointing directly straight to where you are wanting the trailer to end up. This is the biggest and most helpful tip.

Moving your steering wheel to the left will cause the trailer to go right. Moving your steering wheel to the right will steer the trailer to the left. Sounds simple right?

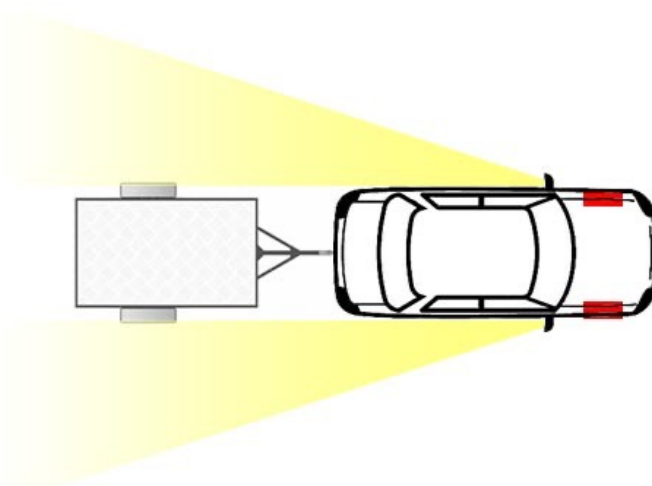


## STEP 2 – VISION

Roll down your windows and make sure you have a clear view through your side mirrors.

Use your side mirrors to keep track of your trailer's movements.

Before you start, note how much trailer appears in each mirror, that way you will know when you are straight!

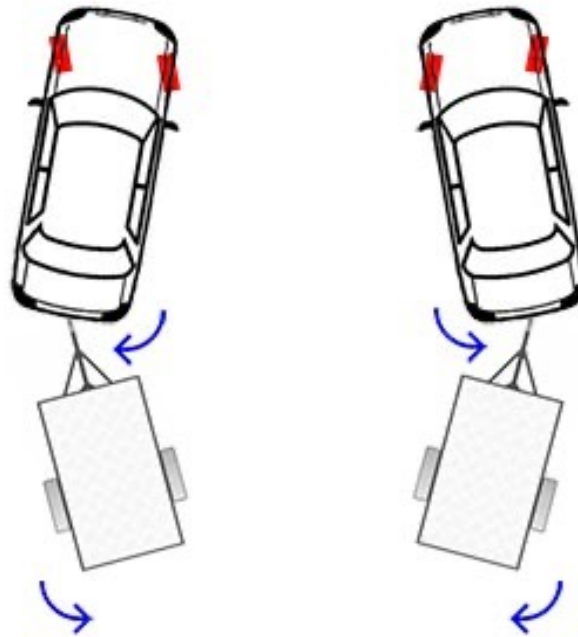


### STEP 3 – THE WHEELBARROW

If you've ever had to navigate your way around the garden with a wheelbarrow full of dirt, you'll understand the concept of this next step.

When you want to turn the wheelbarrow to the right, you have to move the handles to the left and vice versa.

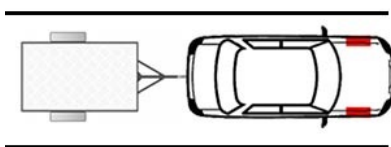
When it comes to steering your trailer, the method is the same.



### STEP 4 – TAKE YOUR TIME

Place the car into reverse. Keep the steering wheel straight and very slowly reverse. Because the trailer is unstable, it won't track directly behind the car. You will start to see more trailer appear in one of the side mirrors, and less in the other. When that happens, turn the steering wheel toward the mirror with more trailer in it. This will help correct its course.

Continue reversing slowly, making minor adjustments with the steering wheel if necessary, to get you where you need to be.

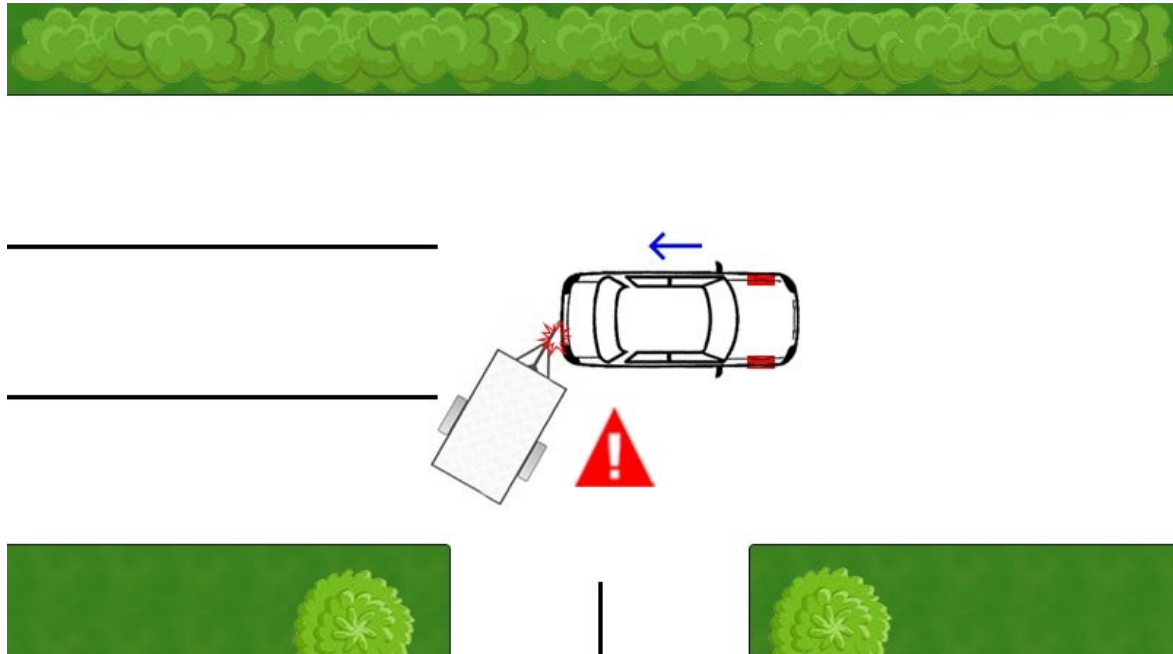


## BE CAREFUL OF THE JACK-KNIFE!

A jack-knifed trailer can cause damage to both the towing vehicle and the trailer.

To prevent this from happening, it's important when backing up to go slowly!

You can correct excessive turns by pulling forward and trying again. It's OK to try again!



## LINKS AND FURTHER INFO

[www.belcocustomtrailers.com.au/trailer-tips/how-to-hook-up-a-trailer/](http://www.belcocustomtrailers.com.au/trailer-tips/how-to-hook-up-a-trailer/)

[www.belcocustomtrailers.com.au/trailer-tips/how-to-reverse-a-trailer/](http://www.belcocustomtrailers.com.au/trailer-tips/how-to-reverse-a-trailer/)

[www.caravanindustry.com.au](http://www.caravanindustry.com.au)

Enjoy your towing!



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