Tech Torque
Towing

Pulling Your Weight
Towing can sometimes be a little daunting to those who have had little experience, especially when reversing. However, once you get to know the dimensions of your RV and the feel of it behind your vehicle, you'll be able to reverse your van with confidence without hearing any unwanted comments from the back seat driver.

The Car
The towing capacity of a vehicle refers to the maximum weight the vehicle can actually tow. Some manufacturers stipulate that additional accessories must be added to the vehicle to increase its towing capacity to its maximum i.e. additional oil coolers or maybe additional heat shielding.
Your car will specify how much it is capable of towing and the towbar should also state how much weight it can tow and how much of that can be on the ball. An automatic towing vehicle may need transmission coolers and the cooling system should be checked regularly anyway. You may also need to up-rate the rear springs on your towing vehicle for comfort and stability.

Towbar and Weight
The towbar is the link between your vehicle and your RV. The towbar itself should have clearly identified on it, its maximum towing weight rating and its maximum ball mass. If the towbar you are contemplating having fitted doesn't identify these capacities, ask why or don't buy it. There are both lightweight and heavy duty tow bars each with their own specific applications. Lightweight bars will have a maximum capacity of 1,000 kg up to the bars on larger 4WDs which can tow up to 3,500 kg.

Tip: each bar has a maximum trailer weight
and a static ball weight, both of which must be adhered to, to ensure you are legal and not voiding your insurance.

Safety Accessories
Definitions
ATM - Aggregate Trailer Mass: The total laden weight of a caravan/trailer, which includes the tow ball mass and whatever you add as payload (eg water, gas, luggage). The ATM is specified by the trailer manufacturer and must not be exceeded.

GTM
Gross Trailer Mass: The total permissible mass which includes whatever you add as payload (eg water, gas, luggage) that can be supported by the wheels of a trailer. This does not include the mass supported by the tow ball. The GTM is specified by the manufacturer and must not be exceeded.

Tare Mass
The unladen weight of the caravan/trailer.

Tow Ball Mass
The weight imposed on the rear of the tow vehicle's tow ball from a trailer ball from a caravan/trailer.

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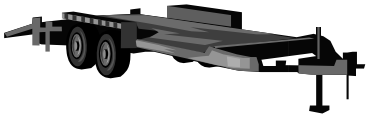
Static Ball Weight

The difference in weight between the van on and off the vehicle. It should be around 10% of the total van's weight. Weight distribution hitches, these are almost standard for larger RVs and those which cause the rear of the tow vehicle to sag. The drawbar of the caravan/trailer should be level when being towed. If your caravan/trailer's ball mass is causing the back end of the vehicle to sag, a weight distribution hitch distributes the weight of the RV over all four wheels of the tow vehicle, not just over the rear wheels. Once fitted and set up correctly, you should notice that the rear of the vehicle isn't taking all the weight i.e. the entire rig levels out.

Tip: when you wind the jockey wheel down after you have hitched the vehicle to the trailer, the back of the towing vehicle should rise, if the coupling is correctly secured. Vehicle braking and handling when towing are vastly improved and many people say that having such a hitch fitted, compared to a standard hitch, is like 'chalk and cheese'.



A general rule is that the ball mass should be about 10-15% of the total laden caravan/trailer weight. The ball mass can be measured either at a weighbridge by resting the jockey wheel on the scale, or visiting a towbar specialist who will place a ball mass scale under the coupling and take the weight off the jockey wheel.
Towbar and tow ball while using a standard 50 mm ball and coupling is perfect for most applications it does however restrict the articulation of the coupling joint. Poly-block couplings allow for much greater pitch, yawl and roll movements. This is especially important if you are going off-road as you can traverse extreme entry and exit angles.

Braking Systems

In regards to brakes, according to the Australian Design Rules, all trailers over 750 kg GTM (Irrespective of the towing capacity or unladen mass of the tow vehicle) including towable RVs must have an effective brake system fitted. All brakes must be operable from the driver's seat on the tow vehicle except for over-ride brakes. The minimum braking system required for a trailer or caravan depends on its type and weight, as well as the weight of the tow vehicle.

To check that your electric brakes are working, hitch the caravan on and drive at about 5km/h. Push the manual slide across and you should feel the caravan or trailer grab without you having to put your foot on the brake. The sensitivity of the RV's brakes can be set by the electric brake controller unit installed in the tow vehicle.

Even with effective brakes, it is important that you do not overload your caravan/trailer. As mentioned earlier, you should not exceed the maximum load specified or recommended by the manufacturer, nor should you exceed the tyre or coupling maximum capacities.
Before you embark on your self-drive holiday you should have had both your vehicle and RV checked by a specialist. Nip any potential problems in the bud now, before you're on the road. Having said that, it is still a good idea to pack a tool kit with a jack and wheel brace suitable for both your vehicle and your van, as well as at least one spare tyre for each vehicle and if you're going off-road, make that two.

Up to 750kgs GTM: No brakes are required.
751-2,000kgs GTM: There must be a braking system on the wheels of at least one axle and over-ride brakes are permitted. However, for caravans exceeding 1000kgs, independent

brakes (electric brakes are the most common) are strongly recommended. 2,001 kgs GTM: A brake system operating on all wheels is required. The system must be capable of automatically activating should the trailer become detached from the tow vehicle. Under these circumstances the brakes must remain applied for at least 15 minutes.

These 'break away' systems are compulsory on all trailers (caravans) over 2,000kgs GTM. Any fuel you are carrying must be in approved containers and secured safely to the A-frame or bumper of the caravan to avoid them rubbing the inside of the mounting straps. A stone guard can also be fitted on the A-frame to protect the bottle.

When Towing

When towing an RV with an ATM less than 2,500 kg one safety chain is sufficient. For towed caravans with an ATM greater than 2,500 kg two safety chains are required. The chain(s) must be fitted to a part of the towbar which is permanently attached to the towing vehicle.

When you tow it is recommended that you don't make any sudden movements! It may sound clichéd but it's true; brakes, accelerator and steering should all be applied gently to ensure a smooth and safe ride. You should also allow for the extra length and width of the caravan when entering and exiting traffic.

If the caravan becomes unstable, i.e. sways when towing, avoid applying the tow vehicle's brakes. If the caravan is fitted with brakes that can be operated independently, apply the manual control firmly otherwise continue at a steady speed or accelerate slightly until the swaying stops.

When towing maintain a stopping distance of at least 60 m between you and the vehicle in front of you. When towing downhill it is recommended that, you put the towing vehicle into a lower gear to avoid possibly straining and overheating the brakes.

Be aware that your acceleration capacity is reduced when towing so you need a little extra time and distance to overtake. Remember to be courteous and pull off the road if traffic behind you has built up. If you are travelling as part of a convoy, allowing 200 m between each vehicle is a great idea as it allows others to safely overtake and pass each vehicle, one at a time.

Tip: when reversing your trailer, if you want it to move to the right, push the bottom of the steering wheel to the right.

Towing an RV is easy and safe especially with an efficient and effective set-up. It does however take a little more concentration than ordinary driving so make sure you take plenty of rest breaks and always remember that your driving conditions have changed and that you are travelling with more weight, width and length behind you.

Tip: make sure the caravan's hand brake is fully released before moving off.

Regular maintenance of your vehicle and caravan is essential for safe towing. As mentioned earlier, have them checked regularly by a specialist to ensure they are in safe and roadworthy condition.

Courtesy of
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