2 Before You Tow

Definitions

Towing Capacity is the maximum weight that a vehicle is capable of towing.

Gross Vehicle Weight Rating (GVWR) is the maximum weight of the vehicle plus its passengers and cargo, and includes the portion of the trailer weight that is placed over the towing vehicle (pin weight).

Load Capacity is the weight of the driver, passengers, fuel, cargo and vehicle options, including the portion of the trailer weight that is placed over the towing vehicle.

The Towing Vehicle

Before you buy or tow an RV trailer, make sure that you have a truck that is capable of towing it. Towing a trailer puts extra demands on the truck and affects handling, braking and acceleration.

Consider the following factors when selecting a truck.

Size

Compare the size of the truck that you are going to use to tow the trailer to the size of the trailer. Even if a compact pickup truck is capable of handling the weight of an RV trailer, its narrow width compared to the wider trailer width may affect vision to the rear. Narrower trailers are available for use with compact pickup trucks. It is best to select a full-size pickup truck to tow a large recreational trailer.

Towing and weight capacity

You need to know the truck's:

- towing capacity rating,
- GVWR, and
- load capacity.

Fast Fact

Exceeding the load capacity, GVWR or towing capacity is unsafe and may void any warranty on the vehicle.

Motor Vehicle Act Regulations prohibit the operation of vehicles that are unsafely or improperly loaded, or that exceed weight ratings.

Definition

Gross Axle Weight Rating (GAWR) is the maximum weight that can be placed over an axle according to manufacturer's engineering standards.

These are usually listed in the owner's manual and on a plate or decal on the vehicle.

Make sure that the truck's towing capacity, GVWR and load capacity are rated for the load to be carried and the trailer you want to tow.

Vehicle Requirements

Most manufacturers have trailer towing packages available which include some or all of the following options. Make sure your truck is equipped for the trailer you intend to tow.

Engine

Diesel engines are often preferred over gasoline engines. Diesel engines usually make more torque, which is what is needed for towing a large trailer, and may also be more fuel-efficient.

Transmission

A heavy-duty transmission capable of coping with towing a trailer is needed.

Cooling system

The added weight of the trailer increases the engine and transmission temperatures so your truck may need a heavy-duty radiator, along with an oil cooler and transmission cooler, in order to tow a large trailer safely.

Axles and suspension

Heavy duty springs and shock absorbers are needed to handle the added weight of the trailer. Load leveling suspension will help keep sufficient weight over the steering axle by helping keep the truck level. The drive axle gear ratio also needs to be appropriate to tow a trailer. The GAWR of each axle also needs to be sufficient to handle the load.

Power brakes and power steering

These will reduce driver fatigue and make it easier to handle your RV combination.

Electrical system

A heavy duty battery and alternator may be needed to meet additional lighting loads, along with a special wiring harness to connect to the trailer lights. Recreational trailers usually have electrically-operated brakes, so a special controller is needed in the pickup truck to operate the trailer brakes. Some new pickup trucks are available with an integrated trailer brake controller unit but with others, a special controller needs to be installed.

Driving Tip

Make sure the tires on both the truck and the trailer are rated for the type and weight of the vehicle including its load.

Put proper truck tires on the truck and trailer tires on the trailer.

Wheels and tires

Manufacturers put a load rating on their tires. Make sure that the maximum load rating stamped on the tire is sufficient for the load that it will carry. Do not allow the weight of your vehicle and load to exceed the rating for any individual tire or any group of tires on a single axle.

Check and adjust tire pressure when tires are cool. Use a tire pressure gauge. If a tire has the correct pressure when it is cool, it will generate a normal amount of heat during use. As this heat builds up it will cause the pressure within the tire to increase a desired amount, which will reduce the amount of wall flexing. When wall flexing is kept under control, heat build up will also be kept under control.

Tire wear

Operating your vehicle with improperly inflated tires will cause your tires to wear out more quickly. It may also reduce the amount of steering control you have.

Fast Fact

When the amount of contact between the tire and the road surface is reduced, steering control is also reduced.

Overinflating a tire causes excess wear in the centre part of its tread. An overinflated tire has less tread surface in contact with the road surface.

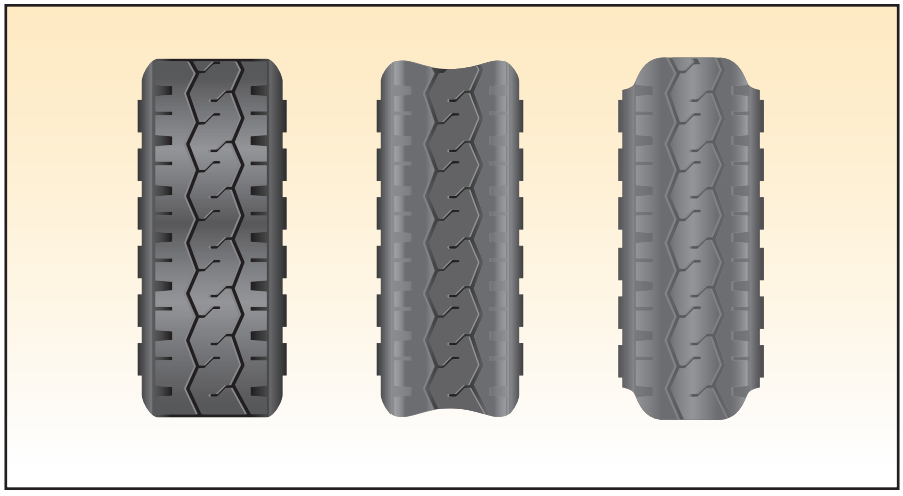
Less contact between your tire and the road means less traction.

Underinflating a tire causes excess wear on the outer edges of its tread. An underinflated tire builds heat more quickly which may result in a tire blowout. In wet conditions, an underinflated tire will not squeeze the water out from between the tire and the road as well as a properly inflated tire. A tire that is underinflated has a greater chance of riding on a film of water (hydroplaning).

Fast Fact

Rust streaks on the rim may indicate a loose lug nut or cracks in the rim.

Some new vehicles are equipped with a Tire Pressure Monitoring System (TPMS) to warn the driver if tire pressure is getting low. However, TPMS does not replace the need to periodically check and adjust tire pressure.



Various types of tire wear patterns.

Ensure the tread depth on your tires conforms to the standards set out in the Motor Vehicle Act Regulations.

Tire problems

Here are some problems to look for on most tires:

- too much or too little air pressure – use a gauge to ensure correct pressure
- tire wear – check for tread depth and tread recap separation
- cuts, abrasions, exploding cord, sidewall separation or bulges or cracks
- tires in contact with each other or tires in contact with any part of the vehicle
- cracked or leaking valve stems
- a mixture of different sizes or radial and bias-ply tires being used on the same axle – these can be mixed on the same vehicle but not on the same axle (not a recommended practice)

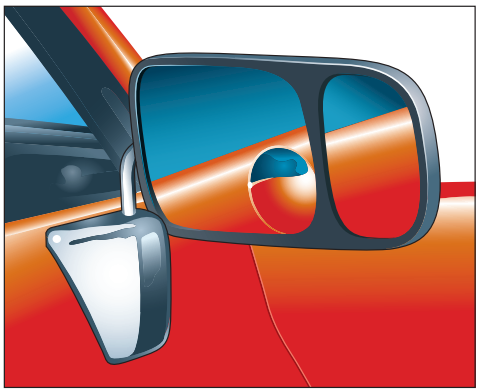
Note: If you change a tire, stop after a short while and check to be certain the wheel nuts are tight.

Mirrors

You may need to install wide-angle or accessory extended mirrors in order to get a good view around the trailer you will be towing. Your side mirrors should be adjusted to show the trailer in the first three centimetres (one inch) of the mirror with the rest reserved to show the space behind and beside your vehicles. Your mirrors should allow you to see at least 200 metres behind your vehicle. It is a good idea to add a convex mirror below each outside mirror. This will help you to see the tracking of your trailer wheels and allow you to see vehicles that may be in your blind spots, especially on your right hand side.

Driving Tip

Remember that with convex mirrors, objects may be closer than they appear. Don't rely on convex mirrors when judging the distance between your vehicle and traffic behind you.



The Trailer to be Towed

You need to know the Gross Vehicle Weight of the trailer including its load, and how much of that weight is on the trailer hitch, to calculate if the truck is capable of towing the trailer.

There is usually a plate or decal on the trailer indicating the GVWR. This is the manufacturer's recommended maximum weight of the trailer and its load. Most RVs carry a lot of water for washing, cooking and sanitation, along with furniture, food and other supplies. All of this weight needs to be included when determining if the actual trailer weight is within its GVWR, and if the truck has the towing capacity required for the trailer.

Fast Fact

The pin weight or hitch weight should be 15 to 25 per cent of the fifth wheel trailer's actual loaded weight.

You also need to determine how much of this weight will be on the truck. This is called the pin weight or hitch weight. Too little pin weight or hitch weight can cause the trailer to sway. Too much weight can cause steering problems, as there may not be enough weight on the truck's front axle for proper control. You can measure these weights at a public weigh scale.

The trailer connection

A ball and hitch or fifth wheel is used to connect the trailer to the towing vehicle.

Smaller lighter trailers usually use a ball and hitch connection; larger heavier ones use a fifth wheel.

Fast Fact

Your fifth wheel should be rated to tow 20 per cent more than your trailer's weight. For example, if your fifth wheel RV weighs 5,000 kg, select a fifth wheel that is rated for at least 6,000 kg.

Fifth wheel assembly

The basic components of the fifth wheel assembly mounted in the pickup truck bed are:

- fifth wheel plate – This includes the hitch plate, plate jaws, and handle.
- locking device – This holds the plate jaws closed.
- side rails – These support the fifth wheel plate.

The basic components of the fifth wheel assembly on the trailer are:

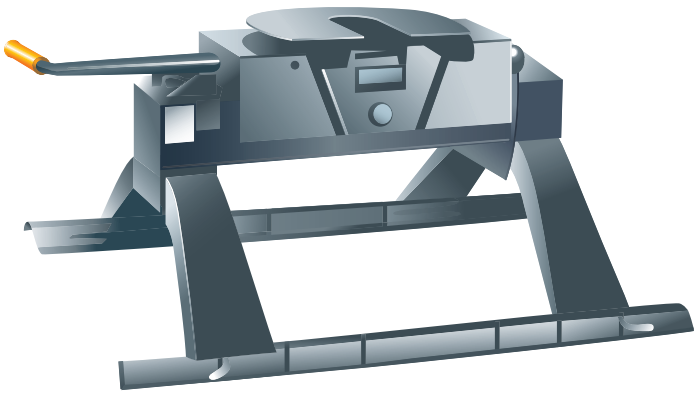
- kingpin – This is the pin that attaches to the fifth wheel hitch on the pickup truck.
- pin box – This is attached to the bottom front section of the trailer frame; the kingpin is attached to the bottom of the pin box.

Driving Tip

When mounting the fifth wheel, make sure it is securely fastened to the truck's frame, not just to the pickup bed, or there is a risk that the fifth wheel may come loose from the truck. If your truck has a bed liner, this will need to be removed in the area where the fifth wheel is placed.

Mounting the fifth wheel

Consult a professional to help select and install the right fifth wheel assembly for your combination. Make sure there is clearance between the back of the truck cab and the front of the trailer, between the bottom of the trailer and the pickup box, and between trailer sides and the pickup box. This leaves space for the trailer to turn without striking the truck, and for movement between the truck and trailer when going over bumps or starting to go up or down steep hills.



Fast Fact

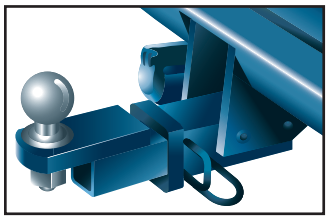
The fifth wheel should be mounted over, or ahead of, the rear axle.

It should never be mounted behind the rear axle.

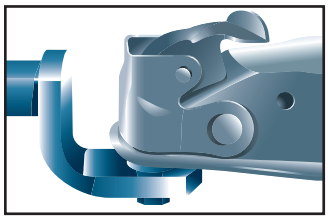
A fifth wheel hitch should never be mounted behind the rear axle of the truck, which would reduce the percentage of weight over the truck's front axle, resulting in reduced steering control. You could cause damage to both truck and trailer as well as create a hazard for other road users.

Ball and hitch connection

The basic components of a ball and hitch connection are:



- the ball hook mounted on the truck, and



- the hitch on the trailer to connect to the ball on the truck.

Fast Fact

When fastening the chains on a ball and hitch connection, cross the chains over each other, under the ball and hitch.

Safety chains or cables are also required to connect the trailer to the truck in case of hitch failure.

A load equalizing hitch assembly is often used with heavier trailers.

There are various classes of hitches, each designed to handle a certain range of weight.

Driving Tip

Consult a professional to help select and install the trailer brake connections and controls for your RV combination.

Mounting a ball and hitch trailer connection

Consult a professional to help select and install the right type of assembly for your combination. Make sure there is sufficient height to clear bumps in the road and areas that you will back the unit into.

The added weight of the trailer may load down the rear of the truck, reducing the percentage of weight over the truck's front axle, resulting in reduced steering control. Load leveling hitches can help to compensate for the added weight of the trailer.

Driving Tip

An emergency breakaway device is meant for emergency use only. DO NOT use it as a parking brake.

Trailer brakes and brake controls

Most RV trailers have either electric brakes or hydraulic surge brakes. Surge brakes are not allowed on trailers over 2,800 kg GVWR. As well, recreational trailers have an emergency breakaway device that will activate the trailer brakes if the trailer comes adrift from the truck.

While some new trucks are equipped with an integrated trailer brake controller, in most cases special controls need to be added so you can activate the trailer brakes with the truck's brakes.

Most electric brake controllers are dash-mounted and have a manual override button to allow the trailer brakes to be operated without operating the tow vehicle braking system if needed.

Follow the manufacturer's instructions for use of the brake controller including adjusting the controller for the weight of your truck and RV trailer and for various driving conditions, such as driving in the city or driving on highways. As well, follow the manufacturer's instructions for inspecting and testing trailer brake response as part of a pre-trip inspection.

Fast Fact

If your truck has an anti-lock braking system (ABS), only certain types of brake controllers can be used. They must be carefully installed to ensure that the ABS system will still function properly.

Putting Them Together

You may have a pickup truck with a towing capacity of 5,500 kg and a load capacity of 1,500 kg, and a fifth wheel RV weighing 5,000 kg fully loaded with a pin weight of 750 kg.

In this example, the gross weight of the trailer is within the towing capacity of the truck, and the pin weight is within the truck's 1,500 kg load capacity.

However, after you subtract the pin weight from the truck's load capacity, only 750 kg of load capacity remains to accommodate the total weight of all persons, fuel and cargo in the truck. Otherwise, the truck's load capacity and GVWR will be exceeded.

Driving Tip

The weight of the trailer may load down the rear of the truck, resulting in the headlights aiming higher than they did before. Check the headlight aim when you have the trailer attached to the truck, and adjust as needed.