

# Recreational Vehicle Towing Guide



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## **DISCLAIMER**

This guide applies to Alberta only; other province's regulations may differ.

This guide applies solely to the non-commercial operation of trailers. Trailer combinations operated for commercial purposes are governed by different regulations and standards.

## **HOW TO DETERMINE GROSS VEHICLE WEIGHT RATINGS FOR RECREATIONAL VEHICLES**

If hauling a camper unit, towing a trailer or fifth wheel, the following steps will help you in determining what your vehicle is capable of towing or hauling. This guide is intended to assist you. Should conflict arise please refer to the Traffic Safety Act and its regulations which can be viewed online at the Queen's Printer [www.qp.gov.ab.ca](http://www.qp.gov.ab.ca)

### Terms and Definitions

“*Gross Axle Weight Rating (GAWR)*”; the GAWR refers to the maximum weight an axle is designed to carry. The GAWR is a safety standard used to prevent overloading.

Manufacturers set the Gross Axle Weight Rating based on requirements set by Transport Canada.

“*Gross Vehicle Weight Rating (GVWR)*”; the GVWR refers to the maximum weight a vehicle is designed to carry including the net weight of the vehicle with accessories, plus the weight of passengers, fuels, and cargo. The GVWR is a safety standard used to prevent overloading. Manufacturers set the GVWR based on requirements set by Transport Canada. The weight on an axle can vary depending on where items are stored.

“*Gross Combination Weight Rating (GCWR)*”; the GCWR, sometimes expressed as the maximum trailer towing capacity, may change with different engine, transmission, and differential combinations, and is normally found in the owner's manual. The GCWR is the maximum weight of the truck and trailer combined. The maximum trailer towing capacity is the maximum weight of a trailer which may be towed when your truck is empty (no payload), any load carried in the truck will reduce its maximum trailer towing capacity.

“*Gross Vehicle Weight (GVW)*” is the number of kilograms derived by adding the weights on all the axles of your loaded vehicle.

“*Net Weight*” is the weight of a vehicle that is empty except for the maximum capacity of fuel, oil, and coolant necessary for its operation. (ALSO referred to as “CURB Weight”) (MVAR)

### Conversion

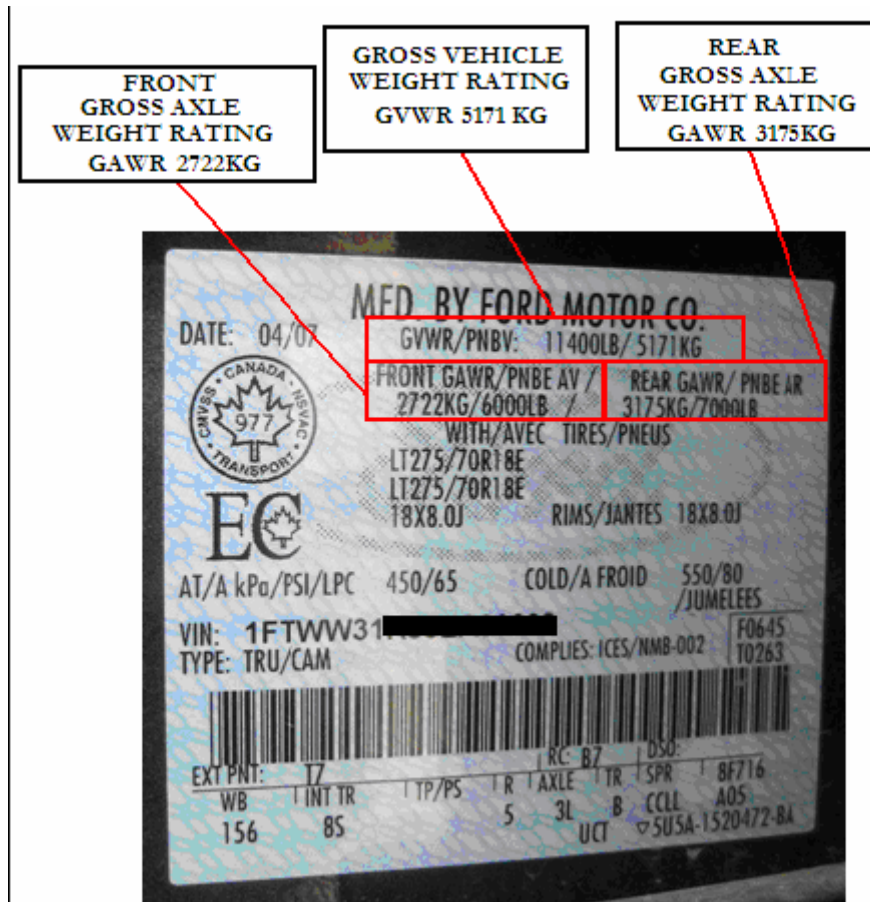
To convert: Multiply kilogram by 2.2  
Divide pounds by 2.2

### Net (CURB) Weight of the Vehicle Used to Tow or Haul

- Weigh the front axle and rear axle of the vehicle
- Add front and rear axle weight to achieve Net Vehicle Weight
  - For example:
    - Front axle weight equals – 1200 kg
    - Rear axle weight equals – 1400 kg
    - Total Net Vehicle Weight equals – 2600 kg

## Manufactured Gross Vehicle Weight Rating

- Refer to the manufacturer's Gross Vehicle Weight Rating (located on drivers side door)
- Refer to Diagram:



- In this case the GVWR is 5171 kg, the front GAWR is 2722 kg and the rear GAWR is 3175
- Note:
  - The front and rear GAWR's added together will always be greater than the GVWR
  - Alberta Transportation recommends that you do not exceed any of the three ratings

## Vehicle Payload

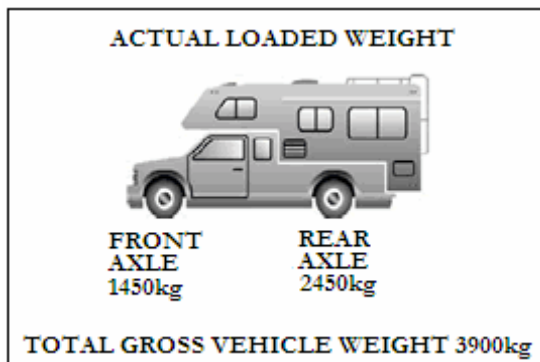
- once the Net Weight and GVWR has been determined, subtract the Net Vehicle Weight from the GVWR
  - For example:
    - GVWR equals – 5171 kg
    - Net Weight equals – 2600 kg
    - Vehicle Payload equals 2571 kg

## Trailer Gross Vehicle Weight Rating (GVWR)

- The previous steps also apply to recreational trailers when determining its carrying capacity
- Locate the manufacturer's GVWR label (located near the front of the trailer, accompanied by the VIN number)
- Subtract the net trailer weight from the GVWR; this will give you the actual carrying capacity of the recreational trailer
- Alberta Transportation recommends that this weight not be exceeded.

## **EXAMPLES**

### Truck and Camper Unit



### Manufacturer's Ratings

- GVWR = 2800 kg
- Front GAWR = 1600 kg
- Rear GAWR = 1400 kg

### Vehicle Net Weight (without camper unit)

- Net Weight = 1900 kg
- Front Axle = 1200 kg
- Rear Axle = 700 kg

### Gross Vehicle Weight (loaded)

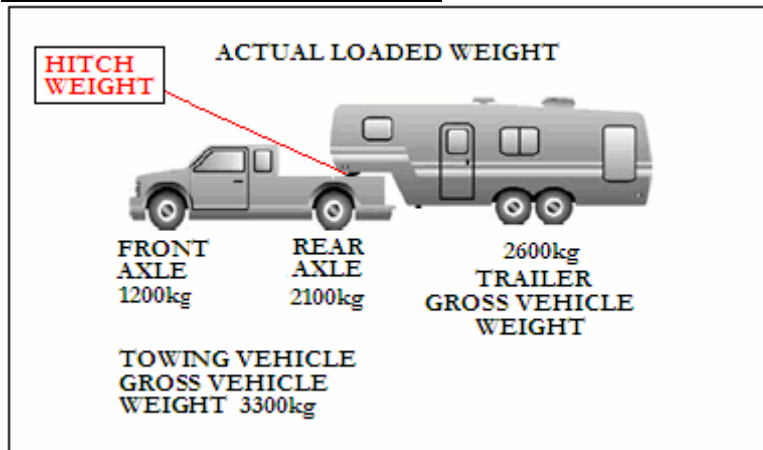
- GVW = 3900 kg
- Front Axle Weight = 1450 kg
- Rear Axle Weight = 2450 kg

### Vehicle Payload

- $GVWR\ 2800\ kg - Net\ Weight\ 1900\ kg = Payload\ 900\ kg$

**THIS UNIT HAS EXCEEDED THE GVWR BY 1100 kg AND THE REAR GAWR BY 1050 kg**

## Truck Towing Recreational Trailer



### Manufacturer's Ratings

- GVWR = 3800 kg
- Front GAWR = 1600 kg
- Rear GAWR = 2400 kg

### Vehicle Net Weight (without trailer)

- Net Weight = 2100 kg
- Front Axle = 1200 kg
- Rear Axle = 900

### Gross Vehicle Weight of Truck (loaded)

- GVW = 3300 kg
- Front Axle Weight = 1200 kg
- Rear Axle Weight = 2100 kg

### Vehicle Payload

- GVWR 3800kg – Net Weight 2100 kg = Payload 1700 kg

**THIS UNIT HAS NOT EXCEEDED THE MANUFACTURER'S GVWR OR THE GAWR**

## **CALCULATE YOUR VEHICLES PAYLOAD**

### Manufacturer's Rating (Door Post)

- GVWR =
- Front GAWR =
- Rear GAWR =

### Vehicle Net Weight (Empty)

- Net Weight
- Front Axle
- Rear Axle

### Gross Vehicle Weight (loaded)

- GVW
- Front Axle Weight
- Rear Axle Weight

### Vehicle Payload

- $GVWR - \text{Net Weight} = \text{Payload}$

### \*To convert:

- Multiply kg by 2.2
- Divide lbs by 2.2

## **KEY FACTORS TO REMEMBER**

- You should not exceed manufacturer's GVWR
- You should not exceed manufacturer's GAWR
- Adding components such as air bags or overload springs does not allow these rating to be increased or exceeded
- When coupled to a trailer unit or fifth wheel remember each unit will transfer weight to the towing unit (hitch weight). Take this into consideration when determining the GVWR and GAWR.
- Make sure fifth wheel mounts and ball receiver hitches are rated accordingly and do not to exceed the manufacturers ratings
- Ensure tire pressure is maintained according to manufacturers specifications
- You should not exceed the GCWR. Check your owner's manual for the GCWR (towing capabilities). If you tow a load that is too heavy for your vehicle, you create a potential safety risk for yourself and others on the road. You may also void warranties.

## **Tires**

- The original manufacturer of your vehicle and trailer will designate acceptable tire sizes and type; any replacement tires should meet these requirements. A couple requirements that apply to tires to be aware of:
  - On-highway vehicles must use tires that are designed for on-highway use
  - Tires have a rated carrying capacity, the sum of the total rated capacity for the tires on an axle must be greater than the GAWR
  - Alberta Transportation recommends that all tires that share an axle be the same

## **BRAKING REQUIREMENTS FOR TRAILERS**

### When are Brakes Required on Trailers

- If the trailer has a gross laden weight more than 910 kg
- If the trailer weighs 50 per cent or more of the towing vehicle

### Types of Brakes Required

- The service brakes on a motor vehicle or on a combination of vehicles are adequate if they can bring the motor vehicle or combination to a stop
  - if the motor vehicle or combination is moving at 30 kilometres per hour and loaded to capacity when the brakes are applied,
  - on a level surface free from loose materials and consisting of dry paving of asphalt or concrete, and
  - within 10 metres from the point at which the brakes are applied
- The emergency or parking brake on a motor vehicle or on a combination of vehicles is adequate if it can bring the motor vehicle or combination to a stop
  - if the motor vehicle or combination is moving at 30 kilometres per hour and loaded to capacity when the brake is applied,
  - on a level surface free from loose materials and consisting of dry paving of asphalt or concrete, and
  - within 16 metres from the point at which the brake is applied
- The brakes on a vehicle that tows a trailer are adequate if they are capable of controlling the safe movement of the towing unit
- The emergency brake or parking brake system of a motor vehicle or combination of vehicles must hold the motor vehicle or combination at a stop if they are loaded to capacity and facing up or down a 20 per cent grade

### Trailer Breakaway Device

- A breakaway device is not specifically required in Alberta legislation. The owner must maintain the vehicle combination in a safe operating condition.
- A person shall not drive or operate a vehicle that is towing a trailer unless the trailer is attached to the towing unit by two separate means of attachment designed so that the failure of one attachment does not permit the trailer to separate from the towing unit
- Each means of attachment must have sufficient strength to pull all the weight towed by the towing unit



- The secondary means of attachment must be capable of
  - towing the trailer so that the trailer substantially follows in the track of the towing vehicle, and
  - preventing the drawbar of the trailer or the primary means of attachment from touching the road surface
- The lead trailer in a combination is the towing unit for the second trailer
- A fifth wheel trailer does not require a second means of attachment

## EXAMPLES

In these scenarios the trailer may or may not be required to have brakes but the brakes for the vehicle combination are still required to adequately stop the combination (see types of brakes required section, pg. 8).

Trailer Exceeds 910 kg and Weighs More Than 50% of the Towing Vehicle Weight



**BRAKES ARE REQUIRED ON TRAILER**

Trailer Does Not Exceed 910 kg and Weighs Less Than 50% of Towing Vehicle Weight and Consists of a Single Axle



**BRAKES ARE NOT REQUIRED ON TRAILER**

Trailer weighs more than 910 kg and is Less Than 50% of Towing Vehicle Weight



**BRAKES ARE NOT REQUIRED ON TRAILER**

## TOWING NUMEROUS TRAILERS

- Two trailers can only be towed if the lead trailer is a fifth wheel trailer with at least two axles in tandem.
- The length from the front of the towing vehicle to the rear of the last trailer can not exceed 20 metres
- The hitch fastening the second trailer to the first trailer must be fastened to the frame of the first trailer
- The longer trailer must be the first trailer



**NOT ALLOWED**

Must be a  
5<sup>th</sup> wheel



**ALLOWED**