

Tow and load

Page

- 10-2 Towing
- 10-3 Towing equipment
- 10-4 Loading the car
- 10-5 Attaching a trailer
- 10-6 Towing and loading equipment
- 10-6 Superlift shock absorbers
- 10-6 Equaliser hitch
- 10-7 Towing precautions
- 10-8 Kerb weight
- 10-8 Running-in when towing
- 10-8 Car maintenance when towing
- 10-9 Wagon cargo barrier

TOWING

Your car is designed primarily as a passenger car, so handling, durability and economy may be affected by towing a caravan or trailer.

Refer to the chart on the facing page to see which equipment is specified as essential and which equipment is recommended for the weight you are towing. Your Holden Dealer will help supply and install towing equipment to suit your requirements. Note that regulations covering the maximum towing capacity varies from State to State.

Never exceed the loads given for the towing equipment fitted to your car. For your safety and your car's durability, all essential equipment must be fitted. Otherwise you may void your New Vehicle Warranty, to the extent that Holden considers the overloading or missing equipment to have affected the specifications or quality of your car.

Driving speed

When towing up to 1,600 kg maximum driving speed is as per the State's Law.

When towing between 1,600 kg and 2,100 kg maximum driving speed must not exceed 80 km/h.

CAUTION: Holden towing equipment is recommended where it is available. Where it is not available, no recommendation is made as to the make of equipment which should be used. Holden will not accept liability for defects occurring in towing equipment not marketed by Holden or for defects in the car arising from the use of such equipment. The use of such equipment may void your New Vehicle Warranty, to the extent that Holden considers the non-recommended equipment affects the specifications or quality of your Holden vehicle. It is inadvisable to mix and match different brands of towing equipment, as equipment is usually designed as an integrated package.

TOWING EQUIPMENT

Up to 1200 kg	Essential	Holden 1,200 kg rated tow bar
	Essential	Holden trailer wiring harness
	Recommended	A load distribution hitch is recommended if towing a single axle trailer /caravan that weighs more than 750kg when loaded.
	Recommended	Trailer brakes, if required by your State's Law
Between 1200 kg and 1600 kg	Essential	Holden 1,600 kg rated tow bar
	Essential	Holden trailer wiring harness
	Recommended	A load distribution hitch is recommended when towing a single axle trailer/caravan.
	Essential	Electric or hydraulic brakes on the trailer /caravan
	Essential	Automatic transmission essential if car has a V6 engine.
	Essential	Holden power steering oil cooler essential if car has a V6 engine (fitted as standard equipment with V8 engines).
	Essential	Heat shields for the rear muffler and the centre bearing
Between 1600 kg and 2100 kg	Essential	Holden 2,100 kg rating tow bar
	Essential	Holden trailer wiring harness
	Recommended	Adjustable load distribution hitch
	Essential	Electric or hydraulic brakes on the trailer/caravan
	Essential	Automatic transmission
	Essential	Holden power steering oil cooler essential if car has a V6 engine (fitted as standard equipment with V8 engines).
	Essential	Heat shields for the rear muffler and the centre bearing
	Essential	Superlift shock absorbers

LOADING THE CAR

Overloading is a safety hazard and could also shorten the life of your car. The recommended carrying capacity of your car is, typically, as shown.

SEDAN - 5 occupants plus 68 kg luggage (408 kg load in total).

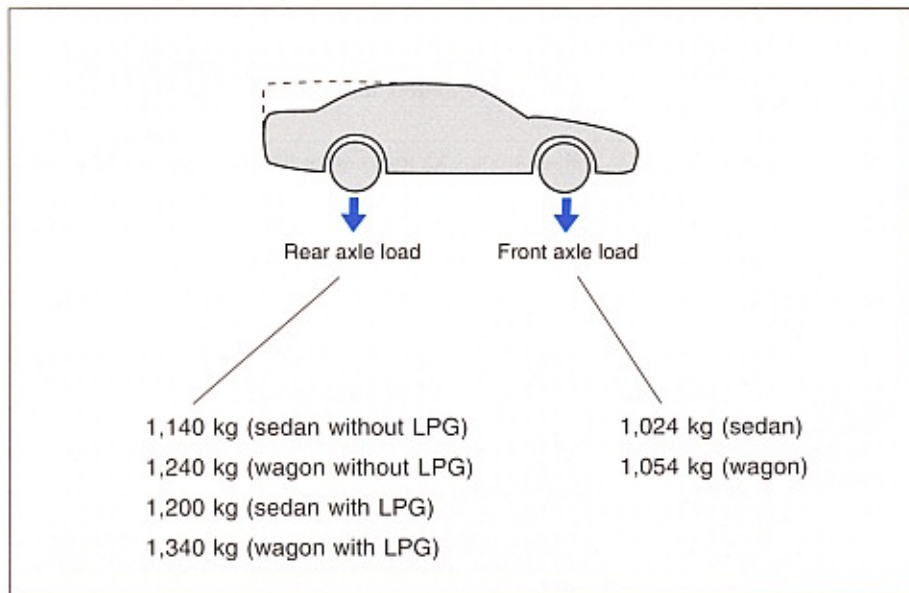
WAGON - 5 occupants plus 140 kg luggage (480 kg load in total)

However, do not exceed the maximum axle loads shown below in the diagram, considering the weight of any fitted Holden approved accessories.

If unsure, the car should be weighed at a weighbridge. Remember that weight on a roof rack must be included in calculating the payload.

Note that due to lack of room, the 3rd row child seat (sold as a Holden accessory) must not be fitted if the wagon is fitted with LPG.

Maximum front and rear axle loads

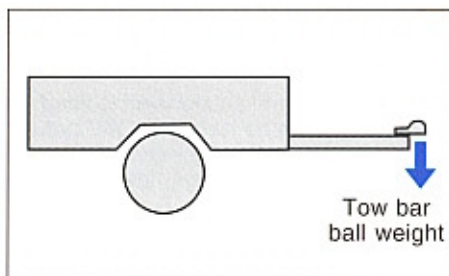


ATTACHING A TRAILER

Recommended procedure for attaching a trailer

If a caravan or trailer is hitched to the car it places a weight on the tow bar, this weight is called the "tow bar ball weight".

It is recommended that the tow bar ball weight should be 10% of the packed trailer/caravan weight. This can be adjusted by correctly packing the contents of the trailer/caravan, i.e., by moving items forwards or backwards within the trailer/caravan so as to change the balance of the trailer/caravan. If the tow bar ball weight is too light or too heavy, the steering and handling of the car will be affected.



All towing

1. Axle loads must not be exceeded when the tow bar ball weight is included (refer previous page for maximum axle loads). If maximum axle loads are exceeded, sufficient weight should be removed from the rear of the car and transferred onto the trailer.
2. Ensure the weight of the packed trailer is not greater than the towing capacity of your Holden approved tow bar package.
3. Connect the trailer to the car.

When towing over 1,200 kg

4. Adjust superlift shock absorbers, if fitted (refer page 10-3 for requirement of superlift shock absorbers). Note that if towing at maximum trailer capacity, apply the maximum of 300 kPa pressure.
5. Adjust load distribution hitch so that the car and trailer are level with the ground.

Example:

- Wagon loaded with 5 occupants (with an average weight of 68 kg each) and 140 kg of luggage in the rear load area. This is the maximum load allowable.
- Trailer then hitched up, weighing 1,000 kg when loaded. The trailer has been correctly balanced so as to provide 10% of its weight on the tow bar. This translates to:

$$\begin{array}{ll} 140 \text{ kg} & \text{(existing luggage)} \\ + 100 \text{ kg} & \text{(10\% of trailer weight)} \\ = 240 \text{ kg} & \text{loaded on the wagon} \end{array}$$

The wagon is now overloaded at the rear.

- Therefore, move 120 kg of luggage into the trailer. This now translates to:

$$\begin{array}{ll} 20 \text{ kg} & \text{(luggage)} \\ + 112 \text{ kg} & \text{(10\% of the trailer, which now weighs 1,120 kg)} \\ = 132 \text{ kg} & \text{loaded on the wagon} \end{array}$$

The wagon and trailer are now correctly loaded, as this weight is under 140 kg.

TOWING and LOADING EQUIPMENT

Distribution hitch

A distribution hitch is recommended when towing more than 750 kg.

A distribution hitch is designed to raise the rear of the car and transfer a portion of the load to the front wheels when the loaded trailer/caravan is hitched.

The loaded vehicle and trailer should be level to the ground.

If electric level ride suspension is fitted: When hitching a trailer/caravan it is important that the ignition be switched OFF before hitching the trailer/caravan and loading the car. The ignition must remain OFF until after any equalizing equipment is correctly adjusted, so that the level ride suspension moves the height afterwards.

Booster springs and superlift shock absorbers

The use of booster springs or superlift shock absorbers DOES NOT increase the carrying capacity of the car. Maximum loads for your car must NOT be exceeded, otherwise overloading of axle parts may shorten the life of your car.

Superlift shock absorbers do, however, allow adjustment of the car's height, so that you have improved handling and better ground clearance in rough terrain when the car is heavily loaded.

CAUTION:

Do not drive with superlift shock absorbers inflated when the car is not loaded, as car handling is affected. The car should be at normal level.

Always ensure that superlift air pressures are within the minimum and maximum pressures shown on the tag attached to the air pressure valve. When towing 2,100 kg the superlift shock absorbers should be adjusted to 300 kPa.

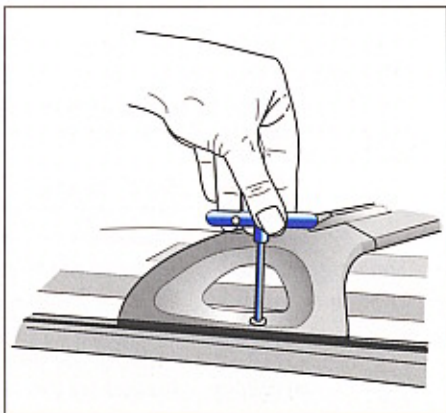
Roof rack loads

Roof rack loads alter the handling of a car, due to a change in the centre of gravity. When carrying loads on the roof rack, avoid abrupt swerving or sharp steering. The load, which should not exceed 50 kg for sedans or 80 kg for wagons, should be evenly distributed.

The crossbars on the wagon roof rack can be adjusted using a special key, provided in the glovebox of your new car.

To adjust, loosen the screws at both ends of the crossbar with the key. Move the crossbar backwards or forwards as required, then tighten the screws with the key.

Remember that weight on a roof rack must be included when calculating the payload.



TOWING PRECAUTIONS

- When towing, your tyres should be inflated to the maximum recommended pressure (refer Chapter 7 for the tyre placard location).
- Ensure that a load distribution hitch is correctly distributing the ball load and that superlift shock absorbers are adjusted correctly, refer page 10-5.
- Tighten the tow ball retaining nut to 175 Nm and check the torque frequently.
- Your car will handle differently when towing. It's a good idea to make a couple of short distance trips with the caravan or trailer before you set off on the big one.
- Have your car correctly maintained and serviced.
- Have your caravan or trailer maintained and serviced, with particular attention given to condition of brakes, tyres, suspension, wheel bearings, towing coupling and lighting.
- You should have an extended-arm mirror on both sides of your car.
- Headlights may need re-aiming after the loaded caravan has been hitched, particularly if a load distribution hitch is not used.
- Use a lower gear, rather than your brakes, when descending steep hills.
- If your caravan or trailer moves off the road behind you, allow the left wheels of your car to move off as well. When it is safe to do so, carefully steer back on to the road. A sudden attempt to steer back could make you swerve dangerously.
- *Automatic transmission:* To stop the transmission constantly changing between 3rd and 4th gear, it is recommended that the "Power" mode be selected when towing. Refer page 4-4 for selection of "Power" or "Economy" modes.
- Do not use axle-mounted hitches. They can cause damage to the axle housing, wheel bearings, wheels and tyres.
- Ensure that the tow bar does not obscure the rear licence plate. If necessary, remove the towbar tongue when it is not required for towing.
- If a towbar is removed, be certain to have any mounting holes in the underbody properly sealed to prevent the possible entry of exhaust fumes, dust and water.

TRAILER BRAKES:

Trailer brakes are recommended on trailers weighing 500 kg when loaded. Some States require trailer brakes on loads less than 500 kg and you should check your State's requirements.

The brakes on the trailer or caravan must be designed to cope with the braking requirements of that trailer or caravan under all towing conditions, without adversely affecting the brakes on the car.

Different types of brake signalling devices are available for trailers, such as electric, overrun or hydraulic signalling. If a hydraulic signalling type is used, it must not displace more than 0.21 cc of fluid during braking. It must not be fitted to the front brake system, only to the rear brake system. While no recommendation is made by Holden with regard to the manufacturer of the brake system, the specifications issued by PBR indicate that their unit meets Holden requirements.

TOWING cont.**Running-in when towing**

It is recommended that you drive your new car for at least 1,500 km before towing. If you must tow before this do not exceed 80 km/h. The same applies if you have a new or reconditioned engine, transmission or rear axle.

Car maintenance

More frequent car maintenance is required when using your car to pull a trailer or caravan, refer page 12-4. For example, if an automatic transmission is fitted, the transmission fluid should be changed every 12 months or 20,000 km.

Kerb weight

Some States specify that the load being towed must not exceed the weight of the car. The kerb weights provided below, are for a standard unloaded car, without options but with a full tank of fuel.

	3800 (V6) engine	Gen III (V8) engine
Executive sedan	1,512 kg	1,572 kg
Executive wagon	1,572 kg	1,632 kg
Berlina sedan	1,555 kg	1,602 kg
Berlina wagon	1,623 kg	1,671 kg
Calais	1,601 kg	1,648 kg

WAGON CARGO BARRIER (if fitted)

Your new cargo barrier has been designed to fit at two positions. It can be fitted behind the front seats when the rear seat is folded down, or behind the rear seats when they are upright.

Behind upright rear seat

For this position, the extension straps and folding centre leg are not required. Ensure all are folded back and tied away securely.

With the cargo barrier's compliance plate facing to the rear, tilt the cargo barrier back and lift into the wagon load area.

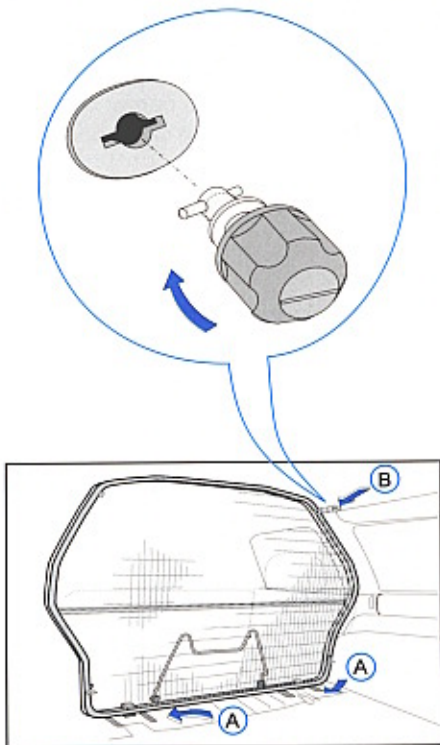
Insert the two cargo barrier base hooks into the slots in the wagon floor, directly behind the rear seats "A".

Tilt the top of the cargo barrier up towards the roof and align the top attachments with roof rear attaching holes "B".

Push the attaching pins of the cargo barrier firmly into the roof and turn 90 degrees to lock.

Ensure that all attachments, top and bottom, are firmly secured.

When moving or removing the cargo barrier reverse this fitting procedure.

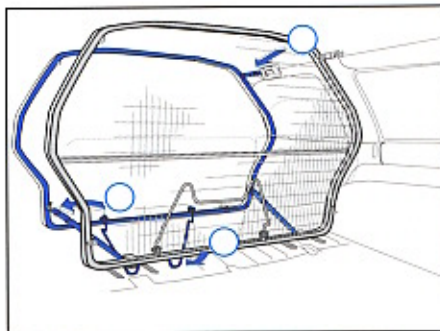
**Behind front seats
- with rear seat folded**

Fold down the rear seat, refer Chapter 3.

Remove the restraining tie from the centre leg of the cargo barrier and rotate the leg to the "down" position "A".

With the cargo barrier's compliance plate facing to the rear, tilt the cargo barrier back and lift into the wagon load area.

Lift the cargo barrier behind the front seats, with the centre leg resting on top of the



WAGON CARGO BARRIER (if fitted) cont.

transmission tunnel.

Tilt the top of the cargo barrier up towards the roof and align the top attachments with roof front mounting locations "B".

Push the attaching pins of the cargo barrier firmly into the roof and turn 90 degrees to lock into position, refer illustration on previous page.

Remove restraining ties on the extension straps. Swing the extension straps forward and align with the cargo barrier extension pins "C".

Pull up extension pins on cargo barrier, secure the ends of the extension straps under the pins, release the pins. Ensure pins completely lock back down into place.

Ensure that all attachments are secured firmly.

When moving or removing the cargo barrier reverse this fitting procedure.

Carrying heavy loads in the rear cargo area

VT series wagons are equipped with anchorages for fitting a cargo barrier. When carrying heavy loads Holden recommends fitting a genuine Holden cargo barrier, designed to reduce cargo impact to passengers in an accident.

WARNINGS:

- 1 Place loads against the cargo barrier.
- 2 If involved in an accident or accidentally damaged, the cargo barrier should be replaced and the anchorages inspected by an authorised Holden Dealer.
3. Adult passengers should not ride in the cargo area and children should only ride in the cargo area when restrained in a Holden accessory seat. The cargo barrier must be removed when children are riding in a Holden accessory seat.
- 4 Remember that the tailgate cannot be opened from inside the cargo barrier area. Never leave children in the cargo area unattended if a cargo barrier is fitted.
- 5 Take care when placing loads behind the cargo barrier so as to prevent damage to child restraint anchorages and seat belt webbing in an accident.
- 6 In an accident, cargo may cause the cargo barrier to deform towards passengers.
- 7 The plaque must not be removed from the cargo barrier.
- 8 Clean the cargo barrier only with soap and water. Do not use solvents or chemicals. Discard the cargo barrier if it becomes rusted.
- 9 Do not obstruct seat belts or child restraints, or their operation.
- 10 Seat, seat belts or child restraint anchorages must not be used to secure the cargo barrier.
- 11 Long thin items of cargo should be placed long ways across the car to minimize the risk of penetration.
- 12 Do not attach (drill, rivet, stick etc.) objects to the front or rear of the cargo barrier.
- 13 The maximum load for a genuine Holden cargo barrier is 60kg single mass. That is, if an object weighs 60kg, only one object is permitted behind the cargo barrier.