

# CHAPTER 7

## Weekly checks

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**MISCELLANEOUS CHECKS**

As well as taking your car to be serviced (refer Chapter 12) there are a few simple, weekly checks that the owner/operator is required to make. These are shown on the following pages.

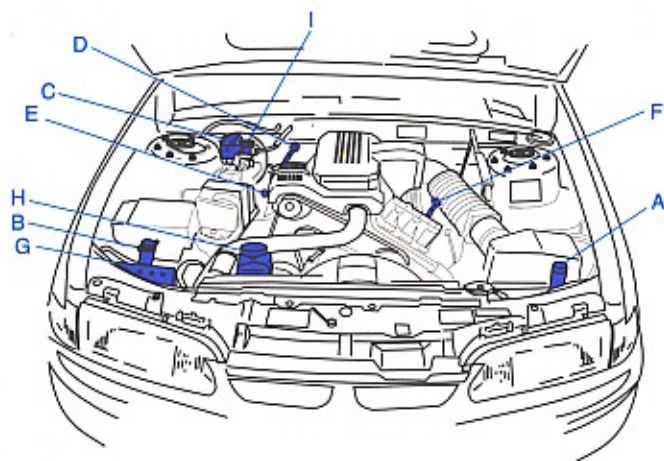
**CAUTION:** The engine cooling fan can start working unexpectedly, even when the engine is not running. To avoid injury from the fan, make sure the ignition key is switched OFF, so that the fan cannot start operating.

**CAUTION:** Electronic ignition systems have a high ignition power. Do not touch the ignition system; this could be highly dangerous.

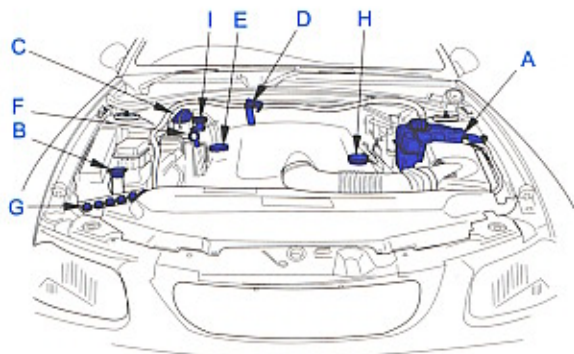
The following checks should also be regularly done to ensure safety of your car.

**Check:**

- that all exterior lights are working and that their appropriate interior indicators light up,
- mirrors and glass are clean and not scratched,
- automatic transmission T-bar indicator correctly lines up next to the gear selected,
- demister operates,
- horn works,
- condition and operation of all seat belts and check that buckles are clean and operating correctly. Remember that seat belts must never be worn twisted.

**CHECK LOCATIONS***V6 engine*

- A Engine coolant ..... page 7-6  
B Windscreen washer fluid ..... page 7-9  
C Brake fluid ..... page 7-10  
D Dipstick for automatic transmission ..... page 7-8  
E Engine oil cap ..... page 7-4  
F Dipstick for engine oil ..... page 7-4  
G Battery ..... page 7-15  
H Power steering fluid ..... page 7-12  
I Clutch fluid ..... page 7-11

*V8 engine*

## ENGINE OIL LEVEL

### To check the level

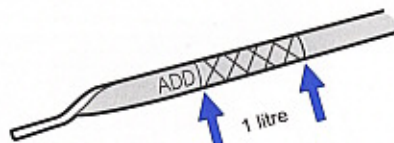
- The oil level should be checked weekly.
- Check the level when the oil is warm, such as when stopping for fuel.
- The car must be on level ground.
- After switching off the ignition wait a few minutes for the oil to settle.

The level is checked from the dipstick. Refer to the diagram on page 7-3 for location.

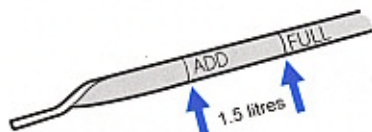
Remove the dipstick and wipe it clean with a clean cloth or paper. Insert the dipstick firmly all the way down, pause for a second then withdraw the dipstick and look at the oil level on it.

If the level is lower than the ADD mark, top up with enough oil to reach the FULL mark. Be careful not to add too much, as the reading should never be over the FULL mark.

V8 engine



V6 engine



### To add oil

For optimum fuel economy, under all driving conditions, use 10W/30 SJ GF2 engine oil. If this oil is unavailable, use SG, SH or SJ engine oil, with viscosity of 20W/50 or 15W/40.

To add oil, turn the oil cap (refer page 7-3 for location) anti-clockwise and remove. Pour the required oil into the opening (clean up any spilled oil). Wait a few minutes for the oil to settle. Then check the oil level with the dipstick again. If still too low, add more oil.

When correct, screw the cap back on tightly and replace the dipstick. If you check the oil level when the oil is cold do not run the engine first, as the cold oil does not drain back into the oil pan fast enough to give an accurate reading.

**NOTE:** Non-detergent and other low quality oils are specifically not recommended. The use of break-in oil, tune up compounds, friction reducing compounds and other supplemental additives are not recommended. Their use increases costs, may be detrimental to the operation of your car and may void your New Vehicle Warranty, to the extent that Holden considers the non-recommended fluid to have affected the specifications or quality of your Holden vehicle.

### Oil change intervals

The oil must be changed every 10,000 km. This is the *maximum* service interval for changing the oil and is based on the average car use of driving 10,000 km in 6 months.

If you have not travelled 10,000 km when 6 months comes up you should have the oil changed anyway, as oil deteriorates over time, not just when driving. Refer Chapter 12 for servicing requirements, particularly *abnormal* driving conditions.



## **ENGINE OIL CONSUMPTION**

Every internal combustion engine uses a certain amount of oil, especially when running-in. The engine is dependent on oil for lubricating critical areas, such as the cylinder walls, pistons, rings and valve stems. These parts are all subjected to high friction loads, and will prematurely wear out without a constant supply of engine oil. A thin film of oil is left on the cylinder walls, some of which is carried into the combustion chamber and burnt during the combustion process. This also applies to the film of oil on the valve stems which is drawn into the combustion chamber and burnt.

There are several other factors that contribute to the rate of oil consumption in your engine: the way in which the car is operated; the quality and grade of oil; the oil level and dilution of the oil; worn pistons, rings, valve stems and guides.

**Operation of the car:** High speed driving and heavy towing increases engine temperature, which lowers oil viscosity, causing more oil to reach the combustion chamber and get burnt away. The oil level should always be checked prior to towing or a long trip.

**Quality and grade of oil:** Oil viscosity is a significant factor in oil consumption. If you use an oil which is too "thin" (low viscosity) your oil consumption will increase. Use only the recommended grades of oil.

**Oil level:** Maintaining a proper oil level is also an important factor in controlling oil consumption. An over-full engine will splash oil onto the cylinder walls in quantities greater than the piston rings can control. This excess oil is drawn into the combustion chamber and burnt, or may result in aeration of oil in the sump causing damage to the engine.

**Dilution:** Probably the most prevalent complaint of oil consumption comes from the driver whose car is frequently driven on short trips where the engine often fails to reach normal operating temperatures. The oil becomes diluted by fuel and moisture that settles in the oil pan. This may raise the oil level creating a false reading on the oil level dipstick. For example, in a car that has accumulated 1,500 km of short distance or intermittent city operation and has consumed a normal amount of oil, the level may not have dropped from the FULL mark, due to dilution. If this car is driven for some distance at highway speeds on a warm day, the dilution elements evaporate lowering the oil level. This sudden change in oil level can give the driver the impression that an excessive amount of oil has been "lost" in the highway operation.

**Measuring oil consumption:** A simple economy test can be performed if the driver is concerned by an apparent drop in the oil level.

Add sufficient oil to bring the level up to the "FULL" mark on the dipstick (avoid overfilling). Take note of the odometer reading and check the oil periodically. When the level reaches the "ADD" mark, carefully measure the amount of oil required to return the level back to "FULL" and note the odometer reading. The amount of oil added for the kilometres travelled over the duration of the test indicates the oil economy of the engine. Remember to check the oil level at the start and finish of the test on level ground and allow time for oil to drain down. Avoid minor top-ups (0.25 to 0.5 litres) when measuring oil economy, as inaccuracies of oil quantity added, may cloud the result.

If, after taking into account the above factors, you are still concerned that your engine has excessive oil consumption then you should discuss the situation with a Holden Dealer. Remember that an engine's oil consumption should not be judged until it has run at least 10,000 km.

**ENGINE COOLANT LEVEL - V6 ENGINE**

The coolant level should be checked at least weekly. The cap for the coolant reservoir is yellow and has the word "COOLANT" marked on the top. It is located in the engine compartment, behind the passenger's side headlight.

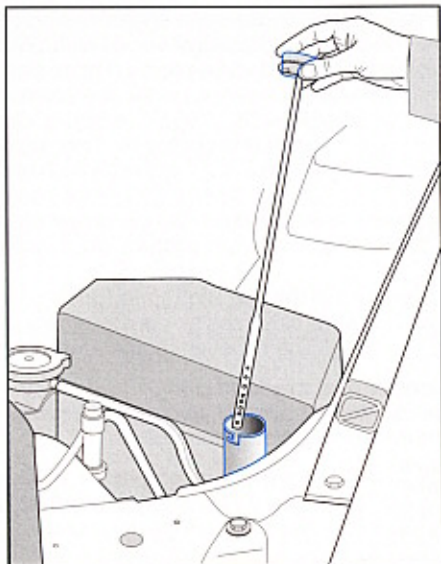
Ensure the ignition is switched off.

Turn the coolant dipstick cap one eighth of a turn anti-clockwise and slowly pull out the dipstick.

There are two triangles on the dipstick, representing MAXIMUM and MINIMUM fluid levels.

When the engine is cold, the coolant level should be at or above the MINIMUM triangle mark on the dipstick. After the car has been driven and the engine is at normal operating temperature, the level should be somewhere between half full and the MAXIMUM triangle mark.

If the coolant level is correct, replace the dipstick and turn the cap one eighth of a turn clockwise to secure.



The coolant in your car conforms to Holden specification number HN 2043. This can be purchased from a Holden Dealer as: 92140054 (1 litre); 92140057 (5 litres); 92140055 (20 litres). Failure to use the coolant meeting Holden's specification or maintaining the specified concentration may result in voiding your warranty.

If the coolant requires topping up, mix a solution of 50% Holden's coolant and 50% water in a container. Pour the fluid into the dipstick tube (the same opening as the dipstick is stored in). Again check the level with the dipstick and add further fluid if necessary. When the level is correct, replace the dipstick and turn the cap one eighth of a turn clockwise to secure. Note that the dipstick should only be replaced one way. The word "COOLANT" on the cap should be able to be read from the front of the car. If the wording is facing the rear of the car the dipstick should be turned 180 degrees and then secured.

In emergency situations, plain water may be used temporarily until the correct Holden coolant is obtained (as soon as possible) from the nearest Holden Dealer.

The specified coolant works in three ways: it contains special corrosion inhibitors, it helps the cooling system in hot weather by increasing the boiling point and it protects against freezing down to  $-37^{\circ}\text{C}$ , provided the 50% concentration is maintained.

If you regularly have to top up the cooling system you should see your Holden Dealer.

**CAUTION:**

Corrosion inhibitors and anti-freeze fluids are poisonous. Use extreme care when handling. If swallowed, seek medical attention. Do not remove the radiator cap or plastic coolant tank cap if the engine and radiator are still hot. Scalding fluid and steam can be blown out under pressure which could cause serious burns.

Refer to Chapter 6 if engine overheats or loses a lot of coolant.



## **COOLANT LEVEL- V8 ENGINE**

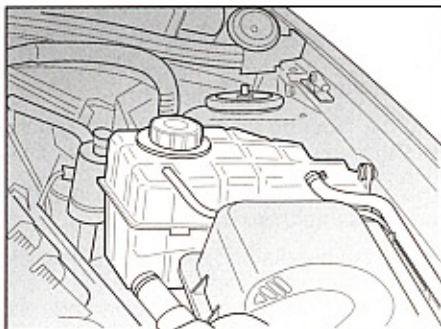


Cars with a V8 engine have a low coolant warning light in the instruments. To check that the bulb is working the light is shown for a few seconds when the ignition is first turned ON.

If the light is shown when driving it indicates that the engine coolant level is very low. You should check the level as soon as possible. As this may involve checking the level when the coolant is hot, refer to the instructions in "Overheating" in Chapter 6 and the relevant cautions in that chapter.

Regardless of the low coolant light, the coolant level should be checked at least weekly, by looking at the level in the plastic tank when the engine is **cold**. For ease of location, the coolant cap is coloured yellow.

The coolant level should be at or slightly above the "COLD FILL" mark at the centre weld joint when the engine is cold. The level rises when the engine is running and drops again when the engine cools down. If the level falls below the weld joint, coolant should be topped up to a little over the mark. Do not overfill, as coolant requires space to expand when warmed up.



The coolant in the V8 engine conforms to GM6277M specification, and is otherwise known as Dex-Cool, and can be bought from your Holden Dealer. The concentration used is 50% water and 50% Dex-Cool.

If the coolant requires topping up, pre-mix a solution of 50% Dex-Cool and 50% water in a container, then (when the engine is cold) undo the cap and pour the fluid into the plastic tank. When the level is correct, replace the cap and turn clockwise until secure.

Failure to use Dex-Cool at 50% concentration may result in voiding your warranty.

In emergency situations, plain water may be used temporarily until Dex-Cool is obtained (as soon as possible) from the nearest Holden Dealer.

Dex-Cool works in three ways: it contains special corrosion inhibitors, it helps the cooling system in hot weather by increasing the boiling point and it protects against freezing down to -37°C, provided the 50% concentration is maintained.

If you regularly have to top up the cooling system you should see your Holden Dealer.

### **CAUTION:**

Corrosion inhibitors and anti-freeze fluids are **poisonous**. Use extreme care when handling. If swallowed, seek medical attention. Do not remove the coolant cap if the engine and radiator are still hot. Scalding fluid and steam can be blown out under pressure which could cause serious burns.

Refer to Chapter 6 if the low coolant light  shows or if the engine overheats or loses a lot of coolant.

## **AUTOMATIC TRANSMISSION LEVEL**

The fluid level should be checked monthly, by looking at the fluid level on the dipstick.

The dipstick is located at the rear of the engine compartment, on the driver's side (refer to diagram on page 7-3).

Dirt in the transmission can cause breakdowns, so be careful when checking or adding fluid.

The fluid should be checked after the car has been driven for at least 20 kilometres - so that the fluid is warm.

The car must be standing on level ground with the engine running.

The gear shift selector should be in PARK and the park brake applied.

Unclip the handle and remove the dipstick; wipe it clean with a clean cloth or paper and re-insert it fully. Remove it again and read the fluid level.

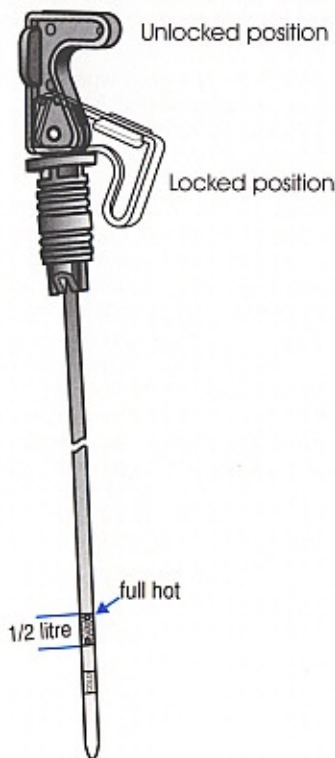
The fluid level should be showing on the cross hatched HOT area.

The level should NEVER read over the FULL HOT mark, so be careful not to add too much.

If adding fluid, use only DEXRON®III AUTOMATIC TRANSMISSION FLUID. Add the fluid in the dipstick tube (the same opening as the dipstick is stored in) and wait one minute for the oil to settle (clean up any spilled fluid). Again check the level on the dipstick with the engine running and add further fluid if necessary. Remember to always replace the dipstick and lock the handle down.

If fluid has to be added often, there may be a problem or leak and you should see your Holden Dealer.

**NOTE:** The cold markings on the dipstick should only be used as an indication when initially filling the transmission after the fluid has been completely drained. It should be rechecked when hot.





**WASHER FLUID LEVEL**

The washer container is marked yellow and is located in the engine compartment, near the battery. It has a flip top cap.

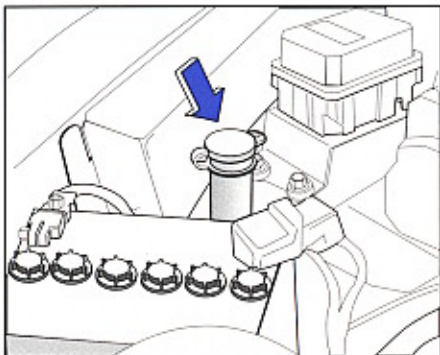
The container shown supplies water to both the front windscreen washer and rear wagon washer.

As washer fluid is constantly used the level should be topped up weekly.

For a crystal clear windscreen, the correct amount of Optikleen (part number 92140005) can be added. Do not use ordinary soap or detergent as these not only froth up but will also damage the wiper rubbers.

Make sure the cap is secured.

Note that washer jets are not adjustable, and can be damaged if tampered with.



## **BRAKE FLUID LEVELS**

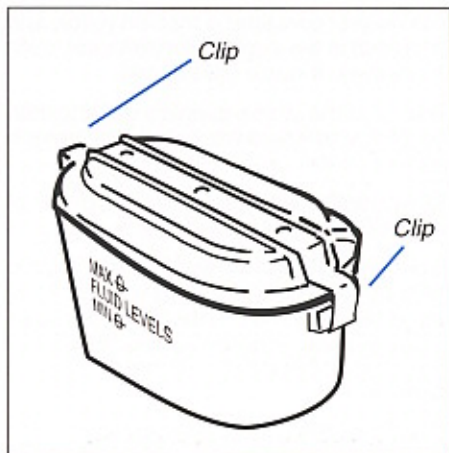
**CAUTION:** Brake fluid is poisonous and corrosive and will damage the paint finish of your car if spilled.

The brake fluid level in the master cylinder should be checked weekly. The fluid level, is visible through the master cylinder (see page 7-3 for location) and should be maintained between the MIN and MAX level markings. If the fluid is between these levels do not remove the master cylinder cap, as brake fluid exposed to the atmosphere will quickly absorb moisture.

If fluid does need to be added, first ensure that the ignition is switched to OFF. Wipe clean the sides of the top cover. Then, unclip and lift off the top cover. Top up with heavy duty brake fluid which meets Holden specification number HN 1796. Remember to secure the cap at each end and clean up any spilled fluid.

Use only new brake fluid. Use of old, used or inferior brake fluid may endanger the functioning of the brake system.

If the master cylinder requires constant topping up it could indicate that a fault exists and you should immediately see your Holden Dealer.



**CLUTCH FLUID LEVEL**

**CAUTION:** Clutch fluid is poisonous and corrosive and will damage the paint finish of your car if spilt.

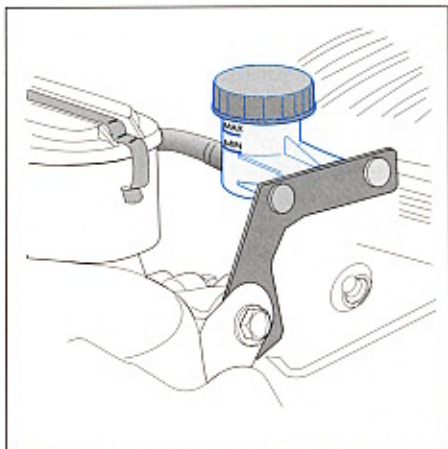
The clutch fluid level should be checked weekly. The fluid level, is visible through the container and should be maintained between the MIN and MAX level marks. If the fluid is between these levels do not remove the cap, as the fluid will quickly absorb moisture if exposed to the atmosphere.

If fluid does need to be added, first ensure that the ignition is switched OFF.

Wipe clean the sides of the cap and remove the cap. Top up with heavy duty **brake** fluid (both the clutch system and the brake system use **brake** fluid) which meets Holden specification number HN 1796. Remember to replace the cap and clean up any spilled fluid.

Use only new fluid. Use of old, used or inferior fluid may endanger the functioning of the clutch system.

If the clutch fluid requires constant topping up it could indicate that a fault exists and you should immediately see your Holden Dealer.





## **POWER STEERING FLUID LEVEL**

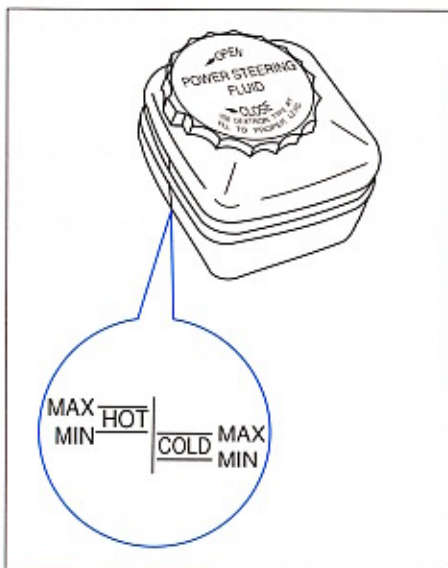
The level should be checked after the car has been driven for a while (at least 20 minutes) so that the fluid is warm. A convenient time is when stopping for petrol. The cold level check should only be used after the engine has not been running for at least 5 hours. The hot level check, however, is always recommended.

Refer page 7-3 for location of the reservoir.

### **V6 engines**

The fluid level can be viewed through the transparent reservoir. The level markings are on the rear of the reservoir.

When the fluid is cold the level should be between the COLD MIN and MAX marks; when the car has been driven for a while and the fluid is hot the level should be between the HOT MIN and MAX marks.

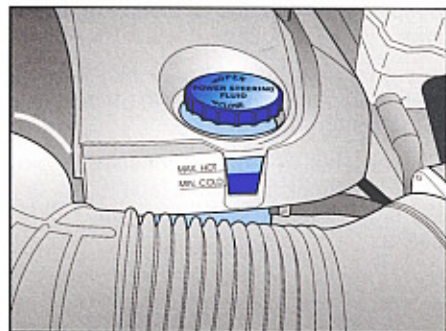


### **V8 engines**

The fluid level can be viewed through the transparent reservoir. The level markings are next to the fluid window.

When the engine is hot the level should be between the MAX HOT and half way to the MIN COLD mark.

If the level is getting close to the MIN COLD mark when the engine is cold, add enough fluid to bring the level to half way between the two marks.



### **All engines**

If fluid must be added, undo the cap anti-clockwise to the safety "stop"; push down on the cap and turn it further anti-clockwise, until the cap can be lifted off.

Use DEXRON® III.

Do not over fill and remember to replace the cap tightly. If you often need to add fluid, you should see your Holden Dealer.

Remember to secure cap when level is correct and clean up any spill.

## **TYRES**

### **Air pressure**

Weekly checking of the air pressure of your tyres (including the spare) ensures your safety, as well as reducing fuel consumption and increasing the life of your tyres.

For constant long distance or rough road driving, daily checking is recommended.

The correct pressure for your tyres is shown on the tyre placard, as shown.

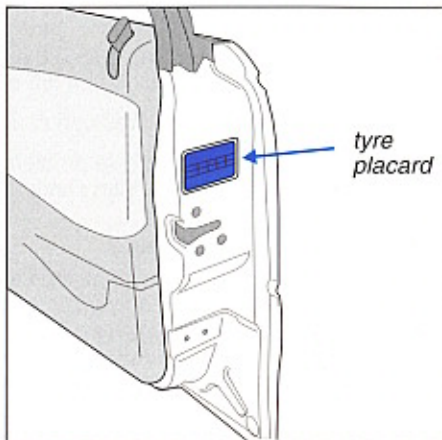
Tyre inflation pressure increases when the tyres have been driven more than 2 km. Therefore, the pressure should be checked when the tyres have been stationary for over 3 hours. If they must be checked immediately after driving, increase the pressure shown on the placard by 10%.

Always use a tyre pressure gauge to check the tyres - simply looking at the tyres is not sufficient.

Remember to replace any valve dust caps or extensions, as this stops dirt and moisture from fouling the valves.

When checking the tyre air pressure, take a look at the condition of the tyre tread and inspect for stones or abnormal wear.

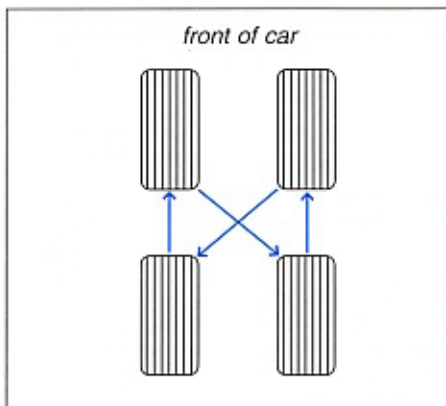
Cars driven for prolonged periods over rough roads, particularly in outback conditions, should use the cold tyre inflation pressure on the tyre placard for maximum load condition.



### **Tyre rotation**

Front and rear tyres perform different jobs and can wear differently depending on the types of roads driven, your driving habits, wheel alignment, balance, tyre pressures etc.

Tyre condition is checked for you when you take your car to be serviced by your Holden Dealer, who is able to diagnose any unusual signs of wear. If the tyres are rotated it is recommended that the balance be checked at the same time.



**TYRES cont.****Alignment and balance**

Improper wheel alignment can cause the tyres to wear faster and to wear unevenly. It can also cause the car to pull to the left or right.

Out-of-balance wheels and tyres can cause annoying vibration and uneven tyre wear.

If you suspect either of the above problems exist have a wheel alignment and balance check carried out by your Holden Dealer.

**Replacement and repair**

Replacing your factory fitted wheels and tyres with non-specified wheels and tyres may affect your warranty as well as your insurance policy. Refer to the tyre placard on your car for tyre size and load rating, see previous page. Using a different size or type of tyre may affect such things as ride, handling, speedometer, car ground clearance, tyre clearance or snow chain clearance.

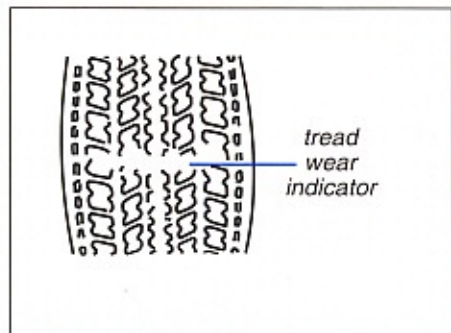
Take care when using tyres with heavy treads, including tyres made for better grip in the wet. At sustained high speeds, this type of tyre runs at higher temperatures than standard tyres and consequently should only be operated within the limits recommended by the manufacturer. Any doubts about the tyres on your car should be referred to your Holden Dealer.

Tyres with a *higher* speed or load rating are acceptable, provided they are fitted to a suitable rim size.

New tyres should be fitted in pairs to the front. If replacing only one tyre, it should be paired on the same axle with the least worn of the other three.

You should replace your tyres when:

- The tyres are worn to the point where the tread indicators appear, or the cord or fabric is showing. The tyres originally fitted to your car have built-in tread indicators. When only 1.5 mm of tread remains, these indicators show as plain bars across the tread pattern at regular intervals around the tyre.
- The tread or sidewall is cut, split, or cracked deep enough to expose the cord or fabric.
- The tyre has a bump or bulge in it, indicating some kind of internal damage.
- The tyre has a puncture, cut or other damage which can't be repaired because of the size or location of the damage.



Do not attempt to drive on the flat tyre more than is necessary to stop safely. Driving even a short distance can damage the tyre and wheel beyond repair. Tyres which have been repaired or retreaded are not be capable of being driven safely at high speeds. Therefore, their use is not recommended.



## **BATTERY**

### **CAUTION:**

- Batteries emit an explosive gas mixture which may be ignited. You should, therefore, keep sparks and flames away from the battery at all times. Never smoke near a battery.
- Batteries contain sulphuric acid. If acid contacts skin or clothing, flush immediately with a lot of water. In case of eye contact, flush with a lot of water and contact a doctor immediately. Battery acid also damages paint and fabrics. To minimise damage, wash off immediately.
- Take care with all metal objects and tools including items you may wear (e.g., jewellery, rings and metal watch bands) near battery terminals.

### **Fluid check**

The fluid level of the battery will be checked for you when you take your car to be serviced by your Holden Dealer. If your car is operated in hot temperatures or at constant high speed the battery fluid level should be checked each month.

When checking the battery level, make sure the engine is not running. Each of the six cells must be individually checked. Use distilled water, as required, to keep the level just below the bottom of each split tube. **DO NOT OVER FILL.**

Cars with V8 engines have a battery cover to keep the battery cool. The cover should always be securely in place when driving.

Refer Chapter 6 for emergency starting when the battery is flat.

Replacement batteries should be: Low Maintenance, 12 volt 95 min / 400 amp.

### **Battery disconnection**

The battery is recharged by the generator when the engine is running. If the engine is not run for approximately 6 weeks the battery will discharge, due to the power required by the security system etc. If the battery is disconnected it will discharge anyway after approximately 12 weeks.

If you disconnect the battery when leaving the car for a long period of time, it is recommended that the battery be "trickle fed" on a battery charger over-night, before replacing it in the car.

If the battery is disconnected for a short time the radio security number, the PIN, has to be entered, refer Chapter 2. After entering the PIN the radio resumes playing and the settings and station numbers are remembered. After approx. 8 hours of battery disconnection all preset radio settings are forgotten.

Higher luxury cars are fitted with the personal identity key system (refer Chapter 2). If the car's battery has been disconnected the key may "forget" some settings. Your adjustments will be remembered by the key the next time you adjust the feature.

## **TROLLEY JACK LOCATIONS**

You should always use the jack locations shown on page 6-8 when using the original jack supplied with your car. This jack has been designed to correctly and safely lift your car, provided the cautions in Chapter 6 are observed.

However, if using a trolley jack to raise the car, it is important that the jack be positioned under the suspension cross member or hoist pad locations. **DO NOT JACK UNDER THE SUSPENSION CONTROL ARMS.** The car should always be supported by jack stands when raised.

