



# TECHNICAL BULLETIN

**Changing oil and under bonnet maintenance**  
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# PENRITE

**OIL-**

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## PREPARATION

Make sure all items required are on hand. The majority of old cars hold between five and ten litres of engine oil. In the old language, five litres is equivalent to roughly nine imperial pints.

One litre equals 1.75976 pints, and one pint equals 0.568261 litres.

Some handbooks use the terminology "dry fill" which gives the sump capacity without the oil filter. Others include the oil filter.

The equipment you require will include the following.

- A funnel of a reasonable size.
- Several rags for clean up.
- A draining dish to catch waste oil.
- A spanner to fit the sump plug.
- An oil filter wrench of the appropriate size to suit the filter.
- A pair of ramps to run the front wheels up- or:
- A jack to lift the front of the car- plus:
- A pair of axle stands to go under the front suspension when lifted.
- A pair of suitable chocks for the rear wheels.

## RE-WORK TIPS

- A good tip is to purchase a box of disposable latex rubber gloves. These gloves are thin which means you still have the "feel" in your fingers, and are ideal for messy jobs around the car.
- When using axle stands, cover the top of the stand with a piece of carpet. This will protect the undersides of the vehicle. When using car ramps, place some old carpet under the ramp. This will stop the ramps skidding on the concrete floor as the car is driven up the ramps.
- When undoing sump plugs, always use the correct tool. With sump plugs, either a socket or a ring spanner is desirable. Some plugs were made of a very soft alloy, and are easy to damage. Once the hex heads become rounded, it is very difficult to undo and specialised tools will be needed to get the plug out.
- Oil filter wrenches come in various sizes and are relatively inexpensive. A mole-wrench and a leather belt also works as an oil filter tool. The method of puncturing the filter with a screwdriver and using it as a fulcrum in undesirable.

## CHANGING THE OIL

The best time to change the oil is straight after a run when the oil is still hot – but be careful. Wait for the engine to cool down a little so you do not burn yourself.

- Raise the front of the car up on a jack and place axle stands under the front suspension or on the chassis rails and chock the rear wheels.
- Take the rag, the draining dish and sump plug spanner and get under the car.
- Locate the sump plug and wipe clean the immediate area of the sump.
- Place dish in appropriate position and undo sump plug. If there is a gasket on the plug, don't lose it. Wipe plug and gasket clean.
- Locate oil filter and undo with filter-wrench by turning anti-clockwise.
- When loose it may drip oil, so have rags at the ready. It may still be hot.
- While oil is still draining, take the new oil filter and moisten the neoprene seal with some new oil and screw into place after wiping clean the filter mounting area.
- Tighten filter by hand firmly. This is normally enough to seal the filter. Over tightening can distort the seal or gasket and lead to oil leaks.



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- Back under the car, check that the oil has stopped dripping, replace the sump plug, and tighten with a socket or ring spanner firmly but not over tight.
- Lower the vehicle to the ground and with a rag, clean around the neck of the rocker box neck and cap. Remove cap and place funnel in neck and slowly pour in oil.
- Rather than pouring directly from the pack, it may be easier to pour the oil from either a 500-ml or 1 litre oil pourer.
- Having already read the owner's handbook for sump and filter capacities pour in about a litre less than required.
- Allow a minute or two for the oil to flow to the sump, start engine, and allow to idle for about a minute to circulate the oil.
- Stop engine; allow oil to settle again for a minute or two. Check level with dipstick, and top up slowly to full mark.
- Do not overfill.
- New oil on the dipstick is often hard to see. In some cases it may require dipping a couple of times to gauge the correct level.
- Finally check the oil filter for leaks and tightness.

Whilst waiting for the old oil to drain from the sump, it is the perfect opportunity to check other parts of the vehicle.

### OTHER ITEMS TO CHECK:

Check the levels of brake and clutch fluid. In some cars the brake and clutch master cylinders are mounted on the firewall, or under the floor. Any fluid around the lid suggests the cork or neoprene gasket inside the lid has expired, and a new one will be required. Check levels and top up if necessary using the correct type fluid. Do not use silicone brake fluid in a vehicle using conventional fluid.

In regards to radiators, never remove a radiator cap when the system is hot, the pressure release can cause the water to suddenly boil and violently emit from the radiator with nasty results - very dangerous!! Wait until cold to check and top up if necessary. On later cars, this can be done through the overflow bottle. Check the condition of hoses and clamps, and tighten where necessary.

Whilst up the front of the car, have a good look at the condition of the fan or serpentine belt. It should be tight, but should also be able to be compressed. Check also for frayed edges as this means that the fan belt isn't running truly on the crankshaft, water pump and generator / alternator pulleys.

Some batteries are sealed, however if yours has vent plugs you can check the level of the electrolyte. This should be about 3 to 5mm above the top of the plates. The electrolyte is diluted acid, so any spill on clothes etc burns holes. Never add acid, only water. Distilled water. Don't smoke over the top of the battery. There can be explosive gases inside.

Air filters are often neglected. There are many different types including the old oil bath filters, the flat pancake style cleaners which were fitted to many sports cars, and the modern pan type cleaners with their replaceable filters. A light tap on the ground usually dislodges the dirt trapped in the elements and a general wipe with a rag around the body of the filter unit is all that's required. Oil bath filters need draining of oil and replenishing. A wash down in petrol will also be beneficial.

The question is always asked as to when should the oil be changed in the older type vehicle that gets occasional use?

It would be wise to change the oil fairly regularly on vehicles, which have rudimentary type oil filters. Penrite recommends that with pre-1920 vehicles the oil should be changed at 500 mile intervals. Vehicles from 1920 to 1950 with more advanced filtration systems should be changed every 1000 miles and vehicles covering the classic period ie from 1950-1970 should be changed at 3000 mile intervals.

An additive used in Penrite's Classic Oil range contains a package designed to protect engine internals from corrosion whilst the vehicle is not in use. The protection of engines in vehicles used occasionally has been a concern to many owners particularly those with more than one vehicle. An approach was made to Penrite to come up with an additive system incorporated in the oil to protect these seldom used vehicles.

This additive system is used in Penrite's Heritage, Shelsley and Classic oil range.

Further details on these products are available on their respective product information sheets found on the Penrite web site: [www.penriteoil.com.au/products](http://www.penriteoil.com.au/products)

Penrite recommend "The Right Oil for the Right Application"

[Click Here](#) to visit the Penrite Recommendation Guide, which will ensure you receive the correct oil for your application



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