

Vehicle Fluids

There are many vehicle maintenance jobs you can do without sophisticated knowledge – checking your vehicle's fluid containers is one of them.

Heat Exchangers

The radiator is up front, so it's a logical place to start. You should examine the top and bottom tanks – or the side tanks if it's a cross-flow radiator – for signs of damage or leaks. The core is also a fluid container, so it needs to be in good condition, free of dings or bugs. If the core looks powdery and flaky it's time for a reconditioning job, so drain it, whip it out and take it to a specialist. Radiator hoses are also fluid containers and they need to be firm to the touch – not spongy – and free of damage.

Most 4x4 automatics have oil coolers mounted in front of their radiators and these need to be checked for leaks or damage, just like the coolant radiator. Trace the oil hoses back to the transmission and make sure they're in good condition.

Washer Bottle

Because the washer bottle isn't a key mechanical component it often gets neglected during servicing. However, a split washer bottle out in grasshopper territory can make driving hazardous, or time consuming, as you have to stop every half-hour and clean the screen by hand.

Washer bottles can gum up with algae, especially if straight water is used, rather than a detergent mix. This black muck can jam the little pump or clog the delivery tubes and the spray jets.

Washer bottles don't last forever and become brittle with age, so a replacement may be in order.

If you're not happy with the standard spray pattern you can remove the cowl jets and fit hose instead, leading the hoses up to the wiper arms, so the fluid plays directly onto the moving wiper blades. Many trucks have this type of washer system and kits are available.

Brakes

We're not suggesting that unqualified people work on 4x4 brakes, but it's easy to check the master cylinder reservoir for damage, leaks or a weeping cap. Ditto for the brake lines.

Open the cap, after cleaning any dirt from the outside of the reservoir and the cap, and look at the fluid. If it's murky it could be time for a brake fluid change, next time the vehicle's in for service. Brake fluid absorbs water, so it doesn't retain its as-new quality forever.

Power Steering

Power steering fluid works hard for its living, especially in vehicles that spend their lives in city driving or manoeuvring off road. The fluid level in the reservoir needs to be monitored regularly and topped up when necessary. It's important to clean the reservoir and the cap before taking off the lid.

Power steering hoses carry fluid to and from the pump and reservoir, so they need to be checked for leaks or damage.

Some reservoirs are lightly mounted, so check the brackets for cracking or distortion.

Battery

The battery is a fluid container – and pretty nasty fluid it is inside. A fully sealed battery is ideal, but if you do have a battery with removable cell caps you have to check it. Acid level and concentration needs to be maintained through regular inspection. Levels are easy enough to check, but the correct acidity needs a hydrometer – available cheaply enough at automotive shops. It's wise to have a professional battery condition check at least yearly.

If there's any sign of battery fluid splashing or leaking it's important to remove the battery, to check the condition of the battery box. Acid has an irritating habit of eating away at steel fabrications. (Check your vehicle manual for the correct procedure before disconnecting the battery.)

Battery holding clamps need to be tight enough to hold the battery steady over rough roads, but not so tight as to distort the casing.

Axles

We don't necessarily think of axles and diff housings as fluid containers, but they hold vital lubricating oil and, hopefully, no contaminants.

Opening and closing the filler and drain plugs ensures that you have those spanners in your toolbox and lets you see the level and condition of the oil inside. If the washers look worn or the drain plugs are scarred, make a note to have them replaced at the next service.

While you're underneath, check the breathers for operation and integrity of hoses.

Sumps

Engine and automatic transmission sumps are fluid containers that must be liquid-tight. The drain plugs need to have close fitting, undistorted washers. Check for stone damage and if there's any deep scarring take the vehicle in for immediate service. A 'dinged' engine or automatic transmission sump may have a misaligned oil pickup on the inside and that situation can lead to oil starvation of very expensive mechanicals.

Fuel Tank

Fuel tanks are often protected by external bash plates and, while these protect the tank from damage, also mask any tank problems. In some designs the gap between the bash plate and the tank can pack with small stones and these act like percussion caps on the underside of the tank if the vehicle scrapes its bash plate. Another problem is water collecting in the silt between the plate and the tank, causing the tank to rust prematurely.

You need to check the condition of your fuel tank periodically and be able to undo the drain cock, in case you score adulterated or water-contaminated fuel that needs to be drained out.

Shock Absorbers

Shock absorbers are fluid containers – or should be. Any sign of leaking oil on a shock absorber body should be taken as an indication of imminent failure, because a seal that lets out a small amount of oil will pass a greater quantity once the shocker starts to work hard. As oil leaks or pumps out it's replaced by air and that only adds to the problem, allowing what oil is left to froth and shocker performance to 'fade'.

You can do a rough check on shock absorber performance by driving over a rough surface for a few minutes and then feeling each shock absorber. Working shockers warm up as they control suspension movement, but ineffective ones do little damping work and so remain cool to the touch.

Gas Bottles

LPG bottles are liquid containers – the gas vapourises when it escapes through the outlet valves. The law is clear on gas bottles – they must be in good external condition, have undamaged fittings and not be out of date. It's illegal to refill a bottle that is past its condemnation date.

Old bottles are not worth the risk, as anyone who's seen an LPG fire can attest.

Check with your 4x4 insurance company about stowing LPG bottles inside your wagon. Large bottles cannot legally be carried inside a vehicle.

Jerry Cans

Plastic or steel jerries need to be clean and scale-free before they're used to carry water or fuel. It can take days of repetitive cleaning to get muck out of old cans and if it looks like a tough job it's probably best to dump the old ones and buy anew.

Water residue may have attracted growth or bugs, so after cleaning water containers it's not a bad idea to use purification tablets when you refill them.

The jury is still out on steel vs plastic jerries, but there's no doubt that steel ones are more durable. However, it's important to buy steel cans that comply with the Australian Standard, to be sure you're not buying potential rust traps.

One advantage of steel over plastic is at bath time, when you can warm a steel water jerry in the campfire, before putting your shower pump hose inside.