Long Range Tanks

Very few 4x4s leave the factory with sufficient fuel tank capacity for extended Outback trips.

Unless you've bought a Toyota Prado, a late model LandCruiser 75 Series, or a 78-79 Series ute or Troop Carrier you don't have sufficient standard fuel capacity on board for long bush trips. These 180-litre tanked machines need no capacity enhancement, provided they're diesel-powered. Even 180 litre tanks aren't enough to fuel a petrol engine for hauls such as the Canning and the Len Beadell desert tracks.

All other 4x4 utes and wagons have insufficient capacity for Australian Outback distances, where the general rule of thumb is that you need around double the capacity of the standard main tank. Even two-tank Patrols and LandCruiser 80 and 100 Series are a tad underdone, because their auxiliaries are around half the size of their main tanks.

The best arrangement for increasing fuel tank capacity is the way Toyota has done it, using two separate tanks and supply systems. That method means duplicated tanks and fuel lines, so if something goes wrong with one tank you can rely on its fully-functioning partner. Next best is a replacement tank for the standard one, with up to double the original's capacity. The other option is an auxiliary tank that pumps or drains into the main tank.

After Market Tanks

The standard tanks fitted at 4x4 factories are formed from pressed steel or moulded plastic and are designed to be produced in their thousands and to be fitted quickly on production lines. You can look at most fuel tanks and see the amount of wasted under-floor space there is beside, above and, sometimes, below them.

After-market tank makers look at the wasted space and endeavour to fill as much of it as they can with tank volume. An after-market tank is quite differently made from the standard pressed or moulded types and would not be economically viable in a mass-produced vehicle plant. Most after-market tanks are made up from many pressed-steel pieces that are welded together.

The most common material for after-market tanks is zinc-plated or aluminised steel plate.

When you're shopping for an after-market fuel tank it's important that you buy from a reputable maker who backs his products with a warranty and who has established service points around Australia.

The tank needs to have fuel-surge control – usually done by the shape of the tank and with internal baffles.

For off-road use it's essential that the fuel pick-up is in a retention chamber that prevents fuel starvation when the tank level is low.

A replacement after market tank should use the standard fuel pick-up module and be easily recalibrated at fitting time so that the standard fuel gauge indicates the new-tank level.

The breather outlet(s) must be fitted with extension tubes that are capped with dust filters. Fuel expansion capacity needs to be inbuilt.

The drain plug must be easily accessible and be protected from rock damage.

Ideally, the tank should fit without any modification to the exhaust system and it should have heat shields where it's close to the exhaust plumbing.

Auxiliary after market tanks need the same structural qualities as replacement main tanks, but there's the additional requirement of fuel filling and delivery to be considered.

The best auxiliary tank neck is one that's siamesed into the original filler port, so there's no bodywork modification needed.

If your aftermarket auxiliary replaces a smaller factory one the delivery module, lines and breather can be reused, but if it's a new auxiliary installation you need to be sure that the fuel delivery system is reliable. We've spent many uncomfortable hours repeatedly draining fuel from an auxiliary into a bucket, then tipping it into the main tank, after the failure of a transfer pump. Siphon transfers sound simpler, but can also give trouble. Make sure the auxiliary transfer system is a long term proposition before you buy.

Coping with Extra Weight

More fuel on board means more weight. It's likely that if you're investing in more fuel capacity you'll also be fitting a water tank and that's even more pudding. If you double the standard vehicle's fuel capacity and, typically, slot in a 60-litre water tank you're adding around 150kg to the vehicle's 'wet' tare weight.

The tanks should be located as low-down as possible and the water tank as far forward as practical. It's not wise to put both the additional fuel and water weight out behind the rear axle. If the long range fuel tank is offset to one side of the vehicle some balance can be restored by off-setting the water tank to the other side.

In any event, a 4x4 that's kitted up for long bush trips will most likely need after-market suspension and it's best to present the tanked-up vehicle, fully loaded, to your suspension specialist.

The Long Range Alternative for Petrol Vehicles

Give thought to an LPG tank as the auxiliary for a petrol-powered 4x4. You can't get LPG in remote locations, but you can in most bitumen-road, bush locations.

The lower cost of LPG means that all your bitumen-road driving can be done on the cheap and, when you do get off the beaten track, you have the same fuel capacity you'd have with a petrol auxiliary tank.

Portable Long Range Auxiliaries

Jerry cans are still the most popular form of auxiliary tank, but they're best kept for pure emergency conditions. It's more space efficient and safer to store 80 litres of fuel in an under-body tank than it is in four jerries.

Fuel stowed inside a vehicle has obvious primary and secondary safety issues.

Flexible tanks are a viable alternative to metal long-range tanks, but don't expect to save much money using this route: top-quality flexible tanks aren't cheap, because they're built to military specifications, for use as auxiliaries in aircraft, for example.