

## **4WD INFORMATION**

### **4WD recovery kit**

Despite what the four-wheel drive advertisements would have you believe there are times when the going gets tough even for the best off-road wagons.

They can even get stuck occasionally - and if you're out in the middle of nowhere, this can turn into a serious, and potentially dangerous, situation. Here's a guide to the right gear and techniques to get you out of trouble.

#### **Isn't a 4WD supposed to be unstoppable?**

- No. A four-wheel drive usually gets stuck for exactly the same reason as a car - it loses the traction required to get the engine's power to the ground. This can happen on sand, mud, clay, gravel or ice.
- Despite a four-wheel drive's high ground clearance, it can become stuck on a rock, or a ridge, if the suspension travel is inadequate to keep the wheels in contact with the track.
- On steep climbs and descents, particularly if the track is wet or slippery, a surface such as clay can sometimes provide no grip at all. In this case, gravity takes over and the vehicle can simply slide down the hill.
- A slope of 30 degrees is about the maximum that any four-wheel drive will climb on a non-bitumen, dry surface.
- A deep creek crossing can see the engine's air intake ingest water instead, instantly stopping the engine.

#### **How do I avoid getting stranded in the first place?**

- This is an excellent question to ask yourself before you charge up or down that challenging hill. If you're in any doubt about your ability to do it, look for an easier alternative. Humility is less inconvenient than overconfidence.
- Travelling with another vehicle is recommended. If one gets stuck, the other can at least go and find some help, or get everyone back to civilisation.
- Learn the limitations of your vehicle and how its 4WD system works. The best way to do this is on a four-wheel-driving course in a supervised, controlled environment. You will also learn the correct techniques for driving on different surfaces.
- If you do get stuck, don't try to get out by simply revving the engine harder and hoping. All you'll do is dig the wheels deeper into the mire.

#### **What basic equipment should I take to help me get out of trouble?**

- The good old shovel is the first item for any recovery kit. If you get bogged, a bit of spade work in front of each wheel to clear a ramp is often all that's required to get you mobile.
- In many off-road situations, the standard jack may be inadequate. You should at least have a metal or thick timber base plate, which the jack sits on so it is stable when changing a tyre on soft surfaces. This should ideally be 300-500 mm square.
- A pair of tough, leather, rigger's gloves, available for less than \$20 from large hardware stores, will protect your hands when doing recovery work in the bush. They're also good protection against burns when messing about with a campfire or cooking utensils.

### **What's a snatchem strap?**

- This is an inexpensive, simple recovery tool, invented in the 1980s, which is great for quick, easy extraction when you're stuck - as long as there's another vehicle to pull you out. Prices start at about \$50, from any 4WD accessory store.
- It's made of thick seat-belt-webbing type material, usually 10-15 metres long, with a reinforced loop at each end. Before using it, you need to make sure that both vehicles have proper anchor points (usually a hook on the front and/or rear of the chassis.) These need to be substantial and solid, because if the tension generated by a snatchem strap breaks a loose or flimsy anchor it turns into a missile.
- When the strap is connected, you start your engine and engage second gear, in low range. As the towing vehicle drives forward, taking up the slack, you release the clutch and give the engine a moderate rev when the strap becomes taut. The strong elastic action of the strap as it recoils will, in most cases, pull you out.
- Make sure all your passengers are out of the car and standing well away, preferably at 90 degrees to the line of recovery.

### **What about an Hi-Lift Off-road vehicle jack?**

- These can also be worthwhile, both for convenience and to extract yourself from some situations.
- The exhaust jack is basically a heavy-duty inflatable bag, made of rubber or a similar synthetic compound. You slip the inflator tube over the exhaust, start the engine and the bag lifts the car.
- The high-lift jack uses a mechanical ratchet action, working a lug up a long steel bar, to raise the vehicle higher than a normal jack does.
- Both types of jack need care. In both cases, you must ensure that you don't raise the vehicle beyond the point of stability. As with any jack, never get underneath the vehicle when it is raised.
- You can use these jacks for several purposes, including raising the vehicle to fill deep holes dug by the wheels, basic wheel replacement and, with a long handled shovel, clearing rocks or other debris from underneath.

### **Do I need a winch?**

- That depends, but the most important thing to realise is that winching can be extremely dangerous if done incorrectly. Having two and a half tonnes hanging from a tensioned wire cable requires expertise to be done safely. Again, a four-wheel drive course is the place to learn.
- A winch can get you out of trouble if you have no other vehicle to help. There are three types: hand operated, power take-off (driven mechanically or hydraulically by the engine) and electric. The latter two are usually mounted on the front of the chassis, or the bullbar. A simple hand winch will cost a few hundred dollars; a heavy-duty power winch can cost several thousand.
- Winches come in various load capacities. You also need several accessories. A sling, usually made of snatchem strap type webbing, wraps around a tree as an anchor point. Shackles are D shaped metal connectors, which join the various winching apparatus. Snatch blocks are pulleys, through which you can run the winch cable to increase the pulling capacity of the winch.
- Of course, if you have nowhere to anchor the winch, it's useless. You can make an anchor out of star pickets, logs or a spare wheel sunk into the ground, but this is pretty extreme stuff and, like the whole subject of winching techniques, is best learned from a professional.