



Part 1

TYRE PRESSURES

Preserving the trail

Most folk who know me reckon I'm pretty easy to get along with and it takes a fair bit to get me riled. But seeing a track unnecessarily cut up gets the blood pressure up. You see there is a fine line between driving sensibly and conservatively, versus being an arse and tearing things to shreds!!! The secret is found in the amount of air your tyres are inflated to, as tyre pressure is THE most important 4WD tool you'll have at your fingertips, to either make a fist of it or sail on through without a care in the world!

It's all about increments, making subtle little adjustments as the track deteriorates to keep the traction in sync with the surface material and density you are driving on. Put simply, don't be afraid to let a lot of air out if the surface demands it. Let's start with a well-made dirt road with typical corrugations on the corners, a loose surface of gravels and maybe pock-marked with the odd pothole. At full road pressures (refer to your placard) your tyres will be working pretty hard to keep delivering the required grip, great on the bitumen, horrible on anything else. If you've noticed that on those same bends your vehicle is doing



a merry old dance, with maybe a big sidestep on the potholes mid-corner, the pressure in the tyres is too great. Here's something that'll help and I call it my '20 percent rule'.

Take your placarded pressures and let 20 percent of the air out and slow down by the same margin. If your placard wanted 200kPa/30psi, they now become 180kPa/24psi. Come down from your prior 100km/h to a much more sensible 80km/h, and you'll notice an extraordinary difference in the vehicle's behaviour. Couple that up with HIGH range 4WD usage and you'll be as safe as houses.

What you've done for the vehicle now is to give the sidewall of the tyre a chance to flex and absorb the initial impact of the corrugations, gravel, or potholes before sending the suspension to work to control the wheel's articulation. The formation of corrugations in dirt roads is encouraged by driving in 2WD with lots of wheel spin; most drivers wouldn't have a clue this is going on yet the evidence is seen in their rear tyres being worn out before their time. The latent energy of the suspension pounds the track space into a corduroy surface. Do this one simple thing, and you'll make a massive difference to your comfort levels, your safety - thanks to reduced braking distances - and the road maker's need to come out with the grader so often.

You might get inquisitive further up the road and take a side track that'll lead to a river, a beach or a mountain that begs to be investigated and with each change in terrain comes the need to let

TYRE PLACARD		
NOMINATED RIM SIZE AND TYRE SIZE DESIGNATION	RECOMMENDED COLD INFLATION PRESSURE (kPa) UP TO MAX LOAD	
16 x 7 J 245 / 70R 16 111S	NORMAL SPEED	
	FRONT	REAR
	200	280
	HIGH SPEED ABOVE 140 km/h	
	200	280
WARNING The tyres fitted to this vehicle shall have a maximum load rating not less than load index of 111 and a speed category symbol not less than S. When fitted with winter tread tyres, this vehicles should not be driven at speeds in excess of the tyre speed category symbol as moulded on the tyre or, in absence thereof, at high speeds.		
8981007560		



Here's a really simple guide to pressures for driving on different surfaces using the placarded recommendations seen on an Isuzu DMAX LS-M carrying a full load as our starting point:

Front	Bitumen	Dirt/Gravel	Sand	Mud	Rock	Minimum
200kPa (30psi)	200kPa (30psi)	180kPa (24psi)	125kPa (18psi)	125kPa (18psi)	125kPa (18psi)	105kPa (15psi)
Speed	Up to 110km/h	Up to 80km/h	Up to 50km/h	Up to 30km/h	Up to 20km/h	Up to 40km/h
Rear	Bitumen	Dirt/Gravel	Sand	Mud	Rock	Minimum
280kPa (40psi)	280kPa (40psi)	225kPa (32psi)	125kPa (18psi)	125kPa (18psi)	125kPa (18psi)	105kPa (15psi)
Speed	Up to 110km/h	Up to 80km/h	Up to 50km/h	Up to 30km/h	Up to 20km/h	Up to 40km/h

There are a couple of flags that need to be waved with my chart here; the first is the minimum pressure of 105kPa/15psi. This is a safe minimum, meaning that without being too aggressive with your steering or braking there's a reasonable chance you'll keep the tyre on the rim. The contact point is the "bead" of the tyre, a narrow strip around the inner circumference of your tyre that mates up against the inner lip of your wheel's rim.

Blow enough air into the wheel assembly, and the beads will seat against the rim and stay there reliably despite the flexing forces being applied to the tyre as you negotiate the trail. Go below that (and you will at some point in your driving career) and do so in the knowledge that a hard turn will dislodge the tyre from the rim because there's simply not enough air there to do the



more air out. A 50 percent reduction from road pressures might ultimately be the go, but with practice and observation you'll let them down bit-by-bit and arrive at something that suits the track on that day and in those conditions.

I say conditions because from one season to another there will be a variance, especially in sand. It's all about the moisture content, something also true about mud.





job. Competition off-roaders use bead-lock wheels to prevent this from occurring.

These sub-105kPa/15psi pressures, say 55kPa/8psi – 80kPa/12psi will be needed in an emergency; like you're bogged on a beach with a rising tide. I've used them on plenty of occasions and successfully too, mindful of the need to keep the speed slow. Drive any faster than 25km/h for an extended period, and the tyre will get hot and bothered; and gently does it with turns, brakes and accelerator.

I've also adjusted down the speeds recommended for mud and rock. While 125kPa/18psi will happily sustain 50km/h all day and in the sand or elsewhere where momentum is the key, driving through mud or over sharp rocks at that speed might not be prudent! Slow down to avoid a loss of control in the mud or banging your precious chassis on a sharp rock.

All this is aiming for one thing, to make your progress as easy as possible, without wheel-spin and to leave as little impact on the track as we can for others to enjoy too! 🏠