4WD — Tyre Tips

Tyres affect how a car steers, starts, stops, sounds, feels and looks...

Fact: A taller tyre gives more clearance under the differential and chassis; a wider tyre (or change in tread pattern) gives more traction.

- Whenever moving to a larger tyre size, re-gear the front and rear ends to off-set the size.
- It's important to keep in mind that lifting the vehicle also raises its centre of gravity, thus increasing chances for roll-overs.
- Under-inflated tyres cause the engine to work harder. Similar to riding a bicycle with low tyres. Increased rolling resistance makes it harder to pedal.
- Under-inflated tyres wear faster and affect the steering and handling of a vehicle.
- Under-inflation, by as little as 6 p.s.i., can increase petrol usage by 3%.
- Cold temperatures affect the air pressure in tyres. There is a loss of one pound for each ten degrees of temperature drop.
- Most 4-wheelers drop their tyre pressures for the trail. This helps with increased traction.
- When airing down, ground clearance is decreased several inches by reducing the working diameter of the tyre. Therefore the gear ratio will be lowered slightly, as well as making the sidewalls of the tyre more vulnerable to damage.
- Airing down tyres is the easiest and most cost effective method of increasing off-road performance.
- "All-terrain" (AT) tread performs well under a variety of off-highway conditions and to some extent has closed the street/trail performance gap. The closed tread design is usually quiet on the highway, yet noisier than a street tyre, and performs well on rocks, sand, and on the highway.
- Only a small patch of tyre touching the pavement at any given moment (called the "contact area") is responsible for keeping a vehicle under control. That contact area is only about six square inches in size.
- Under normal loads, inflate tyres according to the vehicle manufacturer's recommendations, NOT the maximum pressure listed on the sidewall.
- For the most accurate reading, tyre pressure must be checked when tyres are cold.

Tyre Markings

If you look at your tyres, you'll see markings that give you the specifications for that tyre.

Let's take **P 195/60R 15 94H** for example.

- 'P' means passenger vehicle;
- '195' refers to the nominal section width of the tyre in millimeters;
- '60' is the aspect ratio of the tyre (the ratio between the tyre's height and width);
- 'R' is the symbol for radial ply construction;
- '15' is the wheel rim diameter in inches;
- '94' Is the Load Index, which is the load a tyre can carry at the speed indicated by the speed symbol ('H') up to 210km/h under specified conditions; 94 represents 670kg *(refer to chart below)*.
- 'H' indicates the Speed Category at which the tyre can carry a load corresponding to its load index under specified conditions. 'H' represents 210km/h *(refer to chart below).*

Load Index & Speed Rating

Using a **265/75R 16 119N** tyre size as an example, the 119N at the endof the size represents the tyre's service description. A service description identifies the tyre's load index and speed rating. The first three digits – 119 – represents the tyres load index and are followed by a single letter – N – identifying the tyre's speed rating.

LOAD INDEX

265/75R16 119N - The Load Index - 119 - is the tyre's assigned numerical value used to compare relative load carrying capabilities. In the case of this example the 119 identifies the tyre's ability to carry a maximum of 1360 kg (2998 lbs). The higher the tyre's Load Index number, the greater its load carrying capacity. The Load Index rating also represents the load carrying capacity of the tyres when they are inflated to maximum psi so the load carrying capacity reduces as tyre pressures are reduced.

Load Index	kg	lbs
90	600	1323
91	615	1356
92	630	1389
93	650	1433
94	670	1477
95	690	1521
96	710	1565
97	730	1609
98	750	1653
99	775	1709
100	800	1764
101	825	1819

Load Index	kg	lbs
102	850	1874
103	875	1929
104	900	1984
105	925	2039
106	950	2094
107	975	2149
108	1000	2205
109	1030	2271
110	1060	2337
111	1090	2403
112	1120	2469
113	1150	2535

Load Index	kg	lbs
114	1180	2601
115	1215	2679
116	1250	2756
117	1285	2833
118	1320	2910
119	1360	2998
120	1400	3086
121	1450	3197
122	1500	3307
123	1550	3417
124	1600	3527
125	1650	3638

SPEED RATING

Speed ratings are based on laboratory tests where the tyre is pressed against a large diameter metal drum to reflect its appropriate load, and run at ever increasing speeds until the tyre's required speed has been consistently exceeded.

Australian Vehicle Standards' rules state that a 4WD manufactured with offroad features must have a tyre speed rating of N (140 km/h) or greater. It is not a legal requirement to match the tyre placard's speed rating so long as it is not less than N (140 km/h). The speed rating must be stamped on the tyre.

It is important to note that speed ratings only apply to tyres that have not been damaged, altered, under-inflated or overloaded. A tyre that has been cut or punctured no longer retains the original speed rating, even after being repaired.

***Disclaimer:* While a speed symbol is an indication of the speed capability of the tyre, we do not endorse the operation of any vehicle in excess of legal speed limits.**

Speed Category Symbol	Speed Km/h
E	70
F	80
G	90
J	100
K	110
L	120
M	130
N	140
P	150
Q	160

Speed Category Symbol	Speed Km/h
R	170
S	180
T	190
U	200
H	210
V	240
W	270
Y	300
Z	Over 240

Article sourced from Tyres 4U website and Cooper Tyres brochure