



Tyre sidewall markings explained

Understanding the markings on the sidewalls of tyres will help you to choose the right tyres for your car. Here's a guide to those sidewall markings using a **175/80 R14 88H** tyre as an example.

175 - Tyre width

This is the width across the tread measured in mm but more accurately defined as the **section width** - the width of the inflated tyre section, excluding any lettering or decoration on the sidewall.

80 – Aspect ratio

The aspect ratio or profile of the tyre is calculated as the sidewall height expressed as a percentage of the tyre width. So a tyre with an aspect ratio of 80 is a tyre whose height is equal to 80% of its width. Modern tyres have lower aspect ratios – for example 60 - than the 80 originally fitted to the MGBGTV8. The expression “sidewall height” is more accurately defined as the **section height** – the radial distance between where the bead of the tyre sits on the wheel rim to the outer most point at the centerline of the tread.

Selecting a lower aspect ratio than originally specified for the wheel on your classic MG can lower the gearing, so care needs to be taken in any tyre choice. However if you fit wider tyres, say 195 rather than 175, then a slightly reduced aspect ratio may not result in a significant change to the gearing of the drive train, but it will need careful thought before making a decision on choice of tyre width and aspect ratio. If in doubt seek advice from a specialist tyre supplier or fitter. See the note on **Changing either wheel size and/or tyre width and aspect ratio** below and also the useful V8NOTE187 at www.v8register.net for more information.

R – Radial construction

This marking is almost redundant these days because very nearly all tyres for cars are radials but when the MGBGTV8 was launched in 1973 tyres with crossply construction were still available and fitted to some vehicles. Radial tyres were specified

equipment for the MGBGTV8 from its launch.

14 – Wheel rim diameter

This is the diameter in inches of the rim of the wheel that the tyre has been designed to fit. The diameter is measured bead shoulder to bead shoulder which equates to the tyre internal diameter. Simply measuring the external wheel diameter includes the bead/rim retaining lip and will make dimension appear slightly larger than they actually is.

88 – Load index

This is a numerical code which gives the maximum load that the tyre can carry whilst it is travelling at up to the maximum speed set by the speed rating of the tyre. In the example above, 88 means that this tyre can carry 560 kg whilst travelling at its maximum speed.

See the table alongside for the various load index codes and the corresponding maximum loads.

H – Speed rating

This indicates the maximum permitted speed that the tyre can endure for a period of ten minutes without being in danger of sustaining damage. The speed rating of the tyre must match or exceed

Speed Symbol table

Speed Symbol	Speed (km/h)	Speed (mph)
L	120	75
M	130	81
N	140	87
P	150	93
Q	160	99
R	170	108
S	180	112
T	190	118
U	200	124
H	210	130
V	240	149
W	270	168
Y	300	186

Load Index table

Load Index	Load (kg)	Load Index	Load (kg)	Load Index	Load (kg)
65	290	85	515	105	925
66	300	86	530	106	950
67	307	87	545	107	975
68	315	88	560	108	1000
69	325	89	580	109	1030
70	335	90	600	110	1060
71	345	91	615	111	1090
72	355	92	630	112	1120
73	365	93	650	113	1150
74	375	94	670	114	1180
75	387	95	690	115	1215
76	400	96	710	116	1250
77	412	97	730	117	1285
78	425	98	750	118	1320
79	437	99	775	119	1360
80	450	100	800	120	1400
81	462	101	825	121	1450
82	475	102	850	122	1500
83	487	103	875	123	1550
84	500	104	900	124	1600



the maximum speed of your car. See the table below for the maximum permitted speeds for each speed rating. Generally tyre speed ratings are in alphabetical order, however W and Y rated tyres are a special case as they can operate at higher maximum speeds than older Z rated tyres. It is therefore safe to replace your current Z rated tyres with W or Y rated tyres.

Important note regarding load index and speed rating

It is essential you **do not fit** tyres to your vehicle with a lower speed rating or load index than recommended by the vehicle manufacturer. Fitting lower speed rated tyres or tyres with a lower load index may invalidate your insurance. Although the UK speed limit is just 70mph, most vehicles are more than capable of exceeding this speed. Therefore vehicle insurance companies will insist that the tyres of the correct speed rating are fitted to your vehicle.

E4 marking and DOT code

The E4 marking is an ECE type approval mark which demonstrates the tyre has been tested as high quality by the European Regulatory Authorities. All tyres for use in the USA have the DOT code as required by the US Department of Transport (DOT). It specifies the company, factory, mould, batch, and date of production - 2 digits for the week of the year plus 2 digits for the year; or 2 digits for the month of the year plus 1 digit for the year for tyres made prior to 2000. So in the example above the **0508** indicates that tyre was made in the fifth week of 2008.

Additional information on the sidewall will include the manufacturer's name and the

country of origin. For asymmetric tyres the outer face of the tyre will have "outside" as an additional sidewall marking.

Earlier sidewall markings. Prior to 1991, tyre speed ratings were shown between the tyre size and the "R" character in the case of a radial construction tyre. For example in the MGBGTV8 Driver's Handbook AKD 8423 page 67 the recommended tyres were **175HR x 14 radial ply**. Back in the early 1970s the available codes were SR (112 mph, 180 km/h), HR (130 mph, 210 km/h), VR (in excess of 130 mph, 210 km/h) and ZR (in excess of 149 mph, 240 km/h). The ZR code is still in common use, often combined with a W or Y speed code.

Changing either wheel size and/or tyre width and aspect ratio

When considering changing either wheel or tyre sizes, it is necessary to retain an overall diameter (wheel rim diameter plus the tyre sections) which is as close as possible to the original if the gearing of the drive train is to be maintained. Changing the overall diameter will also alter the ride height. There is a very useful **Tyre Size Change Calculator** on the etyres website which can help you.

<http://www.etyres.co.uk/tyre-size-calculator.htm>

Of course some people might wish to make changes by using different wheel and tyre combinations. If the overall gearing of the vehicle is significantly changed as a consequence, then the

speedometer will have to be recalibrated to suit. If wider tyres are fitted, remember to check that they do not foul the wheel arches under any conditions. Turning up the lip of the wheel arch may help. If advantage is taken of modern tyre compounds or wider tyres to increase cornering speeds, this will increase the load on the front wheel bearings, amongst other components, and these should be regularly checked.

Contributors: This note has been prepared by Victor Smith with helpful contributions from John Bolt, Gordon Hesketh-Jones, Chris Hunt Cooke, Geoff King, Bob Owen, Ian Quarrington and Dave Wellings.

	Tread Width	Profile Height	Wheel Diameter	Overall Tyre Diameter	
Old >> Tyre >> Size >>	195 mm	65 %	15 inches	24.98 inches	634 mm
Do not select impossible tyre sizes ; Check manufacturers.					
New >> Tyre >> Size >>	195 mm	65 %	15 inches	24.98 inches	634 mm
We recommend a MAXIMUM of +/- 2.5% difference					
Difference in Diameter = 0 %					
Actual diameter change = 0 mm					