



Motorhome Tyres

Tyres are the only parts of the motorhome which are in contact with the road. Safety in acceleration, braking, steering and cornering all depend on a relatively small area of road contact. It is therefore of paramount importance that tyres should be maintained in good condition at all times and that when the time comes to change them the correct replacements are fitted.

The original tyres for a motorhome are determined by joint consultation between the vehicle and tyre manufacturers and take into account all aspects of operation. It is recommended that changes in tyre size or type should not be undertaken without seeking advice from the motorhome or tyre manufacturers, as the effect on motorhome handling, safety and clearances must be taken into account.

In some other European countries it is illegal to use replacements which differ in certain respects (e.g. size, load, and speed rating) from the tyre fitted originally by the vehicle manufacturer.

And Your Safety



TyreSafe[®]
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Charity Number:
1168354 (England and Wales)

Motorhome Tyres and Your Safety

Don't Forget Your Tyres

Whatever the vehicle, safe driving is extremely important and one major factor frequently overlooked is the tyres. Look after the tyres properly and you will improve the safety and behaviour of your motorhome. This booklet has been produced by the UK tyre industry to help you to do this.

Check The Pressure

It is essential to the safety and stability of the vehicle that all tyres are correctly inflated. This is a 'golden rule' of motoring and of motorhome operation in particular. Incorrect tyre pressures can not only adversely affect the handling, but can also cause dangerous tyre failure. The correct inflation pressure of your motorhome tyres will be shown in the vehicle/chassis handbook.

Furthermore, tyres that are not inflated to the correct pressure wear out more quickly and affect the vehicle's fuel consumption. So in the long run, keeping them at the right pressure could also save you money.

THE VOLUME OF PRESSURISED AIR INSIDE THE TYRE DETERMINES THE LOAD THE TYRE CAN WITHSTAND. REDUCING TYRE PRESSURE REDUCES THE TYRE'S LOAD CARRYING CAPACITY.

Pressures should be checked and, if necessary, adjusted prior to any journey when the tyres are cold – not during or after a run when they will be higher. Never reduce pressures when the tyres are warm, as they could be too low when they cool down. After pressure checking ensure the valve is not leaking and that a valve cap is fitted.

Fit The Right Tyres

As with all road vehicles, it is essential that tyres of the correct specification be fitted. It is always advisable to have the same construction of tyres on all wheels. Only tyres of equal size and service description (Load Index/Speed Symbol) and identical wheels should be fitted across an axle and carried as a spare. Tyre pressures across an axle should be equal.

Tyres originally fitted to motorhomes are usually of a Light Commercial ("C" or "CP") type. CP-type tyres are now widely used as they have been designed to cater for the higher loads imposed by motorhomes, especially when fitted in a single formation on the rear axle. The original tyre specification should not be changed without consulting either the vehicle or tyre manufacturer. Deviating from the original specification of tyre is likely to have an effect on the handling and general characteristics of the vehicle. Never replace the tyres with ones of a lower speed rating or load capacity.

Most tyres in current use will be of a 'tubeless' construction, although some older vehicles may have 'tube type' tyres fitted. If the tyre is marked 'tube type' it is important the correct size of tube is used. If converting from 'tube type' tyres to 'tubeless' radials, the wheel must be of the 'safety' type. Consult a tyre expert before carrying out such a conversion.

If travelling abroad during the winter season, some countries stipulate appropriate winter tyres are fitted to the vehicle. Even if the country being visited does not employ such a legal requirement it is always a good practice to fit tyres that are appropriate for the road/weather conditions. Consult the tyre manufacturer.

Watch Your Speed

Never exceed the speed limit. This may seem an obvious recommendation, but with motorhomes the vehicle load and load distribution is often different from that of more conventional road vehicles, resulting in unique handling characteristics. Drive at a speed that is comfortable for both you and the vehicle.

TABLES OF SPEED SYMBOLS AND LOAD INDICES ARE SHOWN ON PAGE 4.

General Recommendations

Spare Tyre/Wheel

It is strongly recommended that a compatible spare wheel/tyre assembly be carried for the motorhome. This should be checked for its condition and inflation pressure regularly. The pressure should be set at the maximum required for the vehicle. You never know when it will be needed and for which wheel position.

Minimum Tread Depth

To ensure compliance with regulations throughout Europe a minimum tread depth of 1.6 mm **across the full tread width** is strongly recommended. If you are traveling abroad, some European countries require winter tyres to be fitted at certain times of the year with a minimum tread depth of 3 or 4 mm, so be sure to check this with the countries you are visiting if this applies to you.

Tyre Care

Check your tyres regularly but particularly when the motorhome has not been used for some time. Vehicles that are not used normally used during winter should be thoroughly inspected prior to re-use. Look particularly for any sign of age deterioration in the tyres such as sidewall cracking and carcass deformation. Tyres on a stationary vehicle, particularly if parked in coastal areas, always age more quickly than those in regular and frequent use. If your motorhome is going to stand for any length of time, it is wise to cover the tyres and to shield them from direct sunlight and if possible to jack the weight off them. If in doubt about the condition of your tyres, have them checked immediately by a tyre specialist.

There is no known technical data that supports a specific tyre age for removal from service. However, in the interests of safety a number of vehicle and tyre manufacturers recommend that tyres (including spare tyres) that were manufactured more than a certain number of years previously be replaced with new tyres, even when they appear to be usable from their external appearance and the tread may not have reached the minimum wear out depth. It is recommended that any such instruction be followed.

Consumers should note that most tyres would have to be removed for tread wear-out or other causes before any prescribed age is reached. A stated removal period in no way reduces the consumer's responsibility to replace tyres as needed.

Puncture Sealants

The use of a pre-puncture sealant is not recommended; however it is recognised that a post-puncture sealant may well serve a useful function if used to move a stranded vehicle to a safe location where a proper INTERNAL examination and repair of the tyre may be carried out. In view of the fact that the non-punctured tyre on the other side of the axle may have been overloaded following a deflation it is important to have BOTH tyres examined. If the distance travelled on a totally deflated tyre is more than a few metres it is likely that the extent of non-visible damage renders the tyre irreparable and, hence, in need of replacement.

Do Not Overload

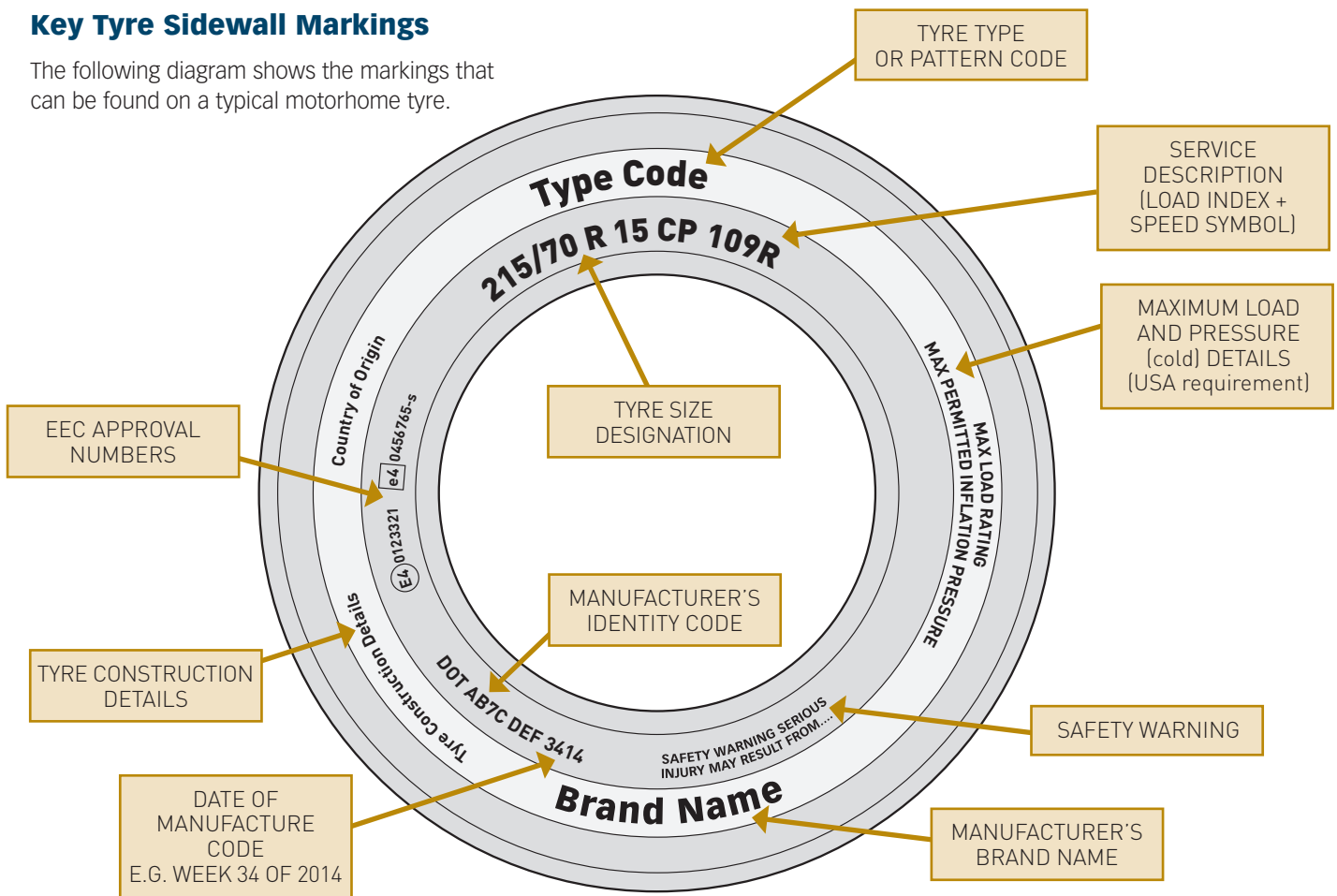
It is dangerous to overload tyres at any time. The police may take action against drivers when their vehicle is carrying an excessive or badly distributed load. A poorly distributed load can cause overloading of one or more wheels even when the maximum permissible total load is not exceeded. It is important to spread the load evenly around the vehicle and as low as possible, thus the stability of the vehicle will not be impaired. Failure to adhere to this rule will invite tyre problems and possibly tyre failure.

It is advisable to ensure the total vehicle operating weight is below the specified maximum limit, and a margin of 10% will partly compensate for some unequal load distribution.

To ensure a safely loaded vehicle make use of public weighbridges. Contact your local council if you are unsure where to find your nearest weighbridge.

Key Tyre Sidewall Markings

The following diagram shows the markings that can be found on a typical motorhome tyre.



Explanation of Tyre Size Designations – MOTORHOME CP-TYPE TYRE EXAMPLE

Nominal Section Width (mm)	Nominal Aspect Ratio (Sidewall Height/Section Width as a percentage)	Tyre Construction (Radial)	Nominal Rim Diameter Code*	Service Description	
				Load Index**	Speed Symbol
195	70	R	15 CP	109	R

* "CP" after the rim diameter code denotes a commercial vehicle tyre for service on motorhomes. "C" would denote a standard light commercial tyre.

** CP-type tyres usually only have a single load index indicating their normal use as a single fitment. Where a twin fitment is required the axle capacity is 1.85 times that for a single fitment axle. C-type tyres usually have two load indices (e.g. 109/107). The first load index applies to tyres in single formation and the second applies to tyres fitted in twin formation.

Tyre Speed Symbols

Speed Symbol	Maximum Speed		Speed Symbol	Maximum Speed	
	mph	km/h		mph	km/h
J	62	100	S	112	180
K	68	110	T	118	190
L	75	120	U	124	200
M	81	130	H	130	210
N	87	140	V	149	240
P	93	150	W	168	270
Q	99	160	Y	186	300
R	106	170	ZR	over 149	over 240

Tyre Load Index Table

Maximum load per single wheel

Load Index	Load kg	Load Index	Load kg	Load Index	Load kg	Load Index	Load kg
91	615	100	800	109	1030	118	1320
92	630	101	825	110	1060	119	1360
93	650	102	850	111	1090	120	1400
94	670	103	875	112	1120	121	1450
95	690	104	900	113	1150	122	1500
96	710	105	925	114	1180	123	1550
97	730	106	950	115	1215	124	1600
98	750	107	975	116	1250		
99	775	108	1000	117	1285		

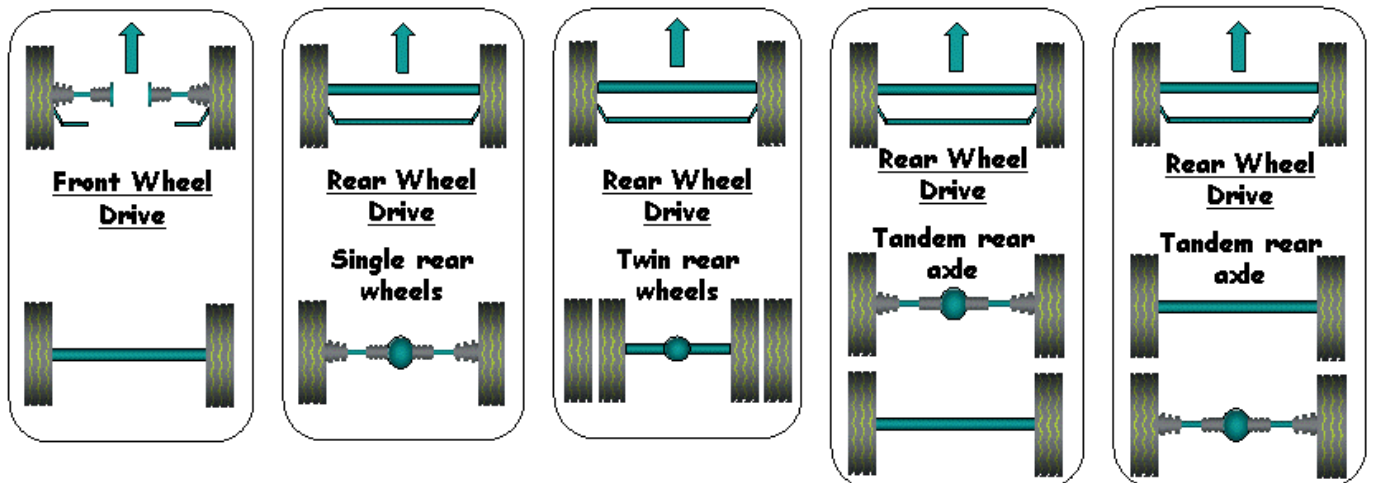
Tyre Loads

In the interests of safety it is prudent to avoid continuous operation at the tyre's maximum load capacity. Surveys over the years show that the opportunity for unwittingly overloading a motorhome, or poorly distributing the weight are high. To safeguard against overloading the tyres, the UK tyre industry recommends that the maximum load on an axle should not exceed 90% of the tyre load capacity as indicated by the tyre's load index.

Valves

Valves appropriate to the wheel aperture and inflation pressures must be used. Note that standard rubber snap-in tubeless valves must not be used for cold inflation pressures over 4.5 bar (65 psi), so metal valves or special high pressure snap-in valves will be required for most motorhomes. Valves should be replaced or serviced when replacing tubeless tyres. When checking or adjusting inflation pressure, always ensure the valve is not leaking. A valve cap with an effective rubber seal must always be used.

Popular Motorhome Axle Configurations



The trailing rear axle may be referred to as a 'Tag' axle

The leading rear axle may be referred to as a 'Tag' axle

Remember the 'Golden Rules'

For safe use of motorhomes:

- Fit tyres of the correct specification • Tyres must be in good condition • Do not overload
- Tyre pressures must be correctly maintained (obtain a pressure gauge from your auto centre)
- Check your tyres regularly for any signs of damage and remove from the tread any potential penetrations such as trapped stones.
- Drive the combination at reasonable ('comfortable') speeds – within the speed limits
- Avoid rapid manoeuvres, e.g. sudden overtaking/lane changes, wherever possible. Good driving practice includes intelligent anticipation of such moves.
- Respect the motorhome manufacturer's recommendations at all times.

Motorhome Tyre Inflation Pressure Advice

The correct inflation pressures for your motorhome's tyres can normally be found in the manufacturer's documentation or on a sticker on the vehicle. You can also obtain advice on your tyre pressures from your vehicle or tyre manufacturer. In the absence of any of the above, here is some information to help with your motorhome tyre pressures.

LIGHT COMMERCIAL C-TYPE TYRES: MINIMUM PRESSURE FOR LOAD TABLE												
Tyre Size	Load Index	Cold Inflation Pressure, bar/(psi)										
		2.5 (36)	2.75 (40)	3.0 (44)	3.25 (47)	3.5 (51)	3.75 (54)	3.95 (57)	4.15 (60)	4.25 (62)	4.5 (65)	4.75 (69)
Axle Load Capacity (kg) - Single formation												
165 R 14 C	97/95	912	985	1070	1125	1194	1262	1315	1368	1395	1460	
175 R 14 C	99/98	969	1045	1136	1195	1268	1340	1396	1453	1481	1550	
185 R 14 C	102/100	1062	1146	1245	1310	1390	1469	1532	1593	1624	1700	
195 R 14 C	106/104	1187	1281	1392	1465	1554	1642	1712	1781	1815	1900	
185/75 R 14 C	102/100	1017	1098	1193	1255	1332	1407	1467	1526	1555	1628	1700
195/70 R 15 C	104/102	1125	1214	1319	1387	1472	1556	1622	1687	1720	1800	
225/70 R 15 C	109/107	1489	1607	1746	1837	1949	2060					
225/70 R 15 C	112/110	1400	1511	1641	1727	1832	1936	2018	2100	2140	2240	
215/70 R 15 C	109/107	1287	1389	1489	1588	1685	1780	1854	1931	1968	2060	
195/75 R 16 C	107/105	1167	1259	1368	1439	1527	1614	1683	1750	1784	1867	1950
205/75 R 16 C	110/108	1269	1369	1487	1565	1660	1755	1829	1903	1940	2030	2120
215/75 R 16 C	113/111	1376	1485	1614	1698	1801	1904	1984	2064	2104	2203	2300
195/65 R 16 C	104/102	1077	1162	1263	1329	1410	1490	1553	1616	1647	1724	1800
205/65 R 16 C	107/105	1167	1259	1368	1439	1527	1614	1683	1750	1784	1867	1950
215/65 R 16 C	109/107	1233	1330	1445	1521	1613	1705	1777	1849	1885	1973	2060
225/65 R 16 C	112/110	1340	1447	1572	1653	1754	1854	1933	2011	2049	2145	2240
235/65 R 16 C	115/113	1454	1569	1682	1794	1903	2011	2097	2181	2223	2327	2430

The above table shows the minimum tyre inflation pressures for a given axle load, however for motorhome use TyreSafe suggests:

- using the pressure indicated above for an axle load 10% higher than your axle load (up to the maximum permissible axle load shown in **RED**).
- do not exceed the pressure given for the maximum permissible axle load (shown in **RED**).
- do not exceed the maximum cold inflation pressure given on the tyre sidewall.

Specialised Motorhome CP-type tyres

CP-type tyre construction enables the use of higher inflation pressures to provide resistance to the difficult conditions of use encountered on motorhomes especially on the rear axle.

Therefore when CP-type tyres are fitted in a single formation on a motorhome rear axle, set the inflation pressures to 5.5 bar (80 psi) for all loads.

SPECIALISED MOTORHOME CP-TYPE TYRES: MINIMUM PRESSURE FOR LOAD TABLE													
Tyre Size	Load Index	Wheel Position	Cold Inflation Pressure, bar/(psi)										
			3.5 (51)	3.75 (54)	4.0 (58)	4.15 (60)	4.25 (62)	4.5 (65)	4.75 (69)	4.82 (70)	5.0 (73)	5.25 (76)	5.5 (80)
			Axle Load Capacity (kg)										
195/75 R 14 CP	106	Front	1488	1573	1656	1705	1738	1820	1900				
		Rear, Single	1323*	1399*	1473*	1517*	1546*	1618*	1690*	1710*	1761*	1831*	1900
		Rear, Twin	2753	2909	3064	3155	3216	3366	3515				
215/70 R 15 CP	109	Front	1613	1705	1795	1849	1885	1973	2060				
		Rear, Single	1435*	1516*	1597*	1644*	1676*	1754*	1832*	1854*	1909*	1985*	2060
		Rear, Twin	2985	3154	3321	3421	3487	3650	3811				
225/70 R 15 CP	112	Front	1754	1854	1952	2011	2049	2145	2240				
		Rear, Single	1560*	1649*	1736*	1788*	1823*	1908*	1992*	2016*	2075*	2158*	2240
		Rear, Twin	3246	3430	3612	3720	3791	3969	4144				
195/65 R 16 CP	104	Front	1410	1490	1569	1616	1647	1724	1800				
		Rear, Single	1254*	1325*	1395*	1437*	1465*	1533*	1601*	1620*	1668*	1734*	1800
		Rear, Twin	2608	2756	2902	2989	3046	3189	3330				
225/65 R 16 CP	112	Front	1754	1854	1952	2011	2049	2145	2240				
		Rear, Single	1560*	1649*	1736*	1788*	1823*	1908*	1992*	2016*	2076*	2158*	2240
		Rear, Twin	3246	3430	3612	3720	3791	3969	4144				
235/65 R 16 CP	115	Front	1903	2011	2118	2181	2223	2327	2430				
		Rear, Single	1692*	1788*	1883*	1939*	1977*	2069*	2161*	2187*	2251*	2341*	2430
		Rear, Twin	3521	3721	3918	4035	4113	4305	4496				
195/75 R 16 CP	107	Front	1527	1614	1700	1750	1784	1867	1950				
		Rear, Single	1358*	1435*	1511*	1557*	1587*	1661*	1734*	1755*	1807*	1879*	1950
		Rear, Twin	2826	2986	3144	3238	3300	3455	3608				
215/75 R 16 CP	113	Front	1801	1904	2005	2064	2104	2203	2300				
		Rear, Single	1602*	1693*	1783*	1836*	1871*	1959*	2045*	2070*	2131*	2216*	2300
		Rear, Twin	3333	3522	3708	3819	3893	4075	4255				
225/75 R 16 CP	116	Front	1958	2069	2179	2244	2287	2394	2500				
		Rear, Single	1741*	1840*	1938*	1996*	2034*	2129*	2223*	2250*	2316*	2409*	2500
		Rear, Twin	3623	3828	4031	4151	4231	4429	4625				
225/75 R 16 CP	118	Front	1909	2017	2124	2187	2229	2334	2437	2466	2539	2640	
		Rear, Single	1839*	1943*	2046*	2107*	2148*	2248*	2348*	2376*	2446*	2544*	2640
		Rear, Twin	3531	3731	3929	4047	4124	4317	4508	4561	4697	4884	

The above table shows the minimum tyre inflation pressures for a given axle load, however for motorhome use TyreSafe suggests:

- using the pressure indicated above for an axle load 10% higher than your axle load (up to the maximum permissible axle load shown in **RED**).
- do not exceed the pressure given for the maximum permissible axle load (shown in **RED**).
- do not exceed the maximum cold inflation pressure given on the tyre sidewall.

* for CP-type tyres when fitted in a single formation on a motorhome rear axle, set the inflation pressure to 5.5 bar (80 psi) for all loads.

Figures in **RED** show the maximum permissible axle loads, and **ORANGE** loads above 90% of this level.

It is recommended not to exceed 90% of the maximum permissible axle load in order to reduce the risk of overloading an individual tyre. Also, load your motorhome to achieve a weight distribution as even as possible across the axle.