

And Your Safety

Motorcycle Tyres

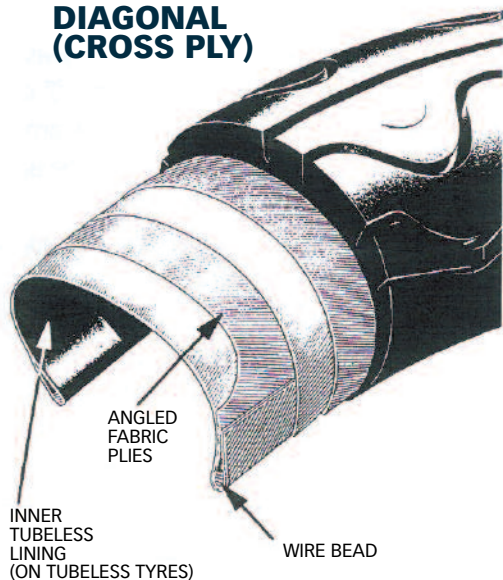
Tyres are the only parts of the motorcycle which are in contact with the road. Safety in acceleration, braking, steering and cornering all depend on a relatively small area of road contact. It is therefore of paramount importance that tyres should be maintained in good condition at all times and that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

The original tyres for a motorcycle are determined by joint consultation between the motorcycle 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 motorcycle or tyre manufacturers, as the effect on motorcycle handling, safety and clearances must be taken into account.

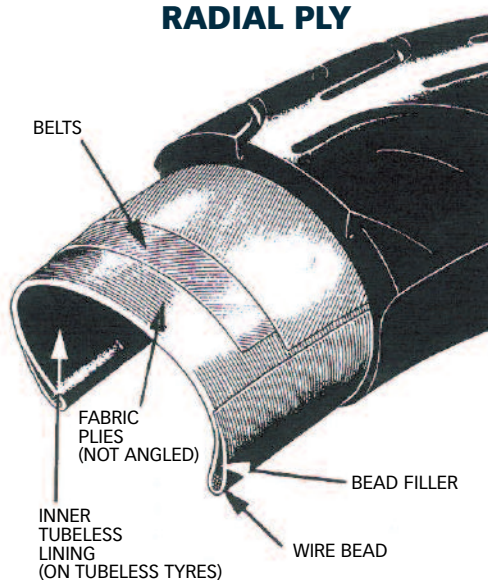
In some other European countries it is illegal to use replacements which differ in certain respects (e.g. size, load, and speed rating) from the tyre fitted originally by the vehicle manufacturer.



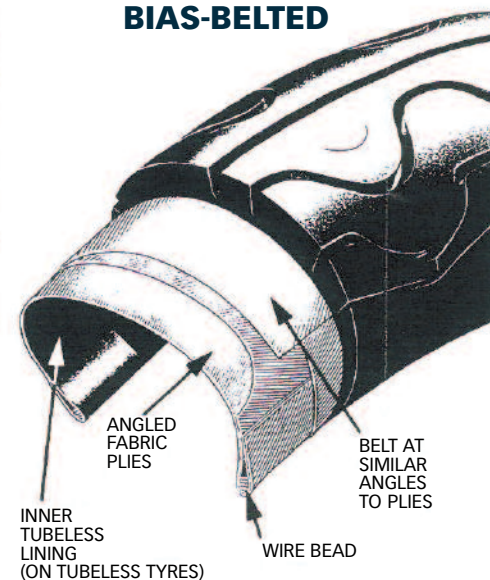
DIAGONAL (CROSS PLY)



RADIAL PLY



BIAS-BELTED



Motorcycle Tyres and Your Safety

Types of Tyres

There are three tyre construction types:

- Diagonal (cross) ply
- Radial ply
- Bias belted

Depending on the wheel type, these may be tubeless (no tube required); or tube type (requiring an inner tube).

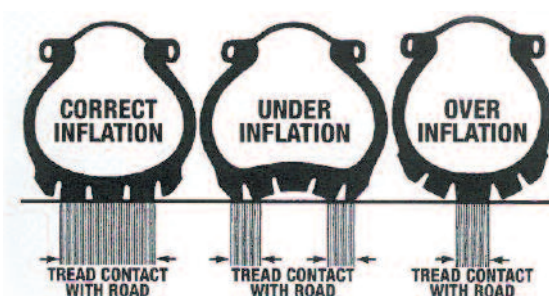
All three construction types are manufactured in several tread profiles. Tread patterns and profiles are available for front and rear positions. Special tyres are available for sporting events, some of which are unsuitable for road use and are marked accordingly (normally NHS – Not for Highway Service).

Mixing of Tyres

It is illegal and could be dangerous to mix tyres on motorcycles in certain ways, i.e. radial – front/cross-ply; rear – bias belted; front/cross-ply; rear/radial

Where sidecars are fitted and the sidecar axle aligns with either of the motorcycle axles, the sidecar tyre must be of the same type of structure (construction) as the tyre with which it aligns.

If in doubt a tyre specialist should be consulted, but to avoid any misunderstanding it is strongly recommended that both tyres on a motorcycle, and all tyres on a combination, should be of the same construction.



Keep up the Pressure

Inflation pressures must be checked at least once a week. They should be checked only when the tyre is cold, since there is an increase in pressure when the tyre has warmed up after being run. A reliable pressure gauge should be used.

The recommended inflation pressures are vitally important for safe handling of the motorcycle. Pressures must be adjusted appropriately for solo and for pillion and pannier loads. It is dangerous to re-inflate a tyre which has been run flat or seriously under-inflated. Such tyres should be removed for inspection by a tyre specialist.

Running in Tyres

When a new tyre is fitted, it should not be subjected to maximum power or speed for the first 100 miles. Take particular care on wet or greasy roads.

Inspection and Maintenance

Tyres should be examined regularly, removing stones and other objects embedded in the tyre.

Oil and grease should be removed with a suitable diluted detergent.

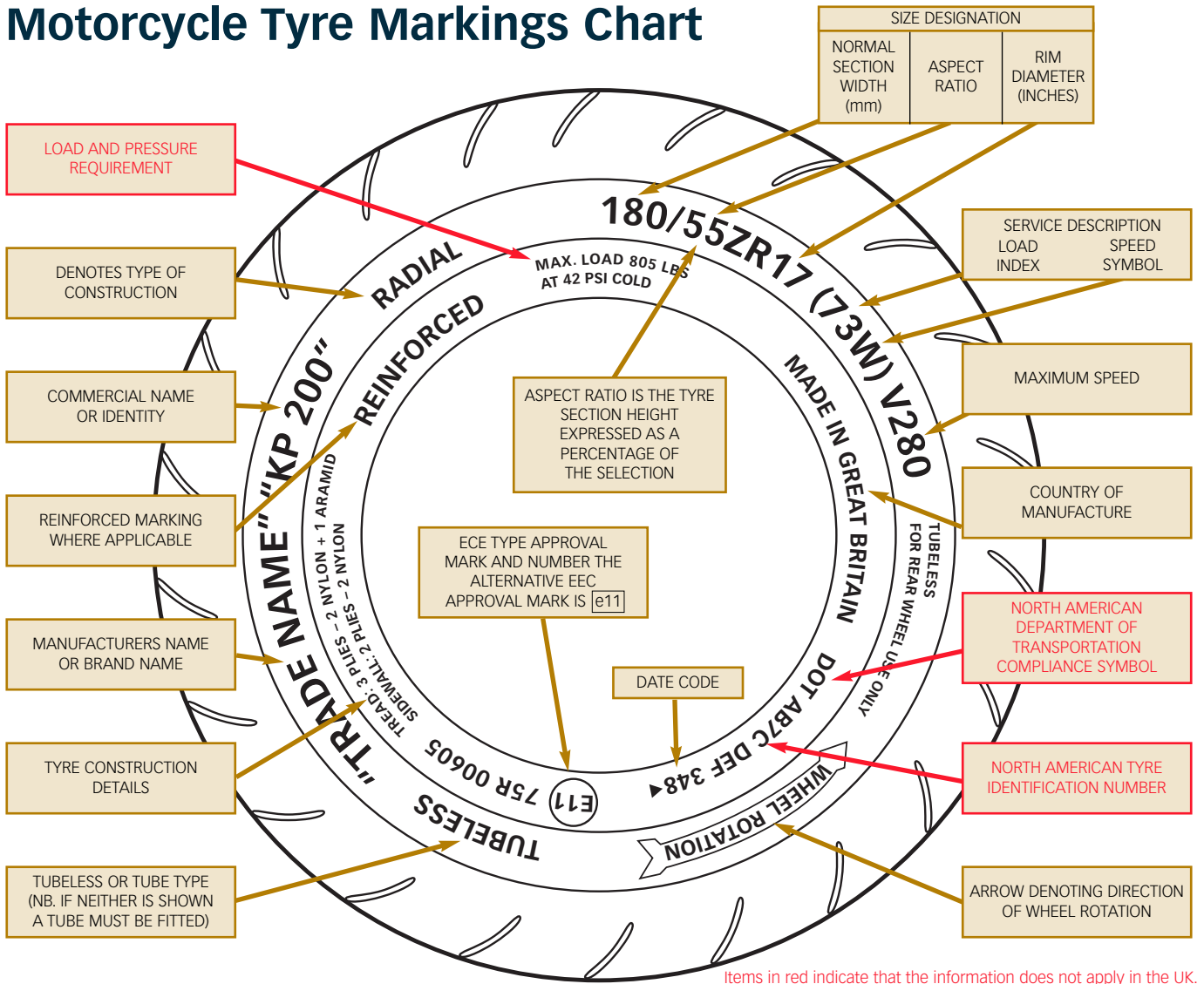
Lumps or bulges could indicate internal damage and should be examined by a tyre specialist without delay.

Watch your Tread

Tyre treads are designed to give good wet grip but the road surface condition plays the major part in tyre to road adhesion. In general, wet grip decreases as tyre tread patterns wear down or as the depth of surface water increases. Motorcyclists should take this into consideration and reduce speed when it is wet.

Motorcycle tyres normally have tread wear indicators in the tread grooves and the appearance of these indicators, level with the tread surface, should be taken as one sign that the tyre is ready for replacement.

Motorcycle Tyre Markings Chart



The legal limit of tyre tread depth in the UK for motorcycles over 50cc is 1mm across $\frac{3}{4}$ of the width of the tread pattern and with visible tread on the remaining $\frac{1}{4}$. For motorcycles up to 50cc the law requires that all the grooves of the original tread pattern must be clearly visible. The legal requirements may differ in other countries.

Tyre Load and Speed Markings

Radial, bias belted and diagonal (cross) ply tyres have markings to indicate their load and speed capabilities.

It is important that tyres are suitable for the maximum speed capability of the motorcycle. In some overseas countries this is a legal requirement.

Tyre speeds are shown in accordance with an alphabetical list of symbols indicating speeds at 10km/h increments.

The relevant speed symbol is positioned near the size designation in conjunction with a load index: e.g. 120/90-18 65S, where '65' is the load index and 'S' the speed symbol. In the case of speed symbols 'V' and 'ZR', these are shown within the size designation, e.g. 120/90 V18. Details of speed symbols and load indices are shown in tables 1 and 2.

Tubes

Ensure that the correct size and type is fitted. Always use a new tube when fitting a replacement tube type tyre or a tubeless tyre requiring an inner tube. Tubes which are stretched, thinned or excessively repaired may deflate without warning and should not be re-fitted.

Tubes must always be used with tyres fitted to wire spoked wheels, irrespective of whether the tyre is tubeless or tube type, except for those wire spoked rims specifically designed for tubeless tyres. A rim band or a rim tape of the correct type must be fitted to protect the tube from spoke head damage.

Tubes in Tubeless Tyres

Inner tubes of the correct size may only be used with tubeless tyres if correctly fitted, and approved by the individual tyre manufacturer. It must, however, be emphasised that the result of fitting tubes in tubeless tyres is that, in the event of a puncture, the assembly will behave in exactly the same way as a tube type tyre and tube assembly – i.e. it is likely to lose pressure more rapidly than a tubeless tyre assembly.

Where tubes for certain low profile tubeless tyres are not available, an alternative size tube should not be fitted.

Tube Type Tyres

Tyres which are marked 'Tube Type' or are not marked 'tubeless' must be fitted with an inner tube.

Valves

A new valve should be fitted when replacing tubeless tyres. When checking or adjusting inflation pressure always ensure that the valve is not leaking.

The fitment of a valve core with a steel spring is necessary for high speed usage.

Particular care must be taken to ensure that the valve is the correct size and type for the rim.

When a tube is fitted and the rim valve hole is designed for a rubber snap-in tubeless valve, it will be necessary to fit an adaptor collar or skirted lock nut to ensure correct valve location.

Always fit a valve cap, preferably of the sealing type.

Age Deterioration

Tyres can deteriorate with age which shows as cracking of the tread and sidewall rubber, sometimes accompanied by carcass deformation. Cracking is usually an indication that tyres have been in service for an extremely long time, but rubber deterioration may be brought about by poor storage conditions. If cracking is severe, the tyre must be replaced.

Repaired Tyres

Repairs to motorcycle tyres and tubes should be carried out in accordance with tyre manufacturer's recommendations or the current British Standard AU 159 and should, therefore, be entrusted to a specialist.

All punctured or damaged tyres must be removed from the wheel for internal and external examination to ensure there is no hidden damage which could cause a later failure.

In order to avoid such a hazard, neither externally applied plug type repairs nor liquid sealants are recommended and tyre manufacturers cannot be responsible for problems resulting from their use.

Wheels and Rims

It is essential that the wheel size and type is a suitable fitment for the tyre and motorcycle concerned.

Tyres must not be used on damaged or distorted wheels since this could result in tyre damage, deflation and possible loss of control.

Car and motorcycle rims of the same nominal diameter have different dimensions and therefore car and motorcycle rims and tyres must not be inter-changed.

Removal and Fitting of Tyres

These operations should be entrusted only to a tyre specialist who has the necessary equipment and expertise. Inexpert fitting can result in damaged tyres and wheels.

Direction arrows, where shown on the sidewall, indicate the direction of rotation of front and rear tyres and must not be ignored.

General

Driving over pot-holes, kerbs or other obstructions, even at low speeds, can result in the weakening or fracture of the casing structure. If you are in doubt about the correct tyre for your motorcycle, consult a tyre specialist.

Table 1 – Tyre Speed Marking Table

Speed Symbol	Maximum motorcycle speed for which tyre is suitable	
	Km/h	mph
Moped	50	30
J	100	62
K	110	69
L	120	75
M	130	81
P (or-)	150	95
Q	160	100
R	170	105
S	180	113
T	190	118
U	200	125
H	210	130
V*	240	150
W*	270	168
ZR*	over 240	over 150

* The maximum speed approved may be marked on the tyre as for example V230, meaning a maximum speed of 230km/h

Table 2 – Tyre Load Indices and Related Maximum Loads

Load Index	Load KG	Load Index	Load KG	Load Index	Load KG	Load Index	Load KG	Load Index	Load KG
20	80	35	121	50	190	65	290	80	450
21	82.5	36	125	51	195	66	300	81	462
22	85	37	128	52	200	67	307	82	475
23	87.5	38	132	53	206	68	315	83	487
24	90	39	136	54	212	69	325	84	500
25	92.5	40	140	55	218	70	335	85	515
26	95	41	145	56	224	71	345	86	530
27	97	42	150	57	230	72	355	87	545
28	100	43	155	58	236	73	365	88	560
29	103	44	160	59	243	74	357	89	580
30	106	45	165	60	250	75	387	90	600
31	109	46	170	61	257	76	400	91	615
32	112	47	175	62	265	77	412	92	630
33	115	48	180	63	272	78	425	93	650
34	118	49	185	64	280	79	437	94	670
								95	690



Look after your tyres and they'll look after you

TyreSafe