Form Number: DVT 924
Issue: 7
Origin: DVT
Review: Jan 2028

TYRES

INFORMATION

THIS INSPECTION APPLIES TO:

Tyres fitted to the road wheels only, except in the case of a PSV. The vehicle presenter should be informed when it is noticed that there is a defective tyre on a spare wheel. No comment should be made where a spare wheel is not present.

IDENTIFYING TYRE SIZE AND TYPE

To identify the size and type of tyres, it might be necessary to rotate the wheels or move the vehicle.

Only one sidewall of a tyre needs to be marked.

Section height: section width ratio (aspect ratio).

The aspect ratio of a tyre is included in the size marking e.g. a 215/55R15 has an aspect ratio of 55%.

“Standard” car tyres have a nominal aspect ratio of 82% (unless marked otherwise) and these are almost identical in size to tyres with an aspect ratio of 80% and can be safely mixed in any configuration on a vehicle. Therefore, in these circumstances it is not a Reason for Rejection

Load capacity

The relevant axle UK WEIGHT is that shown on the Manufacturer’s Plate displaying axle weights. Where a Manufacturer’s Plate is not fitted or does not display axle weights, then the load capacity of tyres on such vehicles must be assumed suitable, unless there is indisputable evidence to the contrary.

Dual size marking of tyres

Some tyre manufacturers are now dual marking certain sizes of tyres. For example, a 185/75R14 tyre may be dual marked 185R14

Where a tyre is found to be dual marked by the manufacturer on the side-wall, either markings can be accepted.

Inspecting the tyres

It is not possible to see every part of a tyre, in particular the tread contact area, when twin wheels are fitted or when the body shrouds the tyres. If necessary, the vehicle must be moved to expose the hidden parts and the examination completed from under the vehicle.

Recut tyres

Recut tyres are permitted on:-

- A goods vehicle at least 2540 kg unladen weight having at least 405 mm (16 inch) diameter wheels,
- A vehicle with at least 8 passenger seats, excluding the driver's seat, and over 2540 kg unladen weight,
- A vehicle over 3050 kg unladen weight.

Tread

A tread pattern is the combination of plain surfaces and grooves extending across the breadth of the tread and round the entire circumference.

The tread pattern excludes any tie-bars, tread wear indicators, or other features designed to wear out substantially before the remainder of the pattern, and other minor features. Grooves that had not been cut as deep as those containing the wear indicators when new, are not to be considered as part of the tread pattern.

Breadth of tread

The part of the tyre which can contact the road under normal conditions of use measured at 90 degrees to the peripheral line of the tread.

A 1.6 mm minimum tread depth applies to:

A vehicle first used after January 1933 that is either:-

a. a passenger carrying vehicle (car, motor caravan etc) with not more than 8 passenger seats, excluding the drivers, or

b. a goods vehicle or dual purpose vehicle not exceeding 3500 kg maximum gross weight.

c. All quadricycles

d. Tricycles with an unladen weight exceeding 410kg

A 1.0 mm tread depth applies to:

a. A passenger carrying vehicle with more than 8 passenger seats excluding the driver's seat.

b. Tricycles with an unladen weight not exceeding 410 kg and an engine capacity greater than 50cc

c. tricycles with an ULW not exceeding 410kg which are electrically powered

d. A vehicle first used before January 1933.

A visible tread pattern only applies to:

a. Tricycles with an unladen weight not exceeding 410 kg and an engine capacity not greater than 50cc.

SPEED RATING

Speed Category	Corresponding Speed	
Symbol	km/h	mph
A1	5	3
A2	10	6
A3	15	9
A4	20	13
A5	25	16
A6	30	19
A7	35	22
A8	40	25
B	50	31
C	60	38
D	65	41
E	70	44
F	80	50
G	90	56
J	100	62
K	110	68
L	120	75
M	130	81
N	140	87
P	150	93
Q	160	99
R	170	106
S	180	112
T	190	118
U	200	124
H	210	130
V	240	149

W	270	168
Y	300	186

Tyre Pressure Monitoring System

The inspection of the tyre pressure monitoring system (TPMS) warning lamp only applies to passenger vehicles first used on or after 1 November 2014 with four wheels and no more than 8 passenger seats excluding the driver.

Note: Quadricycles and vehicles issued with a Department's Approval Certificate (IVA), do not require TPMS to be fitted

The warning lamp (as below) will generally illuminate and go off again when the ignition is switched on. If one or more tyre pressures are low, the lamp will remain illuminated.

In the event of a system malfunction, the lamp will flash a number of times and then remain on.

METHOD OF INSPECTION

A. TYPE OF STRUCTURE

On all the tyres fitted, check the

1. Nominal size and aspect ratio.

   Note:
   It cannot be assumed that there is a difference in the nominal sizes of tyres because either twin wheel is not in contact with the ground.

   Note:
   A vehicle tyre which appears to be of inadequate size, ply or speed rating for the vehicle or its use is not a reason for rejection. However, the vehicle presenter should be informed.

2. Type of structure, i.e., bias-belted, cross-ply or radial.

Note:
Steel and fabric radial-ply tyres are to be regarded as the same structure type.

B. LOAD INDEX AND SPEED RATING

1.

a. Check for a load index (of ply rating and tyre size) marked on at least one sidewall of each tyre. (See pages for the identification of tyre load index. Ply rating and tyre size).

Note:
A tyre not marked with a load index or ply rating is assumed to have the lowest 'load capacity' of its size.

b. Check the load index is adequate for the maximum laden weight of the axle. (where known)

2. Check for a speed rating letter marked on the sidewall of each tyre.

C. CONDITION OF TYRES

1. Examine each tyre for:

a. Cuts,

b. Lumps, bulges, tears, exposure to the ply or cord, or tread separation.

Note:
On radial ply tyres care should be taken to distinguish between normal undulations in the carcass, resulting from manufacturing, and lumps or bulges caused by structural deterioration.

c. Recut tread,

d. Incorrect seating in the wheel rim,

e. Valve condition and alignment,

f. Correct fitting,

g. Under-inflation.

Note:
Under-inflation of a tyre is not in itself a reason for rejection.

However,

- A brake test might be inadvisable, because of possible damage, or

- A headlight test might be affected, if the underinflation is affecting alignment.

2. Check tyres for fouling a part of the vehicle.

3. Check tyres on twin wheels for wall contact.

D. BREADTH AND DEPTH OF TREAD

1.6 MM TREAD DEPTH

- Check the tread pattern over the complete circumference of the tyre. Check also that the tread depth meets the requirements using, as necessary a depth gauge accepted for testing.

1.0 MM TREAD DEPTH

- Check the tread pattern over the complete circumference of the tyre. Check also that the tread depth meets the requirements using, as necessary, a depth gauge accepted for testing.

VISABLE ONLY TREAD DEPTH

- Check that the tread pattern is visible over the complete circumference of the tyre.

E. DIRECTIONAL TYRES

A directional tyre fitted to vehicles (with the exception of motorcycles) in the opposite direction is **not** a reason for failure. If a vehicle arrives for the annual inspection with a tyre fitted in the opposite direction the examiner should inform the customer that the tyre has been fitted in the wrong direction and they should have the tyre refitted correctly as soon as possible.

F. TYRE PRESSURE MONITORING SYSTEM

On vehicles first used on or after 1 November 2014 fitted with a tyre pressure monitoring system, check that the warning lamp is operative and does not indicate a system malfunction.

Note: This inspection does not apply to quadricycles or vehicle that have been issued with a Department's Approval Certificate (IVA).

REASON FOR REJECTION

Deficiency

Category

A. TYPE OF STRUCTURE

1. One tyre is of a different nominal size or aspect ratio to any other on the same axle. — MAJOR

Note:
Tyres with aspect ratios of 80% and 82% are almost identical in size and can be safely mixed in any configuration on a vehicle. Where this is done, Reason for Rejection 1 does not apply.

In all other cases of mixed aspect ratios on the same axle, rejection is justified (except where one temporary spare wheel* or space saver is used in an emergency. Where a temporary spare wheel or space saver is used, this should be recorded as an advisory defect).

Temporary spare wheel
A temporary spare tyre must have a speed category at least equal to 120 km/h (speed category symbol L). When fitted to the vehicle for temporary use the outward facing surface of the wheel must exhibit a distinctive colour or colour pattern which is clearly different from the colour(s) of the normal units. If it is possible to attach a wheel cover to the temporary-use spare unit the distinctive colour or colour pattern must not be obscured by this wheel cover. A maximum speed warning symbol must be permanently displayed on the outer face of the wheel in a prominent position

2.

a. One tyre is of a different type of structure from another tyre on the same axle. — MAJOR

b. A 3 or 4 wheeled vehicle fitted with single wheels, and

i. A cross-ply tyre or bias-belted tyre fitted on rear axle and radial-ply tyre is fitted on front axle, or — MAJOR

ii. A cross-ply tyre fitted on rear axle and bias-belted tyre fitted on rear axle. — MAJOR

Note:
Any tyre ‘type’ mix between different axles is acceptable for vehicles that have

- 2 axle and ‘twin’ wheels on the rear axle
- 3 axle, one steering and one driving.

Note:
This does not apply to vehicles with an axle fitted with ‘super

single' tyres having a road contact area at least 300 mm wide.

c.	a tyre of a different type of structure is fitted to a steerable axle from that fitted to another steerable axle	MAJOR
d.	In the case of non-steerable axles a tyre fitted to a driven axle is of a different type of structure from that fitted to another driven axle.	MAJOR

B. LOAD INDEX AND SPEED RATIOS

1.

a.	a tyre not marked with its size on at least one sidewall.	MAJOR
b.	A tyre that has a load index (or ply rating and tyre size) that is inadequate for the permitted maximum laden weight of the axle to which it is fitted. (See pages for the determination of tyre load capacity).	DANGEROUS
c.	A tyre marked with one of the following speed rating letters: A, B, C, D, E, F, G, J or K are not acceptable, however they would be acceptable in the case of a Quadricycle where the speed rating on the tyre is suitable for the maximum design speed as declared by the applicant (this may be a lower speed than the national speed limit).	DANGEROUS

Note:
Some tyres are not marked with a speed rating and the absence of such a mark is not a reason for rejection.

C. CONDITION OF TYRES

1.

a.	A tyre has a cut the length of which is at least 25 mm or 10% of section width, whichever is greater, deep enough to reach the ply or cords.	DANGEROUS
b.	A tyre has:	
	• a lump, bulge or tear caused by separation or partial failure of its structure. This includes any lifting of the tread rubber.	DANGEROUS
	• Any of its ply or cord exposed	DANGEROUS

Note:

Bulges resulting from satisfactory repair in the sidewall or shoulder of a tyre should be accepted provided the height of the bulge does not exceed 5 mm.

c.	A re-cut tyre fitted to a vehicle not permitted to be so equipped,	MAJOR
d.	A tyre incorrectly seated on the wheel rim,	DANGEROUS
e.	A seriously damaged or misaligned valve stem which could cause sudden deflation of the tyre.	DANGEROUS
f.	A tyre not fitted in compliance with the manufacturer's sidewall instruction, e.g., an asymmetric with a sidewall marked 'outer' fitted with the marking to the inner side of the wheel.	MAJOR
g.	A deflated tyre	MAJOR
h.	A tyre which is underinflated	MINOR
i.	a tyre marked 'NHS', 'Not for Highway use' or similar	DANGEROUS

Note: Direction of rotation may be indicated by an arrow and/or words, but an arrow by itself should not be taken to indicate direction of rotation.

2. A tyre fouling a part of the vehicle. MAJOR

Note:
This does not apply to vehicles designed to permit tyre contact with the chassis or frame e.g., steering lock stop function.

3. Tyres on twin wheels making wall contact due to under-inflation or incorrect fitment. MAJOR

Note:
Some tyres, e.g., radial ply tyres, with flexible side walls may touch under load. Wall contact in these circumstances is not a reason for rejection.

D. BREADTH AND DEPTH OF TREAD

1. The grooves of the tread pattern are not at least 1.6 mm throughout a continuous band comprising:

   - The central three-quarters of the breadth of tread, and — DANGEROUS

- Round the entire outer circumference of the tyre. DANGEROUS

Note:
Each side of the central band of the tyre can be devoid of tread (i.e., bald and still meet the pass standard although in practice such tyre wear is unlikely to occur. See diagram overleaf.

2. A tyre with a tread pattern.

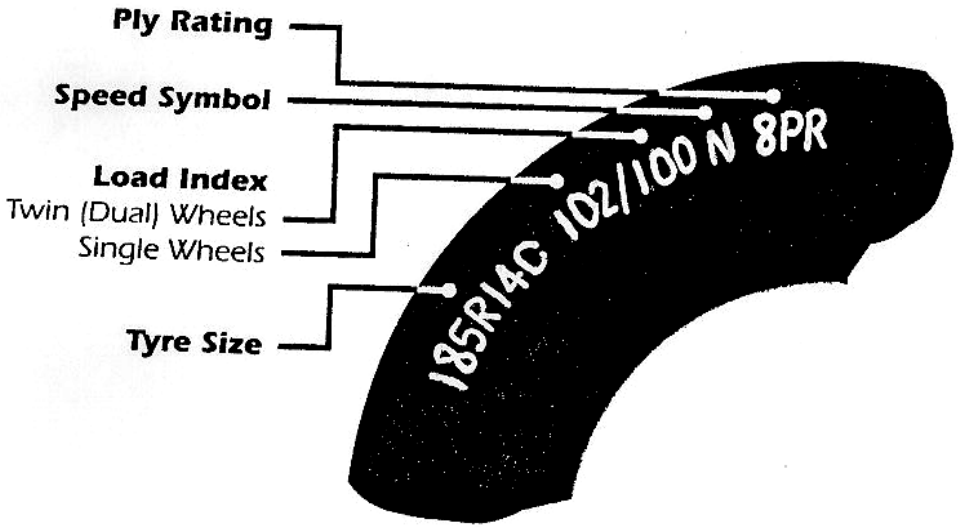
   a. Not visible over the whole tread area, and DANGEROUS

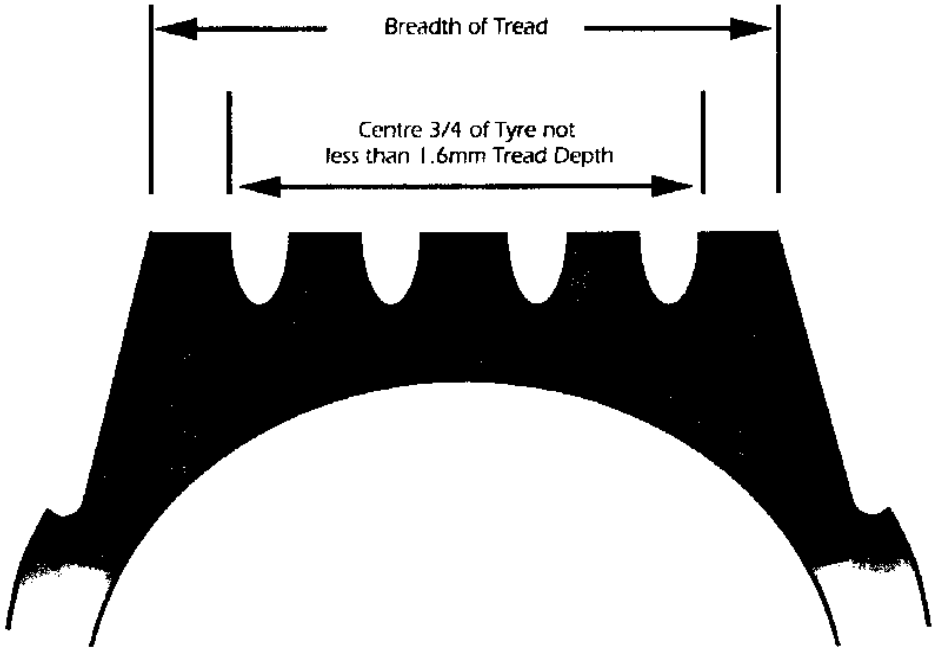
   b. The depth of which is not at least 1 mm through a single band:

      - round the entire outer circumference of the tyre, DANGEROUS

      - of at least three-quarters of the breadth of tread. DANGEROUS

Note:
The 1.0 mm tread depth requirement applies to the whole tread width if the original tread pattern did not extend beyond three-quarters of the tyre tread width when new.





E. TYRE PRESSURE MONITORING SYSTEM

A tyre pressure monitoring system warning lamp:

- inoperative where required — MAJOR
- indicating a system malfunction. — MINOR

TYRE SIZE, PLY RATING AND LOAD INDEX TABLES

HOW TO USE THIS TABLE:

1. Locate the line entry corresponding to the size and ply rating or load index marked on the tyre sidewall.

2. Read off the maximum axle load (kg) for these tyres in ‘SINGLE’ or ‘TWIN’ formation, as appropriate.

3. These tables show the maximum axle load for tyres in single and dual (twin) formation. If a tyre has only one load index marked then that index refers to use in single formation. Such tyres can be used in dual formation by applying the following formula:

   Max load in dual formation = Max load shown for single x 1.91

TABLE

Nominal Tyre Size	Ply Rating	Load Index	Maximum Axle Load (Kg)	
			Single Tyres	Twin Tyres
145-13C	6	83/81	970	1840
145-13C	8	88/86	1120	2120
560-13C	6	-	1020	1940
590-13C	6	-	1070	2090
640-13C	6	-	1280	2240
640-13C	8	-	1430	2750
670-13	-	94/93	1340	2600
670-13C	6	-	1380	2650
670-13	-	99/98	1550	3000
670-13C	8	-	1580	3050
155-14C	6	-	1070	2040
175-14	-	96/94	1420	2680
175-14C	6	-	1430	2680
175-14C	8	99/98	1550	3000
185-14	RADIAL	-	1200	2300
185-14	REINFORCED	-	1340	2560
185-14	RAD	94	1340	2560
185-14C	REINFORCED	99/97	1550	2920
185-14C	4PL	102/100	1770	3200
	6			
	8			
195-14	-	105/103	1850	3500
195-14C	6	-	1850	3510
195-14C	8	109/107	2060	3900
215-14C	8	112-110	2240	4240
590-14C	6	-	1170	2240
600-14C	8	92/90	1260	2400
640-14C	6	-	1330	2550
650-14	4	-	970	1860
650-14C	6	93/91	1300	2460
650-14C	8	-	1500	2840
670-14C	6	-	1430	2750
670-14	-	101/99	1650	3100
670-14C	8	-	1680	3160
700-14C	4	-	1070	2050
700-14	-	94/93	1340	2600
700-14C	6	-	1380	2650
750-14	4	-	1200	2300
750-14	-	98/96	1500	2840
750-14C	6	-	1530	2950
750-14	-	102/101	1700	3300
750-14C	8	-	1730	3360
175/75-14	-	98/99	1550	3000
185/75-14	-	102/100	1700	3200
195/75-14	-	106/104	1900	3600

Nominal Tyre Size	Ply Rating	Load Index	Maximum Axle Load (Kg)	
			Single Tyres	Twin Tyres
205/75-14	-	109/107	2060	3900
215/75-14	-	112/110	2240	4240
145-15C	8	91/98	1230	2320
185-15C	8	103/102	1750	3400
590-15C	6	-	122-	2340
640-15C	6	-	1380	2650
670-15	-	98/96	1500	2840
670-15C	6	-	1530	2900
670-15	-	103/102	1750	3400
670-15C	8	-	1780	3460
670-15	10	108/107	2000	3900
700-15C	6	-	1750	3400
700-15C	-	103/102	1750	3400
700-15C	8	-	1940	3760
700-15	10	-	2440	4580
750-15C	6	-	1830	3560
750-15C	8	-	2060	3970
750-15	10	-	2340	4370
750-15	12	-	2750	5340
255/75-15	-	118/116	2640	5000
175-16C	6	98/96	1500	2840
175-16C	8	101/99	1650	3100
185-16C	8	104/102	1800	3400
195-16C	8	107/105	1950	3700
205-16	-	106/104	1900	3600
205-16C	6	-	1900	3610
205-16C	8	110/108	2120	4000
215-16C	6	110/108	2120	4000
215-16C	8	113/111	2300	4360
600-16	-	95/92	1380	2520
600-16	6	-	1380	2550
600-16	8	-	1530	2920
600-16	-	103/101	1750	3300
600-16	10 & RADIAL	-	1830	3300
650-16	-	98/97	1500	2920
650-16	6	-	1530	2920
650-16	-	104/102	1800	3400
650-16	8	-	1830	3460
650-16	-	108/107	2000	3900
650-16	10 & RADIAL	-	2040	3900
700-16	-	102/100	1700	3200
700-16	6	-	1730	3260
700-16	-	108/106	2000	3800
700-16	8	-	2040	3870
700-16	-	113/112	2300	4480
700-16	10	-	2340	4480

Nominal Tyre Size	Ply Rating	Load Index	Maximum Axle Load (Kg)	
			Single Tyres	Twin Tyres
700-16	-	117/116	2570	5000
700-16	12 & RADIAL	-	2650	5000
750-16	-	108/106	2000	3800
750-16	6	-	2040	3870
750-16	-	112/110	2240	4240
750-16	8 & RADIAL	-	2240	4270
750-16	10	-	2500	4720
750-16	-	116/114	2500	4720
750-16	12 & RADIAL	-	2900	5600
750-16	-	121/120	2900	5600
825-16	8	-	2650	4880
825-16	10	-	2850	5440
900-16	6	-	2340	4370
900-16	-	114/111	2360	4360
900-16	8	-	2720	5140
900-16	-	119/117	2720	5140
900-16	10	-	3050	5600
175/75-16	-	101/99	1650	3100
185/75-16	-	104/102	1800	3400
195/75-16	-	104/102	1800	3400
195/75-16	-	107/105	1950	3700
205/75-16	-	110/108	2120	4000
215/75-16	-	113/111	2300	4360
225/75-16	-	116/114	2500	4720
225/75-16	-	118/116	2640	5000

The tyre load index table below shows the maximum axle load for tyres in single and dual (twin) formation that may not be listed in the Size-Load table.

Load Index	Single Kg	Single lbs	Dual Kg	Dual lbs
70	670	1474	1340	2948
71	690	1518	1380	3036
72	710	1562	1420	3124
73	730	1606	1460	3212
74	750	1650	1500	3300
75	774	1703	1548	3405
76	800	1760	1600	3520
77	824	1813	1648	3625
78	850	1870	1700	3740
79	874	1923	1748	3845
80	900	1980	1800	3960
81	924	2033	1848	4065
82	950	2090	1900	4180

83	974	2143	1948	4285
84	1000	2200	2000	4400
85	1030	2266	2060	4532
86	1060	2332	2120	4664
87	1090	2398	2180	4796
88	1120	2464	2240	4928
89	1160	2552	2320	5104
90	1200	2640	2400	5280
91	1230	2706	2460	5412
92	1260	2750	2520	5544
93	1300	2860	2600	5720
94	1340	2948	2680	5896
95	1380	3036	2760	6072
96	1420	3124	2840	6248
97	1460	3212	2920	6424
98	1500	3300	3000	6600
99	1550	3410	3100	6820
100	1600	3520	3200	7040
101	1650	3630	3300	7260
102	1700	3740	3400	7480
103	1750	3850	3500	7700
104	1800	3960	3600	7920
105	1850	4070	3700	8140
106	1900	4180	3800	8360
107	1950	4290	3900	8580
108	2000	4400	4000	8800
109	2060	4532	4120	9064
110	2120	4664	4240	9328
111	2180	4796	4360	9592
112	2240	4928	4480	9856
113	2300	5060	4600	10120
114	2360	5192	4720	10384
115	2430	5346	4860	10692
116	2500	5500	5000	11000
117	2570	5654	5140	11308
118	2640	5808	5280	11616
119	2720	5984	5440	11968
120	2800	6160	5600	12320
121	2900	6380	5800	12760
122	3000	6600	6000	13200