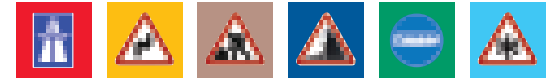




► REGROOVING GUIDELINES



► REGROOVING GUIDELINES

Depending on conditions of use and maintenance, Goodyear's high-quality tyre casings can give each tyre a minimum of four lives (new, regrooved, retread, regrooved retread) while ensuring safety, performance and minimising operating costs.

► REGROOVING BASICS

- 1 – A regrooved tyre is a tyre, either new or retreaded, on which the tread pattern has been renewed or a new tread pattern has been produced by cutting into the tread deeper than the original moulded groove depth.
- 2 – The regrooving of truck tyres should be entrusted solely to fully trained operators.
- 3 – Only proven regrooving tools with electrically heated blades should be used.
- 4 – A minimum of remaining undertread rubber is essential to avoid damage at the top breaker belt, groove cracking and/or stone damage.
- 5 – If regrooved according to the recommendations outlined in this manual, Goodyear tyres can, in principle, be mounted on all wheel positions. However, since it has become standard practice for users to normally fit new tyres on front axles, the regrooved tyres will usually be mounted on the rear axles or trailer positions.
- 6 – Tyres which are heavily damaged in the tread area (e.g. rib tearing, multiple cutting and chipping) should not be regrooved but retreaded.

All tyres which are marked 'Regroovable' in the sidewall areas have extra undertread thickness for regrooving purposes.

► REGROOVING RECOMMENDATIONS

- 1 – Under NO circumstances should the tyre be completely worn before regrooving. It is strongly recommended to regroove when 3 to 6 mm of the original design is still left.
- 2 – Determine the blade setting depth for each individual tyre as follows:
 - a) Measure the remaining groove depth AT THE POINT OF LOWEST TREAD DEPTH;
 - b) Set the blade in the cutter head to the 'minimum remaining groove depth' + 3 mm maximum regrooving depth.This will maintain a 3 mm gauge under the regrooved tread.
- 3 – While regrooving, hold the cutter so that the underside of the cutting head is flush against the tread surface.
- 4 – The maximum regrooving depth is 3 mm for all Goodyear truck tyres.
- 5 – If the wear is irregular, probing of the remaining undertread gauge is necessary to ensure that 3 mm of undertread will remain after regrooving.

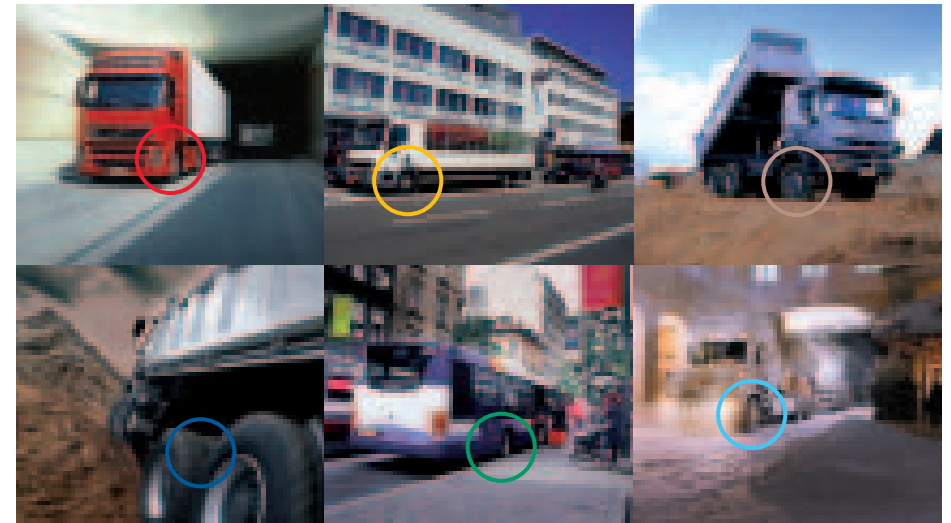
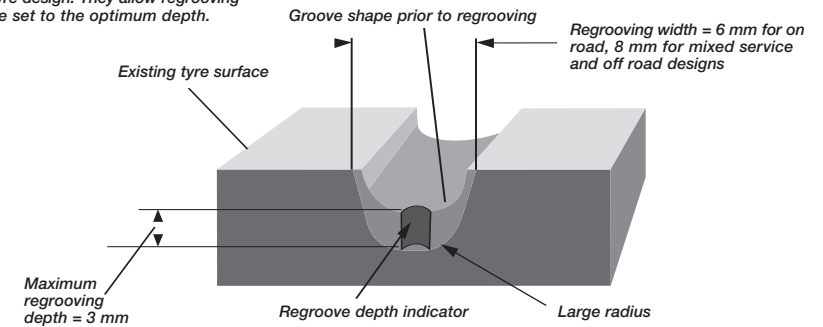
► REGROOVING GOODYEAR REMOULD TYRES

Provided that the retreading process is on Goodyear casings carried out by Goodyear Authorised Retreader, Goodyear remould tyres may be regrooved to the same pattern as the new tyre, regrooving depth being maximum 3 mm.

► REGROOVING PARAMETERS

Regroove Goodyear truck tyres when there is still sufficient tread depth. Suggested remaining tread depths are: 3-4 mm for regular highway use; 5-6 mm in operating conditions where penetration damage is likely.

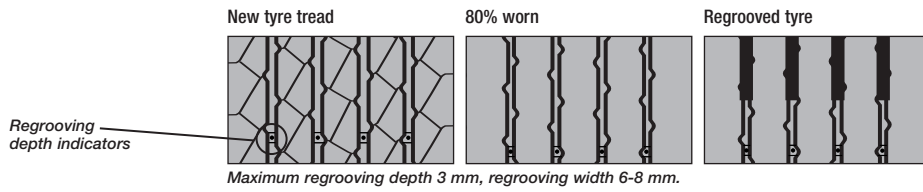
Regrooving depth indicators are moulded in to the tyre design. They allow regrooving tools to be set to the optimum depth.



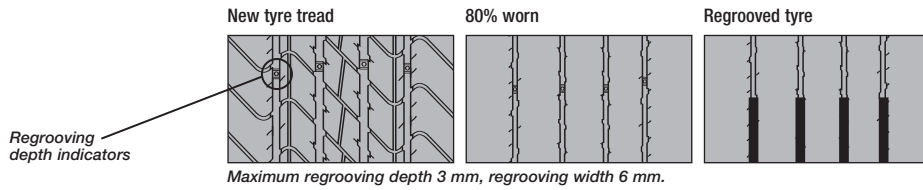
▶ REGROOVING GUIDELINES

MARATHON

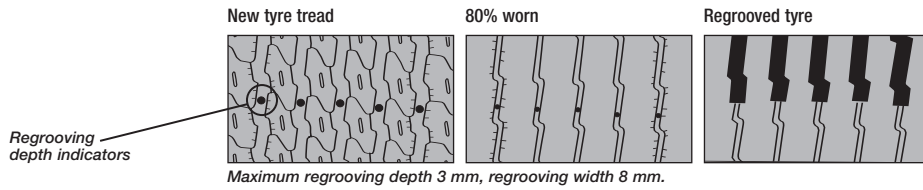
▶ MARATHON LHS®



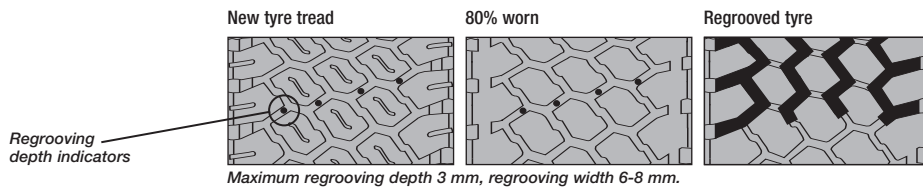
▶ MARATHON LHS® LR8



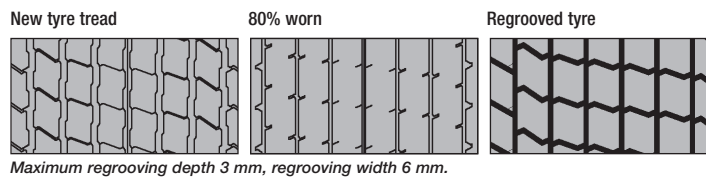
▶ MARATHON LHS® 65, 55 AND 50 SERIES



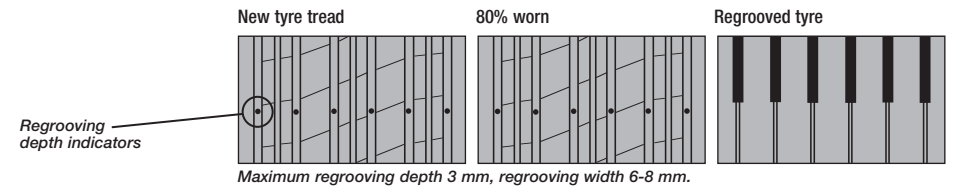
▶ MARATHON LHD®



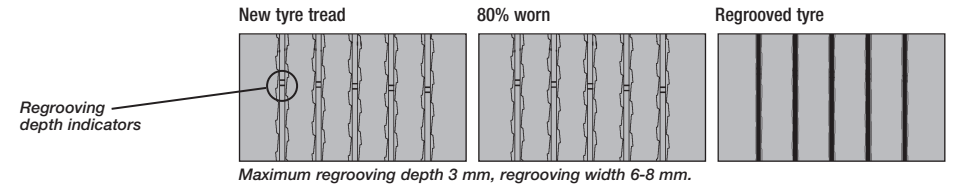
▶ MARATHON LHD® SUPER SINGLE 495/45R22.5



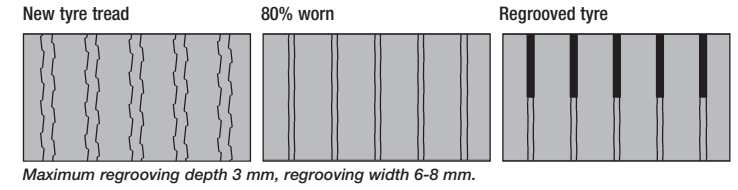
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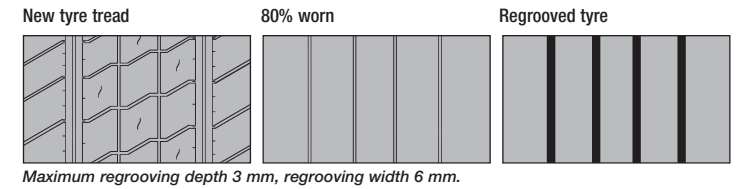
▶ MARATHON LHT® 65 AND 55-SERIES



▶ MARATHON LHT® 455/40R22.5



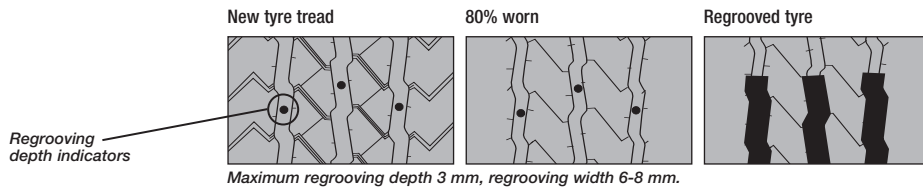
▶ MARATHON LHT® LPT



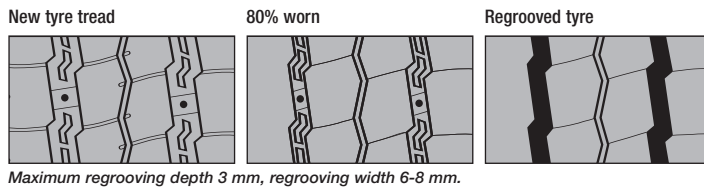
▶ REGROOVING GUIDELINES

REGIONAL

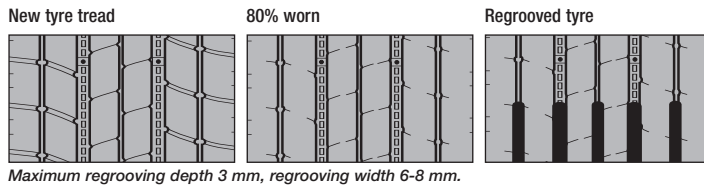
▶ REGIONAL RHS 22.5



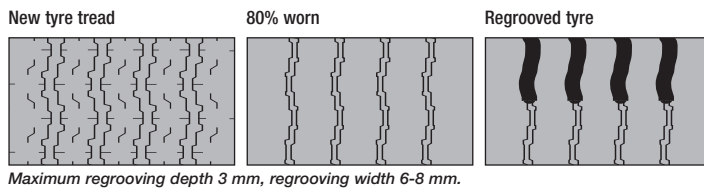
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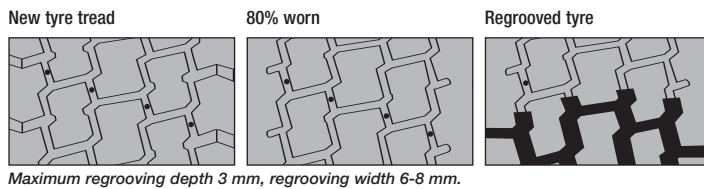
▶ REGIONAL RHS 17.5



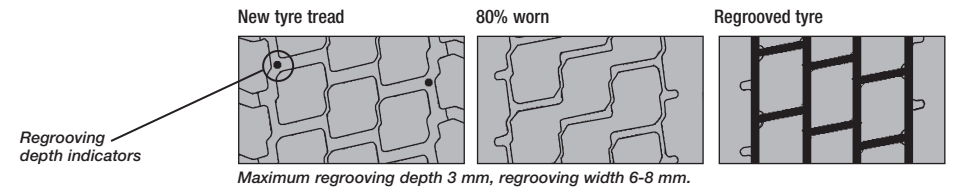
▶ G293



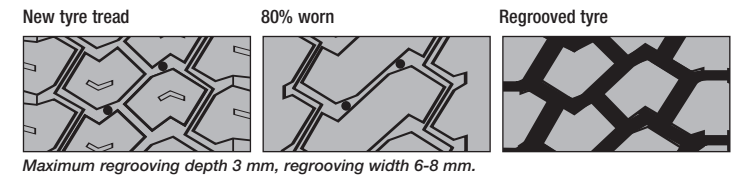
▶ REGIONAL RHD 22.5



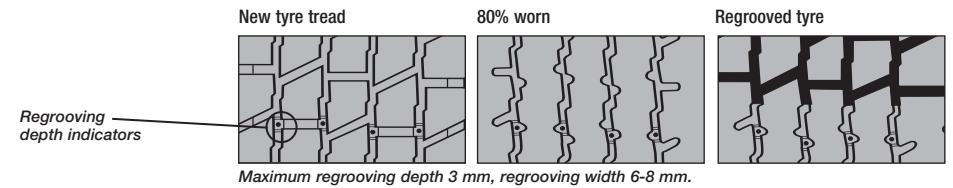
▶ REGIONAL RHD 22.5 (G113)



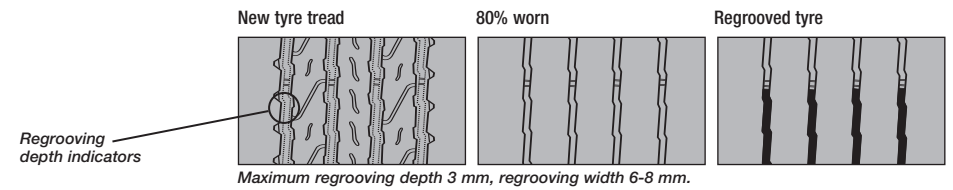
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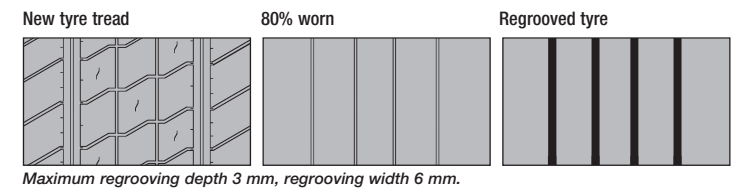
▶ REGIONAL RHD 17.5



▶ REGIONAL RHT 385/65R22.5



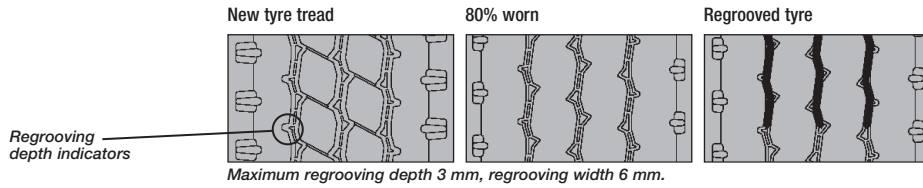
▶ REGIONAL RHT LPT



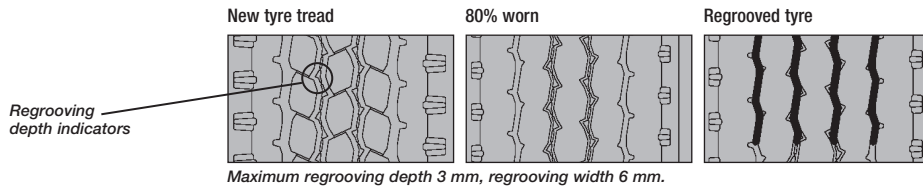
▶ REGROOVING GUIDELINES

OMNITRAC

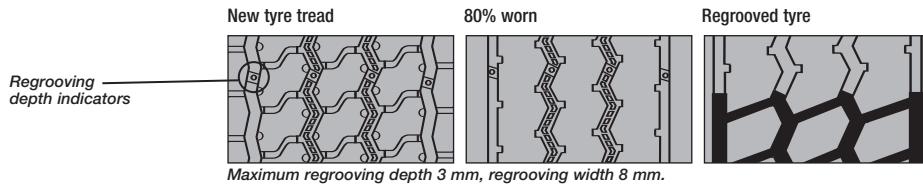
▶ OMNITRAC MSS 4 RIB



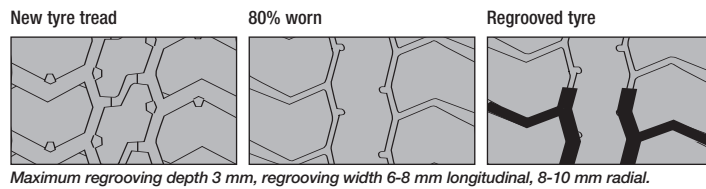
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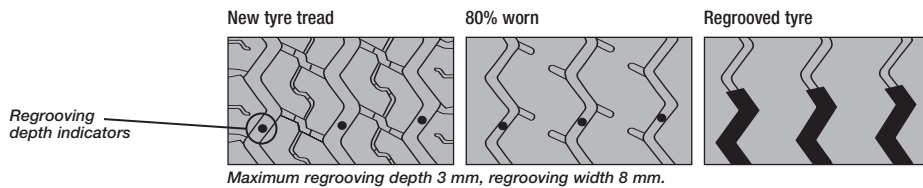
▶ OMNITRAC MSS 75 AND 90-SERIES



▶ OMNITRAC MSD

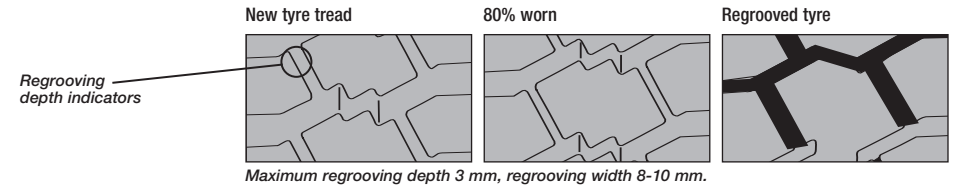


▶ OMNITRAC MST

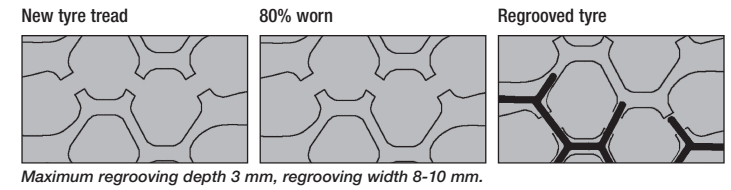


OFFROAD

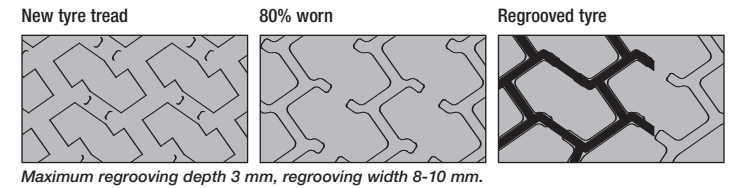
▶ OFFROAD ORD



▶ OFFROAD ORD 90 SERIES



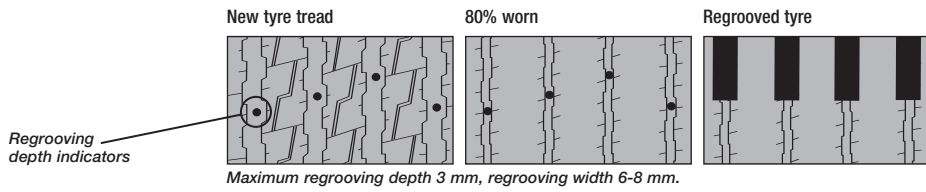
▶ OFFROAD ORD 1400R20



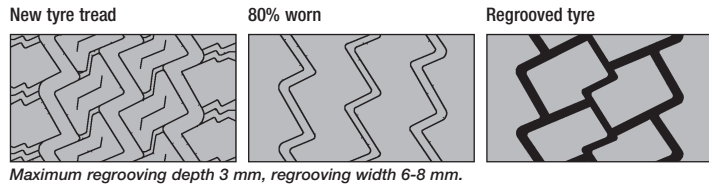
▶ REGROOVING GUIDELINES

METRO

▶ METRO MCS*



▶ METRO MCD

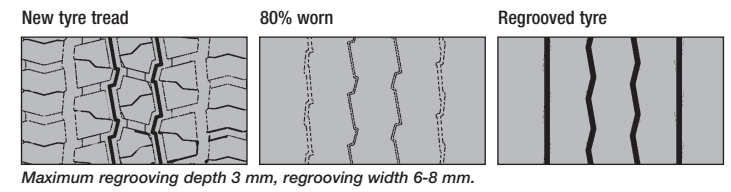


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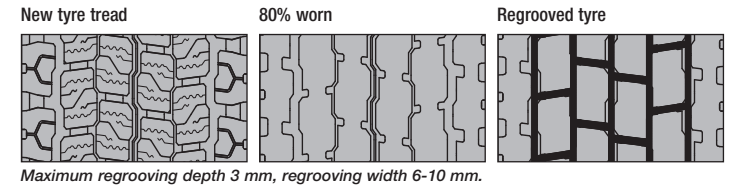


ULTRA GRIP

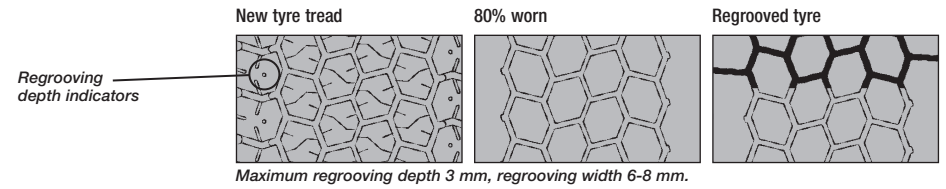
▶ ULTRA GRIP WTS



▶ ULTRA GRIP WTD



▶ G443





► TYRE TECHNOLOGY



► TYRE TECHNOLOGY

TYRE CONSTRUCTION AND TYRE TERMINOLOGY

► INTRODUCTION

Truck tyres are a high value investment. Moreover, their performance potential can be dramatically influenced by a multitude of service parameters – which can be globally identified as operating and maintenance conditions. In other words, **the true cost per kilometre is not only a function of the tyre quality and price, but is primarily a direct consequence of the actual running conditions of the tyre.** In order to be able to optimise these conditions, it is essential to first of all be familiar with the construction characteristics of a tyre and to understand its mechanical properties.

It will also be desirable to have a basic knowledge of vehicle dynamics and to recognise the importance of environmental factors such as road design and ambient temperature.

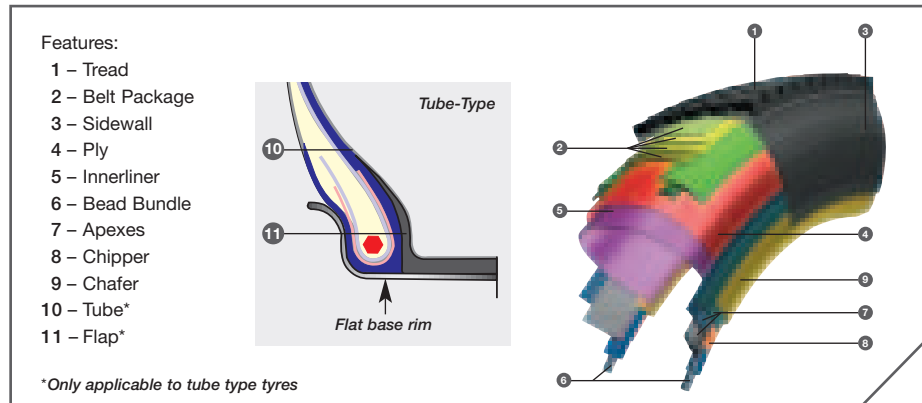
This brochure is designed to convey these elementary rules and guidelines and to thus help minimise fleet operating expenses.

For further clarifications and updated facts and figures, please consult with your Goodyear truck tyre specialist.

► TYRE TERMINOLOGY

Truck tyres are a high value investment. Moreover, the commercially available tyre is a composite product, made up from rubber compounds and

textile, steel synthetic reinforcements. The major components of the Goodyear radial ply, steel carcass and belt tyre are described below.



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► TYRE TERMINOLOGY

Tread – Provides primarily traction and wear and protects the carcass underneath.

Belt – Multiple, low angle, steel cord layers provide strength to the tyre, stabilise the tread and prevent penetrations into carcass.

Sidewall – Provides protection for the ply and withstands flexing and weathering.

Ply – The radial (90°) ply transmits all load, braking and steering forces between the wheel and the road and withstands the burst loads of the tyre under operating pressure.

Innerliner – A layer of rubber in tubeless tyres specially compounded to prevent loss of air.

Bead bundle – The steel bead bundle properly seats and seals the tyre on the rim and maintains it in position.

Apex – Rubber filler in the bead and lower sidewall area to provide progressive transition from the stiff bead area into the flexible sidewall.

Chafer – A layer of hard rubber that resists erosion of the bead zone by the rim flange.

Tube* – A separate air chamber, compounded to prevent loss of air, inserted into tube-type tyres.

Flap* – A rubber band placed between tube and rim. Protects the tube from chafing and prevents damage to the tube by the rim.

*Only applicable to tube type tyres.

► TYRE DIMENSION DEFINITIONS

Tyre companies throughout the world are members of regional tyre manufacturers associations (ETRTO for Europe), which establish tyre dimensions and tolerances, load carrying capacities and inflation pressures for the different tyre categories and sizes. The basic tyre and rim dimension nomenclature is explained below:

Outside Diameter – The diameter of an unloaded tyre, mounted on its recommended rim and inflated to recommended pressure.

Section Width (SD) – The width of the inflated tyre section, excluding any lettering or decoration.

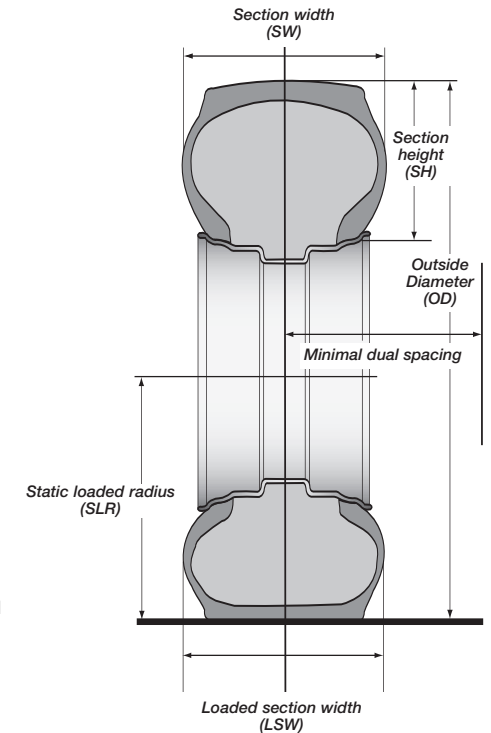
Section Height (SH) – The distance from the bead seat to the outer tread contour of the inflated tyre – at centreline.

Static Loaded Radius (SLR) – The standing height from the road surface to the axle centre under nominal tyre load/inflation conditions.

Loaded Section Width – The width of the loaded cross-section.

Minimum Dual Spacing – The minimum recommended distance between centrelines of dual mounted tyres to avoid kissing in the flex area.

Aspect Ratio – The section height (SH) expressed as a percentage of the section width (SD).



► TYRE TECHNOLOGY

TYRE MARKINGS

► SIZE MARKINGS

There are various forms of tyre size marking and these differ in order to differentiate between tyre types. The size markings should be treated the same as a part number on a vehicle, so the motorist should

ensure that the tyres on his vehicle carry the precise markings indicated in the vehicle handbook or are an approved alternative fitment.

► SERVICE DESCRIPTION

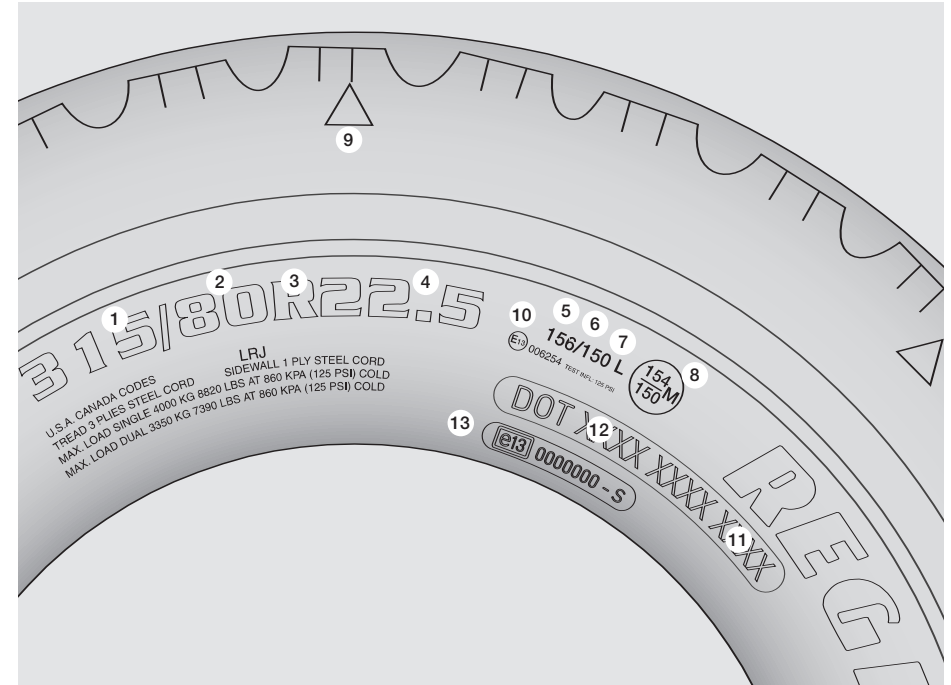
In accordance with the European regulation (ECE-R54), all tyres destined for commercial vehicles will be marked with a “Service Description” located near to the tyre size marking. This consists of a code which indicates operating limits of load and speed and includes a “load index” for single and dual tyre fitment and a “speed symbol” (e.g. 156/150 L).

An additional marking may be used to show the corresponding tyre loads for an alternative higher speed. This additional marking will be placed in a circle.

► SIZE DEFINITIONS

Listed below are the size designations that are being used on truck tyres. With each size is an explanation of what each component describes.

12 <i>Section width in inches</i>		R <i>R-radial</i>	22.5 <i>Rim diameter in inches</i>	152/148 <i>Load index (single/ dual mounted)</i>	M <i>Speed symbol</i>
295 <i>Section width in mm</i>	/	80 <i>Aspect ratio</i>	R <i>R-radial</i>	22.5 <i>Rim diameter in inches</i>	M <i>Speed symbol</i>
365 <i>Section width in mm</i>	/	80 <i>Aspect ratio</i>	R <i>R-radial</i>	20.0 <i>Rim diameter in inches</i>	J <i>Speed symbol</i>



The position of the major tyre markings are as shown:

- | | |
|---|---|
| 1 – Tyre Section width (mm or inches) | 8 – Alternative load indices when used with alternative speed |
| 2 – Aspect ratio S.H./S.W. | 9 – TWI – Tread Wear Indicator |
| 3 – Radial construction (R=Radial) | 10 – ECE Homologation number |
| 4 – Rim Diameter (inches) | 11 – Date code (week, year) |
| 5 – Load Index (Max. load per tyre – single tyre) | 12 – DOT Manufacturing Code |
| 6 – Load Index (Max load per tyre – dual mounted) | 13 – Noise number – indicates that the tyre conforms to ECE noise regulations |
| 7 – Speed Symbol | |

USA and Canada
In accordance with US Safety Regulation MVSS 109 for Car tyres, and 119 for Truck tyres, the maximum load of the tyre in pounds (LBS) and its corresponding air pressure in pounds per square inch (PSI) must be shown on the tyre.

Additionally, the tyre must be marked D.O.T. (Department of Transportation) to insure that it conforms to all valid regulations in these countries.

► TYRE TECHNOLOGY

LOAD INDEX AND SPEED SYMBOL

These parameters are established by ETRTO and are the two most important service factors determining tyre performance.

Load indices and speed symbols are shown on both tyre sidewalls. Example: 149/145 L. The first number denotes the tyre load carrying capacity in SINGLE application, while the second number refers to DUAL fitment. The letter "L" defines the maximum speed limit.

Unmarked Radial tyres are allowed up to a speed of 110 km/h. (Bias ply tyres are confined to 100 km/h).

Retreaded tyres can be run up to a maximum speed of 110 km/h, unless they are marked otherwise.

Special purpose tyres, for specific heavy duty applications must have the respective speed limitations identified on the sidewall.

The speed and load service identifications below are required by the European ECE-R54 regulation. The scale below shows the relationship between the Load Index (LI) and actual load values in kilograms (kg).

► LOAD INDEX

LI	kg	LI	kg	LI	kg	LI	kg	LI	kg	LI	kg
50	190	70	335	90	600	110	1060	130	1900	150	3350
51	195	71	345	91	615	111	1090	131	1950	151	3450
52	200	72	355	92	630	112	1120	132	2000	152	3550
53	206	73	365	93	650	113	1150	133	2060	153	3650
54	212	74	375	94	670	114	1180	134	2120	154	3750
55	218	75	387	95	690	115	1215	135	2180	155	3875
56	224	76	400	96	710	116	1250	136	2240	156	4000
57	230	77	412	97	730	117	1285	137	2300	157	4125
58	236	78	425	98	750	118	1320	138	2360	158	4250
59	243	79	437	99	775	119	1360	139	2430	159	4375
60	250	80	450	100	800	120	1400	140	2500	160	4500
61	257	81	462	101	825	121	1450	141	2575	161	4625
62	265	82	475	102	850	122	1500	142	2650	162	4750
63	272	83	487	103	875	123	1550	143	2725	163	4875
64	280	84	500	104	900	124	1600	144	2800	164	5000
65	290	85	515	105	925	125	1650	145	2900	165	5150
66	300	86	530	106	950	126	1700	146	3000	166	5300
67	307	87	545	107	975	127	1750	147	3075	167	5450
68	315	88	560	108	1000	128	1800	148	3150	168	5600
69	325	89	580	109	1030	129	1850	149	3250	169	5800

The **LOAD INDEX** denotes the maximum load a given tyre can carry at the maximum speed as indicated by the speed symbol.

► SPEED SYMBOL

Speed Symbol	Speed (km/h)
E	70
F	80
G	90
J	100
K	110
L	120
M	130
N	140

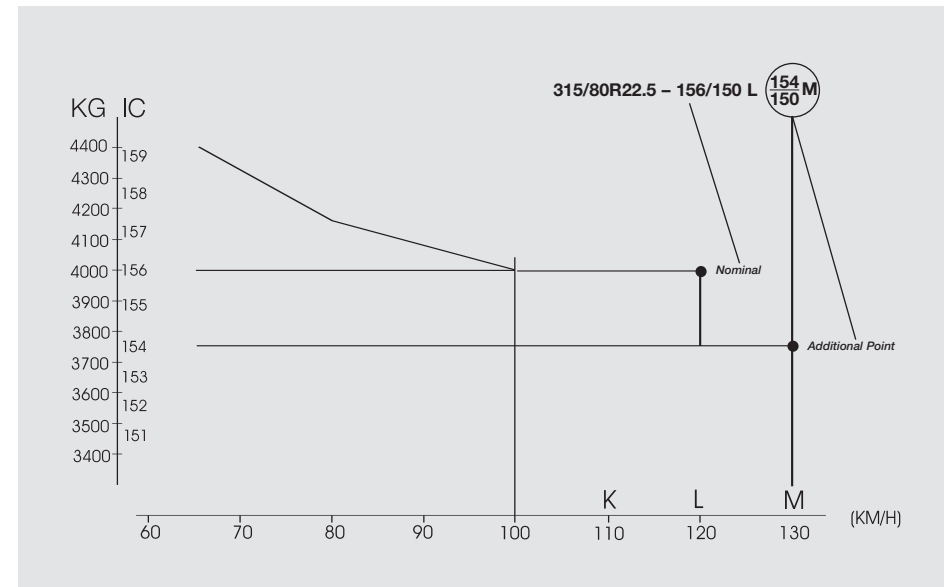
The **SPEED SYMBOL** denotes the maximum speed at which a given tyre can carry the load indicated by the load index.

► ADDITIONAL LOAD/SPEED MARKINGS

At lower speeds, higher loads can be tolerated, at higher speeds, loads may need to be reduced.

For actual load benefits due to maximum speed variations, please refer to the load capacity variation tables on the next pages.

NOTE: Additional load/speed markings, such as in the example shown, are circled and indicate that this tyre can be run at higher speed provided the load is reduced accordingly.



► TYRE TECHNOLOGY

INTERACTION OF LOAD AND SPEED

► LOAD CAPACITY VARIATIONS (%) AS A FUNCTION OF SPEED

The load carrying capacity of tyres in dual fitment is twice the load carrying capacity in single application – up to a maximum speed of 40 km/h. L, M and N tyre load benefits are restricted to speeds below 120 km/h.

Some countries may have different load and speed regulations for special vehicles respectively special applications. Make sure to consult, in such case, the vehicle and/or tyre manufacturer for further details.

Commercial vehicle tyres with LI 121 (1450 kg) or less in single applications				
up to max. km/h	L 120 km/h	M 130 km/h	N 140 km/h	Inflation Pressure Compensation (%)*
Static	+110			+40
5	+90			+35
10	+75			+35
15	+60			+30
20	+50			+30
25	+42			+30
30	+35			+30
35	+29			+30
40	+25			+30
45	+22			+28
50	+20			+25
55	+17.5			+22
60	+15			+18
65	+13.5			+15
70	+12.5			+15
75	+11			+14
80	+10			+12
85	+8.5			+10
90	+7.5			+9
95	+6.5			+8
100	+5			+8
105	+3.75			+4
110	+2.5			+2
115	+1.25			+1
120	0	0	0	0

NOTE: Increment to be applied in the absence of any specific agreement with the tyre manufacturer.

► LOAD CAPACITY VARIATIONS (%) AS A FUNCTION OF SPEED

The load carrying capacity of tyres in dual fitment is twice the load carrying capacity in single application – up to a maximum speed of 40 km/h. K, L, and M tyre load benefits are restricted to speeds below 95 km/h and lower.

Some countries may have different load and speed regulations for special vehicles respectively special applications. Make sure to consult, in such case, the vehicle and/or tyre manufacturer for further details.

Commerical vehicle tyres in single applications							
up to max. km/h	All Load indices					M 130 km/h	Inflation Pressure (%)*
	F 80 km/h	G 90 km/h	J 100 km/h	K 110 km/h	L 120 km/h		Compensation
Static			+150				+40
5			+110				+40
10			+80				+30
15			+65				+25
20			+50				+21
25			+35				+17
30			+25				+13
35			+19				+11
40			+15				+10
45			+13				+9
50			+12				+8
55			+11				+7
60			+10				+6
65	+7.5		+8.5				+4
70	+5		+7				+2
75	+2.5		+5.5				+1
80	0		+4				0
85		+2	+3				0
90		0	+2				0
95			+1				0
100			0				0
105				0	0	0	0
110				0	0	0	0
115					0	0	0
120					0	0	0
125						0	0
130						0	0

NOTE: Increment to be applied in the absence of any specific agreement with the tyre manufacturer.

► TYRE TECHNOLOGY

RIMS AND WHEELS

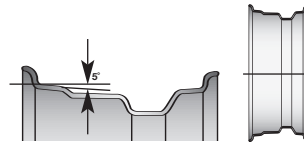
For truck tyres, there are essentially 3 basic rim types available on the market:

- one-piece tubeless drop centre rims
- multi-piece tube-type flat base rims
- multi-piece tubeless flat base rims

► ONE PIECE TUBELESS DROP CENTRE

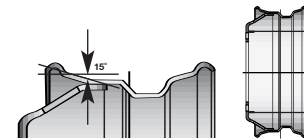
5° Drop Centre Rim – (13", 14", 17" etc...)

symmetric and asymmetric rims for standard and low section light truck (C) tyres.



15° Drop Centre Rim – (17.5", 19.5", 22.5" etc...)

rims for standard and wide section (Low Aspect Ratio, Super Single) tyres.



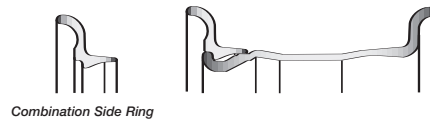
► TWO AND FOUR PIECE TUBE-TYPE FLAT BASE

(Mainly 20") rims for high aspect ratio tyres. It will be important to avoid interchanging of

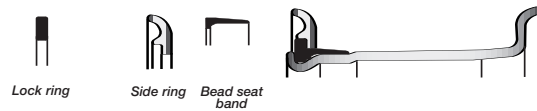
parts from both systems. Note that each system is usually identified accordingly (stamped 2P or 4P).



► TWO PIECE TUBE-TYPE FLAT BASE

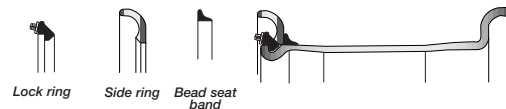


► FOUR PIECE TUBE-TYPE FLAT BASE



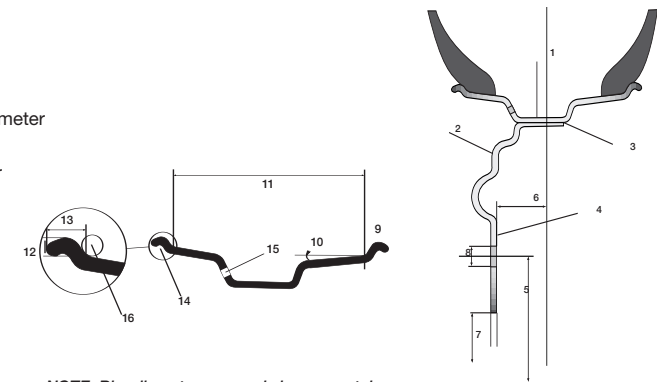
► FOUR PIECE TUBELESS FLAT BASE

(20") rims for mainly 80-series tyres. They require a new sealing gasket for each new tyre.



Complete wheel details are shown below:

- 1 – Drop centre
- 2 – Disc
- 3 – Rim/disc junction
- 4 – Hub contact face
- 5 – Pitch (bolt) circle diameter
- 6 – Offset
- 7 – Centre hole diameter
- 8 – Stud hole diameter
- 9 – Rim flange
- 10 – Taper
- 11 – Rim Width
- 12 – Rim flange height
- 13 – Rim flange width
- 14 – Rim flange radius
- 15 – Valve hole
- 16 – Ball tape



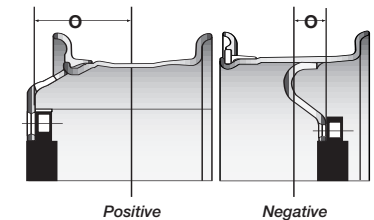
NOTE: Rim diameters can only be accurately measured by means of a special ball tape.

All wheels have a given offset (O) which does not only provide for the necessary brake drum space, but which also determines track width, kingpin offset, handling characteristics and wheel bearing load. On dual assemblies, it also influences the dual spacing.

Tyre fitters and mechanics must therefore pay attention that:

- specific vehicles are fitted with the correct offset wheels.
- wheels with different offsets are not mixed up on the same axle.

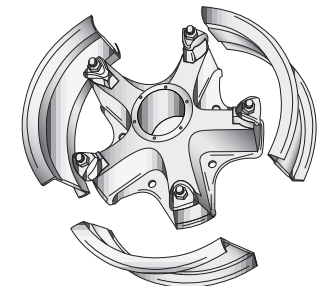
Wheel offsets can be positive, negative or zero. The offset is defined as the distance from the wheel centre to the inside face of the disc (against the hub) and is called positive whenever this inside face is located outside of the centreline, negative when located inside, zero when matching the centreline exactly.



As a general maintenance rule, assembling and disassembling of multi-piece rims should only be done with specially designed tools. This will not only assure the safety of the fitter, but will also avoid usage of hammers and other inadequate equipment which could sooner or later damage or break vital rim parts. Also, for 1-piece tubeless rims, proper tooling is essential, since it will otherwise be extremely difficult or even impossible to mount such tyres safely and without bead area damage.

For demountable 1- or multiple-piece spoke-type wheels, the following additional precautions should be taken:

- Contact surfaces between rim and star should not be painted to guarantee perfected centring.
- Bolts should be tightened clockwise (not crosswise) – without exceeding the recommended maximum torque given by the vehicle manufacturer.
- Bolts and clamps should be re-checked at 50-100 km after wheel fitment and re-tightened if necessary.
- In case of dual mounting, the spacer ring should be pre-centred over the centring cams (placed on spokeheads).



► TYRE TECHNOLOGY

TUBES AND FLAPS

Only use "Radial" marked tubes and flaps in Radial Tyres. Preferably fit a new tube and a new flap when mounting a new tyre. Due to their inherent construction, Radial Tyres impose far greater local stresses on Inner tubes than do Bias Tyres. "Radial" marked Tubes are specially compounded to withstand these stresses and their use in Radial Tyres is mandatory. "Radial" marked Tubes may also

be used in Bias Tyres, but in this application, unmarked Bias Tubes are perfectly satisfactory.

The higher stresses in Radial Tyres render the tube more susceptible to Flap Edge Cutting, and the use of "Radial" marked flaps, specially compounded such that they will not harden excessively in service is mandatory.

► TUBES

Tubes are designed within well defined limits of Radial and Total Stretch. A tube too large will be liable to buckling, and to early failure.

A tube too small will be stretched excessively, leading to reduced rub resistance, and poorer air retention. In an emergency, a small tube is better than a large tube, since the failure mode is less likely to be catastrophic.

In case of necessity, a tube may be reused, if,

- There is no apparent damage and
- If the tube has not grown excessively during the first life. It is suggested that for a tube to be reused, a residual radial stretch of at least 15% is required.

NOTE: The fitment of tubes to "tubeless" tyres is not recommended.

► FLAPS

The flap is designed to:

- Protect the tube from the roughness of the rim.
- To prevent the tube being pinched by the component parts of multi-pieced rims.
- To prevent the tube being pushed through the valve slot.

As a rule we can say that flaps are necessary for any rim which has a valve slot as against a valve hole.

All Drop centre rims including passenger, truck and farm, have a valve hole on the side of the well and require an off centre valve on the tube. They do not require a Flap.

Drop centre truck rims occasionally have the valve hole on centre, but these are normally only fitted with run out tubes in emergency cases which is a practice not endorsed by Goodyear.

All flat base rims with a removable flange have a valve slot extending from the centreline of the rim to the edge. These rims require a flap, and a tube with an on centre valve.

All Semi Drop Centre rims have a short valve slot, which may be on or off centre dependant on the type of rim, and upon the rim manufacturer, and require flaps and tubes with respectively on or off centre valvehole, and tube valve.

► RIM SLOT COVER PLATES

Even the best flaps, subjected as they are to high pressure and temperature, (wheel temperatures as high as 200°C have been measured on the inside rear position in City Bus service in Europe) are liable to be pushed through the rim slot in service.

Flaps are designed with fabric, or heavy rubber reinforcement in the valve slot area to overcome this

problem, but for critical applications, the use of commercially available rim slot coverplates, or even a large diameter metal washer are recommended. Since the push through, and possible failure occurs next to the bead, rather than around the valve, Bridge plates, are not really effective, and their use in Europe is decreasing.

► MEDIUM TRUCK – 20/22/24"

Tyre size	Tube	Rim	Flap	
8.25*20	8.25*20	6.0	20*6.0	
		6.5	20*6.0	
		7.0	20*7.0	
9.00*20	9.00*20	6.5	20*6.0	
		7.0	20*7.0	
		7.5	20*7.0	
10.00*20	10.00*20	7.0	20*7.0	
		7.5	20*7.0	
		8.0	20*8.0	
11.00*20	11.00*20	7.5	20*7.0	
		8.0	20*8.0	
		8.5	20*8.5	
12.00*20	12.00*20	8.0	20*8.5	
		8.5	20*8.5	
		9.0	20*9.5	
14.00*20	14.00*20	10.0	20*9.0	
		11.00*22	7.5	22*8.0
			8.0	22*8.0
12.00*24	12.00*24		8.5	22*8.5
		8.0	24*8.5	
		8.5	24*8.5	
		9.0	24*9.0	

NOTE: For Bias ply tyres with dual beads subtract 1/2" from the above flap widths.

► MPT AND LPT

Tyre size	Tube	Rim	Flap	
6.00*16	6.00*16 DC	4.5J 5K 5.5K	NONE	
		4.50E SDC	16*5.5 #	
		5.00E SDC	16*5.5	
6.50*16	6.50*16 DC	4.5J 5K 5.5K	NONE	
		4.50E SDC	16*5.5 #	
		5.00E SDC	16*5.5	
7.00*16	7.00*16 DC	5.50F SDC	16*6.5 #	
		7.00*16 FB	5K 5.5K 6K	NONE
			5.00E SDC	6*5.5
7.50*16	7.50*16 DC		5.50F SDC	6*5.5 #
		7.50*16 FB	6.00G SDC	6*5.5 #
			6L 6.5L	NONE
8.25*16	8.25*16 FB		5.50F SDC	16*6.5 #
		6.00G SDC	16*6.5 #	
		6.50H SDC	16*6.5 #	
7.50*15	7.50*15 FB	6.00G SDC	16*6.5 #	
		6.50H SDC	16*6.5 #	
		6.0	15*6.0	
8.25*15	8.25*15 FB	6.5	15*6.0	
		6.5	15*6.0	
		7.0	15*7.0	

NOTE: 1) Standard valves for DC tubes are TR15. 2) Standard valves for FB are truck type. 3) # Valve hole off centre.

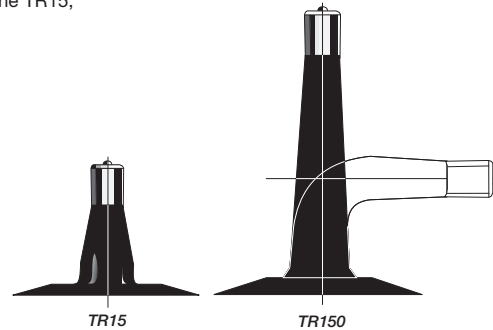
TYRE TECHNOLOGY

VALVES

Three types of Inner Tube Valve exist in Commercial service:

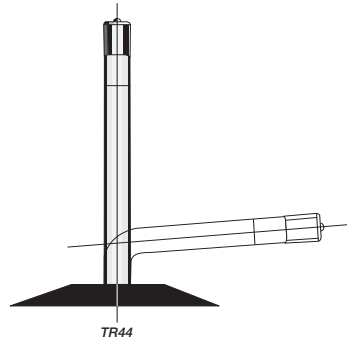
RUBBER COVERED VALVES

Rubber covered valves which may be rigid as for the TR15, or hand bendable as for the TR150.



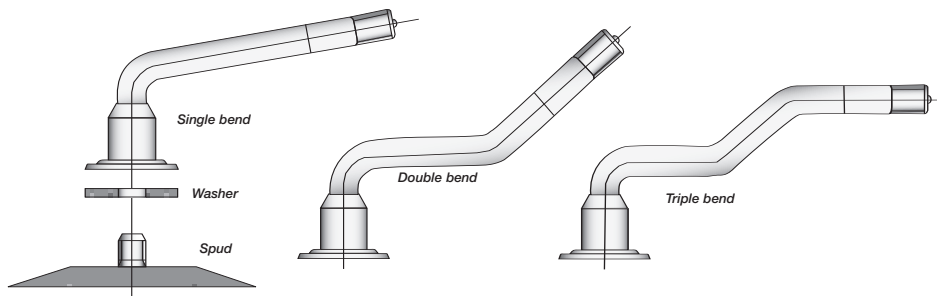
ONE PIECE METAL VALVES

One Piece Metal Valves, such as the TR44* series. These are generally supplied with the required bent form, and may be single, double or triple bent.



TWO PIECE METAL VALVES

European style two piece metal valves consist of a spud (a short threaded metal tube) vulcanised onto the tube and a pre-bent extension which screws onto the spud, using a rubber washer as the air seal.



FITTING EXTENSION VALVES

Extensions are actually coded in the form V*-**-**, but to avoid confusion are generally referred to as the designation of the one piece metal valve to which they are equivalent.

The weakest part of the design of the extension type valve is the rubber washer. The washer is compressed when the valve is tightened, and loses its elasticity with age. Rubber washers should never be reused

since they harden and take a permanent set. Similarly, extensions should never be backed off to make them line up with the rim slots.

The correct procedure is to wind the extension onto the stem until it just contacts the washer. Take another half turn. Then mount the tyre/tube/flap assembly, and line the extension up with the slot by tightening further.



VALVE CAPS

Valves must always be fitted with a valve cap.

The valve core is present to allow the internal air pressure to be measured and changed. It is the valve cap which is the primary air seal. Valve caps are always made of metal and have a rubber sealing

ring. The plastic dust caps are not suitable for field service. They are designed to prevent damage to the Tube/Valve/Valve Core during transportation from point of manufacture to point of use.

VALVE CORES

Valve cores are available in two lengths, two temperature ranges, and with either internal or external springs. Fortunately all these cores are interchangeable. It is recommended to use the short

core, internal spring, heat resistant type. These are recognisable since the small rubber collar around the core is coloured red.

CONVERSION FROM T&RA TO REFERENCE NUMBERS

T&RA	Single	ETRTO Double	Triple
TR75	V3.02.27		
TR76	V3.02.8		
TR78	V3.02.12	V3.04.6	V3.06.5
TR175	V3.02.10	V3.04.4	V3.06.3
TR177	V3.02.9	V3.04.3/10	V3.06.1
TR178	V3.02.14		
TR179	V3.02.15		V3.06.6
TR285			V3.07.1

NOTE: Goodyear primarily manufactures truck tubes with spud/screw on extension type valves.

TYRE TECHNOLOGY

THE TYRE MANUFACTURING PROCESS

